

# **BAILLY ELEMENTARY SCHOOL**

## **2020 NURSE'S OFFICE RENOVATIONS**

*800 South 5<sup>th</sup> Street  
Chesterton, Indiana*

### **Operation and Maintenance Manual**

**OWNER:**

**DUNELAND SCHOOL CORPORATION**  
*601 West Morgan Avenue  
Chesterton, IN 46304*

**ARCHITECT:**

**TRIA ARCHITECTURE**  
*901 McClintock Drive, Suite 100  
Burr Ridge, IL 60527*

**GENERAL CONTRACTOR:**

**LARSON-DANIELSON CONSTRUCTION CO., INC.**  
*302 Tyler Street  
LaPorte, IN 46350*

#56521

**DUNELAND SCHOOL CORPORATION**  
**2020 NURSE'S OFFICE RENOVATION**  
**BAILY ELEMENTARY SCHOOL**

**INDEX**

- #1. Directory
- #2. Larson-Danielson Construction Co., Inc. – *Warranty*
- #3. 06411 Plastic Laminate-Clad Casework/06651 Solid Surface Countertops – *Philip Konrad & Sons, Inc.*
- #4. Roof Patching – *Gluth Bros. Roofing Co.*
- #5. 08110 Steel Doors and Frames/08211 Flush Wood Doors/08710 Door Hardware – *Allied Door and Hardware*
- #6. 09300 Tile/09650 Resilient Flooring/09685 Carpet Tile – *Midwest Tile & Interiors*
- #7. Terrazzo Patching – *Art Mosaic & Tile Co., Inc.*
- #8. 09511 Suspended Acoustical Ceilings
- #9. 09900 Paints and Coatings – *Prism Painting*
- #10. 10800 Toilet Accessories/12216 Cubicle Curtain and Track – *Carney & Company, Inc.*
- #11. Mechanical/Direct Digital Controls – *Circle "R" Mechanical, Inc.*
- #12. Electrical – *Ellis Electric, Inc.*

# **DUNELAND SCHOOL CORPORATION**

## **2020 NURSE'S OFFICE RENOVATION**

### **BAILY ELEMENTARY SCHOOL**

## **DIRECTORY**

|                     |   |   |
|---------------------|---|---|
| Owner:              | Duneland School Corporation<br>700 West Porter Avenue<br>Chesterton, IN 46304   |   |
| Jobsite:            | Baily Elementary School<br>800 South 5 <sup>th</sup> Street<br>Chesterton, Indiana  |   |
| Architect:          | Tria Architecture<br>901 McClintock Drive, Suite 100<br>Burr Ridge, IL 60527<br>Tom Szurgot   | Phone: 630-455-4500<br>Fax: 630-455-4040<br><br>Email: <a href="mailto:tszurgot@tria-arch.com">tszurgot@tria-arch.com</a>   |
| General Contractor: | Larson-Danielson Construction Co., Inc.<br>302 Tyler Street<br>LaPorte, IN 46350<br>Jonathan Foglesong, Project Manager<br><br>Karl Wallace, Superintendent<br><br>Rhonda Sullivan, Project Assistant | Phone: 219-362-2127<br>Fax: 219-362-2848<br>Direct: 219-575-6116<br>Cell: 219-608-0120<br>Email: <a href="mailto:jpf@ldconstruction.com">jpf@ldconstruction.com</a><br>Cell: 219-851-7958<br>Email: <a href="mailto:kwallace@ldconstruction.com">kwallace@ldconstruction.com</a><br>Direct: 219-575-6045<br>Email: <a href="mailto:rrs@ldconstruction.com">rrs@ldconstruction.com</a> |

## **SUBCONTRACTORS**

|                    |  |  |
|--------------------|--|--|
| Terrazzo Patching: | Art Mosaic & Tile Co.<br>844 Rush Street<br>South Bend, IN 46601<br>Steve Lovisa       | Phone: 574-287-8131<br>Fax: 574-287-4863 |
| Mechanical:        | Circle "R" Mechanical, Inc.<br>6620 Shepherd Avenue<br>Portage, IN 46368<br>Doug Young | Phone: 219-787-5566<br>Fax: 219-787-5567 |
| Electrical:        | Ellis Electric, Inc.<br>P.O. Box 2232<br>Chesterton, IN 46304<br>David Ellis           | Phone: 219-926-7400                      |

**DUNELAND SCHOOL CORPORATION**  
**2020 NURSE'S OFFICE RENOVATION**  
**BAILY ELEMENTARY SCHOOL**

|  |  |  |
|--|--|--|
| Roof Patching:                           | Gluth Bros. Roofing Co.<br>6701 Osborn Avenue<br>Hammond, IN 46323<br>Russell Gluth          | Phone: 800-824-5884<br>Fax: 219-845-6953 |
| Tile/Resilient Flooring/<br>Carpet Tile: | Midwest Tile & Interiors<br>1805 North Cedar Street<br>Mishawaka, IN 46545<br>Brooke Carlton | Phone: 574-256-6814<br>Fax: 574-258-0360 |
| Painting:                                | Prism Painting<br>368 Kennedy Avenue<br>Schererville, IN 46375<br>Mike Helm                  | Phone: 219-322-7321<br>Fax: 219-322-7321 |

**SUPPLIERS**

|  |  |  |
|--|--|--|
| Steel Doors and Frames/<br>Flush Wood Doors/<br>Door Hardware: | Allied Door and Hardware<br>388 Pilot Drive, Suite B<br>Valparaiso, IN 46383<br>Kevin Offdenkamp | Phone: 219-531-2895<br>Fax: 219-531-2831 |
| Toilet Accessories/<br>Cubicle Curtain and Track:              | Carney & Company, Inc.<br>636 Schneider Drive<br>South Elgin, IL 60177<br>Dan Carney             | Phone: 847-931-4440<br>Fax: 847-931-4498 |
| PLAM Casework/<br>Solid Surface Countertops:                   | Philip Konrad & Sons, Inc.<br>1315 East State Road 10<br>Knox, IN 46534<br>Dennis Konrad         | Phone: 574-772-3966<br>Fax: 574-806-0831 |



August 31, 2020

**WARRANTY**

Duneland School Corporation  
601 West Morgan Avenue  
Chesterton, IN 46304

Re: 2020 Nurse's Office Renovations at Bailly Elementary School  
Chesterton, Indiana

We hereby warrant that the work we have installed on the above mentioned project has been done in strict accordance with the drawings and specifications and that the work will fulfill the requirements of those specifications.

We agree to repair or replace, or cause to be repaired or replaced, any or all of the work which may prove to be defective in workmanship or materials for a period of one (1) year after the date Duneland School Corporation issues the final payment to Larson-Danielson Construction Co., Inc. for the 2020 Nurse's Office Renovations at Bailly Elementary School Project for Duneland School Corporation, ordinary wear and tear and unusual abuse or neglect excepted.

Sincerely,  
LARSON-DANIELSON CONSTRUCTION CO., INC.



Jonathan P. Foglesong  
Project Manager



302 Tyler Street · LaPorte, Indiana 46350

(219) 362-2127 · Fax (219) 362-2848

August 3, 2020

Duneland School Corporation  
601 West Morgan Avenue  
Chesterton, IN 46304

Re: 2020 Nurse's Office Renovations at Bailly Elementary School  
Chesterton, Indiana

To the best of our knowledge we have not, nor have our Subcontractors installed any product containing asbestos in our scope of work.

Sincerely,  
LARSON-DANIELSON CONSTRUCTION CO., INC.

Jonathan P. Foglesong  
Project Manager

August 3, 2020

**JOINT SEALERS 5-YEAR WARRANTY**

Duneland School Corporation  
601 West Morgan Avenue  
Chesterton, IN 46304

Re: 2020 Nurse's Office Renovations at Bailly Elementary School  
Chesterton, Indiana

We hereby warrant that the Joint Sealant work we have installed on the above mentioned project has been done in strict accordance with the drawings and specifications and that the work will fulfill the requirements of those specifications.

We agree to repair or replace, or cause to be repaired or replaced, any or all of the installed sealants and accessories work which fails to achieve an air tight seal, fails to achieve a water tight seal and exhibits loss of adhesion or cohesion, or fails to cure within a period of five (5) years from the date of substantial completion, August 3, 2020, for the 2020 Nurse's Office Renovations at Bailly Elementary School Project for Duneland School Corporation, ordinary wear and tear and unusual abuse or neglect excepted.

Sincerely,  
LARSON-DANIELSON CONSTRUCTION CO., INC.



Jonathan P. Foglesong  
Project Manager

# PHILIP KONRAD & SONS, INC.

*"Custom Architectural Cabinetry and Millwork" SINCE 1957*

**Larson Danielson Construction**

**302 Tyler Street**

**Laporte, IN 46350**

**Project: #56521 Duneland School Corporation – Bailly Elementary School Office Renovation**


***Philip Konrad & Sons, Inc. does hereby agree to warrant for a period of 10 years from, August 3, 2020 the Solid Surface Countertops by Philip Konrad & Sons, Inc. for Duneland School Corporation – Bailly Elementary School Office in Chesterton, In.***

*Should any defects develop in the millwork within the specified period due to faults in products or workmanship, **Philip Konrad & Sons, Inc.** hereby agrees to replace or repair any defective material necessary to correct the problem to the owner's satisfaction. If a product, such as a material fails and is not warranted by the manufacturer of material, Philip Konrad and Sons, Inc. will not warrant product either.*

*Nothing herein intends or implies that the warranty shall apply to work that has been abused or neglected, improperly installed or maintained by the Owner, or his successor in interest.*

***Philip Konrad & Sons, Inc. expressly warrants that each item of cabinetry and millwork provided is suitable for the application shown and specified in the contract documents, and includes all features, accessories, and performing characteristics to meet or exceed those required by the Architectural Woodwork Industry. [AWI]***  
**All materials are from fully paid stock.**

*Sincerely,*



Dennis Konrad  
Secretary/Treasurer

# *PHILIP KONRAD & SONS, INC.*

*"Custom Architectural Cabinetry and Millwork" SINCE 1957*

---

**Larson Danielson Construction**

**302 Tyler Street**

**Laporte, IN 46350**

**Project: #56521 Duneland School Corporation – Bailly Elementary School Office Renovation**

***Philip Konrad & Sons, Inc. does hereby agree to warrant for a period of 3 years from August 3, 2020 the Plastic Laminate – Clad Casework by Philip Konrad & Sons, Inc. for Duneland School Corporation – Bailly Elementary School Office in Chesterton, In.***

*Should any defects develop in the millwork within the specified period due to faults in products or workmanship, **Philip Konrad & Sons, Inc.** hereby agrees to replace or repair any defective material necessary to correct the problem to the owner's satisfaction. If a product, such as a material fails and is not warranted by the manufacturer of material, Philip Konrad and Sons, Inc. will not warrant product either.*

*Nothing herein intends or implies that the warranty shall apply to work that has been abused or neglected, improperly installed or maintained by the Owner, or his successor in interest.*

***Philip Konrad & Sons, Inc. expressly warrants that each item of cabinetry and millwork provided is suitable for the application shown and specified in the contract documents, and includes all features, accessories, and performing characteristics to meet or exceed those required by the **Architectural Woodwork Industry. [AWI]*****  
**All materials are from fully paid stock.**

*Sincerely,*



**Dennis Konrad**  
**Secretary/Treasurer**



# GUARANTEE

## Gluth Brothers Roofing Company, Inc.

TO: Duneland School Corporation – Duneland SCH – 2020 Nurse's Off

*We the undersigned do hereby guarantee the roofing installed by us on your building located at*

800 South 5<sup>th</sup> Street, Chesterton, IN 46304

*for a term of 1 years, against faulty workmanship and should any leaks occur from these causes, and in accordance with the provisions contained on the reverse side of this certificate, upon written notice to us of these leaks, we will make any repairs that may be necessary owing to any defects in our material or due to our workmanship.*

*This guarantee becomes void if all payments and other obligations according to contract or verbal agreement have not been fulfilled by the customer.*

*Invoice #*

Firm: Gluth Brothers Roofing Co., Inc.

Date Applied: June 29, 2020

Address: 6701 Osborn Ave., Hammond, IN 46323

Guarantee Expires: June 29, 2021

Phone: 219-844-5536

By: H. Russell Gluth  
H. Russell Gluth / Vice President

Not Valid Unless Paid In Full



## PROVISIONS OF THE ROOFING GUARANTEE

It will be necessary for the owner or agent to notify us by registered mail within 5 days from the discovery of the leakage and should any roof leaks occur as a result of natural wear and tear, and within the following terms of this guarantee, we will make the necessary repairs within a reasonable time, weather permitting. This contractor shall inspect the premises; within a reasonable time after receiving proper notification, and his reference to repairs shall be binding.

No liability is assumed for any damage to the building, interior decorations, roof insulation, roof decking, nail pops, fixtures, mold, pre-existing conditions, or contents thereof because of these roof leaks.

This guarantee does not cover damage to roofing or roof insulation or leakage there from caused by defects or failure of any material used as a roof base, or improper deck construction, settlement, distortion, warping, or failure of the roof deck over which our roofing is applied, or damage or leakage due to faulty construction of parapet walls, or water leakage due to erosion and porosity of mortar and brick, copings, chimneys, metal flashing, skylights, louvers, gutters, roof drains, curbs plumbing stacks, vents, supports, braces or other parts of the building connected to our roofing; Or damage or leakage caused by hail, fire, tornadoes, windstorm or other acts of God or unusual natural or unnatural phenomena of the elements.

We will not be responsible for damage or leakage caused by the installation of decks, platforms, railings or concrete or promenade wearing surfaces over our roofing and if in order to make the necessary repairs, these decks, platforms, railings or slabs are to be removed, they shall be removed and replaced by others, owner or agents thereof) at no cost to this company. If, during the performance of our work, we agree to remove any decks or supports, television or radio apparatus or antennas, or railings, we are not to be held liable for damages to same or responsible for their re-installation nor their condition thereof unless specifically agreed upon.

We disclaim any liability for any damages to our roof or the building or contents caused by the effect of water resulting from vapor condensation (nor for the rectification of this condition).

This roof is not to be used as promenade deck, work deck, sun deck, sprayed or flooded unless specifically agreed upon or specified at time of application of roofing and if these features are to be added, a special endorsement will be required, which endorsement will be issued only after certain considerations and specifications have been agreed upon.

This guarantee is not transferable without our written consent.

This contractor is not responsible for any damage to the roof caused by traffic of any nature whatsoever by other than his own men, or resulting from the use of the roof as a storage or recreation surface area or vehicle traffic and this guarantee is null and void if the roof deck and structure thereon are not under the exclusive control of the owner or agent.

This guarantee covers only the roofing installed by us as of this date and does not include or cover any alterations or changes of present roofing or roof deck or any additions added. In event of any such alterations or installations, this guarantee shall be automatically cancelled. This guarantee becomes null and void should any other contractor or person perform any repairs to this roof while same is under our guarantee. We will not be responsible for damages to the roof that occur which are not a result of this roofing contractor but as a result of other contractors or persons performing work of any nature over or across this roof.

It is expressly understood that should any roof leak occur during the course of this guarantee that this company be immediately informed of said leak, in writing, as above mentioned, and that this company be allowed to investigate alleged leak, both within the building and on the roof. We shall examine and repair the roof if the fault is within our scope of responsibility as indicated above, and owner or agent to pay any expense incurred if the defect or leakage is due to other causes.

In consideration of this Gluth Brothers Roofing Co., Inc. agreeing to make roofing repairs under its guarantee for the time specified, the owner or agent agrees to hold Gluth Brothers Roofing Co., Inc. harmless from the cost of damage, resulting from roof leaks, to insulation, building, contents of building or personal liability.

The foregoing is in lieu of all other warranties, express or implied, and Gluth Brothers Roofing Co., Inc. neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with said roofing.

Gluth Brothers Roofing Co., Inc. recognizes that, for satisfaction and maximum roof performance for the owner, it is desirable to eliminate conditions, which result in standing water, and recommends that roof design provide slope under all conditions. Proper location and design of drains can greatly facilitate drainage. This guarantee will not be effective for areas of the roof where improper drainage pools water. Gluth Brothers Roofing Co., Inc.'s requirement is that the roofs shall not be subjected to ponding of water for periods exceeding forty-eight (48) hours after rainfall.

In order to continue the coverage of this guarantee the following maintenance program must be implemented. There are a number of items not covered by this guarantee that are the responsibility of the owner. In order to ensure that your new roof will continue to perform its function, you must examine and maintain these items on a regular basis: Maintain a file for your records on this roof, including this Guarantee, invoices and subsequent logs of all inspections performed and repairs that are made to the roof. Inspect your roof at least semiannually.

As a condition of the foregoing terms of guarantee, the recipient hereof shall pay a service charge call made upon complaint, if the same shall prove, upon inspection by the contractor, to be caused by some deficiency of structure other than the roofing. No charge shall be made for service calls where the roofing done by the contractor is defective.

# ALLIED DOOR AND HARDWARE, LLC.

388 Pilot Drive, Suite B  
Valparaiso, IN 46383

Ph: 219-531-2895  
Fax: 219-531-2831

---

## **CLOSEOUT DOCUMENTS**

### **Warranty Letter**

**Project: Duneland School Corporation  
Nurse's Office Renovations  
Bailly Elementary School  
800 S 5<sup>th</sup> Street  
Chesterton, IN 46304**


**Architect: TRIA Architecture  
OAS  
769 Heartland Dr., Unit A  
Sugar Grove, IL 60554**

**Contractor: Larson-Danielson Construction Co., Inc.  
302 Tyler Street  
LaPorte, IN 46350**

Allied Door and Hardware, LLC provides the attached manufacturer warranties for all materials that we provided for this project. All warranties are limited to the manufacturer's standard warranty unless specific exceptions are documented in writing by the manufacturer. All products are sold without any further warranties, expressed or implied, and all implied warranties of merchantability and fitness for a particular purpose are hereby disclaimed. Allied Door and Hardware, LLC disclaims all liability for labor, transportation and other costs resulting from such repair or replacement, and for incidental or consequential damages directly or indirectly sustained. All warranty periods are from the Contractor's specified project completion date. Please see the attached sheets for warranty periods.

COMPLETION DATE: August 3, 2020

Authorized signature

  
Darrell J. Vitoux  
Allied Door and Hardware, LLC



## **MANUFACTURER'S WARRANTY INFORMATION**

- \* WELDED HOLLOW METAL FRAMES - ONE (1) YEAR – BARON STEEL DOORS & FRAMES**
- \* WOOD DOORS – LIFETIME – GRAHAM / MASONITE**
- \* HINGES – LIFETIME – CAL-ROYAL PRODUCTS**
- \* L SERIES MORTISE LOCKS – LIMITED LIFETIME – SCHLAGE**
- \* 4040XP CLOSERS – TEN (10) YEARS – LCN**
- \* KICKPLATES, WALL STOPS – ONE (1) YEAR – ROCKWOOD**
- \* TEMPERED GLASS – THE GLASS PROVIDED ON THIS PROJECT WAS SINGLE THICKNESS AND DOES NOT HAVE SEALS THAT WOULD BE SUBJECT TO FAILURE AND INTERPANE DUSTING OR MISTING. THEREFORE, IT DOES NOT CARRY A SPECIFIC WARRANTY.**

# WARRANTY

\* Warranty - for a period of one year from the date of delivery to the original direct purchaser, manufacturer warrants to the original direct purchaser that it will at its option, either repair, replace or otherwise correct any product acknowledged by the manufacturer to be defective in materials or workmanship.

ALL MANUFACTURER'S PRODUCTS ARE SOLD WITHOUT ANY OTHER FURTHER WARRANTIES. EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. MANUFACTURER DISCLAIMS ALL LIABILITY FOR LABOR, TRANSPORTATION AND OTHER COSTS RESULTING FROM SUCH REPAIR OR REPLACEMENT, AND FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES DIRECTLY OR INDIRECTLY SUSTAINED. THIS WARRANTY SHALL BE NULL AND VOID IF MANUFACTURER'S PRODUCTS ARE SUBJECT TO ABUSE, ACCIDENT, MISAPPLICATION, OR INSTALLATION NOT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.

## Baron

Steel Doors & Frames

**ASSA ABLOY**

ASSA ABLOY, the global leader  
in door opening solutions

### ASSA ABLOY Service Centers

9159 Telecom Drive  
Milan, TN 38358-3245  
(731) 686-8345

\*This warranty applies to  
Baron Service Center (BSC)  
Material Only.

48G2M01



## Flush Door Warranty

Graham I Maiman



Masonite Architectural warrants all flush wood doors sold under this warranty to be of good material and workmanship at the time of shipment, and to be free of defects which would render said door unserviceable or unfit for the ordinary recommended use for the lifetime of the door. This warranty is applicable for the life of original installation of the door, and covers the following:

| Door Type  | Interior Use                   | Exterior Use            |
|--|--------------------------------|-------------------------|
| Thermal Fused – Non-Rated  | Life of original installation  | Not Warranted           |
| Thermal Fused – 20 Minute  | Life of original installation  | Not Warranted           |
| Thermal Fused – 45,60,90 Minute  | Life of original installation  | Not Warranted           |
| Thermal Fused – Acoustical and Lead Lined                                    | Life of original installation  | Not Warranted           |
| Graham Supreme Door<br>(GSD) Graham Premium Door<br>(GPD) Graham Custom Door | Life of original installation* | Not warranted           |
| (GSD) Graham CMM and CMD   | 1 year limited warranty        | Not warranted           |
| Integris   | 3 year limited warranty        | 1 year limited warranty |

\* Graham Supreme, Premium and Custom Doors with hollow cores are excluded. These products are not warranted.

THE WARRANTY SET FORTH HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. (This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.)

The original purchaser shall notify Masonite Architectural in writing promptly upon discovery of facts giving rise to any claim under this warranty, stating specifically the nature of the claim, the date of discovery of same, identifying the product involved, and providing photographic evidence of the condition of the doors. If Masonite Architectural sends a representative to the jobsite and the warranty issue is determined not to be a manufacturer's issue the original purchaser will be charged for all applicable expenses incurred in the jobsite visit.

Inspection of goods must be made upon receipt and any claim must be received by Masonite Architectural within thirty days of receipt. Failure to notify Masonite Architectural within thirty days shall fully and completely relieve Masonite Architectural from any obligation under this warranty.

Masonite Architectural shall not be liable for any consequential, indirect or incidental damages of any kind. The limitation on damages is intended to have the broadest possible application and is intended to apply to all disputes that are directly or indirectly related to the products supplied by Masonite Architectural. Masonite Architectural's liability is expressly limited to the repair or replacement of nonconforming products or refund of the purchase price at Masonite Architectural's option.

If the defect was not reasonably discoverable until after installation, Masonite Architectural agrees to bear the reasonable cost of repairs, machining, and rehanging of the product. Rework and rehanging of defective goods shall be performed only after the cost of such work has been determined, and approval has been obtained from Masonite Architectural. Masonite Architectural shall not be liable for any door repaired or replaced without its prior consent. If the defect was reasonably discoverable prior to installation, Masonite Architectural is not obligated to pay the cost of rehanging.

Since Masonite Architectural cannot control the handling or exposure of doors after shipment, the purchaser must inspect the doors when received. Written notice of any claim must be given by the purchaser or installer to the supplier and Masonite Architectural within 30 days of delivery. Forwarding of doors prior to inspection for damage will waive all opportunity to file a freight claim. All parties must be given a reasonable opportunity to investigate the reported problem. National Motor Freight Class guidelines apply for LTL deliveries (Item 300135 - Reporting Concealed Damage). Follow this link for details:

<http://onesrc.com/nmfc-national-motor-freight-class-guidelines-effective-april-18-2015-concealed-damages-must-be-reported-to-carriers-within-5-days-after-delivery/>

### TELEGRAPH AND WARP

- Warp is any distortion in the door itself and does not refer to the relationship of the door to the frame or jamb in which it is hung; it includes bow (curvature along the length of the door), cup (curvature along the width of the door), and twist (one or two corners are out of plane with the other corners of the door).
- Warp shall not be considered a defect unless it exceeds 1/4 inch in the plane of the door itself. For doors 1-3/4 inch or thicker, warp shall not exceed 1/4 inch in doors 3/6 x 7/0 or smaller, nor shall it exceed 1/4 inch in doors 3/6 x 7/0 section of larger doors. For doors less than 1-3/4 inch thick, warp shall not exceed 1/4 inch in doors 3/0 x 7/0 or smaller.
- Warp shall be measured by placing a straight-edge, taut wire, or string on the suspected concave face of the door (vertically, horizontally, or diagonally), with the door in its installed position. The measurement of the warp shall be made at the point of maximum distance between the bottom of the straight-edge, taut wire, or string and the face of the door.
- Warp and telegraph shall not be warranted in any event if the door is not treated in a manner consistent with the "storage, handling, finishing, installation and maintenance instruction".
- Action on any claim for warp or telegraph after installation may be deferred, at the option of Masonite Architectural, for a period of 12 months from the date of complaint to allow for acclimation to surroundings.

### FAILURE TO COMPLY WITH THE FOLLOWING ITEMS WILL VOID THE WARRANTY FOR EXTERIOR INSTALLATIONS OF INTEGRIS DOORS:

- Failure to double seal all machined surface including openings and hardware cutouts with exterior sealer.
- Failure to provide adequate overhead protection. This includes a maximum of 4 feet between the top of the door and the bottom of the overhang aluminum of 4 feet out from the face of the door and a minimum of 4 feet protection on each side of the door.
- The warranty does not cover finish of exterior doors.
- Failure to properly protect lite cutouts in exterior doors to prevent moisture from seeping into the core. Lip mouldings and exterior caulk are required. The top of an exterior door must be properly protected by flashing.
- Any door machined for concealed hardware (vertical rods, closers, holders, stops or flush bolts), pivots, or magnetic switches in the top rail will not be warranted.

ALLOWABLE TOLERANCES PER ANSI/WDMA STANDARDS

## SPECIFIC MATTERS EXCLUDED FROM WARRANTY BUT NOT LIMITED TO:

1. Unsatisfactory door function or appearance caused by failure to follow the "Storage, Handling, Finishing, Installation and Maintenance Instructions".
2. Appearance of field finished doors, or high gloss wood faced doors.
3. Natural variations in the color, texture, character, or cut of the wood.
4. Door with cutouts that 1) have an edge within 5 inches of door edge, 2) have an edge within 5 inches (3-5/16" on non-rated and 20 minute doors) of another cutout (including hardware cutouts), 3) have an area exceeding 40% of the door face area, or 4) have a height exceeding 50% of the door height (exception: Engineered Composite core door with cutout).
5. Door not meeting applicable fire door requirements.
6. Warp, if it occurs when 1) 1 3/8" thick door is larger than 3070, 2) face veneers are of differing species, or 3) door is finished/painted differently on each face of the door. This may create an unbalanced condition not warranted against warpage. This also includes doors with different plastic colors or patterns on each face.
7. Door used in an exterior application unless noted above, or an interior door with differing temperature and/or humidity on opposing side of door.
8. Door improperly installed or hung in a frame that is not plumb, square, and level, and/or doesn't allow the door to swing freely.
9. Normal wear and tear, including wear-through of finish or deterioration for reasons other than material and workmanship of the door itself or fading due to exposure to ultra-violet light sources.
10. Door with hardware that is not compatible for the particular door construction. This includes concealed closers deeper than 2 inches or wider than 1-1/4", and concealed vertical rod devices.
11. Cracking of Thermal Fused surfaces or warp resulting from:
  - a. Doors that are improperly hung or do not swing freely.
  - b. Doors that have lite and/or louver cutout areas exceeding 1,296 square inches of visible glass or one continuous dimension of 54" H or one continuous dimension of 36" W, unless the following minimum dimensions are maintained: 5" stiles, 7" top rail, and 10" bottom rail. Pairs of doors must also have a minimum of 3 point latching.
  - c. Doors with light openings not cut by Masonite Architectural.
12. Doors hung without a hinge and/or pivot for every 30" of door height.
13. Doors with machined pockets that leave less than 1/4" thick cavity walls.
14. Doors that have any form of facing grooving penetrating the veneer in excess of limitations set by the factory.
15. Doors altered by others for size by re-railing, re-stiling or refacing.
16. Lites not glazed by Masonite Architectural, including glass breakage and/or damage to the door.
17. Thermal Fused Doors exceeding 4'0" in width, or 9'0" in height are not warranted.
18. All other flush doors exceeding 4'0" in width or 10'0" in height are not warranted.

## INSTRUCTIONS FOR STORAGE, HANDLING, FINISHING, USE AND INSTALLATION

Since methods and conditions of installation and use may affect product conditions and are beyond Masonite Architectural control, failure by the original and any subsequent purchaser to strictly comply with each of the following provisions shall void this warranty. This warranty shall be void and Masonite Architectural will have no obligation hereunder in the event the door(s) have not been stored, handled, or field finished in accordance with the WDMA field finish guidelines contained in the Masonite Architectural Field Solutions guide.

## INSTALLATION

1. The utility or structural strength of the doors must not be impaired when fitting to the opening, applying hardware, or preparing for lites, louvers, plant-ons or other detailing.
2. Use two hinges for solid core doors up to 60 inches in height, three hinges up to 90 inches in height or portion thereof. Interior hollow core doors weighing less than 50 lbs. and not over 90 inches in height may be hung on two hinges. Use heavy weight hinges on doors over 175 lbs. Pivot hardware may be used in lieu of hinges. Consult hinge or pivot hardware manufacturer with regard to weight and size of hinges or pivots required.
3. The maximum clearance between the top, hinge edge and lock edge to the frame and meeting edge of pairs of doors, is 1/8 inch.
4. All hardware locations, preparations and methods of attachment must be appropriate for the specific door construction. Templates for specific hardware preparation are available from hardware manufacturers or their distributors.
5. Pilot holes must be drilled for all screws that act as hardware attachments. Full threaded screws are preferable for fastening hardware to nonrated doors and are required on fire-rated doors. Self-tapping or combination wood/metal screws are not to be used on wood doors.
6. In fitting non-rated doors for height, do not trim top or bottom edge by more than 3/4 inch unless accommodated by additional blocking. Trimming of fire-rated doors must be in accordance with NFPA 80.
7. Doors and door frames should be installed plumb, square and level.
8. Installation of prefinished door shall constitute acceptance.

## ADDITIONALLY, SPECIFIC TO FIRE DOORS:

- A fire door bearing Masonite Architectural certification label has been prepared for installation per the conformance authorities granted by Warnock Hersey International and under label service; it must be installed per label instructions, with the certification label on the hinge stile at approximately eye level.
- Removal or tampering with the fire label will void the fire rating of the door.
- Unless otherwise identified, certified labeled fire doors installed in pairs must have metal edges or metal meeting edges with an astragal.
- Job site modification of certified labeled fire doors is restricted to:
  1. Function holes for mortise locks, preparations for surface or applied hardware, and holes for labeled viewers, none of which shall exceed 1" in diameter.
  2. A maximum undercut of 3/4" from nominal height.
  3. Manufacturer's restrictions for protection plate type and surface area.

## CLEANING AND TOUCH-UP

1. Inspect all wood doors prior to hanging them on the job. Repair noticeable marks or defects that may have occurred from improper storage and handling.
2. Field repairs and touch-ups are the responsibility of the installing contractor upon completion of initial installation. Field touch-up shall include the filling of exposed nail or screw holes, re-finishing of raw surfaces resulting from job fitting, repair of job inflicted scratches and mars and final cleaning of finished surfaces.
3. When cleaning door surfaces, use a non-abrasive commercial cleaner designed for cleaning wood door or paneling surfaces that does not leave a film residue that would build up or affect the surface gloss of the door finish.

## ADJUSTMENT AND MAINTENANCE

1. Ensure that all doors swing freely and do not bind in their frame. Adjust the finish hardware for proper alignment, smooth operation and proper latching without unnecessary force or excessive clearance.
2. Review with the owner/owner's representative how to periodically inspect all doors for wear, damage and natural deterioration.
3. Review with the owner/owner's representative how to periodically inspect and adjust all hardware to insure that it continues to function as it was originally intended.

Customer: \_\_\_\_\_  
Door Type: \_\_\_\_\_  
PO#: \_\_\_\_\_

Order#: \_\_\_\_\_  
Job Name: \_\_\_\_\_  
Date: \_\_\_\_\_

Masonite Architectural Mason City  
1502 12th Street NW • Mason City, IA 50401  
Phone: 641-423-2444 • Fax: 800-672-8110

Masonite Architectural Springfield  
3839 East Mustard Way • Springfield, MO 65803  
Phone: 417-862-0681 • Fax: 417-862-3780

www.masonitearchitectural.com

© 2018 Masonite- Architectural  
MA\_LIT-GM-18073





## Product Warranty



### MERCHANDISE WARRANTY

Goods are warranted against defects in manufacture for one year. The company makes no other warranty, and all implied warranties including any warranty of merchantability or fitness for a particular purpose are limited to the duration of the expressed warranty period as set forth above.

The company's maximum liability hereunder is limited to the purchase price of the products in no event shall the company be liable for any consequential, indirect, incidental or special damages of any nature arising from the sale or use of this product, whether in contract, tort, strict liability or otherwise.

Products will not be accepted for repair or replacement under this warranty unless we have given prior authorization for their return. Upon receipt of products returned for repair or replacement we will determine whether products qualify for repair or replacement under this warranty; if they do not, we will notify our customer of estimated costs of repair or replacement involved and will obtain authorization prior to proceeding. We have no liability to pay any costs of repair performed by anyone other than us, unless in each instance we have given prior written approval of such repair in which case we will pay what we consider to be the reasonable cost thereof.

All materials and finishes meet ANSI /BHMA standards at time of shipment. We do not warrant finishes exposed to hostile environments, such defect has been caused by corrosion or ordinary wear and tear.

### CAL-ROYAL LIFETIME LIMITED WARRANTY

The Cal-Royal Products listed below are warranted against defects in mechanical workmanship and 3 year finish warranty for the life of the opening into which they are installed. This warranty is valid only if the products are installed according to the manufacturers' explicit directions, are the correct application for the opening in question (i.e.: a grade 2 lock is not acceptable in a school or university application) and those products that require adjustment at installation are adjusted correctly. It is assumed that if either the door or frame components in the opening has been violated and therefore the Warranty of those Cal-Royal products in that opening would be null and void. It is also assumed by this Warranty that those products that require periodic adjustment or maintenance are receiving that attention through the life of the opening.

This warranty DOES NOT COVER:

1. Abuse or vandalism
2. Products used in an incorrect application
3. Scratches or normal wear in a products finish (Does not cover US10B/613)
4. Products that have been improperly installed or adjusted
5. Any Product installed in a hostile environment causing premature corrosion, wear and tear
6. The cost incurred in removing and installing a replacement product. Upon return of defective product to Cal-Royal Products, Cal-Royal may repair or replace the product or refund the purchase price. Cal-Royal is not liable for incidental or consequential damages.

The products that are covered by the above Lifetime Limited Warranty are:

1. All commercial Grade Hinges.
2. Genesys, Calypso, Omega, NM Series Grade 1 Locks – Mortise and Cylindrical Locksets.
3. Apollo, Columbus, HIL, Pioneer, Commander, Challenger, Explorer, Barrington, Polygon Grade 2 Locksets.
4. CRB Series Grade 1 & CB160, T300 Series Grade 2 Deadbolts.
5. 900, CR441, CR801 / CR801S, 300, 700 Series Grade 1 Door Closers.
6. 7700, 9800 and 2200 Series Grade 1 Exit Devices.

Cal-Royal Locksets, Door Closers, Exit Devices and Door Hardware are designed to provide the highest standard of product quality and performance. To maintain a long-lasting finish great care should be taken. Constant use and exposure to elements and high traffic would require cleaning on a regular basis.





## Product Warranty



### EXIT DEVICE TRIMS WARRANTY

LIMITED WARRANTY: Cal-Royal Products (CRP) warrants that its products are free from defects in workmanship and material under normal use and service.

1. All Cylindrical Trims (5 years)
2. Escutcheon Trims (3 years)
3. All 8000 Series Exit Trims (1 year)
4. All Electrified trims (1 year)

### ELECTRIFIED HARDWARE WARRANTY (2 YEARS LIMITED WARRANTY)

LIMITED WARRANTY: Cal-Royal Products (CRP) warrants that its products are free from defects in workmanship and material under normal use and service. Since CRP does not control product usage, CRP makes no representation as to the degree of security conveyed by the use of any product. This warranty does not cover defects or damage which occur from improper maintenance, improper storage, improper installation, shipping and handling, ordinary wear and tear, misuse, abuse, accidents, unauthorized service, work done by others or consequential damages.

CRP will not pay for the cost of repair performed other than in accordance with this warranty. CRP can only perform authorized warranty work at the factory. CRP's only liability, in tort or contract, whether under this warranty or otherwise, is limited to providing repair or replacement of any product or component part which is proven to be defective as covered by the warranty, within three (3) years after delivery from CRP to the original purchaser. Written notice of a product or component part believed to be defective, as covered by this warranty, should be sent to Cal-Royal Products 6605 Flotilla St, Commerce, CA 90040.

Include Claimant's name, address, phone, and identification of the product, invoice number and date, and a brief description of the defect. Upon receipt of such notice, a CRP representative will contact claimants to where to ship such product or component part, with shipping charges prepaid for examination, and in the event such examination reveals a defect covered by this warranty, the product will be repaired or replaced. This warranty is in lieu of all other express warranties. To the extent permitted by law, all implied warranties are limited to the duration of this warranty.

CRP shall not be liable for any incident or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above may not apply to you. This warranty gives you specific legal rights, and you may have other rights, which vary, from state to state.

### HEAVY DUTY KEYLESS DOOR LOCKS, DIGITAL KEYPAD LOCKSETS AND DEADLOCKS WARRANTY

1. CRCODE007, CRCODE101, CRCODE200 SERIES KEYLESS DOOR LOCKS  
Goods are warranted to be free from manufacturing defects in material and workmanship which carries a ONE YEAR Limited Warranty on Electronic Series Locks (CRCODE007) and a TWO YEAR Limited Warranty on Mechanical Series Locks (CRCODE101, CROCDE202, CRCODE203, CRCODE204) and its conditions, limits and policies.
2. CR3000, PL7100, RS2100, CR6000, CR9000 DIGITAL KEYPAD DOOR LOCK  
Goods are warranted against defects in manufacture for two (2) years after the date of manufacture. The company makes no other warranty, all implied warranties including any warranty of merchantability or fitness for a particular purpose are limited to the duration of the expressed warranty period as set forth above.
3. DB5000, DB9000, ZWDB-10 (Z-wave) DIGITAL KEYPAD DEADLOCK WARRANTY  
Goods are warranted against defects in manufacture for two (2) years after the date of manufacture for mechanical parts and one (1) year for electronic parts. The company makes no other warranty; all implied warranties including any warranty of merchantability or fitness for a particular purpose are limited to the duration of the expressed warranty period as set forth above.



The company's maximum liability hereunder is limited to the purchase price of the products in no event shall the company be liable for any consequential, indirect, incidental or special damages of any nature arising from the sale or use of the product, whether in contract, tort, strict liability or otherwise. Seller's warranty shall not be enlarged, diminished or affected by no obligation or liability shall arise out of Seller's rendering of technical advice or services in connection with Buyer's order of the goods furnished hereunder.

This warranty DOES NOT COVER:

1. Abuse or vandalism
2. Products used in a wrong application
3. Scratches or normal wear in a products finish (Does not cover US10B/613)
4. Products that have been improperly installed or adjusted
5. Any products installed in a hostile environment causing premature corrosion, wear and tear
6. The cost incurred in removing and installing a replacement product. Upon return of defective product to CAL-ROYAL Products, CAL-ROYAL may repair or replace the product or refund the purchase price. CAL-ROYAL is not liable for incidental or consequential damages.

## TERMS AND CONDITIONS FOR LITES AND LOUVERS

1. Limited Warranty: Lites and Louver products shall be warranted for a period of five years from the date of the first delivery provided by CAL-ROYAL. The warranty is based upon the product being used with the application of the hardware for which it was designed and that it meets the standard industry specifications provided by CAL-ROYAL, if any, so as long the products are installed and used as followed, and are free from defects in material and workmanship. This warranty is limited to the replacement or repair at the option of CAL-ROYAL.
2. CAL-ROYAL will not be subjected to any other or future liability and claims for defects and damages occurred from improper installation, adjustment, lack of maintenance, accidents, improper shipping and handling, use with unauthorized parts, or inappropriate product specifications. CAL-ROYAL will not be responsible for the costs of replacement or repair performed other than in accordance to this warranty. No other warranty indicated or implied is valid.
3. The Purchaser agrees to pay CAL-ROYAL all sums properly invoiced to Purchaser for the products that are absolute and unconditional. Payments that are due by the Purchaser shall not be withheld, or delayed in any under circumstances.
4. Claims: Any claim submitted by the Purchaser with reference to the products shall be considered waived by the Purchaser unless submitted in writing in accordance to this paragraph. Upon receipt of the products, the Purchaser shall inspect it immediately, prior to any installation or use of such products. Any products that are subject to claim for defects or shortages, the Purchaser shall provide a written notice to CAL-ROYAL within fourteen days after the Purchaser's receipt of shipment. Otherwise, the products shall be deemed finally accepted and inspected by the Purchaser.
5. Additional Terms: Acceptance of the products shall be limited to the terms and conditions that are stated herein. Any terms and conditions included in the Purchaser's purchase order or acceptance that are in addition to, or are in conflict with, the terms and conditions stated herein shall not become a part of the agreement between the Purchaser and CAL-ROYAL unless approved and confirmed by an authorized officer of CAL-ROYAL.
6. Glazing products, and Glass replacements are not included in this warranty.





Subject to the terms and conditions of this warranty, Schlage Lock Company, LLC ("Schlage") extends a limited lifetime mechanical and finish warranty and a limited three-year electronics warranty to the original consumer user ("Original User") of our Schlage brand product ("Products") against defects in material and workmanship as long as the Original User occupies the residential premises upon which the Product was originally installed.

**What Schlage Will Do:** Upon return of the defective Product to Schlage, Schlage's sole obligation, at its option, is to either repair the Product, replace it with new or refurbished product, or refund the original purchase price in exchange for the Product.

**Original User:** This warranty only applies to the Original User of Products. This Warranty is not transferable.

**What is Not Covered:** The following costs, expenses and damages are not covered by the provisions of this limited warranty: (i) labor costs including, but not limited to, such costs as the removal and reinstallation of Product; (ii) shipping and freight expenses required to return Product to Schlage; (iii) failures, defects, or damage including, but not limited to, any security failure or loss of data caused by the user, a third party, or any third party product, service, or system connected or used in conjunction with the Product; and (iv) any other incidental, consequential, indirect, special and/or punitive damages, whether based on contract, warranty, tort (including, but not limited to, strict liability or negligence), patent infringement, or otherwise, even if advised of the possibility of such damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

The provisions of this Warranty do not apply to Products: (i) used in commercial applications; (ii) used in common area applications; (iii) used for purposes for which they are not designed or intended; (iv) which have been subjected to alteration, abuse, misuse negligence or accident; (v) which have been improperly stored, installed, maintained or operated; (vi) which have been used in violation of written instructions provided by Schlage; (vii) which have been subjected to improper temperature, humidity or other environmental conditions; (viii) which, based on Schlage's examination, do not disclose to Schlage's satisfaction non-conformance to the warranty. Additionally, the limited lifetime warranty DOES NOT COVER scratches, abrasions, or deterioration due to the use of paints, solvents or other chemicals.

**Exclusions:** Oil Rubbed Bronze finish (613) is designed to improve over time and change in appearance, creating a living finish through daily use and, thus, finish discoloration is not applicable to the above warranty.

**Additional terms:** Schlage does not authorize any person to create for it any obligation or liability in connection with the Products. Schlage's maximum liability hereunder is limited to the original purchase price of the Product. No action arising out of any claimed breach of this warranty by Schlage may be brought by the Original User more than one (1) year after the



cause of action has arisen.

**How Local Law Applies:** This warranty gives you specific legal rights, and you may also have other rights as otherwise permitted by law. If this product is considered a consumer product, please be advised that some local laws do not allow limitations on incidental or consequential damages or how long an implied warranty lasts, so that the above limitations may not fully apply. Refer to your local laws for your specific rights under this warranty.

**Guaranteed Fit Program:** Schlage products are designed to fit standard residential door preparations and retrofit existing tubular locks. Note: Mortise locks and preparations are not considered standard and are not guaranteed under this program. During the initial installation, if there is a problem with the Product's performance, the Original User may simply contact Schlage Customer Service at 888-805-9837 in the U.S., 800-900-4734 in Canada or 800-506-7866 in Mexico for assistance.

**Program & Warranty Claims:** If you encounter a non-standard residential door preparation or fit issue under the Guaranteed Fit Program, please contact Schlage Customer Service for a repair, replacement, or refund of the original purchase price in exchange for the Product.

**To make a warranty claim, contact Schlage Customer Service:**

U.S. and Canada  
Schlage Customer Service  
P. O. Box 1210  
Olathe, KS 66051-1210  
1-888-805-9837 (US phone)  
1-800-900-4734 (Canada phone)  
1-800-366-5625 (fax)

Visit [Schlage.com](http://Schlage.com) to learn more.

**About Allegion™**

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a \$2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises more than 25 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. For more, visit [www.allegion.com](http://www.allegion.com)

FALCON ■ IVES ■ LCN ■ **SCHLAGE** ■ STEELCRAFT ■ VON DUPRIN



© 2017 Allegion  
MR-1573  
Rev. 9-18  
[allegion.com](http://allegion.com)

## STANDARD POWDER COATED FINISH

The world's best door closers feature the finest, state-of-the-art metal finishing process available. LCN powder coating provides superior protection against the effects of weathering and is an environmentally friendly process. The high quality, chip resistant finish is far superior to any previously offered. Corrosion resistance surpasses 100 hours salt spray testing (four times the industry standard). Non-metallic components also provide the same high resistance to the effects of the elements. All LCN products must be shipped with a finish. Standard LCN finishes with the closest BHMA equivalent are:

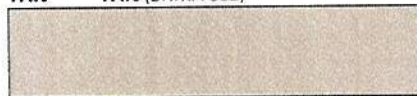
### ALUM ALUMINUM (BHMA 689)



### DKBRZ DARK BRONZE (BHMA 695)



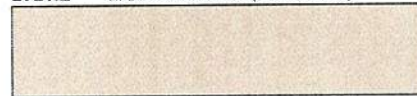
### TAN TAN (BHMA 692)



### STAT STATUARY BRONZE (BHMA 690)



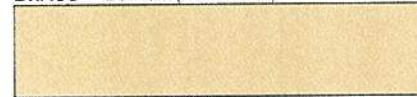
### LTBRZ LIGHT BRONZE (BHMA 691)



### BLK BLACK (BHMA 693)



### BRASS BRASS (BHMA 696)



## OPTIONAL CUSTOM POWDER COATED FINISHES

LCN offers optional custom powder coat colors to compliment special installations. This provides a custom appearance and all the corrosion resistance of standard powder coated finishes at a nominal additional cost. Contact your local LCN representative for a brochure showing the available custom colors.

## OPTIONAL PLATED FINISHES

Visible components such as covers, arms, fasteners, and finish plates are plated to match the selected finish. Surface mounted tracks are powder coated to complement the plated finish. Hidden assemblies such as cylinders, tracks, and mounting plates are supplied with a powder coated finish. Additional cost LCN plated finishes with the closest BHMA equivalent are:

### LCN plated finish options

|        |                                   |       |                          |
|--------|-----------------------------------|-------|--------------------------|
| US 3   | Bright Brass (BHMA 632)           | US 4  | Satin Brass (BHMA 633)   |
| US 9   | Bright Bronze (BHMA 637)          | US 10 | Satin Bronze (BHMA 639)  |
| US 10B | Oxidized Satin Bronze (BHMA 640)  | US 14 | Bright Nickel (BHMA 645) |
| US 15  | Satin Nickel (BHMA 646)           | US 19 | Satin Black (BHMA 631)   |
| US 20  | Oxidized Bright Bronze (BHMA 649) | US 26 | Bright Chrome (BHMA 651) |
| US 26D | Satin Chrome (BHMA 652)           |       |                          |

## SPECIAL RUST INHIBITING (SRI) PROCESS

For installations where a higher level of protection against weathering, or the effects of a potentially corrosive atmosphere is required, LCN offers a special rust inhibiting (SRI) process. Ferrous metal components receive an SRI pretreatment and a powder finish coat in your choice of either an LCN standard color or optional extra charge custom colors. Closers treated with the SRI process exceed the 100 hour protection level available with standard LCN powder coated finishes. For details, contact your local LCN representative or the LCN factory.

## STANDARD ANODIZED FINISH

LCN electromechanical power operators are offered with an anodized finish.

Anodizing is an electrochemical process that thickens and toughens the protective oxide on aluminum metal. We offer our customer two standard colors:

|             |            |
|-------------|------------|
| Aluminum    | (BHMA 628) |
| Dark Bronze | (BHMA 710) |

## OPTIONAL CUSTOM ANODIZED FINISHES

In addition to offering our standard anodized finishes LCN offers optional custom anodized finishes on electromechanical power operators. These custom finishes are available at a nominal cost but with lengthened production times. This provides a custom appearance and all the benefits of an anodized finish. Some of the finishes available are:

|       |                 |            |
|-------|-----------------|------------|
| US3   | Bright Brass    | (BHMA 707) |
| US4   | Satin Brass     |            |
| US10  | Satin Bronze    | (BHMA 709) |
| US26  | Bright Chrome   | (BHMA 712) |
| US26D | Satin Chrome    | (BHMA 713) |
| US32D | Stainless Steel |            |
| 315AN | Black           | (BHMA 711) |

Contact LCN for additional information on custom finishes for our electromechanical products



# WARRANTY

LCN warrants its products manufactured after January 1, 1989 to be free from defects in materials and workmanship for a period of ten (10) years from the date of manufacturer for the 4000 Series and the 1000 Series products and for two (2) years from the date of manufacturer for all other products specifically listed in the table below (see Table below for products and warranty periods).

| Products   | Years    |
|--|----------|
| 4000 Series Closers  | 10 Years |
| 1000 Series Closers, Concealed Closers, High Security Closers (less DPS) |          |
| Power Operators, Sentronics, 2210 DPS, Safety Guard                      | 2 Years  |

This limited warranty does not cover products that (i) are not the proper size for the application; (ii) are not installed in accordance with LCN's published installation instructions; (iii) are installed with improper or incorrect parts [Note: It is recommended that the products be installed with the LCN fasteners provided with the product]; (iv) have been, in the opinion of LCN, modified, repaired, or altered in any way without the express written consent of LCN; (v) are used for purposes which they are not designed or intended; or (vi) are subjected to misuse, abuse, negligence, or accident. The following costs and expenses are not covered by the provisions of this limited warranty; (i) labor costs for the removal and reinstallation of products; (ii) shipping and freight expenses required to return products to LCN; (iii) normal maintenance; and (iv) economic losses.

LCN will replace the products which, in the opinion of LCN, are found to be defective, provided said products are returned to LCN, Warranty and Replacement Department, 121 West Railroad Avenue, P.O. Box 100, Princeton, Illinois USA 61356-0100.

LCN SHALL IN NO EVENT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES FOR ANY CLAIM WHETHER BASED ON CONTRACT, WARRANTY, TORT (INCLUDING, BUT NOT LIMITED TO, STRICT LIABILITY OR NEGLIGENCE), PATENT INFRINGEMENT, OR OTHERWISE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This limited warranty is in place of all other warranties, expressed or implied, and excludes any warranties of fitness for a particular purpose or merchantability. No agent, representative, dealer, or employee of LCN has the authority to increase or alter the obligations of this limited warranty.

Note: 900/7900 Series compressors are not manufactured by LCN and are excluded from the coverage of the LCN limited warranty. Lcn reserves the right to supply alternative compressors. For more information, parts, or repairs concerning the compressors, contact the compressor manufacturer directly.

**GENERAL WARRANTY**300 Main Street • Rockwood, PA 15557 • P: 800-458-2424 • F: 800-922-9212 • Website: [www.rockwoodmfg.com](http://www.rockwoodmfg.com)

**Rockwood Manufacturing Company ("Rockwood")** warrants to purchasers of Rockwood Products sold in the United States of America that its products when properly delivered, installed and maintained, under normal use and service conditions, will be free from defects in material and workmanship for a period of one year from the date of delivery. Because of variations in atmospheric and climatic conditions, Rockwood does not warrant that its products will maintain a "like new" appearance for any length of time, so this warranty does not extend to the appearance of Rockwood's products. Rockwood shall have no responsibility other than the repair or replacement of defective products.

Purchasers should contact Rockwood upon receipt of any product claimed to be defective. If an in-plant inspection is necessary, purchasers should obtain a Return Goods Authorization and then send the product freight paid to Rockwood. If, upon inspection, the product is determined by Rockwood to be in violation of this warranty, Rockwood will repair or replace the defective product promptly.

There are no other express or implied warranties of Rockwood's products.

THE FOREGOING WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. IN NO CIRCUMSTANCES WILL ROCKWOOD BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR SALE OF ITS PRODUCTS OR ARISING OUT OF A BREACH OF ITS WARRANTY OF ITS PRODUCTS.

The foregoing limitations and exclusions are intended to be effective to the maximum extent of the law.





# L/LV9000-Series



**P515-742**

Lever and Rose  
Manija y Embellecedor  
Levier et Rosette

Installation Instructions  
Instrucciones de Instalación  
Instructions d'Installation

A Lockcase and mounting screws  
Caja de cerradura y tornillos  
Caisse de serrure et les vis

B Spindle and spring  
Husillo y resorte  
Axe et ressort

C Outside lever and rose  
Manija y embellecedor exterior  
Levier et rosette extérieur

D Mounting posts  
Puntales de montaje  
Tenons de montage

E Spring cage or spacer  
Caja para resorte o espaciador  
Cage du ressort ou entretoise

F Occupancy indicator  
Cilindro de indicador  
Cylindre d'indicateur

G Inside mounting plate & screws  
Placa de montaje interior y tornillos  
Plaque de montage intérieur et vis

H Inside lever  
Manija interior  
Levier intérieur

J Inside thumbturn  
Mariposa interior  
Tourniquet intérieur

K Cylinder, compression ring and spring  
Cilindro, anillo compresor y resorte  
Cylindre, anneau de compression et ressort

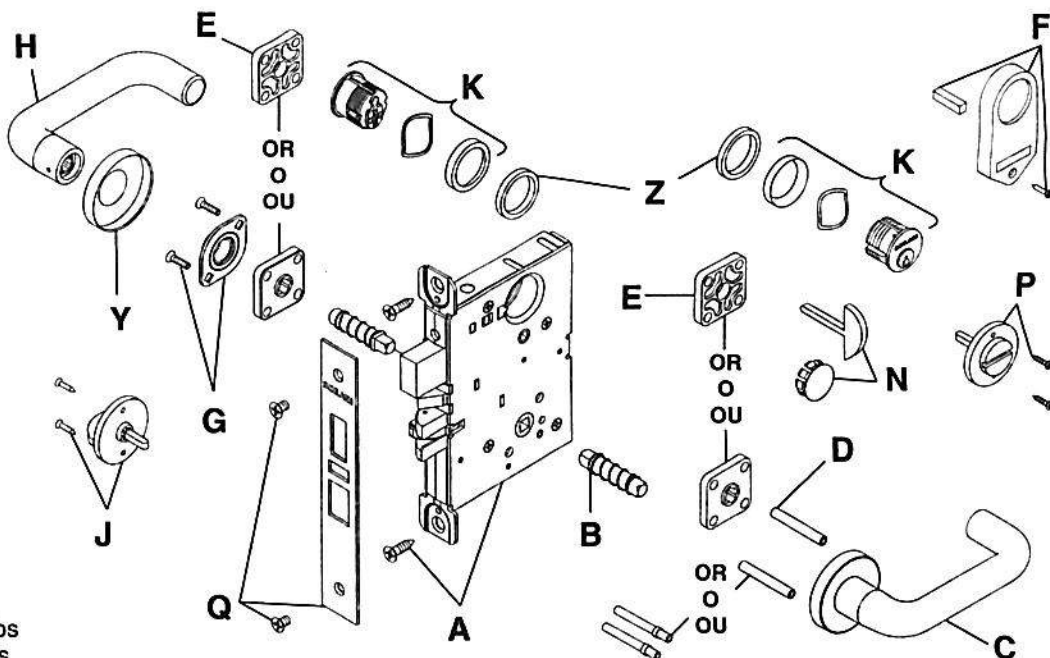
L Inside rose  
Embellecedor interior  
Rosette intérieur

N Emergency turn and button  
Mariposa y botón de emergencia  
Tourniquet et bouton d'urgence

P Coin turn  
Mecanismo de giro a moneda  
Bouton de manœuvre par pièce de monnaie

Q Armor front and screws  
Tornillos y placa frontal  
Plaque de protection avant et vis

Z Blocking ring  
Anillo de bloqueo  
Anneau de blocage



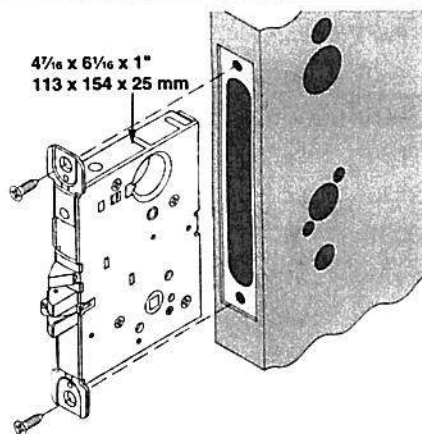
① **IMPORTANT:** Before installation of any L/LV Series lock, check lock handing. (See door handing section.)

① **IMPORTANTE:** Antes del instalación cualquier cerradura de L/LV, compruebe las instrucciones de orientación. (Vea la sección para orientación de la puerta.)

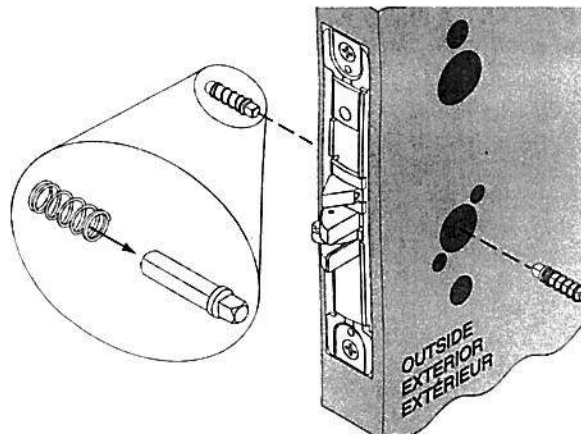
① **IMPORTANT:** Avant d'installer n'importe quelle serrure de L/LV, vérifiez les instructions de manipulation. (Voir la section de sens de déplacement de la porte.)

**1** All functions Todas las funciones Toutes fonctions

Fully tighten at step 9  
Apriete completamente en el paso 9  
Serrer à fond à l'étape 9

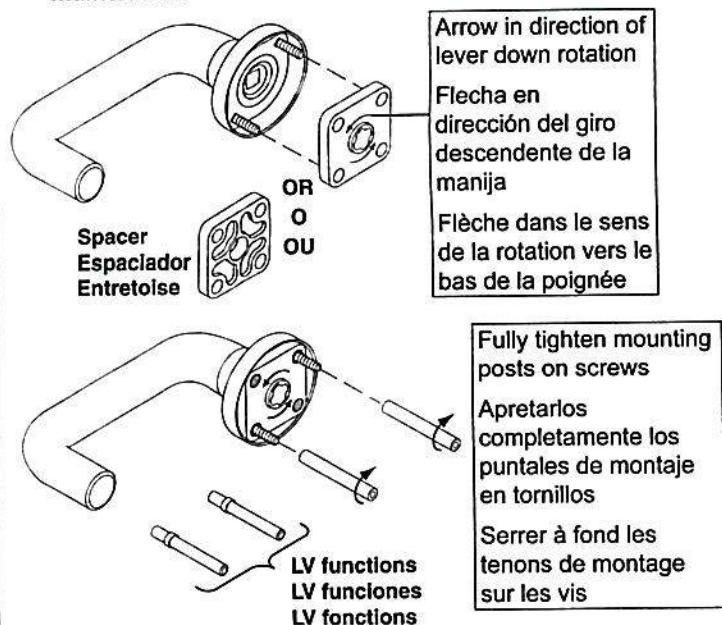


**2** All functions Todas las funciones Toutes fonctions

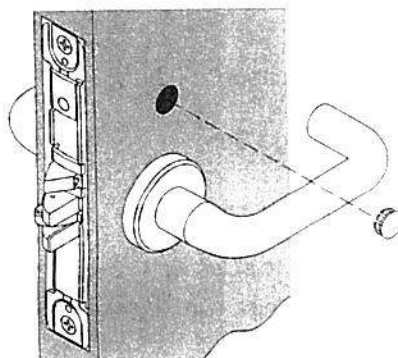




- ① **IMPORTANT:** If spacer is supplied, install now.  
 ① **IMPORTANTE:** Si se incluye un espaciador, instálelo ahora.  
 ① **IMPORTANT:** Si l'entretoise est fournie, installer maintenant.

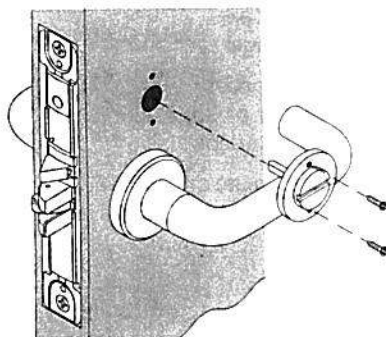


For/For/Pour:  
 9040  
 9440

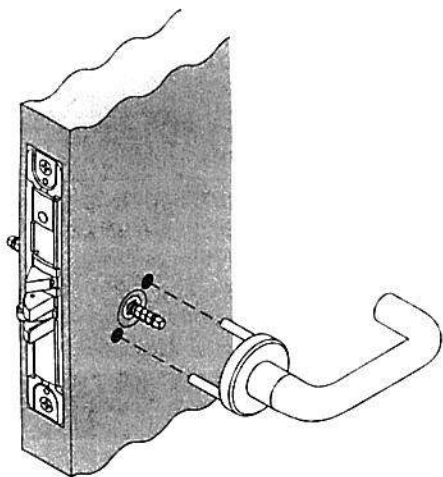


OR O OU

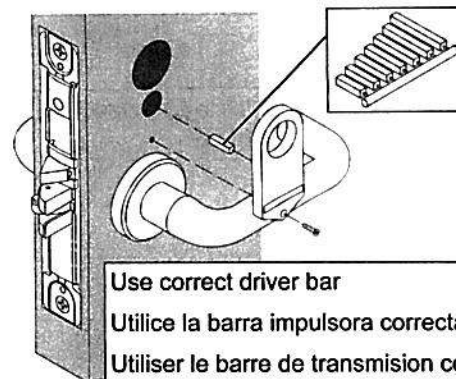
For/For/Pour:  
 9044  
 9444



OR O OU

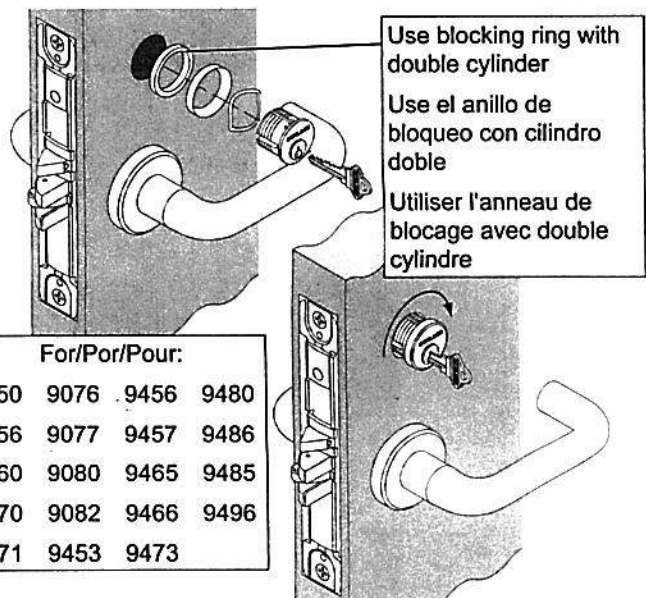


For/For/Pour:  
 9486  
 9496



Use correct driver bar  
 Utilice la barra impulsora correcta  
 Utiliser le barre de transmission correcte

OR O OU



Use blocking ring with double cylinder  
 Use el anillo de bloqueo con cilindro doble  
 Utiliser l'anneau de blocage avec double cylindre

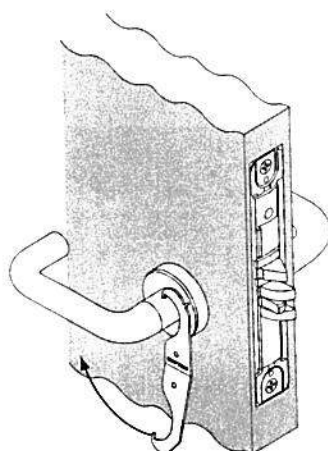
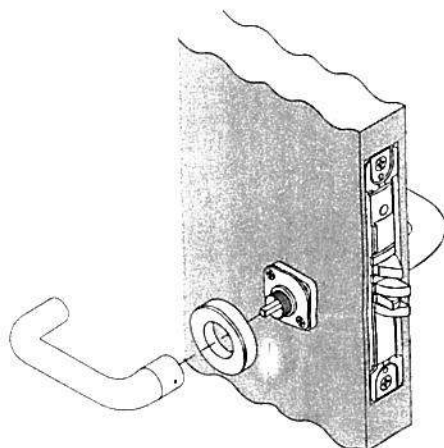
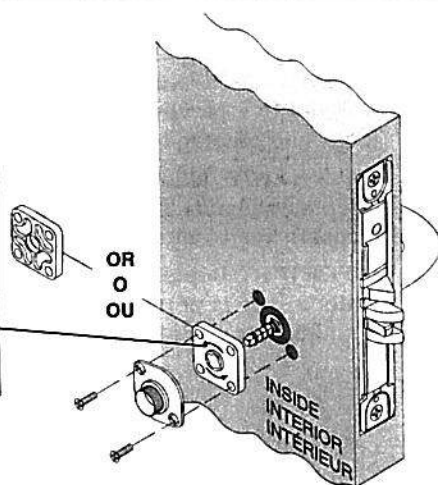
For/For/Pour:

|      |      |      |      |
|------|------|------|------|
| 9050 | 9076 | 9456 | 9480 |
| 9056 | 9077 | 9457 | 9486 |
| 9060 | 9080 | 9465 | 9485 |
| 9070 | 9082 | 9466 | 9496 |
| 9071 | 9453 | 9473 |      |

Arrow in direction of  
lever down rotation

Flecha en dirección  
del giro descendente  
de la manija

Flèche dans le sens  
de la rotation vers le  
bas de la poignée



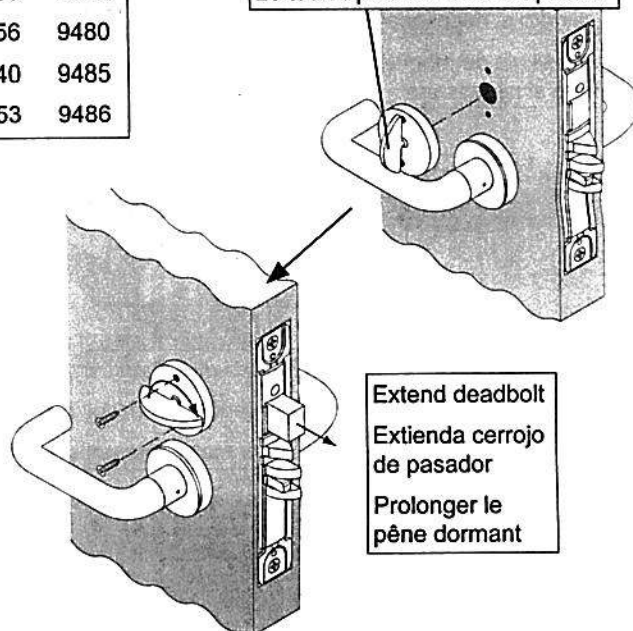
For/For/Pour:

|      |      |
|------|------|
| 9040 | 9456 |
| 9050 | 9473 |
| 9056 | 9480 |
| 9440 | 9485 |
| 9453 | 9486 |

Thumbturn vertical

Mariposa se coloca vertical

Le tourniquet est verticale placée



Extend deadbolt

Extienda cerrojo  
de pasador

Prolonger le  
pêne dormant

OR O OU

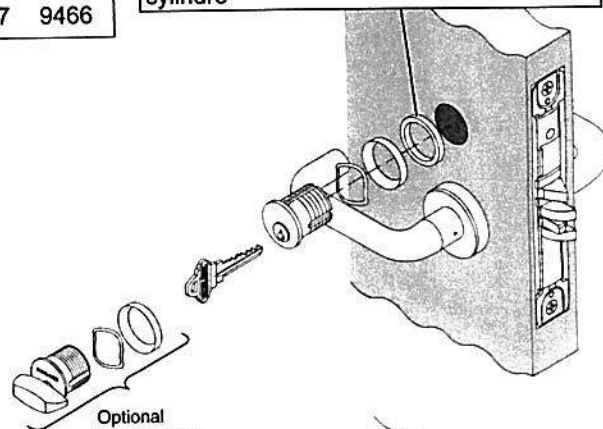
For/For/Pour:

|      |      |
|------|------|
| 9060 | 9082 |
| 9071 | 9457 |
| 9077 | 9466 |

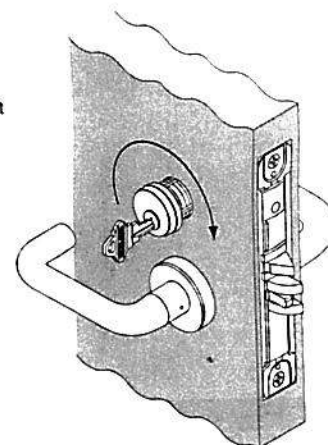
Use blocking ring with double cylinder

Use el anillo de bloqueo con cilindro doble

Utiliser l'anneau de blocage avec double  
cylindre



Optional  
cylinder turn  
Opcional mariposa  
por cilindro  
En option tourniquet  
pour cylindre



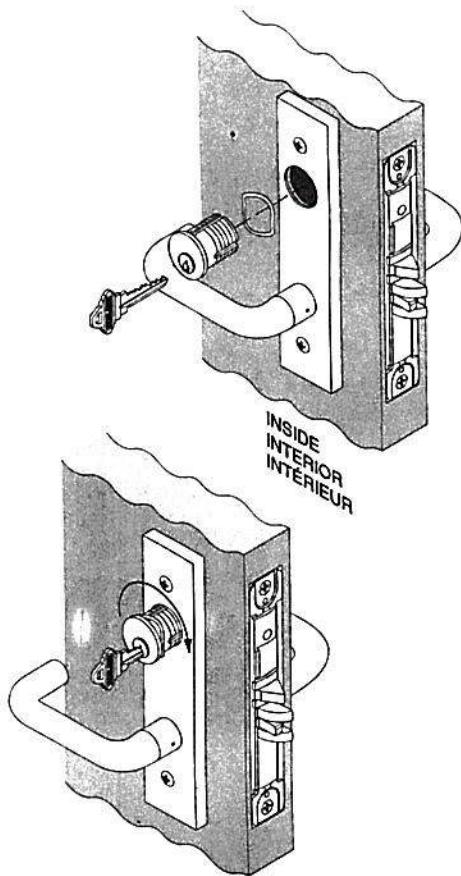


For/Par/Pour:

9060 9082

9071 9457

9077 9466

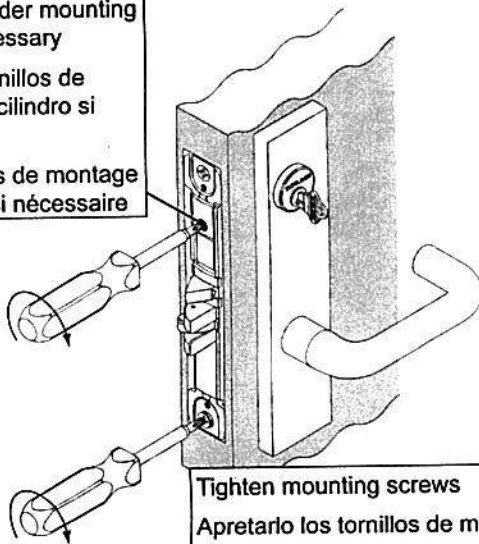


## 10 All functions Todas las funciones Toutes fonctions

Tighten cylinder mounting screw if necessary

Apretarlo tornillos de montaje del cilindro si necesaria

Serrer les vis de montage du cylindre si nécessaire



Tighten mounting screws

Apretarlo los tornillos de montaje

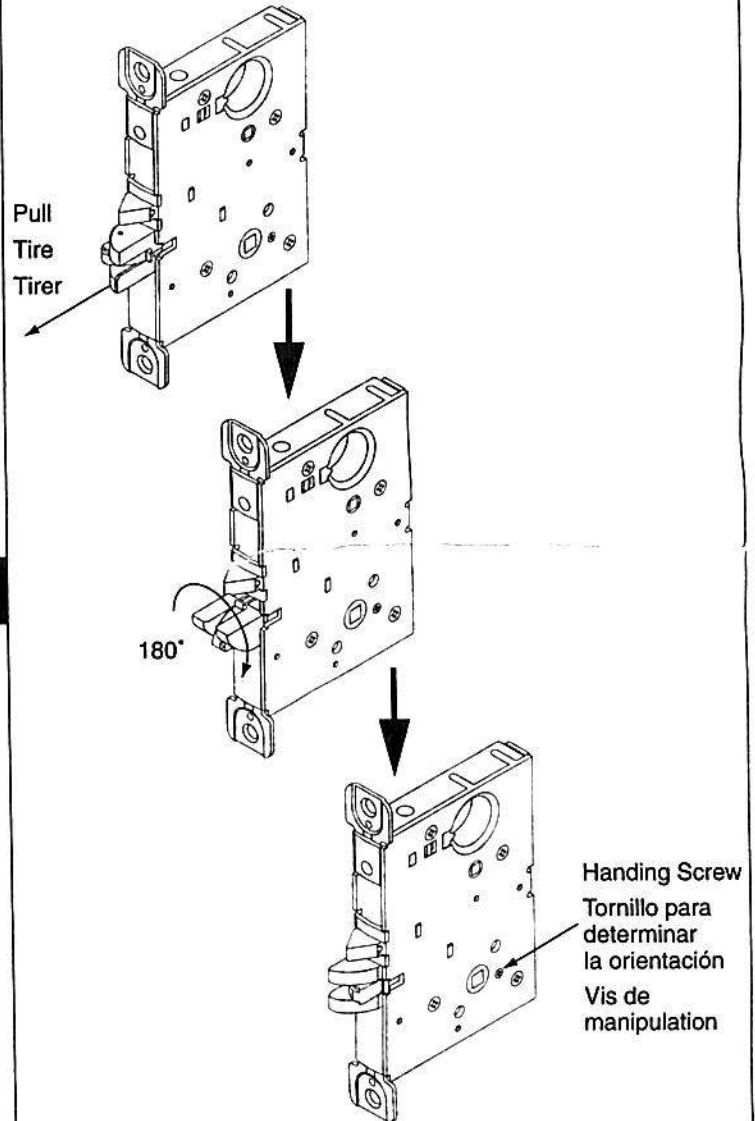
Serrer les vis de montage

## Door Hanging

## Orientación de la puerta

## Sens de déplacement de la porte

- ① **IMPORTANT:** Move handing screw to inside of door for L locks and outside of door for LV locks.
- ① **IMPORTANTE:** Muéve el tornillo que determina la orientación hacia el interior de la puerta para cerraduras L. Muévalo hacia fuera de la puerta para cerraduras LV.
- ① **IMPORTANT:** Déplacer la vis de manipulation vers l'intérieur de la porte pour les serrures L et vers l'extérieur pour les serrures LV.





REMOVE TO EXPOSE ADHESIVE

REMOVE TO EXPOSE ADHESIVE

4040XP/4041 DA

LCN®

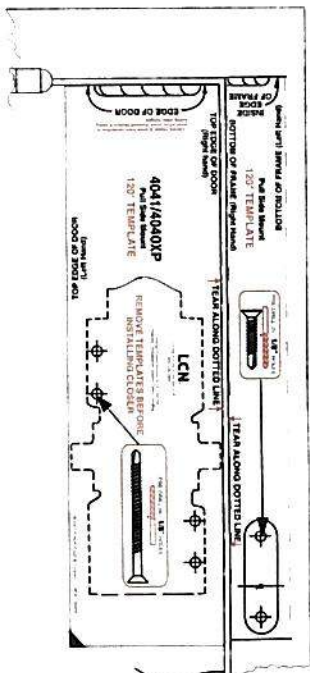
28102

# 120° Template

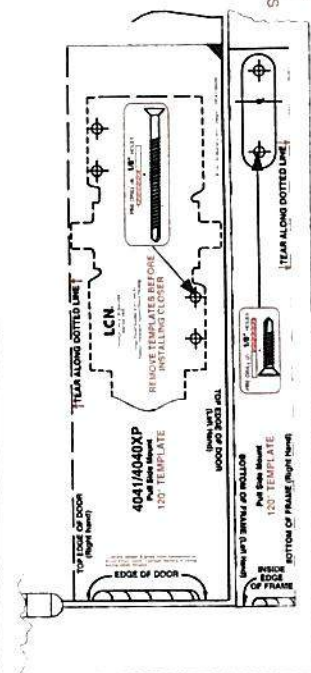
## Installation Instructions

**1** Locate proper template, tear along dotted line, peel template and apply. Center punch all hole locations. For self reaming tapping screws (SRT) drill 1/8" pilot holes. Remove template before installing closer.

(Fig. 1)  
4040XP EN 1-5



MAXIMUM OPENING TORQUE 46 ft-lb / 63 Nm  
RH  
LH  
MAXIMUM OPENING TORQUE 46 ft-lb / 63 Nm



**2** Determine door width, adjust spring power to match chart.

**CAUTION**

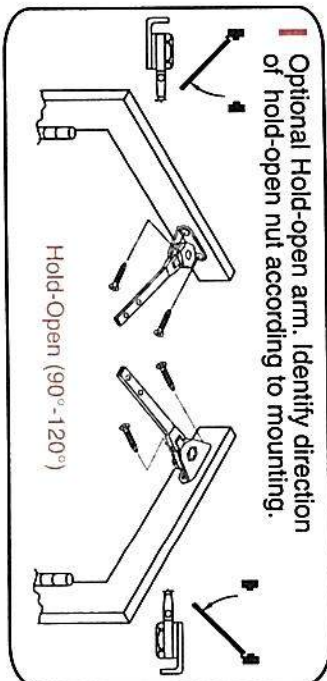
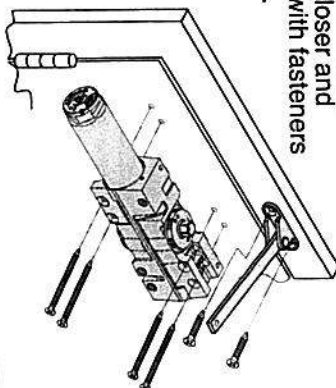
**3** Secure closer and forearm with fasteners provided.

| DOOR WIDTH | LCN FAST™ Power Adjust |
|------------|------------------------|
| 34"        | 1                      |
| 36"        | 2                      |
| 38"        | 3                      |
| 40"        | 4                      |
| 42"        | 5                      |
| 44"        | 6                      |

LCN, FAST™ Power Adjust for Spring Power Adjustment



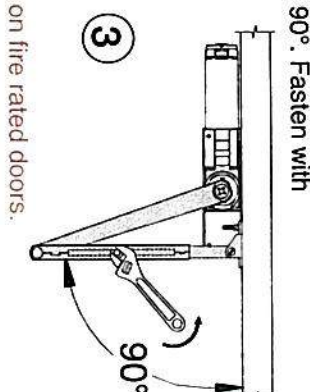
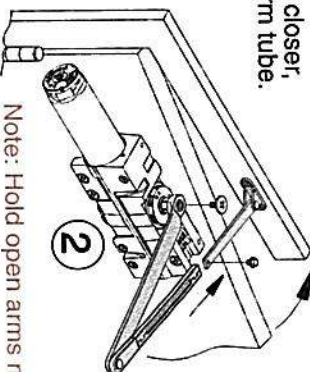
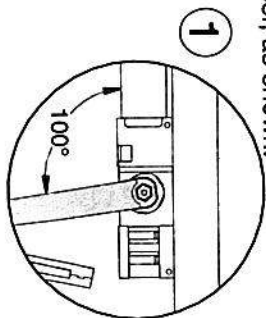
IMPROPER INSTALLATION OR REPAIR MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE. FOLLOW ALL INSTRUCTIONS CAREFULLY. FOR QUESTIONS CALL 877-671-7011



**4** **1** Mount arm on shaft at 100° to closer, as shown.

**2** Attach arm to closer, insert rod into arm tube.

**3** Pre-load arm to 90°. Fasten with screw provided.

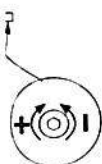


Note: Hold open arms must not be installed on fire rated doors.

**5** If necessary, adjust closer.

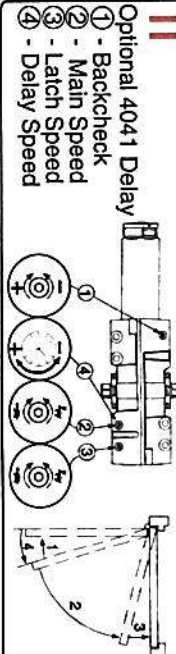
NOTE: A "Normal" closing time from 90° open position is 5 to 7 seconds, evenly divided between main speed and latch speed.

**CAUTION**  
OPENING OF REGULATION VALVES TOO FAR MAY RESULT IN LEAKAGE OF FLUID. FOLLOW ALL INSTRUCTIONS CAREFULLY.



BACKCHECK  
1  
MAIN SPEED

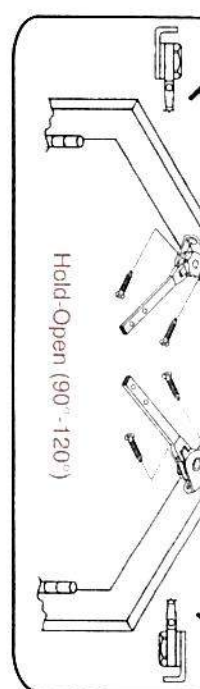
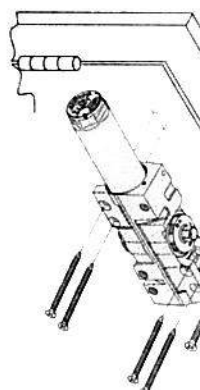
NO  
MAINTENANCE  
REQUIRED





| INTERIOR | EXTERIOR  | SET TO: |
|----------|-----------|---------|
| 34"      | 8.5 lb-ft | 1       |
| 38"      | 30"       | 2       |
| 48"      | 36"       | 3       |
| 54"      | 42"       | 4       |
| 60"      | 48"       | 5       |
|          |           | 6       |

LCN FAST™ Power  
Adjust  
for Spring Power  
Adjustment

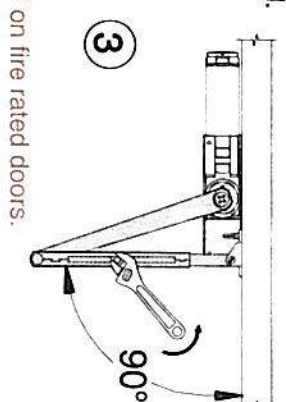
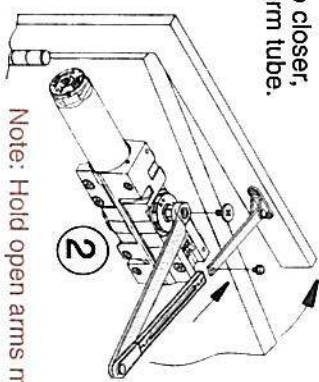
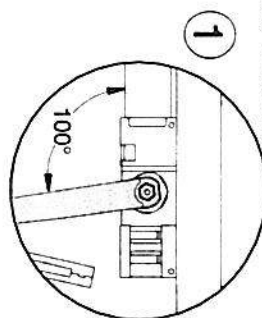


Hold-Open (90°-120°)

1 Mount arm on shaft at 100° to closer, as shown.

2 Attach arm to closer, insert rod into arm tube.

3 Pre-load arm to 90°. Fasten with screw provided.

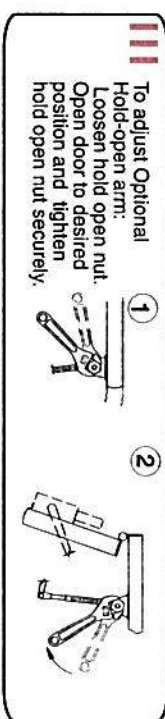
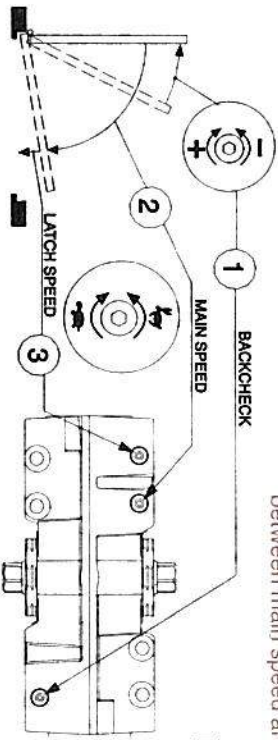
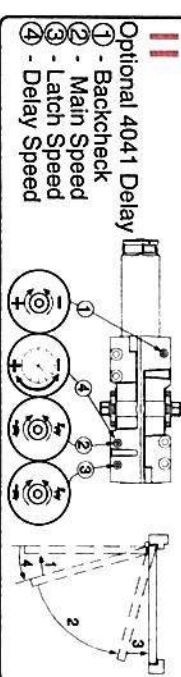


Note: Hold open arms must not be installed on fire rated doors.

5 If necessary, adjust closer.

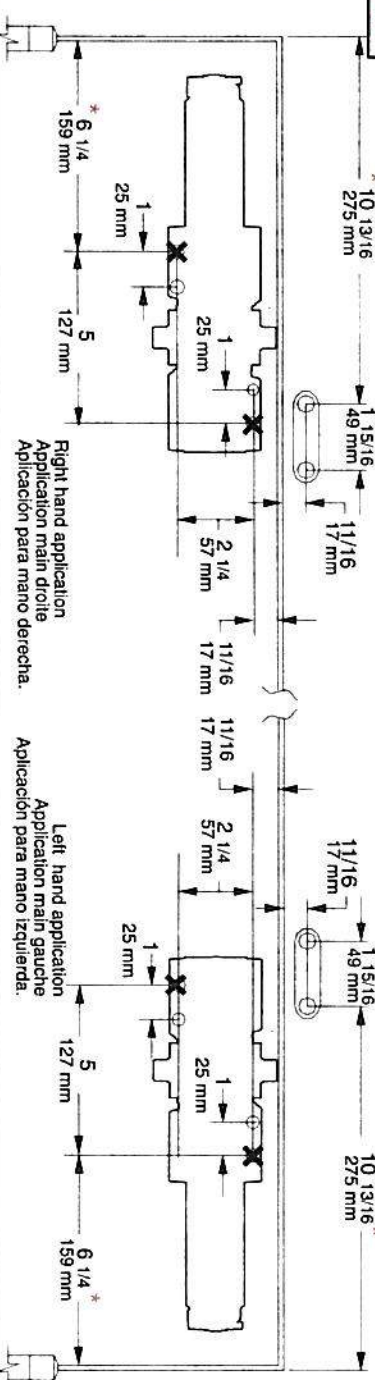
NOTE: A "Normal" closing time from 90° open position is 5 to 7 seconds, evenly divided between main speed and latch speed.

NO  
MAINTENANCE  
REQUIRED



6 Snap on cover.

7 Dimensional Information



Note: Use screws to attach cover.

4040XP Instructions et gabarit autocollant de 120° pour une installation sur le côté à tirer.

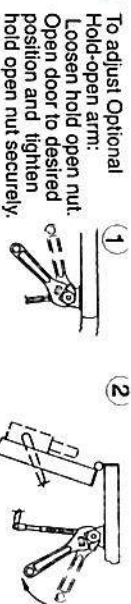
1 Repérez le gabarit approprié, détachez-le, retirez la pellicule et appliquez. Marquez le centre de tous les trous. Percez des trous de guidage de 1/8" pour les vis tarauds. Retirez le gabarit avant de poser le ferme-porte.

5 Au besoin, réglez 1 - résistance d'ouverture 2 - vitesse de fermeture 3 - vitesse de verrouillage

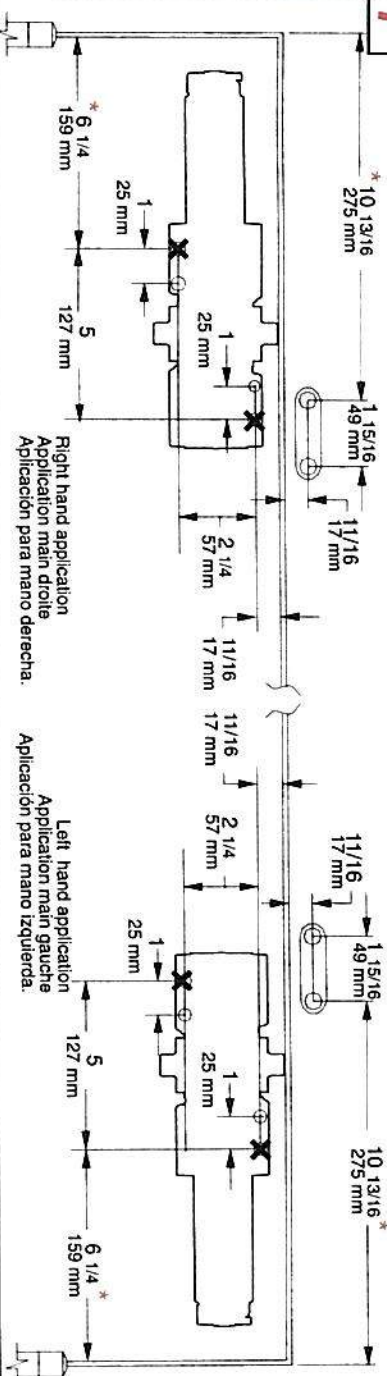
NOTE: la fermeture d'une porte ouverte à 90° prend normalement de 5 à 7 secondes, ce délai est réparti entre la vitesse de fermeture et la vitesse de verrouillage.

Pour régler le bras de retenue





### Dimensional Information



Note: Use screws to attach cover.

**4040XP Instructions et gabarit autocollant de 120° pour une installation sur le côté à tirer.**

- 1** Repérez le gabarit approprié, détachez-le, retirez la pellicule et appliquez. Marquez le centre de tous les trous. Percez des trous de guidage de 1/8" pour les vis tarauds. Retirez le gabarit avant de poser le ferme-porte.

- 5** Au besoin, réglez  
① - résistance d'ouverture

- 4041 Action retardée optionnelle  
① - résistance d'ouverture

- Mesurez la largeur de la porte. Réglez le**

- Bras de retenue (90°-120°)
- 4 ① Montez le bras sur la tige à 100° du du ferme-pieds comme sur l'illustration

- ③ - vitesse de verrouillage
- ④ - vitesse de retenue

- 2** Mesurez la largeur de la porte. Réglez le ressort selon les indications du tableau.

- ③ Préchargez le bras à 90°  
fixez avec la vis fournie.

- 6 Fixez le couvercle
  - 7 Dimensions

**4040XP Instrucciones Pela y Pega para plantilla 120° con montaje del lado de empuje.**

- 1** Localiza la plantilla apropiada, rompe a lo largo de la línea de puntos, pinta la plantilla y aplicarla. Marca el centro de cada agujero. Barrena agujeros piloto de 1/8" para los tornillos autorroscantes. Quitla la plantilla antes de instalar el cerrador.

- Brazo de retención opcional. Identifica la dirección de la tuerca de retención según el montaje.

- Brazo de retención (90°-120°)

- Si se usan tornillos de rosca cortante en la madera, se deberá reducir el par de apretado. Con la madera, se recomienda utilizar tornillos para madera.

- 4 ① Monte el brazo en el eje a 100° del cerrador, tal como se muestra.

- 2** Determina la anchura de la puerta. Ajusta la fuerza del resorte según lo indicado en el gráfico.

- ② Coloca el brazo al cerrador, inserta la varilla en el tubo del brazo.

- 3** Sujeta el cerrador y el antebrazo con los

- 3 Prearma el brazo a 90°. Sujeta con el tornillo ya incluido.

- ## 7 Datos dimensionales

- If pivots are used, locate closer and shoe from centerline of pivot and for offset pivots increase the marked dimensions by 1/8" For swing clear hinges, consult factory.

**NOTE:** la fermeture d'une porte ouverte à 90° prend normalement de 5 à 7 secondes, ce délai est réparti entre la vitesse de fermeture et la vitesse de verrouillage.

Pour régler le bras de retenue optionnelle, desserrez la vis de retenue. Ouvrez la porte à la position désirée et resserrez la vis.

**! DANGER**

Une installation ou un réglage inadéquats peuvent entraîner des blessures ou des dommages. Veuillez suivre toutes les instructions avec soin. Pour plus de renseignements, composez le

877 - 671 - 7011

**! DANGER**  
UNE OUVERTURE EXAGÉRÉE DES  
SOUAPES DE RÉGLAGE PEUT  
ENTRAÎNER DES FUITES, DES  
BLESSURES OU DES DOMMAGES.  
VEUILLEZ SUIVRE LES  
INSTRUCTIONS AVEC SOIN.

**NOTA:** El tiempo de cerrado "Normal" de una puerta abierta a 90° es de 5 hasta 7 segundos, dividido igualmente entre la velocidad principal y la velocidad de seguro.

Para ajustar el brazo de retención opcional: Afloja la tuerca de retención. Abre la puerta a la posición deseada y aprieta bien la tuerca de retención.

**! ADVERTENCIA**

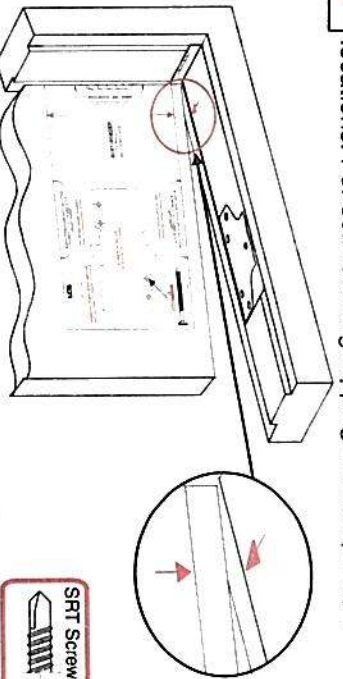
UNA INSTALACIÓN O UN AJUSTE INCORRECTOS PUEDEN RESULTAR EN DAÑO PERSONAL O MATERIAL. SIGA BIEN TODAS LAS INSTRUCCIONES PARA MÁS INFORMACIONES.

**¡ADVERTENCIA**

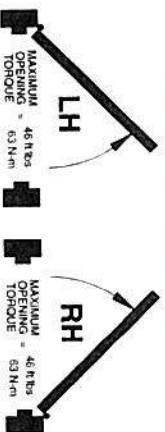
LA APERTURA DEMASIADO GRANDE DE LAS VALVULAS DE AJUSTE PUEDE OCASIONAR UN DERRAME, DANO PERSONAL O MATERIAL. SIGA BIEN TODAS LAS INSTRUCCIONES.



- 1 Locate proper template. Peel template and apply so red arrows align. Center punch all hole locations. For self reaming tapping screws (SRT) drill 1/8" pilot holes. Remove template before installing closer.



For 4041 Delay 90° Mounting provides additional delay time.



Reduce installation torque if using SRT screws in wood. The use of wood screws is recommended for wood.

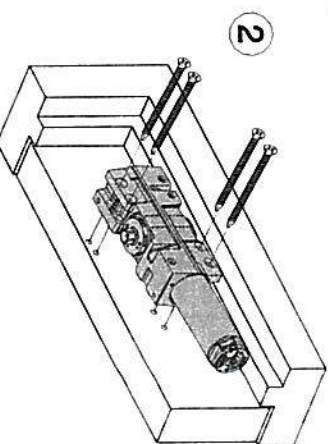
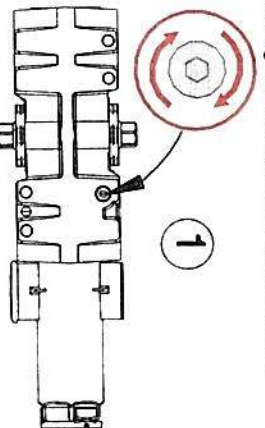
- 2 Determine door width, adjust spring power to match chart.

| DOOR WIDTH | INTERIOR  | EXTERIOR | SET TO |
|------------|-----------|----------|--------|
| 34"        | 8.5 lb-ft | 2        | 1      |
| 38"        | 30"       | 3        | 2      |
| 48"        | 36"       | 4        | 3      |
| 54"        | 42"       | 5        | 4      |
| 60"        | 48"       | 6        | 5      |

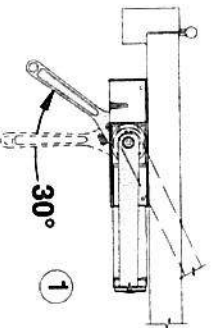
LCN FAST™ Power Adjust for Spring Power Adjustment



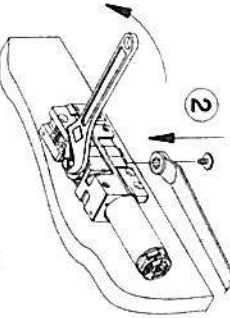
- 3 Screw in valve on back of closer. Using screws provided, secure closer to door.



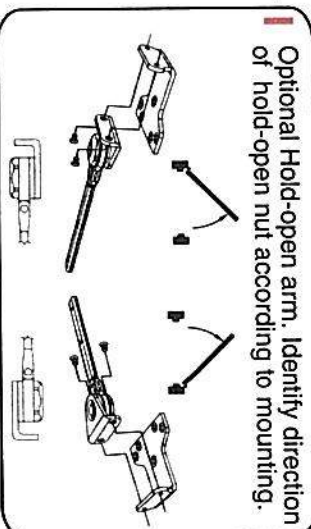
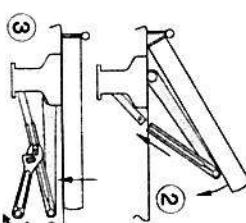
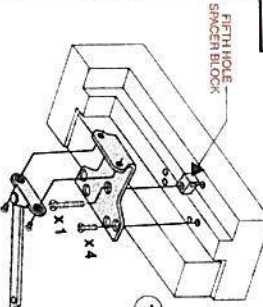
- 4 ① Pre-load closer to 30°, as shown.



- ② Attach arm to closer, with provided fastener.



- 5 Attach P.A. shoe to frame and fasten forearm to shoe with fasteners provided. Pre-load arm and tighten screw.



Optional Hold-open arm. Identify direction of hold-open nut according to mounting.

Note: Hold open arms must not be installed on fire rated doors.

- 6 If necessary, adjust closer

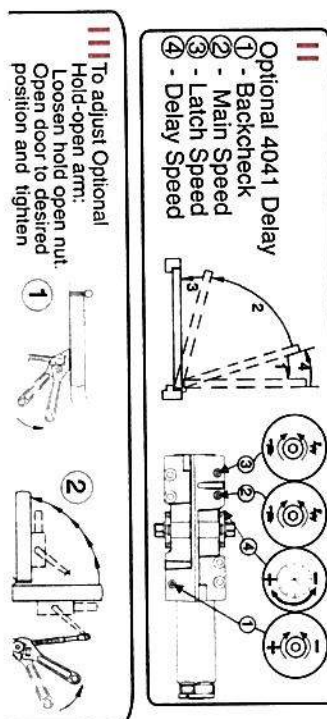
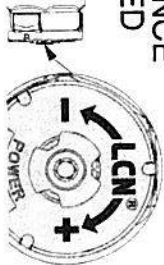
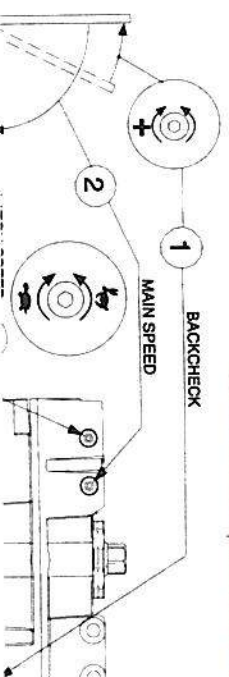
NOTE: A "Normal" closing time from 90° open position is 5 to 7 seconds, evenly divided between main speed and latch speed.

CAUTION

OPENING OF REGULATOR OR ADJUSTMENT OF CLOSER, PERSONAL INJURY OR PROPERTY DAMAGE, FOLLOW ALL INSTRUCTIONS CAREFULLY.

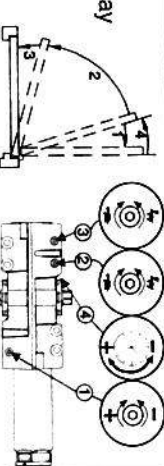
NO

MAINTENANCE REQUIRED

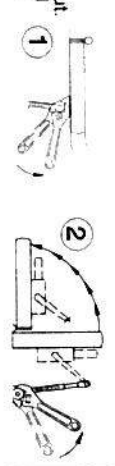


- Optional 4041 Delay

- ① - Backcheck
- ② - Main Speed
- ③ - Latch Speed
- ④ - Delay Speed

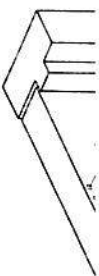
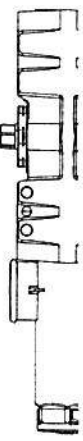


- III To adjust Optional Hold-open arm: Loosen hold open nut. Open door to desired position and tighten





|     |     |   |
|-----|-----|---|
| 36° | 30° | 3 |
| 48° | 36° | 4 |
| 54° | 42° | 5 |
| 60° | 48° | 6 |

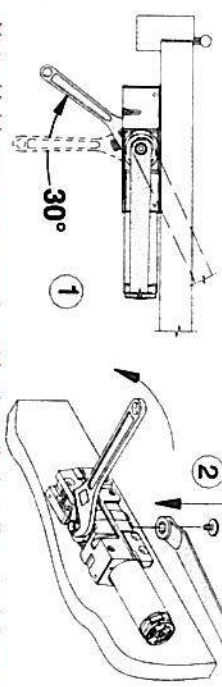


**4** ① Pre-load closer to 30°, as shown.

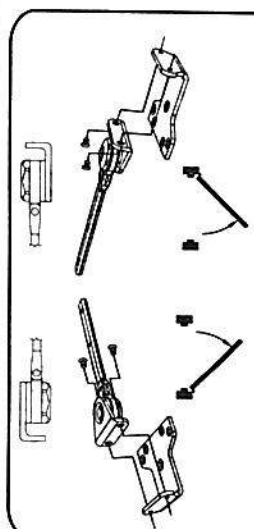
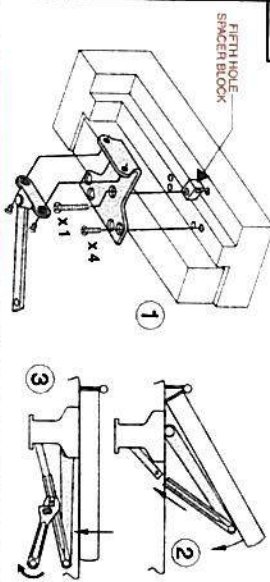
② Attach arm to closer, with provided fastener.

**5** Attach P.A. shoe to frame and fasten forearm to shoe with fasteners provided. Pre-load arm and tighten screw.

**I** Optional Hold-open arm. Identify direction of hold-open nut according to mounting.



Note: Hold open arms must not be installed on fire rated doors.

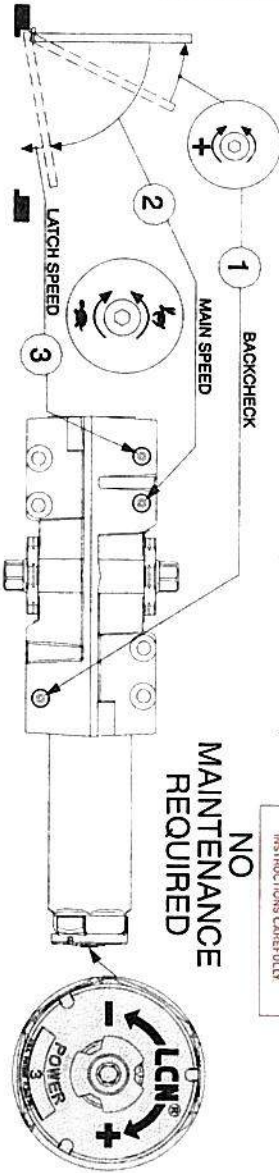


**6** If necessary, adjust closer

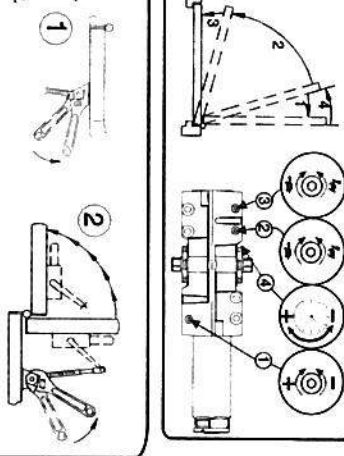
NOTE: A "Normal" closing time from 90° open position is 5 to 7 seconds, evenly divided between main speed and latch speed.

**CAUTION**  
WARNING OF REGULATION VALUES TO BE USED FOR THE ADJUSTMENT OF CLOSER. PERSONAL INJURY OR PROPERTY DAMAGE FOLLOW ALL INSTRUCTIONS CAREFULLY.

**NO MAINTENANCE REQUIRED**

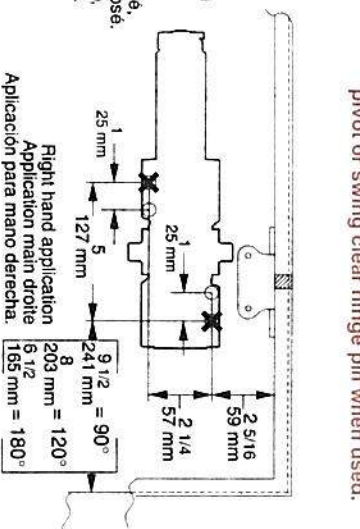
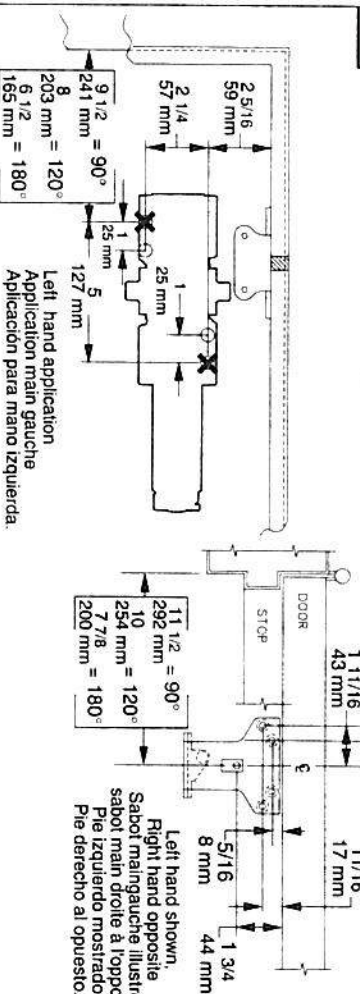
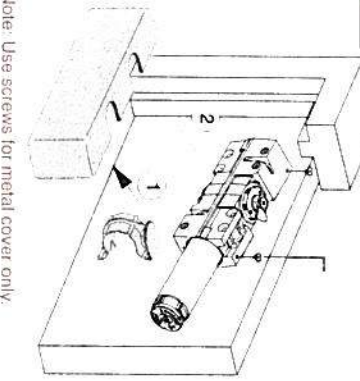


**III** To adjust Optional Hold-open arm:  
Loosen hold open nut. Open door to desired position and tighten hold open nut securely.



**7** Snap on cover.

**8** Dimensional Information for standard and delay action mounting.



\* Locate closer & shoe from centerline of pivot or swing clear hinge pin when used.

**4040XP Instructions et gabarit autocollant de 180° pour une installation "bras parallèle".**

**1** Repérez le gabarit approprié. Retirez la pellicule, alignez les flèches rouges et appliquez. Marquez le centre de tous les trous. Percez des trous de guidage de 1/8" pour les vis tarauds. Retirez le gabarit avant de poser le ferme-porte.

**3** Vissez la soudape derrière le ferme-porte. Fixez le ferme-porte sur la porte avec les attaches fournies.

**4** ① Préchargez le ferme-porte à 30°, comme sur l'illustration.  
② Rattachez le bras au ferme-porte

**6** Au besoin, réglez  
① - résistance d'ouverture  
② - vitesse de fermeture  
③ - vitesse de verrouillage

**II** 4041 Action retardée optionnelle  
① - résistance d'ouverture  
② - vitesse de fermeture

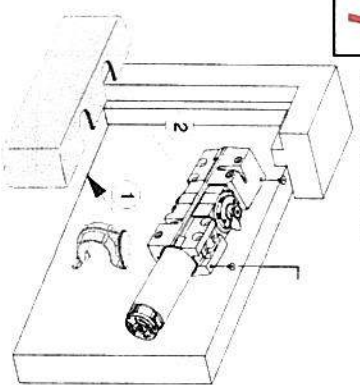
NOTE: la fermeture d'une porte ouverte à 90° prend normalement de 5 à 7 secondes, ce délai est réparti entre la vitesse de fermeture et la vitesse de verrouillage.

**III** Pour régler le bras de retenue optionnelle, desserrez la vis de retenue. Ouvrez la porte à la position désirée et resserrez la vis.

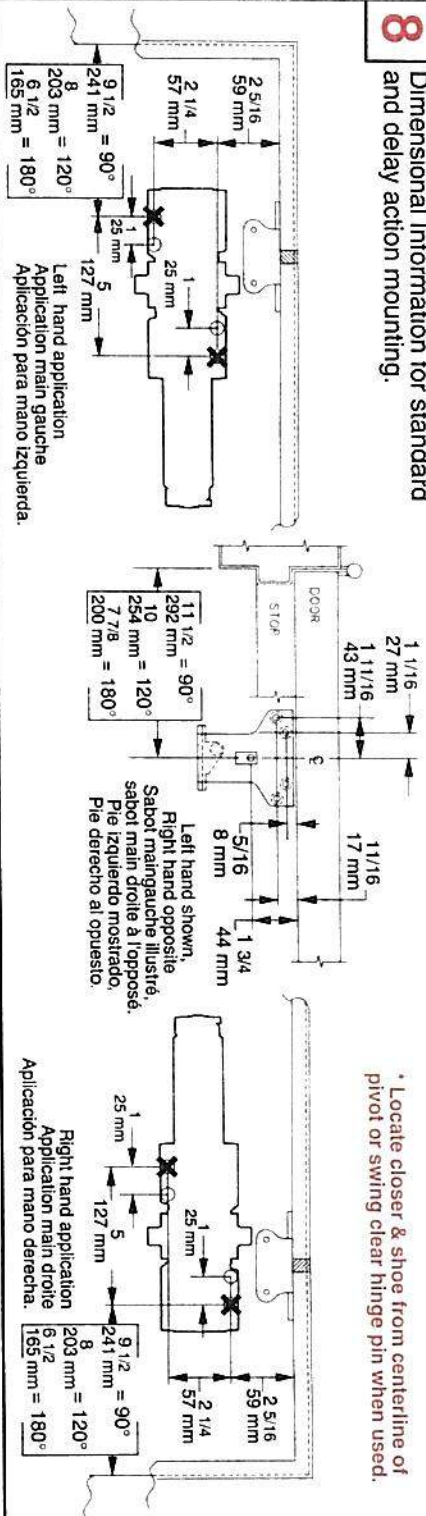
Pour le 4041 l'installation de la Retenue 90° permet un délai de retenue additionnel.



## 7 Snap on cover.



## 8 Dimensional Information for standard and delay action mounting.



\* Locate closer & shoe from centerline of pivot or swing clear hinge pin when used.

Note: Use screws for metal cover only

## 4040XP Instructions et gabarit autocollant de 180° pour une installation "bras parallèle".

**1** Repérez le gabarit approprié. Retirez la pellicule, alignez les flèches rouges et appliquez. Marquez le centre de tous les trous. Percez des trous de guidage de 1/8" pour les vis tarauds. Retirez le gabarit avant de poser le ferme-porte.

Pour le 4041 l'installation de la Retenue 90° permet un délai de retenue additionnel.

Réduisez le couple de serrage à l'installation des vis tarauds dans le bois. Les vis à bois sont recommandées pour le bois.

**2** Mesurez la largeur de la porte. Réglez le ressort selon les indications du tableau.

**Réglage de force LCN®FAST™**  
pour régler la force du ressort

## 4040XP Instrucciones Pela y Pega para plantilla 180° con montaje del brazo paralelo.

**1** Localiza la plantilla apropiada. Quitar la película, alinear las flechas rojas y aplicar la plantilla. Marca el centro de cada agujero. Barrena agujeros piloto de 1/8" para los tornillos autorroscantes. Quitla la plantilla antes de instalar el cerrador.

Para la Retención del 4041, un montaje de 90° dará un tiempo de retención adicional. Si se usan tornillos de rosca cortante en la madera, se deberá reducir el par de apretado. Con la madera, se recomienda utilizar tornillos para madera.

**2** Determina la anchura de la puerta. Ajusta la fuerza del resorte según lo indicado en el gráfico LCN®FAST™cuadrante de ajuste para ajustar la potencia del resorte

**3** Vissez la soupape derrière le ferme-porte. Fixez le ferme-porte sur la porte avec les attaches fournies.

**4** **1** Préchargez le ferme-porte à 30°, comme sur l'illustration.

**2** Rattachez le bras au ferme-porte avec l'attache fournie.

**3** Rattachez le sabot du b. p. au cadre et fixez l'avant-bras sur le sabot avec les attaches fournies. Préchargez le bras et serrez la vis.

**5** Bras de retenue optionnelle. Identifiez la direction du boudin de retenue selon l'ouverture de la porte.

**6** Au besoin, réglez

**1** - résistance d'ouverture

**2** - vitesse de fermeture

**3** - vitesse de verrouillage

**4** - vitesse de retenue

**7** Fixez le couvercle.

**8** Dimensions

**1** - résistance de fermeture

**2** - vitesse de fermeture

**3** - vitesse de verrouillage

**4** - vitesse de retenue

**7** Encaje la tapa.

**8** Datos dimensionales para montaje estándar y de acción retardada.

NOTE: la fermeture d'une porte ouverte à 90° prend normalement de 5 à 7 secondes, ce délai est réparti entre la vitesse de fermeture et la vitesse de verrouillage.

**III** Pour régler le bras de retenue optionnelle, desserrez la vis de retenue. Ouvrez la porte à la position désirée et resserrez la vis.

**⚠ DANGER**

Une installation ou un réglage inadéquats peuvent entraîner des blessures ou des dommages. Veuillez suivre toutes les instructions avec soin. Pour plus de renseignements, 877-671-7011

**⚠ DANGER**

UNE OUVERTURE EXAGÉRÉE DES PORTES PEUT ENTRAÎNER DES BLESSURES OU DES DOMMAGES. VEUILLEZ SUIVRE LES INSTRUCTIONS AVEC SOIN.

NOTA: El tiempo de cerrado "Normal" de una puerta abierta a 90° es de 5 hasta 7 segundos, dividido igualmente entre la velocidad principal y la velocidad de seguro.

**III** Brazo de retención opcional. Identifica la dirección de la tuerca de retención según el montaje. Para ajustar el brazo de retención opcional: Afloja la tuerca de retención. Abre la puerta a la posición deseada y aprieta bien la tuerca de retención.

**⚠ ADVERTENCIA**

UNA INSTALACIÓN O UN AJUSTE INCORRECTOS PUEDEN RESULTAR EN DAÑO PERSONAL O MATERIAL. SIGA BIEN TODAS LAS INSTRUCCIONES PARA MÁS INFORMACIONES. LLAMA A LCN AL 877-671-7011

**⚠ ADVERTENCIA**

LA APERTURA DEMASIADO GRANDE DE LAS VALVULAS DE AJUSTE PUEDE CAUSAR DAÑO PERSONAL O MATERIAL. SIGA BIEN TODAS LAS INSTRUCCIONES

**Duneland School Corporation  
2020 Nurse's Office Renovations  
Bailly Elementary School  
Chesterton, IN**

**OPERATION AND  
MAINTENANCE MANUAL**

**Submitted by:**

**Midwest Tile & Interiors, Inc.  
1805 N. Cedar Street  
Mishawaka, IN 46545  
Telephone: (574) 256-6814**

**MIDWEST TILE & INTERIORS, INC.**  
**GUARANTEE**





# Midwest Tile & Interiors, Inc.

1805 North Cedar Street, Mishawaka, Indiana 46545 Phone (574) 256-6814

## Guarantee for Construction

**WHEREAS**, Midwest Tile & Interiors, Inc., hereinafter called the Contractor, has supplied workmanship for the labor and material on the carpet, ceramic and resilient flooring at Duneland School Corporation, 2020 Nurse's Office Renovations, Bailly Elementary School, located in Chesterton, IN hereinafter called the Project.

**AND WHEREAS**, said Contractor represents and wishes to guarantee the quality of construction for a period of one (1) year from the date of substantial completion, or as specified per the contract documents, for work performed by the Contractor in accordance with the contract documents as prepared by Larson-Danielson Construction Company, Inc. and owner authorized revisions.

**THEREFORE**, said Contractor guarantees to the said Owner that, for a period of one (1) year from the Date of Substantial Completion, as specified per the contract documents, for workmanship and material from said date of substantial completion, Contractor will at its own expense, make or cause to be made, any repairs that may be necessary as a result of defects in workmanship and materials supplied by the Contractor.

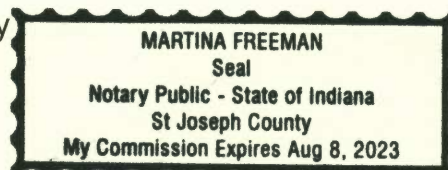
Dated at Mishawaka, Indiana  
this 21<sup>st</sup> day of August, 2020.

Gregory J. Gluchowski  
President

State of Indiana  
County of St. Joseph

Gregory J. Gluchowski, President of Midwest Tile & Interiors, Inc., personally appeared before me, a Notary Public, in and for the above-named County and State, this 21<sup>st</sup> day of August, 2020 and acknowledged the execution of the foregoing instrument for and on behalf of said Midwest Tile & Interiors, Inc.

Martina Freeman – A resident of St. Joseph County  
My Commission Expires: 08/08/2023



## **MANUFACTURER WARRANTIES**

## Daltile 1-Year Limited Warranty

Daltile warrants that manufactured products will be free from defect for a period of one year from date of purchase. Defect is defined as a shortfall in the product to perform to Daltile specifications as disclosed in product literature, within industry-allowable tolerances as set forth in standard, national industry protocols. **THIS ONE-YEAR EXPRESS WARRANTY IS THE SOLE WARRANTY EXTENDED AND REPLACES ANY STATUTORY WARRANTIES TO THE MAXIMUM EXTENT ALLOWABLE BY LAW.** Customer misuse including negligence, physical, or chemical abuse is not covered by this warranty. Installation defects are not covered by this warranty. All warranty claims must be reported immediately. Failure to report any warranty claim within 30 days of defect discovery will void this warranty. All products must be inspected prior to installation. Visual defects or nonconformities apparent prior to installation voids this warranty.

Tile is subject to variation in technical specifications, including COF, due to inherent variability in the raw materials and production process. Express technical specifications are not guarantees of minimum or maximum thresholds of performance. Tile containing abrasives create a rough surface, creating cleaning challenges because dirt and other contaminants lodge in the surface. Extra attention is necessary to ensure contaminants are removed promptly. Unless specifically stated otherwise, tile recommended for floor or wall applications refers to interior applications only. Daltile does not recommend its products for use on ceilings or roofs. Local building codes may dictate minimum tile performance specifications. Daltile does not warrant product installations that violate building codes. Photographic color images may not be an exact product match. Product samples are representative only. Express color match warranties are only extended to actual product samples.

## Other Daltile Warranties

### Implied Warranties Limited in Duration and Scope

Any implied warranty applicable to the product sale, including the implied warranty of merchantability or the implied warranty of fitness for a particular purpose is limited in duration to the duration of this written warranty or the maximum statutory period, whichever is less. Some states do not allow limitations on implied warranty duration, so the above limitation may not apply to you.

The Federal Magnuson-Moss Warranty Act limits disclaimers of implied warranties involving consumer products. To the maximum extent allowable by federal and state law, this warranty supplements or supersedes federal and state consumer goods warranty protections.

### Implied Warranty of Fitness for a Particular Purpose

Daltile provides detailed information in its product literature with regard to appropriate tile and stone applications. In these specified applications, Daltile limits the duration of the implied warranty of fitness for a particular purpose to one year or the maximum statutory period prescribed by law, whichever is less. Failure to comply with recommended applications voids this warranty.

Natural stone products are mined and cut from natural formations. Because these products are not subject to a manufacturing process, quality warranties are limited to the specified representations in product literature and guidelines established by the Marble Institute of America. Daltile does not



warrant natural stone products for shade, size, thickness, warping, cleft variations, surface finish variations, or other natural variances on stone products.

## Remedy Limitation and Disclaimer

---

If a defect in materials or workmanship is discovered within the one-year period, Daltile will either refund the price of the product or provide a replacement product after a reasonable number of attempts to remedy product defects. Buyer's remedy is limited to replacement or repair of the defective product. No consequential (including, but not limited to, lost profits) or incidental damages are recoverable. Daltile disclaims all express warranties not contained in this limited express warranty. Any representations made in connection with the sale of this product that differs from the terms of this warranty are not valid and should be brought to the attention of Daltile immediately (1-800-933-TILE).

Legal Notice: Warning Tile and installation products contain chemicals known to the state of California to cause cancer, birth defects, reproductive harm, respiratory harm or other health problems. For more product-specific information on chemical content, obtain an MSDS at [Daltile.com](http://Daltile.com) or contact Daltile at 1-800-833-TILE.

## To Make a Claim

1. The original purchaser must notify a Daltile Sales Service Center or an authorized representative in writing within 30 days of the occurrence of any defect.
2. After notification, Daltile or an authorized representative will inspect and/or test the product for defect and complete a Product Claim Action form. No claim will be honored without product inspection by Daltile or an authorized representative.
3. Upon determination that the product defect claim is valid, Daltile will notify the purchaser in writing. Daltile reserves the right to repair, replace or refund the originally purchased product, at its sole discretion.



# Interface Standard LVT Product Warranty – Americas

**Interface**

Rev. 11/1/19

InterfaceFLOR, LLC (Interface) warrants its Interface® brand Luxury Vinyl Tile (LVT) products to the original end-use customer as stated below for a period of 15 years from the date of invoice for 4.5mm Sound Choice™ and 3mm Criterion™ LVT products, and for a period of 10 years from the date of invoice for 3mm Basis™ LVT products:

- Interface® brand LVT products are warranted against excessive wear, provided the material was installed and maintained properly and used as intended and recommended. For these purposes, “excessive wear” is defined as the complete removal of pattern and/or color due to normal traffic and assuming proper installation and maintenance strictly in accordance with Interface’s Luxury Vinyl Tile Installation Instructions and Luxury Vinyl Tile Maintenance Guidelines, both of which can be found on Interface’s website; and
- This warranty covers odor from plasticizer hydrolysis of Interface brand LVT products, to the extent that the odor is caused by moisture (RH) and alkalinity (pH) in concrete slabs, when installed strictly within the limits set forth in Interface’s Luxury Vinyl Tile Installation Instructions.
- All installations must be completed strictly in accordance with Interface’s installation instructions for LVT, which can be found on Interface’s website. In all installations, there must be no visible moisture on the surface of the concrete slab. Archived written and photographic evidence of moisture and alkalinity test results must be maintained by the original end-use customer.

If a product fails to perform as warranted, Interface will correct the problem in the affected area either by repair or (at Interface’s option) replacement with comparable products(s) at no charge to the customer.

Interface also warrants its LVT products against defects arising out of the manufacturing process to the original end-use customer as stated below:

- If the product is determined to exhibit a manufacturing defect within the first year following the date of invoice, Interface will correct the problem in the affected area either by repair or (at Interface’s option) replacement with comparable product(s) at no charge to the customer, as well as pay the reasonable labor costs (as determined by Interface) associated with its repair or replacement;
- If the product is determined to exhibit a manufacturing defect in the second year following the date of invoice, Interface will correct the problem in the affected area either by repair or (at Interface’s option) replacement with comparable product(s) at no charge to the customer, as well as pay fifty percent (50%) of the reasonable labor costs (as determined by Interface) associated with its repair or replacement; and
- If the product is determined to exhibit a manufacturing defect in the third, fourth, or fifth years following the date of invoice, Interface will correct the problem in the affected area either by repair or (at Interface’s option) replacement with comparable product(s) at no charge to the customer, but will not be responsible for any labor costs associated with its repair or replacement.

In all cases in which a covered warranty condition is determined by Interface to exist, the customer must provide reasonable cooperation to facilitate Interface’s repair or replacement in the affected area.

This warranty does not cover cuts, loss of gloss, burns, scratches, indentations, stains or other damage, deterioration, problems, or loss caused by abuse, neglect, misuse, improper installation, improper maintenance, flood, use on stairs, subfloor irregularities, or use with athletic equipment. Moisture and pH testing at the installation site are not the responsibility of Interface, and issues related to or arising from excessive moisture and/or pH are specifically excluded from this warranty except as expressly set forth herein and in Interface’s Luxury Vinyl Tile Installation Instructions and Luxury Vinyl Tile Maintenance Guidelines. This warranty does not cover any problems or damages arising from or related to the use of adhesives or non-recommended installation techniques or conditions.



Interface does not warrant installer's workmanship unless the affected product was installed by Interface affiliate Interface Services Inc. (Interface Services), and then only in accordance with the terms of the Interface Services installation warranty.

Warranty claims must be made in writing to Interface within a reasonable time from the discovery of the claimed warranted defect, but in any event they must be received no more than 90 days from the time the claimed defect was discovered. Warranty claims must be addressed to: Field Services Department, InterfaceFLOR, LLC, 1503 Orchard Hill Rd., LaGrange, Georgia 30240 (USA). Warranty claims must include contemporaneous documentation that all warranty conditions were and continue to be met. This warranty will be void if its terms are not followed. Interface will not pay labor costs to repair or replace material with defects that were apparent before or at the time of installation. No person other than an officer of Interface may authorize a waiver or modification of the terms of this warranty, which must be in writing and signed by that officer.

THE WARRANTY, REMEDY AND LIMITS OF LIABILITY CONTAINED HEREIN ARE EXPRESSLY IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, REMEDIES AND LIABILITIES, WHETHER EXPRESS OR IMPLIED. INTERFACE MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND HEREBY DISCLAIMS ANY AND ALL OTHER WARRANTIES THAT MAY ARISE BY OPERATION OF LAW, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS OF ITS PRODUCTS FOR ANY PARTICULAR PURPOSES. NOTE THAT SOME JURISDICTIONS DO NOT PERMIT DISCLAIMERS OF SOME IMPLIED WARRANTIES, SO YOUR RIGHTS MAY BE DIFFERENT THAN STATED HEREIN. INTERFACE WILL NOT BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES IN ANY CASE.

# Garantía Estándar Interface De Producto LVT Américas

**Interface**

Rev. 11/1/19

InterfaceFLOR, LLC (Interface) garantiza sus pisos vinílicos de lujo (LVT) de la marca Interface® al consumidor final, según se establece a continuación, durante un período de 15 años desde la fecha de la factura para los productos LVT Sound Choice™ de 4.5 mm y Criterion™ de 3 mm, y durante un período de 10 años desde la fecha de la factura para los productos LVT Basis™ de 3 mm:

- Los productos LVT de la marca Interface® tienen garantía contra desgaste excesivo, siempre que el material se haya instalado y mantenido de manera apropiada y utilizado según lo previsto y recomendado. Para estos fines, «desgaste excesivo» se define como la eliminación completa del patrón y/o el color debido al tránsito normal y siempre que la instalación y el mantenimiento hayan sido adecuados, en estricta conformidad con las instrucciones de instalación y las normas de mantenimiento para LVT de Interface. Ambos están disponibles en el sitio web de Interface.
- Esta garantía cubre el olor de la hidrólisis del plastificante de los productos LVT de la marca Interface, en la medida en que el olor sea producto de la humedad (RH) y la alcalinidad (pH) de las losas de cemento, cuando se hayan instalado estrictamente dentro de los límites establecidos en las instrucciones de instalación de LVT de Interface.
- Todas las instalaciones deben completarse en estricta conformidad con las instrucciones de instalación de Interface para LVT, que se encuentran disponibles en el sitio web de Interface. En cualquier caso, no debe haber humedad visible en la superficie de las losas de cemento. El cliente final original debe guardar evidencia escrita y fotográfica de los resultados de las pruebas de humedad y alcalinidad.

Si un producto no se desempeña según la garantía, Interface corregirá el problema en el área afectada ya sea con la reparación (a discreción de Interface) o el reemplazo con producto o productos comparables, sin costo para el cliente.

Asimismo, Interface garantiza sus productos LVT al cliente final original contra defectos que surjan del proceso de fabricación, según se establece a continuación:

- Si se determina que el producto exhibe un defecto de fabricación dentro del primer año posterior a la fecha de la factura, Interface corregirá el problema en el área afectada ya sea con la reparación (a discreción de Interface) o el reemplazo con producto o productos comparables sin costo para el cliente, además del pago de costos de mano de obra razonables (según lo determine Interface) asociados con su reparación o reemplazo.
- Si se determina que el producto exhibe un defecto de fabricación en el segundo año posterior a la fecha de la factura, Interface corregirá el problema en el área afectada ya sea con la reparación (a discreción de Interface) o el reemplazo con producto/s comparables sin costo para el cliente, además del pago del cincuenta por ciento (50 %) de los costos de mano de obra razonables (según lo determine Interface) asociados con su reparación o reemplazo; y
- Si se determina que el producto exhibe un defecto de fabricación en el tercero, cuarto o quinto año posterior a la fecha de la factura, Interface corregirá el problema en el área afectada ya sea con la reparación (a discreción de Interface) o el reemplazo con producto/s comparables sin costo para el cliente, pero no será responsable de ningún costo de mano de obra asociado con su reparación o reemplazo.

En todos los casos en los cuales Interface determine que existe una condición de garantía cubierta, el cliente debe brindar cooperación razonable para facilitar la reparación o reemplazo por parte de Interface en el área afectada.

Esta garantía no cubre cortes, pérdida de brillo, quemaduras, rayas, hendiduras, manchas ni otros daños, deterioro, problemas o pérdidas causados por el abuso, la negligencia, el uso indebido, la instalación inadecuada, el mantenimiento inadecuado, inundación, uso en escaleras, irregularidades del contrapiso o uso con equipo atlético. Las pruebas de humedad y pH en el lugar de instalación no son responsabilidad de Interface, y los problemas relacionados o que surjan de humedad y/o pH excesivos están excluidos específicamente de esta garantía, excepto según se establece expresamente en la presente y en las instrucciones de instalación y las normas de mantenimiento para LVT de Interface. Esta garantía no cubre ningún problema ni daños que surjan o estén relacionados con el uso de adhesivos o técnicas o condiciones de instalación no recomendadas.



Interface no garantiza la mano de obra del instalador a menos que el producto afectado haya sido instalado por el asociado de Interface, Interface Services Inc. (Interface Services), y luego únicamente en conformidad con los términos de la garantía de instalación de Interface Services.

Los reclamos de garantía deben presentarse por escrito ante Interface dentro de un plazo razonable desde el descubrimiento del defecto reclamado garantizado, pero en ningún caso deben recibirse después de más de 90 días desde el momento en el que se descubrió el defecto reclamado. Los reclamos de garantía deben enviarse a: Field Services Department, InterfaceFLOR, LLC, 1503 Orchard Hill Rd., LaGrange, Georgia 30240 (EE.UU.). Los reclamos de garantía deben incluir documentación contemporánea que atestigüe que todas las condiciones de la garantía se respetaron y se siguen respetando. Esta garantía se anulará, si no se respetan dichos términos. Interface no pagará costos de mano de obra para reparar o reemplazar material con defectos que eran aparentes antes o al momento de la instalación. Ninguna otra persona que no sea un miembro responsable Interface puede autorizar una renuncia o modificación de los términos de esta garantía, que debe ser por escrito y llevar la firma de ese responsable.

LA GARANTÍA, EL RESARCIMIENTO Y LOS LÍMITES DE RESPONSABILIDAD CONTENIDOS EN LA PRESENTE SON EXCLUSIVOS Y REEMPLAZAN A CUALQUIER OTRA GARANTÍA, RESARCIMIENTO Y RESPONSABILIDAD, YA SEA EXPRESA O IMPLÍCITA. INTERFACE NO OFRECE NINGUNA OTRA REPRESENTACIÓN NI GARANTÍA, EXPRESA O IMPLÍCITA, Y POR LA PRESENTE DECLINA CUALQUIER OTRA GARANTÍA QUE PUDIERA SURGIR POR EL IMPERIO DE LA LEY, INCLUIDA PERO SIN LIMITARSE A CUALQUIER GARANTÍA DE COMERCIALIZACIÓN O IDONEIDAD DE SUS PRODUCTOS PARA CUALQUIER FIN EN PARTICULAR. CONSIDERE QUE ALGUNAS JURISDICCIONES NO PERMITEN LA EXCLUSIÓN DE ALGUNAS GARANTÍAS IMPLÍCITAS, POR LO CUAL SUS DERECHOS PODRÍAN SER DIFERENTES A LOS ESTABLECIDOS EN LA PRESENTE. INTERFACE NO SERÁ RESPONSABLE DE NINGÚN DAÑO INCIDENTAL, INDIRECTO, ESPECIAL NI CONSECUENTE EN NINGÚN CASO.

# LVT Padrão da Interface

## Garantia do Produto — Américas

**Interface®**

Rev. 11/11/19

A InterfaceFLOR, LLC (Interface) oferece a garantia de seus Pisos Vinílicos (LVT, Luxury Vinyl Tile) de sua marca Interface® para o cliente final conforme descrito abaixo por um período de 15 anos a partir da data da nota fiscal para produtos LVT Sound Choice™ de 4,5 mm e Criterion™ de 3 mm, e por um período de 10 anos a partir da data da nota fiscal para produtos LVT Basis™ de 3 mm:

- Os pisos vinílicos da marca Interface® possuem garantia contra desgaste excessivo, desde que o material tenha sido instalado e mantido adequadamente e utilizado conforme pretendido e recomendado. Para o propósito do presente documento, “desgaste excessivo” é definido como a remoção completa de padrão e/ou cor devido ao tráfego normal e presumindo uma instalação e manutenção adequadas estritamente em conformidade com as Instruções de Instalação do Piso Vinílico da Interface e as Diretrizes de Manutenção do Piso Vinílico, que podem ser encontradas no site da Interface; e
- Esta garantia cobre odores decorrentes da hidrólise do plastificante dos produtos da marca Interface de LVT, na medida em que o odor seja causado pela umidade (RH) e pela alcalinidade (pH) nas lajes de concreto quando a instalação obedece estritamente aos limites estabelecidos nas Instruções de Instalação do Piso Vinílico de Luxo da Interface.
- Todas as instalações devem ser realizadas estritamente em conformidade com as instruções de instalação da Interface para LVT, que podem ser encontradas no site da Interface. Em todas as instalações não deve haver umidade visível na superfície de concreto. Evidências arquivadas escritas e fotográficas dos resultados de teste de alcalinidade devem ser mantidas pelo cliente final.

Se o produto não funcionar como garantido, a Interface corrigirá o problema na área afetada por reparo ou (a critério da Interface) substituição por produto(s) similar(es) sem custos para o cliente.

A Interface também oferece garantia de seus produtos contra defeitos decorrentes do processo de fabricação ao cliente final conforme declarado abaixo:

- Se for determinado que o produto possui um defeito de fabricação no primeiro ano após a data da fiscal, a Interface corrigirá o problema na área afetada seja por meio de reparo ou (a critério da Interface) substituição com produto(s) similar(es) sem custos para o cliente, além de pagar as despesas razoáveis referente à mão de obra (conforme determinado pela Interface) associada ao reparo ou substituição;
- Se for determinado que o produto possui um defeito de fabricação no segundo ano após a data da fiscal, a Interface corrigirá o problema na área afetada seja por meio de reparo ou (a critério da Interface) substituição com produto(s) similar(es) sem custos para o cliente, além de pagar cinquenta por cento (50%) das despesas razoáveis referente à mão de obra (conforme determinado pela Interface) associada ao reparo ou substituição; e
- Se for determinado que o produto possui um defeito de fabricação no terceiro, quarto ou quinto anos após a data da nota fiscal a Interface corrigirá o problema na área afetada seja por meio de reparo ou (a critério da Interface) substituição com produto(s) similar(es) sem custos para o cliente, mas não será responsável por quaisquer despesas referente à mão de obra associada ao reparo ou substituição.

Em todos os casos nos quais uma condição de cobertura de garantia seja determinada pela Interface como válida, o cliente deverá cooperar de maneira razoável para facilitar o reparo ou a substituição pela Interface na área afetada.

Esta garantia não cobre cortes, perda de brilho, queimaduras, arranhões, concavidades, manchas ou outros danos, deterioração, problemas ou perda causados por abuso, negligência, uso indevido, instalação inadequada, manutenção inadequada, inundação, uso em degraus, irregularidades do contrapiso ou uso com equipamentos atléticos. O teste de umidade e pH no local de instalação não é de responsabilidade da Interface e problemas relacionados ou decorrentes do excesso de umidade e/ou pH estão especificamente excluídos desta garantia, exceto conforme expressamente estabelecido neste documento e nas Instruções de Instalação do Piso Vinílico de Luxo e nas Diretrizes de Manutenção do Piso Vinílico de Luxo da Interface. Esta garantia não cobre quaisquer problemas ou danos decorrentes ou relacionados ao uso de adesivos ou técnicas ou condições de instalação não recomendadas.

A Interface não oferece garantia para a mão de obra do instalador, exceto se o produto afetado foi instalado por uma afiliada da Interface, a Interface Services Inc. (Interface Services), e, assim, apenas em conformidade com os termos da garantia de instalação da Interface Services.

Os pedidos de garantia devem ser feitos por escrito à Interface em um tempo razoável a partir da descoberta do defeito alegado coberto pela garantia, mas em nenhum momento devem ser recebidos mais de 90 dias após a descoberta do defeito alegado. Os pedidos de garantia devem ser enviados a: Rua Surubim nº577 - 7º andar - Conjuntos 73 e 74 - CEP 04571-050 - São Paulo - SP. Os pedidos de garantia devem incluir documentação contemporânea de que todas as condições de garantia eram e continuam a ser cumpridas. Essa garantia será nula se essas condições não forem seguidas. A Interface não pagará por custos de mão de obra ou de substituição de materiais defeituosos visíveis antes ou no momento da instalação. Nenhuma pessoa além de um funcionário da Interface pode autorizar uma concessão ou modificação das condições desta garantia, que deve ser escrita e assinada pelo funcionário.

A GARANTIA, A REPARAÇÃO E OS LIMITES DE RESPONSABILIDADE CONTIDOS NESTE INSTRUMENTO ESTÃO EXPRESSAMENTE NO LUGAR DE E EXCLUEM TODAS AS OUTRAS GARANTIAS, REPARAÇÕES E RESPONSABILIDADES, EXPRESSAS OU LEGAIS. A INTERFACE NÃO FAZ OUTRAS DECLARAÇÕES OU GARANTIAS, EXPRESSAS OU LEGAIS E, PORTANTO, REJEITA QUALQUER E TODAS AS OUTRAS GARANTIAS QUE POSSAM SURTIR POR FORÇA DA LEI, INCLUINDO, ENTRE OUTRAS, QUALQUER LIMITAÇÃO, QUALQUER GARANTIA DE COMERCIALIZAÇÃO OU ADEQUAÇÃO DOS SEUS PRODUTOS A QUAISQUER FINALIDADES ESPECÍFICAS. ALGUMAS JURISDIÇÕES NÃO PERMITEM REJEIÇÕES DE ALGUMAS GARANTIAS LEGAIS, ENTÃO, SEUS DIREITOS PODEM SER DIFERENTES DOS AQUI DECLARADOS. A INTERFACE NÃO SERÁ RESPONSÁVEL POR INDENIZAÇÕES ACIDENTAIS, INDIRETAS, ESPECIAIS OU POR DANO INDIRETO EM NENHUM CASO.



## Limited Warranty

### Tarkett Warranty Overview

Tarkett is pleased to offer the world's most-integrated, high-performance flooring system, bringing together design, function and safety; leading to enhanced productivity in high-performance environments. All Tarkett products are warranted against manufacturers' defects to ensure high standards of quality, performance and aesthetics.

### Limited Warranty Information

#### Section 1: Rubber Sheet Flooring

Limited 5-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of five (5) years of Commercial use that rubber sheet flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-5).

Tarkett warrants that the products will not wear through for the warranty period of five (5) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

| SECTION | PRODUCT TYPE   | TARKETT BRAND PRODUCT LINES   |
|---------|--|---|
| 1       | Rubber Sheet Flooring                                  | Replay® Rolls   |
| 2       | Compression Molded Rubber Tile                         | Circulinity™; CorkTones™; Defiant™; Eco-Shell™ with Cork; MicroTone™; Mesto Configurations™; Metallurgy™; Minerality™; Organics; Prima® Olío® and Marbleized; Replay® Tiles; Solid Color Rubber Tile; Tactile Walking Surface Indicators; Terra-Turf®; Triumph and Inertia™ |
| 3       | Stairwell Management                                   | Rubber or Vinyl Stair Treads, Nosings, Risers, Stringers; Tactile Warning Surface and Safe-T-First®   |
| 4       | Finishing Borders (Wall Base)<br>Finishing Accessories | BaseWorks™; Masquerade™; Millwork®; Perceptions™; TightLock®; Wall Art™; Traditional Rubber or Vinyl; Safe-T-First®; Vent Cove; and Transitions   |
| 5       | Vinyl Sheet and Tile Flooring                          | Acczent®; Acczent® Flourish; Acczent® Wood Acoustiflor®; Aria™; iQ® Granit™ / iQ® Granit™ Micro; iQ® Granit™ SD; iQ® Natural; iQ® Optima®; iQ™ Optima® Acoustiflor®; iQ® Toro SC; Granit™ Safe-T; Melodia™; Standard Plus; Training® and Performa™                          |
| 6       | Vinyl Composition Tile and Plank                       | A: Vinyl Composition Tile (VCT): Tarkett<br>B: Vinyl Enhanced Tile (VET): Azterra™; Color Essence™ Solid Vinyl Tile (SVT): Cortina Grande™  |
| 7       | Linoleum Sheet Flooring                                | LinoFloor xf2™; LinoFloor Acoustiflor xf2™ and LinoWall xf2™  |
| 8       | Luxury/Solid Vinyl Tile and Plank                      | A: Adaptt™; iD Inspiration™ 55; iD Principle; Resolve; Transcend™ SureSet™ and iD Mixonomi<br>B: Event; iD Inspiration™ 70; iD Latitude + Techtonic™ and Victory®<br>C: Contour + Techtonic™; Collections Infinies  |
| 9       | Luxury Tile and Plank (Light Commercial)               | Transcend™ Click  |
| 10      | Underlayment   | SureStart™ Underlayment; Tarkolay Underlayment  |



## **Section 2: Compression Molded Rubber Tile**

Limited 5-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of five (5) years of Commercial use that molded rubber tile flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-5).

Tarkett warrants that the products will not wear through for the warranty period of five (5) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

## **Section 3: Rubber or Vinyl Stair Treads**

Limited 5-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of five (5) years of Commercial use that rubber or vinyl stair tread products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-5).

## **Section 4: Finishing Borders (Wall Base & Accessories)**

Limited 2-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of two (2) years of Commercial use that rubber or vinyl wall base and/or accessory products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2).

## **Section 5: Vinyl Sheet and Tile Flooring**

Limited 10-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of ten (10) years of Commercial use that vinyl sheet and/or tile flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2-3); and Material Only (Years 4-10).

Tarkett warrants that the products will not wear through for the warranty period of ten (10) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

## **Section 6A: Vinyl Composition Tile and Plank**

Limited 5-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of five (5) years of Commercial use that vinyl composition tile and plank flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-5).

Tarkett warrants that the products will not wear through for the warranty period of five (5) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

## **Section 6B: Vinyl Tile Flooring**

Limited 10-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of ten (10) years of Commercial use that vinyl tile flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-10).

Tarkett warrants that the products will not wear through for the warranty period of ten (10) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

## **Section 7: Linoleum Sheet Flooring**

Limited 10-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of ten (10) years of Commercial use that linoleum sheet flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-10).

Tarkett warrants that the products will not wear through for the warranty period of ten (10) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

## **Section 8A: Luxury Tile and Plank**

Limited 10-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of ten (10) years of Commercial use that luxury tile and plank flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-10).



Tarkett warrants that the products will not wear through for the warranty period of five (5) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

#### **Section 8B: Luxury Tile and Plank**

Limited 20-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of twenty (20) years of Commercial use that luxury tile and plank flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); Material Only (Years 3-10); 50% Material Only (Years 11-15); and 25% Material Only (Years 16-20).

Tarkett warrants that the products will not wear through for the warranty period of five (5) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

#### **Section 8C: Luxury Tile and Plank**

Limited 25-Year Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of twenty five (25) years of Commercial use that luxury tile and plank flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); Material Only (Years 3-10); 50% Material Only (Years 11-15); and 25% Material Only (Years 16-25).

Tarkett warrants that the products will not wear through for the warranty period of five (5) years of Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

#### **Section 9: Luxury Tile and Plank (Light Commercial)**

Light Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of ten (10) years of Light Commercial use that luxury tile and plank flooring products conform to written specifications and are free of manufacturing defects, subject to the terms and conditions specified herein. Light Commercial applications are defined as foot-traffic only (no rolling loads).

The customer must notify Tarkett of any obvious visual defects prior to installation; otherwise this warranty will not apply. If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge. If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); Material Only (Years 3-5); and 50% Material Only (Years 6-10).

Tarkett warrants that the products will not wear through for the warranty period of ten (10) years of Light Commercial use. For claims based on wear-through, the customer must notify Tarkett and permit an inspection of the flooring. If Tarkett determines that the original flooring is worn through, Tarkett will replace or repair the worn flooring at its own cost; however, labor costs will be the customer's responsibility except as provided on the prorated basis described in the prior paragraph.

## Section 10: Underlayment

Limited 10-Year Light Commercial Warranty for Manufacturing Defects: Tarkett warrants from the date of purchase for a period of ten (10) years of Light Commercial use of SureStart™ underlayment with approved Tarkett LVT products, subject to subfloors being prepared & meeting Tarkett Installation Instruction guidelines and subject to the terms and conditions specified herein.

The customer must notify Tarkett of any obvious visual defects or concerns prior to install; otherwise this warranty will not apply.

If the defect is found and Tarkett is notified in writing prior to installation, Tarkett will replace any defective product, at no charge.

If the customer believes the product to be defective after installation, the customer must promptly notify Tarkett and permit an inspection of the product. If, upon inspection, Tarkett determines that the product is defective, Tarkett will replace or repair the defective product at its own cost, subject to the limitations in this warranty, and prorated as follows: Material and 100% Reasonable Labor Costs (Year 1); Material and 50% Reasonable Labor Costs (Year 2); and Material Only (Years 3-10).

### All Tarkett Commercial Products:

This Limited Warranty applies only for products installed, used and maintained according to the written recommendations and specifications provided at the time of material purchase.

#### Warranty Claim Procedure

To be eligible for replacement under this warranty, the customer must file a claim by giving Tarkett written notice of the defect. This notice must be filed immediately, but in no event more than 10 days following discovery of the defect. Notice shall be given to Tarkett at its corporate address of 30000 Aurora Road, Solon, Ohio 44139.

Phone: (800) 899-8916; Fax: (440) 543-5774.

If defective product has been discontinued or is otherwise unavailable, Tarkett reserves the right to select and supply the customer with Tarkett replacement flooring, similar in quality and quantity to the material claimed to be defective.

### Warranty Exclusions

The Tarkett Limited Warranty does not apply to:

- The exact matching of shade, color or mottling.
- Tears, burns, cuts or damage due to improper installation or use or improper cleaning agents and maintenance methods.
- Labor costs outside of prorated schedule defined in the warranty.
- Sales of non-first quality materials, i.e., “seconds,” “off goods” or other irregular flooring. Such non-first quality materials are sold “AS IS.”
- Issues associated with the use of adhesives other than those recommended by Tarkett.
- Issues caused by moisture or alkali in the subfloor. Pre-installation moisture and alkali testing is required and must be made available to Tarkett upon request.
- Issues of discoloration or staining associated with subfloor contamination or markings that bleed through the flooring material.
- Problems caused by installation, uses and maintenance that are contrary to Tarkett’s specifications, recommendations or instructions.
- Material installed with obvious defects not notified to Tarkett prior to installation.
- Exterior installations – Tarkett products are designed for interior applications only.
- Fading and/or discoloration resulting from heavy sunlight penetration and ultraviolet ray exposure from direct or glass-filtered sunlight.
- Damage to flooring products caused by high or spiked heels, improper protectors/casters or furniture rests. Some rolling-type casters on furniture or appliances may damage resilient flooring. Warranty as to the suitability of the factory-installed casters rests with the furniture or appliance manufacturers. To avoid Tarkett warranty exclusions, casters must be suitable for use on resilient flooring.
- Damage to flooring products from pallet jack and tow-motor traffic.
- Premature wear or deterioration from spikes and skate blade exposure.
- Variations in color or embossing between products, photography or printed color illustrations.
- Installation of Tarkett flooring in work or commercial areas exposed to oil and grease, such as commercial kitchens or butcher shops. Defiant™ Oil and Grease-Resistant Rubber tiles are recommended in such situations.
- Additional expense associated with overtime, replacing or moving appliances or furniture, business interruptions, loss of use or other related costs associated with the replacement of the flooring.

- Shifting, cracking, or movement of the substrate or foundation.
- Hydrostatic pressure, flooding, standing water or moisture on the surface of the substrate.
- Issues related to exposure to heavy rolling loads (Light Commercial Products).

• **Warranty Disclaimer**

- EXCEPT AS STATED HEREIN, TARKETT MAKES NO WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED. ALL IMPLIED WARRANTIES WHICH MAY ARISE BY LAW, IMPLICATION OF LAW OR APPLICATION OF COURSE OF DEALING, PERFORMANCE OR USAGE OF TRADE INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED AND EXCLUDED. ANY ORAL STATEMENTS ABOUT THE PRODUCTS DESCRIBED HEREIN ARE NOT WARRANTIES, SHOULD NOT BE RELIED UPON BY BUYER, DO NOT FORM ANY PART OF THE BASIS OF THE BARGAIN, AND ARE NOT PART OF THIS OR ANY OTHER LIMITED WARRANTY. NO AGENT, DISTRIBUTOR OR REPRESENTATIVE OF TARKETT, EXCEPT AN AUTHORIZED OFFICER OF TARKETT, SHALL HAVE AUTHORITY TO AGREE TO ANY TERM, CONDITION OR PROVISION INCONSISTENT HERewith OR NOT CONTAINED HEREIN. IN NO EVENT SHALL TARKETT BE LIABLE TO BUYER FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, DAMAGES OR LOSS OF PROFIT ARISING OUT OF OR RELATING TO ANY BREACH OF THIS WARRANTY, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT, OR OTHERWISE) UPON WHICH THE CLAIM IS BASED.
- These warranties provide specific legal rights; these and other rights may vary from state to state.





## **INTERFACE STANDARD PRODUCT WARRANTY – AMERICAS**

InterfaceFLOR, LLC (Interface) warrants its modular and performance broadloom carpet products to the original end-use customer as stated below for a period of 15 years from the date of invoice. Interface® and Heuga® brand products are warranted against manufacturing defects resulting in excessive surface wear, edge ravel, backing separation, shrinking, stretching, cupping, doming, and static electricity. Excessive surface wear means loss of more than 10% by weight of face fiber. Products containing Intersept® antimicrobial are warranted to maintain antimicrobial effectiveness. Products constructed of 100% solution dyed yarns are warranted against excessive color loss due to normal exposure to indoor light. This warranty covers odor from plasticizer hydrolysis of Interface carpet tiles caused by moisture and alkalinity in concrete slabs up to the following limits when installed strictly according to Interface's installation instructions: (1) for moisture levels, up to 97% relative humidity (rH) when installed with Interface's TacTiles® connectors in conjunction with XL Brands' 9511 Moisture Vapor Reduction System provided the warranty eligibility requirements for the 9511 product are met, up to 90% rH when installed with Interface's TacTiles connectors under specified concrete slab conditions, up to 85% rH when installed with Interface's TacTiles connectors under all other suitable concrete slab conditions, and up to 80% rH for glue-down installations; and (2) for alkalinity levels, where surface alkalinity is < 9 pH; or, if > 9 pH, where the surface is treated according to Interface's instructions.

This warranty does not cover tears, burns, cuts, pulls or other damage, deterioration, problems or loss caused by abuse, neglect, misuse, improper installation, improper maintenance, flood, use on stairs, or use with athletic equipment. Moisture and pH testing are not the responsibility of Interface, and issues related to or arising from excessive moisture and/or pH are specifically excluded from this warranty except as expressly set forth herein and in Interface's installation instructions. This warranty does not cover any problems or damages arising from or related to the use of adhesives or non-recommended installation techniques or conditions.

If a product fails to perform as warranted, Interface will correct the problem in the affected area either by repair or (at Interface's option) replacement with comparable products(s) at no charge to the customer (the customer must provide reasonable cooperation to facilitate Interface's repair or replacement in the affected area). Warranty claims must be made in writing to Interface within a reasonable time from the discovery of the claimed warranted defect, but in any event they must be received no more than 90 days from the time the claimed defect was discovered. Warranty claims must be addressed to: Field Services Department, InterfaceFLOR, LLC, 1503 Orchard Hill Rd., LaGrange, Georgia 30240 (USA). Warranty claims must include contemporaneous documentation that all warranty conditions were and continue to be met. This warranty will be void if its terms are not followed. No person other than an officer of Interface may authorize a waiver or modification of the terms of this warranty, which must be in writing and signed by that officer.

THE WARRANTY, REMEDY AND LIMITS OF LIABILITY CONTAINED HEREIN ARE EXPRESSLY IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, REMEDIES AND LIABILITIES, WHETHER EXPRESS OR IMPLIED. INTERFACE MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND HEREBY DISCLAIMS ANY AND ALL OTHER WARRANTIES THAT MAY ARISE BY OPERATION OF LAW, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS OF ITS PRODUCTS FOR ANY PARTICULAR PURPOSES. NOTE THAT SOME JURISDICTIONS DO NOT PERMIT DISCLAIMERS OF SOME IMPLIED WARRANTIES, SO YOUR RIGHTS MAY BE DIFFERENT THAN STATED HEREIN. INTERFACE WILL NOT BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES IN ANY CASE.



## **CERAMIC**

### **Manufacturer**

Daltile Corporation

### **Supplier**

Daltile Corporation  
3235 Rosetta Place Drive  
South Bend, IN 46628  
Telephone: (574) 232-8933

## **RESILIENT**

Interface Flooring (LVT)

Interface Flooring  
P. O. Box 1503  
LaGrange, GA 30241  
Telephone: (800) 336-0225

Johnsonite/Tarkett (Base)

E. J. Welch Company, Inc.  
3303 William Richardson Court  
South Bend, IN 46628  
Telephone: (574) 234-3504

## **CARPET**

Interface (Carpet Tile)

Interface Flooring  
P. O. Box 1503  
LaGrange, GA 30241  
Telephone: (800) 336-0225

# CARE AND MAINTENANCE

## CERAMIC TILE

### CERAMIC TILE - ROUTINE CARE

Contaminants and spills on a glazed ceramic tile are, generally, easier to clean than other surfaces. Glazed tile products should be cleaned routinely with an all-purpose, low VOC household or commercial cleaner. The product chosen should also be grout joint cleaning compatible. The type of product may vary depending on the tile application and use. A multipurpose spray cleaner, which removes soap scum, hard water deposits, and mildew designed for every day use, can be used on wall tile areas in residential baths and showers.

The entire area should be cleaned and scrubbed with cleaner solution through the use of a cotton mop, cloth, sponge, or non-metallic brush. The entire area should be rinsed with clean water to remove any cleaning solution residue. Remember that you should sweep or vacuum floor areas prior to cleaning to remove any dust or debris. Routine cleaners should never contain hazardous or polluting products including, but not limited to acids or ammonia. Acids can damage the grout and the glazed surface of the tile, and ammonia can discolor the grout.

Unglazed tile should be cleaned routinely with concentrated tile cleaners that have a neutral pH for safe regular use. These cleaners are better suited at removing grease, oils and normal spills from unglazed products. Again these products will vary depending on the application, amount of traffic and the use. The product chosen should also be compatible with cleaning the grout joints at the same time.

### Removal of Sealers/Waxes/Floor Finishes:

If you need to remove a topical sealer or floor wax from a ceramic tile you should use a Tile Sealer & Adhesive remover. Always test a small area first. Apply a liberal amount of undiluted sealer & adhesive remover to a manageable area. Allow setting without drying until coating or residue softens. Reapply if necessary until sealer softens and can be removed. If necessary, agitate with white nylon scrub pad. Wipe up the residue with a cotton towel or sponge. Rinse thoroughly with clean water. Do not use on natural stone products.

### Glass Tiles:

For routine cleaning, use any non-abrasive cleaning compound recommended for either glass or tile

### Metal Signatures/Metal Ages/Urban Metals:

- To clean, use a liquid non-abrasive household cleaner.

- DO NOT use scouring pads, steel wool, sandpaper or other abrasive products.
- Avoid cleaners containing ammonia, bleach, abrasives, or other hazardous/polluting compounds.
- Always test in small inconspicuous area while using a new cleaner to ensure compatibility.

### CERAMIC TILE - GROUT CARE

Grout is the material used to fill the spaces between the individual tiles. Grout comes in many colors. While color is important to the final finished look of the tile installation, it has little effect on the functionality of the grout. The purpose of grout is, simply, to fill the joint between the tiles and becomes a permanent, integral component of the finished installation.

### Penetrating/Impregnating Sealer:

Most tile installations use cementitious grouts. This type of grout should be sealed after installation to prevent the color from staining. The grout should be sealed with a penetrating/impregnating sealer (often called grout sealers) which does not contain silicone, as silicone can shorten the useful life of the sealer. Epoxy grouts, conversely, are chemically cured and acid resistant and, as a result, do not require a sealer. The application of a good quality penetrating/impregnating sealer into the grout joints of a cementitious grout will not change the natural color of the grout, but will prevent the penetration of moisture, simplify maintenance, and help prevent staining or discoloration. Only the grout needs to be sealed, not glazed floor or wall tiles. Grout can be sealed seventy-two hours after installation.

There are different grades of penetrating/impregnating sealers, therefore the useful life and price will differ between a low quality and high quality sealer. You may need to reapply the sealer on an annual basis depending on the sealer quality, traffic patterns, and maintenance routine. Some sealers have multiple year warranties for useful life. Refer to the manufacturer warranty, technical & product information for specific details on product installation, useful life, and product applications (including any warnings) before use.

### Grout Maintenance:

Neither sealing the grout nor using a 100% Epoxy Grout will guarantee against surface build-up or discoloration of the grout. Grout needs to be cleaned on a periodic basis to remove any surface build-up. Routine grout cleaning can be done with a daily concentrated household or commercial cleaner depending on the application. When heavy duty grout cleaning is required, you will need to use a professional strength Tile & Grout Cleaner that is capable of removing grease, soap scum, body oil, mildew stains, algae, and synthetic or acrylic waxes from the grout joints. However, such a product should contain non-polluting chemicals and low



VOC levels. This type of product can be purchased from most Home Centers, or through your local professional Floor Covering Dealer

#### **Grout Color Restoration:**

When grout has been stained to the point that it cannot be maintained or returned to its natural color, you can return the grout back to its original color or any other color through the use of a "grout stain". Grout Stains are epoxy-based products that are specifically designed to penetrate into the grout and seal the surface with a permanent color. Once the grout has been stained there is no need to seal it any further with a penetrating/impregnating sealer. Prior to staining, the grout joint should be cleaned thoroughly to remove any dirt, oils, grease or sealers with a professional strength Tile & Grout Cleaner. This can be purchased from most Home Centers or through your local Professional Floor Covering Dealer.

#### **Post-Grout Clean-Up:**

Grout haze is a film that has been left behind on the surface of the tile as part of the final grouting process. Usually this is buffed off the surface after the grout has achieved its initial 12 to 24 hour cure. The removal of the haze is often difficult when buffing with a clean rag or floor machine. Cementitious grout haze can be successfully removed with "Sulfamic" acid, which is a mild acid that attacks and breaks down cement smears. There are several products on the market called grout haze removers, which usually contain Sulfamic acid. Sulfamic acid can also be purchased in powder form and mixed with water to different strengths by qualified professionals. Similarly, 100% Solids Epoxy Grout haze can be removed with an Epoxy Haze Remover. These removers are formulated to safely and quickly remove cured epoxy haze from new tile installations. Their unique formulation will soften most epoxy hazes for easy removal without damaging the grout or tile, usually in one application. Sulfamic acid or grout removers should never be used on Natural Stone products.

## **NATURAL STONE**

#### **NATURAL STONE - ROUTINE CARE**

To ensure your natural stone products will provide you with a lifetime of aesthetics and utility, a proper maintenance program is crucial. Natural Stone products are porous by nature and require a different maintenance program than traditional ceramic tile.

Natural stone requires a different maintenance routine than traditional, man-made ceramic tile. Many of the cleaners acceptable for use on ceramic tile can stain, damage or dull stone. Dirt and dust will scratch the surface of stone. Therefore, stone floors should be vacuumed or dust mopped frequently to remove abrasive agents from the stone surface. Natural stone should be cleaned with neutral cleaners. Stone cleaners should never contain acid or bleach. Acids, even a light solution of vinegar and water, will etch and eventually damage natural stone.

#### **Stone Cleaners:**

Only use cleaners specifically designed for cleaning stone. These cleaners contain no acids and are concentrated neutral pH cleaners that will not affect existing sealers or wax-type coatings. The surface of the stone should be dampened with clear water. This will keep the cleaning solution on the surface so it can be effective. A solution of the cleaner and water missed to manufacturer instructions should be applied to the stone surface with a sponge or mop. On walls, kitchen counters or vanity tops, a spray bottle can be used to apply the cleaning solution. Allow sitting for manufacturers specified amount of time (usually 3 to 5 minutes). Agitate with a sponge, synthetic mop, soft bristle brush or through the use of a floor-scrubbing machine. Mop up dirty solution and buff dry.

Once the stone has been cleaned, you can periodically apply a Spray-Buff wax-type floor finish to enhance the beauty and luster of polished stone (including countertops). Apply the finish with a spray applicator and buff immediately with a white nylon pad. Reapply as often as needed, depending on volume of surface traffic and consistency of routine maintenance program. This product is not designed to restore the original shine, but is intended to maintain and protect the original shine. This can be purchased from most Home Centers or through your local Professional Floor Covering Dealer.

#### **Heavy-Duty Stone Cleaning:**

When some areas have been neglected, you will need to use a heavy-duty non-hazardous and non-polluting stone cleaner and degreaser to effectively remove dirt, grease, grime, waxes and floor finishes. An optimal heavy-duty cleaner should contain low percentages of volatile organic compounds. These cleaning products are concentrated and designed to deep clean the stone without damaging it. Apply the solution of the cleaner and water mixed to manufacturer instructions to the stone surface with a sponge or mop. Allow setting for manufacturer-specified amount of time. Agitate with a sponge, synthetic mop, and soft bristle brush or through the use of a floor-scrubbing machine. Mop up dirty solution and buff dry. Be sure to change out the cleaning solution every 100 square feet to avoid reintroducing dirty water during the cleaning process. Rinse thoroughly with clean water when finished. After cleaning you may apply the Spray-Buff wax-type floor finish to enhance the natural shine.

**Stain Removal:**

Stone poultice will remove stains and grout haze from stone. Poultice is a fine, nonacidic, absorptive clay cleaning powder that removes deep-set oil stains, grease and light cementitious grout haze from polished and unpolished natural stone.

**CAUTION:** *Poultice may dull the shine of the polished stone. If this occurs you will need to use a marble polish to restore the natural shine.*

**Restoration:**

If a marble finish has become dull, scratched or etched, you can restore the natural shine through the use of a marble polish. Some marble polishes are available in kits. The process can be enhanced with the use of floor buffing machines. The process is generally a re-crystallization process to remove fine scratches and restore the original shine and polish to the stone. This is not an application of a topical sealer or wax to cover-up damaged or worn surfaces.

**NATURAL STONE - NEW INSTALLATIONS**

Sealing is strongly recommended for newly installed marble and other natural stone to provide maximum below surface stain protection. Consult your Professional Floor Covering Dealer or Home Center Store to ensure that you select a high quality sealer to protect your natural stone. Immediately after natural stone has been installed and grouted, the new installation should be covered with brown paper to protect it from debris during the remaining construction process. The protective brown paper should remain in place until construction is completed and the area is opened to intended (post-construction) use.

**Pre-grout Sealing:**

A non-sanded grout is strongly recommended for natural stone installations due to the narrow grout joints customarily preferred. This type of grout has very fine particles of cement, polymers and color pigments that can penetrate the microscopic pores of the stone surface where they become trapped and appear as a stain in the stone. Therefore, all travertine, slate, tumbled stone and honed/flamed/unpolished granite should be sealed prior to the grouting process to protect them from staining. The application of a good quality sealer should be used as a grout sealer and applied again as the final sealing process once the installation is finished.

**Sealing:**

A premium natural look penetrating/impregnating sealer is the normal choice on polished or honed marble, limestone, granite, or where the natural color of a slate is desired. A stone enhancer sealer is often used on tumbled, antique stones or on slate where a darker, enriched or highlighted character is desired. When choosing either one of these types of sealers, make sure the brand you have chosen is formulated to provide maximum stain protection for stone products. Stone products should be tested periodically per manufacturer's instructions to insure that the sealer is working effectively.

**Penetrating/impregnating** stone sealers are a no-sheen, natural look sealer that can be water-based or solvent-based, good for interior and exterior applications. Most quality sealers of this type are rated to protect the stone for several years.

**Stone enhancer sealers** are also a no-sheen, penetrating/impregnating sealer that is formulated to darken, enrich and highlight the natural color and beauty of stone products. They will rejuvenate and improve the appearance of worn and weathered stone. Always test loose pieces of stone to ensure desired effect with enhancing sealers. However, they will also darken the color of grout joints. They are, generally, suitable for interior and exterior use, and rated to protect the stone for several years.

Always reference manufacturer's literature for specific information on the duration of the sealer's protection and make sure that the sealer is applied in strict accordance with the manufacturer's instructions.

**Finishing:**

A stone floor finish should be applied to a polished natural stone floor only. This type of product will help enhance the shine and provide a protective coating for "soft" or polished marbles. Verify the finish is a wax-type finish designed to add luster and enhance the beauty of sealed and polished natural stone only. A topical finish may change the appearance and performance of your stone, so always test a small area first. **Application of topical sealer or wax should never be done as an attempt to add a shine to a honed, scratched or non-polished stone product. This will only create maintenance and/or slip resistance problem.**

**SALTILLO****SALTILLO TILE - ROUTINE CARE**

Soft clay tiles are categorized as specialty use products, and as such they are generally not governed by the same requirements as glazed or unglazed ceramic tile. These products will require some type of

topical sealer protection. These sealers are designed to provide stain resistance and a durable finish to protect clay tile against wear. Pre-sealing the tile prior to grouting will act as a pre-grout sealer, provided it is applied over a clean tile surface. An additional final coat over the grouted floor will complete the sealing process along with providing the final grout stain protection.

There are two common types of sealers used today for sealing specialty tiles. The first is a water-based blend of acrylic polymers. This product allows for moisture vapor transmission, and it can be reapplied over itself, without stripping or removing the old sealer when the original application has become worn. The second type is a solvent-based sealer. Solvent-based sealers are not as forgiving after they have become worn, they must be stripped and removed prior to reapplication. Both types should be UV stable, which means the ultra violet rays from the sun should not break them down. You should always follow the manufacturer's instructions for use, maintenance and precautions.

The expected wear of the topical sealer will vary depending on the hardness, surface texture, type or area, usage, and type of maintenance products used. However, the average expected use life of the sealer, when properly prepared, is a maximum of 3 years. Harsh cleaning methods, high-alkaline or solvent-based cleaners can significantly lower the expected life of the sealer. Concentrated tile cleaners are recommended for routine cleaning.

#### **Maintenance Cleaning:**

Highly alkaline, acidic, ammoniated, abrasive cleaners and/or bleach may break down the sealer, adversely affecting repellency and may not be good for the tile or grout. Use neutral cleaners specially formulated for tile and grout that are low VOC, non-hazardous and non-polluting.

#### **For routine cleaning:**

We recommend DuPont™ StoneTech® Professional Stone & Tile Cleaner.

- Mix 2 ounces of Stone & Tile Cleaner concentrate in 1 gallon of warm or hot water. (Note: One gallon of concentrate makes 64 gallons of cleaning solution.)
- Apply mixed solution with a damp mop, sponge or appropriate professional cleaning equipment.

- Clean entire area with mop, changing mop water often to ensure that soil is not re-deposited. Wipe or rinse cleaned area.
- Let area dry completely before using.

You may also use DuPont™ StoneTech® Professional Stone & Tile Cleaner in the ready-to-use spray bottle or wipes.

#### **Re-Sealing and Protecting:**

For interior surfaces, resealing should be performed every 3-5 years. For exterior surfaces, resealing should be performed every 1-3 years. Terrazzo surfaces must be sealed to prevent or minimize staining. Leaving terrazzo untreated may greatly hinder the complete removal of stains in the future. We recommend the use of a heavy-duty sealant that is low in VOC content and does not contain any hazardous materials.

## **ONE QUARTZ SURFACES**

### **ONE QUARTZ SURFACES - ROUTINE CARE**

- One Quartz Surfaces are virtually maintenance free and can be cleaned with extreme ease.
- Common household spills – such as, tea, coffee, lemon juice, soda, fruit, vegetable juice, olive oil or grease spills – are easily removed and the surface restored to its original appearance.
- Some One Quartz Surface colors and finishes liked honed, matt, etc., are more sensitive to grease or finger-prints and may require extra care during routine cleaning.
- Quartz is one of the hardest materials in nature, which is your assurance that your One Quartz Surfaces will not easily scratch or chip. The use of a cutting board is nevertheless recommended.
- To maintain the natural beauty of One Quartz Surfaces, do not place hot skillets or roasting pans directly onto the surface but use a trivet instead.
- For routine cleaning, use a damp cloth or paper towel and, if necessary, a small amount of mild soap. Once clean, rinse and dry surface thoroughly.
- For stubborn or dried spills, use a nonabrasive cleaning pad such as a white 3M Scotch-Brite® scrub pad combined with a small amount of mild soap or specialized stone cleaner. One Quartz Surfaces floors in high traffic areas should be cleaned daily with a clean, dry dust mop or soft bristle broom.
- One Quartz Surfaces floors in low traffic areas can be cleaned less frequently using the same method. Spills should be spot treated with the use of a damp mop or



cloth towel and, if necessary, a small amount of mild soap or specialized stone cleaner.

- A floor machine such as a slow speed buffer or walk behind scrubber can be used for larger commercial environments. Be sure to rinse thoroughly to remove any haze residue that may diminish the shine and beauty of the floor.
- For Heavily soiled floors, as with any floor, it makes sense to clean up spills as soon as possible.
- Avoid exposing One Quartz Surfaces to chemicals and solvents, especially paint removers or furniture strippers containing trichlorethane or methylene chloride. Keep nail polish remover, bleach or cleansers that contain bleach, bluing, permanent markers or inks. While casual exposure to alkaline materials will not damage One Quartz Surfaces, highly alkaline (high-pH) cleansers are not recommended when cleaning One Quartz Surfaces. If any of the substances listed above come into contact with One Quartz Surfaces, rinse the exposed surface immediately and thoroughly with plenty of clean water.
- Do not use strong abrasive and/or alkaline cleaning products. Always follow the manufacturers' dilution instructions and recommendations.

## MANUFACTURED STONE

### Manufactured Stone – Routine Care

Care should be taken to avoid smearing mortar on the surface of the veneers. Accidental smears should be removed using a dry whisk broom only after mortar has dried completely. Never use a wet brush or wire brush. Do not power-wash, sandblast, use acid or acid-based products. Dirt or other materials may be removed with a strong solution of granulated soap or detergent and water with a bristle brush. Do not use a wire brush as it will cause damage to the surface. Rinse immediately with fresh water. Regular maintenance only requires to rinse the wall with water occasionally to remove dirt.

### Sealing:

Seal with a breathable, non-film forming masonry sealer, to prevent staining from rusty downspouts, splattered mud, etc. Sealing is strongly recommended for dry-stacked applications and/or for harsh environments.

## POLISHED PORCELAIN

### Recommended Sealers Pre-Grout sold through Dal Tile stores may include ...

- DuPont Stone Tech Professional Bullet Proof (Follow manufacturer instructions for application process).
- Aqua Mix Ultra-Solv (Follow manufacturer instructions for application process).

### Recommended Sealers Post-Grout sold through Dal Tile stores may include ...

- DuPont Stone Tech Professional Impregnator Pro (Follow manufacturer instructions for application process).
- Aqua Mix Sealers Choice Gold (Follow manufacturer instructions for application process).

**IMPORTANT:** Always use the same sealer when applying both before and after grouting. Never mix water-based sealers with solvent-based sealers on the same tiles.

Fully polished impervious porcelain tile is achieved by mechanically changing the surface from matte / natural to a honed or high polished finish. Polished Colorbody® porcelain is achieved by mechanically changing the glaze surface from matte to light, honed or high polish finish. This process creates a microporosity on the face of the tile. The tile itself is still technically sound porcelain with the same characteristics expected of high quality impervious tile.

The surface, however, may possibly require added protection to assure clean-ability and ease of ongoing maintenance under a range of conditions including but not limited to:

- grout haze removal
- construction chemicals and dirt
- maintenance / solvent based cleaning materials
- exposure to rubber containing solvent based materials
- acid based materials

All of the above can result in hazing, spotting, etching or general staining of the polished tile surface.

We recommend the use of a sealer on fully polished, impervious porcelain and polished glaze porcelain tile prior to grouting. We strongly caution against the use of acid based or solvent based chemicals for cleaning or construction maintenance on fully polished impervious or polished glaze porcelain tile. The use of such products may damage the floor.

With proper installation techniques, preventative care and effective maintenance procedures, fully polished impervious porcelain and polished glaze porcelain tile is a durable, high value, long lasting flooring option for most commercial and residential spaces.

**Recommended Stain Remover sold through Dal Tile stores may include:**

- DuPont Stone Tech KlenzAll (Follow manufacturer instructions for application process).
- Aqua Mix Sealer and Coating Remover (Follow manufacturer instructions for application process).

Polished tile can be slippery when wet. Please refer to our usage and maintenance recommendation on our website and catalog for all porcelain products. [www.daltile.com](http://www.daltile.com).

**UNGLAZED/MATTE/TEXTURED PORCELAIN**

Porcelain tiles with a matte or textured surface may contain structure or micro texture for slip resistance and visual enhancement. We recommend the use of a grout release prior to grouting for these products to enhance the efficacy of removal of the various types of grout, latex modified grout, epoxy grout used in the market today.

**Recommended Grout Release products sold through Dal-Tile stores may include ...**

- DuPont Stone Tech Professional Impregnator Pro (Follow manufacturer instructions for application process).
- Aqua Mix Grout Release (Follow manufacturer instructions for application process).

**Recommended Sealer products sold through Dal-Tile stores may include ...**

- DuPont Stone Tech Professional Impregnator Pro (Follow manufacturer instructions for application process).
- Aqua Mix Ultra-Solv (Follow manufacturer instructions for application process).

**Additional Installation Tips**

- Sealers may require more than one application depending on the tile and grout utilized. (Apply on a test area to validate prior to grouting).
- Penetrating sealers usually require only one application and should not be left to dry on the tile surface. (Remove excess as material is being applied).

- Remove excess sealer from the tile surface by buffing with a clean dry towel. (Follow manufacturer instructions).
- Allow the sealers and /or grout release products to cure on the tile before grouting. (Follow manufacturer instructions).

Please contact your local Dal-Tile Representative, NA Manager or the National Account Support team at the contact numbers or email below:

Phone: 214.309.3408 | 877.556.5728  
Email: [national.accounts@daltile.com](mailto:national.accounts@daltile.com)

**DISCLAIMER**

Dal-Tile does not manufacture installation products or tile cleaning/maintenance products. Dal-Tile provides the information contained herein to its customers as an information source only. The products identified in this website may have chemicals that cause reactions in certain individuals. Dal-Tile strongly recommends the use of safety glasses, respirators (masks) and gloves in handling any materials that contain chemicals.

Dal-Tile, in keeping with its Healthy Planet objectives, recommends the proper disposal of any scrap tile/stone, installation and/or maintenance products discussed herein.

Please contact the manufacturer directly, PRIOR to usage, to obtain proper handling instructions, application instructions and warnings concerning potential health hazards for any product contemplated for use. Dal-Tile also strongly recommends that you ALWAYS test a small area PRIOR to usage of any installation/tile/cleaning/maintenance product to determine whether the product you are about to apply serves its intended purpose.

Natural stone has its own unique qualities that not only distinguish it from man-made materials, but also should be considered in selecting it for a particular project. Stone is not manufactured; it is a product of nature. Blocks are removed from the quarry, slabs are cut from these blocks, and the slabs are further fabricated into the final stone to be installed. Each block is different; each slab is different. Skillful blending or matching of the dimension stone blocks, veneer panels, tops, etc., results in a beautiful blending of nature's variety and man's design. "Uniformity of material," when applied to natural stone, is a term of relative value that needs to be understood when making a selection.

To ensure your natural stone products will provide you with a lifetime of aesthetics and utility, proper maintenance is crucial. Natural stone products are porous by nature and require a different maintenance program than traditional ceramic tile.

# Luxury Vinyl Tile Maintenance Guidelines

## Contents

---

➤ English

➤ Français

➤ Español

➤ Português

[www.interface.com](http://www.interface.com)

**InterfaceFLOR, LLC**  
1503 Orchard Hill Road  
LaGrange, GA 30240  
1.800.336.0225 ext.56511



Climate change is undeniable. And reversible. Our mission is to prove it. Join the #ClimateTakeBack and help create a climate fit for life.



## LVT Maintenance Guidelines

---

**Proper care is essential to the appearance and longevity of LVT. Protect and extend the life of your floors by following these Interface-approved guidelines, which include normal cleaning devices such as a household broom, a suction-only vacuum cleaner, or a damp microfiber mop.**

### Required Cleaning Equipment

- Broom, Dust Mop with a Microfiber Cloth and/or Suction-Only Vacuum Cleaner
- Microfiber Mop – DO NOT USE STRING MOPS ON INTERFACE LVT
- Neutral pH Cleaning Solution (pH of 6.0-9.0)

### Precautions

- NEVER use products that can damage the surface of your LVT. These include powdered cleaners, metal bristle brushes, or steel wool.
- Do not soak floor with water or liquid cleaners, and do not allow puddles of water to remain on the floor.

## Initial Maintenance After Installation

---

**Wait 48 hours from the completion of installation to clean floor.**

- Start with removing dry soil by sweeping or dust mopping with a microfiber cloth.
- Follow with damp mopping using a neutral cleaning solution (pH of 6.0-9.0) and a microfiber mop.
  - Make sure to use a liquid cleaning solution that is ready-to-use or dilute the cleaner with the proper amount of water.
  - Rinse mop often with clean water while mopping to remove contaminants from mop.
  - If floor appears to be heavily soiled use a counter-rotating dual cylindrical brush machine with a white or 'soft' brush.
- After mopping or brushing with cleaning solution, rinse floor with clean hot water and microfiber mop.
  - Always use a damp microfiber mop. Do not pour water directly on the floor and do not allow puddles of water to remain on the floor.
- Allow floor to completely dry before foot traffic is resumed.

## Preventative Measures

---

### Walk Off Carpet / Mats

- Protect your flooring and reduce dry soil by using walk off carpet or mats 8-10 feet from exterior entrances and at entrances to rooms. Placing walk off mats at other high traffic areas can also help protect your LVT.

### Furniture

- Use appropriate protectors under furniture. These should be felt or other soft material specifically designed to protect the hard surface from scratches or damage to the wear layer.
- Office chairs must be provided with soft wheels.

### Precautions

- Long-term exposure to rubber can damage the LVT. We recommend avoiding mats with rubber lining, rubber furniture legs or rubber wheels.
- When moving any type of furniture or heavy equipment, protect the floor by covering with plywood, Masonite or other hard-shell material to prevent scratching or permanent damage.
- Be careful with equipment, kitchen appliances, cigarettes and hot or heavy objects that can damage the floor when falling.

## Routine Maintenance

---

**Regular cleaning will keep your floors looking newer longer.**

### Dry Soil Removal

- Sweep, dust mop with a microfiber cloth or vacuum with the suction-only setting daily or more frequently with heavy traffic.

### Wet Cleaning

- Always remove dry soil before wet cleaning.
- Damp mop the floor with a neutral cleaning solution using a microfiber mop once a day.
- After removal of the soil, rinse the floor with clean hot tap water (120-130 degrees Fahrenheit) using a damp microfiber mop.
  - Do not pour water directly onto the floor.
- Allow floor to completely dry before foot traffic is resumed.

## Restorative Maintenance

---

**Restore your floor with the appropriate procedure as needed or a minimum of once every 3 months.**

### Wet Cleaning

- Scrub floor using a counter-rotating dual cylindrical brush machine with a white or 'soft' brush and a neutral cleaning solution or use an auto-scrubber with a neutral cleaning solution and a non-abrasive pad (red or white 3M Floor Pad). We recommend a ride-on auto-scrubber for large, open areas and a walk-behind auto-scrubber for small areas.
- Damp mop the floor with clean hot water using a microfiber mop

### Scuffs and Marks

- Address scuffs and marks by using a microfiber cloth and a citrus oil-based cleaner, such as Pro-Solve Liquid by Pro's Choice or Goo Gone, or a solvent, such as WD-40 or isopropyl alcohol.
- Using a damp microfiber cloth, rinse the area with clean water to remove any remaining residue.

### Surface Scratches

Address scratches by using Dr. Schutz Scratch Fix Kit to repair LVT floor scratches. Follow manufacturer's instructions.

### Tile Replacement

- If a tile(s) needs to be removed, locate the seam of the tile and insert a thin-bladed screwdriver or paint-scraper into the seam. Lift the tile to be removed and then replace with a new tile following the approved layout.
  - Additional adhesive should not be necessary.

## LVT to Carpet Transition Maintenance

---

- Use caution when cleaning areas where Interface LVT and modular carpet tiles are installed side-by-side. Do not use maintenance routines or equipment on floors for which the guidelines are not intended. Do not use a LVT auto-scrubber over carpet as the motion could fray the carpet fibers. Do not use a carpet extractor over LVT as the metal could scratch the LVT.
- Using routines and equipment on floors that the maintenance guidelines are not intended for could cause damage to the products and/or equipment and void the product warranty.

## LVT to Rubber Transition Maintenance

---

- Cleaning protocol is as described for LVT Maintenance.
- The ProClean System is not recommended on LVT.

## Spot Cleaning

---

**All spills should be addressed immediately to avoid staining and hazards to occupants.**

### Dry Spills

- Dry spills should be removed using a broom and dust pan.

### Wet Spills

- Wet spills should be absorbed with a cloth and, if necessary, cleaned using a microfiber cloth and a neutral cleaning solution.

### Greasy / Oily Spills

- Greasy / oily spills should be absorbed with a cloth and, if necessary, cleaned using a microfiber cloth and a neutral cleaning solution.
- If a neutral cleaning solution does not sufficiently remove the greasy / oily spill, use rubbing alcohol (isopropyl alcohol) to remove it. Then rinse the floor with clean, hot tap water (120-130) degrees Fahrenheit) using a damp microfiber mop.
- Allow floor to completely dry before foot traffic is resumed.

## Precautions

---

- Highly concentrated, non-water based liquid dyes, such as hair color, iodine, betadine, can permanently stain the surface of the LVT.
- Powdered cleaners or caustic solutions could damage or stain the LVT and void the warranty. Interface will not be liable for any incidental, indirect, special or consequential damage in any case.

### Waxes and Polishes Are Not Recommended

- Interface's LVT has a built-in top layer that does not require waxing or polishing. Wax will damage the surface of the LVT and create a cloudy finish. We are not aware of any methods to reverse this damage.

## Contact Info

---

### United States/Latin America

Mark French – Director of Field Services  
 (office) 706-812-6268  
 (cell) 706-302-1174  
[mark.french@interface.com](mailto:mark.french@interface.com)

### Canada

Steven Twiss – Client Relations Manager  
 (office) 800-336-0225 x 52117  
 (cell) 613-848-8793  
[steven.twiss@interface.com](mailto:steven.twiss@interface.com)

## Directives d'entretien des carreaux de vinyle de luxe

**Un entretien adéquat est essentiel pour préserver l'apparence et la longévité des carreaux de vinyle de luxe (LVT). Prolongez la durée de vie de vos planchers en appliquant ces directives approuvées par Interface, qui nécessitent notamment l'utilisation de matériel de nettoyage courant (balai, aspirateur sans brosse, vadrouille humide en microfibres).**

### Équipement requis

- Balai, vadrouille à épousseter en microfibres ou aspirateur sans brosse;
- Vadrouille humide en microfibres – NE PAS UTILISER DE VADROUILLE EN COTON SUR LES LVT D'INTERFACE;
- Nettoyant neutre (pH entre 6 et 9).

### Précautions

- NE JAMAIS utiliser de produits qui pourraient abîmer la surface des LVT, par exemple des nettoyants en poudre, des brosses à poils métalliques ou de la laine d'acier.
- Ne pas détremper le plancher d'eau ou de nettoyant liquide ni y laisser des flaques d'eau.

## Premier entretien après l'installation

**Une fois l'installation terminée, attendre 48 heures avant de nettoyer le plancher.**

- Éliminer d'abord les saletés sèches avec un balai ou une vadrouille à épousseter en microfibres.
- Appliquer ensuite un nettoyant neutre (pH entre 6 et 9) avec une vadrouille en microfibres.
  - Vérifier si le nettoyant liquide est prêt-à-l'emploi. Sinon, le diluer dans la quantité d'eau appropriée.
  - Rincer fréquemment la vadrouille à l'eau claire pour éliminer les contaminants.
  - Pour les saletés tenaces, utiliser un appareil muni de brosses cylindriques doubles à contre-rotation blanches ou « douces ».
- Une fois le nettoyage terminé, rincer le plancher avec une vadrouille en microfibres et de l'eau chaude claire.
  - Toujours utiliser une vadrouille humide en microfibres. Ne pas verser d'eau directement sur le plancher et ne pas y laisser de flaques d'eau.
- Laisser le plancher sécher complètement avant d'y permettre la circulation.

## Mesures préventives

### Essuie-pieds

- Pour protéger le revêtement de plancher et réduire la quantité de saletés sèches, placer des essuie-pieds de 2,5 à 3 m aux sorties extérieures et à l'entrée des pièces. Les essuie-pieds disposés dans les autres zones achalandées protégeront également les LVT.

### Meubles

- Mettre sous les meubles des patins de feutre ou d'un autre matériau doux conçu pour protéger la couche d'usage des rayures ou d'autres dommages.
- Munir les chaises de bureau de roulettes souples.

### Précautions

- Une exposition prolongée au caoutchouc peut endommager les LVT. Nous recommandons donc d'éviter les tapis à endos en caoutchouc et les meubles aux pieds ou aux roulettes en caoutchouc.
- Avant de déplacer tout type de meuble ou d'équipement lourd, couvrir le plancher de contreplaqué, de masonite ou d'un autre matériau rigide pour éviter de le rayer ou de l'endommager de façon permanente.
- Attention à l'équipement, aux électroménagers, aux cigarettes et aux objets chauds ou lourds, car ils peuvent endommager le plancher en cas de chute.

## Entretien de routine

**Avec un entretien régulier, vos planchers conserveront plus longtemps leur apparence d'origine.**

### Nettoyage des saletés sèches

- Balayer, nettoyer à la vadrouille à épousseter en microfibres ou passer l'aspirateur (en aspirant seulement) tous les jours, voire plus fréquemment dans les zones achalandées.

### Nettoyage avec liquides

- Toujours éliminer les saletés sèches avant de nettoyer avec des liquides.
- Une fois par jour, nettoyer le plancher avec une vadrouille humide en microfibres et un nettoyant neutre.
- Après avoir éliminé la saleté, rincer le plancher avec une vadrouille en microfibres et de l'eau chaude du robinet (50 à 55 °C).
  - Ne pas verser l'eau directement sur le plancher.
- Laisser le plancher sécher complètement avant d'y permettre la circulation.

## Nettoyage de restauration

**Utiliser la procédure appropriée pour restaurer le plancher au besoin ou, au minimum, tous les trois mois.**

### Nettoyage avec liquides

- Frotter le plancher avec un nettoyant neutre ainsi qu'un appareil muni de brosses cylindriques doubles à contre-rotation blanches ou « douces » ou une récurveuse équipée d'un tampon non abrasif (tampon pour plancher 3M rouge ou blanc). Nous recommandons l'utilisation d'une récurveuse autoportée pour les grandes surfaces ouvertes et d'une récurveuse à commande arrière pour les petits espaces.
- Nettoyer le plancher avec une vadrouille en microfibres et de l'eau chaude claire.

### Marques et traces

- Pour éliminer toute marque ou trace, utiliser un chiffon en microfibres et un nettoyant à base d'huile d'agrumes, par exemple Pro-Solve Liquid de Pro's Choice ou Goo Gone, ou un solvant comme du WD-40 ou de l'alcool isopropylique.
- Rincer la zone avec un chiffon en microfibres et de l'eau claire pour éliminer tout résidu.

### Égratignures

Pour réparer les LVT égratignés, utiliser la trousse ScratchFix de Dr. Schutz en suivant les instructions du fabricant.

### Remplacement de carreaux

- Pour retirer un carreau, trouver le joint et y insérer un tournevis plat ou un grattoir à peinture. Soulever le carreau et le remplacer en suivant la disposition approuvée.
  - Il ne devrait pas être nécessaire d'ajouter de l'adhésif.

## Entretien des zones de transition entre LVT et tapis

- Faire preuve de prudence en nettoyant les surfaces où des LVT et des carreaux de tapis modulaires d'Interface sont installés côte à côte. Ne pas utiliser de procédures d'entretien de routine ou d'équipement qui ne sont pas conçus pour le revêtement. Ne pas utiliser de récurveuse pour LVT sur un tapis, car le mouvement pourrait effiloche les fibres. Ne pas utiliser d'extracteur pour tapis sur les LVT; le métal pourrait les rayer.
- Utiliser des procédures de nettoyage ou de l'équipement inadéquats pourrait endommager le revêtement ou l'équipement et annuler la garantie du produit.



## Entretien des zones de transition entre LVT et caoutchouc

---

- Faire preuve de prudence en nettoyant les surfaces où des LVT et des caoutchoucs se rencontrent.
- Nettoyage selon les instructions d'entretien des LVT.
- Système ProClean non recommandé pour les LVT.

## Nettoyage des taches

---

**Nettoyer toute salissure immédiatement pour éviter toute tache et tout risque pour les occupants.**

### Salissures sèches

- Éliminer les salissures sèches avec un balai et un porte-poussière.

### Salissures humides

- Absorber le liquide avec un chiffon. Au besoin, laver la surface avec un chiffon en microfibres et un nettoyant neutre.

### Salissures grasses ou huileuses

- Absorber la graisse ou l'huile avec un chiffon. Au besoin, laver la surface avec un chiffon en microfibres et un nettoyant neutre.
- Si un nettoyant neutre ne suffit pas, nettoyer avec de l'alcool à friction (alcool isopropylique), puis rincer le plancher avec une vadrouille en microfibres et de l'eau chaude du robinet (50 à 55 °C).
- Laisser le plancher sécher complètement avant d'y permettre la circulation.

## Précautions

---

- Les teintures liquides très concentrées qui ne sont pas à base d'eau, par exemple les colorants capillaires, la teinture d'iode ou la Betadine, peuvent tacher la surface des LVT de façon permanente.
- Les nettoyants en poudre et les solutions caustiques pourraient endommager ou tacher les LVT, et ainsi annuler la garantie. En aucun cas, Interface ne pourra être tenue responsable de tous dommages accessoires, indirects, consécutifs ou particuliers.

### Avertissement concernant les cires et les encaustiques

- La couche supérieure des LVT d'Interface ne requiert ni cirage ni polissage. La cire endommage la surface et produit un effet trouble. Nous ne connaissons aucune méthode pour remédier à la situation.

## Coordonnées

---

### États-Unis et Amérique latine

Mark French, directeur des services sur le terrain

Bureau : 706 812-6268

Cellulaire : 706 302-1174

[mark.french@interface.com](mailto:mark.french@interface.com)

### Canada

Steven Twiss, responsable des relations avec la clientèle

Bureau : 1 800 336-0225, poste 52117

Cellulaire : 613 848-8793

[steven.twiss@interface.com](mailto:steven.twiss@interface.com)

## Normas de mantenimiento para LVT

**Se necesita cuidado adecuado para mantener el buen aspecto de los productos LVT y garantizar su longevidad. Proteja y prolongue la vida de sus pisos siguiendo estas normas aprobadas por Interface, las cuales cubren los aparatos de limpieza normales como una escoba estándar, una aspiradora sin cepillo giratorio y una mopa de microfibra húmeda.**

### Equipo de limpieza necesario

- Escoba, fregona plana con paño de microfibra o aspiradora sin cepillo giratorio
- Mopa de microfibra –NO UTILICE TRAPEADORES DE CUERDAS SOBRE LOS PRODUCTOS LVT DE INTERFACE
- Solución limpiadora con un pH neutro (pH entre 6 y 9)

### Precauciones

- NUNCA utilice productos que puedan dañar la superficie de sus productos LVT, por ejemplo, limpiadores en polvo, cepillos de cerdas metálicas o lana de acero.
- No remoje el piso con agua o limpiadores líquidos, y no deje charcos de agua en el piso.

## Mantenimiento inicial tras la instalación

**Espere 48 horas después de haber finalizado la instalación antes de limpiar el piso.**

- Comience por eliminar la suciedad seca con una escoba o fregona de microfibra.
- Siga pasando una mopa de microfibra húmeda con una solución limpiadora neutra (pH entre 6 y 9).
  - Utilice una solución limpiadora líquida lista para uso o diluida con la cantidad adecuada de agua.
  - Enjuague la mopa con agua limpia a menudo para eliminar los contaminantes.
  - Si el piso parece estar muy sucio, utilice una máquina con doubles cepillos cilíndricos contra giratorios blancos o suaves.
- Después de mopear o cepillar el piso con una solución limpiadora, utilice una mopa de microfibra con agua caliente y limpia para enjuagarlo.
  - Siempre utilice una mopa de microfibra húmeda. No vierta agua directamente sobre el piso, y no deje charcos de agua en él.
- Asegúrese de que el piso esté completamente seco antes de caminar sobre él.

## Medidas preventivas

### Tapetes de alfombra y felpudos

- Proteja su piso y reduzca la cantidad de suciedad seca instalando tapetes de alfombra o felpudos a una distancia de 2,5 a 3 m de las entradas exteriores y a las habitaciones. El colocar tapetes en otras áreas de alto tránsito también puede proteger sus productos LVT.

### Muebles

- Use protectores adecuados debajo de los muebles. Estos deben ser de fieltro u otro material blando diseñado específicamente para proteger las superficies duras de rayones o daños en la capa de desgaste.
- Las sillas de oficina deben tener ruedas blandas.

### Precauciones

- La exposición prolongada al caucho puede dañar los productos LVT. Se recomienda evitar tapetes con revestimiento de caucho y muebles con patas o ruedas de caucho.
- Al mover muebles o equipos pesados, proteja el piso con madera contrachapada, Masonite u otro material duro para evitar rayones o daños permanentes.
- Tenga cuidado con el equipo, los electrodomésticos, los cigarrillos y los objetos calientes o pesados que al caer podrían dañar el piso.

## Mantenimiento rutinario

**Con la limpieza habitual, sus pisos tendrán un aspecto nuevo por más tiempo.**

### Eliminación de la suciedad seca

- Escobe o pase una mopa de microfibra o aspiradora sin cepillo giratorio diariamente o con mayor frecuencia donde hay tránsito pesado.

### Limpieza en húmedo

- Siempre elimine la suciedad seca antes de limpiar en húmedo.
- Pase una mopa de microfibra húmeda con una solución limpiadora neutra cada día.
- Después de eliminar la suciedad, utilice una mopa de microfibra con agua de la llave caliente y limpia (entre 50 y 55 °C) para enjuagar el piso.
  - No vierta agua directamente sobre el piso.
- Asegúrese de que el piso esté completamente seco antes de caminar sobre él.

## Mantenimiento restaurativo

**Con la limpieza habitual, sus pisos tendrán un aspecto nuevo por más tiempo.**

### Limpieza en húmedo

- Fregue el piso utilizando una máquina con doubles cepillos cilíndricos contra giratorios blancos o suaves y una solución limpiadora neutra o una restregadora con una solución limpiadora y un disco para limpieza no abrasivo (disco para limpieza 3M rojo o blanco). Se recomienda utilizar una restregadora de operador sentado o a pie para zonas de gran superficie y una restregadora de operador caminando para zonas pequeñas.
- Pasa una mopa de microfibra con agua caliente y limpia.

### Rasguños y marcas

- Para eliminar los rasguños y las marcas, utilice un paño de microfibra y una solución limpiadora a base de aceite cítrico, por ejemplo, Pro Solve Liquid de Pro's Choice o Goo Gone, o un solvente como WD-40 o alcohol isopropílico.
- Enjuague la superficie con agua limpia y un paño de microfibra húmedo para eliminar todo residuo remanente.

### Arañazos

Para ocultar los arañazos en los productos LVT, utilice el juego ScratchFix de Dr. Schutz siguiendo las instrucciones del fabricante.

### Reemplazos de las piezas

- Si se necesita retirar una o unas piezas, inserte un destornillador plano fino o un raspador de pintura en la unión de la pieza. Levante la pieza y reemplácela con una nueva pieza según el diseño aprobado.
  - No debería ser necesario añadir adhesivo.

## Mantenimiento de las zonas de transición entre LVT y alfombra

- Tenga cuidado al limpiar superficies donde LVT y alfombra modular están instalados uno al lado del otro. No utilice rutinas de mantenimiento o equipo que no está destinado al piso. No utilice una restregadora para LVT sobre la alfombra, dado que el movimiento podría deshilar las fibras de la alfombra. No utilice un extractor de alfombras sobre los LVT, pues el metal podría rayarlos.
- Al utilizar rutinas de mantenimiento o equipo que no está destinado al piso, se pueden dañar los productos o equipo y anular la garantía del producto.

## Mantenimiento de las zonas de transición entre LVT y el caucho

---

- Siga las instrucciones de limpieza para LVT.
- No se recomienda usar el sistema ProClean sobre LVT.

## Limpieza puntual

---

**Todos derrames deben limpiarse inmediatamente para evitar manchas y peligros para los ocupantes.**

### Derrames secos

- Utilice una escoba y un recogedor para limpiar las manchas secas.

### Derrames de líquido

- Absorba los derrames de líquido con un paño y, si se necesita, límpielos con un paño de microfibra y una solución limpiadora neutra.

### Derrames grasosos o aceitosos

- Absorba los derrames grasosos o aceitosos con un paño y, si se necesita, límpielos con un paño de microfibra y una solución limpiadora neutra.
- Si la solución limpiadora neutra no remueve el derrame grasoso o aceitoso de manera suficiente, límpielo con alcohol de fricción (alcohol isopropílico). Luego utilice una mopa de microfibra con agua de la llave caliente y limpia (entre 50 y 55 °C) para enjuagar el piso.
- Asegúrese de que el piso está completamente seco antes de caminar sobre él.

## Precauciones

---

- Los colorantes líquidos muy concentrados no basados en agua, como los tintes de cabello, el yodo y la Betadine, pueden manchar la superficie de los productos LVT de manera permanente.
- Los limpiadores en polvo y las soluciones cáusticas pueden dañar o manchar los productos LVT y anular la garantía del producto. Interface no será responsable por ningún daño incidental, indirecto, especial o consiguiente en ningún caso.

### Advertencia sobre las ceras y los abrillantadores

- La capa superior de los productos LVT de Interface no requiere encerado o pulido. La cera dañará la superficie y producirá un acabado borroso. No se conoce métodos para revertir este daño.

## Contacto

---

### Estados Unidos / América Latina

Mark French, directeur des services sur le terrain  
 Mark French, director de servicios sobre el terreno  
 Oficina: 706 812-6268  
 Celular: 706 302-1174  
[mark.french@interface.com](mailto:mark.french@interface.com)

### Canadá

Steven Twiss, gerente de relaciones con los clientes  
 Oficina: 800 336-0225 extensión 52117  
 Celular: 613 848-8793  
[steven.twiss@interface.com](mailto:steven.twiss@interface.com)



## Diretrizes para manutenção de LVT

**Cuidados adequados são essenciais para a aparência e a longevidade do LVT. Proteja e amplie a vida útil dos seus pisos seguindo estas diretrizes aprovadas pela Interface, que incluem dispositivos de limpeza normais como vassoura doméstica, um aspirador de pó apenas de sucção ou um mop de microfibra umedecido.**

### Equipamentos de limpeza obrigatórios

- Vassoura, Dust Mop com pano de microfibra e/ou aspirador de pó somente de sucção
- Mop de microfibra – NÃO USE MOPS DE FIOS EM LVT DA INTERFACE
- Solução de limpeza de pH neutro (pH de 6,0 – 9,0)

### Precauções

- JAMAIS use produtos que possam danificar a superfície do seu LVT. Isso inclui agentes de limpeza em pó, escovas com cerdas de metal ou palha de aço.
- Não molhe o piso diretamente com água ou agentes de limpeza líquidos e não deixe poças d'água permanecerem no piso.

## Manutenção inicial após a instalação

### Aguarde 48 horas a partir da conclusão da instalação para limpar o piso.

- Comece removendo sujeira seca varrendo ou removendo a poeira com um mop com pano de microfibra.
- Em seguida, passe o mop de microfibra úmido utilizando uma solução de limpeza neutra (pH de 6,0 a 9,0).
  - Certifique-se de utilizar uma solução de limpeza líquida pronta para uso ou dilua a solução com a quantidade adequada de água.
  - Enxágue o mop com água limpa e esfregue-o para remover os contaminantes presentes.
  - Se o piso estiver muito sujo, use um equipamento de escovação cilíndrica de rotação em sentidos opostos com uma escova branca ou "macia".
- Após esfregar ou escovar com a solução de limpeza, enxágue o piso com água quente limpa e o mop de microfibra.
  - Sempre use um mop de microfibra úmido. Não derrame água no piso diretamente e não deixe poças d'água permanecerem no piso.
- Deixe o piso secar completamente antes de permitir o tráfego de pedestres.

## Medidas preventivas

### Capachos / Tapetes

- Proteja seus pisos e reduza a quantidade de sujeira seca utilizando capachos ou tapetes de 8 a 10 pés (243,84 cm a 304,8 cm) em entradas externas e em entradas de salas. Colocar capachos em outras áreas de tráfego elevado também pode ajudar a proteger o seu LVT.

### Mobília

- Use protetores apropriados sob a mobília. Eles devem ser de feltro ou de outro material macio especificamente criado para proteger a superfície dura contra arranhões ou danos à camada de desgaste.
- Cadeiras de escritório devem ser fornecidas com rodas macias.

### Precauções

- Exposição de longo prazo a borracha pode danificar o LVT. Recomendamos evitar tapetes com forro de borracha, pernas de móveis emborrachados ou rodas emborrachadas.
- Quando mover qualquer tipo de móvel ou equipamentos pesados, proteja o piso cobrindo com compensado, masonita ou outro material de revestimento duro para evitar arranhões ou danos permanentes.
- Tome cuidado com equipamentos, aparelhos de cozinha, cigarros e objetos quentes ou pesados que, se caírem, podem danificar o piso.

## Manutenção de rotina

**A limpeza regular manterá seus pisos com aparência de novos por mais tempo.**

### Remoção de sujeira seca

- Varra, remova a poeira com um mop de microfibra ou use um aspirador somente de sucção diariamente ou mais frequentemente em caso de tráfego elevado.

### Limpeza úmida

- Sempre remova a sujeira seca antes da limpeza úmida.
- Limpe o piso usando um mop de microfibras úmido com uma solução de limpeza neutra uma vez ao dia.
- Após a remoção da sujeira, enxágue o piso com água quente (48,88 °C a 54,44 °C [120 °F 130 °F]) usando um mop de microfibras úmido.
  - Não derrame água diretamente no piso.
- Deixe o piso secar completamente antes de permitir o tráfego de pedestres.

## Manutenção restaurativa

**Restaure o piso com o procedimento apropriado conforme for necessário ou no mínimo uma vez a cada 3 meses.**

### Limpeza úmida

- Esfregue o piso usando um equipamento de escovas cilíndricas de rotação em sentido contrário com uma escova branca ou "macia" e uma solução de limpeza neutra ou use um esfregão automático com solução de limpeza neutro e uma esponja não abrasiva (esponja de piso 3M vermelha ou branca). Recomendamos um equipamento de limpeza automático com condutor para áreas grandes e abertas e um equipamento de limpeza automático sem condutor para áreas menores.
- Use um mop de microfibra úmido com água quente limpa no piso.

### Arranhões e marcas

- Trate arranhões e marcas utilizando um pano de microfibra e um agente de limpeza cítrico à base de óleo, como Pro-Solve Liquid by Pro's Choice ou Goo Gone, ou um solvente, como WD-40 ou álcool isopropílico.
- Use um pano de microfibra, enxágue a área com água limpa para remover qualquer resíduo remanescente.

### Arranhões na superfície

Trate os arranhões utilizando Dr. Schutz Scratch Fix Kit para reparar arranhões em pisos de LVT. Siga as instruções do fabricante.

### Substituição de placas

- Se uma placa precisar ser removida, localize a emenda da placa e insira uma chave de fenda de lâmina fina ou um raspador de tinta na emenda. Erga a placa a ser removida e substitua-a por uma nova seguindo o layout aprovado.
  - Não deve ser necessário aplicar adesivo adicional.

## Manutenção de transição do LVT para carpete

- Tome cuidado quando limpar áreas nas quais o piso vinílico LVT e placas de carpetes modulares da Interface estiverem instalados lado a lado. Não use rotinas de manutenção ou equipamentos sobre pisos fora destas diretrizes. Não use um equipamento de limpeza automático para LVT sobre carpetes, pois o movimento poderá desfiar as fibras do carpete. Não use extratora de carpetes sobre LVT, pois o metal poderá arrancar o LVT.
- Usar rotinas e equipamentos em pisos fora destas diretrizes de manutenção poderá resultar em danos aos produtos e/ou ao equipamento e anular a garantia do produto.

## Manutenção de transição do LVT para nora

---

- O protocolo de limpeza é o mesmo descrito para manutenção de LVT.
- O Sistema ProClean não é recomendado em LVT.

## Limpeza localizada

---

**Todos os derramamentos devem ser tratados imediatamente para evitar manchas e perigos aos ocupantes.**

### Derramamentos secos

- Derramamentos secos devem ser removidos usando uma vassoura e pá.

### Derramamentos líquidos

- Derramamentos líquidos devem ser absorvidos com um pano e, se necessário, limpos usando um pano de microfibra e uma solução de limpeza neutra.

### Derramamentos gordurosos/oleosos

- Derramamentos gordurosos/oleosos devem ser absorvidos com um pano e, se necessário, limpos usando um pano de microfibra e uma solução de limpeza neutra.
- Se a solução de limpeza neutra não remover o derramamento gorduroso/oleoso suficientemente, use álcool para limpeza (álcool isopropílico) para removê-lo. Em seguida, enxágue o piso com água de torneira limpa quente (48,88 °C a 54,44 °C (120 °F a 130 °F)) usando um mop de microfibras úmido.
- Deixe o piso secar completamente antes de permitir o tráfego de pedestres.

## Precauções

---

- Corantes líquidos à base de água e altamente concentrados como tinta de cabelo, iodo, betadine, podem manchar permanentemente a superfície do piso vinílico LVT.
- Agentes de limpeza em pó ou soluções cáusticas podem danificar ou manchar o LVT e anular a garantia. A Interface não será responsável por danos incidentais, indiretos, especiais ou por dano direto em nenhum caso.

### Ceras e agentes de polimento não são recomendados

- O LVT da Interface tem uma camada superior integrada que não precisa de enceramento ou polimento. A cera danificará a superfície do LVT e criará um acabamento turvo. Não conhecemos nenhum método para reverter danos desse tipo.

## Informações de contato

---

### Estados Unidos/América Latina

Mark French – Diretor de Serviços de Campo  
(escritório) 706-812-6268  
(celular) 706-302-1174  
[mark.french@interface.com](mailto:mark.french@interface.com)

### Canadá

Steven Twiss – Gerente de Relacionamento com o Cliente  
(escritório) 800-336-0225 x 52117  
(celular) 613-848-8793  
[steven.twiss@interface.com](mailto:steven.twiss@interface.com)



## **Rubber & Vinyl Wall Base**

### **Maintenance Instructions**

#### **Routine Cleaning**

---

Johnsonite Rubber and Vinyl Wall Base are maintained with regular wiping with a soft, wet cloth. A mild soap may be added to the water. Coarse scrubbing media or harsh cleaning chemicals may damage the surface of the wall base.

For further questions please contact Johnsonite Customer Service or Technical Services Department at 1-800-899-8916.



Technical Services Department  
16910 Munn Road, Chagrin Falls, Ohio 44023  
(800) 899-8916 ext 297 Fax (440) 543-8920

[www. Johnsonite.com](http://www.Johnsonite.com)  
E-mail: [info @ Johnsonite.com](mailto:info @ Johnsonite.com)

© 2006 Johnsonite, Inc. A Tarkett Company.



# Carpet Tile Maintenance Guidelines



# Carpet Tile Maintenance Guidelines

**Interface®**

Rev. 4/1/19

## Table of Contents

---

### **Introduction 3**

- Why is Maintenance Important?
- Comprehensive Maintenance Plan
- Identifying your needs

### **Frequency Chart 3**

### **Maintenance Techniques 4**

- Preventative Maintenance
- Chair Pads
- Vacuum Cleaning
- Spot Cleaning
- Dry Extraction
- Crystallizing Application
- Bonnet Cleaning
- Hot Water Extraction

### **Cleaning Solutions 5**

### **Maintenance Equipment 5**

- Vacuum
- Low Moisture Applicator
- Hot Water Extractor

### **Consultants and Additional References 6**

## Introduction

### Why is maintenance important?

By implementing a routine carpet maintenance program, you preserve and maintain your floorcovering and extend the life of your carpet investment. A routine maintenance program includes daily care, such as vacuuming and spot cleaning, in addition to periodic restorative cleaning by hot water extraction. Excessive soils and stains may require different methods or a combination of methods. However, even restorative cleaning typically will not achieve the desired original beauty and appearance of the floorcovering if the carpet has been neglected. Routine care means a longer lasting product, but it is important to implement a maintenance program from the very beginning. Having the right equipment and cleaning solutions along with properly trained technicians is critical to the success of the program. An effective maintenance program is carefully planned and executed on schedule.

### Comprehensive Maintenance Plan

An effective maintenance program consists of five key elements:

- Preventative Maintenance – containing the soil entering the building using walk-off mats at entrances. This includes outside matting, inside matting and mats at certain other high traffic interior areas.
- Vacuuming - regular vacuuming is the single most important part of a maintenance program. Vacuuming is designed to remove dry soil matter.
- Spot and Spill Removal – quick response to spills is the key. The faster spills are dealt with the less chance they will leave a stain.
- Interim Cleaning – several different methods can be used. Regularly scheduled interim cleaning can prolong the need for restorative cleaning.
- Restorative Cleaning – deep cleaning designed to remove trapped soils. Hot water extraction is the most effective method and the only restorative method recommended by Interface.

### Identifying Your Specific Maintenance Needs

Just as various areas of your office or building are subject to different uses, each area demands a different level of maintenance and care. Heavily trafficked areas such as entrances and corridors require more frequent vacuuming and cleaning. Areas around vending machines and desks need daily attention to spills and stains. Also, certain areas may require different types of equipment to be used. A comprehensive maintenance program should have a chart or diagram of the building's floor space outlining proper cleaning frequency rates, methods and equipment. This well-designed maintenance plan will add years of useful life to your carpet investment.

## Commercial Carpet Cleaning Frequency Chart

| Traffic Soil Rating  | Carpet Owner/Maintainer                             |                                       | Professional Carpet Cleaner/Restorer                |                      |
|--|---|---------------------------------------|---|----------------------|
|  | Vacuuming   | Spot Cleaning                         | Interim Maintenance (Between Restorative Cleanings) | Restorative Cleaning |
| <b>Light</b><br><b>&lt;500 foot traffics per day</b>             | 1 to 2x per week                                    | Daily or as soon as spots are noticed | 1 to 3x annually                                    | 1 to 2x annually     |
| <b>Medium</b><br><b>(moderate)500-1000 foot traffics per day</b> | Daily in traffic areas. Overall 3 to 4x per week    | Daily or as soon as spots are noticed | 3 to 6x annually                                    | 2 to 4x annually     |
| <b>Heavy</b><br><b>1001 – 2500 foot traffics per day</b>         | Daily in traffic areas. Overall 4 to 7x per week    | Daily or as soon as spots are noticed | 6 to 12x annually                                   | 3 to 6x annually     |
| <b>Very Heavy</b><br><b>&gt;2500 foot traffics per day</b>       | 1 to 2x daily in traffic areas. Overall 7x per week | Daily or as soon as spots are noticed | 12 to 52x annually                                  | 6 to 24x annually    |

*\*Recommended frequency guide per IICRC S100  
(Institute of Inspection, Cleaning, and Restoration Certification)*



## Maintenance Techniques

---

The ideal maintenance program is designed to help prevent soil from reaching the carpet and to remove soil before it causes damage. To keep your carpet clean and looking like new, this ideal maintenance program uses a combination of methods. These methods are tailored to your facility's needs. Cleaning frequencies are based on the specific needs of trafficked areas in your facility.

### PREVENTATIVE MAINTENANCE

Maintaining your carpet's appearance means more than choosing the right cleaning method. Choosing the right products up front contributes greatly to the overall performance of your floorcovering. Using walk-off mats helps keep soil from entering the building. Outside mats are designed to scrape dirt and debris off shoes while interior mats are designed to remove smaller soil particles and help absorb moisture. Interior walk-off mats should extend a minimum of six feet inside the entrance. At 15 feet, these mats can effectively remove 80% of soil and moisture before they reach the carpet. Mats can also be effective in other interior areas, including elevators, around water coolers and food station areas, and at stair thresholds. Walk-off matting should be maintained the same way as interior carpet by using the frequency guidelines for 'Very Heavy' based on the **chart on page 3**.

### CHAIR PADS

Chair pads are NOT required with any Interface carpet.

### VACUUM CLEANING

A good vacuuming program is essential to the success of your carpet maintenance efforts. Effective daily vacuuming reduces the frequency of periodic maintenance procedures required to maintain clean carpet. In addition to removing soil, vacuum cleaning also helps to lift and restore pile, particularly for cut pile carpet. Proper equipment and technique are critical to the success of a vacuuming program.

Machines with cylindrical brushes should be used and set so that brushes are in contact with pile surfaces. Twin motor machines with independent motors for suction and brushing are preferred for this task. In most cases upright vacuum cleaners are advised. Canister, backpack type machines without brushes, and riding sweepers with rotary brushes are generally not recommended, but their use will not void the product warranty. Vacuums with top loading soil bags and HEPA filters are highly recommended. The Carpet and Rug Institute has a Seal of Approval program that grades various maintenance equipment, including vacuum cleaners. For a list of these certified vacuum cleaners see the CRI website at [www.carpet-rug.org](http://www.carpet-rug.org).

The frequency of vacuuming is determined by visual inspection but should be done daily. Heavy traffic areas such as lobbies, entryways and barrier mats, particularly those exposed to various weather conditions, may require more frequent vacuuming. Vacuuming these areas more than once a day will help prevent soil from being tracked into other areas. The procedure for thorough vacuuming is using slow overlapping strokes, making sure that the entire carpet surface is covered. Strokes should be no longer than 2-3 feet in length to avoid constant bending.

### SPOT CLEANING

Daily removal of spots and spills helps maintain the carpet's appearance between scheduled cleanings. Immediate action against spots and spills also reduces the probability of a permanent stain. It is important to use solutions that are appropriate for the specific type of spot or spill – water-based, oil-based, or solids, including gum. Use spotting solutions sparingly and always try to remove the spot with water only before using a spotting solution. If available, using a portable extractor will significantly improve the ability to remove spots.

### Treating Water-Based Spots

For liquid spills, start by blotting up as much of the liquid as possible with a clean white cloth. If the spill is semi-solid or has hardened, gently scrape it with a spoon or spatula, and then blot the spot with a damp sponge. Always work from the edge of the spot towards the center. Never rub across a wet spill in a manner that causes the stain or contamination to be spread from the original area.

If spot remains after using water, use a general purpose spot cleaner. Apply a minimal amount of solution and use a hand brush to gently agitate the solution. Rinse with water and allow the area to dry about 1 hour before vacuuming. Repeat the application if necessary. Protect the freshly cleaned area until the carpet is completely dry. *Do not brush aggressively on the spot.*

### Treating Oil-Based Spots

When removing oily stains such as paint, grease, tar, or asphalt, it will be necessary to use a cleaner specifically designed for these types of spots. Always check for colorfastness by applying your cleaning solution to an inconspicuous area of the carpet. Spray or pour the cleaning solution onto a white cloth and press it onto the carpet. Check the cloth for any evidence of dye transfer. If color transfer is evident, do not use the solution. If colorfastness is not a problem, apply your solution sparingly to a clean white cloth and press the cloth onto the spot.

Again, do not rub across the stain, but wipe gently from the outer edge toward the center of the spot. Repeat the procedure until the spot has been removed. Rinse with water and allow the area to dry about 1 hour before vacuuming. Protect the freshly cleaned area until the carpet is completely dry.

NOTE: IF AVAILABLE, A SMALL PORTABLE EXTRACTOR MAKES THE TASK OF FLUSHING SPOTS AND REMOVING EXCESS MOISTURE MUCH EASIER. IF STAIN CANNOT BE REMOVED, PLEASE CONTACT AN INTERFACE CONSULTANT.

### DRY EXTRACTION

The low moisture dry extraction method is a safe, easy, and effective method for handling maintenance on a regular basis. The procedure uses a moist compound (powder) that does not leave the carpet wet and allows for immediate access and traffic once the procedure is complete.

Follow this process for dry extraction: Thoroughly vacuum the carpet. Spread extraction compound on the carpet and then agitate using a low moisture applicator with counter rotating brushes to gently brush the moist compound into the fiber, dislodging and dispersing accumulated soil. Allow 30 minutes for drying before thoroughly vacuuming compound and soil from the carpet.

### CRYSTALLIZING APPLICATION (ENCAPSULATION)

The crystallizing method of maintenance is a low moisture procedure similar in some respects to the dry extraction method but instead of using the powder, a liquid encapsulation solution is used. This process is designed to encapsulate the soil as the solution dries, forming small crystals that can easily be vacuumed out of the carpet. Benefits include immediate access to the area without the necessity of extended drying time.

Follow this procedure for crystallizing application: Thoroughly vacuum the carpet. Apply the encapsulation solution using an electric sprayer or a simple pump-up garden type sprayer. Agitate the carpet pile using a low moisture applicator with counter rotating brushes to gently brush the solution into the fiber, dislodging and dispersing accumulated soil. Allow time for the solution to dry. Drying time will vary according to several factors, including humidity, air flow and air temperature, but it's typically 30 - 60 minutes. Finish with vacuuming.

## BONNET CLEANING

NOTE: USE OF A BONNET OR ANY OTHER TYPE OF ROTARY MACHINE FOR CLEANING OR DRYING IS NOT RECOMMENDED AND MAY VOID ALL WARRANTIES.

## HOT WATER EXTRACTION

As like with all other maintenance methods, always prepare the carpet by vacuuming.

Hot water extraction is an effective method for removing heavy soil and residue from carpeting. Start by applying a detergent pre-spray appropriate for carpet with an electric or pump type sprayer. The application should cover the entire carpeted surface, not just the traffic lanes. Agitate the pre-spray with a dual brush counter-rotating low moisture applicator. Allow 10 minutes of dwell time. Using only clean water in the extractor, thoroughly rinse the carpet. For heavily soiled high-traffic areas the procedure can be repeated until the extracted water is relatively clear. The hot water extraction method injects water into the carpet. The injected water suspends the soil and contaminants in the solution for easy removal by the built-in vacuum system.

The recommended technique: Operate the floor wand or self-contained extractor by engaging the solution valve or button and pulling or pushing the equipment for approximately three to five feet (or at a comfortable distance). Release the solution valve before reaching the end of your pass to assure that you vacuum up all of the solution. Cover the same area two or three times both with solution and without solution (suction only) to remove as much soil and moisture from the carpet as possible. Overlap each stroke approximately two inches on the area already cleaned and proceed as described above. Make several additional passes with the solution valve off to remove as much moisture from the area as possible. It is important not to over wet the carpet and to remove as much moisture as possible to expedite drying. Make sure HVAC system is on and use drying fans (air movers) on wet areas during and after cleaning to allow the carpet to dry completely. Complete the procedure with a thorough vacuuming.

NOTE: ALTHOUGH IT IS RECOMMENDED THAT WATER TEMPERATURE RANGE BETWEEN 110° - 130°F, USING WATER WITH TEMPERATURES ABOVE THAT RANGE, TYPICAL WITH TRUCKMOUNT EXTRACTION, WILL NOT DAMAGE OUR PRODUCTS. LIKEWISE, COLD WATER CAN BE USED, BUT ONLY WITH A DETERGENT DESIGNED FOR COLD WATER USE.

NOTE: DRYING TIMES WILL VARY BASED ON INTERNAL AND EXTERNAL ENVIRONMENTAL CONDITIONS. PLAN ON A MINIMUM OF 3 HOURS UNDER NORMAL CONDITIONS. DO NOT ALLOW FOOT TRAFFIC ON THE CARPET UNTIL IT IS DRY. ALLOWING FOOT TRAFFIC BEFORE CARPET IS DRY CAN CAUSE FIBER DAMAGE AND RAPID RE-SOILING.

## Cleaning Solutions

Some commercial carpet cleaning solutions are very harsh and can damage the carpet fiber. It is important to select solutions that meet the basic standards outlined here and to evaluate each product before using it.

Interface brand carpets can be maintained using a number of widely recognized and readily available carpet cleaning agents. Some cleaners have actually earned the Carpet & Rug Institute's Seal of Approval. For a list of these certified cleaning solutions see the CRI website at [www.carpet-rug.org](http://www.carpet-rug.org). Always follow the manufacturer's recommended guidelines for using any cleaning solution. Avoid products with pH levels over 9.5 and products that contain toxic or flammable solvents. Do not use oil-based defoamers of any kind. Detergents designed for use in hot water extraction equipment should not contain an oil-based defoamer and caution should be used with the amount of detergent added. Oil-based defoamers have the potential to leave oily residues and adding too much detergent could leave excess detergent on the carpet. Both scenarios will lead to rapid re-soiling and the need for more frequent cleanings. In

addition, cleaning solutions containing optical brighteners should not be used. Optical brighteners can adversely affect the coloration of carpet and lead to premature aging or yellowing of the carpet.

Cleaning solutions used for interim and/or restorative cleaning should be tested for sticky residues that may cause re-soiling. To test a solution, pour a small amount in a clean glass dish. Allow the solution to air dry completely (24 hours minimum). Break up any hard residue on the surface of the glass dish and examine it. If the residue can be characterized as dry powder, dry flakes or dry crystals, the solution is acceptable. If the residue appears oily, greasy, sticky, or in waxy flakes, the solution is not acceptable since it would likely contribute to rapid re-soiling.

Spotting solutions should be used as needed and should be flushed out with clean water after the spot has been treated.

## Maintenance Equipment

Using the right equipment is as important as using the right cleaning solutions and the best techniques. These guidelines provide the basic technical specifications you need for key pieces of carpet maintenance equipment.

### VACUUM (FOR TWIN MOTOR UPRIGHTS)

|                   |  |
|-------------------|--|
| Power             | ▪ 8 amp  |
| Filtration        | ▪ Down to 0.3 microns or lower                                       |
| Vacuum            | ▪ 60" water lift-motor or better @ 90+ cfm                           |
| Brush             | ▪ Toothed belt drive preferred                                       |
|                   | ▪ Brush speed 2,500 - 5000 rpm                                       |
|                   | ▪ Brush diameter 2" - 3½"  |
|                   | ▪ Brush height adjustment essential; self-adjusting design preferred |
| Working Width     | ▪ 15" - 30"  |
| Dust Bag Capacity | ▪ 300 - 400 cubic inches   |

NOTE: VACUUM CLEANER SHOULD HAVE THE CARPET AND RUG INSTITUTE'S SEAL OF APPROVAL THROUGH THEIR SEAL OF APPROVAL/GREEN LABEL CERTIFICATION PROGRAM. TOP-LOADING DUST BAG MACHINES WITH HEPA FILTERS ARE STRONGLY RECOMMENDED. WALK-BEHIND OR RIDING FLOOR SWEEPERS ARE NOT RECOMMENDED.

### LOW MOISTURE APPLICATOR

|             |                              |
|-------------|------------------------------|
| Power       | ▪ 2-8 amp                    |
| Width       | ▪ 12" - 22"                  |
| Brushes (2) | ▪ 10" - 20" Counter-rotating |
| Brush speed | ▪ 400 - 500 rpm              |

### HOT WATER EXTRACTOR

|                |   |
|----------------|---|
| Power          | ▪ 10 - 15 amp   |
| Fluid Delivery | ▪ minimum of ½ gallons/minute - 100 psi                       |
| Tanks          | ▪ 8-20 gallon solution  |
|                | ▪ 8-20 gallon recovery  |
| Vacuum         | ▪ 100" - 140" water lift at around 90-100 cfm                 |
| Vacuum Shoe    | ▪ minimum of 11" - 18" wide for wands and portable extractors |
| Wheels         | ▪ Non-marking 4" - 10" diameter                               |
| Water Temp     | ▪ minimum of 120°F  |

NOTE: ALTHOUGH IT IS RECOMMENDED THAT WATER TEMPERATURE RANGE BETWEEN 110° - 130°F, USING WATER WITH TEMPERATURES ABOVE THAT RANGE, TYPICAL WITH TRUCKMOUNT EXTRACTION, WILL NOT DAMAGE OUR PRODUCTS. LIKEWISE, COLD WATER CAN BE USED, BUT ONLY WITH A DETERGENT DESIGNED FOR COLD WATER USE.

## Consultants

---

For more information about carpet maintenance, please contact one of the following consultants:

### **UNITED STATES**

#### **Mark French – Director of Field Services**

(office) 706-812-6268

(cell) 706-302-1174

mark.french@interface.com

### **CANADA**

#### **Steven Twiss – Client Relations Manager**

(office) 800-336-0225 x 52117

(cell) 613-848-8793

steven.twiss@interface.com

## Additional References

---

Carpet and Rug Institute - **[www.carpet-rug.org](http://www.carpet-rug.org)**

The Institute of Inspection, Cleaning and Restoration Certification - **[www.iicrc.org](http://www.iicrc.org)**

## ATTIC STOCK FORM I.3

**Project:** Nurse's Office Renovations @ Bailly Elementary School  
**Contract No.:** 56521  
**Subcontractor:** \_\_\_\_\_

The following listed items were delivered to the Owner:

| Quantity | Description                                       |
|----------|---|
|          | 09300 Tile  |
|          | 2% of each size, color and surface finish of tile |
| 1 box    | DalTile Fabrique P686 Creme Linen 12 x 24         |
| 1 box    | DalTile Fabrique P686 Creme Linen 4 x 24          |
| 1/2 box  | DalTile Fabrique P686 Creme Linen 3 x 12          |
|          | 09650 Resilient                                   |
| 1 box    | Interface A007 Studio Set A00702 Pewter 25cm x 1m |
| 1 box    | Johnsonite #85 Burgundy 4" Vinyl Cove Base        |
|          | 09685 Carpet                                      |
| 1 box    | Interface AE311 Aerial 104673 Iron 25cm x 1m      |
|          |   |
|          |   |
|          |   |
|          | **Material Left on site, Head Custodian has it**  |

### Signatures

**Subcontractor:**

Brooke Calt Midwest Tile

**Date:** 8 / 14 / 2020

**General Contractor:**

**Date:**  / /

**Owner:**

**Date:**  / /



## ATTIC STOCK FORM I.3

**Project:** Nurse's Office Renovations @ Bailly Elementary School  
**Contract No.:** 56521  
**Subcontractor:** \_\_\_\_\_

The following listed items were delivered to the Owner:

| Quantity | Description  |
|----------|--|
|          | 09650 Resilient Flooring   |
|          | 100 sq ft of flooring, 60 lineal feet of base of each type and color specified |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |
|          |  |

### Signatures

**Subcontractor:** \_\_\_\_\_ **Date:**   /  /    
**General Contractor:** \_\_\_\_\_ **Date:**   /  /    
**Owner:** \_\_\_\_\_ **Date:**   /  /



The following listed items were delivered to the Owner:

## Signatures

L:\Filing System\Office\Policies & Procedures\LD Company Procedure Manual\09 - Office Operations\Office Operation Forms\Attic  
Stock Form I\_3.docx 2/12/18

ESTABLISHED 1907

# THE ART MOSAIC & TILE CO., INC.

CONTRACTORS FOR: TERRAZZO - CERAMIC - QUARRY TILE - MARBLE - GRANITE

844 RUSH STREET • P.O. BOX 569  
SOUTH BEND, INDIANA 46624-0569

PHONE: (574) 287-8131 • FAX (574) 287-4863

July 29, 2020

Larson-Danielson Construction Co.  
302 Tyler St.  
LaPorte, IN 46350

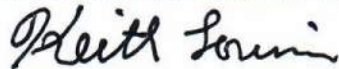
**Re: 56521 Duneland School Corp-2020 Nurse's Office Reno. Baily Elem.**

The Art Mosaic & Tile Co., Inc. warrants all labor performed and material installed at the above referenced project in accordance with the contract, plans, and specifications for a period of one (1) year from the date of substantial completion August 3, 2020

Any defects or deficiencies that occur within the warranty period will be repaired or replaced, as needed and in a prompt manner, at no cost to the Owner.

Sincerely,

**THE ART MOSAIC & TILE CO., INC.**



Keith Lovisa

## Fine Fissured

Mineral Fiber Ceilings

LOW  
VOC

\$\$\$

LEED® v4

LEED® v4

● MR: Environmental Product Declarations (EPDs)

● MR: Sourcing Raw Materials

● MR: Material Ingredients (HPDs)

● IEQ: Daylight

● IEQ: Low-Emitting Materials

● IEQ: Prereq. Min. Acoustic Performance (Schools)

● IEQ: Acoustic Performance

● MR: PBT Source Reduction (Healthcare)

● IEQ: Interior Lighting

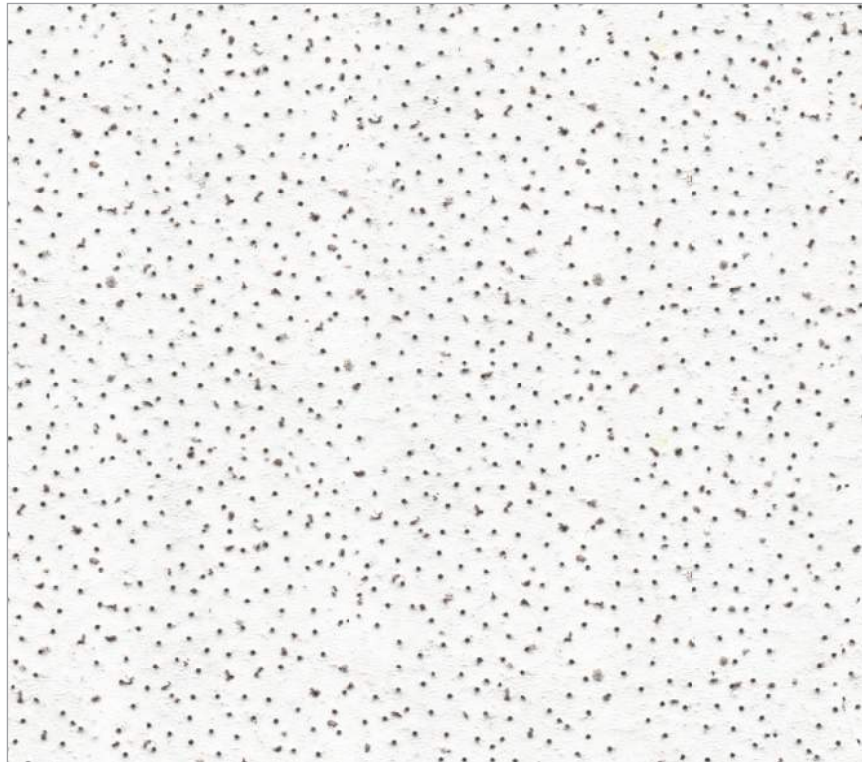
● EA: Prereq. Min. Energy Performance

● EA: Optimize Energy Performance

● Recycled Content  
CLASS A Pre: **28%** Post: **2%**  
PROTECTONE® Pre: **37%** Post: **1%**

### TOOLS

Visit [CertainTeed.com/Ceilings](http://CertainTeed.com/Ceilings)  
Download HPDs and EPDs  
LEED® Information / BIM Objects  
3-Part Specs / Data Pages



In addition to traditional white, you can make an impact with one of our 5 standard colors for item numbers HMF-154, HMF-155, HMF-157, HMF-158, HMF-159



### FEATURES & BENEFITS

- 100% non-directional pattern
- Available in fire-rated (Protectone®) versions
- Variety of edge detail options and panel sizes
- High humidity and sag resistant
- Third-party verified Environmental Product Declaration (EPD) available for this product
- Health Product Declaration (HPD) available for this product

### APPLICATIONS

- Schools
- Libraries
- Retail / Department Stores
- Offices
- Other Commercial Buildings / Space Applications



Carbon Footprint Reduction  
Rapidly Renewable Resource Content  
Recycled Content

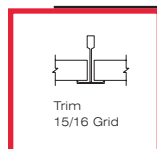


EPD Available



HPD Available

### AVAILABLE EDGE DETAILS



Trim  
15/16 Grid



Reveal  
Beveled  
15/16 Grid



Narrow Reveal  
Corner Bevel  
9/16 Grid



Narrow Reveal  
Corner Bevel  
9/16 Grid Bolt Slot

Color-coordinated suspension systems available





Fine Fissured Reveal (White) (HHF-154)

## ATTRIBUTES

|                               | DIMENSIONS<br>INCHES | EDGE<br>DETAIL | UL<br>NRC | CLASSIFIED<br>CAC | EPD<br>AVAILABLE | HPD<br>AVAILABLE | SAG<br>RESISTANT | MOLD<br>RESISTANT | LR   | WASHABLE | FIRE CLASS<br>(ASTM E1264) | EMISSION<br>COMPLIANT | RECYCLED<br>CONTENT |
|-------------------------------|----------------------|----------------|-----------|-------------------|------------------|------------------|------------------|-------------------|------|----------|----------------------------|-----------------------|---------------------|
| <b>FINE FISSURED</b>          |                      |                |           |                   |                  |                  |                  |                   |      |          |                            |                       |                     |
| <b>HHF-157</b>                | 24 x 24 x 5/8        | Trim           | 0.55      | 33                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>PFF-157</b>                | 24 x 24 x 5/8        | Trim           | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Protectone*                | Certified             | 38%                 |
| <b>HHF-154</b>                | 24 x 24 x 5/8        | Reveal         | 0.55      | 33                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>PFF-154</b>                | 24 x 24 x 5/8        | Reveal         | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Protectone*                | Certified             | 38%                 |
| <b>HHF-150</b>                | 24 x 24 x 5/8        | Narrow Reveal  | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>HHF-197</b>                | 24 x 48 x 5/8        | Trim           | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>PFF-197</b>                | 24 x 48 x 5/8        | Trim           | 0.55      | 40                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Protectone*                | Certified             | 38%                 |
| <b>HHF-194</b>                | 24 x 48 x 5/8        | Reveal         | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>HHF-2067</b>               | 20 x 60 x 5/8        | Trim           | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>HHF-177</b>                | 24 x 60 x 5/8        | Trim           | 0.55      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |
| <b>FINE FISSURED - METRIC</b> |                      |                |           |                   |                  |                  |                  |                   |      |          |                            |                       |                     |
| <b>HHF-2067M</b>              | 500 x 1500 x 15      | Trim           | 0.60      | 35                | Yes              | Yes              | Yes              | BioShield         | 0.84 | —        | Class A                    | Certified             | 30%                 |

\* Protectone®: A fire-resistive ceiling when used in applicable UL assemblies.

**CAN'T FIND A SIZE?** Contact your local Sales Representative or call 800-233-8990

## PHYSICAL DATA

### MATERIAL

Mineral Fiber

### ASTM E1264 CLASSIFICATION

Type III, Form 2, Pattern C D

### FIRE CLASS (ASTM E1264)

Tested according to ASTM E84 & CAN S102

Flame Spread: 25 or less

Smoke Developed: 50 or less

### VOC EMISSIONS

Independently certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010.

### MOLD/MILDEW RESISTANCE

BioShield® treatment included for added mold and mildew resistance.

### MAINTENANCE

Wipe with a soft cloth or vacuum with brush attachment.

### WARRANTY

15-Year Limited System Warranty

### INSTALLATION CONSIDERATION

Colored ceilings are dye-lotted and should not be mixed.

Technical Support | [certainteed.com/ceilings](https://certainteed.com/ceilings) 800-233-8990

© 05/18 CertainTeed Corporation

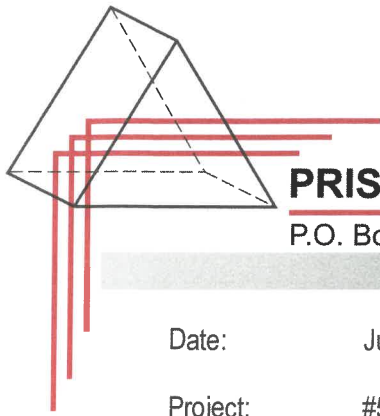
**CertainTeed**  
SAINT-GOBAIN  
Ceilings



The following listed items were delivered to the Owner:

## Signatures

L:\Filing System\Office\Policies & Procedures\LD Company Procedure Manual\09 - Office Operations\Office Operation Forms\Attic Stock Form I\_3.docx 2/12/18



## PRISM PAINTING COMPANY

P.O. Box 1944 • Highland, IN 46322

219-322-4800

FAX 219-322-7321

Date: July 29, 2020

Project: #56521-004 Duneland School Corporation – 2020 Nurse's Office Renovations at  
Bailey Elementary

Location: 800 S. 5<sup>th</sup> Street, Chesterton IN 46304

Owner: Duneland School Corporation

PPC # H834C-20

Date of Substantial Completion: August 3, 2020

### \*\*\*Warranty on Painting and/or Wallcovering Work\*\*\*

In accordance with the project documents, drawings, specifications and other relevant items, we herewith guarantee all work on the above referenced project against any defective or substandard labor, material, equipment, or workmanship for a period of one (1) year from the Date of Substantial Completion. Should any defects develop in the materials or workmanship within the specified warranty period, this subcontractor agrees within five (5) days after receiving written or verbal notice from the Owner or General Contractor, without expense to the Owner or General Contractor, to repair, replace, and in general to perform all necessary corrective work, with regard to the defective work or material, together with work in the trades that are disturbed as a result of such corrective work, to the satisfaction of the Owner. The foregoing shall not in any manner limit the Owner's remedy to this subcontractor's liability to those defects appearing within the warranty period. This subcontractor agrees to perform the work in a proper manner and time period so as to minimize any consequential damage sustained by the Owner and so as not to interfere with or in any way disrupt the operations of the Owner.

Sincerely,

Mike Helm  
Project Manager

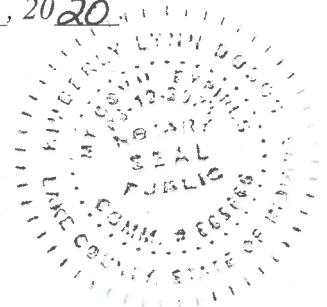
Subscribed and sworn before me this 29<sup>th</sup> day of July, 2020

Notary Public:

Kimberly Lynn Dobos

Commission Expires: March 19, 2023

Residing in: Lake County, Indiana





The following listed items were delivered to the Owner:

## Signatures

**Date:**        /        /

**Date:** 08 / 26 / 2020

**Date:**      /      /





**CARNEY  
and  
COMPANY, INC.**

636 SCHNEIDER DRIVE SOUTH ELGIN, ILLINOIS 60177

PHONE: (847) 931-4440 FAX: (847) 931-4498

WWW.CARNEYANDCO.COM

BUILDING SPECIALTIES SINCE 1974

July 30, 2020

Gina Merkel  
Larson-Danielson Construction Co., Inc.  
302 Tyler Street  
La Porte, IN 46350

RE: BAILLY ELEMENTARY SCHOOL  
CHESTERTON, IN

### **LETTER OF GUARANTEE**

We, the undersigned, herewith guarantee the TOILET ACCESSORIES AND CUBICLE CURTAINS AND TRACKS furnished by us, installed by others, against defects in material and workmanship for a period of one (1) year commencing August 3, 2020. We agree to correct or replace any defective material found within this period at no cost to the Owner, provided claim is made in writing and manufacturers' installation and maintenance instructions have been followed; improper usage, neglect or ordinary wear and tear excluded.

**PLATE GLASS MIRRORS carry a fifteen (15) year warranty against silver spoilage.**

**Operating and Maintenance Data provided by each manufacturer and placed inside each carton at the time of shipment.**

This guarantee supersedes all previous guarantees, written or implied.

CARNEY and COMPANY, INC.

Dan Carney  
Vice President



QUANTITY ONE

780

Angle-Frame Mirror

Mirror with angle frame, welded corners and theft-resistant mounting:

24"W X 36"H

## Product Materials

**FRAME:** one-piece roll-formed stainless steel,  $\frac{3}{4}$ " x  $\frac{3}{4}$ " angle with corners welded, ground and polished smooth to a satin finish. Double strength continuous integral stiffener on all sides for added strength. Bevel on front of angle secures frame flush against mirror.

**BACK:** galvanized steel, secured to frame with concealed screws, equipped with integral horizontal hanging brackets.

**MIRROR:** first quality  $\frac{1}{4}$ " float glass, thermosetting infrared cured-paint backing with Poly-Glaze protective finish. Manufactured in accordance with ASTM C 1036 and ASTM C 1503. All edges protected by shock-absorbing, neoprene tubing. The back of the mirror is protected by a sheet of  $\frac{1}{4}$ " extruded polystyrene, which is placed between the mirror and the galvanized steel.

**WALL HANGER:** 18 gauge cold rolled steel, all welded construction to form rigid template.



## Installation

Verify all rough-in dimensions prior to installation. Secure concealed mounting bracket to wall with screws (not included) at holes provided. Mounting kits available through Bradley (ref. #899-026). For more information, visit [bradleycorp.com](http://bradleycorp.com). Provide in-wall backing at mounting screw locations. Position mirror over mounting bracket to engage hanger tabs. Slide mirror down and lock into position.

## Guide Specification

Mirror shall be framed with heavy gauge, one-piece roll-formed  $\frac{3}{4}$ " x  $\frac{3}{4}$ " stainless steel angle with double strength continuous integral stiffener. Welded corners shall be polished to a uniform satin finish. Mirror shall be of first quality  $\frac{1}{4}$ " float glass guaranteed for 15 years against silver spoilage and protected by a shock-absorbing, neoprene tubing with Poly-Glaze protective finish. Back of unit shall be galvanized steel secure to frame with concealed screws, equipped with integral horizontal hanging brackets and separate wall hanger for concealed mounting.

**Framed Mirror shall be Bradley Model**

**780-\_\_\_\_\_ " W x \_\_\_\_\_ " H (specify width and height).**

- ☒ Bradley mirrors are not field interchangeable from horizontal to vertical or vice versa.  
**Always specify width first.**

## ADA Compliant

- ☒ Consult local and national accessibility codes for proper installation guidelines.
- ☒ Conformity and compliance to local and national codes is the responsibility of the installer.

Orders composed of products indicated as **Bradex®** will be available to ship in three days after receipt of order at the factory. There is no pricing penalty for this service from Bradley.

Page 1 of 2  
7/17/2017  
This information is subject to change without notice.  
Bradley\_Mirror\_780

© 2017 Bradley  
P.O. Box 309, Menomonee Falls, WI 53052-0309  
800 BRADLEY (800 272 3539) +1 262 251 6000  
[bradleycorp.com](http://bradleycorp.com)

**Carney and Company, Inc.** 636 Schneider Dr. South Elgin, IL 60177  
Ph: 847-931-4440 Fx: 847-931-4498



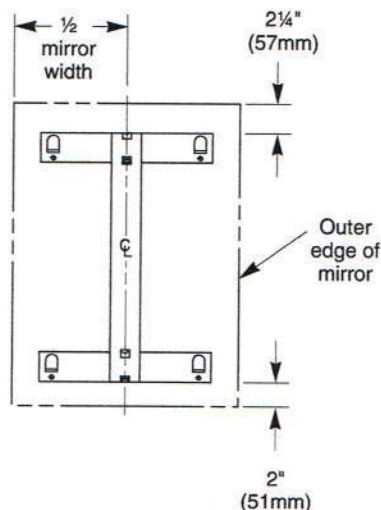


780

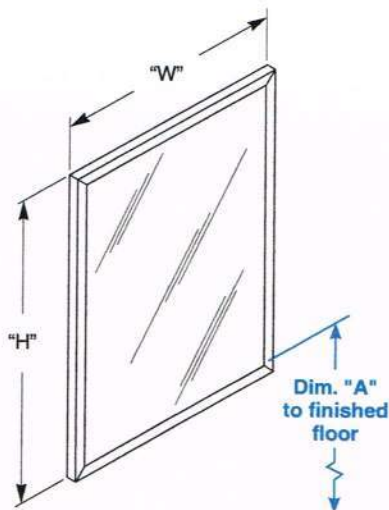
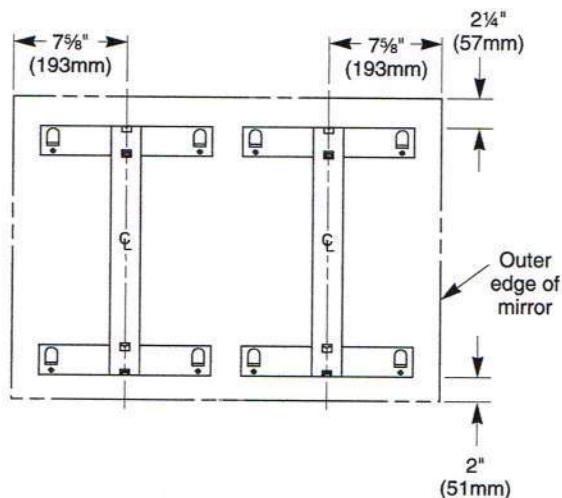
Angle-Frame Mirror

## Dimensions

## MIRRORS 30" WIDE AND UNDER



## MIRRORS OVER 30" WIDE



## Bradex® Models

| Width (Inches) W | Height (Inches) H | Overall Dimension (Inches) | Overall Dimensions (Millimeters) | Standard Model Number |
|------------------|-------------------|----------------------------|----------------------------------|-----------------------|
| 18"              | 30"               | 18 x 30                    | 457 x 762                        | 780-1830              |
| 18"              | 36"               | 18 x 36                    | 457 x 914                        | 780-1836*             |
| 24"              | 36"               | 24 x 36                    | 610 x 914                        | 780-2436*             |
| 24"              | 60"               | 24 x 60                    | 610 x 1524                       | 780-2460              |

Model 780 series angle framed mirrors can be fabricated to a maximum size of 120"W x 72"H but must not exceed 40 sq ft.

\* Indicates available Tempered glass. **Bradex®**

| Dim. "A" Key Surface:  | For Dim. "A"                                  | Bottom of Unit  |
|--|---|-----------------|
| Mirror's bottom edge of the reflecting surface to finished floor | 40" (1016mm)                                  | 39 1/4" (997mm) |
|  | 37" (940mm)                                   | 36 1/4" (921mm) |
|  | 34" (864mm)                                   | 33 1/4" (845mm) |
| <b>Rough wall opening:</b>                                       |   |                 |
| Surface Mount:   | No rough wall opening, see overall dimensions |                 |

Orders composed of products indicated as **Bradex®** will be available to ship in three days after receipt of order at the factory. There is no pricing penalty for this service from Bradley.

Page 2 of 2

7/17/2017

This information is subject to change without notice.

Bradley\_Mirror\_780

© 2017 Bradley  
P.O. Box 309, Menomonee Falls, WI 53052-0309  
800 BRADLEY (800 272 3539) +1 262 251 6000  
bradleycorp.com



QUANTITY

3

1018"  
1036"  
1042"

832  
Grab Bar

## 1 1/4" O.D. heavy duty stainless steel grab bar with concealed mounting:

### Product Materials

**FLANGES:** 3/8" dia. 13 gauge stainless steel.

**ESCUTCHEONS:** 22 gauge stainless steel. One-piece drawn construction with exposed surfaces in architectural satin finish. Snap over flanges to conceal mounting screws.

**TUBING:** 1 1/4" O.D. 18 gauge stainless steel, seamless construction with exposed surfaces in architectural satin finish. Bent ends of tubing pass thru the flanges and are welded for maximum strength. Intermediate supports are contour cut and joined by welding to form an integral part of the grab bar. All welds ground and polished to blend. Mandrel bending process maintains uniform bar diameter. Return provides 1 1/2" standard safety clearance between wall and bar.

### Strength

When properly mounted, all Bradley heavy duty grab bar systems meet or exceed the requirements of ANSI Standard A117.1, the ADA and ABA Accessibility Guidelines for Buildings and Facilities (ADAAG), and the Uniform Federal Accessibility Standard (UFAS).

### Installation

Verify all rough-in dimensions prior to installation. Secure to wall where adequate in-wall backing exists. Use bar as template to locate mounting holes. Drill holes and set anchors as appropriate. Mount grab bar and secure mounting screws (not included). Snap escutcheons into place. For Bradley grab bar mounting kits, please visit [bradleycorp.com](http://bradleycorp.com).

### Optional Features

| Features  | Suffix |
|---|--------|
| <input type="checkbox"/> Safety-grip finish <i>Provided</i> | -2     |

### Guide Specification

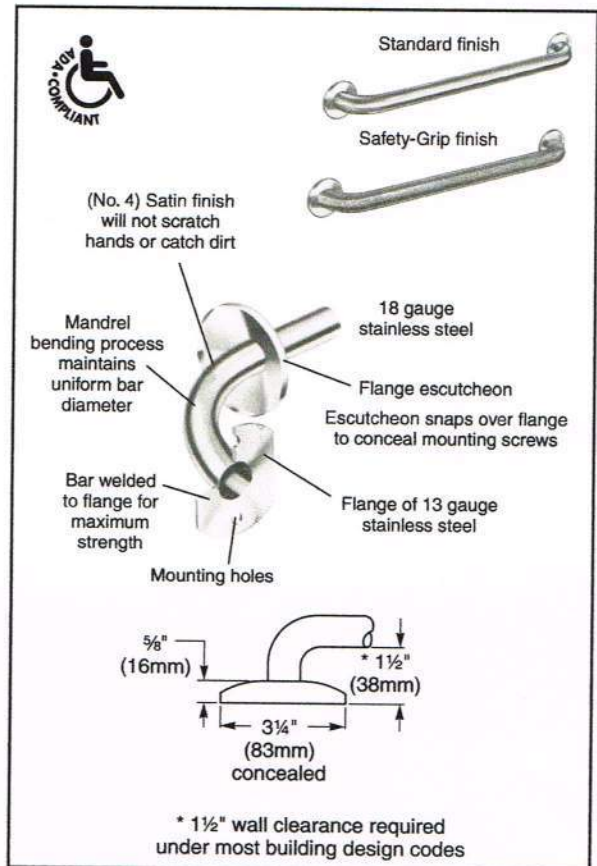
Grab bar shall be fabricated of satin finish stainless steel with concealed mounting flanges in sizes and configurations as indicated. Install with Bradley Mounting Kits as indicated.

### ADA Compliant

- ☒ Consult local and national accessibility codes for proper installation guidelines.
- ☒ Conformity and compliance to local and national codes is the responsibility of the installer.

Orders composed of products indicated as **Bradex®** will be available to ship in three days after receipt of order at the factory. There is no pricing penalty for this service from Bradley.

Page 1 of 1  
2/11/2011  
This information is subject to change without notice.  
Bradley\_GrabBar\_832



### Bradex® Models

| Configuration Number | Shipping Data |          |
|----------------------|---------------|----------|
|                      | Cu. Ft.       | Wt. Lbs. |
| 001-18"              | 0.14          | 2        |
| 001-24"              | 0.14          | 2        |
| 001-36"              | 0.15          | 3        |
| 001-42"              | 0.15          | 4        |
| 001-48"              | 0.25          | 4        |
| 055**                | 1.15          | 4        |

NOTE: These units must ship via common carrier.  
 \*\* 055 24" x 24" with 120° Angle Standard Dimension.  
**Bradex®** only in safety-grip finish.  
 • Indicates available Safety Grip. **Bradex®**





Sheet Metal • Heating • Air Conditioning  
Ventilation • Plumbing • Fabrication • Service  
Certified Air and Water Balancing  
Temperature Control

*Women Owned Business Enterprise (WBE)*

July 27, 2020

Larson-Danielson Construction  
Duneland School Corporation – 2020 Mechanical Renovations at Bailly Elementary School-Nurse's Office  
800 South 5<sup>th</sup> Street  
Chesterton, IN 46304

### **PLUMBING LETTER OF WARRANTY**

If within one year after the architects final certificate of payment or date of acceptance for the work or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, this contractor shall correct any deficiencies promptly after receipt of a written notice from the owner to do so unless the owner has previously given this contractor a written acceptance of such condition. The owner shall give such notice promptly after discovery of the condition.

In addition to the above, this contractor unconditionally warrants to the owner and the architect that all materials and equipment furnished under this contract are new unless otherwise specified, and that all work is of top quality, free from faults and defects, and in accordance with the Contract Documents.

Circle "R" Mechanical Inc.'s warranty shall begin on August 3, 2020 and shall expire on August 2, 2021 unless this office is notified in writing to the contrary.

Respectfully,

CIRCLE "R" MECHANICAL INC.

Tom Heckman  
President





# BAILLY ELEMENTARY

O&M

NAME Circle R Mechanical  
EMAIL dave@circlermechanical.com  
PHONE 2197875566  
FAX 2197875567  
ADDRESS 6620 Shepherd Ave  
Portage In 46368

| VENDOR                  | DESCRIPTION   | PAGE |
|-------------------------|---|------|
| FCO                     |   |      |
| Zurn                    | Adjustable Cleanout   | 4    |
| FD- 1                   |   |      |
| Zurn                    | Body Assembly With "type B" Strainer  | 5    |
| L- 1                    |   |      |
| American Standard       | Lucerne Wall Mounted Sink 4 In Ctrs - White   | 8    |
| Delta                   | Commercial Classic Single Handle Centerset Lavatory Faucet  | 9    |
| Dearborn Brass          | Cast Grid Patent Outlet Plug  | 18   |
| Brass Craft             | Flanges Faucet Kit: 1/2 In. Nom Comp X 3/8 In. O.d. Comp Multi-turn A                                   | 18   |
| Oatey Manufacturing     | Semi-cast P-trap 1.25 17 Gauge  | 18   |
| TRUBRO                  | One P-trap Cover, Two Angle Valves And Supply Covers, One 5" Offset Tailpiece Wheelchair Strainer Cover | 18   |
| Josam Company           | Floor Mount Concealed Arm   | 18   |
| TMV- 1                  |   |      |
| Jones Stephens          | Lead Free* Under Sink Guardian Thermostatic Mixing Valves, Brass  | 20   |
| WC- 1                   |   |      |
| American Standard       | Afwall Millennium Flowise Elongated Top Spud- White   | 25   |
| Sloan                   | Royal 111 - 1.28 Exposed Water Closet Flushometer   | 28   |
| Sloan                   | Dfsm/sfsm Retrofit Unit   | 39   |
| Bemis Manufacturing Co. | Bemis White Elongated Open-front Anti-microbial Seat  | 43   |
| Josam Company           | Closet Carrier  | 44   |

| VENDOR | DESCRIPTION         | PAGE |
|--------|---------------------|------|
| Zurn   | Adjustable Cleanout | 4    |

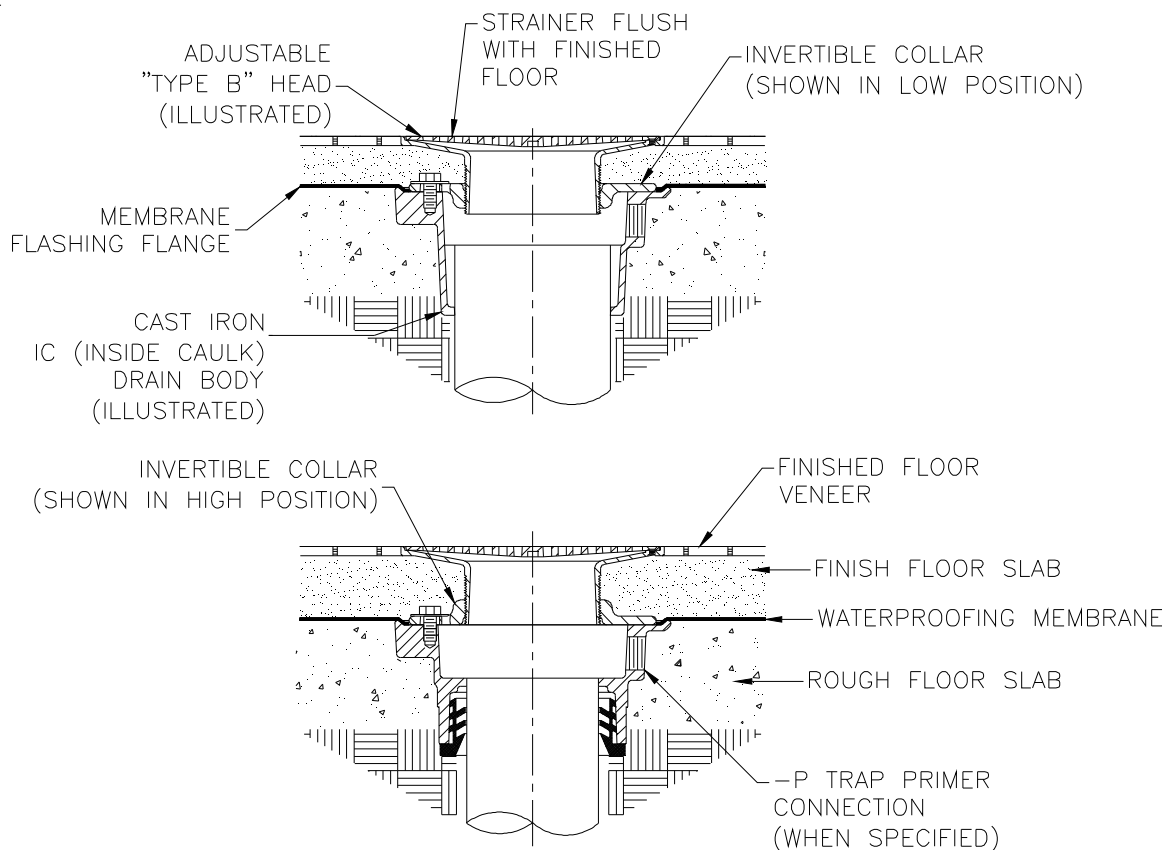


| VENDOR | DESCRIPTION                          | PAGE |
|--------|--------------------------------------|------|
| Zurn   | Body Assembly With "type B" Strainer | 5    |



## TYPICAL INSTALLATION FOR Z415 FLOOR DRAIN

Dimensional Data (inches and [ mm ]) are Subject to Manufacturing Tolerances and Change Without Notice



### Z415 FLOOR DRAIN

The Z415 Zurn Floor Drain can be installed in most floor construction. The drain pipe is run to an elevation below the expected finished floor level, so that the drain top will be flush with (or slightly below) the finished floor. Dimensional data for all drain heights and outlet types are shown in the Engineering Handbook, and on Zurn Submittal Drawings. The drain body is secured to the pipe with any of four connections, Threaded, No-Hub, Inside Caulk or the Neo-Loc. The type of connection should be specified upon ordering any Zurn drain. Once the drain is set in place, the initial concrete sub-floor is poured to an elevation level with the top flange of the drain body. The waterproofing membrane is then run up to and over the flange. The invertible clamping collar is then placed on the drain and secured. The strainer is then screwed into the invertible clamping collar and finished floor is poured to finished grade. Note the Z415 collar can be used in the high or low position to change the total adjustment of the head elevation (for example, the 5" "Type B" adjustment in the low position is 1 [25] - 1-1/2 [38] and in the high position 1-3/32 [28] - 2-1/4 [57]). Also, care should be taken to protect the top finish during installation, through the use of cardboard, tape or other protective material applied by the plumber.

Form # FD15      Date: 1/31/11      C.N. No. 120820      Rev. A

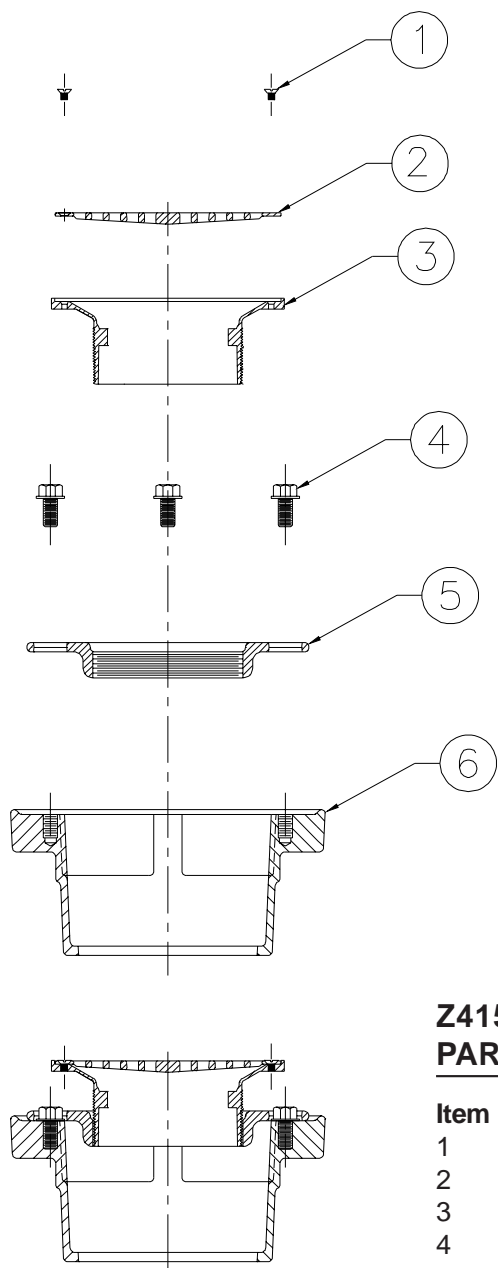
ZURN INDUSTRIES, LLC. ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514  
Phone: 814/455-0921 ♦ Fax: 814/454-7929 ♦ World Wide Web: [www.zurn.com](http://www.zurn.com)

In Canada: ZURN INDUSTRIES LIMITED ♦ 3544 Nashua Drive ♦ Mississauga, Ontario L4V1L2 ♦ Phone: 905/405-8272 Fax: 905/405-1292



## Z415B

### BODY ASSEMBLY W/ "TYPE B" 6" [152] STRAINER EXPLODED PARTS LIST



### Z415B PARTS LIST

| Item | Name              | Part Number | Quan. |
|------|-------------------|-------------|-------|
| 1    | #8-32 Mach. Screw | 14855       | 3     |
| 2    | 6" [152] Strainer | 46234       | 1     |
| 3    | "Type B" Head     | 33161       | 1     |
| 4    | 3/8 Cap Screw     | 50535       | 4     |
| 5    | Clamping Collar   | 47047       | 1     |
| 6    | Body              | 55837       | 1     |

Form # FD28 Date: 10/12/04 C.N. No. 92656 Rev. B

ZURN INDUSTRIES, INC. ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514

Phone: 814/455-0921 ♦ Fax: 814/454-7929 ♦ World Wide Web: [www.zurn.com](http://www.zurn.com)

In Canada: ZURN INDUSTRIES LIMITED ♦ 3544 Nashua Drive ♦ Mississauga, Ontario L4V1L2 ♦ Phone: 905/405-8272 Fax: 905/405-1292

| VENDOR              | DESCRIPTION   | PAGE |
|---------------------|---|------|
| American Standard   | Lucerne Wall Mounted Sink 4 In Ctrs - White   | 8    |
| Delta               | Commercial Classic Single Handle Centerset Lavatory Faucet  | 9    |
| Dearborn Brass      | Cast Grid Patent Outlet Plug  | 18   |
| Brass Craft         | Flanges Faucet Kit: 1/2 In. Nom Comp X 3/8 In. O.d. Comp Multi-turn A                                   | 18   |
| Oatey Manufacturing | Semi-cast P-trap 1.25 17 Gauge  | 18   |
| TRUBRO              | One P-trap Cover, Two Angle Valves And Supply Covers, One 5" Offset Tailpiece Wheelchair Strainer Cover | 18   |
| Josam Company       | Floor Mount Concealed Arm   | 18   |





# Warranties

## AS AMERICA, INC. ONE YEAR LIMITED WARRANTY FOR COMMERCIAL FIXTURES

If inspection of this AS America, Inc. ("American Standard®") plumbing product, within one year after its initial purchase, confirms that it is defective in materials or workmanship, American Standard® will repair or, at its option, exchange the product for a similar model.

If the commercial fixture is purchased with a matching American Standard flush valve, American Standard will extend the limited commercial warranty for the commercial fixture to five years. Proof of purchase is required and must show that the commercial fixture and flush valve are purchased together and in the same proof of purchase document.

This limited warranty applies only to the original purchaser and installation of these products. In the event of a limited warranty claim, proof of purchase will be required – **save sales receipt**.

This limited warranty does not apply to local building code compliance. Since local building codes vary considerably, the purchaser of this product should check with a local building or plumbing contractor to insure local code compliance before installation.

This limited warranty is void if the product has been moved from its initial place of installation; if it has been subjected to faulty maintenance, abuse, misuse, accident or other damages; if it was not installed in accordance with American Standard®'s instructions; or if it has been modified in a manner inconsistent with the product as shipped by American Standard®.

American Standard®'s option to repair or exchange the product under this limited warranty does not cover any labor or other costs of removal or installation. **IN NO EVENT WILL AMERICAN STANDARD® BE LIABLE FOR THE COST OF REPAIR OR REPLACEMENT OF ANY INSTALLATION MATERIALS, INCLUDING BUT NOT LIMITED TO, TILES, MARBLE, ETC.** American Standard® will not be responsible for any other incidental or consequential damages attributable to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this limited warranty. This limited warranty does not cover any liability for consequential or incidental damages, all of which are hereby expressly disclaimed, or the extension beyond the duration of this limited warranty of any implied limited warranties, including those of merchantability or fitness for an intended purpose. (Some states or provinces do not allow the exclusion or limitation of implied limited warranties, so this exclusion may not apply to you.)

This limited warranty gives you specific legal rights. You may have other statutory rights that vary from state to state or from province to province, in which case this limited warranty does not affect such statutory rights.

## AS AMERICA, INC. LIMITED WARRANTY FOR CHAMPION® PRO AND CHAMPION®4 TOILETS

**This toilet comes with a limited lifetime warranty on chinaware, a limited 10 year warranty on all mechanical parts of the toilet and a limited 1 year warranty on the toilet seat if included with product.** If inspection of this AS America, Inc. ("American Standard®") plumbing product, inclusive of the chinaware and all mechanical parts, confirms that it is defective in materials or workmanship, American Standard® will repair or, at its option, exchange the product for the same or a similar model.

This limited warranty applies only to the original non-commercial purchaser and installation of the products. In the event of a limited warranty claim, proof of purchase will be required – **save sales receipt**.

For this warranty to become effective, the warranty registration process must be completed via the internet or telephone per the warranty registration instructions.

This limited warranty does not apply to commercial installations. The warranty for commercial installations is 1 year on chinaware and mechanical parts and 1 year on the toilet seat if included with product.

This warranty **does not apply** to local building code compliance. Since local building codes vary considerably, the purchaser of the product should check with a local building or plumbing contractor to ensure local code compliance before installation.

This warranty **will be void** if the product has been moved from its initial place of installation; if it has been subjected to faulty maintenance, abuse, misuse, accident or other damage; if it was not installed in accordance with American Standard®'s instructions; or if it has been modified in a manner inconsistent with the product as shipped by American Standard®.

**WARNING:** This warranty **DOES NOT COVER** any damages caused by the use of in-tank cleaners. These products can seriously corrode the fittings in the tank. This damage can cause leakage and property damage. **American Standard® will not be responsible or liable for any damage caused by the use of in-tank cleaners.**

American Standard®'s option to repair or exchange the product under this warranty does not cover any labor or other costs of removal or installation including any costs of any surrounding material such as tile or marble. **American Standard® is not responsible for any other incidental or consequential damages attributed to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this warranty.** (Some states or provinces do not allow the exclusion or limitation of implied warranties, so this exclusion may not apply to you.)

This warranty gives you specific rights. You may have other statutory rights that may vary from state to state or province to province, in which case this warranty does not affect such statutory rights.



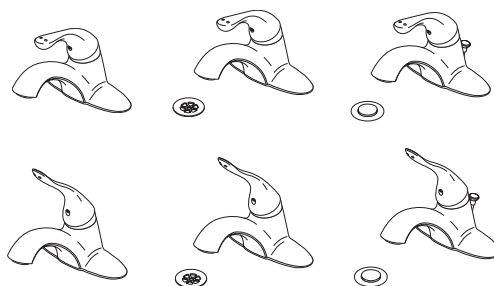
73420

**SINGLE HANDLE LAVATORY  
CENTERSET FAUCETS**

**LLAVES MONOCONTROL DE MONTURA  
DE CENTRO PARA LAVAMANOS**

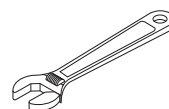
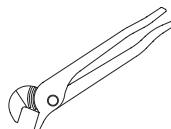
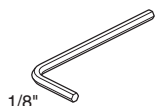
**ROBINETS À ENTRAXE COURT À  
UNE POIGNÉE**

Models/Modelos/Modèles  
501LF-HDF, 511LF-HDF, 515LF-HDF,  
516LF-HDF, 520LF-HDF & 523LF-HDF  
Series/Series/Seria



Write purchased model number here.  
Escriba aquí el número del modelo comprado.  
Inscrivez le numéro de modèle ici.

**You may need/Usted puede necesitar/  
Articles dont vous pouvez avoir besoin:**



**For easy installation of your Delta  
faucet you will need:**

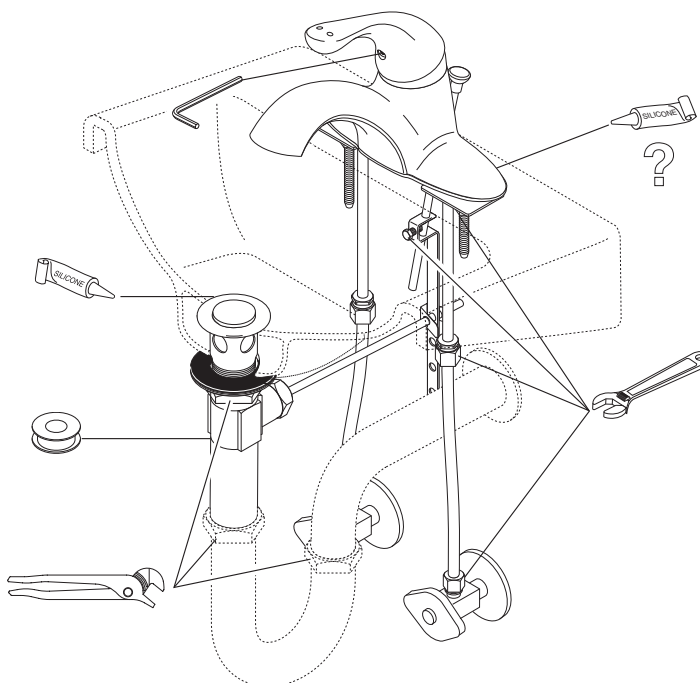
- To **READ ALL** the instructions completely before beginning.
- To **READ ALL** warnings, care, and maintenance information.
- To purchase the correct **water supply hook-up**.

**Para instalación fácil de su llave Delta  
usted necesitará:**

- **LEER TODAS** las instrucciones completamente antes de empezar.
- **LEER TODOS** los avisos, cuidados, e información de mantenimiento.
- Comprar las conexiones correctas para el **suministro de agua**.

**Pour installer votre robinet Delta  
facilement, vous devez:**

- **LIRE TOUTES** les instructions avant de débiter;
- **LIRE TOUS** les avertissements ainsi que toutes
- Acheter le bon nécessaire de raccordement.



### Delta Commercial Faucet Limited Warranty

All parts of the Delta® HDF® and TECK® faucets are warranted to the original consumer purchaser to be free from defects in material, finish and workmanship for a period of five (5) years unless otherwise specifically stated in the catalogue and price book. This warranty is made to the original consumer purchaser and shall be effective from date of purchase as shown on purchaser's receipt.

Delta will, at its option, repair or replace, FREE OF CHARGE, during the warranty period, any part which proves defective in material or workmanship under normal installation, use and water and service conditions. If Delta Faucet concludes that the returned part was manufactured by Delta Faucet and is, in fact, defective, then Delta Faucet will honour the warranty stated herein. Replacement parts can be obtained from your local dealer or distributor listed in the telephone directory or by returning the part along with the purchaser's receipt to our factory, TRANSPORTATION CHARGES PREPAID, at the address listed. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY MADE BY DELTA. ANY CLAIMS MADE UNDER THIS WARRANTY MUST BE MADE DURING THE FIVE YEAR PERIOD REFERRED TO ABOVE. ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED

WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. LABOUR CHARGES AND/OR DAMAGE INCURRED IN INSTALLATION, REPAIR OR REPLACEMENT AS WELL AS INCIDENTAL AND CONSEQUENTIAL, SPECIAL, INDIRECT OR PUNITIVE DAMAGES CONNECTED THEREWITH ARE EXCLUDED AND WILL NOT BE PAID BY DELTA FAUCET.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty is for commercial products only from Delta Faucet Company and Delta Faucet Canada and is void for any damage to this faucet due to misuse, abuse, neglect, accident, improper installation, any use in violation of instructions furnished by Delta Faucet or any use of replacement parts other than genuine Delta parts.

© 2016 Masco Corporation of Indiana

### Garantía Limitada de las Llaves de Agua Comerciales Delta

Todas las piezas de las llaves de agua (grifos) Delta®, HDF®, TECK® están garantizadas al comprador consumidor original de estar libres de defectos de material, acabado y fabricación por un periodo de cinco (5) años a menos que sea establecido específicamente de otra manera en el catálogo o libro de precios. Esta garantía se le hace al comprador consumidor original y será efectiva desde la fecha de compra como mostrado en el recibo del comprador.

Delta, a su opción, reparará o reemplazará, GRATISMENTE, durante el periodo de garantía, cualquier pieza que pruebe ser defectuosa en material o fabricación bajo instalación, uso, agua y condiciones de servicio normales. Si Delta Faucet concluye que la pieza devuelta fue fabricada por Delta Faucet y es, de hecho, defectiva, entonces Delta Faucet honrará la garantía establecida en este documento.

Las piezas de repuesto se pueden obtener de su comerciante o distribuidor local listado en el libreto telefónico o devolviendo la pieza junto con el recibo del comprador a nuestra fábrica. CARGOS DE TRANSPORTE PRE-PAGADOS, a la dirección incluida. ESTA GARANTÍA ES LA ÚNICA GARANTÍA EXPRESA HECHA POR DELTA. CUALQUIER RECLAMO HECHO BAJO ESTA GARANTÍA DEBE SER HECHO DURANTE EL PERÍODO DE CINCO AÑOS ARRIBA

MENCIONADO. CUALQUIER GARANTÍA IMPLÍCITA, INCLUYENDO LA GARANTÍA INPLÍCITA DE COMERCIABILIDAD DE EMPLEO PARA UN PROPOSITO PARTICULAR, TIENE UNA DURACIÓN LIMITADA A LA DURACIÓN DE ESTA GARANTÍA. LOS CARGOS DE LABOR Y/O DAÑO INCURRIDO DURANTE LA INSTALACIÓN, REPARACIÓN O REPUESTO COMO TAMBIÉN DAÑOS INCIDENTALES O RESULTANTES, ESPECIALES, INDIRECTOS O PUNITIVOS RELACIONADOS CON LO MENCIONADO SON EXCLUIDOS Y NO SERÁN PAGADOS POR DELTA FAUCET.

Algunos estados no permiten limitaciones de la duración de una garantía implícita limitada, o la exclusión o limitación de daños incidentales o consecuentes, de manera que las limitaciones o exclusiones arriba mencionadas puedan no aplicarle a usted. Esta garantía le da derechos legales específicos, y usted también puede tener otros derechos que varían de estado a estado.

Esta garantía es solo para productos comerciales de Delta Faucet Company y Delta Faucet Canada y es nula por cualquier daño hecho a esta llave de agua resultante del mal uso, abuso, descuido, accidente, instalación incorrecta, cualquier uso en violación de las instrucciones proporcionadas por Delta Faucet o cualquier uso de piezas de repuesto que no sean de piezas genuinas de Delta.

© 2016 Masco Corporación de Indiana

### Garantie Limitee Delta Commercial

Toutes les pièces des robinets de marque Delta® HDF® et TECK® sont garanties contre tout défaut de matière, de finition et de main d'oeuvre pour une période de cinq (5) ans, sauf indication contraire stipulée dans le catalogue et la liste des prix. Cette garantie est offerte à l'acheteur original et entre en vigueur à compter de la date d'achat indiquée sur la preuve d'achat.

Delta procédera, à son entière discrétion, à la réparation ou au remplacement, SANS FRAIS, durant la période de garantie, de toute pièce qui présente un défaut de matière ou de main d'oeuvre dans des conditions d'installation, d'usage, d'eau et de service normales. Si Delta Faucet détermine que la pièce retournée a été fabriquée par Delta Faucet et qu'en effet, cette pièce fait défaut, Delta Faucet respectera alors la garantie stipulée aux présentes. Les pièces de rechange peuvent être obtenues chez votre marchand local ou le distributeur inscrit dans votre annuaire téléphonique ou en retournant la pièce ainsi que la preuve d'achat à notre usine, FRAIS DE TRANSPORT PRÉPAYÉS, à l'adresse indiquée. CETTE GARANTIE EST LA SEULE GARANTIE EXPRESSE FAITE PAR DELTA.

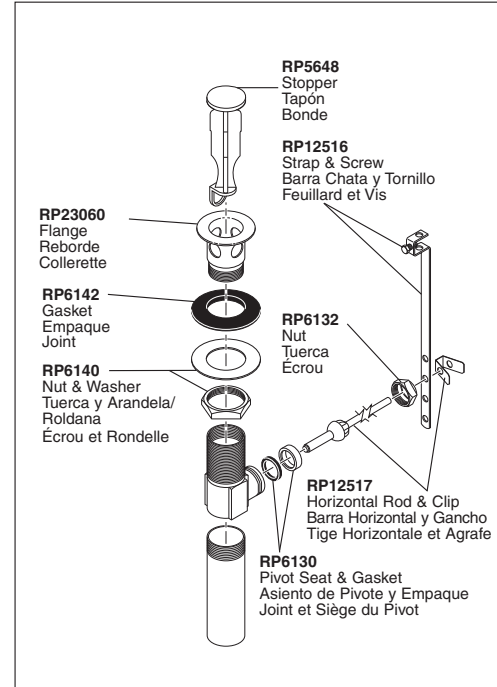
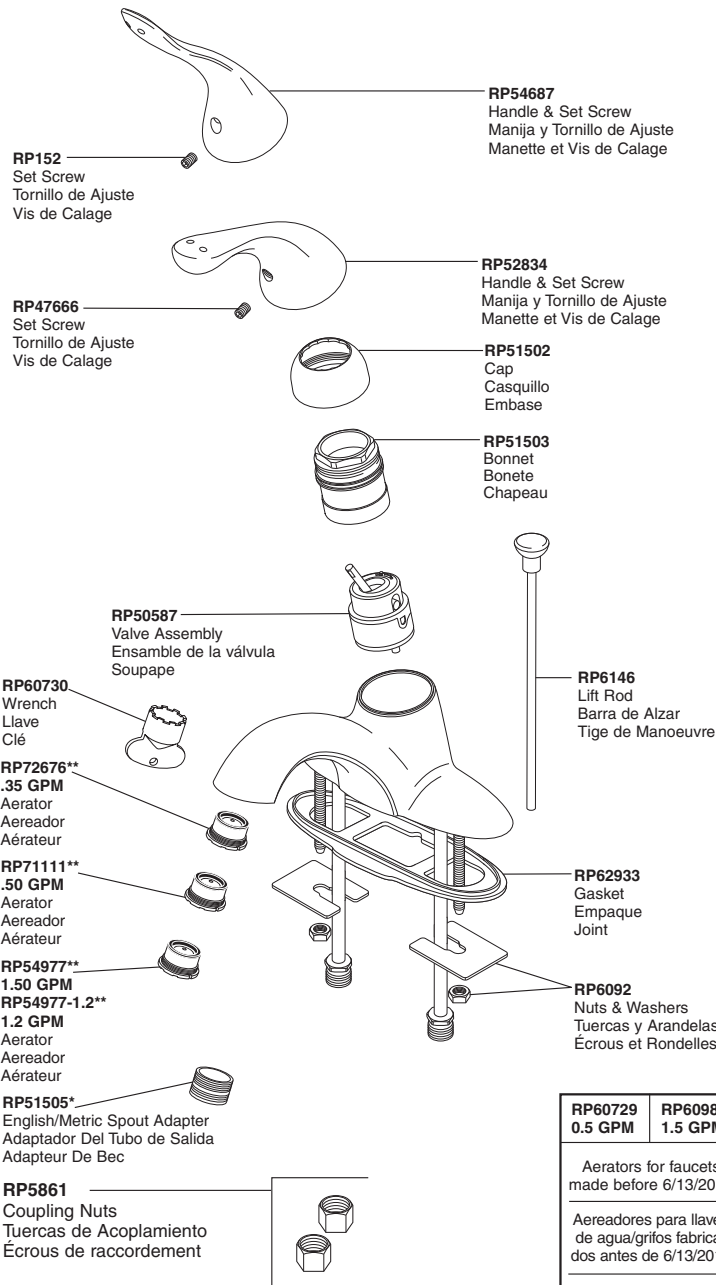
TOUTE RÉCLAMATION FAITE EN VERTU DE CETTE GARANTIE DOIT ÊTRE PRÉSENTÉE DURANT LA PÉRIODE DE CINQ ANS MENTIONNÉE CI-DESSUS. TOUTE GARANTIE IMPLICITE, Y COMPRIS LA GARANTIE IMPLICITE DE VALEUR

COMMERCIALE RELATIVEMENT À L'APTITUDE À LA FONCTION, EST LIMITÉE EN TERMES DE DURÉE POUR LA DURÉE DE CETTE GARANTIE. LES FRAIS DE MAIN D'OEUVRE ET/OU DE DOMMAGES ENCOEURUS DURANT L'INSTALLATION, LA RÉPARATION OU LE REMPLACEMENT AINSI QUE LES DOMMAGES-INTÉRÊTS ACCESSOIRES OU IMMATÉRIELS, SPÉCIAUX, INDIRECTS OU PUNITIFS S'Y RAPPORTANT SONT EXCLUS ET NE SERONT PAS PAYÉS PAR DELTA FAUCET.

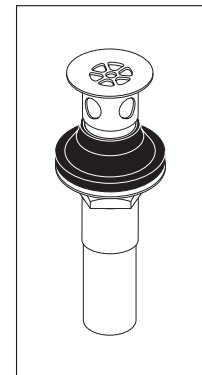
Certains états ne permettent pas la limitation de la durée de la garantie implicite, ou l'exclusion ou la limitation des dommages-intérêts accessoires ou immatériels, et par conséquent, les limitations ou les exclusions stipulées ci-dessus peuvent ne pas s'appliquer dans votre cas. Cette garantie vous accorde certains droits reconnus par la loi et vous avez peut-être aussi d'autres droits qui varient d'un état à l'autre.

Cette garantie s'applique seulement aux produits commerciaux des sociétés Delta Faucet et Delta Faucet Canada et est nulle de plein droit pour tout dommage causé à ce robinet en raison d'usage excessif, d'abus, de négligence, d'accident, de mauvaise installation, tout usage en contravention des directives fournies par Delta Faucet ou tout usage de pièces de rechange autres que des pièces originales Delta.

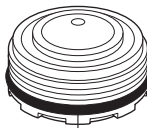
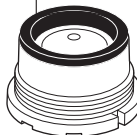
© 2016 Division de Masco Indiana



**RP26533**  
Metal Pop-Up Assembly Less Lift Rod  
Ensamble de Metal del Desagüe Automático Menos  
la Barra de Alzar  
Renvoi Mécanique en Métal Sans la Tige de Manoeuvre



**RP6346**  
Grid Strainer  
Tamiz de la rejilla  
Tamis de grille

| RP60729<br>0.5 GPM  | RP60983<br>1.5 GPM | RP72676<br>0.35 GPM  | RP71111<br>0.5 GPM | RP54977<br>1.5 GPM |
|---|--------------------|--|--------------------|--------------------|
| Aerators for faucets made before 6/13/2011  |                    | Aerators for faucets made after 6/13/2011  |                    |                    |
| Aereadores para llaves de agua/grifos fabricados antes de 6/13/2011                 |                    | Aereadores para llaves de agua/grifos fabricados después de 6/13/2011                |                    |                    |
| Aérateurs pour les robinets fabriqués avant le 13/06/2011                           |                    | Aérateurs pour les robinets fabriqués après le 13/06/2011                            |                    |                    |
|  |                    |  |                    |                    |
| O-ring Seal<br>Anillos "O"<br>Joints Torique  |                    | Gasket Seal<br>Empaque<br>Joint  |                    |                    |

\*RP51505 adapter is only compatible with aerators produced before 6/13/2011.

Adaptador \*RP51505 solo es compatible con aireadores fabricados antes de junio 13, 2011.

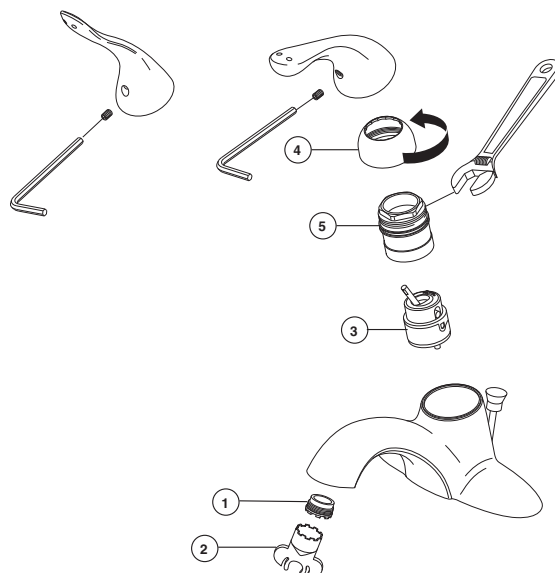
\*L'adaptateur \*RP51505 est compatible uniquement avec les aérateurs produits avant le 13 juin 2011.

\*\*If you are unsure of the manufacture date, please order both aerators in the flow rate you desire.

\*\*Si no está seguro de la fecha de fabricación, por favor, ordene ambos aireadores para el flujo deseado.

\*\*Si vous n'êtes pas certain de la date de fabrication, veuillez commander les aérateurs de chacun des modèles qui ont les caractéristiques de débit que vous désirez.





## Maintenance

### If faucet exhibits very low flow:

- A. Remove and clean Aerator (1) with supplied wrench (2), or  
 B. SHUT OFF WATER SUPPLIES. Replace valve cartridge (3). When reinstalling parts, make sure bonnet nut (5) is tightened securely with a wrench.\*

### If faucet leaks from under handle:

Remove handle and unthread trim cap (4). Using a wrench, ensure bonnet nut (5) is tight.

### If leak persists—SHUT OFF WATER SUPPLIES.

Replace valve cartridge (3). When reinstalling parts, make sure bonnet nut (5) is tightened securely with a wrench.\*

### If faucet leaks from spout outlet—SHUT OFF

WATER SUPPLIES. Replace valve cartridge (3). When reinstalling parts, make sure bonnet nut (5) is tightened securely with a wrench.\*

**\* WARNING: Failure to securely tighten bonnet nut with a wrench could result in water damage.**

**Note:** Do not attempt to disassemble cartridge (3). There are no repairable parts inside.

## Cleaning and Care

Care should be given to the cleaning of this product. Although its finish is extremely durable, it can be damaged by harsh abrasives or polish. To clean, simply wipe gently with a damp cloth and blot dry with a soft towel.

## Mantenimiento

### Si la lave de agua exhibe muy poco flujo:

- A. Quite y limpie el aereador (1) con la llave de tuerca incluida (2), o  
 B. CIERRE LOS SUMINISTROS DE AGUA. Cambie el cartucho de la válvula (3). Sando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

### Si la llave de agua tiene una filtración por debajo de la manija:

Quite la manija y casquillo (4). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

### Si la filtración persiste – CIERRE LOS

SUMINISTROS DE AGUA. Cambie el cartucho de la válvula (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

### Si la llave de agua tiene una filtración desde la salida del surtidor – CIERRE LOS

SUMINISTROS DE AGUA. Cambie el cartucho de la válvula (3). Sando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

**\* AVISO: Si no aprieta fijamente la tuerca tapa con una llave de tuercas pudiera resultar en daño por agua.**

**Note:** No procure desmontar el cartucho (3). No hay piezas reparables adentro.

## Limpieza y Cuidado de su Llave

Tenga cuidado al ir a limpiar este producto. Aunque su acabado es sumamente durable, puede ser afectado por agentes de limpieza o para pulir abrasivos. Para limpiar su llave, simplemente frótelas con un trapo húmedo y luego séquelas con una toalla suave.

## Entretien

### Si le débit du robinet est très faible :

- A. Enlevez l'aérateur (1) à l'aide de l'outil fourni (2) et nettoyez-le ou  
 B. FERMEZ LES ROBINETS D'ALIMENTATION. Remplacez la cartouche de la soupape (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

**Si le robinet fuit par le dessous de la manette :** Enlevez la manette et embase (4). À l'aide d'une clé, assurez-vous que l'écrou-chapeau (5) est serré.\*

### Si la fuite persiste, COUPEZ L'ARRIVÉE D'EAU.

Remplacez la cartouche de la soupape (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

### Si le robinet fuit par la sortie du bec, COUPEZ

L'ARRIVÉE D'EAU. Remplacez la cartouche (3). Usando una llave de tuercas, asegúrese que la tuerca tapa (5) esté apretada.\*

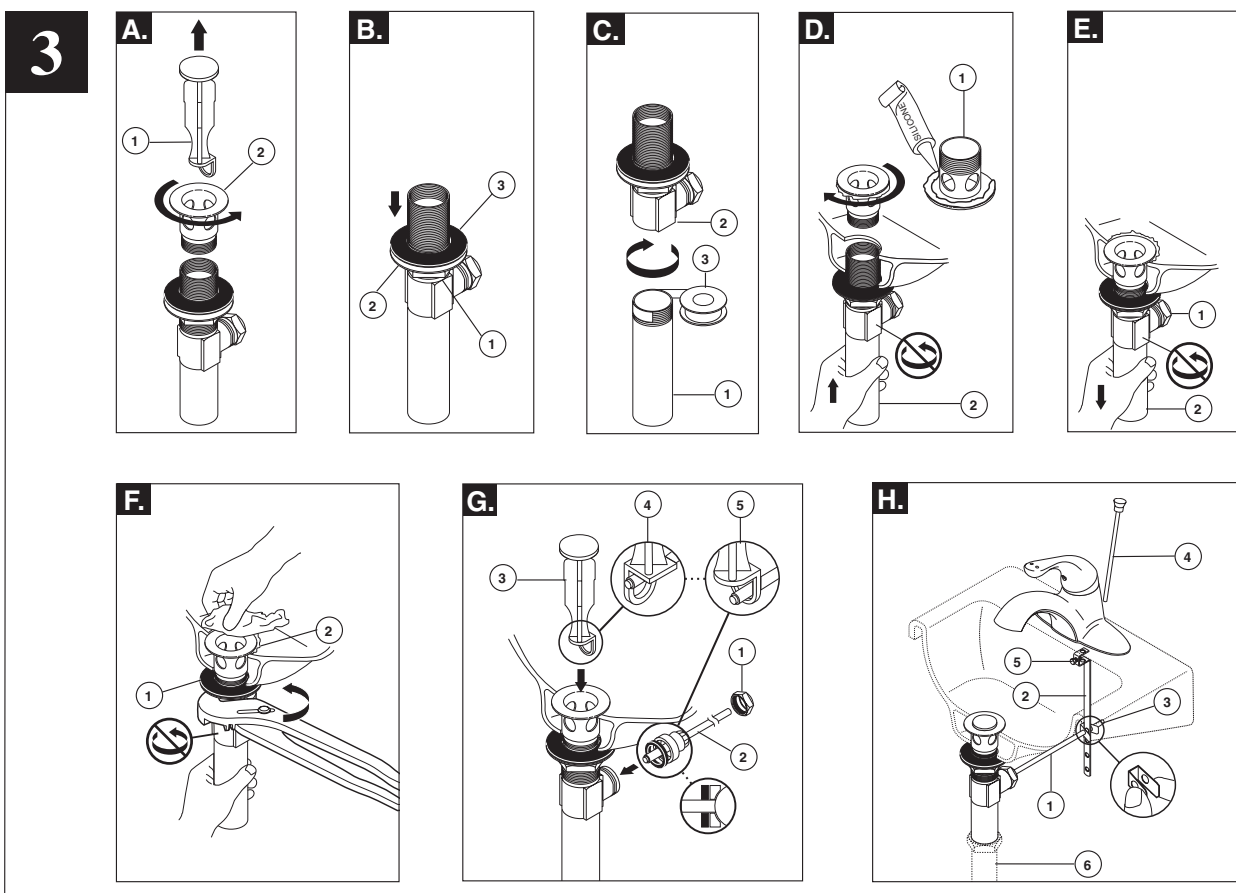
**\* MISE EN GARDE : L'omission de bien serrer l'écrou-chapeau peut entraîner une fuite d'eau et des dommages.**

**Note :** N'essayez pas de démonter la cartouche (3). Il n'y a aucune pièce réparable à l'intérieur.

## Instructions de nettoyage

Il faut le nettoyer avec soin. Même si son fini est extrêmement durable, il peut être abîmé par des produits fortement abrasifs ou des produits de polissage. Il faut simplement le frotter doucement avec un chiffon humide et le sécher à l'aide d'un chiffon doux.

|   |   |
|---|---|
| <div>1</div> <div> <p>A.</p> </div> <div> <p>B.</p> </div>   | <div>2</div> <div> </div>   |
| <p>A. Position faucet (1) and gasket (2) on sink. <i>Option: If sink is uneven, use silicone under the gasket.</i></p> <p>B. Secure with washers (1) and nuts (2).</p>  | <p><b>Supply Line Connections</b></p> <p><b>Note: Be careful when bending the copper tubing. Kinked tubes will void the warranty.</b> Choose hook-ups for 1/2" I.P.S. connections: (1) Ball nose riser (3/8" O.D. copper tubing), or (2) 1/2" I.P.S. faucet connector. Use the enclosed coupling nuts (3) with the ball nose risers (1).</p> <p><b>Important: Use two wrenches when tightening. Do not overtighten.</b></p>   |
| <p>A. Coloque la llave (1) y el empaque (2) en el lavamanos. <i>Opción: Si el lavamanos está desnivelado, use silicón debajo del empaque.</i></p> <p>B. Fije con arandelas (1) y tuercas (2).</p>   | <p><b>Conexiones de las líneas de Suministro</b></p> <p><b>Nota: Tenga cuidado cuando doble la tubería de cobre. Tubos torcidos anularán la garantía.</b> Escoja las conexions IPS de 1/2": (1) Conexión Bola-nariz (Tubería cobre 3/8" D.E.), o (2) Conector de llave I.P.S. 1/2". Utilice las tuercas de acoplamiento incluidas (3) con la conexión bola-nariz (1). <b>Utilice dos llaves de tuercas cuando apriete. No apriete demasiado.</b></p>  |
| <p>A. Placer le robinet (1) et le joint (2) sur l'évier. <i>Facultatif - Si la surface de l'évier est inégale, placez du composé d'étanchéité à la silicone sous le joint.</i></p> <p>B. Fixez le robinet à l'aide des rondelles (1) et des écrous (2).</p> | <p><b>Branchements à la tuyauterie d'alimentation</b></p> <p><b>Note - Prenez garde de pincer les tubes en les cintrant. La garantie est nulle si les tubes ont été pincés.</b> Choisissez des raccords compatibles 1/2 po IPS : (1) tubes-raccords à portée sphérique (tube en cuivre 3/8 po d.e.) ou (2) raccords de robinet 1/2 po IPS. Si vous utilisez des tubes-raccords à portée sphérique (1), servez-vous des écrous de raccordement fournis (3). <b>Utilisez deux clés pour serrer les raccords. Prenez garde de trop serrer.</b></p> |



### Metal Pop-Up Installation

- A.** Remove stopper (1) and flange (2).
- B.** Screw nut (1) all the way down. Push washer (2) and gasket (3) down.
- C.** Remove tailpiece (1) from body (2), add plumber tape (3), replace tailpiece.

- D.** Apply silicone to underside of flange (1). Insert body (2) into sink. Screw flange (1) into body (2).
- E.** Pivot (1) must face faucet. Pull assembly (2) down firmly and hold in place. DO NOT TWIST.
- F.** Tighten nut/washer/gasket (1), clean off excess silicone (2). DO NOT TWIST.

- G.** Remove pivot nut (1). Install horizontal rod (2) and stopper (3) as removable (4) or non-removable (5). Hand tighten pivot nut (1).
- H.** Attach horizontal rod (1) to strap (2) using clip (3). Install lift rod (4), tighten screw (5). Connect assembly to drain (6).

### Desagüe Automático de Metal

- A.** Quite el tapón (1) y el reborde (2).
- B.** Atornille la tuerca (1) completamente hasta abajo. Empuje la arandela/roldana (2) y el empaque (3) hacia abajo.
- C.** Quite el tubo de cola (1) del cuerpo (2), aplique cinta para plomero (3), coloque otra vez el tubo de cola.

- D.** Aplique silicón a la parte interior del reborde (1). Inserte el cuerpo (2) en el lavamanos. Atornille el reborde (1) en el cuerpo (2).
- E.** El pivote (1) debe de estar de frente a la llave. Hale el ensamble (2) hacia abajo firmemente y sujételo en sitio. NO LO GIRE.
- F.** Apriete la tuerca/arandela/empaque (1), limpie el exceso de silicón (2). NO LO GIRE.

- G.** Quite la tuerca del pivote (1). Instale la barra horizontal (2) y el tapón (3) como desmontable (4) o fijo (5). Apriete a mano la tuerca del pivote (1).
- H.** Una la barra horizontal (1) a la barra chata (2) utilizando el gancho (3). Instale la barra de alzar (4), apriete el tornillo (5). Conecte el ensamble al desagüe (6).

### Renvoi Mécanique en Métal

- A.** Enlevez la bonde (1) et la collerette (2).
- B.** Serrez l'écrou (1) pour le faire descendre complètement. Poussez la rondelle (2) et le joint (3) vers le bas.
- C.** Enlevez le raccord droit de vidange (1) du corps (2), appliquez du ruban de plomberie (3), puis remettez le raccord droit en place.

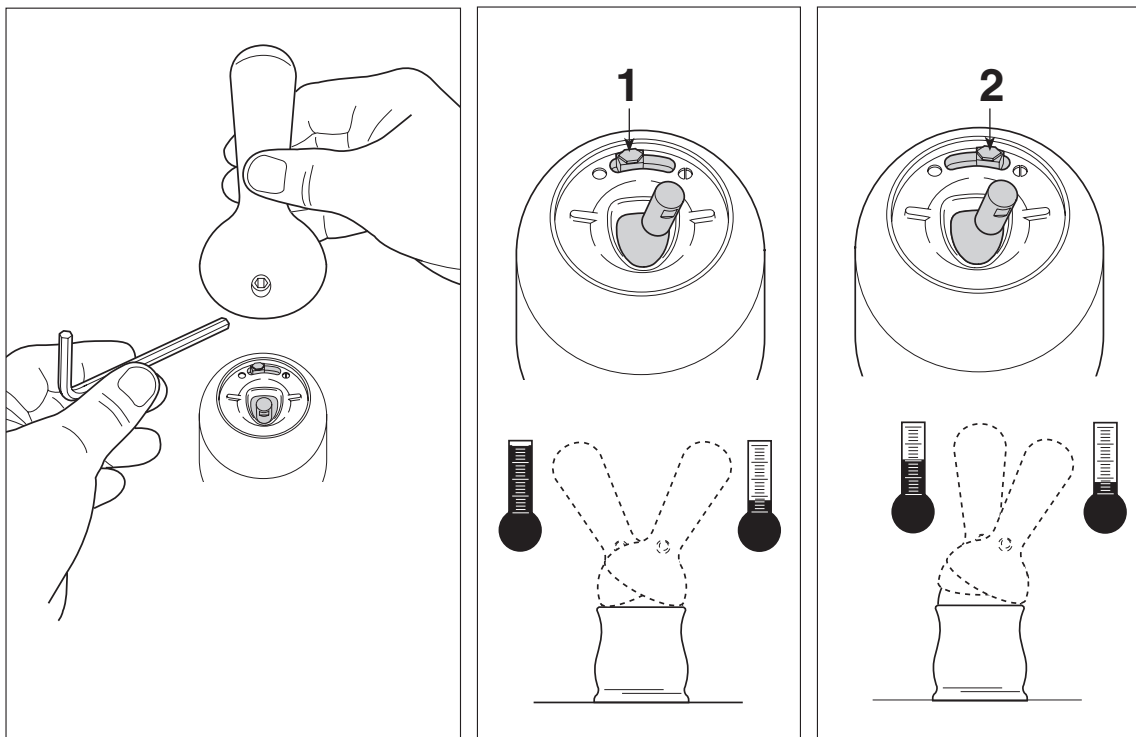
- D.** Appliquez du composé à la silicone sous la collerette (1). Introduisez le corps (2) dans lav-abo, puis vissez la collerette (1) dans le corps (2).
- E.** Le pivot (1) doit faire face au robinet. Tirez l'ensemble (2) vers le bas fermement et maintenez-le en place. PRENEZ GARDE DE LE TORDRE.
- F.** Serrez l'écrou contre la rondelle et le joint (1), puis enlevez le surplus de composé à la silicone (2). PRENEZ GARDE DE TORDRE LE PIVOT.

- G.** Enlevez l'écrou du pivot (1). Installez la tige horizontale (2) et la bonde (3) de manière que la bonde soit amovible (4) ou non amovible (5). Serrez l'écrou (1) du pivot à la main.
- H.** Fixez la tige horizontale (1) au feuillard (2) à l'aide de l'agrafe (3). Installez la tige de manoeuvre (4) et serrez la vis (5). Fixez l'ensemble au renvoi (6).

|   |  |
|---|--|
| <div>3</div> <div> <div> <p>A.</p> </div> <div> <p>B.</p> </div> <div> <p>C.</p> </div> <div> <p>D.</p> </div> </div>  | <div>4</div> <div> </div>  |
| <p><b>Grid Strainer Installation</b></p> <p><b>A.</b> Remove grid flange (1). Screw nut and washer (2) down as far as possible. Push gasket (3) down to nut and washer.</p> <p><b>B.</b> Remove tailpiece (1) and apply plumber tape (2) to threads. Replace tailpiece.</p> <p><b>C.</b> Apply silicone sealant to underside of grid flange (1). Insert grid strainer assembly (2) up through bottom of lavatory. Screw grid flange back on and secure.</p> <p><b>D.</b> Pull grid strainer straight down into drain hole and secure gasket nut and washer (1). <b>DO NOT TURN GRID STRAINER WHILE TIGHTENING NUT OR SEALANT MAY NOT SEAL DRAIN. REMOVE EXCESS SEALANT.</b> Connect assembly to drain.</p>  | <p>Remove aerator (1) using supplied wrench (2) and move faucet handle (3) to the full on mixed position. Turn on hot and cold water supplies (4) and flush water lines for one minute. <b>Important: This flushes away any debris that could cause damage to internal parts.</b> Reinstall aerator.</p> <p>Check all connections at arrows for leaks. Re-tighten if necessary, but do not overtighten.</p>  |
| <p><b>Instalación de la Rejilla Coladora</b></p> <p><b>A.</b> Quite el reborde de la rejilla (1). Atornille la tuerca y la arandela (2) lo más posible. Empuje el empaque (3) hacia abajo, hacia la tuerca y la arandela.</p> <p><b>B.</b> Quite el tubo de cola (1) y aplique cinta para plomero (2) a las roscas. Coloque otra vez el tubo de cola.</p> <p><b>C.</b> Aplique sellador de silicona a la parte de abajo del reborde de la rejilla (1). Inserte el ensamble de la rejilla-colador (2) hacia arriba por debajo del lavamanos. Atornille, otra vez, el reborde de la rejilla y fíjelo.</p> <p><b>D.</b> Hale la rejilla colador directamente hacia abajo, que quede dentro del hoyo del drenaje, y fije la tuerca del empaque y la arandela (1). <b>NO GIRE LA REJILLA O EL SELLADO PUEDA NO SELLAR EL DRENAJE. LIMPIE EL EXCESO DE SELLADOR.</b> Conecte el ensamble al desagüe.</p>            | <p>Quite el aereador (1) usando la llave de tuercas (2) proporcionada con su llave de agua y mueva la manija de la llave de agua (3) a la posición completamente abierta. Abra los suministros de agua caliente y fría (4) y deje correr en agua por la líneas por un minuto. <b>Importante: Esto limpia cualquier escombros que pudiera causar daño a las partes internas.</b> Reemplace el aereador.</p> <p>Examine todas las conexiones donde señalan las flechas por si hay filtraciones de agua. Apriete de nuevo si es necesario, pero no apriete demasiado.</p>                         |
| <p><b>Installation de la crépine</b></p> <p><b>A.</b> Retirez la collerette de la crépine (1). Vissez l'écrou avec la rondelle (2) autant ue possible. Abaissez le joint (3) contre l'écrou et la rondelle.</p> <p><b>B.</b> Enlevez le raccord droit de vidange (1) et appliquez du ruban de plomberie (2) sur les filets. Remettez le raccord en place.</p> <p><b>C.</b> Appliquez du composé à la silicone contre le dessous de la collerette de la crépine (1). Introduisez la crépine (2) dans l'orifice par le dessous du lavabo. Remettez la collerette en place et vissez-la à fond.</p> <p><b>D.</b> Tirez la crépine vers le bas dans l'orifice et vissez l'écrou contre la rondelle et le joint (1). <b>NE FAITES PAS TOURNER LA CRÉPINE EN SERRANT L'ÉCROU CAR LE COMPOSÉ D'ÉTANCHÉITÉ POURRA PERDRE SON EFFICACITÉ. ENLEVEZ LE COMPOSÉ D'ÉTANCHÉITÉ EN TROP.</b> Fixez l'ensemble au renvoi.</p> | <p>Retirez l'aérateur (1) en utilisant la clé (2) et placez la poignée (3) du robinet en position d'écoulement maximum de l'eau chaude et de l'eau froide. Rétablissez l'alimentation en eau chaude et en eau froide (4) et laissez couler l'eau pendant une minute. <b>Important: Il faut laisser s'écouler l'eau pour évacuer les saletés qui pourraient abîmer les éléments internes du robinet.</b> Remettez l'aérateur en place.</p> <p>Vérifiez l'étanchéité de tous les raccords identifiés par une flèche. Resserrer les raccords au besoin, mais prenez garde de trop les serrer.</p> |



5



#### Setting The Handle Limit Stop (Optional)

This faucet includes an integrated handle limit stop that has two positions. Position 1, to the left, allows full handle motion (the full range between "all cold" to "all hot"). The faucet is set in position 1 in the factory. Position 2, to the right, allows half of the normal handle motion ("all cold" to "mixed hot/cold").

The handle limit stop can be adjusted by the homeowner once the faucet is installed. Setting the handle limit stop in position 2 may help to prevent scalding

because it limits the amount of hot water in the mix; however, this handle limit stop will not always prevent scalding because it does not compensate for incoming pressure or sudden water temperature changes.

**To change positions of the handle limit stop:** remove the handle; move the valve stem to the all cold position so the water is on; change the position of the handle limit stop; turn off the water; reinstall the handle.

#### Fijando la parada de límite de la manija (opcional)

Esta llave de agua incluye una manija integrada, que tiene dos posiciones, para limitar la temperatura. La posición 1, a la izquierda, permite el movimiento completo de la manija (el alcance completo entre el agua "totalmente fría" hasta "totalmente caliente"). La fábrica preselecciona la llave de agua (grifo) a la posición 1. La posición 2, a la derecha, permite la mitad del alcance de movimiento normal de la manija ("totalmente fría" a la posición "mixta caliente/fría").

Una vez que la llave de agua (grifo) se ha instalado, el límite rotacional de la manija puede ajustarse por el propietario de la residencia. Ajustando la manija de ajuste del tope del límite de la temperatura a la posición 2 puede ayudar a prevenir

escaldaduras porque limita la cantidad de agua caliente en la mezcla; sin embargo, esta manija que limita la temperatura del agua no siempre prevendrá escaldaduras porque no compensa la presión del agua de entrada o cambios repentinos de la temperatura del agua.

**Para cambiar las posiciones de la manija que limitan la temperatura:** quite la manija; cambie la posición de la espiga de la válvula a la posición totalmente fría de manera que el agua este abierta; cambie la posición de la manija que limita la temperatura; cierre el agua; reinstale la manija.

#### Plaçant l'arrêt de limite de poignée (facultatif)

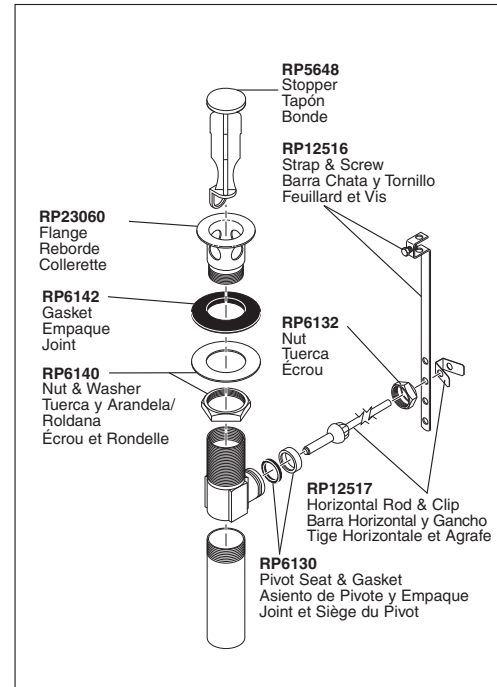
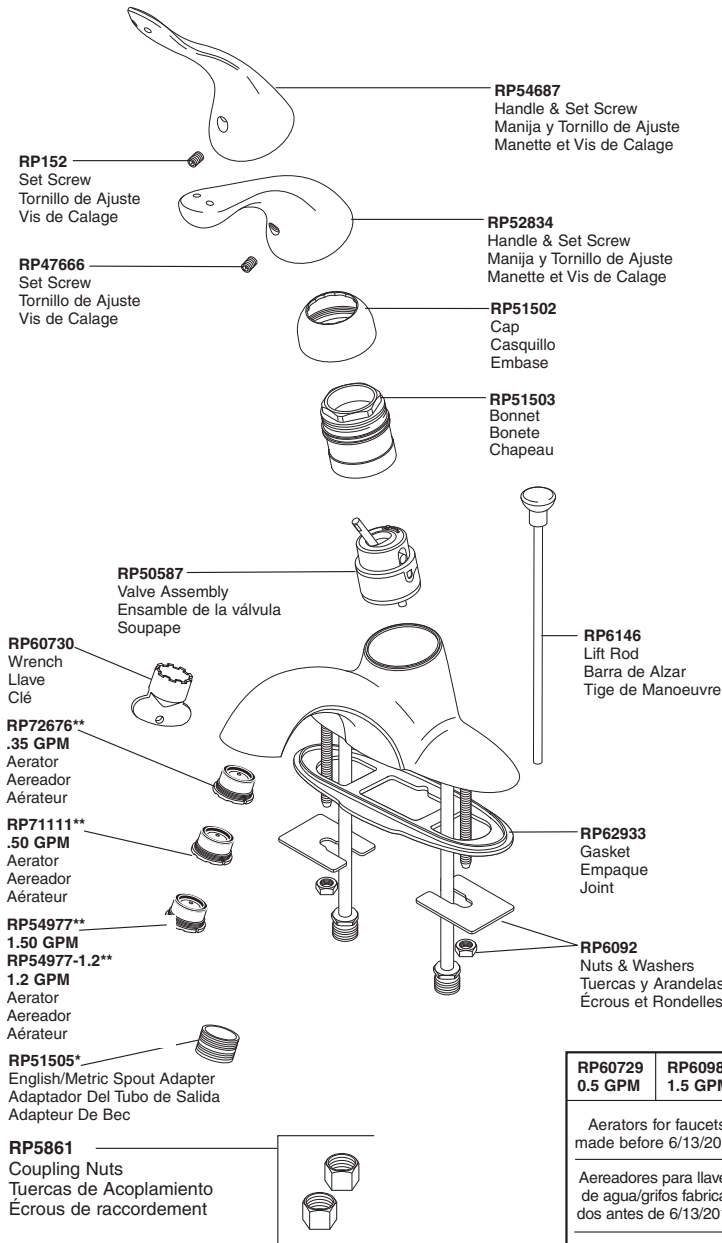
Ce robinet est muni d'une butée de température maximale à deux positions. La position 1, à gauche, permet le déplacement de la manette entre les deux extrémités de la plage de température (eau très froide et eau très chaude). C'est la position sélectionnée en usine. La position 2, à droite, permet le déplacement de la manette sur la moitié de la plage de température (eau très froide et eau mitigée).

Il est possible de régler la butée de température maximale de la manette au moment de l'installation du robinet. Un réglage à la position 2 peut empêcher l'ébullantage parce que cette position limite la quantité d'eau chaude dans le

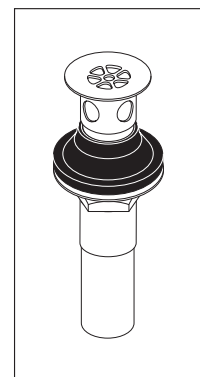
mélange. Toutefois, ce réglage de la butée de température maximale de la manette ne constitue pas une garantie absolue contre l'ébullantage parce qu'il n'offre aucune protection contre les fluctuations de la pression d'alimentation ou les changements de température soudains.

**Pour modifier la position de la butée de température maximale de la manette :** enlevez la manette; amenez l'obturateur à l'extrémité de la plage du côté eau froide pour faire s'écouler l'eau; modifiez la position de la butée de température maximale; fermez le robinet; réinstallez la manette.

Models/Modelos/Modèles  
501LF-HDF, 511LF-HDF, 515LF-HDF, 516LF-HDF, 520LF-HDF & 523LF-HDF  
Series/Series/Seria



**RP26533**  
Metal Pop-Up Assembly Less Lift Rod  
Ensamble de Metal del Desague Automático Menos  
Barra de Alzar  
Ensemble Mécanique en Métal Sans la Tige de Manoeuvre



**RP6346**  
Grid Strainer  
Tamiz de la rejilla  
Tamis de grille

\*RP51505 adapter is only compatible with aerators produced before 6/13/2011.


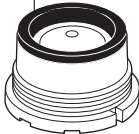
Adaptador \*RP51505 solo es compatible con aireadores fabricados antes de junio 13, 2011.

\*L'adaptateur \*RP51505 est compatible uniquement avec les aérateurs produits avant le 13 juin 2011.

\*\*If you are unsure of the manufacture date, please order both aerators in the flow rate you desire.

\*\*Si no está seguro de la fecha de fabricación, por favor, ordene ambos aireadores para el flujo deseado.

\*\*Si vous n'êtes pas certain de la date de fabrication, veuillez commandez les aérateurs de chacun des modèles qui ont les caractéristiques de débit que vous désirez.

| RP60729<br>0.5 GPM  | RP60983<br>1.5 GPM | RP72676<br>0.35 GPM  | RP71111<br>0.5 GPM | RP54977<br>1.5 GPM |
|---|--------------------|--|--------------------|--------------------|
| Aerators for faucets made before 6/13/2011  |                    | Aerators for faucets made after 6/13/2011  |                    |                    |
| Aeradores para llaves de agua/grifos fabricados antes de 6/13/2011                  |                    | Aeradores para llaves de agua/grifos fabricados después de 6/13/2011                 |                    |                    |
| Aérateurs pour les robinets fabriqués avant le 13/06/2011                           |                    | Aérateurs pour les robinets fabriqués après le 13/06/2011                            |                    |                    |
|  |                    |  |                    |                    |
| O-ring Seal<br>Anillos "O"<br>Joints Torique  |                    | Gasket Seal<br>Empaque<br>Joint  |                    |                    |

**JOSAM 17100 SERIES FLOOR-MOUNTED, SINGLE LAVATORY CARRIER WITH CONCEALED ARMS, LEVELING AND SECURING SCREWS, STRUCTURAL UPRIGHTS, AND WELDED FEET.**

**SPECIFICATION:**

JOSAM 17100 SERIES FLOOR-MOUNTED, SINGLE LAVATORY CARRIER WITH CONCEALED ARMS, LEVELING AND SECURING SCREWS, STRUCTURAL UPRIGHTS, AND WELDED FEET.

| OPTION | DESCRIPTION   |
|--------|---|
| 17100  | BACK-TO-BACK CARRIER (SEPARATE SUBMITTAL FOR THIS OPTION AVAILABLE) |
| 17101  | EXTENSION SLEEVES (LONGER THAN STANDARD SLEEVE WALL THICKNESS)      |
| 17102  | VALVE PLATE FOR ATTACHING TO UPRIGHT                                |
| 17103  | CONCEALED ARM CARRIER FOR WHEELED CHAIR LAVATORY                    |
| 17104  | 2" CHROME PLATED ESCUTCHEONS  |
| 17105  | 4" CHROME PLATED ESCUTCHEONS  |
| 17106  | 6" CHROME PLATED ESCUTCHEONS  |

**TABLE**

OPTION

DESCRIPTION

17100

BACK-TO-BACK CARRIER (SEPARATE SUBMITTAL FOR THIS OPTION AVAILABLE)

17101

EXTENSION SLEEVES (LONGER THAN STANDARD SLEEVE WALL THICKNESS)

17102

VALVE PLATE FOR ATTACHING TO UPRIGHT

17103

CONCEALED ARM CARRIER FOR WHEELED CHAIR LAVATORY

17104

2" CHROME PLATED ESCUTCHEONS

17105

4" CHROME PLATED ESCUTCHEONS

17106

6" CHROME PLATED ESCUTCHEONS

SPECIFICATION:  
 JOSAM 17000 SERIES REUSABLE ALIGNMENT TOOL FOR FLOOR  
 MOUNTED FIXTURE CARRIERS WITH UPRIGHTS.  
 SERIES  
 17000  
 REUSABLE ALIGNMENT TOOL  
 FIXTURE CARRIER

## Fixture Carriers

48

| VENDOR         | DESCRIPTION  | PAGE |
|----------------|--|------|
| Jones Stephens | Lead Free* Under Sink Guardian Thermostatic Mixing Valves, Brass | 20   |





**ADVERTENCIA**

Lea este manual ANTES de utilizar este equipo.  
El no leer y seguir todas las medidas de seguridad y usar la información puede causar la muerte, lesiones personales graves, daños materiales o daños en el equipo.  
Guarde este manual para referencia futura.

**ADVERTENCIA**

EL INCUMPLIMIENTO DE LAS INSTRUCCIONES DE INSTALACIÓN Y MANTENIMIENTO ADECUADAS PUEDE CAUSAR FALLOS EN LA VALVULA, PROVOCANDO LESIONES E INCLUSO LA MUERTE.  
PARA GARANTIZAR EL USO PRECISO Y FIABLE DE ESTE PRODUCTO, ES ESENCIAL:

- Diseñar adecuadamente el sistema para minimizar las variaciones de presión y temperatura.
- Esta válvula viene preajustada de fábrica. Sin embargo, puede ser ajustada hasta llegar a temperaturas extremas. **Compruebe las temperaturas de salida para comprobar que no supera los 41°C (105°F).** Asegúrese de que el límite de aumento de temperatura está correctamente situado a un máximo de 41°C (105°F). La alteración del límite de aumento de temperatura puede llevar a temperaturas extremas, provocando lesiones corporales graves y/o incluso la muerte.

**ADVERTENCIA**

**Requerimiento de inspección periódica/mantenimiento:** Este producto debe ser evaluado periódicamente de acuerdo con los códigos locales, pero al menos una vez o más al año según las condiciones del servicio. Todos los productos deben volver a ser evaluados una vez se haya realizado el mantenimiento. Condiciones de agua corrosiva y/o ajustes o reparaciones no autorizados pueden provocar que el producto deje de funcionar para el servicio previsto. Una inspección y limpieza regulares de los componentes internos del producto garantizan la vida máxima y el adecuado funcionamiento del producto.

**ADVERTENCIA**

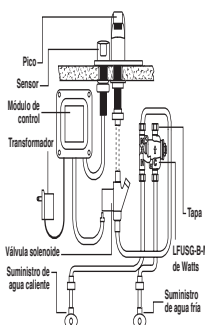
Es obligatorio consultar los códigos locales de construcción y fontanería antes de comenzar la instalación. Si la información de este manual no se corresponde con los códigos locales de construcción y fontanería, deberán seguirse estos últimos. Pregunte a las autoridades gubernamentales sobre otros requisitos locales.

**Descripción**

La válvula termostática de empalme de compresión y conexión rápida para mezcla Watts de 10 mm (3/8 pulg.) mantiene y limita el agua caliente en la temperatura seleccionable deseada entre 27 °C y 49 °C (80 °F y 120 °F) y con caudales desde 1,9 lpm (0,5 gpm) hasta 9,5 lpm (2,5 gpm). La válvula para mezcla está en conformidad con el estándar 1070 de ASSE e IAPMO cUPC. La característica superior de caudal en la serie LFUSG-B proporciona un control de temperatura preciso con poca caída de presión. Las series LFUSG-B incorporan válvulas de verificación dobles para proteger contra el flujo transversal y rejillas integrales para filtrar residuos. Se incluye una tapa para aplicaciones con tres puertos.

**Aplicaciones**

Las series LFUSG-B están diseñadas para instalaciones debajo del fregadero para controlar la temperatura del agua caliente y minimizar las quemaduras accidentales. La temperatura del agua debe ser ajustada por el instalador con un termómetro para medir la temperatura del agua caliente en la salida del grifo. Se recomienda una temperatura máxima de 41 °C (105 °F).

**Grifo sensor****Instalación**

**AVISO** Enjuague bien todas las tuberías antes de la instalación.

1. Ubique el lugar apropiado para la válvula atemperadora. La válvula deberá estar accesible para realizarle un servicio y ajustarla y lo más cerca posible del lugar de uso.
2. Conecte el agua caliente y el agua fría a la válvula de suministro usando conexiones por compresión de 10 mm (3/8 pulg.). Asegúrese de que la tubería de cobre no se extienda más de 0,48 cm (3/16 pulg.) después del casquillo de compresión. Para la conexión rápida, consulte la instalación de la conexión rápida.
3. Conecte las salidas de la válvula atemperadora a las entradas del grifo.
4. Abra los suministros de agua caliente y fría. Si observa alguna fuga, apriete las conexiones según sea necesario antes de continuar.
5. Abra el grifo y permita que el agua fluya durante 2 minutos. Mida la temperatura en la salida.

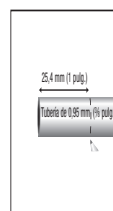
Si el agua no está a la temperatura deseada, ajústela según sea necesario (consulte la sección de ajuste de temperatura).

**Grifo de dos llaves**

Autorizado por ASSE 1070 y cUPC

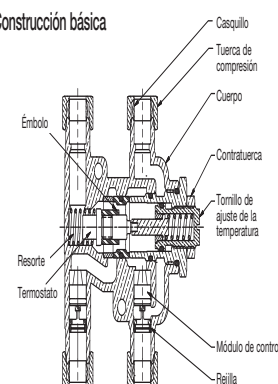
**Ajuste de temperatura**

1. Afloje la contratuera.
2. Abra el grifo y deje correr el agua durante al menos 2 minutos para permitir que se establezca la temperatura del agua.
3. Gire el tornillo de ajuste de la temperatura en sentido horario para una temperatura de salida más caliente o en sentido antihorario para una temperatura de salida más fría.
4. Apriete la tuerca de seguridad para prevenir el ajuste de la temperatura accidental o no autorizado.
5. Vuelva a controlar la temperatura de salida.

**Instalación de conexión rápida****Para conectar:****Para desconectar:**

1. Refire el sujetador de boquilla.
2. Presione el sujetador.
3. Tire de la tubería de la alacocha de aspiración.

1. Marque la tubería como se muestra. Esta es la profundidad de colocación de la tubería.
2. Limpie el extremo de la tubería.
3. Si usa tubería PEX, introduzca el regulador de tuberías (incluido) en el extremo de la tubería.
4. Coloque la tubería en la alacocha de aspiración hasta la marca.
5. Introduzca el sujetador de boquilla.

**Construcción básica****AVERTISSEMENT**

Lisez attentivement ce manuel avant d'utiliser cet équipement.  
Négliger de lire et de suivre toutes les consignes de sécurité et d'utilisation de l'information peut entraîner la mort, des blessures graves ou des dégâts matériels, ou endommager l'équipement.  
Veuillez conserver ce manuel pour toute référence ultérieure.

**AVERTISSEMENT**

LE NON-RESPECT DES INSTRUCTIONS POUR UNE BONNE INSTALLATION ET UNE MAINTENANCE CORRECTE PEUVENT ENTRAÎNER LA DÉFAILLANCE DE LA VANNE, RESULTANT EN DES BLESSURES ET/OU LA MORT.

POUR GARANTIR LE FONCTIONNEMENT PRÉCIS ET FIABLE DE CE PRODUIT, IL EST IMPÉRATIF DE:

- Concevoir correctement le système pour réduire la pression et les variations de température.
- Cette vanne est préréglée en usine. Toutefois, elle peut être ajustée pour fournir des températures brûlantes. **Vérifier la température de sortie pour garantir qu'elle ne dépasse pas 41°C (105°F).** S'assurer que le limiteur d'arrêt de température est correctement réglé au maximum de 41°C (105°F) suivant une maintenance ou une réparation de vanne. La manœuvre abusive du limiteur d'arrêt d'une manière ou d'une autre peut entraîner des températures brûlantes provoquant des lésions corporelles graves et/ou la mort.

**AVERTISSEMENT**

**Nécessité d'inspection périodique/maintenance:** Ce produit doit être testé périodiquement en conformité avec les codes locaux, mais au moins une fois par an ou plus, comme les conditions de service le justifient. Tous les produits doivent être testés une fois que les opérations d'entretien ont été effectuées. Des conditions d'admission corrosives et/ou des réglages ou des réparations non autorisés peuvent rendre le produit inefficace pour le service prévu. Un contrôle régulier et le nettoyage des composants internes du produit permettent d'assurer la durée de vie et le bon fonctionnement du produit.

**AVERTISSEMENT**

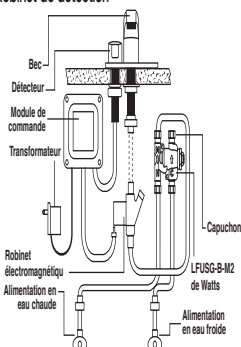
Vous êtes tenus de consulter les codes de la construction locale et de la plomberie avant l'installation. Dans la mesure où cette information n'est pas cohérente avec les codes locaux, les codes locaux doivent être suivis. Renseignez-vous auprès des autorités gouvernementales pour des exigences locales supplémentaires.

**Description**

Le régulateur thermostatique à raccord rapide et de compression Watts de 10 mm (3/8 po) maintient et limite l'eau chaude à la température désirée, soit entre 27 °C et 49 °C (80 °F et 120 °F) avec un débit aussi bas que 1,9 L/min (0,5 gal/min) et aussi élevé que 9,5 L/min (2,5 gal/min). Le régulateur respecte la norme ASSE 1070 et IAPMO cUPC. Le débit supérieur des modèles des séries LFUSG-B permet un contrôle précis de la température avec une faible chute de pression. Le LFUSG-B comprennent un clapet de non-retour double comme protection contre les débits croisés et des écrans intégrés destinés à filtrer les résidus. Il comporte aussi un capuchon pour les applications à trois orifices.

**Applications**

Le LFUSG-B sont conçus pour des installations sous l'évier pour contrôler la température de l'eau chaude et réduire le risque de brûlures accidentelles. La température de l'eau doit être ajustée par l'installateur à l'aide d'un thermomètre afin de mesurer celle-ci à sa sortie du robinet. On recommande une température maximale de 41 °C (105 °F).

**Robinet de détection****Installation**

**AVIS** Purgez toute la tuyauterie à fond avant l'installation.

1. Trouver un endroit convenable pour la soupape de mélange thermostatique. La soupape doit être accessible pour des fins d'entretien et de réglage, et aussi près que possible du point d'utilisation.
2. Raccorder l'eau chaude et froide au robinet d'alimentation à l'aide des raccords à compression 3/8 po (10 mm). S'assurer que la tuyauterie en cuivre ne dépasse pas la virole de compression de plus de 0,48 cm (3/16 po). Pour un branchement rapide, consulter l'installation du raccord rapide.
3. Raccorder les sorties de la soupape de mélange aux entrées du robinet.
4. Ouvrir l'alimentation en eau froide et en eau chaude. S'il y a présence de fuites, serrer les raccords au besoin avant de continuer.
5. Ouvrir le robinet et laisser l'eau s'écouler pendant 2 minutes. Mesurer la température à la sortie du robinet.

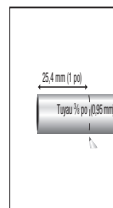
Si l'eau n'est pas à la température désirée, régler au besoin (voir la section Réglage de la température).

**Robinet à deux poignées**

Homologué ASSE 1070 et cUPC

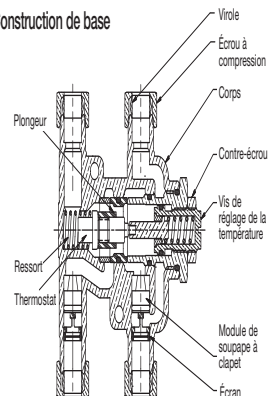
**Réglage de la température**

1. Desserrer le contre-écrou.
2. Ouvrir le robinet et laisser l'eau s'écouler pendant au moins deux minutes afin de permettre à la température de se stabiliser.
3. Tourner la vis de réglage de la température dans le sens antihoraire pour de l'eau plus chaude ou dans le sens horaire pour de l'eau plus froide à la sortie du robinet.
4. Serrer le contre-écrou pour empêcher un dérèglement accidentel ou non autorisé de la température.
5. Révifier la température à la sortie.

**Installation du raccord rapide****Raccordement :****Déconnexion :**

1. Enlever la pince de serrage.
2. Enfoncer la baguette.
3. Sortir le tuyau de l'about.

1. Marquer un repère sur le tuyau, comme illustré. Ceci correspond à la profondeur d'insertion du tuyau.
2. Nettoyer l'extrémité du tuyau.
3. Si une tubulure PEX est utilisée, insérer le renfort de tuyau (fourni) dans l'extrémité du tuyau.
4. Enfoncer le tuyau dans l'about jusqu'au repère.
5. Insérer la pince de serrage.

**Construction de base**

ES-LFUSG-B-M2

**For Residential and Commercial Applications**

Job Name \_\_\_\_\_ Contractor \_\_\_\_\_  
 Job Location \_\_\_\_\_ Approval \_\_\_\_\_  
 Engineer \_\_\_\_\_ Contractor's P.O. No. \_\_\_\_\_  
 Approval \_\_\_\_\_ Representative \_\_\_\_\_

**LEAD FREE\*****Series LFUSG-B**  
**Under Sink Guardian®**

The LFUSG-B-M2 Under Sink Guardian® 3/8" (10mm) compression and Quick-Connect fitting thermostatic mixing valves maintain and limit hot water to desired selectable temperature between 80°F and 120°F (27°C and 49°C) with flow rates as low as 0.25 gpm (1.0 lpm) and as high as 2.25 gpm (8.5 lpm). The mixing valve is listed to ASSE Standard 1070 for single fixture applications and IAPMO cUPC. The LFUSG-B-M2 features Lead Free\* construction to comply with Lead Free\* installation requirements. The superior flow characteristics of these valves provide temperature control with low pressure drop. As an added feature, the LFUSG-B-M2 incorporates dual check valves to protect against cross-flow and integral screens to filter out debris.

**Features**

- Lead Free\* Brass body construction
- Installs easily between the stop valves and faucet
- Includes tamper resistant locking nut to prevent accidental mis-adjustment
- Built-in check valves prevent migration of hot water to cold and cold water to hot water piping
- Provided with cap for three port application
- Integral strainer with 40 mesh stainless steel screens to filter out debris

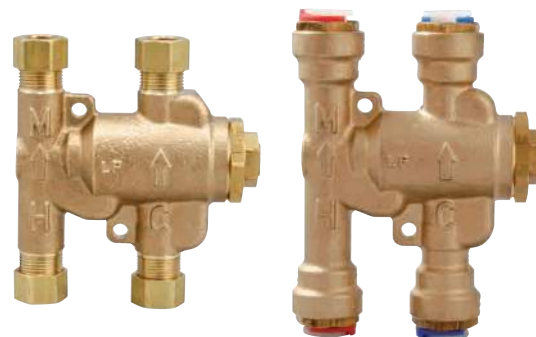
**Applications**

The unit is intended for under sink installation to control the hot water temperature and minimize the occurrence of accidental scalding. The water temperature must be adjusted by the installer using a thermometer to measure the hot water temperature at the faucet outlet. Maximum temperature of 105°F (41°C) is recommended.

**Specifications**

A Thermostatic Mixing Valve shall be installed on the hot water supply to the fixture. The valve shall be ASSE Standard 1070 and IAPMO cUPC listed and control the temperature of the hot water. It shall have a Lead Free\* brass 4-port, "H" pattern body. Lead Free\* under counter thermostatic valves shall comply with state codes and standards, where applicable, requiring reduced lead content. The valve shall include integral check valves, integral screens and an adjustment nut with locking feature. The valve shall be provided with 3/8" (10mm) male compression or Quick-connect fittings. The valve shall be Watts Series LFUSG-B.

For satin chrome finish specify – SC.



LFUSG-B-M2

LFUSG-B-QC-M2

ASSE 1070 &amp; IAPMO cUPC Listed

**Materials**

Body: Lead Free\* Brass

Rubber Disc: Buna-N

O-rings: Buna-N

Spring: Stainless steel

Piston: Noryl®

Thermostat: Copper

**Approval**

ASSE 1070

**Pressure – Temperature**

Minimum supply pressure: 30psi (207 kPa)

Hot inlet temperature: 120°F-180°F (49°C-82°C)

Cold inlet temperature: 39°F-80°F (3.8°C-27°C)

Minimum inlet temperature differential: 5°F (2.8°C)

Temperature range: 80°F-120°F (27°C-49°C)

Maximum pressure: 150psi (10.3 bar)

Minimum Flow: 0.25 gpm (1.0 l/m)

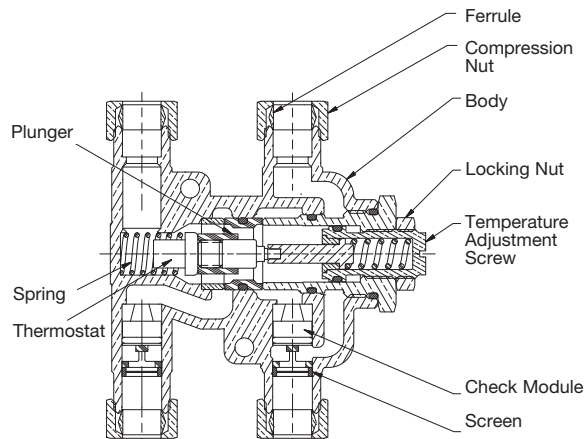
\*The wetted surface of this product contacted by consumable water contains less than one quarter of one percent (0.25%) of lead by weight.

Noryl® is a registered trademark of SABIC Innovative Plastics®.

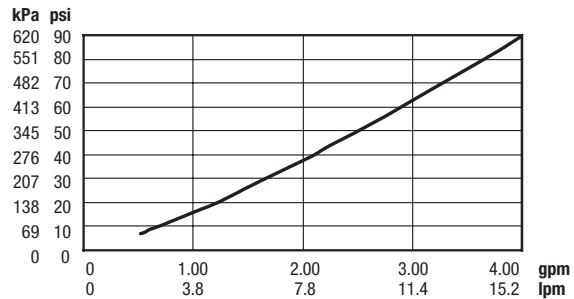
Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



## Basic Construction

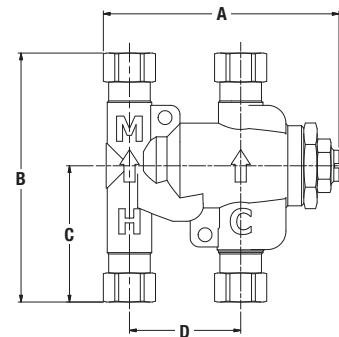


## Flow Capacity



## Dimensions – Weights

| MODEL            | SIZE               | DIMENSIONS |    |       |     |         |    |       |    | WEIGHT |      |
|------------------|--------------------|------------|----|-------|-----|---------|----|-------|----|--------|------|
|                  |                    | A          |    | B     |     | C       |    | D     |    | lbs.   | kgs. |
|                  |                    | in.        | mm | in.   | mm  | in.     | mm | in.   | mm |        |      |
| LFUSG-B-M2       | 3/8" Comp.         | 3 1/8      | 81 | 3 3/8 | 85  | 1 13/16 | 47 | 1 1/2 | 38 | .82    | .37  |
| LFUSG-B-SC-M2    | 3/8" Comp.         | 3 1/8      | 81 | 3 3/8 | 85  | 1 13/16 | 47 | 1 1/2 | 38 | .82    | .37  |
| LFUSG-B-QC-M2    | 3/8" Quick Connect | 3 1/4      | 83 | 4     | 102 | 2 1/4   | 57 | 1 1/2 | 38 | 1.05   | .48  |
| LFUSG-B-QC-SC-M2 | 3/8" Quick Connect | 3 1/4      | 83 | 4     | 102 | 2 1/4   | 57 | 1 1/2 | 38 | 1.05   | .48  |



## Typical Installations

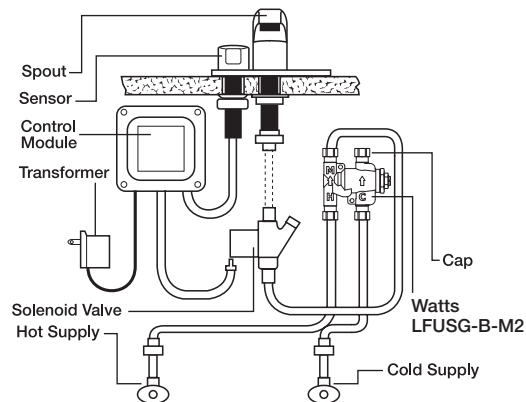
Two Handle Faucet



### NOTICE

This information is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Sensor Faucet



A Watts Water Technologies Company

USA: Tel: (978) 689-6066 • Fax: (978) 975-8350 • Watts.com  
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • Watts.ca  
Latin America: Tel: (52) 81-1001-8600 • Fax: (52) 81-8000-7091 • Watts.com

ES-LFUSG-B-M2 1433

© 2014 Watts



| VENDOR                  | DESCRIPTION  | PAGE |
|-------------------------|--|------|
| American Standard       | Afwall Millennium Flowise Elongated Top Spud- White  | 25   |
| Sloan                   | Royal 111 - 1.28 Exposed Water Closet Flushometer    | 28   |
| Sloan                   | Dfsm/sfsm Retrofit Unit                              | 39   |
| Bemis Manufacturing Co. | Bemis White Elongated Open-front Anti-microbial Seat | 43   |
| Josam Company           | Closet Carrier                                       | 44   |

# INSTALLATION INSTRUCTIONS

## AFWALL® MILLENNIUM™ FLUSHOMETER WALL-MOUNTED TOILETS

*American Standard*

Models 3351.101, 3352.101, 3353.101, 3354.101, 2257.101, 2257.101.NAF, 2633.101, 2634.101



Meets the American Disabilities Act Guidelines and ANSI A117.1 Requirements for the Physically Challenged

Thank you for selecting American Standard – the benchmark of fine quality for over 100 years. To ensure this product is installed properly, please read these instructions carefully before you begin. (Certain installations may require professional help.) Also be sure your installation conforms to local codes.

**CAUTION: PRODUCT IS FRAGILE. TWO PEOPLE ARE RECOMMENDED FOR HANDLING TO AVOID BREAKAGE AND POSSIBLE INJURY!**

NOTE: For proper operation product requires a minimum of 30 psi working line pressure

### RECOMMENDED TOOLS AND MATERIALS

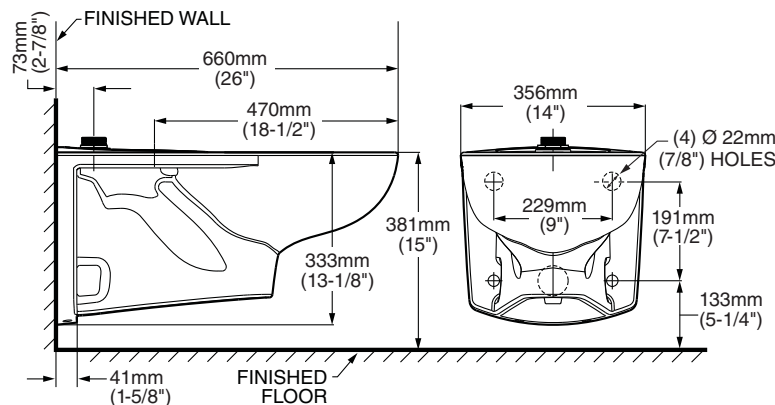
Closet Carrier Support  
Putty Knife

Regular Screwdriver  
Adjustable Wrench

Sealant  
Tape Measure

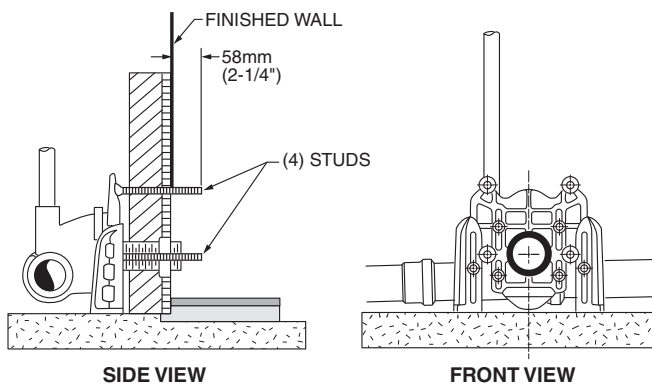
Carpenters Level  
Flush Valve

#### 1 Pictures may not exactly define contour of china



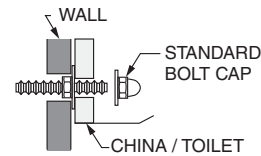
#### 2 FIXTURE MOUNTING

Fixture studs should project 58mm (2-1/4") from face of finished wall.

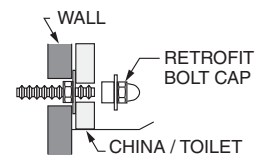


**NOTE:** If carrier bolt does not extend or is flush with china, use retrofit caps 7381285-200.0070A (sold separately).

##### STANDARD BOLT CAP



##### RETROFIT BOLT CAP



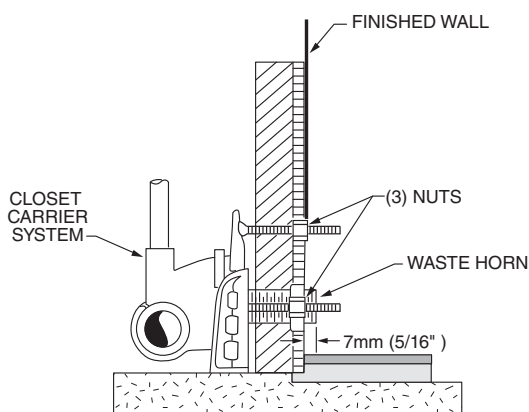
Product names listed herein are trademarks of AS America, Inc.  
© AS America, Inc. 2014

7301962-100 Rev. E

SAVE FOR FUTURE USE

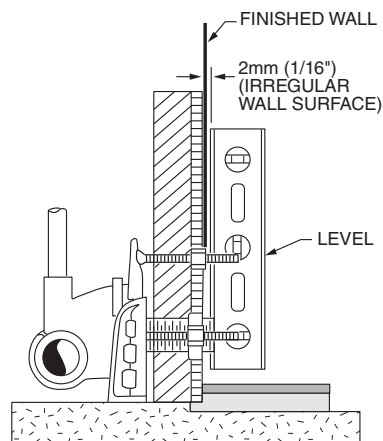
3

- Place back-up nuts on both bottom bolts, and the top left-hand bolt only.
- Adjust the two lower back-up nuts so that front face of nuts and washers are positioned to allow a minimum 1/16" (2mm) gap between fixture and wall surface.
- Adjust waste horn to project 7mm (5/16") from finished wall.



4

- Using a level, adjust the top left back-up nut so that it is in the same vertical plane as the lower left back-up nut.



5

- NOTE: Bearing nuts and washers must be set to take full loading from the fixture allowing 1/16" (2mm) clearance between fixture and wall.
- Follow support manufacturer's recommended setting of closet outlet connection.
- Place felt or neoprene gasket (wax ring not recommended) on closet outlet.
- When the fixture is installed, closet outlet gasket must be compressed sufficiently to assure a gas and watertight seal.

#### The following steps require a helper:

- Install bowl on support using cap nuts and fiber washers with the back-up nuts and washers.

DO NOT APPLY TOP RIGHT FIBER WASHER AND CAP NUT UNTIL OTHER CAP NUTS HAVE BEEN FIRMLY TIGHTENED USING A WRENCH.

- Install top right cap nut with fiber washer and run up hand tight. Wrench tighten approximately 1/4 turn.
- Apply sealant to gap between bowl and finished wall. Remove excess sealant.

**In the United States:**  
American Standard Brands  
P.O. Box 6820  
Piscataway, New Jersey 08855  
Attention: Director of Customer Care  
For residents of the United States, warranty information may also be obtained by calling the following toll free number: (800) 442-1902  
[www.americanstandard.com](http://www.americanstandard.com)

**In Canada:**  
AS Canada, ULC  
5900 Avebury Rd.  
Mississauga, Ontario  
Canada L5R 3M3  
Toll Free: (800) 387-0369  
[www.americanstandard.ca](http://www.americanstandard.ca)

**In Mexico:**  
American Standard B&K Mexico  
S. de R.L. de C.V.  
Via Morelos #330  
Col. Santa Clara  
Ecatepec 55540 Edo. Mexico  
Toll Free: 01-800-839-1200  
[www.americanstandard.com.mx](http://www.americanstandard.com.mx)



# Warranties

## AS AMERICA, INC. ONE YEAR LIMITED WARRANTY FOR COMMERCIAL FIXTURES

If inspection of this AS America, Inc. ("American Standard®") plumbing product, within one year after its initial purchase, confirms that it is defective in materials or workmanship, American Standard® will repair or, at its option, exchange the product for a similar model.

If the commercial fixture is purchased with a matching American Standard flush valve, American Standard will extend the limited commercial warranty for the commercial fixture to five years. Proof of purchase is required and must show that the commercial fixture and flush valve are purchased together and in the same proof of purchase document.

This limited warranty applies only to the original purchaser and installation of these products. In the event of a limited warranty claim, proof of purchase will be required – **save sales receipt**.

This limited warranty does not apply to local building code compliance. Since local building codes vary considerably, the purchaser of this product should check with a local building or plumbing contractor to insure local code compliance before installation.

This limited warranty is void if the product has been moved from its initial place of installation; if it has been subjected to faulty maintenance, abuse, misuse, accident or other damages; if it was not installed in accordance with American Standard®'s instructions; or if it has been modified in a manner inconsistent with the product as shipped by American Standard®.

American Standard®'s option to repair or exchange the product under this limited warranty does not cover any labor or other costs of removal or installation. **IN NO EVENT WILL AMERICAN STANDARD® BE LIABLE FOR THE COST OF REPAIR OR REPLACEMENT OF ANY INSTALLATION MATERIALS, INCLUDING BUT NOT LIMITED TO, TILES, MARBLE, ETC.** American Standard® will not be responsible for any other incidental or consequential damages attributable to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this limited warranty. This limited warranty does not cover any liability for consequential or incidental damages, all of which are hereby expressly disclaimed, or the extension beyond the duration of this limited warranty of any implied limited warranties, including those of merchantability or fitness for an intended purpose. (Some states or provinces do not allow the exclusion or limitation of implied limited warranties, so this exclusion may not apply to you.)

This limited warranty gives you specific legal rights. You may have other statutory rights that vary from state to state or from province to province, in which case this limited warranty does not affect such statutory rights.

## AS AMERICA, INC. LIMITED WARRANTY FOR CHAMPION® PRO AND CHAMPION®4 TOILETS

**This toilet comes with a limited lifetime warranty on chinaware, a limited 10 year warranty on all mechanical parts of the toilet and a limited 1 year warranty on the toilet seat if included with product.** If inspection of this AS America, Inc. ("American Standard®") plumbing product, inclusive of the chinaware and all mechanical parts, confirms that it is defective in materials or workmanship, American Standard® will repair or, at its option, exchange the product for the same or a similar model.

This limited warranty applies only to the original non-commercial purchaser and installation of the products. In the event of a limited warranty claim, proof of purchase will be required – **save sales receipt**.

For this warranty to become effective, the warranty registration process must be completed via the internet or telephone per the warranty registration instructions.

This limited warranty does not apply to commercial installations. The warranty for commercial installations is 1 year on chinaware and mechanical parts and 1 year on the toilet seat if included with product.

This warranty **does not apply** to local building code compliance. Since local building codes vary considerably, the purchaser of the product should check with a local building or plumbing contractor to ensure local code compliance before installation.

This warranty **will be void** if the product has been moved from its initial place of installation; if it has been subjected to faulty maintenance, abuse, misuse, accident or other damage; if it was not installed in accordance with American Standard®'s instructions; or if it has been modified in a manner inconsistent with the product as shipped by American Standard®.

**WARNING:** This warranty **DOES NOT COVER** any damages caused by the use of in-tank cleaners. These products can seriously corrode the fittings in the tank. This damage can cause leakage and property damage. **American Standard® will not be responsible or liable for any damage caused by the use of in-tank cleaners.**

American Standard®'s option to repair or exchange the product under this warranty does not cover any labor or other costs of removal or installation including any costs of any surrounding material such as tile or marble. **American Standard® is not responsible for any other incidental or consequential damages attributed to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this warranty.** (Some states or provinces do not allow the exclusion or limitation of implied warranties, so this exclusion may not apply to you.)

This warranty gives you specific rights. You may have other statutory rights that may vary from state to state or province to province, in which case this warranty does not affect such statutory rights.



# SLOAN®

Code No. 0816195  
Rev. 6 (02/15)

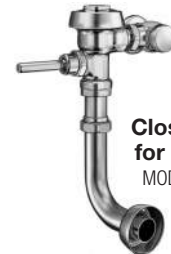
## INSTALLATION INSTRUCTIONS FOR EXPOSED ROYAL® FLUSHOMETERS



**Closet Flushometer  
for 1 1/2" Top Spud**  
MODELS 110/111,  
113, 115 & 116  
**Service Sink Flushometer  
for 1 1/2" Top Spud**  
MODEL 117



**Urinal Flushometer  
for 1 1/4" Top Spud**  
MODEL 180  
**Urinal Flushometer  
for 3/4" Top Spud**  
MODEL 186



**Closet Flushometer  
for 1 1/2" Back Spud**  
MODELS 120, 121 & 122

### LIMITED WARRANTY

Unless otherwise noted, Sloan Valve Company warrants this product, manufactured and sold for commercial or industrial uses, to be free from defects in material and workmanship for a period of three (3) years (one (1) year for special finishes, SF faucets, PWT electronics and 30 days for PWT software) from date of first purchase. During this period, Sloan Valve Company will, at its option, repair, replace, or refund the purchase price of any product which fails to conform with this warranty under normal use and service. This shall be the sole and exclusive remedy under this warranty. Products must be returned to Sloan Valve Company, at customer's cost. No claims will be allowed for labor, transportation or other costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.**

### PRIOR TO INSTALLATION

Before you install the flushometer, be sure the items listed below are installed. Also, refer to the rough-in diagram below.

- Closet fixture • Drain line • Water supply line

#### IMPORTANT:

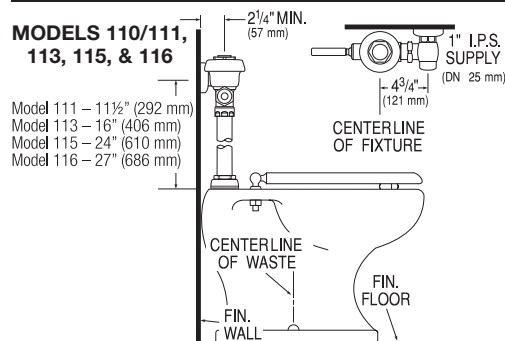
- **ALL PLUMBING SHOULD BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.**

#### • FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.

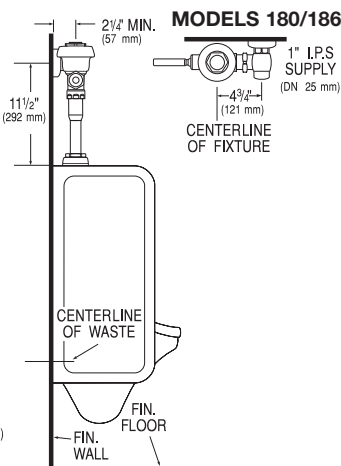
Sloan's flushometers are designed to operate with 15 to 80 psi (103 to 552 kPa) of water pressure. **THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED.** Consult fixture manufacturer for minimum pressure requirements. Most High Efficiency water closets require a minimum flowing pressure of 25 psi (172 kPa). Many building codes and the ASME A112.19.2 fixture standard list Maximum static water pressure as 80 PSI (552 kPa).

### ROUGH-INS

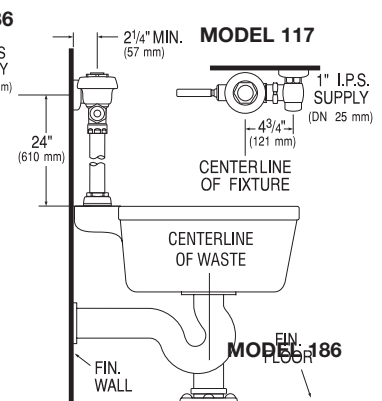
#### MODELS 110/111, 113, 115, & 116



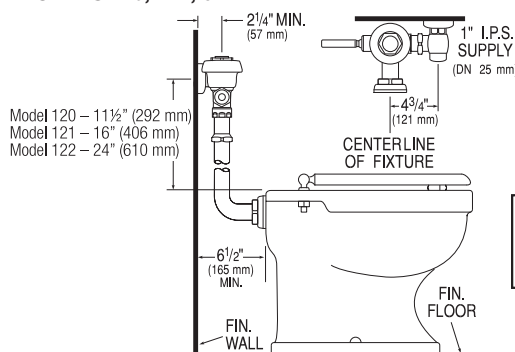
#### MODELS 180/186



#### MODEL 117



#### MODELS 120, 121, & 122



#### !!! IMPORTANT !!!

**WHEN MOUNTED ON AN ADA ACCESSIBLE BOWL, THE ROUGH-IN TO THE SUPPLY INLET SHOULD BE NO HIGHER THAN 37 1/2" OR THE HANDLE WILL EXCEED MAXIMUM HEIGHT ALLOWANCES UNDER ADA GUIDELINES.**

## TOOLS REQUIRED FOR INSTALLATION

- Straight blade screwdriver
- Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench

### !!! IMPORTANT !!!

PROTECT THE CHROME OR SPECIAL FINISH OF SLOAN FLUSHMETERS — DO NOT USE TOOTHED TOOLS TO INSTALL OR SERVICE THESE VALVES. USE A SLOAN A-50 SUPER-WRENCH™, SLOAN A-109 PLIER WRENCH OR SMOOTH JAWED SPUD WRENCH TO SECURE ALL COUPLINGS. SEE "CARE AND CLEANING" SECTION.

### !!! IMPORTANT !!!

NEVER OPEN CONTROL STOP TO WHERE THE FLOW FROM THE VALVE EXCEEDS THE FLOW CAPABILITY OF THE FIXTURE. IN THE EVENT OF A VALVE FAILURE, THE FIXTURE MUST BE ABLE TO ACCOMMODATE A CONTINUOUS FLOW FROM THE VALVE.

### !!! IMPORTANT !!!

WITH THE EXCEPTION OF CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!

### !!! IMPORTANT !!!

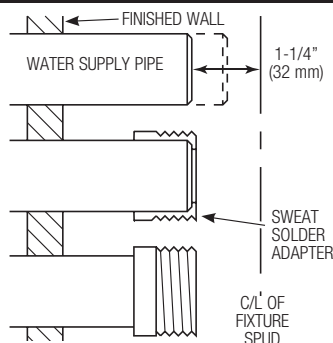
THIS PRODUCT CONTAINS MECHANICAL AND/OR ELECTRICAL COMPONENTS THAT ARE SUBJECT TO NORMAL WEAR. THESE COMPONENTS SHOULD BE CHECKED ON A REGULAR BASIS AND REPLACED AS NEEDED TO MAINTAIN THE VALVE'S PERFORMANCE.

Please take the time to read this manual to ensure proper product installation and longevity.

When further assistance is required, please contact your local Sloan Representative or Sloan Technical Support at:  
1-888-SLOAN-14 (1-888-756-2614)

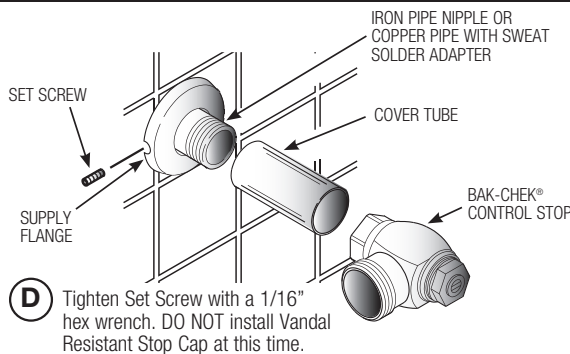
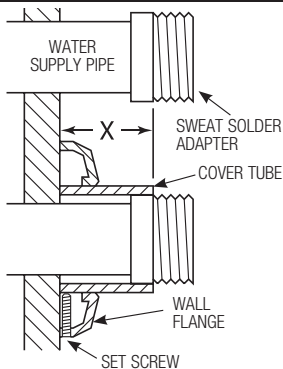
## 1 - INSTALL OPTIONAL SWEAT SOLDER ADAPTER (ONLY IF YOUR SUPPLY PIPE DOES NOT HAVE A MALE THREAD)

- Measure from finished wall to C/L of fixture spud. Cut pipe 1 1/4" (32 mm) shorter than this measurement. Chamfer O.D. and I.D. of water supply pipe.
- Slide threaded adapter fully onto pipe.
- Sweat solder the Adapter to pipe.



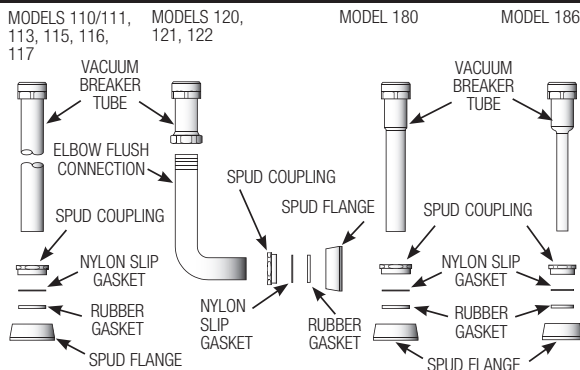
## 2 - INSTALL COVER TUBE, WALL FLANGE AND CONTROL STOP TO SUPPLY PIPE

- Measure from finished wall to first thread of Adapter or threaded supply pipe (dimension "X"). Cut Cover Tube to this length.
- Slide Cover Tube over pipe. Slide Wall Flange over Cover Tube until against wall.
- Thread Control Stop onto pipe. Tighten with a wrench.



## 3 - INSTALL VACUUM BREAKER FLUSH CONNECTION

- Slide Spud Coupling, Nylon Slip Gasket, Rubber Gasket and Spud Flange over Vacuum Breaker Tube.
- Insert Tube into Fixture Spud.
- Hand tighten Spud Coupling onto Fixture Spud.



#### 4 - INSTALL FLUSHOMETER AND TRIPLE SEAL HANDLE ASSEMBLY

##### NOTE

For high efficiency urinal flushometers (0.5, 0.25 and 0.125 gpf), it is necessary to first insert the flow control component into the tailpiece assembly. See the H1015A flow control kit and separate instructions for details on how to install.

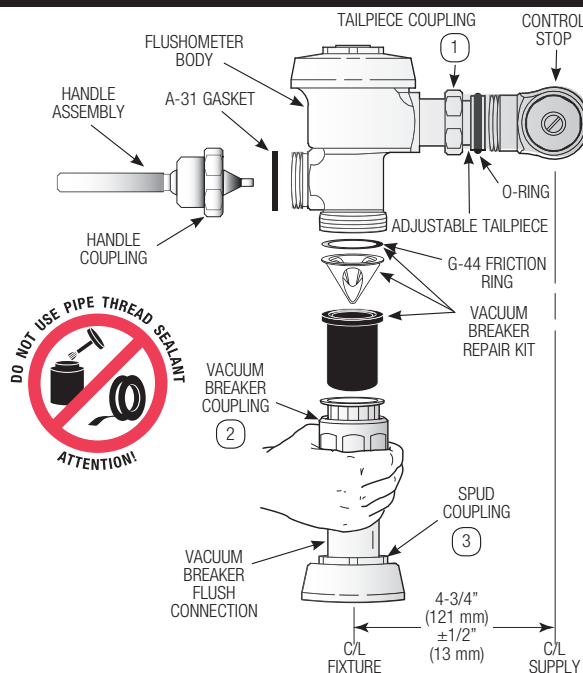
- A** Lubricate tailpiece O-ring with water. Insert Adjustable Tailpiece into Control Stop. Tighten Tailpiece Coupling by hand.
- B** Align Flushometer directly above the Vacuum Breaker Flush Connection by sliding the Flushometer Body IN or OUT as needed. Tighten Vacuum Breaker Coupling by hand.

##### NOTE

Maximum adjustment of the Sloan Adjustable Tailpiece is 1/2" (13 mm) IN or OUT from the standard 4-3/4" (121 mm) (centerline of Flushometer to centerline of Control Stop).

If roughing-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

- C** Align Flushometer Body and securely tighten first the Tailpiece Coupling (1), then the Vacuum Breaker Coupling (2), and finally the Spud Coupling (3). Use a wrench to tighten these couplings in the order shown.
  - D** Install the red A-31 Handle Gasket on the Handle Assembly. Insert the Handle Assembly into the Handle opening in the Flushometer Body. Securely tighten the Handle coupling with a wrench.
- Sloan's triple-sealed Flushometer Handle is ADA-complaint.



#### 5 - FLUSH OUT SUPPLY LINE

- A** Make sure Control Stop is CLOSED and remove Flushometer Outer Cover.
- B** Remove Inside Cover and lift out Inside Parts Assembly.

- C** Reinstall Outside and Inside Cover wrench tight. Open Control Stop to flush supply line. Close Control Stop and remove Outside and Inside Cover.
- D** Reinstall Inside Parts Assembly, Inside Cover and Outside Cover wrench tight.

#### 6 - ADJUST CONTROL STOP AND INSTALL VANDAL RESISTANT STOP CAP

- A** Open Control Stop COUNTERCLOCKWISE one FULL turn from closed position.
- B** Activate Flushometer.
- C** Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.

##### !!! IMPORTANT !!!

Sloan's flushometers are engineered for quiet operation. Excessive water flow creates noise, while too little water flow may not satisfy the needs of the fixture. Proper adjustment is made when plumbing fixture is cleansed after each flush without splashing water out from the lip AND a quiet flushing cycle is achieved.

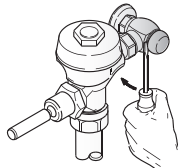
Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

- D** Install Vandal Resistant Control Stop Cap onto Control Stop.
  - Thread the Plastic Sleeve onto the Stop Bonnet until it is snug (tighten only by hand; do not use pliers or a wrench).
  - Place the metal Control Stop Cap over the plastic Sleeve and use the palm of the hand to push or "pop" the Cap over the fingers of the Plastic Sleeve. The Cap should spin freely.

Important: DO NOT install Cap onto Sleeve unless the Sleeve has been threaded onto Control Stop Bonnet. If the Sleeve and Cap are assembled off of the Control Stop, the Sleeve WILL NOT come apart from the Cap.

## VANDAL RESISTANT CONTROL STOP CAP REMOVAL

Use a large flat screwdriver as a lever to remove the Cap from the Control Stop. Insert the screwdriver blade between the bottom edge of the Cap and the flat surface of the Control Stop body as shown. Push the screwdriver handle straight back toward the wall to gently lift the Cap. If necessary, work the screwdriver around the diameter of the Cap until you can grasp the Cap and lift it completely off the Sleeve. The Sleeve should remain attached to the bonnet of the Control Stop.



## TROUBLESHOOTING GUIDE

### 1. Flushometer does not function (no flush).

- A. Control stop or main valve is closed. Open control stop or main valve.
- B. Handle assembly is damaged. Replace handle or install handle repair kit.
- C. Relief Valve is damaged. Replace relief valve.

### 2. Volume of water is not sufficient to siphon fixture.

- A. Control stop is not open wide enough. Adjust control stop for desired delivery of water volume.
- B. Diaphragm assembly is damaged. Replace diaphragm assembly.
- C. Incorrect diaphragm assembly is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace diaphragm. Use valve label and markings on fixture for reference.
- D. Water supply volume or pressure is inadequate. If no gauges are available to properly measure supply pressure or volume of water at the flushometer, then remove the relief valve from the diaphragm assembly, reassemble the flushometer and completely open the control stop.
  - If the fixture siphons, more water volume is required. Install a higher flushing volume diaphragm. **IMPORTANT – LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**
  - If the fixture DOES NOT siphon or if a low consumption flush is required, steps must be taken to increase the water supply pressure and/or volume. Contact the fixture manufacturer for minimum water supply requirements of the fixture.

### 3. Length of flush is too short (short flush).

- A. Diaphragm assembly is worn or damaged. Replace diaphragm assembly.
- B. Handle assembly is damaged. Replace handle or install handle repair kit.
- C. Incorrect diaphragm assembly is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace diaphragm. Use valve label and markings on fixture for reference.

### 4. Length of flush is too long (long flush) or continuous.

- A. Metering bypass hole (upper filter ring) in diaphragm is clogged. Remove the diaphragm assembly. Remove the primary and secondary filter rings from the diaphragm, wash under running water, and reassemble. Replace as necessary.
- B. Diaphragm or relief valve is damaged. Replace diaphragm or relief valve.
- C. Incorrect diaphragm assembly is installed in flushometer; for instance, closet assembly inside a urinal flushometer, or water saver assembly inside a low consumption flushometer. Determine the flush volume required by the fixture and replace the diaphragm. Use valve label and markings on fixture for reference.
- D. Inside cover is damaged. Replace Inside cover.
- E. Supply line water pressure has dropped and is not sufficient to close the valve. Close control stop until pressure is restored.
- F. Relief valve is not seated properly. Disassemble diaphragm components (relief valve, filter rings, and diaphragm unit), wash under running water, and reassemble. Replace as necessary.

### 5. Chattering noise is heard during flush.

- A. Inside cover is damaged. Replace inside cover.
- B. Relief valve or diaphragm is damaged. Replace relief valve or diaphragm assembly.

### 6. Handle Leaks.

- A. Handle seal or assembly is damaged. Replace handle or install handle repair kit.

### 7. Water splashes from fixture.

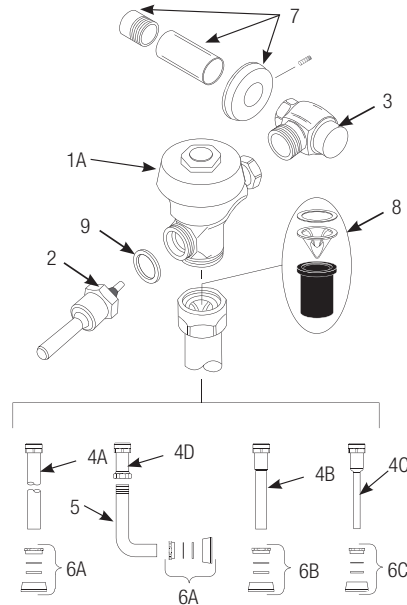
- A. Control stop is open wider than necessary. Adjust control stop for desired delivery of water volume.
- B. Water saver/conventional diaphragm assembly is installed on low consumption fixture or closet diaphragm assembly is installed on urinal fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.

When assistance is required, please contact your local Sloan Representative or Sloan Technical Support at:  
1-888-SLOAN-14 (1-888-756-2614)

## CARE AND CLEANING

DO NOT use abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use ONLY mild soap and water, then wipe dry with clean cloth or towel. While cleaning the bathroom tile, protect the Flushometer from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

## PARTS LIST



| Item No. | Part No.  | Description  |
|----------|---|--|
| 1        | †   | Valve Assembly   |
| 2        | B-73-A  | ADA Compliant Handle Assembly                          |
| 3        | H-700-A   | Bak-Chek® Control Stop                                 |
| 4A       | V-600-AA  | 1½" (38 mm) Vacuum Breaker Assembly ‡                  |
| 4B       | V-600-AA  | 1¼" (32 mm) Vacuum Breaker Assembly                    |
| 4C       | V-600-AA  | ¾" (19 mm) Vacuum Breaker Assembly                     |
| 4D       | V-600-A   | Vacuum Breaker Assembly                                |
| 5        | F-109   | 1½" (38 mm) Elbow Flush Connection                     |
| 6A       | F-56-A  | 1½" (38 mm) Spud Coupling Assembly                     |
| 6B       | F-57-A  | 1¼" (32 mm) Spud Coupling Assembly                     |
| 6C       | F-58-A  | ¾" (19 mm) Spud Coupling Assembly                      |
| 7        | H-634-AA  | 1" (25 mm) Sweat Solder Kit with Cast Set Screw Flange |
|          | H-636-AA  | ¾" (19 mm) Sweat Solder Kit with Cast Set Screw Flange |
| 8        | V-651-A   | High Back Pressure Vacuum Breaker Repair Kit           |
| 9        | A-31  | Handle Gasket  |
| †        | Part number varies with valve model variation; consult factory. |  |
| ‡        | Length varies with valve model variation; consult factory.      |  |

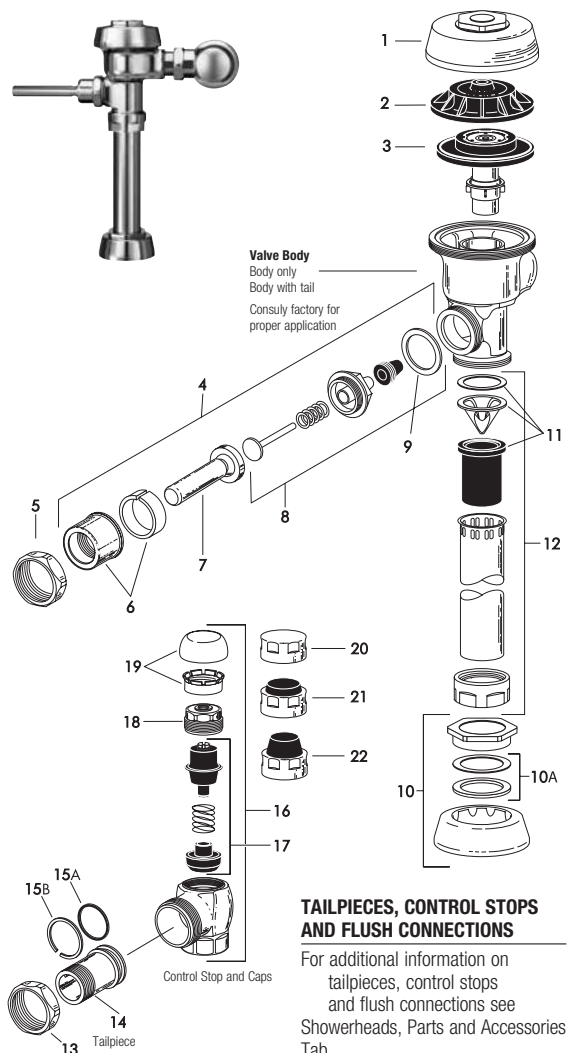
**NOTE:** The information contained in this document is subject to change without notice.

SLOAN • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131  
Phone: 1-800-982-5839 • Fax: 1-800-447-8329 • www.sloanvalve.com



SLOAN.

Repair Parts and Maintenance Guide

**Royal®  
Flushometer****ITEM 10A. SLIP JOINT GASKETS AND RINGS**

| Size            | Code No.               | Part No. | Description                    |
|-----------------|------------------------|----------|--------------------------------|
| 1-1/2"          | <b>5306058</b>         | F-3      | Red Friction Ring              |
|                 | <b>5322001</b>         | VB-F-5   | Black Slip Joint Gasket        |
|                 | <b>0319086/5319086</b> | S-30     | Flexible Seat                  |
|                 | <b>0319079</b>         | S-21     | Rigid Seat (rubber over brass) |
| 1-1/2" x 1-1/4" | <b>0396062</b>         | F-105    | Slip Joint Gasket – Rigid      |
| 1-1/4"          | <b>5306057</b>         | F-3      | Red Friction Ring              |
|                 | <b>5322176</b>         | VB-F-5   | Black Slip Joint Gasket        |
|                 | <b>0307052/5307052</b> | G-21     | Rigid Seat (rubber over brass) |
| 1"              | <b>5306056</b>         | F-3      | Red Friction Ring              |
|                 | <b>5306115</b>         | F-5      | Black Slip Joint Gasket        |
| 3/4"            | <b>5306055</b>         | F-3      | Red Friction Ring              |
|                 | <b>5306113</b>         | F-5      | Black Slip Joint Gasket        |

\* See pages 102-103 for additional lengths

† For use with 1" and 3/4" H-700-A and 1" H-600-A Bak-Chek® screwdriver control stop

‡ For use with 3/4" H-600-A Bak-Chek® screwdriver control stop

RW for use with Reclaimed Water Flushometers

Sloan products are also available in satin, brushed nickel, chrome, gold and polished brass finishes – contact factory for part numbers.

**PARTS LIST**

| Item No. | Code No.   | Part No.    | Description  |
|----------|--|-------------|--|
| 1.       | <b>0301172PKA-72</b>                                     |             | CP Cover   |
|          | <b>0301435PKA-72-HE</b>                                  |             | CP High Efficiency Cover   |
| 2.       | <b>0301168</b>   | A-71        | Inside Cover   |
|          | <b>0301336</b>   | A-71-1      | Inside Cover (Purple)  |
| 3.       | —  |             | Dual-Filtered Bypass Diaphragm Assembly (refer to table and diagram on following page) |
| 4.       | <b>0302390</b>   | B-73-A      | CP ADA-Compliant Triple Seal Handle Assembly   |
|          | <b>0302267</b>   | B-73-A-PH   | CP ADA-Compliant Triple Seal Handle Assembly   |
| 5.       | <b>0301082</b>   | A-6         | CP Handle Coupling   |
| 6.       | <b>0302109</b>   | B-7-A       | CP Socket Assembly   |
| 7.       | <b>0302389</b>   | B-74-A      | CP ADA-Compliant Handle  |
|          | <b>0302264</b>   | B-74-A-PH   | CP ADA-Compliant Handle (Purple Handle)  |
| 8.       | <b>3302306</b>   | B-51-A      | Triple Seal Handle Repair Kit  |
| 9.       | <b>5301139</b>   | A-31        | Handle Gasket – 48 per package   |
| 10.      | <b>0306125</b>   | F-5-AW      | 3/4" (19 mm) CP Spud Coupling Assembly   |
|          | <b>0306140</b>   | F-5-AU      | 1-1/4" (32 mm) CP Spud Coupling Assembly   |
|          | <b>0306146</b>   | F-5-AT      | 1-1/2" (38 mm) CP Spud Coupling Assembly   |
| 10A.     | <b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW LEFT</b> |             |  |
| 11.      | <b>3323182</b>   | V-651-A     | High Back Pressure Vacuum Breaker Repair Kit   |
| 12.      | <b>3393004</b>   | V-600-AA    | 3/4" (19 mm) x 9" (228 mm) CP Vacuum Breaker   |
|          | <b>3393006</b>   | V-600-AA    | 1-1/4" (32 mm) x 9" (228 mm) CP Vacuum Breaker   |
|          | <b>3393007</b>   | V-600-AA    | 1-1/2" (38 mm) x 9" (228 mm) CP Vacuum Breaker   |
| 13.      | <b>0308676</b>   | H-550       | CP Stop Coupling   |
| 14.      | <b>0308801</b>   | H-551-A     | CP Adjustable Tailpiece 2-1/16" (52 mm long) Standard Length*                          |
| 15A.     | <b>5308696</b>   | H-553       | O-ring – 24 per package  |
| 15B.     | <b>5308381</b>   | H-552       | Locking Ring – 12 per package  |
| 16.      | <b>3308386</b>   | H-700-A     | 1" (25 mm) CP Bak-Chek® Screwdriver Stop   |
|          | <b>0388141</b>   | H-700-A-RW  | 1" (25 mm) CP Bak-Chek® Screwdriver Stop   |
|          | <b>3308384</b>   | H-700-A     | 3/4" (19 mm) CP Bak-Chek® Screwdriver Stop   |
|          | <b>0388142</b>   | H-700-A-RW  | 3/4" (19 mm) CP Bak-Chek® Screwdriver Stop   |
| 17.      | <b>3308853</b>   | H-541-ASD   | Control Stop Repair Kit †  |
|          | <b>3308856</b>   | H-543-ASD   | Control Stop Repair Kit ‡  |
| 18.      | <b>0308612</b>   | H-622       | CP Bonnet †  |
|          | <b>0308892</b>   | H-608-RW    | CP Bonnet †  |
|          | <b>0308843</b>   | H-577       | CP Bonnet ‡ – <b>DISCONTINUED</b>  |
| 19.      | <b>3308772</b>   | H-1010-A    | Vandal Resistant Control Stop Cap Assembly †   |
|          | <b>3308790</b>   | H-1009-A    | Vandal Resistant Control Stop Cap Assembly ‡   |
|          |  |             | H-600 3/4" Stop only   |
| 20.      | <b>0308738</b>   | H-573       | Control Stop Cap CP †  |
|          | <b>0308848</b>   | H-582       | Control Stop Cap CP ‡  |
| 21.      | <b>3308866</b>   | H-574       | Control Stop Cap with Bumper †   |
|          |  |             | (–YO Variation)  |
| 22.      | <b>3308867</b>   | H-576       | Control Stop Cap with Extended Bumper †  |
|          |  |             | (–YG Variation)  |
| 23.      | <b>3388015</b>   | H-1015      | Flow Control Kit (not Shown) (HEU Only)  |
| 24.      | <b>3308735</b>   | H-634-AA-RW | 1" (25 mm) Sweat Solder Kit w/ Cast Set Screw  |
|          |  |             | Purple Flange (not shown)  |
|          | <b>3308736</b>   | H-636-AA-RW | 3/4" (19 mm) Sweat Solder Kit w/ Cast Set Screw  |
|          |  |             | Flange (not shown)   |
|          | <b>3308785</b>   | H-636-AA    | 1" (25 mm) Sweat Solder Kit w/ Cast Set Screw  |
|          |  |             | Purple Flange (not shown)  |
|          | <b>3308788</b>   | H-636-AA    | 3/4" (19 mm) Sweat Solder Kit w/ Cast Set Screw  |
|          |  |             | Flange (not shown)   |

SLOAN.

Repair Parts and Maintenance Guide

## Royal® Flushometer

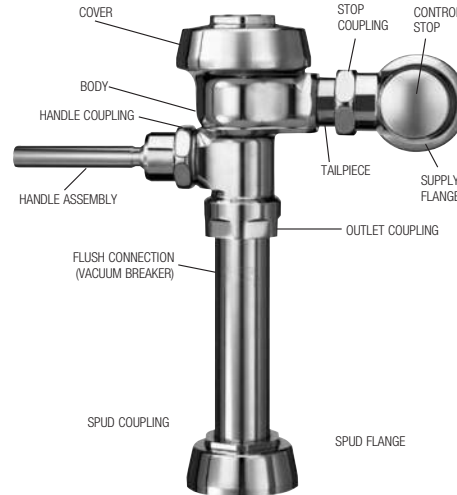
## DUAL-FILTERED DIAPHRAGM ASSEMBLY

Available in diaphragm only and Royal® Performance™ Kits.

Royal® Performance™ Kit includes dual-filtered diaphragm assembly (item 3), handle repair kit with triple seal packing (item 8), high back pressure vacuum breaker repair kit (item 11), and one tailpiece O-ring (item 15A). DIAPHRAGM ONLY KIT contains "drop-in" dual-filtered diaphragm assembly (item 3) ONLY.

The dual-filtered diaphragm can be used in Royal® Regal® and similar diaphragm-style valve bodies. For use in Sloan valve bodies with a bell-shaped cover (manufactured before 1964), replace the bottom filter ring in these kits with a blue A-108 filter ring (not shown Sloan Code No. **5301283**).

NOTE: In January 1998, the Royal® diaphragm design was upgraded to a preassembled unit with two (2) plastic filtering rings attached to the rubber diaphragm (one on top and one on bottom). If the flushometer you are servicing has our older, segmented diaphragm with brass by-pass hole, refer to our Regal section for additional troubleshooting information.



## ROYAL® PERFORMANCE KIT

| Code No.       | Part No. | Description                                       | Relief Valve† | Refill Head* | Flow Ring |
|----------------|----------|---|---------------|--------------|-----------|
| <b>3301070</b> | A-1101-A | Low Consumption Water Closets-1.6 gpf (6.0 Lpf)** | Green         | Gray         | Smooth    |
| <b>3301071</b> | A-1102-A | Water Saver Water Closets-3.5 gpf (13.2 Lpf)**    | White         | Gray         | Smooth    |
| <b>3301072</b> | A-1103-A | 9 Liter European Water Closets-2.4 gpf (9.0 Lpf)  | Blue          | Gray         | Smooth    |
| <b>3301073</b> | A-1106-A | Wash Down Urinals-0.5 gpf (1.9 Lpf)               | Green         | Black        | Smooth    |
| <b>3301074</b> | A-1107-A | Low Consumption Urinals-1.0 gpf (3.8 Lpf)**       | Green         | Black        | Slotted   |
| <b>3301075</b> | A-1108-A | Water Saver Urinals-1.5 gpf (5.7 Lpf)**           | Black         | Black        | Smooth    |

\* Closet refill heads (gray) have larger slots than urinal refill heads (black).

## DIAPHRAGM ONLY KIT

| Code No.       | Part No.    | Description  | Relief Valve† | Refill Head* | Flow Ring        |
|----------------|-------------|--|---------------|--------------|------------------|
| <b>3301502</b> | A-1041-A    | Low Consumption Water Closets-1.6 gpf (6.0 Lpf)**              | Green         | Gray         | Smooth           |
| <b>3301501</b> | A-1038-A    | Water Saver Water Closets-3.5 gpf (13.2 Lpf)**                 | White         | Gray         | Smooth           |
| <b>3301505</b> | A-1044-A    | 9 Liter European Water Closets-2.4 gpf (9.0 Lpf)               | Blue          | Gray         | Smooth           |
| <b>3301504</b> | A-1043-A    | Wash Down Urinals-0.5 gpf (1.9 Lpf)                            | Green         | Black        | Smooth           |
| <b>3301503</b> | A-1042-A    | Low Consumption Urinals-1.0 gpf (3.8 Lpf)**                    | Green         | Black        | Slotted          |
| <b>3301500</b> | A-1037-A    | Water Saver Urinals-1.5 gpf (5.7 Lpf)**                        | Black         | Black        | Smooth           |
| <b>3301506</b> | A-1045-A    | High-Efficiency Water Closets-1.28 gpf (4.8 Lpf)               | Blue          | Gray         | Smooth           |
| <b>3301142</b> | A-1047-A    | High-Efficiency Urinals-0.25 gpf (1.0 Lpf) with White Inserts  | White         | HEU Black    | Smooth           |
| <b>3301143</b> | A-1050-A    | High-Efficiency Urinals-0.125 gpf (0.5 Lpf) with White Inserts | Blue          | HEU Black    | Smooth           |
| <b>3301594</b> | A-1075-A-BX | High-Efficiency Water Closets-1.28 gpf (4.8 Lpf) RW            | Blue          | Black        | Smooth           |
| <b>3301592</b> | A-1073-A-BX | High-Efficiency Urinals-0.5 gpf (1.9 Lpf) RW                   | Green         | Black        | Smooth + Slotted |
| <b>3301591</b> | A-1077-A-BX | High-Efficiency Urinals-0.25 gpf (1.0 Lpf) RW                  | White         | HEU Black    | Smooth           |
| <b>3301590</b> | A-1070-A-BX | High-Efficiency Urinals-0.125 gpf (0.5 Lpf) RW                 | Blue          | HEU Black    | Smooth           |

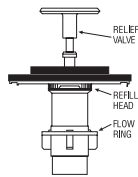
† Consult factory for availability of replacement plastic relief valves (green, black, blue, and white) and brass relief valves.

NOTE: For older water closets that require 4.5 gpf (17.0 Lpf), choose kits A-1102-A or A-1038-A, but remove the flow ring before use. For blowout-style urinals that require 3.5 gpf (13.2 Lpf), choose kits A-1102-A or A-1038-A. For service sinks that require 6.5 gpf (24.6 Lpf), order A-36-A diaphragm repair kit (not shown Sloan Code No. **3301036**) and remove the flow ring before use. Regulations for low consumption fixtures prohibit the use of higher flush volumes.

\* Closet refill heads (gray) have larger slots than urinal refill heads (black).

\*\* Water Saver (3.5 gpf closet and 1.5 gpf urinal) and Low Consumption (1.6 gpf closet and 1.0 gpf urinal) fixtures must use matching gpf (Lpf) diaphragm kits; using a smaller gpf (Lpf) kit in fixtures not intended for less volume will result in inadequate dilution in urinals and improper evacuation in closets.

RW for use with Reclaimed Water Flushometers.



The colors of the relief valve and the refill head plus the shape of flow ring identify the flush volume of a DUAL-FILTERED DIAPHRAGM ASSEMBLY.

SLOAN.

Repair Parts and Maintenance Guide

## Royal® Flushometer

### TROUBLESHOOTING GUIDE

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, **DO NOT USE** pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, **DO NOT USE** toothed tools to install or service these valves. Use our A-50 Super-Wrench or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### 1. Flushometer does not function (no flush).

- A. Control stop or main supply valve is closed. Open control stop or main supply valve.
- B. Handle assembly is damaged. Replace B-73-A handle or repair with B-51-A handle repair kit.
- C. Relief valve is damaged. Replace relief valve.

#### 2. Handle leaks.

- A. Handle seal or handle assembly is damaged. Replace B-73-A handle or repair with B-51-A handle repair kit.

#### 3. Water splashes from fixture.

- A. Control stop is open wider than necessary. Adjust control stop for desired delivery of water volume.
- B. Water saver/conventional diaphragm assembly is installed on low consumption fixture or closet diaphragm assembly is installed on urinal fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.

#### 4. Volume of water is insufficient to adequately siphon fixture.

- A. Control stop is not open wide enough. Adjust control stop for desired delivery of water volume.
- B. Diaphragm assembly is damaged. Replace diaphragm assembly.
- C. Low consumption diaphragm assembly is installed on water saver/conventional fixture or urinal diaphragm assembly is installed on closet fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.
- D. Inadequate water volume or pressure is available from supply. Increase flow rate or pressure to the valve. If gauges are not available to measure supply pressure/volume, remove relief valve from diaphragm assembly and open the control stop.

If the fixture siphons: Additional water volume is required. Install higher flushing volume relief valve or diaphragm assembly or cut flow ring from guide. **IMPORTANT: LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**

If the fixture **DOES NOT** siphon (or a low consumption flush is required): Additional steps must be taken to increase the water pressure and/or volume at the water supply. Contact fixture manufacturer for minimum supply requirements of fixture.

#### 5. Flushometer valve closes immediately (short flush).

- A. Worn or damaged diaphragm assembly. Replace diaphragm assembly.
- B. Handle assembly is damaged. Replace B-73-A handle or repair with B-51-A handle repair kit.
- C. Low consumption diaphragm assembly is installed on water saver/conventional fixture or urinal diaphragm assembly is installed on closet fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace relief valve or diaphragm assembly for appropriate flush volume of fixture.

#### 6. Length of flush is too long (long flush) or fails to shut off.

- A. Bypass hole (upper filter ring) of diaphragm assembly is dirty. Remove the diaphragm assembly. Disassemble the filter rings from the diaphragm, wash under running water, and reassemble. Replace as necessary.
- B. Relief valve or diaphragm assembly is damaged. Replace relief valve or diaphragm assembly.
- C. Water saver/conventional diaphragm assembly is installed on low consumption fixture or closet diaphragm assembly is installed on urinal fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.
- D. Inside cover is damaged. Install new A-71 part.
- E. Line water pressure dropped and is insufficient to close valve. Close the control stop until pressure is restored.
- F. Relief valve is not seated properly. Disassemble diaphragm components (relief valve, filter rings, and diaphragm unit), wash under running water, and reassemble. Replace as necessary.

#### 7. Chattering noise is heard during flush.

- A. Inside cover is damaged. Install new A-71 part.
- B. Relief valve or diaphragm assembly is damaged. Replace relief valve or diaphragm assembly.

### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners to clean flushometers that may dull the luster and attack the chrome or decorative finish. Use **ONLY** mild soap and water, then wipe dry with a clean towel or cloth. When cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# SLOAN®

Code No. 0816195  
Rev. 6 (02/15)

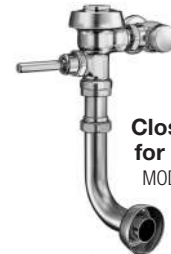
## INSTALLATION INSTRUCTIONS FOR EXPOSED ROYAL® FLUSHOMETERS



**Closet Flushometer  
for 1 1/2" Top Spud**  
MODELS 110/111,  
113, 115 & 116  
**Service Sink Flushometer  
for 1 1/2" Top Spud**  
MODEL 117



**Urinal Flushometer  
for 1 1/4" Top Spud**  
MODEL 180  
**Urinal Flushometer  
for 3/4" Top Spud**  
MODEL 186



**Closet Flushometer  
for 1 1/2" Back Spud**  
MODELS 120, 121 & 122

### LIMITED WARRANTY

Unless otherwise noted, Sloan Valve Company warrants this product, manufactured and sold for commercial or industrial uses, to be free from defects in material and workmanship for a period of three (3) years (one (1) year for special finishes, SF faucets, PWT electronics and 30 days for PWT software) from date of first purchase. During this period, Sloan Valve Company will, at its option, repair, replace, or refund the purchase price of any product which fails to conform with this warranty under normal use and service. This shall be the sole and exclusive remedy under this warranty. Products must be returned to Sloan Valve Company, at customer's cost. No claims will be allowed for labor, transportation or other costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.**

### PRIOR TO INSTALLATION

Before you install the flushometer, be sure the items listed below are installed. Also, refer to the rough-in diagram below.

- Closet fixture • Drain line • Water supply line

#### IMPORTANT:

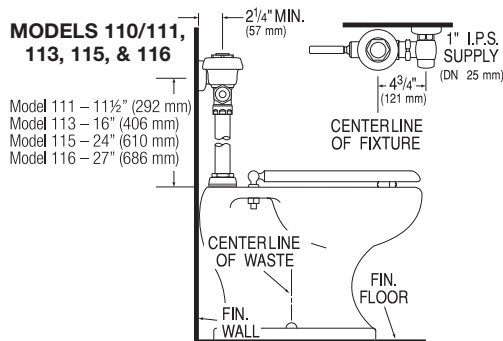
- **ALL PLUMBING SHOULD BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.**

#### • FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.

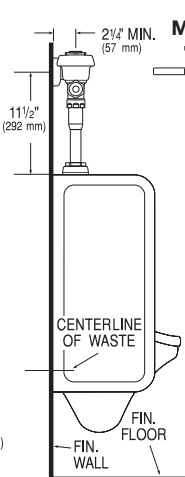
Sloan's flushometers are designed to operate with 15 to 80 psi (103 to 552 kPa) of water pressure. **THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED.** Consult fixture manufacturer for minimum pressure requirements. Most High Efficiency water closets require a minimum flowing pressure of 25 psi (172 kPa). Many building codes and the ASME A112.19.2 fixture standard list Maximum static water pressure as 80 PSI (552 kPa).

### ROUGH-INS

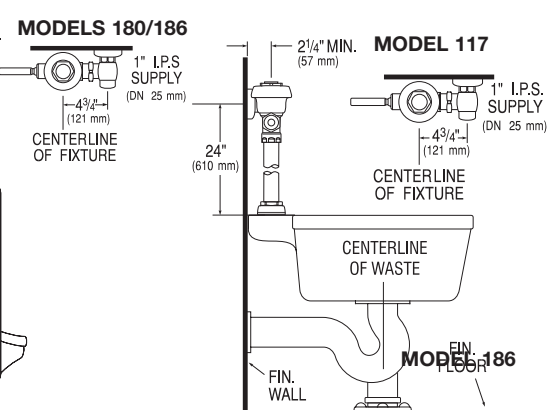
#### MODELS 110/111, 113, 115, & 116



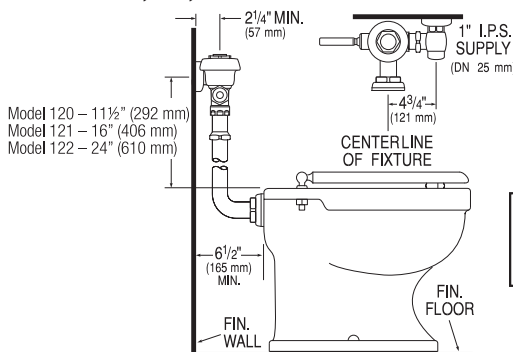
#### MODELS 180/186



#### MODEL 117



#### MODELS 120, 121, & 122



#### !!! IMPORTANT !!!

**WHEN MOUNTED ON AN ADA ACCESSIBLE BOWL, THE ROUGH-IN TO THE SUPPLY INLET SHOULD BE NO HIGHER THAN 37 1/2" OR THE HANDLE WILL EXCEED MAXIMUM HEIGHT ALLOWANCES UNDER ADA GUIDELINES.**



## TOOLS REQUIRED FOR INSTALLATION

- Straight blade screwdriver
- Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench

### !!! IMPORTANT !!!

PROTECT THE CHROME OR SPECIAL FINISH OF SLOAN FLUSHMETERS — DO NOT USE TOOTHED TOOLS TO INSTALL OR SERVICE THESE VALVES. USE A SLOAN A-50 SUPER-WRENCH™, SLOAN A-109 PLIER WRENCH OR SMOOTH JAWED SPUD WRENCH TO SECURE ALL COUPLINGS. SEE "CARE AND CLEANING" SECTION.

### !!! IMPORTANT !!!

NEVER OPEN CONTROL STOP TO WHERE THE FLOW FROM THE VALVE EXCEEDS THE FLOW CAPABILITY OF THE FIXTURE. IN THE EVENT OF A VALVE FAILURE, THE FIXTURE MUST BE ABLE TO ACCOMMODATE A CONTINUOUS FLOW FROM THE VALVE.

### !!! IMPORTANT !!!

WITH THE EXCEPTION OF CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!

### !!! IMPORTANT !!!

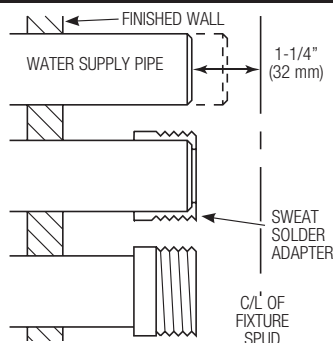
THIS PRODUCT CONTAINS MECHANICAL AND/OR ELECTRICAL COMPONENTS THAT ARE SUBJECT TO NORMAL WEAR. THESE COMPONENTS SHOULD BE CHECKED ON A REGULAR BASIS AND REPLACED AS NEEDED TO MAINTAIN THE VALVE'S PERFORMANCE.

Please take the time to read this manual to ensure proper product installation and longevity.

When further assistance is required, please contact your local Sloan Representative or Sloan Technical Support at:  
1-888-SLOAN-14 (1-888-756-2614)

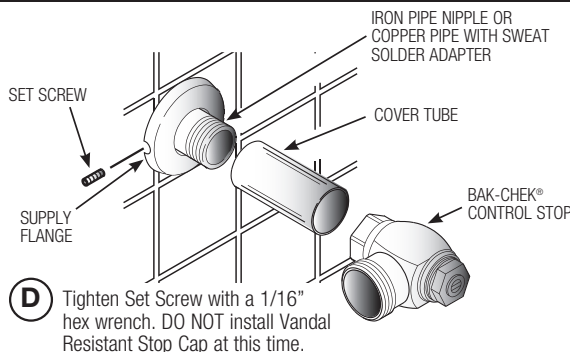
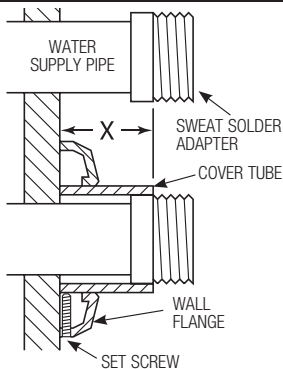
## 1 - INSTALL OPTIONAL SWEAT SOLDER ADAPTER (ONLY IF YOUR SUPPLY PIPE DOES NOT HAVE A MALE THREAD)

- Measure from finished wall to C/L of fixture spud. Cut pipe 1 1/4" (32 mm) shorter than this measurement. Chamfer O.D. and I.D. of water supply pipe.
- Slide threaded adapter fully onto pipe.
- Sweat solder the Adapter to pipe.



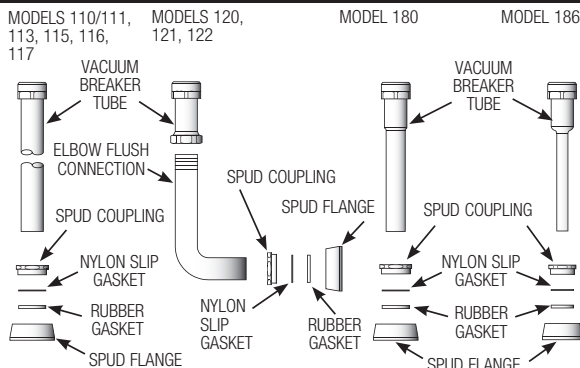
## 2 - INSTALL COVER TUBE, WALL FLANGE AND CONTROL STOP TO SUPPLY PIPE

- Measure from finished wall to first thread of Adapter or threaded supply pipe (dimension "X"). Cut Cover Tube to this length.
- Slide Cover Tube over pipe. Slide Wall Flange over Cover Tube until against wall.
- Thread Control Stop onto pipe. Tighten with a wrench.



## 3 - INSTALL VACUUM BREAKER FLUSH CONNECTION

- Slide Spud Coupling, Nylon Slip Gasket, Rubber Gasket and Spud Flange over Vacuum Breaker Tube.
- Insert Tube into Fixture Spud.
- Hand tighten Spud Coupling onto Fixture Spud.



#### 4 - INSTALL FLUSHOMETER AND TRIPLE SEAL HANDLE ASSEMBLY

##### NOTE

For high efficiency urinal flushometers (0.5, 0.25 and 0.125 gpf), it is necessary to first insert the flow control component into the tailpiece assembly. See the H1015A flow control kit and separate instructions for details on how to install.

- A** Lubricate tailpiece O-ring with water. Insert Adjustable Tailpiece into Control Stop. Tighten Tailpiece Coupling by hand.
- B** Align Flushometer directly above the Vacuum Breaker Flush Connection by sliding the Flushometer Body IN or OUT as needed. Tighten Vacuum Breaker Coupling by hand.

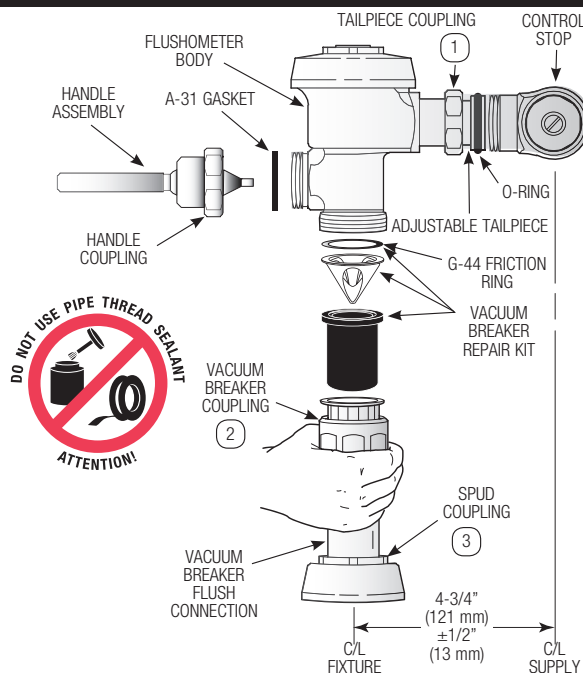
##### NOTE

Maximum adjustment of the Sloan Adjustable Tailpiece is 1/2" (13 mm) IN or OUT from the standard 4-3/4" (121 mm) (centerline of Flushometer to centerline of Control Stop).

If roughing-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

- C** Align Flushometer Body and securely tighten first the Tailpiece Coupling (1), then the Vacuum Breaker Coupling (2), and finally the Spud Coupling (3). Use a wrench to tighten these couplings in the order shown.
- D** Install the red A-31 Handle Gasket on the Handle Assembly. Insert the Handle Assembly into the Handle opening in the Flushometer Body. Securely tighten the Handle coupling with a wrench.

Sloan's triple-sealed Flushometer Handle is ADA-complaint.



#### 5 - FLUSH OUT SUPPLY LINE

- A** Make sure Control Stop is CLOSED and remove Flushometer Outer Cover.
- B** Remove Inside Cover and lift out Inside Parts Assembly.

- C** Reinstall Outside and Inside Cover wrench tight. Open Control Stop to flush supply line. Close Control Stop and remove Outside and Inside Cover.
- D** Reinstall Inside Parts Assembly, Inside Cover and Outside Cover wrench tight.

#### 6 - ADJUST CONTROL STOP AND INSTALL VANDAL RESISTANT STOP CAP

- A** Open Control Stop COUNTERCLOCKWISE one FULL turn from closed position.
- B** Activate Flushometer.
- C** Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.

##### !!! IMPORTANT !!!

Sloan's flushometers are engineered for quiet operation. Excessive water flow creates noise, while too little water flow may not satisfy the needs of the fixture. Proper adjustment is made when plumbing fixture is cleansed after each flush without splashing water out from the lip AND a quiet flushing cycle is achieved.

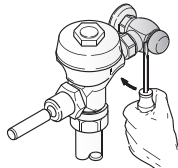
Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

- D** Install Vandal Resistant Control Stop Cap onto Control Stop.
  - Thread the Plastic Sleeve onto the Stop Bonnet until it is snug (tighten only by hand; do not use pliers or a wrench).
  - Place the metal Control Stop Cap over the plastic Sleeve and use the palm of the hand to push or "pop" the Cap over the fingers of the Plastic Sleeve. The Cap should spin freely.

Important: DO NOT install Cap onto Sleeve unless the Sleeve has been threaded onto Control Stop Bonnet. If the Sleeve and Cap are assembled off of the Control Stop, the Sleeve WILL NOT come apart from the Cap.

## VANDAL RESISTANT CONTROL STOP CAP REMOVAL

Use a large flat screwdriver as a lever to remove the Cap from the Control Stop. Insert the screwdriver blade between the bottom edge of the Cap and the flat surface of the Control Stop body as shown. Push the screwdriver handle straight back toward the wall to gently lift the Cap. If necessary, work the screwdriver around the diameter of the Cap until you can grasp the Cap and lift it completely off the Sleeve. The Sleeve should remain attached to the bonnet of the Control Stop.



## TROUBLESHOOTING GUIDE

### 1. Flushometer does not function (no flush).

- A. Control stop or main valve is closed. Open control stop or main valve.
- B. Handle assembly is damaged. Replace handle or install handle repair kit.
- C. Relief Valve is damaged. Replace relief valve.

### 2. Volume of water is not sufficient to siphon fixture.

- A. Control stop is not open wide enough. Adjust control stop for desired delivery of water volume.
- B. Diaphragm assembly is damaged. Replace diaphragm assembly.
- C. Incorrect diaphragm assembly is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace diaphragm. Use valve label and markings on fixture for reference.
- D. Water supply volume or pressure is inadequate. If no gauges are available to properly measure supply pressure or volume of water at the flushometer, then remove the relief valve from the diaphragm assembly, reassemble the flushometer and completely open the control stop.
  - If the fixture siphons, more water volume is required. Install a higher flushing volume diaphragm. **IMPORTANT – LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**
  - If the fixture DOES NOT siphon or if a low consumption flush is required, steps must be taken to increase the water supply pressure and/or volume. Contact the fixture manufacturer for minimum water supply requirements of the fixture.

### 3. Length of flush is too short (short flush).

- A. Diaphragm assembly is worn or damaged. Replace diaphragm assembly.
- B. Handle assembly is damaged. Replace handle or install handle repair kit.
- C. Incorrect diaphragm assembly is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace diaphragm. Use valve label and markings on fixture for reference.

### 4. Length of flush is too long (long flush) or continuous.

- A. Metering bypass hole (upper filter ring) in diaphragm is clogged. Remove the diaphragm assembly. Remove the primary and secondary filter rings from the diaphragm, wash under running water, and reassemble. Replace as necessary.
- B. Diaphragm or relief valve is damaged. Replace diaphragm or relief valve.
- C. Incorrect diaphragm assembly is installed in flushometer; for instance, closet assembly inside a urinal flushometer, or water saver assembly inside a low consumption flushometer. Determine the flush volume required by the fixture and replace the diaphragm. Use valve label and markings on fixture for reference.
- D. Inside cover is damaged. Replace Inside cover.
- E. Supply line water pressure has dropped and is not sufficient to close the valve. Close control stop until pressure is restored.
- F. Relief valve is not seated properly. Disassemble diaphragm components (relief valve, filter rings, and diaphragm unit), wash under running water, and reassemble. Replace as necessary.

### 5. Chattering noise is heard during flush.

- A. Inside cover is damaged. Replace inside cover.
- B. Relief valve or diaphragm is damaged. Replace relief valve or diaphragm assembly.

### 6. Handle Leaks.

- A. Handle seal or assembly is damaged. Replace handle or install handle repair kit.

### 7. Water splashes from fixture.

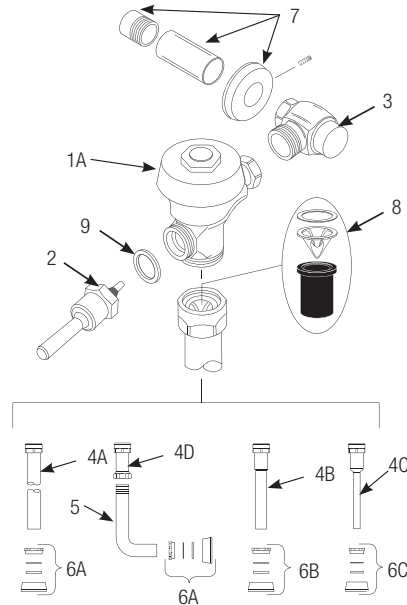
- A. Control stop is open wider than necessary. Adjust control stop for desired delivery of water volume.
- B. Water saver/conventional diaphragm assembly is installed on low consumption fixture or closet diaphragm assembly is installed on urinal fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.

When assistance is required, please contact your  
local Sloan Representative or Sloan Technical Support at:  
1-888-SLOAN-14 (1-888-756-2614)

## CARE AND CLEANING

DO NOT use abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use ONLY mild soap and water, then wipe dry with clean cloth or towel. While cleaning the bathroom tile, protect the Flushometer from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

## PARTS LIST



| Item No. | Part No.  | Description  |
|----------|---|--|
| 1        | †   | Valve Assembly   |
| 2        | B-73-A  | ADA Compliant Handle Assembly                          |
| 3        | H-700-A   | Bak-Chek® Control Stop                                 |
| 4A       | V-600-AA  | 1½" (38 mm) Vacuum Breaker Assembly ‡                  |
| 4B       | V-600-AA  | 1¼" (32 mm) Vacuum Breaker Assembly                    |
| 4C       | V-600-AA  | ¾" (19 mm) Vacuum Breaker Assembly                     |
| 4D       | V-600-A   | Vacuum Breaker Assembly                                |
| 5        | F-109   | 1½" (38 mm) Elbow Flush Connection                     |
| 6A       | F-56-A  | 1½" (38 mm) Spud Coupling Assembly                     |
| 6B       | F-57-A  | 1¼" (32 mm) Spud Coupling Assembly                     |
| 6C       | F-58-A  | ¾" (19 mm) Spud Coupling Assembly                      |
| 7        | H-634-AA  | 1" (25 mm) Sweat Solder Kit with Cast Set Screw Flange |
|          | H-636-AA  | ¾" (19 mm) Sweat Solder Kit with Cast Set Screw Flange |
| 8        | V-651-A   | High Back Pressure Vacuum Breaker Repair Kit           |
| 9        | A-31  | Handle Gasket  |
| †        | Part number varies with valve model variation; consult factory. |  |
| ‡        | Length varies with valve model variation; consult factory.      |  |

**NOTE:** The information contained in this document is subject to change without notice.

SLOAN • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131  
Phone: 1-800-982-5839 • Fax: 1-800-447-8329 • www.sloanvalve.com

**SLOAN®**Code No. 9108310  
Rev. 7 (11/13)**Optima Plus® Dual-Flush and Single-Flush  
Side Mount Unit Installation Instructions**

**EBV-500-A**  
Single-Flush Side Mount



**EBV-550-A**  
Dual-Flush Side Mount

**LIMITED WARRANTY**

Unless otherwise noted, Sloan Valve Company warrants this product, manufactured and sold for commercial or industrial uses, to be free from defects in material and workmanship for a period of three (3) years (one (1) year for special finishes, SF faucets, PWT electronics and 30 days for PWT software) from date of first purchase. During this period, Sloan Valve Company will, at its option, repair, replace, or refund the purchase price of any product which fails to conform with this warranty under normal use and service. This shall be the sole and exclusive remedy under this warranty. Products must be returned to Sloan Valve Company, at customer's cost. No claims will be allowed for labor, transportation or other costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.**

**1 - INSTALLATION (FOR EITHER LEFT- OR RIGHT-HAND)****DO NOT REMOVE STICKER FROM SENSOR WINDOW UNTIL STEP 2.**

Close the control stop.

Using the supplied collar wrench, remove handle from flushometer, if applicable.

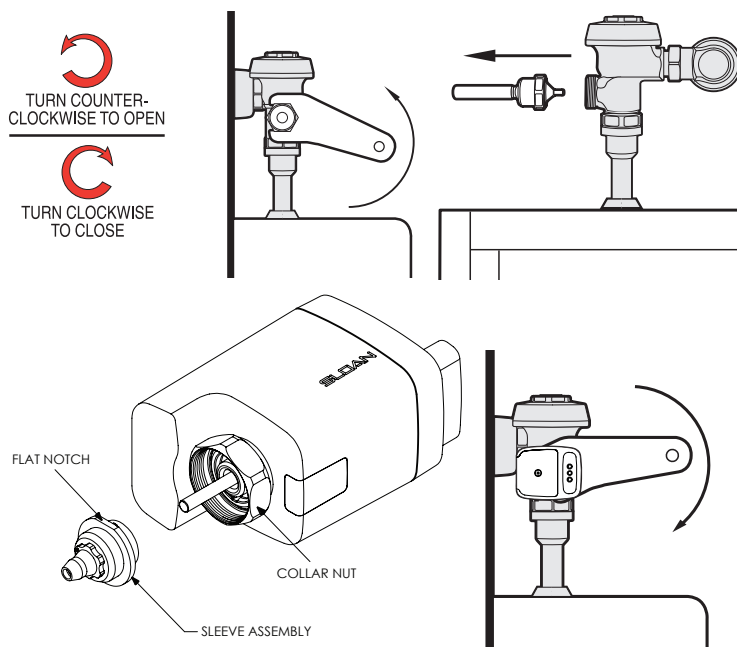
**NOTE:** On some flushometers with a faulty air vent, or recently flushed valve, be prepared to collect a small amount of water with a rag or sponge placed under the handle.

Place sleeve assembly with flat notch facing upwards into collar nut and attach the Side Mount unit where the handle was removed.

**NOTE:** Failure to install flat notch correctly can result in damage to the unit.

Tighten collar nut with supplied collar wrench. Open the control stop.

**NOTE:** Save the handle in the event you wish to return to manual flushometer.



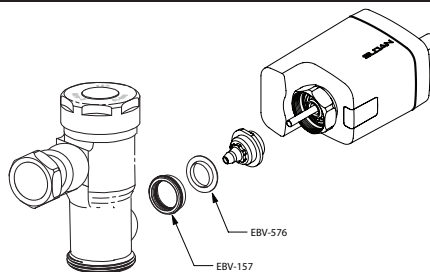


**1 - INSTALLATION (FOR EITHER LEFT- OR RIGHT-HAND) - CONTINUED**

**NOTE:** For retrofit installation to Sloan GEM•2 flushometer (-G variation).

1. Thread EBV-157 adapter onto valve body.
2. Place EBV-576 GEM•2 gasket on top of sleeve assembly.
3. Mount side mount to valve body and tighten collar nut.

**NOTE:** For retrofit installation to Zurn flushometer make sure to re-use the Zurn gasket and place on top of sleeve assembly before mounting to valve. Contact Sloan Technical Support if the Zurn gasket is not present or if another is required.

**2 - START-UP ACTIVATION**

Remove sticker from sensor window.

The Side Mount unit comes with batteries factory installed and will “wake up” when sticker is removed from sensor window. Please ensure this is the last step in the installation process and unless the target is a permanent fixture in the sensor’s environment (i.e. a wall or stall door) it must be removed from the view of the sensor. There is a three minute delay to calibration to allow the installer to clear from the view of the sensor.

The Side Mount unit calibrates to the surrounding environment once sticker is removed (with three minute delay to allow installer to clear from the view of the sensor). Remove all non-permanent articles and step away from the sensor view until the one flush activation verifies calibration is complete. The unit will exhibit an LED flash pattern as follows:

- GREEN and RED LED flash once, GREEN LED flashes 5 times
- 150 seconds of slow GREEN double flashes
- 10 seconds of fast GREEN double flashes
- 12-15 seconds of fast GREEN flashes (calibration)
- 3 slow GREEN LED flashes indicates calibration is done
- Normal Operation with one flush activation

**MODE CHANGE (SINGLE-FLUSH UNITS ONLY)**

Units are preset at factory in water closet mode.

To change unit from water closet mode to urinal mode, complete the following:

Press and hold the True Mechanical Override (TMO) button for 20-30 seconds.

The unit will exhibit an LED flash pattern as follows:

- For approximately the first 10 seconds there will be no LED flashing.
- For approximately seconds 10-20, both the RED and GREEN LEDs will produce short simultaneous flashes.
- For approximately seconds 20-30, the GREEN LED will flash.

Release the TMO button during the 20-30 seconds when both the RED and GREEN LEDs produce SHORT simultaneous flashes and remove non-permanent items from view of the sensor. The Side Mount unit will now be in urinal mode\* and begin calibration. See Activation.

To change unit back to closet mode, press and hold the TMO button for 30-40 seconds. Release when red and green LEDs produce short simultaneous flashes. The Side Mount unit will now be in closet mode and begin calibration.

\*Urinal mode provides a shorter sensor range and 1-2 second flush delay.

**SERVICE MODE - DUAL-FLUSH AND SINGLE FLUSH UNITS**

Press and hold the True Mechanical Override (BLACK) button for 10-20 seconds.

The unit will exhibit an LED flash pattern as follows:

- For approximately the first 10 seconds there will be no LED flashing.
- For approximately seconds 10-20, both the RED and GREEN LEDs will produce short simultaneous flashes.

Release the TMO button during the 10-20 seconds when both the RED and GREEN LEDs produce SHORT simultaneous flashes. The unit will now ignore targets for 10 minutes to enable the toilet or urinal to be cleaned or serviced. Unit will resume normal operation after 10 minutes or if either button is pushed. Green button will generate a reduced flush and then resume normal operation, black button will provide a full flush before resuming normal operation.

## BATTERY REPLACEMENT

Using supplied battery compartment hex wrench, remove battery compartment from the Side Mount unit.

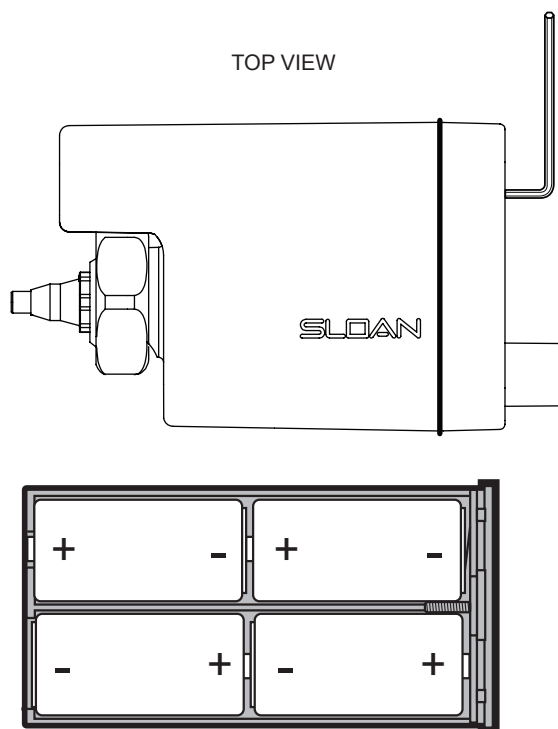
Remove batteries from compartment tray.

Install 4 new C-cell batteries into compartment tray (note position of batteries in tray), and reinstall compartment tray into the Side Mount unit.

The Side Mount unit comes preset from the factory. If special circumstances require adjustment of the activation distance, please contact Sloan.

The Side Mount unit calibrates upon power up, GREEN and RED LEDs flash once. The unit will actuate a flush followed by 5 flashes of GREEN LED. The unit will then perform calibration, a 20 second sequence, where the GREEN LED flashes quickly. Finally the unit will start normal operation.

Manual flush button on Side Mount unit allows manual activation when desired.



## TROUBLESHOOTING

### 1. RED LED continuously flashes when target is present.

The battery is low. Refer to battery replacement instructions.

### 2. RED LED flashes 4 times after a target has been present for 8 seconds. RED LED flashes once when a target is not present.

The battery is low. Refer to battery replacement instructions.

### 3. RED LED flashes continuously after calibration.

The unit has failed to calibrate. The optics window is obscured. Remove power, clean window and remove any objects (barrels, toolboxes, etc.) within close proximity of unit.

Remove battery tray, remove batteries for 10 seconds, then reinstall batteries and repeat power-up sequence.

If unit fails, consult Sloan Technical Support.

**When assistance is required, please contact Sloan Technical Support at:  
1-888-SLOAN-14 (1-888-756-2614)**

## CARE AND CLEANING

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean side mount unit or flushometer that may dull the luster and attack the finish. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, protect the side mount unit from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean sensor window that may distort or ruin the sensor.

**PARTS LIST**

EBV-550-A  
DUAL-FLUSH  
SIDE MOUNT

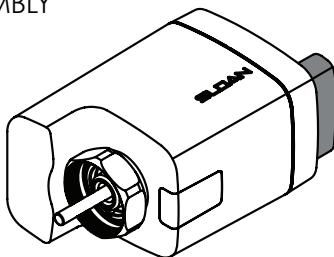
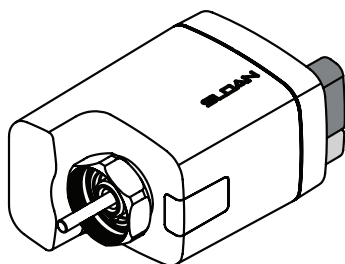


EBV-505-A  
SLEEVE ASSEMBLY

EBV-500-A  
SINGLE-FLUSH  
SIDE MOUNT



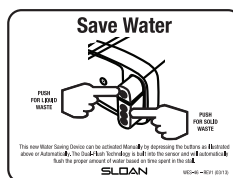
EBV-570-A  
SLEEVE ASSEMBLY



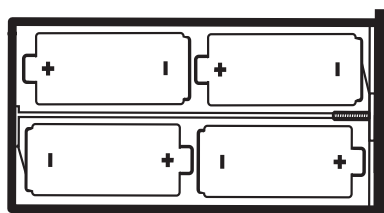
BATTERY  
COMPARTMENT  
HEX WRENCH



EBV-545  
COLLAR WRENCH

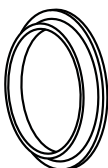


WES-46 WALL PLATE



EBV-1014-A BATTERY TRAY ASSEMBLY

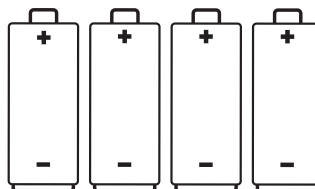
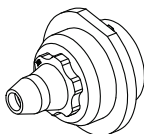
EBV-576 GASKET  
(FOR -G VARIATION ONLY)



EBV-157 ADAPTER  
(FOR -G VARIATION ONLY)



EBV-581 SLEEVE ASSEMBLY  
(FOR -G VARIATION ONLY)



4 C-CELL BATTERIES (FACTORY INSTALLED)

Manufactured in China by Sloan Valve Company.  
US Patents Patent Pending. OPTIMA PLUS®

The information contained in this document is subject to change without notice.

**SLOAN • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131**

Phone: 1-800-9-VALVE-9 (1-800-982-5839) • Fax: 1-847-671-4380 • [www.sloanvalve.com](http://www.sloanvalve.com)

© 2013 SLOAN VALVE COMPANY

Code No. 9108310 – Rev. 7 (11/13)

## ***Toilet Seat Limited Warranty***

This product is guaranteed against defects in material and workmanship for a period of one year. If a product is defective, your exclusive remedy will be a replacement product of equal value. Expenses for removal and replacement not covered.

Molded wood, veneer, soft or residential plastic toilet seats are intended for residential use only.

This Limited Warranty is void if the product has not been installed, used, or maintained according to instructions, or if it has been modified.

THIS LIMITED WARRANTY IS PROVIDED IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS LIMITED WARRANTY EXPRESSLY DISCLAIMS LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES ASSOCIATED WITH THE PRODUCT.



# HyTronic® User Guide Installation Instructions

For single supply and dual supply HyTronic faucets

**CHICAGO  
FAUCETS®**

Geberit Group

## Overview

Chicago Faucets deck mounted faucets feature cast brass bodies and precision cartridges for years of reliable operation. Metering models with adjustable cycle time offer true water savings.

## Notice to the Installer

- Make sure there is enough space and lighting available during installation and service
- Do not modify or convert this Chicago Faucets product yourself. All warranties will be voided.

Pressurized plumbing fixtures shall be installed in accordance with manufacturer's recommendations. The supply piping to these devices shall be securely anchored to the building structure to prevent installed device from unnecessary movement when operated by the user. Care shall be exercised when installing the device to prevent marring the exposed surface.

NOTE: The information in this manual is subject to change without notice.

Please leave this manual with the facility manager after completing the faucet installation. This document contains information necessary for routine maintenance and servicing.

NOTE: Before installation, turn off water supplies to existing faucet and remove faucet if replacing. Clean faucet basin and clear away debris. Flush all supply lines before connecting to faucet. Failure to do so can result in debris clogging the inlets and/or cartridges.

NOTE: Before installing a new ceramic cartridge flush lines completely.

## Safety Information

Read this entire user guide to ensure proper installation. Compliance and conformity to local codes and ordinances is the responsibility of the installer.

The following safety notes must always be complied with during handling of this product:

- Make sure there is enough space and lighting available during installation and service.
- Do not modify or convert this Chicago Faucets product yourself. All warranties will be voided.

## Important

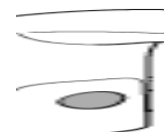
- Installation may be performed at different times of construction by different individuals. For this reason, these instructions should be left on-site with the facility or maintenance manager.
- Pressurized plumbing fixtures shall be installed in accordance with manufacturer's recommendations. The supply piping to these devices shall be securely anchored to the building structure to prevent installed device from unnecessary movement when operated by the user. Care shall be exercised when installing the device to prevent marring the exposed significant surface.
- Do not use pipe dope.
- Flush all the water supply lines before making connections.

This faucet comes with all the components needed for installation, however, some tools and supplies are not included.

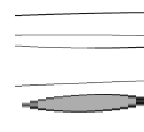
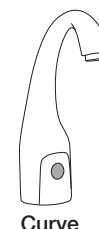
- |                             |                          |
|-----------------------------|--------------------------|
| • Basin Wrench              | • Plumber's Putty        |
| • Adjustable Wrench         | • Hex Key (supplied)     |
| • Adjustable Locking Pliers | • Aerator Key (supplied) |

NOTE: Do not use pipe dope on faucet and supply connections.  
Possible solenoid contamination could occur and will void any warranty.

Traditional  
Lavatory



Contemporary  
Lavatory



Gooseneck



Wall Mount

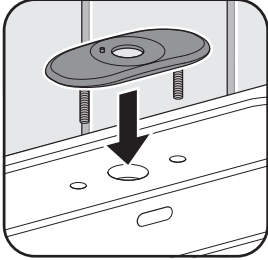
### Mounting of Lavatory and Gooseneck Faucet

#### Prerequisites

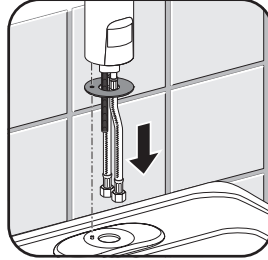
- Supply valve is installed
- Water supply lines are flushed properly
- For AC and faucets with EBPS, power outlet is installed

#### Important

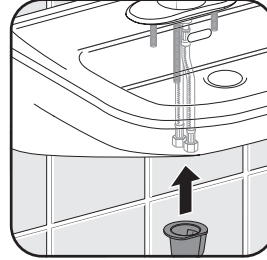
- It is not necessary to unscrew the connection between braided hose and housing to install the product.
- Do not remove protective covering from sensor until starting up faucet operation.
- Do not tighten locknut before step 4 is completed.



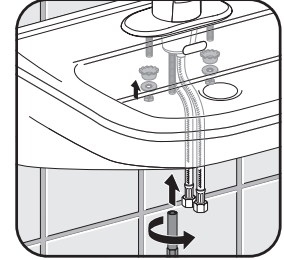
1. Mount cover plate if required. Plumber's putty is recommended to seal cover plate to the sink. Security pin must be located on the left side.



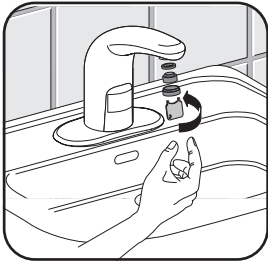
2. Mount gasket and put faucet into sink.



3. Mount bracket from underneath. Place hoses through large opening and mounting rod through small opening. Make sure flange sits securely against surface.

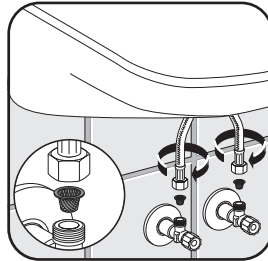


4. Place nut onto mounting rod and tighten with wrench.  
5. If faucet was installed with cover plate, secure with basin washer, flat washer and locknut.



6. Install aerator and tighten with aerator key (supplied).

7. For Gooseneck faucets, tighten spout with wrench.



8. Connect braided hose with filter to supply valve.

Cold water > white label  
Hot water > no label

Note: For AC faucets and faucets with EBPS, please refer to the plugin or hardwired transformer installation instructions.

9. Connect to power supply.

The faucet is now mounted.

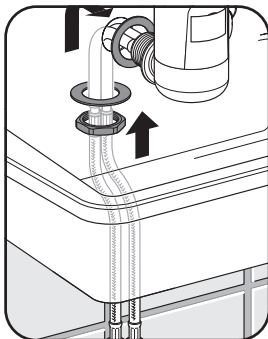
### Mounting of Wall Mount Faucet

#### Prerequisites

- Supply valve is installed
- Water supply lines are flushed properly
- For AC faucets and faucets with EBPS power outlet is installed

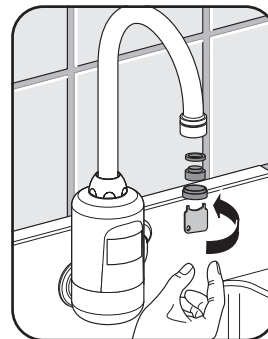
#### Important

- It is not necessary to unscrew the connection between braided hose and housing to install the product.
- Do not remove protective covering from sensor until starting up faucet operation.

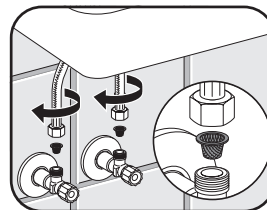


1. Mount gasket, put faucet into opening and tighten

2. Install aerator and tighten with aerator key (supplied)



3. For gooseneck faucets, tighten spout with wrench



4. Connect braided hose with filter to supply valve

Cold water > white label  
Hot water > no label

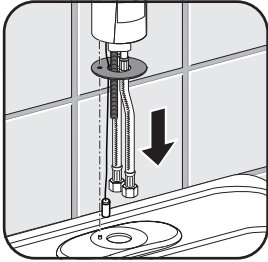
For AC faucets and faucets with EBPS, please refer to the plugin or hardwired transformer installation instructions.

5. Connect to power supply

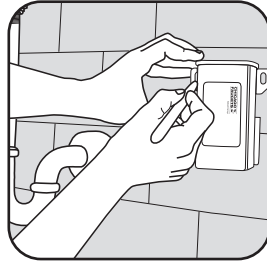
The Wall Mount faucet is now mounted.

### Mounting of Long Term Power System (LTPS) Pack (LTPS Models Only)

The LTPS Power Pack comes with mounting hardware (screws and anchors). You will need a drill and Phillips screwdriver to complete the installation.



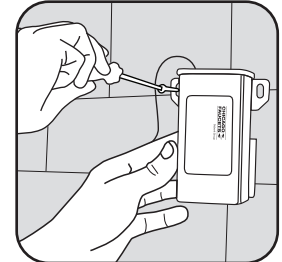
1. Mount faucet by following the standard mounting instructions on page 2.



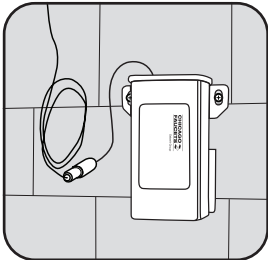
2. Position LTPS unit on wall and mark mounting holes on mounting surface.



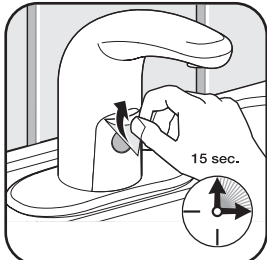
3. Drill holes for screw anchors.



4. Insert anchors into holes and mount LTPS unit to wall with supplied screws.



5. Connect spout wire to LTPS connector wire, making sure connectors are oriented correctly.



6. Remove protective covering from sensor.  
Wait 15 seconds for faucet to calibrate to its environment.

#### LTPS End of Life Directives:

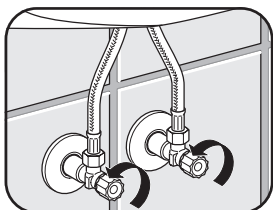
In an effort to produce environmentally conscious products, the LTPS contains materials that are required be recycled by specialized companies. Please ensure you dispose of your LTPS according to local regulations. Follow applicable laws and regulations for transport, shipping, and disposal of batteries. For details on, and locations for recycling lithium-based batteries, please contact a government recycling agency, your waste-disposal service, or visit reputable online recycling sources such as [www.call2recycle.org](http://www.call2recycle.org).

### Start-up Operation

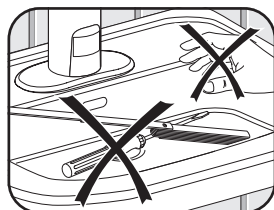
A traditional lavatory faucet is shown as an example. The start-up operation applies to all models.

#### Prerequisites

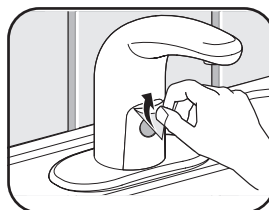
- Faucet is mounted
- Water supply is on
- Water supply lines are flushed properly
- For AC faucets and faucets with EBPS, power outlet is installed



1. Fully open supply valves



2. Remove all items from sink



3. Remove protective covering from sensor

15 sec.

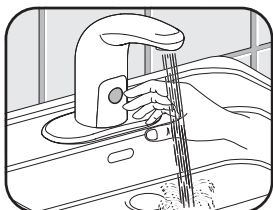


4. Wait for 15 seconds for faucet to calibrate to its environment

The faucet is now activated.

### Test Function

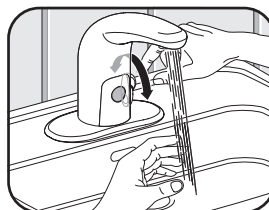
NOTE: If the faucet does not work as described below, see "Troubleshooting" section.



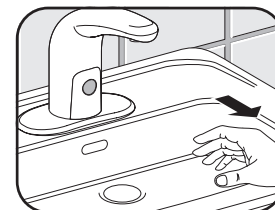
1. Hold hand in front of sensor until water begins to flow.



**WARNING:** Hot water may burn your skin. Avoid contact with the water stream until the water temperature has been properly adjusted. See page 5 for instructions on adjusting water temperature.



2. For faucets with external mixer, turn mixer handle from cold to warm. You should feel the water temperature increase.



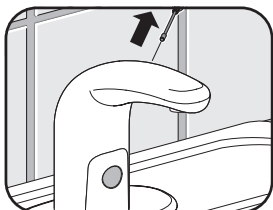
3. Move hand away from sensor until water flow stops.

### Enabling "Manual Setting" Mode

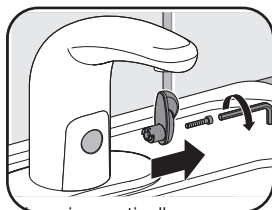
A battery model is shown in the following example. These instructions apply to all models. After 30 minutes, the "Manual Setting" mode will be disabled automatically and all settings will be saved.

#### Prerequisites

- Water supply valve is open
- Battery is full (LED does not blink) for DC faucets
- For EBPS faucets, disconnect AC power
- AC power is on for AC faucets



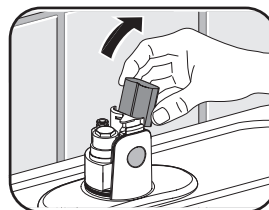
1. Remove shut-off screw



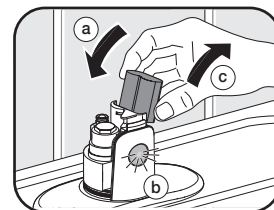
2. Remove mixer handle (only for faucets with external mixer)



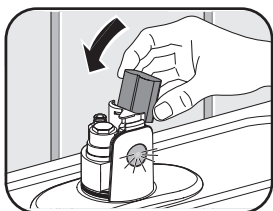
3. Remove housing vertically



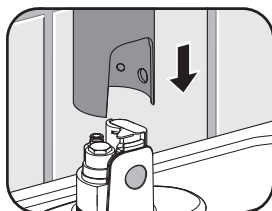
4. Remove battery from battery holder



5. The following procedure (a, b, c) must be done three (3) times in a row.  
a - Reinsert battery  
b - LED lights up  
c - Remove battery immediately after LED switches off



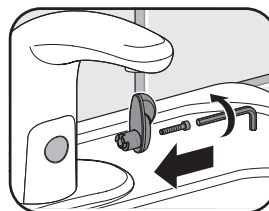
6. Insert battery



7. Mount housing vertically



8. Mount shut-off screw



9. Mount mixer handle (only for faucets with external mixer)

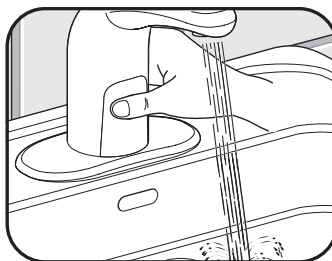
The "Manual Setting" Mode is now enabled.



### CARE AND MAINTENANCE INSTRUCTIONS

The following instructions are described in this section:

- Setting Various Modes
- Reset to Default Settings
- Replacing Battery
- Adjusting Water Temperature (Internal Mixer)
- Adjusting Hot Water Limiter (External Mixer)
- Cleaning or Replacing Inlet Filter
- Cleaning or Replacing Outlet



#### Setting Cleaning Mode

Setting the Cleaning Mode will make the faucet inactive for 90 seconds.

1. Enable "Manual Setting" Mode  
> see "Enabling Manual Setting Mode" section (page 3).
2. Fully cover sensor with hand, until water flow stops.  
(This takes 5 seconds.)
3. Remove hand.

The Cleaning Mode is now active.

For the next 90 seconds, the faucet will be inactive.

#### Setting Normal Mode

Setting the Normal Mode will allow the faucet to activate only when it senses a hand presence.

1. Enable "Manual Setting" Mode  
> see "Enabling Manual Setting Mode" section (page 3).
2. Fully cover sensor with hand.  
Water flow stops after 5 seconds  
- keep sensor covered for one (1) additional water pulse.
3. Remove hand.

Normal Mode is now activated.

#### Setting Metering Mode (10 seconds)

Setting the Metering Mode will allow the faucet to activate for a full 10 seconds after it senses a hand presence.

1. Enable "Manual Setting" Mode  
> see "Enabling Manual Setting Mode" section (page 3).
2. Fully cover sensor with hand.  
Water flow stops after 5 seconds  
- keep sensor covered for another two (2) additional water pulses.
3. Remove hand.

Metering Mode is now activated for 10 seconds.

#### Sensor Range Adjustment

The detection distance of the sensor can be adjusted between approximately 4 - 11 inches from the infrared window.

1. Enable "Manual Setting" Mode  
> see "Enabling Manual Setting Mode" section (page 3).
2. Remove all items from sink.
3. Fully cover sensor with hand.  
Water flow will stop after 5 seconds - keep sensor covered for five (5) additional water pulses.
4. Remove hand.
5. Hold hand in the current detection area until LED flashes. Then move hand to the desired detection distance. When LED stays lit for (2) seconds, detection distance has been re-set to new location.

#### Setting Scrub Mode (60 seconds)

Setting the Scrub Mode for 60 seconds will allow the faucet to activate and run continuously for 60 seconds before shutting off.

1. Enable "Manual Setting" Mode  
> see "Enabling Manual Setting Mode" section (page 3).
2. Fully cover sensor with hand.  
Water flow stops after 5 seconds  
- keep sensor covered for another three (3) additional water pulses.
3. Remove hand.

Scrub Mode is now activated for 60 seconds.

#### Setting Scrub Mode (180 seconds)

Setting Scrub Mode for 180 seconds will allow the faucet to activate and run continuously for 180 seconds before shutting off.

1. Enable "Manual Setting" Mode  
> see "Enabling Manual Setting Mode" section (page 3).
2. Fully cover sensor with hand.  
Water flow stops after 5 seconds  
- keep sensor covered for another four (4) additional water pulses.
3. Remove hand.

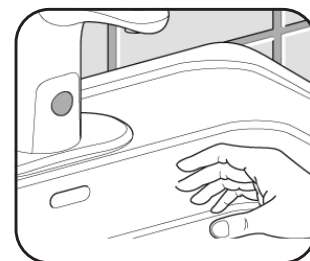
Scrub Mode is now activated for 180 seconds.

#### Reset

All settings will be reset to default setting. The "Manual Setting" Mode will be disabled.

The procedure for the reset is the same as "Enabling Manual Setting Mode", but step 5 needs to be done six (6) times in a row.

All settings are reset to default settings and the manual-setting-mode is now disabled.



The detection distance is now calibrated.

### Replacing Battery

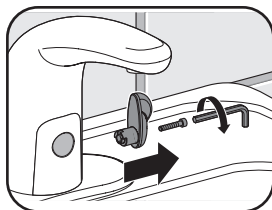
A traditional lavatory faucet is shown as an example. These instructions apply to all DC and EBPS models.

#### Prerequisites

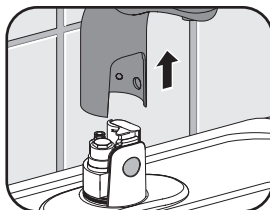
- Battery is low (LED is lit)
- New 6 V Lithium battery (CR-P2) is required
- NOTE: For EBPS units, low battery LED will only light when AC power is disconnected



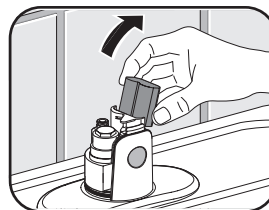
1. Remove shut-off screw



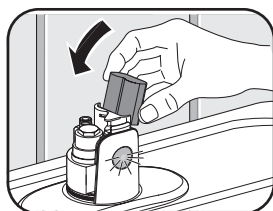
2. Remove mixer handle  
(for faucets with external mixer only)



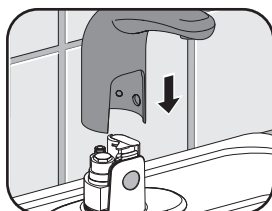
3. Remove housing  
vertically



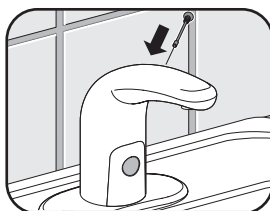
4. Remove used battery  
from holder and recycle



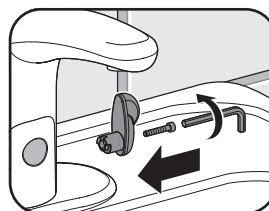
5. Insert new battery.  
IMPORTANT: be sure  
battery is fully seated.  
LED will illuminate when  
battery is properly  
installed.



6. Mount housing vertically



7. Install shut-off screw

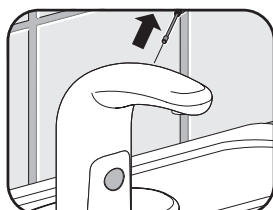


8. Install mixer handle  
(for faucets with external mixer only)

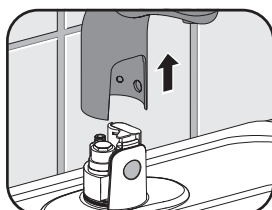
The battery is now replaced.

### Adjusting Water Temperature (Internal Mix)

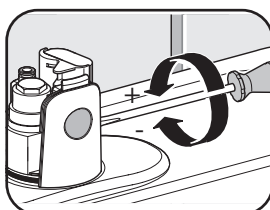
A traditional lavatory faucet is shown as an example. These instructions apply to all models with internal mixers.



1. Remove shut-off screw



2. Remove housing  
vertically



3. Adjust internal mixer with  
screwdriver  
Clockwise > warm  
Counterclockwise < cold



4. Mount housing vertically



5. Install shut-off screw

The temperature is now adjusted. Carefully test the new temperature. If necessary, adjust again.

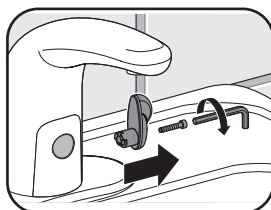
### Adjusting Hot Water Limiter (External Mixer)

A traditional lavatory faucet is shown as an example. These instructions apply to all models with user adjustable temperature control. The proportion of hot water can be switched from approximately 85% to 95% (or reverse) depending upon inlet water pressures and temperatures. The default setting is 85%.

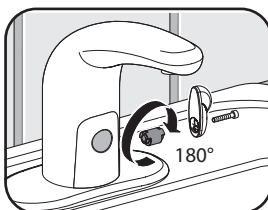
**WARNING:** Hot water may burn your skin.

To avoid the risk of scalding, use a thermometer to check water temperature.

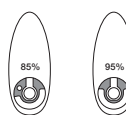
Avoid contact with the water stream until the water temperature has been properly adjusted.



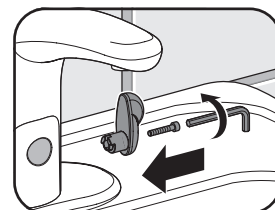
1. Remove mixer handle



2. Carefully pull out hot water limiter from handle (using pliers) and reverse by 180°



Settings of hot water limiter  
(View from placement in mixer handle)



3. Mount mixer handle  
The proportion of hot water is now changed.

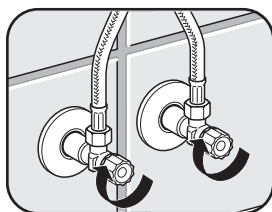
# HyTronic® User Guide Installation Instructions

(continued)

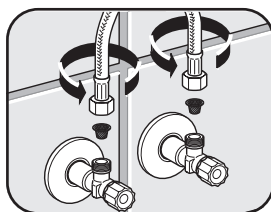
**CHICAGO  
FAUCETS**

Geberit Group

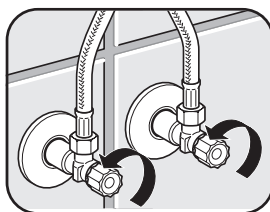
## Cleaning or Replacing Inlet Filter



1. Close supply valves



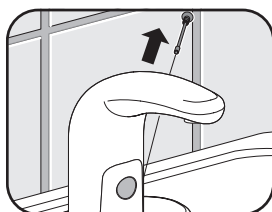
2. Disconnect braided hoses and carefully remove filter that is pressed into hose. Clean or replace filter.



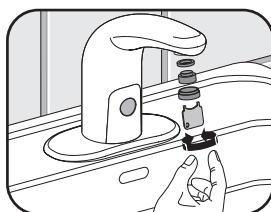
3. Connect braided hoses with filter to supply valves and open the valves.  
Cold water > white label  
Warm water > no label

The filter is now cleaned or replaced.

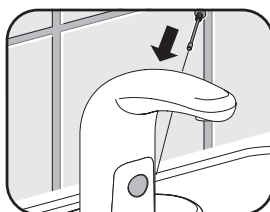
## Cleaning or Replacing Aerator



1. Remove shut-off screw



2. Remove outlet with vandal resistant wrench supplied with the faucet. Clean or replace outlet, then reinstall.



3. Install shut-off screw

The outlet is now cleaned or replaced.

## Commander Handheld Programming Unit

Use the Commander™ Handheld Programming Unit to change settings quickly and easily on your Chicago Faucets HyTronic® and E-Tronic® products. The Commander™ Handheld Programming Unit lets you program, maintain, and monitor our electronic faucets from the palm of your hand. Commander features a ruggedized housing, infrared communications, and touch-screen technology. Refer to the *Commander Quick Start Guide* to get started.



## Faucet Adjustment Overview

Operating modes and sensor ranges can be adjusted with a manual operation through the infrared sensor. A traditional lavatory faucet is shown as an example. Faucet adjustment operations apply to all models. Alternatively, operating modes and sensor ranges can be adjusted with the Chicago Faucets Commander™ Handheld Programming Unit. For more information, visit [chicagofaucets.com/commander](http://chicagofaucets.com/commander).

| Operating Modes                | Description  |
|--------------------------------|--|
| <b>Cleaning Mode</b>           | The faucet is inactive for 90 seconds.   |
| <b>Normal Mode</b>             | The faucet is activated if it senses a hand presence. This is the default operating mode of the faucet.              |
| <b>Metering Mode (10 s)</b>    | The faucet will shut off after 10 seconds regardless of hand presence detected.                                      |
| <b>Scrub Mode (60 s)</b>       | The faucet will shut off 60 seconds after the detection of the last hand presence.                                   |
| <b>Scrub Mode (180 s)</b>      | The faucet will shut off 180 seconds after the detection of the last hand presence.                                  |
| <b>Sensor Range Adjustment</b> | Change the detection distance of the infrared sensor. The default sensor range is approximately 1" beyond the spout. |
| <b>Reset</b>                   | All settings will be reset to original factory settings.   |

In order to set the operating modes, the faucet needs to be placed into "Manual Setting" mode. At this time, operating modes can be changed within the next 30 minutes.

## Care and Maintenance

All Chicago Faucets fittings are designed and engineered to meet or exceed industry performance standards. Care should be taken when cleaning this product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap with warm water for cleaning and protecting the surface of Chicago Faucets fittings.

*For additional technical assistance, call 800/TEC-TRUE (800-832-8783) or visit our website at [chicagofaucets.com](http://chicagofaucets.com).*

## TROUBLESHOOTING

| No Water Flow  |   |
|--|---|
| Cause  | Solution  |
| Supply valves are closed   | Open supply valves.   |
| Aerator is blocked or dirty  | Clean or replace outlet. See "Care and Maintenance".  |
| Water line filter is dirty or blocked                                    | Clean or replace filter. See "Care and Maintenance".  |
| Braided hose is kinked   | Eliminate braided hose kink.  |
| No external water pressure   | Check water pressure. Provide water pressure.   |
| Battery is drained   | Replace SSPS unit. Contact Chicago Faucets technical service or replace power adapter   |
| Reverse green adapter insertion  | Insert green adapter correctly.   |
| Connector between SSPS and power adapter unplugged                       | Plug connector. (green plugs)   |
| Corroded power adapter contacts  | Clean contacts.   |
| Connecting cable is kinked or broken                                     | Replace defective parts. See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a>  |
| Shut-off screw is missing or defective                                   | Replace shut-off screw or defective See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a>   |
| Solenoid valve inoperable  | Replace solenoid valve. See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a> .   |
| Faucet is in cleaning mode   | Wait for cleaning mode to end (appr. 90 seconds)  |
| Electronics module inoperable  | Contact technical service or replace power adapter See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a>  |
| Green Power adapter defective  | Contact technical service or replace power adapter See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a>  |
| Sensor distance is not adjusted properly                                 | Remove and re-install shut-off screw. Do not disturb scanning procedure until water stops and LED is off.   |
| Infrared window scratched or dirty                                       | Clean window with smooth cloth  |
| Interfering reflections from sink  | Remove and re-install shut-off screw. Do not disturb scanning procedure until water stops and LED is off.<br>Adjust upper and lower beam to compensate for reflections. (Commander™ Handheld Unit required. Go to <a href="http://www.chicagofaucets.com/commander">www.chicagofaucets.com/commander</a> for details) |
| Water Runs Continuously and Stops When Object Present                    |   |
| Cause  | Solution  |
| Connector between electronics module and solenoid valve plug is reversed | Plug connector properly   |
| Water Flows Although Shut-Off Screw Is Removed                           |   |
| Cause  | Solution  |
| Electronics module inoperable  | Contact technical service or replace power adapter See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a>  |
| Water drops on infrared window   | Clean window with smooth cloth  |

| Water Runs Continuously  |   |
|--|---|
| Cause  | Solution  |
| Interfering object is in monitoring range  | Remove object from monitoring area. Remove and re-install shut-off screw. Do not disturb scanning procedure until water stops and LED is off.   |
| Defective electronics module   | Replace electronics module. See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a>   |
| Improper electronics module  | Change mode or reset sensor. See "Care and Maintenance".  |
| External water pressure is too high  | Check external water pressure. Provide pressure between 20 - 125 psi.   |
| Solenoid valve inoperable  | Replace solenoid valve. See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a> .   |
| Faucet Turns On By Itself  |   |
| Cause  | Solution  |
| Infrared window scratched or dirty   | Clean window with smooth cloth  |
| Faucet is influenced by room environment (mirror, stainless steel or glass sink, etc.) | Remove and re-install shut-off screw. Do not disturb scanning procedure until water stops and LED is off.<br>Adjust upper and lower beam to compensate for reflections. (Commander™ Handheld Unit required. Go to <a href="http://www.chicagofaucets.com/commander">www.chicagofaucets.com/commander</a> for details) |
| Input line pressure fluctuates   | Install appropriate line pressure regulators  |
| Faucet Is Leaking Water  |   |
| Cause  | Solution  |
| Connections between housing and braided hose   | Check O-rings. Replace damaged or missing O-rings.  |
| Connection between braided hose and inlet supply are loose                             | Check rubber washers. Replace washers when damaged or missing.  |
| Connection between valve body and solenoid valve is loose                              | Check O-rings. Replace damaged O-rings. Carefully re-install solenoid valve & do not over tighten.  |
| Faucet drips, solenoid valve does not close  | Clean or replace solenoid valve. See "Replacement Parts" at <a href="http://chicagofaucets.com">chicagofaucets.com</a> .  |
| Temperature Cannot Be Adjusted Properly  |   |
| Cause  | Solution  |
| Supply valves not fully opened.  | Fully open supply valves.   |
| Water line filter is dirty or blocked  | Clean or replace filter. See "Care and Maintenance".  |
| Braided hose is kinked   | Eliminate braided hose kink.  |
| Backflow preventer in faucet is blocked  | Unblock backflow preventer  |
| Temperature of hot or cold supply is too low   | Check inlet temperature or inspect boiler.  |
| Hot water temperature not sufficient   | Reverse hot water limiter. See "Care and Maintenance"   |
| Inlet hoses are reversed   | Correct the connections.  |

## CHICAGO FAUCETS LIMITED WARRANTY

**TO WHOM DOES THIS WARRANTY APPLY?** — The Company extends the following limited warranty to the original user only.  
**WHAT DOES THIS WARRANTY COVER AND HOW LONG DOES IT LAST?**

This warranty covers the following Commercial Products:

**LIFETIME FAUCET WARRANTY** — The "Faucet," defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or other products separately covered by this Limited Warranty or water restricting components or other components, is warranted against material manufacturing defects for the life of the Product.

**FIVE YEAR FAUCET WARRANTY** — Certain Products and portions of the Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. Products warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase are referred to by the product numbers 42X, 43X, 15XX and E-Tronic™ - 4X, 5X, 6X, 7X, 8X and 9X. All zinc die cast portions of Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

**THREE YEAR ELECTRONICS WARRANTY** — Electronic components, including the solenoid, are warranted for three (3) years from the date of installation.

**FIVE YEAR CARTRIDGE WARRANTY** — The "Cartridge," defined as the metal portion of any Product typically referred to by the product numbers containing 1-099, 1-100, 377X, 217X and 274X, excluding any rubber or plastic components, is warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. All Cartridges included in the Company's Single Control or Shower Products also are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

**ONE YEAR FINISH WARRANTY - COMMERCIAL** — For Products used in commercial applications, the finish of the Product is warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

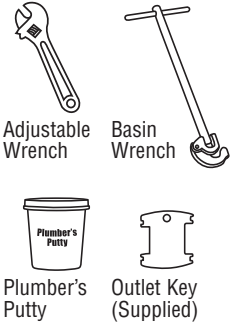
**OTHER WARRANTIES** — All other Products not covered above are warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

Other restrictions and limitations apply. For complete warranty details, call Chicago Faucets Customer Service at 847-803-5000 or visit [chicagofaucets.com](http://chicagofaucets.com).

The Chicago Faucet Company  
 2100 South Clearwater Drive  
 Des Plaines, IL 60018  
 Phone: 847/803-5000  
 Fax: 847/803-5454  
 Technical: 800/832-8783  
[www.chicagofaucets.com](http://www.chicagofaucets.com)

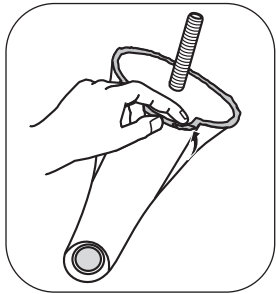


Tools Needed

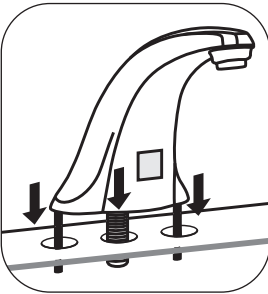
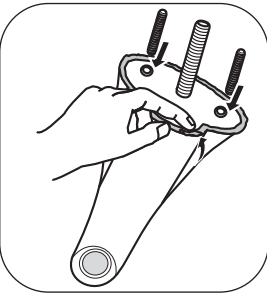


1 Preparation and placement

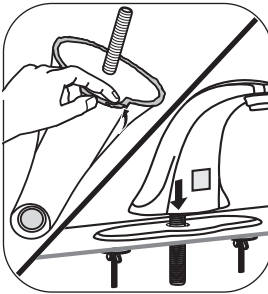
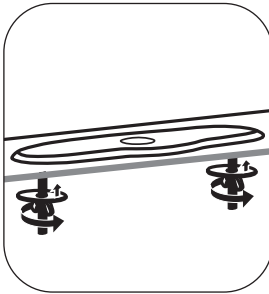
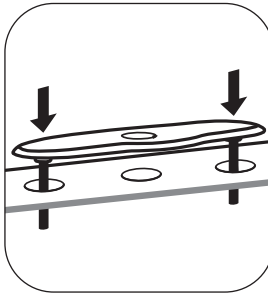
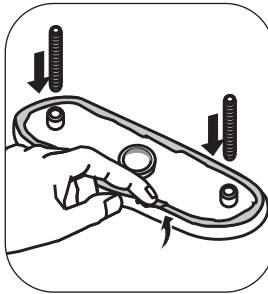
Single Hole



4" Centerset



8" Centers with coverplate



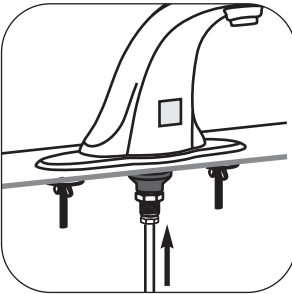
2 Secure faucet



3 Flush supply line

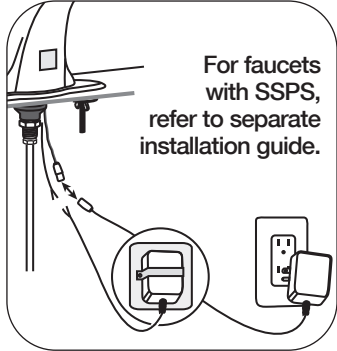


4 Connect supply line

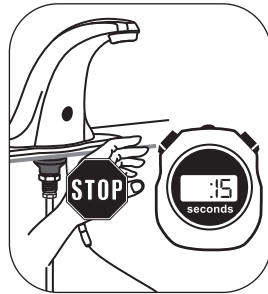
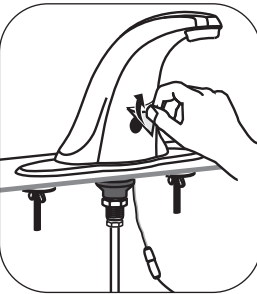


For SSPS units,  
plumb according  
to SSPS installation  
guide.

5 Install outlet



6 Remove lens tape, do not activate



**FAUCET WARRANTY** - The "Faucet," defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or water restricting components or other components, is warranted against material manufacturing defects for five years from the date of purchase.

**FINISH WARRANTY** - For Products used in commercial applications, the finish of the Product is warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

**ELECTRONICS AND SOLENOID WARRANTY** - Electronic faucets electronics, SSPS generator, and solenoid are warranted against material manufacturing defects for a period of three (3) years from the date of Product purchase. This warranty does not cover the life of the battery. The Company offers NO WARRANTY for Product batteries. Visit [www.chicagofaucets.com](http://www.chicagofaucets.com) for complete details.

# Repair Parts

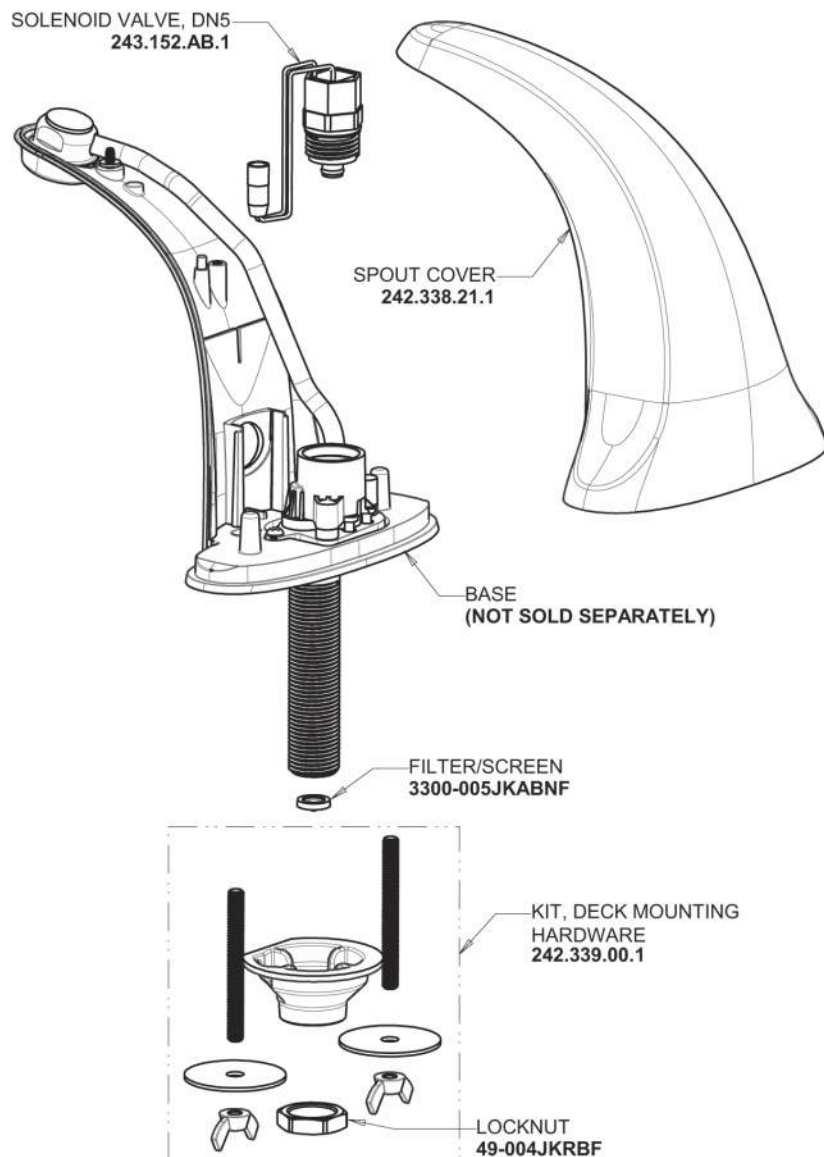
116.606.AB.1

E-Tronic® 40 Traditional Sink Faucet with Dual Beam Infrared Sensor

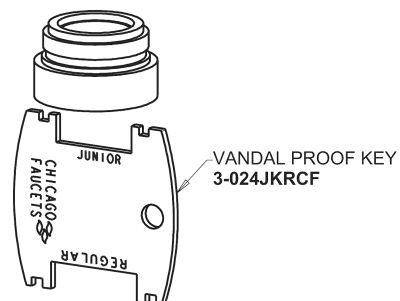
**CHICAGO  
FAUCETS®**  
Geberit Group

E-Tronic 40 Base

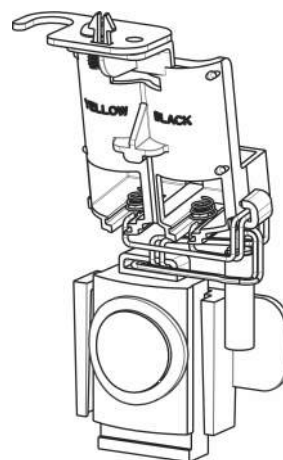
## Base Parts:



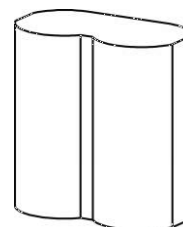
0.5 GPM (1.9 L/min) Vandal Proof  
Econo-Flo Non-Aerating Spray  
**E2805JKABCP**



Electronic Module  
**242.337.00.1**



CR-P2 6V Lithium Battery  
**242.560.00.1**



## For Technical Assistance:

Phone: 800-TEC-TRUE (832-8783)

Email: [techsupport.us@chicagofaucets.com](mailto:techsupport.us@chicagofaucets.com)

2100 South Clearwater Drive  
Des Plaines, IL 60018  
Phone: 847-803-5000  
[chicagofaucets.com](http://chicagofaucets.com)

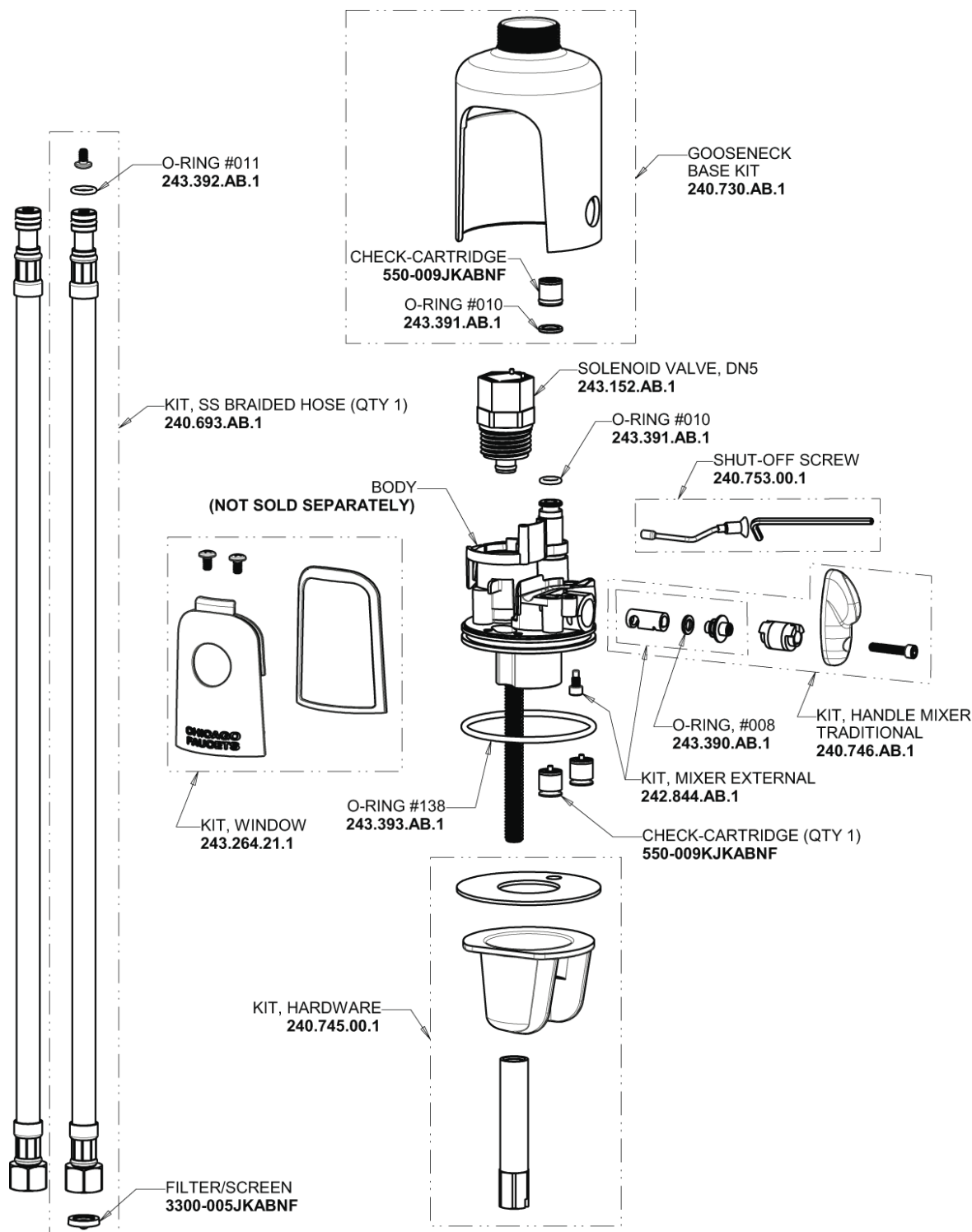
# Repair Parts

116.223.AB.1

HyTronic Gooseneck Sink Faucet with Dual Beam Infrared Sensor

**CHICAGO  
FAUCETS**  
Geberit Group

## Base Parts:



## For Technical Assistance:

Phone: 800-TEC-TRUE (832-8783)

Email: [techsupport.us@chicagofaucets.com](mailto:techsupport.us@chicagofaucets.com)

2100 South Clearwater Drive  
Des Plaines, IL 60018  
Phone: 847-803-5000  
[chicagofaucets.com](http://chicagofaucets.com)

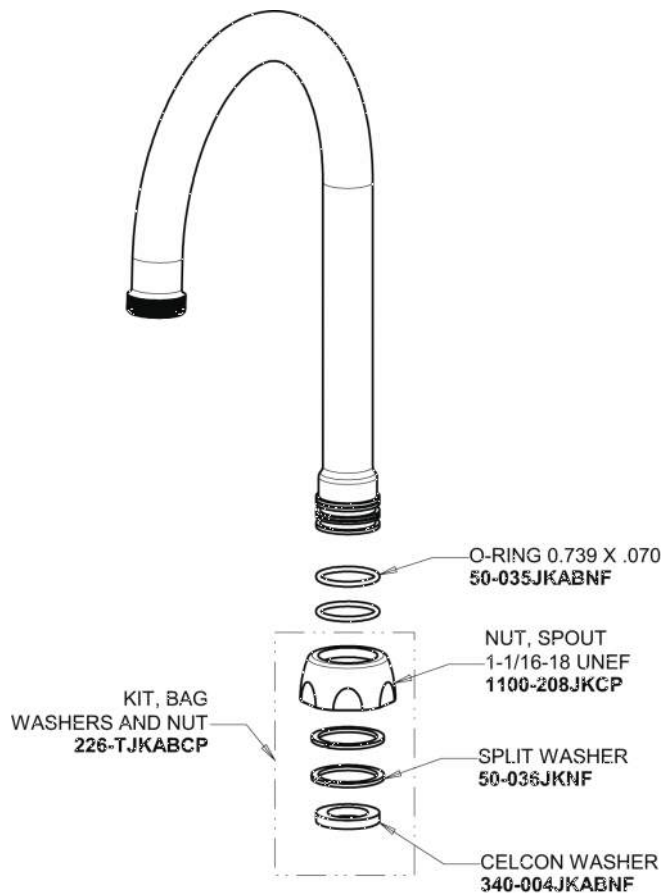
# Repair Parts

116.223.AB.1

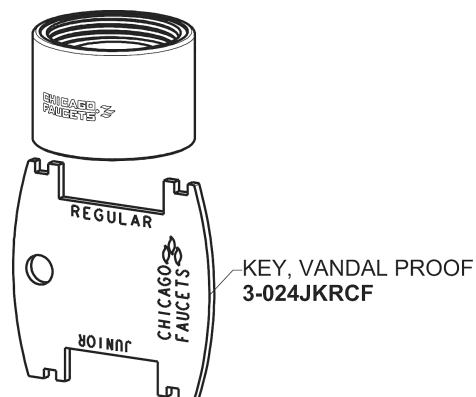
HyTronic Gooseneck Sink Faucet with Dual Beam Infrared Sensor

**CHICAGO  
FAUCETS**  
Geberit Group

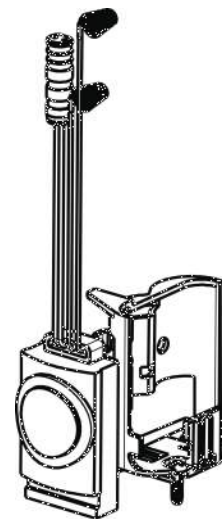
5-1/4" Rigid / Swing Gooseneck Spout  
**GN2AH8JKABCP**



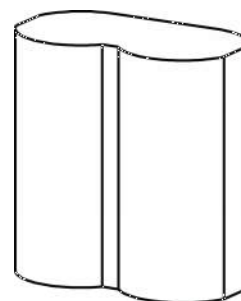
0.5 GPM (1.9 L/min) Vandal Proof Non-Aerating Spray Outlet  
**E2805-5JKABCP**



Electronic Module  
**242.433.00.1**



CR-P2 6V Lithium Battery  
**242.560.00.1**



## For Technical Assistance:

Phone: 800-TEC-TRUE (832-8783)

Email: [techsupport.us@chicagofaucets.com](mailto:techsupport.us@chicagofaucets.com)

2100 South Clearwater Drive  
Des Plaines, IL 60018  
Phone: 847-803-5000  
[chicagofaucets.com](http://chicagofaucets.com)





Sheet Metal • Heating • Air Conditioning  
Ventilation • Plumbing • Fabrication • Service  
Certified Air and Water Balancing  
Temperature Control

*Women Owned Business Enterprise (WBE)*

July 27, 2020

Larson-Danielson Construction  
Duneland School Corporation – 2020 Mechanical Renovations at Bailly Elementary School -Nurse's Office  
800 South 5<sup>th</sup> Street  
Chesterton, IN 46304

### **HVAC LETTER OF WARRANTY**

If within one year after the architect's certificate of final payment or date of acceptance for the work or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, this contractor shall correct any deficiencies promptly after receipt of a written notice from the owner to do so unless the owner has previously given this contractor a written acceptance of such condition. The owner shall give such notice promptly after discovery of the condition.

In addition to the above, this contractor unconditionally warrants to the owner and the architect that all materials and equipment furnished under this contract are new unless otherwise specified, and that all work is of top quality, free from faults and defects, and in accordance with the Contract Documents.

Circle "R" Mechanical Inc.'s warranty shall begin on August 3, 2020 and shall expire on August 2, 2021 unless this office is notified in writing to the contrary.

Respectfully,

CIRCLE "R" MECHANICAL

Tom Heckman  
President



# Domex

## Centrifugal Roof, Direct & Belt Drive Exhausters

OPERATION & MAINTENANCE MANUAL



PENNBARRY™



### IMPORTANT! Read before proceeding!

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

# TABLE OF CONTENTS

|  |       |
|--|-------|
| INTRODUCTION   | 3     |
| INSTALLATION   | 4-5   |
| START-UP AND OPERATION   | 6-7   |
| MAINTENANCE  | 8-10  |
| TROUBLESHOOTING CHECKLIST  | 11    |
| DIRECT DRIVE MODELS DX06R, DX08S/R, 10S/R, 11S/R, 11Q,<br>13V/S/R, 13Q, 16V/S/R, Q1 & Q2 | 12    |
| BELT DRIVE MODELS DX06B-36B, KB, JB & MB   | 13-14 |
| WHEEL ALIGNMENT PROCEDURES   | 15    |
| DIRECT DRIVE - EXPLOSION PROOF MOTOR   | 16    |
| WIRING HARNESS - DISCONNECT DEVICE   | 17    |
| WIRING HARNESS – ECM   | 18-20 |

# INTRODUCTION

## Description

PennBarry roof-mounted ventilators are belt-driven centrifugal exhausters designed to meet air delivery requirements where steady exhaust is needed under moderate static pressure. Housings are of spun aluminum construction with built-in bird screen. Ventilators are furnished with self-aligning, pre-lubricated, ball bearing pillow blocks, spark proof aluminum wheels, and an aluminum backdraft damper.

## Receiving and handling

PennBarry fans are carefully inspected before leaving the factory. When the unit is received, inspect the carton for any signs of tampering. Inspect the unit for any damage that may have occurred during transit and check for loose, missing or damaged parts. Mishandled units can void the warranty provisions. If units are damaged in transit, it is the responsibility of the receiver to make all claims against the carrier. PennBarry is not responsible for damages incurred during shipment.

Avoid severe jarring and/or dropping. Handle units with care to prevent damage to components or finishes. If the unit is scratched due to mishandling, the protective coating may be damaged. Incorrect lifting may damage the fan and void the warranty.

## Storage

Long-term storage requires special attention. Store units on a level, solid surface, preferably indoors. If outside storage is necessary, protect the units against moisture and dirt by encasing the cartons in plastic or in some similar weatherproof material. Periodically inspect units and rotate wheels to spread bearing lubricant. Failure to rotate wheels results in reduced bearing life and may void the manufacturer's warranty. If the unit will be stored for an extended time, remove belts. Belts which remain under tension in a stationary position for extended periods are likely to have a reduced operating life.

## Unpacking

Place the carton in an upright position and remove the staples or use a sharp (knife edge) tool to carefully cut or scribe the sealing tape on both sides at the top of the carton. Open carton flaps. Remove any cardboard and wooden filler pieces, as well as loose components or accessories shipped with the unit.

Carefully remove the unit from the carton. Inspect the unit for any damage that may have occurred during transit and check for loose, missing or damaged parts.





# INSTALLATION

*Note: For Installation in high velocity Hurricane Zones, unit must be installed per instructions under Anchoring and Securing the Ventilator."*

## Installing Motors

In some instances, large frame motors may be shipped loose and require field mounting. If so, carefully review motor mounting installation procedures per Figure 1, Figure 2 and Figure 3.

## Installing The Dampers: Roof Mounting

When required, install dampers prior to mounting the unit on the curb or frame. Secure dampers to the inside of the roof opening (preferred) or curb without undue twisting, which may distort the damper frame. Damper frame must be reasonably level on all sides. Check for free operation. If dampers are motor operated type, ascertain that proper voltage is impressed on motor terminals.

## Positioning And Running Power Lines: Roof Mounting

Power is normally brought from within the building through proper conduit lines and placed inside one corner of the curb. Feed power line through the clearance hole provided in the damper if furnished, if not clearance hole is provided, remove a corner of the lower damper (with a shear cutter or other instrument), through the ventilator to the service switch, if furnished, and motor.

When power lines are brought up to the unit, provide a generous amount of slack to allow for motor adjustments and to permit movement of motor for belt tension adjustments. Ground motor adequately and securely. Protect power lines from sharp objects. Do not kink power line or permit it to contact hot surfaces, chemicals, grease or oil. Use only UL recognized electrical parts, rated for proper voltage, load and environment. Check motor nameplate.

## Anchoring And Securing The Ventilator: Roof Mounting

Whenever possible, anchor the fan by fastening through the vertical portion of the mounting flange. The type, size and number of fasteners depends upon the unit size and curb construction. If code or specification prescribes fastening through the top (vertical portion) of the mounting flange, use neoprene or lead washers under the head of each fastener.

Guy down large units installed in areas subject to high winds or unusual field conditions. If the installer removes any ventilator parts to facilitate installation or electrical connections, reassemble all parts by replacing all spacers, washers, nuts, bolts, fasteners and components exactly as they were found prior to removal. Draw all fasteners tight and secure. Fasteners should be protected against corrosion.

## Motor Installation Procedures

1. Install motor pulley assembly (bracket if it is provided - type 3) with hardware provided through holes in motor mounting plate/frame. Keep driven pulley and drive pulley in line. (Do not tighten hardware).
2. Install belt over drive and driven pulleys and pull up on motor mounting plate/bracket until belt is tight. Tighten motor plate hardware.
3. Wire motor or plug harness connector (from motor if equipped) into terminal socket at end of junction box. Unit is now ready to test to check for smooth operation.
4. See belt adjustment label and Figure 4 for more details.
5. Check for proper wheel rotation.

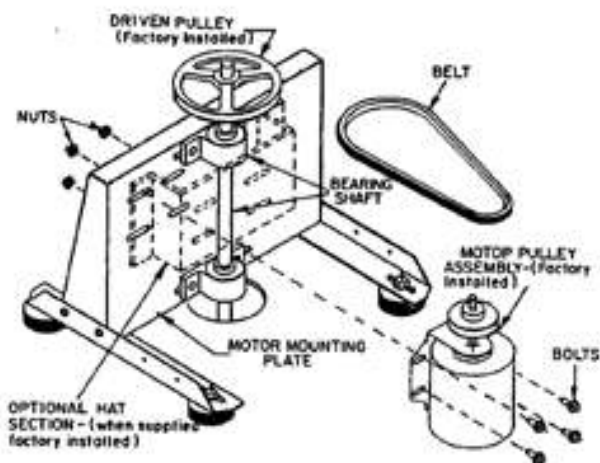


To fulfill our obligations towards Article 33, in accordance to European REACH Regulation No 1907/2006 EC, we hereby inform you that this article contains the following Substances of Very High Concern mentioned on the Candidate list:

- Lead

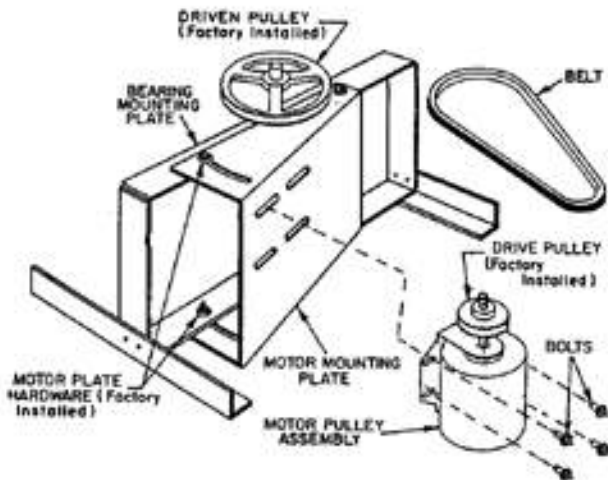
# INSTALLATION

Figure 1: Motor Installation Procedures



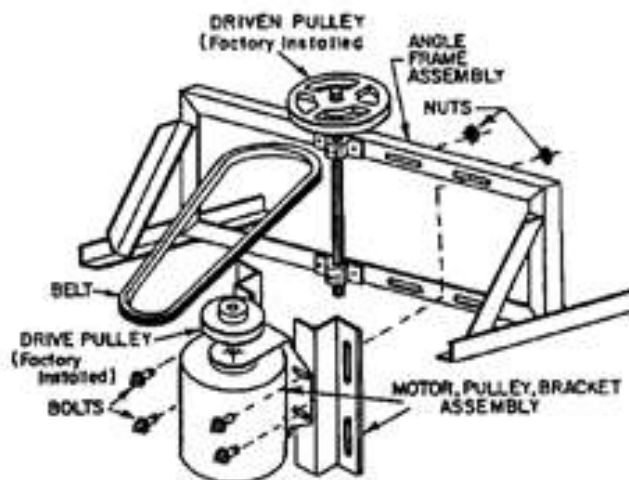
Type 1

Figure 2: Motor Installation Procedures



Type 2

Figure 3: Motor Installation Procedures



Type 3

# START-UP AND OPERATION

Carefully inspect the unit before start-up. All motor bearings should be properly lubricated, and all fasteners should be securely tightened. Rotate centrifugal wheel by hand to ensure free movement.

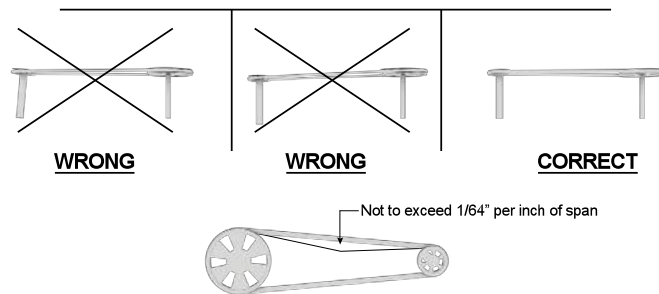


Before placing hand on centrifugal wheel or belts, lock out power source. Check all set-screws and keys. Tighten when necessary.

Check condition of belts and the amount of tension prior to start-up. DO NOT overtighten, as bearing damage will occur.

Recommended belt tension should permit deflection of 1/64" per inch of span. Exercise extreme care when adjusting belts as not to misalign the pulleys. Any misalignment will cause a sharp reduction in belt life and produce squeaky, annoying noises. On units equipped with two groove pulleys, adjust all belts with equal tension. Belts must be adjusted after approximately 40 hours of operation.

**Figure 4: Pulley Alignment & Tension**



Whenever belts are removed or installed, never force belts over pulleys without loosening motor first to relieve belt tension.

Make sure inlets and approaches to the unit are free from obstruction. To ensure maximum air movement, make sure adequate supply air is available to ventilated space.

Before putting fan into operation, complete the following checklist:

- a. Turn off and LOCK OUT the power source.
- b. Make sure installation is in accordance with manufacturer's instructions.
- c. Check and tighten all fasteners.
- d. Spin centrifugal wheel to see if rotation is free.
- e. Check all set-screws and keys; tighten if necessary.
- f. Torqued set screws have a colored Torque Seal mark indicating the correct torque has been applied.
- g. Check belt or direct drive coupling for alignment (use recommended belt tension gauges).
- h. Check belt for proper sheave selection.
- i. Make sure there is no foreign or loose material in ductwork leading to and from fan or in the fan itself.
- j. Properly secure all safety guards.
- k. Secure all access doors to fan and ductwork.
- l. Check line voltage with motor nameplate.
- m. Check wiring.

# START-UP AND OPERATION



(On single phase motors, the terminal block must be set up in accordance with the nameplate instructions and/or wiring diagram. This set up must match the line voltage. If the motor is multi-speed or multi-voltage, the winding leads must be grouped and connected as shown on the motor wiring diagram. The line voltage must correspond with proper grouping of motor leads. The wiring diagram must be followed explicitly, or serious motor or starter damage will occur.) Don't operate at RPM higher than cataloged.

The ventilator has been checked at the factory prior to shipment for mechanical noises. If mechanical noises should develop:

- a. Check rotating components for adequate clearance (wheel alignment procedures are on page 15) and direction of rotation. Judge CW and CCW looking from drive side.
- b. Check proper belt tension and pulley alignment.
- c. Check installation and anchoring.
- d. Check fan bearings.

Switch on electrical supply and allow fan to reach full speed. Then:

1. Check carefully for correct rotation of the centrifugal wheel.



Incorrect rotation overloads motor severely and results in serious motor damage. To change rotation of three phase units, interchange any 2 of the 3 line leads. On single phase units, change the terminal block set-up following the wiring diagram on the motor.

2. Check motor and bearing temperatures for excessive heat.



Use care when touching the exterior of an operating motor. Modern motors normally run hot. They are designed to operate at higher temperatures. This is a normal condition, but they may be hot enough to be painful or injurious to the touch.

If any problem is indicated, TURN OFF POWER TO UNIT IMMEDIATELY. Lock out the electrical supply, check carefully for the cause of the trouble and correct as needed. Even if the fan appears to be operating satisfactorily, shut down after a brief period and check all fasteners, set-screws and keys for tightness.

During the first eight (8) hours of operation, check the fan periodically for excessive vibration or noise. At this time, also check motor input current and motor bearing temperatures to ensure that they do not exceed manufacturer's recommendations. After eight hours of satisfactory operation, shut down the fan and lock out the electrical power to check the following items and adjust if needed:

- a. All set-screws, keys and fasteners.
- b. Drive coupling alignment.
- c. Belt alignment.
- d. Belt tension.



# MAINTENANCE

Do not attempt maintenance on fan until the electrical supply has been completely disconnected. If a service switch has not been provided, remove all fuses from the circuit and lock the fuse panel so they cannot accidentally be replaced.

Lubrication is a primary maintenance responsibility. Check all bearings periodically. Inspect belts for tightness. If the fan is installed in a corrosive or dirty atmosphere, periodically clean the impeller, inlet and other moving parts.

## Fan Shaft Lubrication

Fan shaft bearing pillow blocks are furnished in either the prelubricated sealed-for-life type or the greasable type depending on what was ordered. The prelubricated type requires no servicing for 7 to 10 years of normal use, and the greasable type are factory greased eliminating the need for greasing initially. Follow the lubricating schedule recommended by the factory. When required, apply grease while the shaft is rotating. This practice should not supersede any safety considerations.



Use low pressure grease guns only. High pressure guns tend to blow out or unseat bearing seals, leaving the bearing open to collect grime, dust and foreign particles.

## Lubrication Schedule

Always follow the bearing manufacturer's recommended lubrication schedule. If none is available, use the following general schedule.

- Under average conditions where ambient temperatures do not exceed 120°F, lubrication is required 1 to 2 times a year.
- In dirt laden atmospheres or where there is a temperature range of 120°F to 150°F, lubrication is required from 3 to 6 times a year.
- Under extreme temperature conditions and extremely dirty atmospheres, lubrication should be at least once or twice a month.

**Table 1: Recommended Lubricants**

| Manufacturer | Product            | Temp. Range                     |
|--------------|--------------------|---------------------------------|
| BP           | LG-#P-1            | Below 32° F (0° C)              |
| Gulf         | Gulfcrown EP-1     |                                 |
| Imperial Oil | Unirex EP-1        |                                 |
| Shell        | Alvania R-1        |                                 |
| BP           | Energrease, MPMK11 | 32° F to 150° F (0° C to 66° C) |
| Gulf         | Gulfcrown EP-2     |                                 |
| Imperial Oil | Unirex EP-2        |                                 |
| Shell        | Alvania R-3        |                                 |
| Sun Oil      | Sun Prestige 42    |                                 |
| Texaco       | Regal AFB2         |                                 |

## Motor Lubrication

In general, standard motors are furnished with prelubricated, sealed-for-life ball bearings which require no lubrication for 7 to 10 years of normal service. Where motors have been ordered with greasable bearings, these bearings are factory lubricated and require no attention for one year under normal conditions. If grease relief fittings are provided, remove them when performing maintenance to allow grease to flow out. Whenever possible, apply grease while the motor is running. This practice should not supersede any safety considerations. DO NOT OVERGREASE, as most lubricants deteriorate motor windings, thereby reducing motor life.

# MAINTENANCE

## Hidden Danger

In addition to the normal dangers of rotating machinery, fans present an additional hazard in their ability to suck in not only air, but loose material as well. Solid objects can pass through the fan and be discharged by the impeller as potentially dangerous projectiles. Therefore, screen intake to ductwork, whenever possible, to prevent the accidental entrance of solid objects. Never open access doors to a duct system with the fan running. When starting the fan for the first time, completely inspect the ductwork and interior of the fan (with power locked off) to make certain there is no foreign material which can be sucked into or blown through the ductwork.

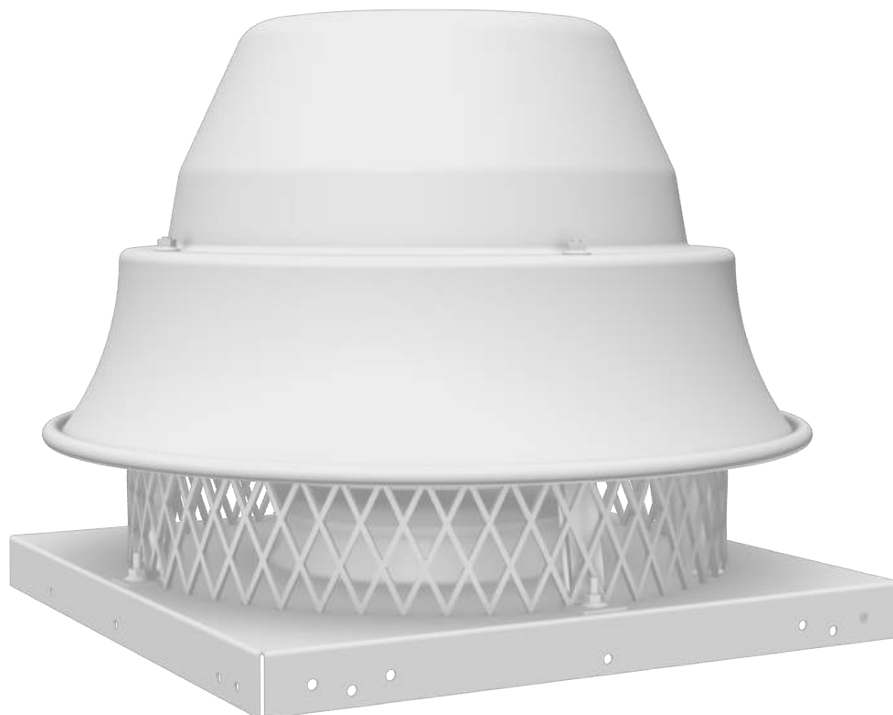
## Guards

All fans have moving parts which require guarding in the same way as other moving machinery.

Where the fan is accessible to untrained personnel or the general public, use maximum safety guards, even at the cost of some performance loss. Unprotected fans located less than 7' above the floor also require guarding as specified in the Occupational Safety and Health Act (OSHA).

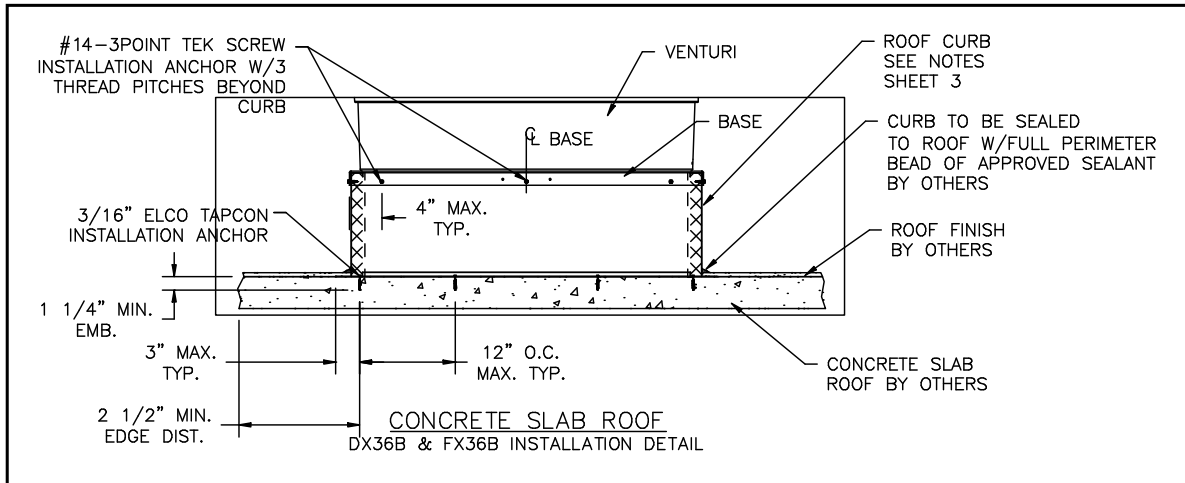
PennBarry recommends the use of guards on all exposed nonducted fans, ceiling and wall mounted.

Centrifugal fans may be connected directly to ductwork which will prevent contact with the internal moving parts, but when the inlet or outlet is exposed, install a suitable guard.

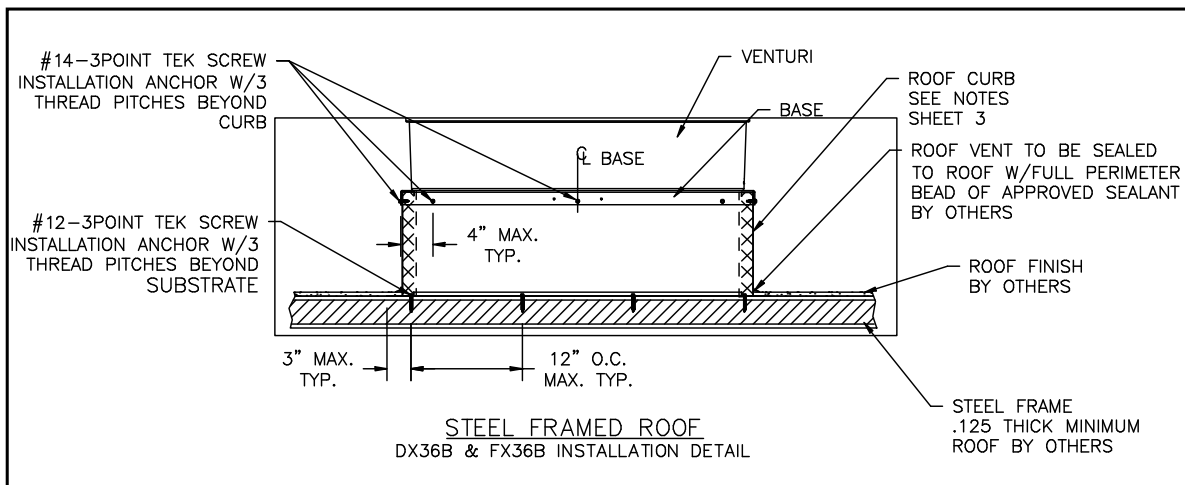


\_\_\_\_\_

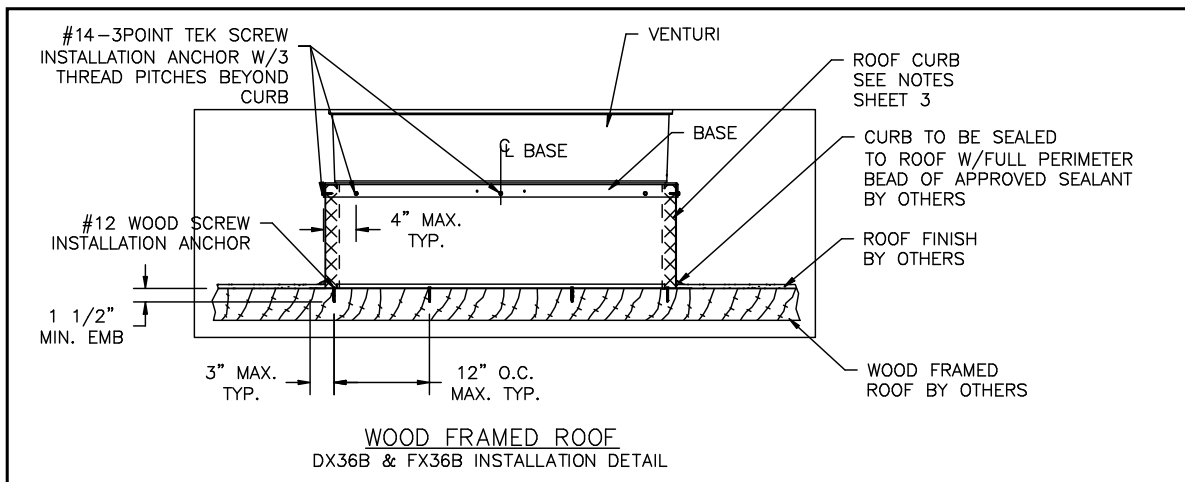
## Typical Concrete Slab Roof Installation



## Typical Steel Framed Roof Installation



## Typical Wood Framed Roof Installation



Installation Notes: All four sides of curb and base are anchored identically.  
Curb Notes: 18 gauge galvanized steel minimum, maximum height 18"

# TROUBLESHOOTING CHECKLIST

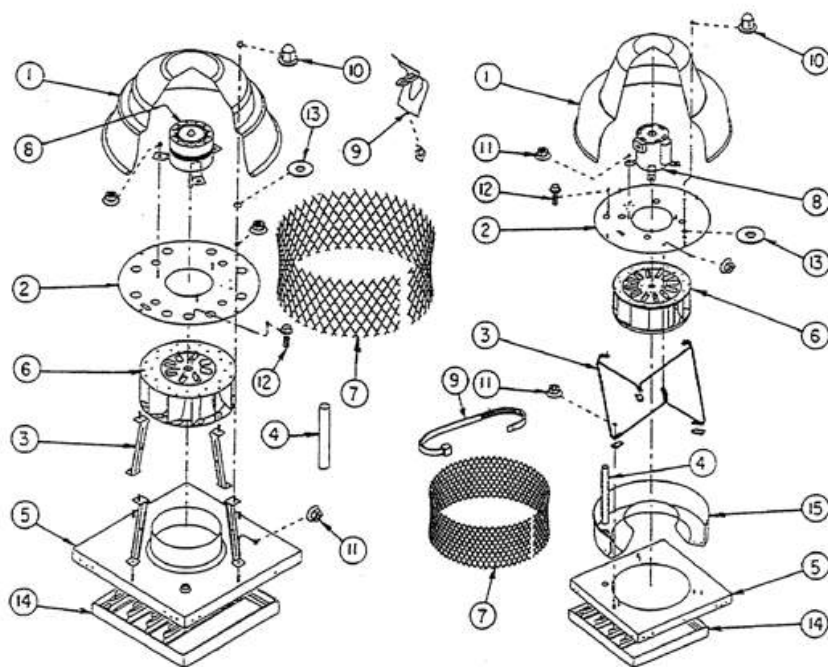
| Symptom   | Possible Cause(s)   | Corrective Action   |
|---|---|---|
| Excessive noise   | 1. Defective or loose motor bearings  | 1. Replace motor with same frame size, RPM, HP  |
|   | 2. Ventilator base not securely anchored  | 2. Reset properly   |
|   | 3. Loose or unbalanced wheel/propeller  | 3. Tighten screws, remove build-up, balance wheel/propeller   |
|   | 4. Misaligned pulleys or shaft  | 4. correct alignment  |
|   | 5. Loose or damaged wheel/propeller   | 4. Replace wheel/propeller  |
|   | 6. Wheel running in wrong direction   | 6. Reverse direction  |
| Fan inoperative   | 1. Blown fuse or open circuit breaker   | 1. Replace fuses or circuit breaker   |
|   | 2. Loose or disconnected wiring   | 2. Shut off power and check wiring for proper connections   |
|   | 3. Defective motor  | 3. Repair or replace motor  |
|   | 4. Broken belts   | 4. Replace belts  |
| Insufficient airflow  | 1. Open access doors or loose sections of ducts   | 1. Check for leakage  |
|   | 2. Clogged filters  | 2. Clean filters  |
|   | 3. Operation in wrong direction   | 3. Correct rotation of wheel  |
|   | 4. Insufficient make-up air direction   | 4. Add make-up fan or louver opening  |
| Water leaking into ductwork or collection of grease under fan | 1. Fan installed with slope in the wrong direction  | 1. Slope should be fitted in the direction of the drainage opening or grease collection box and drain spout |
|   | 2. Clogged drain spout  | 2. Clean drain spout  |
|   | 3. Cooling tube or motor dome top removed   | 3. Install new cooling tube with gasket and dome top  |
|   | 4. Grease container full  | 4. Empty grease box   |
| Motor overheating   | 1. Belt slippage  | 1. Adjust tension or replace bad belts  |
|   | 2. Overvoltage or under voltage   | 2. Contact power supply company   |
|   | 3. Operation in wrong direction   | 3. Reverse direction of motor   |
|   | 4. Fan speed too high   | 4. Slow down fan by opening variable pitch pulley on motor shaft  |
|   | 5. Incorrect motor (service factor 1.0, low ambient temperature)                                  | 5. Replace motor with correct open, NEMA service factors (1.15 or higher) with 40 degrees ambient           |
|   | 6. Blocked cooling tube or leaky gasket   | 6. Remove blockage and seal cooling tube in place   |
|   | 7. Insufficient airflow to kitchen hood fan operating on low speed with kitchen in full operation | 7. Check airflow under hood and adjust kitchen equipment output   |
|   | 8. Undersized motor   | 8. Check motor ratings with catalog speed and air capacity chart  |

*Note: Care should be taken to follow all local electrical, safety and building codes. Provisions of the National Electric Code (NEC), as well as the Occupational Safety and Health Act (OSHA) should be followed.*

All motors are checked prior to shipment. If motor defects should develop, prompt service can be obtained from the nearest authorized service station of the motor manufacturer while under warranty. Exchange, repair or replacement will be provided on a no charge basis if the motor is defective within the warranty period. The PennBarry representative in your area will provide a name and address of an authorized service station if requested. WARNING: Motor guarantee is void unless overload protection is provided in motor wiring circuit.

# DIRECT DRIVE MODELS DX06R, DX08S/R, 10S/R, 11S/R, 11Q, 13V/S/R, 13Q, 16V/S/R, Q1 & Q2

Figure 5: (Left Image) DX06R, DX08S/R, 10S/R, 11S/R, 11Q, 13V/S/R & 13Q (Right Image) DX16V/S/R, Q1 & Q2



| Part | Description      |
|------|------------------|
| 1    | Hood Apron       |
| 2    | Top Plate        |
| 3    | Brace            |
| 4    | Conduit Pipe     |
| 5    | Base             |
| 6    | Wheel            |
| 7    | Screen           |
| 8    | Motor            |
| 9    | Screen Clip      |
| 10   | Acorn Nut        |
| 11   | 1/4-20 Nut       |
| 12   | 1/4-20 Bolt      |
| 13   | Washer           |
| 14   | Backdraft Damper |
| 15   | Venturi          |

| Direct Drive Models |           |
|---------------------|-----------|
| Fan Size            | Base Dim. |
| 6                   | 18.5      |
| 8                   | 18.5      |
| 10                  | 18.5      |
| 11                  | 18.5      |
| 13                  | 18.5      |
| 16                  | 20.5      |

Fan Base Dimensions (outside curb dimension should be 1" smaller than inside fan base dimension)



# BELT DRIVE MODELS DX06B-36B, KB, JB & MB

Figure 6: DX06B, 08B

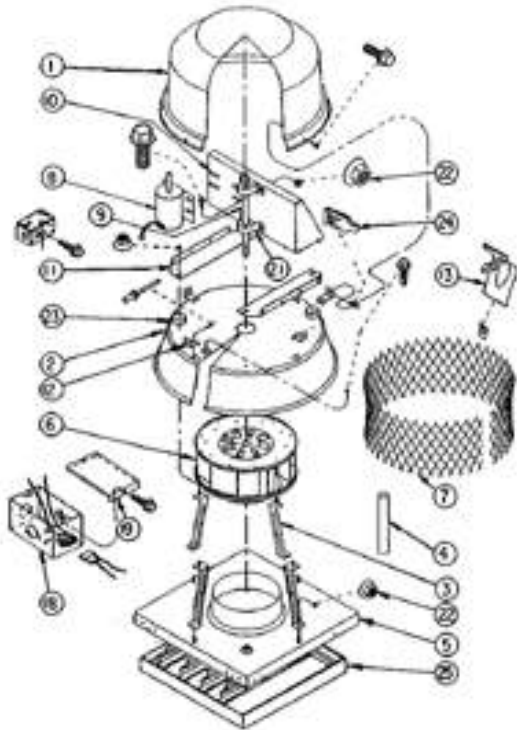


Figure 7: DX11B

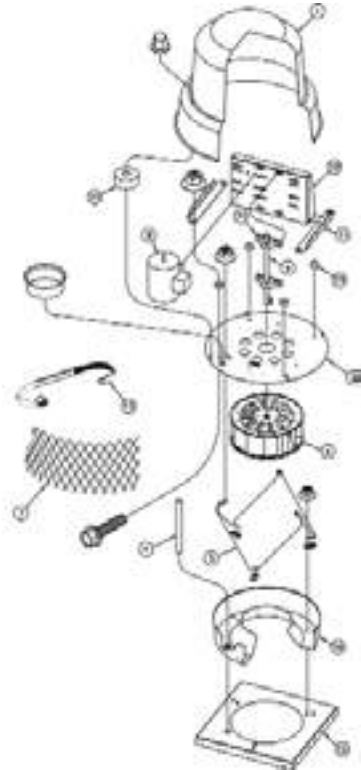


Figure 8: KB, JB, MB

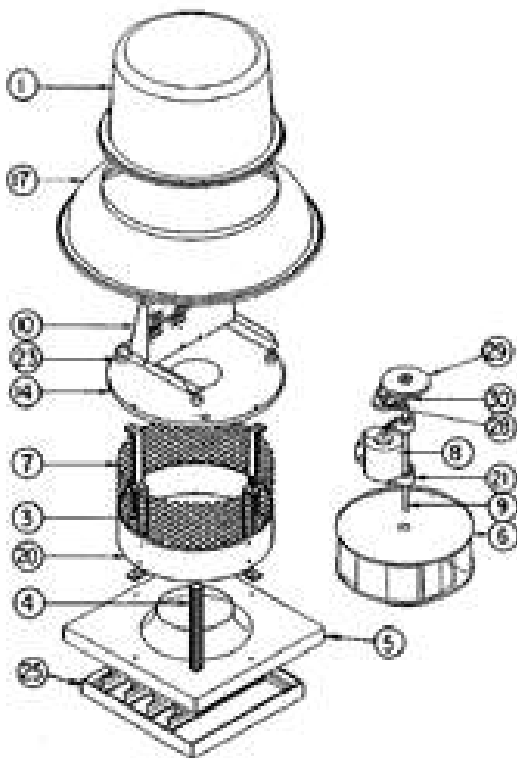
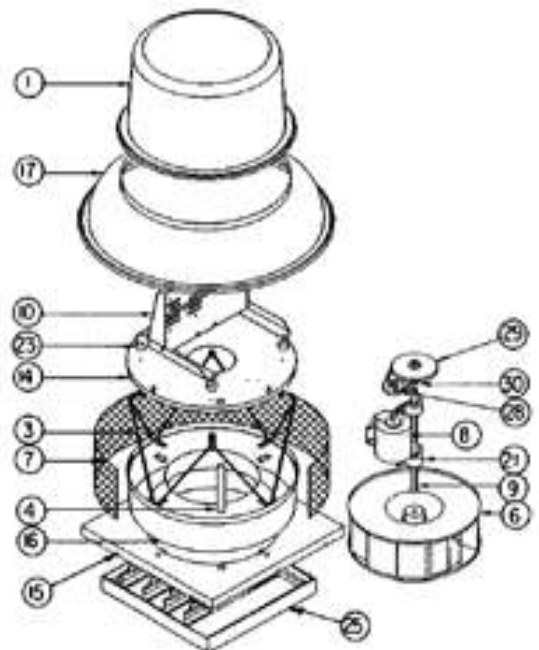


Figure 9: DX11BA thru DX36B



# BELT DRIVE MODELS DX06B-36B, KB, JB & MB

| Part | Description               |
|------|---------------------------|
| 1    | Hood                      |
| 2    | Top Plate Apron           |
| 3    | Vertical Brace            |
| 4    | Conduit Pipe              |
| 5    | Base Venturi              |
| 6    | Centrifugal Wheel         |
| 7    | Screen                    |
| 8    | Motor                     |
| 9    | Shaft                     |
| 10   | Motor Bearing Frame       |
| 11   | Motor Frame Support Angle |
| 12   | Hood Mounting Lug         |
| 13   | Screen Clip               |
| 14   | Top Plate                 |
| 15   | Base                      |

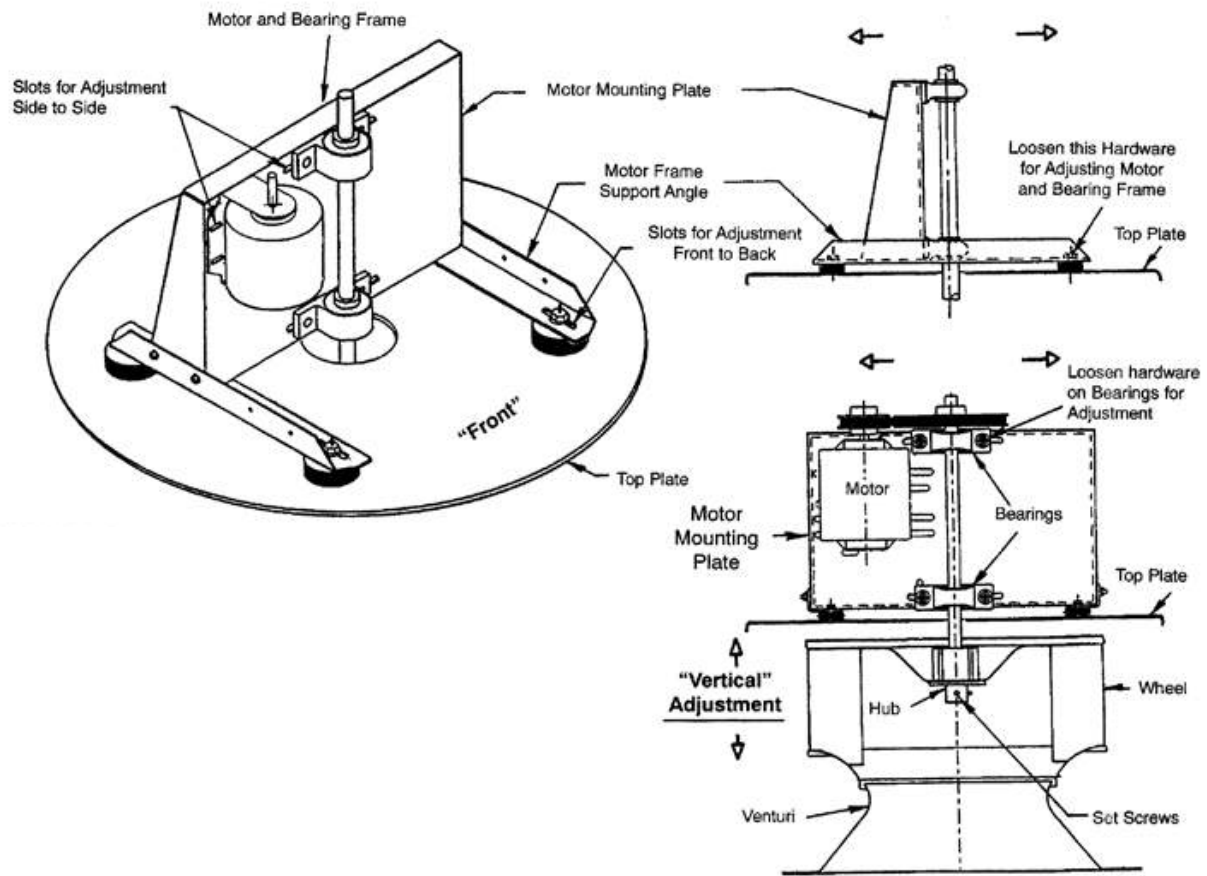
| Part | Description           |
|------|-----------------------|
| 16   | Venturi               |
| 17   | Apron                 |
| 18   | Junction Box          |
| 19   | Junction Box Cover    |
| 20   | Baffle                |
| 21   | Bearings              |
| 22   | 1/4-20 Nut            |
| 23   | Rubber Bushing        |
| 24   | Bolt Clip             |
| 25   | Backdraft Damper      |
| 26   | Bearing Support Plate |
| 27   | Motor Support Plate   |
| 28   | Motor Pulley          |
| 29   | Fan Pulley            |
| 30   | Belt                  |

| Belt Drive Models |           |
|-------------------|-----------|
| Fan Size          | Base Dim. |
| 06B               | 18.5      |
| 08B               | 18.5      |
| 11B(A)            | 20.5      |
| 12B               | 24.75     |
| 14B               | 24.75     |
| 16B               | 28.5      |
| 18B               | 28.5      |
| 24B               | 33.5      |
| 30B               | 36.5      |
| 36B               | 44.5      |
| KB                | 52.5      |
| JB                | 59        |
| MB                | 63.5      |

| Maximum Fan RPM and Motor Horsepower Size Belt Drive Models |      |      |        |      |      |      |      |      |      |      |      |      |      |
|---|------|------|--------|------|------|------|------|------|------|------|------|------|------|
| Fan Size  | 06B  | 08B  | 11B(A) | 12B  | 14B  | 16B  | 18B  | 24B  | 30B  | 36B  | KB   | JB   | MB   |
| Max Safe RPM  | 1437 | 1437 | 1575   | 2007 | 1793 | 1631 | 1326 | 1275 | 988  | 810  | 600  | 480  | 440  |
| Max Motor Frame Size  | 42   | 42   | 56     | 56   | 56   | 145T | 145T | 184T | 184T | 213T | 213T | 215T | 254T |

# WHEEL ALIGNMENT PROCEDURES

Figure 10



The wheel position is preset at factory and must rotate freely. However, movement may occur due to rough handling prior to installation, and realignment may be necessary. If field correction is required follow these procedures:

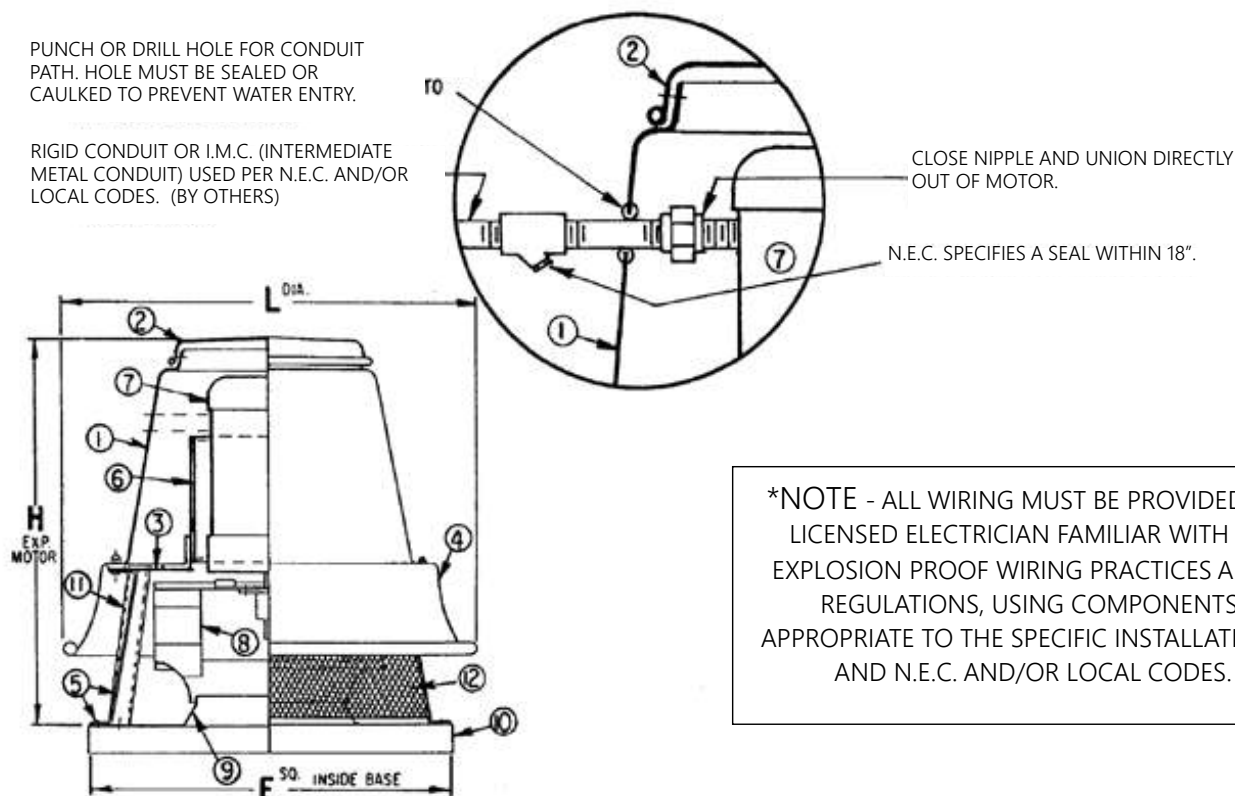
1. If "Front to Back" adjustment is required, loosen both motor frame support angles (four nuts), relocate frame and retighten.
2. If "Side to Side" adjustment is required, loosen both bearings (four nuts), relocate, and retighten.
3. If "Vertical" adjustment is required, loosen both set screws on the wheel hub (accessible from the bottom side of the unit), raise or lower the wheel, and retighten.

# DIRECT DRIVE - EXPLOSION PROOF MOTOR

## Spun Aluminum Centrifugal Roof Exhauster

PUNCH OR DRILL HOLE FOR CONDUIT PATH. HOLE MUST BE SEALED OR CAULKED TO PREVENT WATER ENTRY.

RIGID CONDUIT OR I.M.C. (INTERMEDIATE METAL CONDUIT) USED PER N.E.C. AND/OR LOCAL CODES. (BY OTHERS)



\*NOTE - ALL WIRING MUST BE PROVIDED BY A LICENSED ELECTRICIAN FAMILIAR WITH EXPLOSION PROOF WIRING PRACTICES AND REGULATIONS, USING COMPONENTS APPROPRIATE TO THE SPECIFIC INSTALLATION AND N.E.C. AND/OR LOCAL CODES.

### Legend

|                                    |                              |   |  |
|------------------------------------|------------------------------|---|--|
| 1. Motor Dome                      | 4. Discharge Apron           | 7. Motor (Exp. Motor)                       | 10. Mounting Base                      |
| 2. Motor Hood Top (For Exp. Motor) | 5. Structural Support Braces | 8. Centrifugal Fan Wheel with Cooling Vanes | 11. Conduit Guide (Not for Exp. Motor) |
| 3. Top Plate                       | 6. Motor Mounting Plate      | 9. Spun Venturi                             | 12. Aluminum Bird Screen               |

### Dimensional Data

|              | DX08Q  | DX10Q  | DX11Q  | DX13Q   | DX16Q    |
|--------------|--------|--------|--------|---------|----------|
| L DIA.       | 20 7/8 | 20 7/8 | 20 7/8 | 21 7/16 | 28 1/2   |
| H EXP. MOTOR | 18     | 19     | 19     | 19      | 26 11/16 |

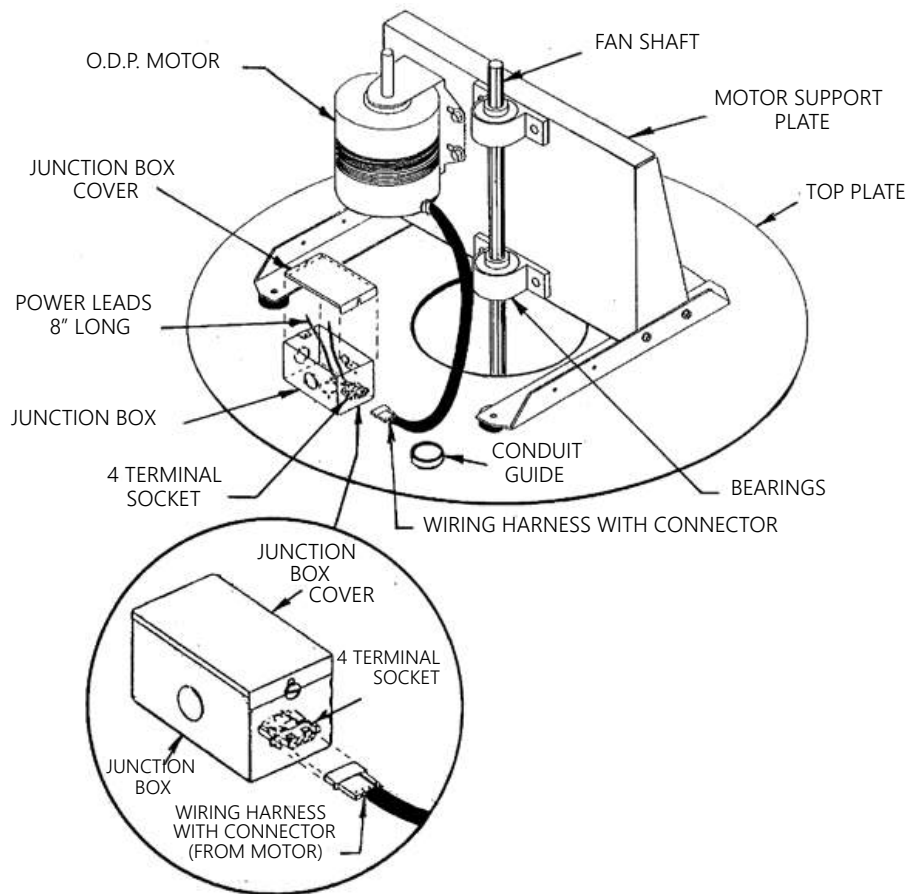
† Outside dimension of curb should be 1 1/2" less than 'E' dimension.  
All dimensions in inches.

### Material: Spun Aluminum Housing

This drawing illustrates our understanding of order requirements. When approved, it represents details for fabrication; as such, PennBarry will not be responsible for revisions in the field or other changes after release for fabrication. Published and protected by PennBarry, Richardson, TX. All rights reserved. May not be reproduced partially or in full without permission from the publisher. No rights conveyed to manufacture partially or in full, use, or sell either the method of construction represented or any invention in any way related thereto.

# WIRING HARNESS - DISCONNECT DEVICE

## O.D.P. Motors (ITW Harness) 115/220 Single Phase



### Electrical Connections

Connect motor per nameplate to correct power supply. Install all wiring, protection and grounding in accordance with National Electrical Code and local requirements. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

### Wiring Instructions

CAUTION: When bringing power lines up, power **MUST** be off.

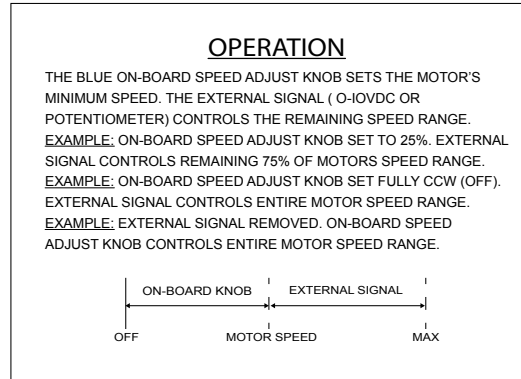
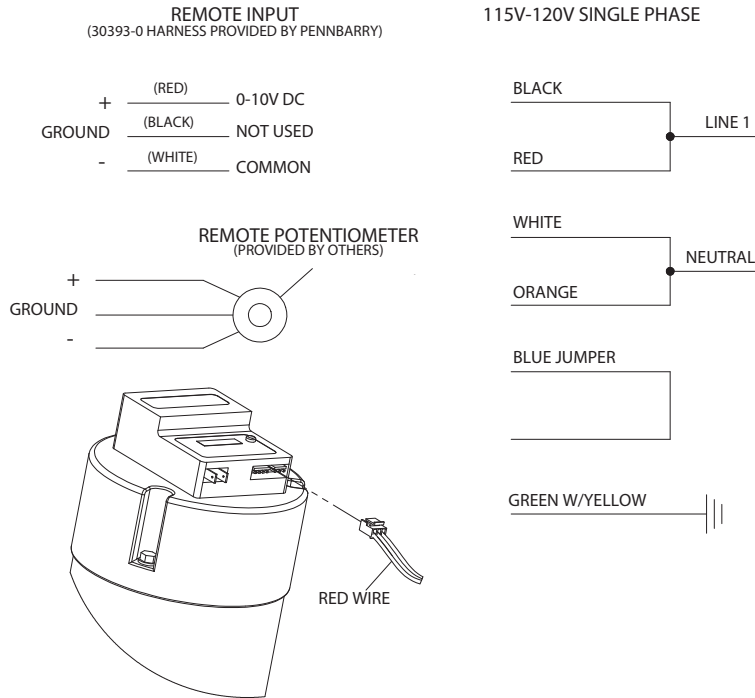
1. Bring power lines up to motor compartment through conduit guide.
2. Remove junction box cover so that power leads are exposed.
3. Remove one knock-out, attach connector, and run power lines from source into junction box.
4. Terminal socket has two 8" long pigtails already stripped. Make connection to power lines using proper size wire nuts and fold wires back into box.
5. Replace junction box cover and secure in place with screw.
6. Plug harness connector (from motor) into terminal socket at end of junction box. Unit is now ready to test.

This drawing illustrates our understanding of order requirements. When approved, it represents details for fabrication; as such, PennBarry will not be responsible for revisions in the field or other changes after release for fabrication. Published and protected by PennBarry, Plano, TX. All rights reserved. May not be reproduced partially or in full without permission from the publisher. No rights conveyed to manufacture partially or in full, use, or sell either the method of construction represented or any invention in any way related thereto.

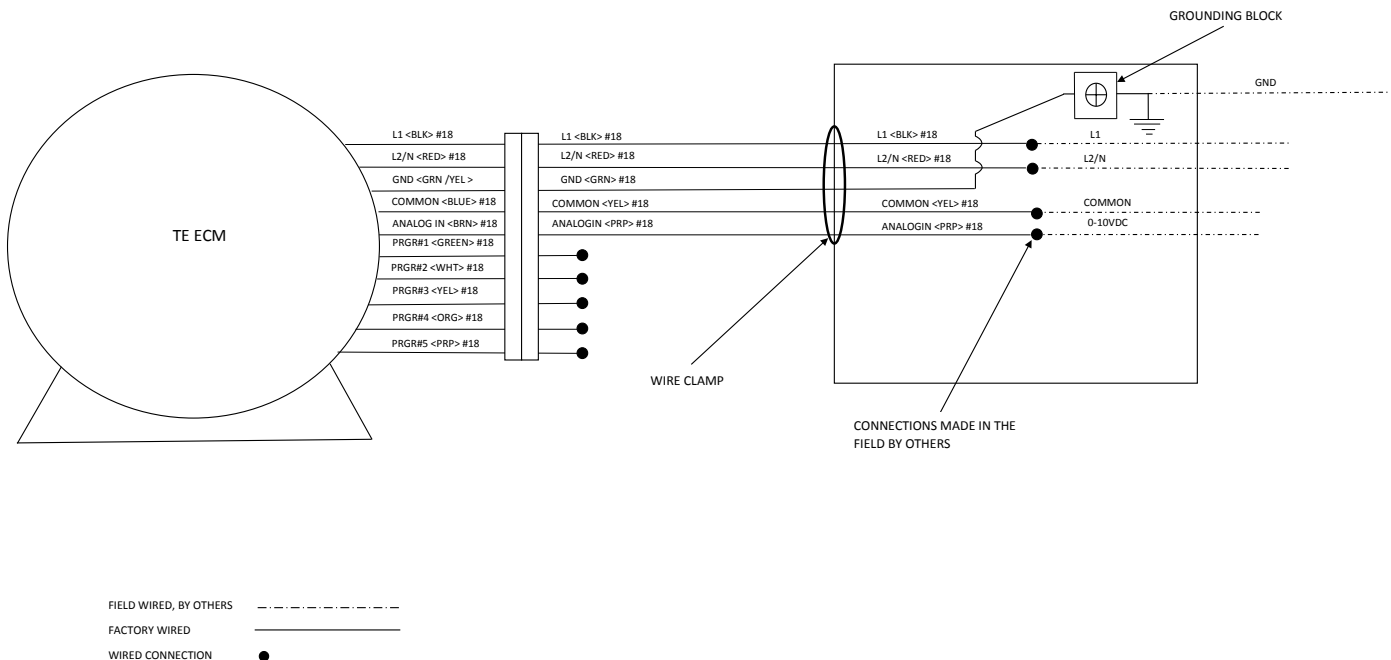


# WIRING HARNESS – ECM

## 1) O.D.P. Motors 120v Single Phase



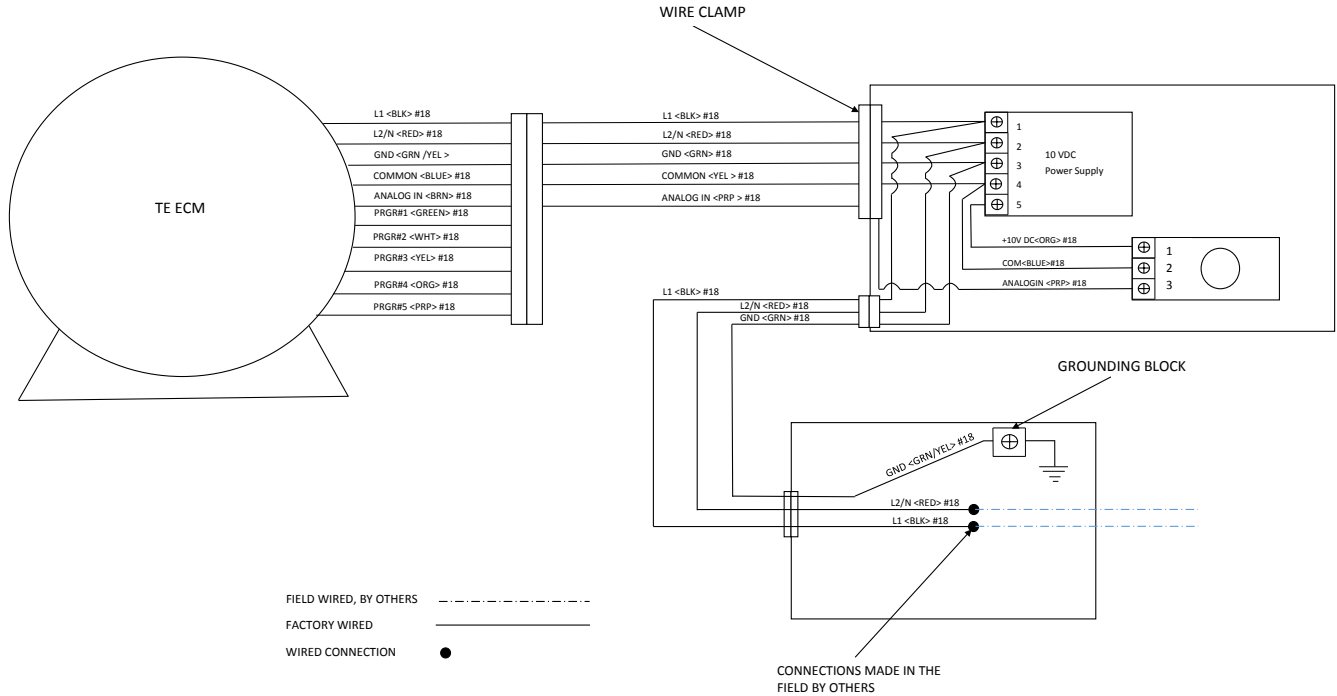
## 2) T.E. Motors 120v/240v/460v Single Phase (control provided by others)



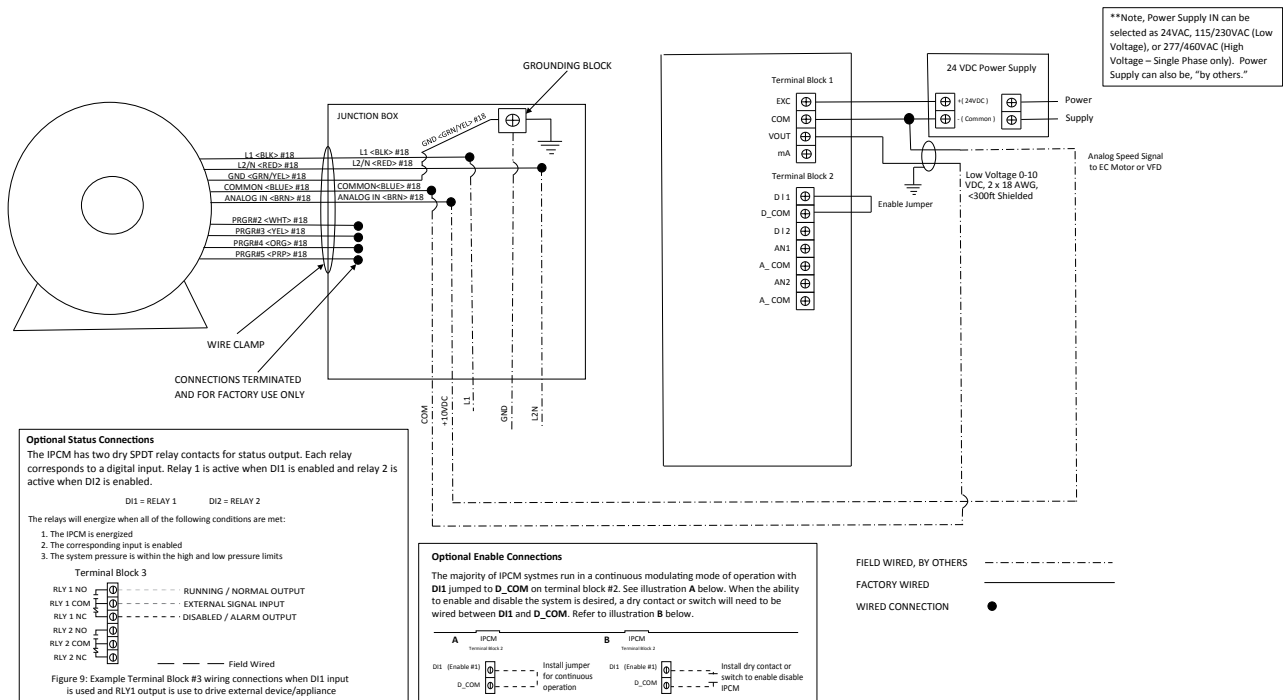
This drawing illustrates our understanding of order requirements. When approved, it represents details for fabrication, as such, PennBarry will not be responsible for revisions in the field or other changes after release for fabrication. Published and protected by PennBarry, Plano, TX. All rights reserved. May not be reproduced partially or in full without permission from the publisher. No rights conveyed to manufacture partially or in full, use or sell either the method of construction represented or any invention in any way related thereto.

# WIRING HARNESS – ECM

## 3) T.E. Motors 120v/240v/460v Single Phase (0-10V output potentiometer)



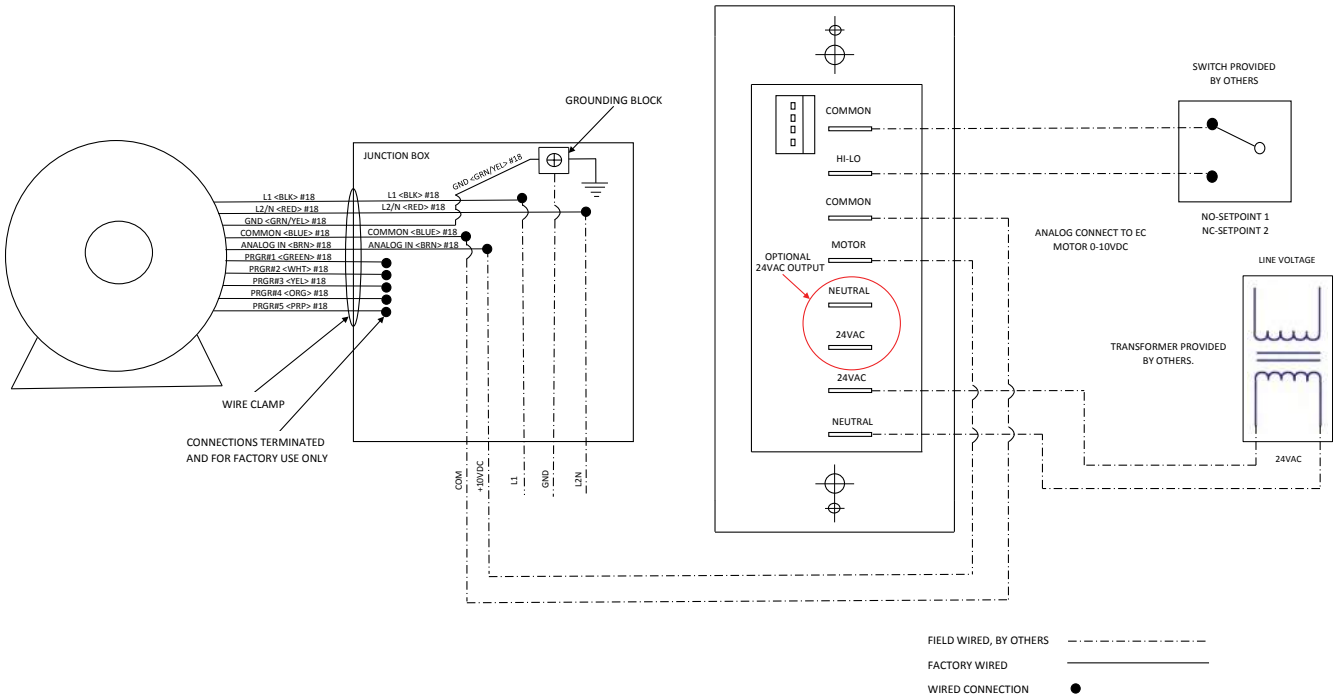
## 4) T.E. Motors 120v/240v/460v Single Phase (with iQ-IPCM controller)



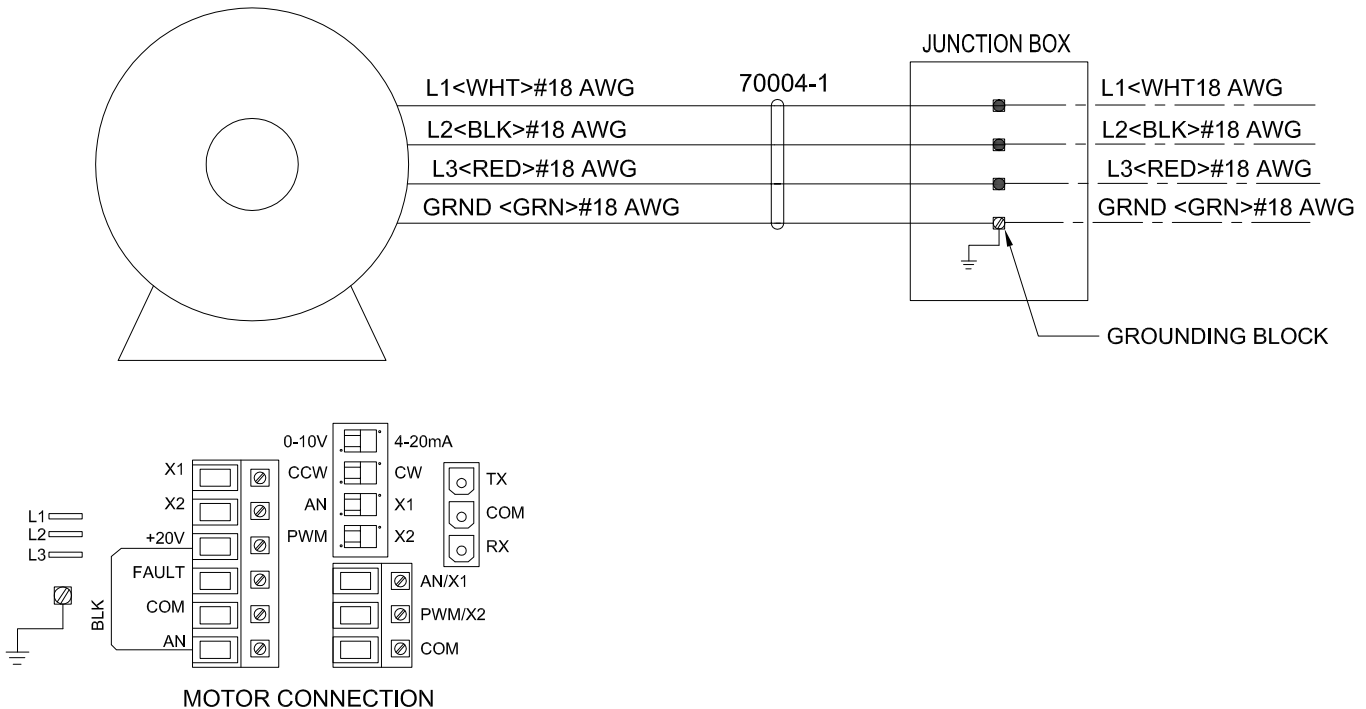
This drawing illustrates our understanding of order requirements. When approved, it represents details for fabrication, as such, PennBarry will not be responsible for revisions in the field or other changes after release for fabrication. Published and protected by PennBarry, Plano, TX. All rights reserved. May not be reproduced partially or in full without permission from the publisher. No rights conveyed to manufacture partially or in full, use or sell either the method of construction represented or any invention in any way related thereto.

# WIRING HARNESS – ECM

## 5) T.E. Motors 120v/240v/460v Single Phase (with iQ-MS controller)



## 6) T.E. Motors 208v/460v Three Phase



This drawing illustrates our understanding of order requirements. When approved, it represents details for fabrication, as such, PennBarry will not be responsible for revisions in the field or other changes after release for fabrication. Published and protected by PennBarry, Plano, TX. All rights reserved. May not be reproduced partially or in full without permission from the publisher. No rights conveyed to manufacture partially or in full, use or sell either the method of construction represented or any invention in any way related thereto.



PENN BARRY™

PennBarry is proud to be your preferred manufacturer of commercial and industrial fans and blowers. Learn how PennBarry can assist you in your next application by contacting your PennBarry Representative or visiting us on the web at [www.pennbarry.com](http://www.pennbarry.com).

PennBarry | [www.pennbarry.com](http://www.pennbarry.com) | [pennbarrysales@pennbarry.com](mailto:pennbarrysales@pennbarry.com) | tel: 972.212.4700 | fax: 972.212.4702

PennBarry reserves the right to make changes at any time, without notice, to models, construction, specifications, options and availability. This manual illustrates the appearance of PennBarry products at the time of publication.

View the latest updates on the PennBarry website.

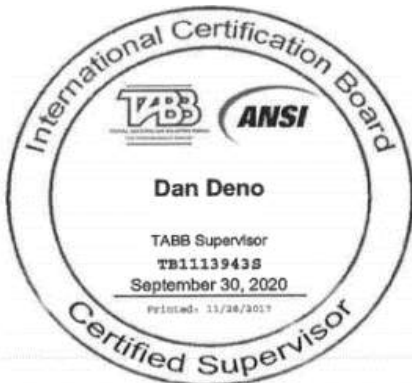
© 2018 PennBarry. All Rights Reserved. Revised SEPTEMBER 2018

**Bailey Elementary**  
**800 S 5th ST**  
**Chesterton IN, 46304**

**Certified**  
**Test & Balance Report**

**July 27, 2020**

**Job # 7994**



**ICB/TABB/NEBB Certified Contractor**  
**Mechanical Test and Balance, Inc.**

**PO Box 1157**

**Crown Point, IN 46308-1157**

**Mr. James K. Larsen, President**

**Phone : (219) 663-8107**

**Fax : (219) 663-1003**

**IN Certification # BB020003C**







# Mechanical Test & Balance, Inc.

## ***Table Of Contents***

**PROJECT:** Bailey Elementary School  
**LOCATION:** , IN  
**PROJECT #:** 7994

**DATE:** 7/30/2020  
**CONTACT:** Craig Schnick  
**AUTHOR:**

---

## **Table Of Contents**

|                          |   |
|--------------------------|---|
| 1 Fan Unit.....          | 4 |
| 1.1 EF-01.....           | 4 |
| 2 Field Note Report..... | 5 |
| 3 Supply Outlet.....     | 6 |
| 4 Balance Valve.....     | 7 |



# Mechanical Test & Balance, Inc.

## Fan Unit

**PROJECT:** Bailey Elementary School  
**LOCATION:** , IN  
**PROJECT #:** 7994

**DATE:** 7/30/2020  
**CONTACT:** Craig Schnick  
**AUTHOR:**

**SYSTEM/UNIT:** EF-01

Tested By: Craig Schnick  
Date: 7/24/2020

| Unit Data          |                   |
|--------------------|-------------------|
| Unit Manufacturer  | Penn Ventilator   |
| Unit Model Number  | DX10QGP           |
| Unit Serial Number | G19VZ65053        |
| Type of Service    | Dedicated Exhaust |

| Test Data         |           |
|-------------------|-----------|
| Design Airflow    | 260 CFM   |
| Actual Airflow    | 278 CFM   |
| Design Fan RPM    | 1217 RPM  |
| Actual Fan RPM    | 1139 RPM  |
| Design Motor RPM  | 1750 RPM  |
| Actual Motor RPM  | 1139 RPM  |
| Motor Volts T1-T2 | 121 Volts |
| Motor Amps T1     | 0.80 Amps |

| Motor Data                     |                   |
|--------------------------------|-------------------|
| Design Motor HP                | 1/3 HP            |
| Design Motor Voltage           | 120 Volts         |
| Design Motor Phase             | 1                 |
| Nameplate Motor RPM            | 1750 RPM          |
| Nameplate Motor Manufacturer   | US Motors         |
| Nameplate Motor Frame          | 48Y               |
| Nameplate Motor HP             | 1/3 HP            |
| Nameplate Motor Rated Volts    | 115-208/230 Volts |
| Nameplate Motor FL Amps        | 4.40 Amps         |
| Nameplate Motor Phase          | 1                 |
| Nameplate Motor Hertz          | 60 Hz             |
| Nameplate Motor Service Factor | 1.15              |

| Test Pressures  |             |
|-----------------|-------------|
| Design Total SP | 0.38 in. wc |



# Mechanical Test & Balance, Inc.

## Field Note Report

**PROJECT:** Bailey Elementary School  
**LOCATION:** , IN  
**PROJECT #:** 7994

**DATE:** 7/30/2020  
**CONTACT:** Craig Schnick  
**AUTHOR:**

| Test    | System / Unit Name | Date      | Contact       | Notes / Comment Logs   |
|---------|--------------------|-----------|---------------|--|
| Project |                    | 27-Jul-20 | Craig Schnick | RTU-E fan is at high speed, registered total 61% of design. All registered in balance, based on drawings. No information on existing registers that are served by RTU-E. |



# Mechanical Test & Balance, Inc.

## Supply Outlet

**PROJECT:** Bailey Elementary School  
**LOCATION:** , IN  
**PROJECT #:** 7994

**DATE:** 7/30/2020  
**CONTACT:** Craig Schnick  
**AUTHOR:**

| System/Unit               | Outlet Type | Size LxW / D | Instrument | Design CFM  | Final CFM   | % Final   |
|---------------------------|-------------|--------------|------------|-------------|-------------|-----------|
| Existing Work Room 103-01 | CD          | 10           | Flowhood   | 600         | 366         | 61        |
| Existing Nurse 102 -01    | CD          | 6            | Flowhood   | 100         | 68          | 68        |
| Existing Nurse 102 -02    | CD          | 10           | Flowhood   | 300         | 192         | 64        |
| Existing Reception-01     | CD          | 10           | Flowhood   | 300         | 178         | 59        |
| Existing Reception-02     | CD          | 10           | Flowhood   | 400         | 238         | 60        |
| <b>Totals:</b>            | -           | -            | -          | <b>1700</b> | <b>1042</b> | <b>61</b> |



# Mechanical Test & Balance, Inc.

## **Balance Valve**

**PROJECT:** Bailey Elementary School  
**LOCATION:** , IN  
**PROJECT #:** 7994

**DATE:** 7/30/2020  
**CONTACT:** Craig Schnick  
**AUTHOR:**



| System/Unit    | MFG   | Model# | Valve Size | Design GPM  | Actual GPM  | Des/Act % | Actual $\Delta$ P | Valve Position |
|----------------|-------|--------|------------|-------------|-------------|-----------|-------------------|----------------|
| HWC-01         | Nexus |        | 3B         | 8.90        | 8.75        | 98        | 39.10             | 70% Open       |
| <b>Totals:</b> | -     | -      | -          | <b>8.90</b> | <b>8.75</b> | <b>98</b> | -                 | -              |







# Catalog

| Part Name       | Image   | Additional Description   |
|-----------------|---|--|
| H120            |  | Relay, 1/2" nipple mount, amperage range: 0.1 - 20A AC, fixed trip point: 0.1A or less, integral N.O. 100mA@30VAC/DC output and SPST N.O. integral command with 24VAC/DC coil, LED status, 1/2" j-box mount. UL.   |
| VG1245AG+943GGA |  | 1/2 in. two-way ball valve, 4.7 Cv, NPT end connections, stainless steel trim, -22 to 212°F fluid temperature rating, not rated for steam service, VA9203-GGA-2Z spring return closed, 0(2) - 10 VDC proportional control, 24 VAC 50/60 Hz or 24 VDC power required, no end switches, 0(2) to 10 VDC feedback, with 120 in. plenum rated cable |

# H120 SERIES

SPST Status Relay with Integral Current Switch



The H120 and H120NC offer a fixed current switch and SPST relay in a single externally mounted housing. Combining the current sensor and relay in one easy-to-install package eliminates the need to fit multiple devices into small electrical enclosures and simplifies the installation. Remove the labor associated with installing a separate current sensor.

## SPECIFICATIONS

|                                  |   |
|----------------------------------|---|
| Sensor Power                     | Induced from relay coil power   |
| Operating Temperature            | -15 to 60 °C (5 to 140 °F) (13.8 A max.),<br>-15 to 50 °C (5 to 12 °F) (2 A max.) |
| Operating Humidity               | 10 to 90% RH non-condensing   |
| Expected Relay Life (mechanical) | 10 million cycles   |
| Relay Status                     | LED ON=energized  |

### LEAD WIRE SPECIFICATIONS

|                 |   |
|-----------------|---|
| Lead Length     | 14" (356 mm) min.   |
| Style and Gauge | UL1015; Coil: 18 AWG; Contacts: 12 AWG;<br>Status: 16 AWG |

### WARRANTY

|                  |         |
|------------------|---------|
| Limited Warranty | 5 years |
|------------------|---------|

### AGENCY APPROVALS

|                  |   |
|------------------|---|
| Agency Approvals | UL 508 closed type device listing, CAT III,<br>Pollution Degree 2, basic insulation |
|------------------|---|

## 2-in-1

Current switch and relay are in series...connect the contacts to the load and your current switch is automatically installed

## Nipple mount

The nipple mount housing can be connected to any 1/2" conduit knockout for installation versatility

## Relay coil LED

Relay coil LED streamlines job commissioning and check out

## HP ratings

HP ratings make the H120 ideal for control and status of fractional HP motors

## 0.1A turn-on

Easily monitors the smallest loads

## NEMA 1 rated

NEMA 1 rated housing may be used in plenum spaces

## APPLICATIONS

- Unit ventilators
- Fan coil units
- Exhaust fans
- Fan terminal units
- Fractional HP motors
- Light resistive loads

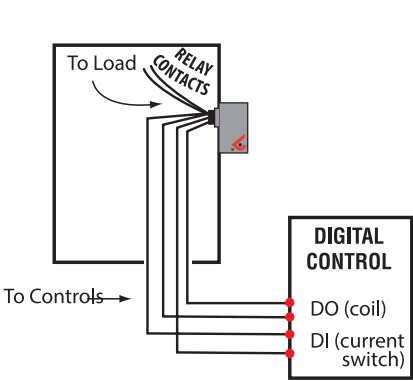


Note: Do not use the LED status indicators as evidence of applied voltage.



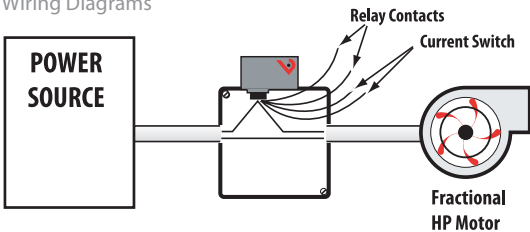
NIPPLE MOUNT DIRECTLY TO A PANEL

Wiring Diagrams

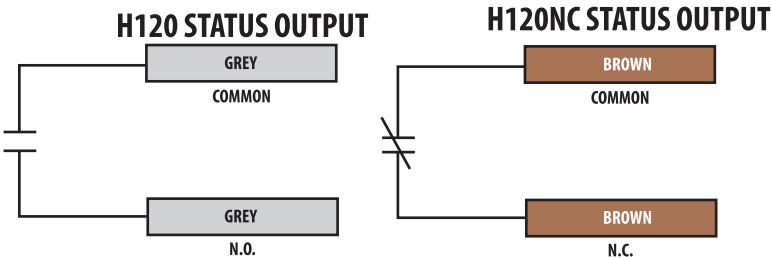
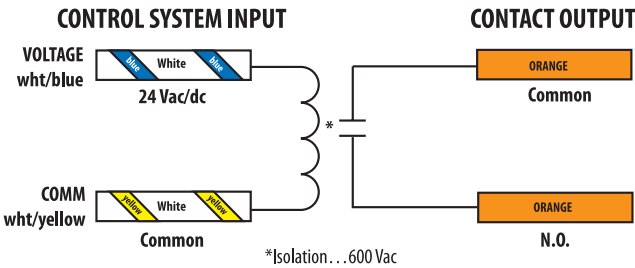


NIPPLE MOUNT TO 4X ELECTRICAL BOX

Wiring Diagrams



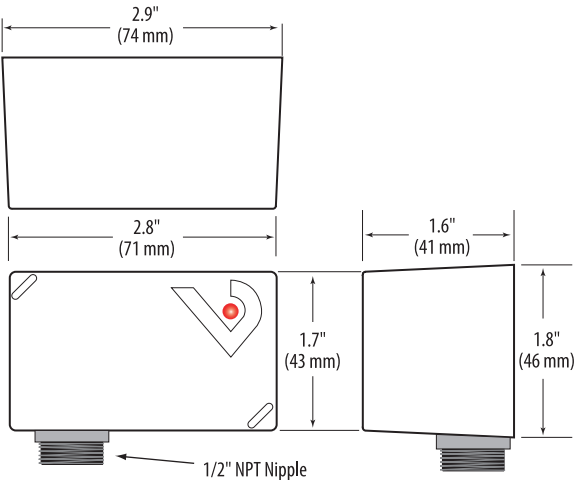
WIRE COLOR CODES



ORDERING INFORMATION

| MODEL  | AMPERAGE RANGE | COIL      | RELAY      | STATUS OUTPUT           | TRIP POINT    | HOUSING      | RELAY POWER LED | UL |
|--------|----------------|-----------|------------|-------------------------|---------------|--------------|-----------------|----|
| H120   | 0.1 to 20 A    | 24 Vac/dc | SPST, N.O. | N.O. 100 mA @ 30 Vac/dc | 0.1 A or Less | Nipple Mount | •               | •  |
| H120NC |                |           |            | N.C. 100 mA @ 30 Vac/dc |               |              | •               | •  |

DIMENSIONAL DRAWING



RELAY CONTACT RATINGS

|           |  |
|-----------|--|
| Resistive | 20 A (r) @ 277 Vac/28Vdc<br>(250,00 Cycles)                  |
| Motor     | 120 Vac, 1HP<br>208 Vac, 1HP<br>250 Vac, 2HP<br>277 Vac, 2HP |
| Ballast   | 277 Vac, 20 A  |
| Tungsten  | 120 Vac, 10 A  |

TYPICAL COIL PERFORMANCE

| Voltage | Coil Current |       |
|---------|--------------|-------|
|         | AC           | DC    |
| 24V     | 75 mA        | 32 mA |

\*See operating temperature specifications

# VG1000 Series Two-Way, Stainless Steel Trim, NPT End Connections Ball Valves with Spring-Return Electric Actuators without Switches Catalog Page

LIT-1900222

2019-09-19

## Description

VG1000 Series Ball Valves are designed to regulate the flow of hot or chilled water and, for some models, low pressure steam in response to the demand of a controller in HVAC systems. Available in sizes 1/2 through 2 in. (DN15 through DN50), this family of two- and three-way forged brass valves is factory or field mounted to Johnson Controls® VA9104, M9106, M9109, and M9100 Series Non-Spring-Return and VA9203 and VA9208 Series Spring-Return Electric Actuators for on/off, floating, or proportional control.

Refer to the *VG1000 Series Forged Brass Ball Valves Product Bulletin (LIT-977132)* for important product application information.

## Features

- Forged brass body — provides 580 psig static pressure rating.
- 200 psi closeoff pressure rating — provides tight shutoff.
- Graphite-reinforced Polytetrafluoroethylene (PTFE) seats — include 15 per cent graphite-reinforced ball seals, providing better wear resistance.
- 300 series stainless steel ball and stem assembly — tolerates high-temperature water or 15 psi saturated steam with fluid temperatures of -22°F to 284 ° F (-30°C to 140 ° C) or where a higher degree of corrosion protection is desired.
- 500:1 rangeability — provides accurate control under all load conditions.





# Bailly Elem School Nurse Renov Duneland

**AS BUILT**

**8/5/2020**

**PROJECT TITLE**

**Bailly Elem School Nurse Renov Duneland**

ARCHITECT

Phone:

ENGINEER

Phone:

MECHANICAL CONTRACTOR

Circle "R" Mechanical, Inc  
6620 Shepherd Ave  
Portage, IN 46368  
Phone: (219) 406-3009

ELECTRICAL SUBCONTRACTOR

Hyre Electric Address  
2655 Garfield Ave  
Highland IN 46322  
Phone:

REFERENCE DRAWING

NO.

REVISION-LOCATION

ECN

DATE

BY

**Johnson  
Controls**



Branch Information

Johnson Controls, Inc.  
1500 Huntington Drive  
Calumet City  
IL 60409-5402  
Phone: (708) 474-1717  
Fax: (708) 474-6551

SALES ENGINEER

Mary Pullo

PROJECT MANAGER

Jeffrey Loupee

APPLICATION ENGINEER

Qusai Alqadi

DATE

8/5/2020

CONTRACT NUMBER

**0N02-0154**



**Creating a better climate for business.**

- ☒ **Environmental Control System**
- ☒ **Facility Management System**
- ☐ **Air and Water System Balancing**
- ☐ **Fire Management System**
- ☐ **Security System**
- ☐ **Lighting Services**
- ☐ **Instrumentation System Installation**
- ☐ **Building Operations Management**
- ☐ **Energy Conservation Control**
- ☐ **Training Programs**
- ☐ **Performance Contracting**
- ☐ **Planned Service Agreements**

Air Conditioning  
Heating  
Diagnostic Services  
Coil Cleaning  
Refrigeration  
Automatic Temperature Controls  
Facility Management Systems  
Fire Management  
Security Management  
Building Operations and Management  
Water Treatment  
Electrical Equipment  
Emergency Generator / Lighting Equipment  
Industrial Controls / Recording / Indication Equipment

# Bailly Elem School Nurse Renov Duneland

DRAWING ISSUE:  
SUBMITTALS  
AS BUILT

REV-0

DATE:  
5/22/2020  
8/5/2020

As-Built  
8/5/2020



Creating a better climate for business.

- Environmental Control System
- Facility Management System
- Air and Water System Balancing
- Fire Management System
- Security System
- Lighting Services
- Instrumentation System Installation
- Building Operations Management
- Energy Conservation Control
- Training Programs
- Performance Contracting
- Planned Service Agreements

Air Conditioning  
Heating  
Diagnostic Services  
Coil Cleaning  
Refrigeration  
Automatic Temperature Controls  
Facility Management Systems  
Fire Management  
Security Management  
Building Operations and Management  
Water Treatment  
Electrical Equipment  
Emergency Generator / Lighting Equipment  
Industrial Controls / Recording / Indication Equipment

PROJECT TITLE  
Bailly Elem School Nurse Renov Duneland

|   |     |   |                      |
|---|-----|---|----------------------|
| ARCHITECT   |     | ENGINEER  |                      |
| Phone:  |     | Phone:  |                      |
| MECHANICAL CONTRACTOR   |     | ELECTRICAL CONTRACTOR   |                      |
| Circle "R" Mechanical, Inc<br>6620 Shepherd Ave<br>Portage, IN 46368<br>Phone: (219) 406-3009 |     | Hyre Electric Address<br>2655 Garfield Ave<br>Highland IN 46322 |                      |
|   |     |   |                      |
|   |     |   |                      |
|   |     |   |                      |
|   |     |   |                      |
| REFERENCE DRAWING   | NO. | REVISION-LOCATION   | ECN                  |
|   |     |   |                      |
| SALES ENGINEER  |     | PROJECT MANAGER   | APPLICATION ENGINEER |
| Mary Pullo  |     | Jeffrey Loupee  | Qusai Alqadi         |
| DATE  |     | CONTRACT NUMBER   |                      |
| 8/5/2020  |     | 0N02-0154   |                      |

## LEGEND

S

20

D-N

15-20

S

80

Air line or Electrical Wire

Connected Lines or Wires

I

Crossing Lines or Wires, Not Connected

X

In-Line Restrictor

7

Pneumatic Tube indicating Tube Number

2/18

Wire Symbol indicating: number of wires and size (E.G. 2 #18 wires)

3

2/18

Wire Symbol indicating: Cable Destination (DA-T), Cable number (3), Number of wires and size (E.G. 2 #18 wires)

1

Electrical Wire Terminal with Appropriate Number

Item Located on Panel Face

1

Drawing Revision Symbol with Appropriate Number

H

C

Heating or Cooling Coil

Ductwork or Piping with Flow Direction Shown

Gage

Device

Bulb Type Temperature Sensing Element Located under Shield in Outside air

Humidity Sensing Element Located under Shield in Outside air

Bulb Type Temperature Sensing Element Located inside Separable Socket/Well

Strap-on Bulb Type Temperature Sensing Element

Combination Bulb Type Temperature Sensing Element and Humidity Sensor (Duct Mount)

Bulb Type Temperature Sensing Element

Pressure Sensing Device

Paddle Type Flow Switch

Vapor Tension Temperature Sensing Element (Hi Limit)

Vapor Tension Temperature Sensing Element (Low Limit)

Current Sensing Switch or Combination Current Sensing switch & Command Relay

Duct Detector (Smoke, CO, CO2)

2-Way Valve with Actuator

3-Way Valve with Actuator

Opposed Blade Damper

Parallel Blade Damper

Filter

Air Flow Measuring Station


Humidifier

Fan

Pump

DRAWING INDEX

| Drawing  | Description                          |
|----------|--------------------------------------|
| 00.00-00 | Title Page                           |
| 00.01-00 | Drawing Index                        |
| 00.02-00 | Standard Hardware Naming Conventions |
| 00.03-00 | Standard Software Naming Conventions |
| 02.00-00 | Misc Controls                        |
| 02.01-00 | Misc Point Schedule 1                |
| VS-1     | Valve Schedule                       |

|   |                 |   |       |  |                   |                  |     |
|---|-----------------|---|-------|--|-------------------|------------------|-----|
| Drawing Title<br><br><b>Valve Schedule</b>                          |                 |   |       |  |                   |                  |     |
|   |                 |   |       |  |                   |                  |     |
|   |                 |   |       |  |                   |                  |     |
|   |                 | REFERENCE DRAWING   |       | NO.  | REVISION-LOCATION |                  | ECN |
| Sales Engineer  | Project Manager | Application Engineer  | DRAWN |  | APPROVED          |                  |     |
| Mary Pullo  | Jeffrey Loupee  | Qusai Alqadi  | BY    | DATE   | BY                | DATE             |     |
| Project Title<br><b>Bailly Elem School Nurse Renov<br/>Duneland</b> |                 |  |       | Branch Information<br><br>Johnson Controls, Inc.<br>1500 Huntington Drive<br>Calumet City, IL 60409-5402<br>Phone: (708) 474-1717<br>Fax: (708) 474-6551 |                   | CONTRACT NUMBER  |     |
|   |                 |   |       |  |                   | <b>0N02-0154</b> |     |
|   |                 |   |       |  |                   | DRAWING NUMBER   |     |
|   |                 |   |       |  |                   | <b>VS-1</b>      |     |

STANDARD HARDWARE NAMING CONVENTIONS

AIR HANDLING UNIT PREFIXES

Devices (both Input & Output)

|     |                         |
|-----|-------------------------|
| SF  | Supply Fan              |
| RF  | Return Fan              |
| EF  | Exhaust Fan             |
| OF  | Outside Fan             |
| SFn | Supply Fan n (n=1,2)    |
| RFn | Return Fan n (n=1,2)    |
| EFn | Exhaust Fan n (n = 1-9) |

|      |              |
|------|--------------|
| OAD  | OA Damper    |
| MOAD | Min Damper   |
| RAD  | RA Damper    |
| MAD  | MA Damper    |
| DAD  | DA Damper    |
| SAD  | SA Damper    |
| EAD  | EA Damper    |
| FBD  | F & B Damper |

Analog Inputs

|     |                  |
|-----|------------------|
| OA  | Outside Air      |
| MOA | Min OA           |
| RA  | Return Air       |
| MA  | Mixed Air        |
| DA  | Discharge Air    |
| SA  | Supply Air       |
| SA1 | Supply Air 1     |
| SA2 | Supply Air 2     |
| EA  | Exhaust Air      |
| RM  | Room             |
| ZN  | Zone             |
| ZNn | Zone n (n = 1-9) |
| PH  | Preheat          |
| CD  | Cold Deck        |
| HD  | Hot Deck         |
| CC  | Cooling Coil     |
| HC  | Heating Coil     |
| DTC | Dual Temp Coil   |
| CZN | Coldest Zone     |
| WZN | Warmest Zone     |

Binary Inputs

|       |                      |
|-------|----------------------|
| FILT  | Filter               |
| PFILT | PreFilter            |
| FFILT | Final Filter         |
| HFILT | HEPA Filter          |
| LT    | Low Temp             |
| HT    | High Temp            |
| LSP   | Low Static Pressure  |
| HSP   | High Static Pressure |
| HHL   | Humidity Hi Limit    |
| SFVSD | Supply Fan VSD       |
| RFVSD | Return Fan VSD       |
| EFVSD | Exhaust Fan VSD      |
| OFVSD | OA Fan VSD           |

Analog and Binary Outputs

|      |                       |
|------|-----------------------|
| CLG  | Cooling               |
| HTG  | Heating               |
| RH   | Reheat                |
| RHn  | Reheat n (n = 1-9)    |
| PH   | Preheat               |
| PC   | Precool               |
| DTC  | Dual Temp Coil        |
| HR   | Heat Recovery         |
| HUM  | Humidifier            |
| HRP  | Heat Recovery Pump    |
| PHP  | Preheat Pump          |
| HP   | Heating Pump          |
| CP   | Cooling Pump          |
| DTP  | Dual Temp Pump        |
| CLGn | Clg Stage n (n = 1-9) |
| HTGn | Htg Stage n (n = 1-9) |
| ZNn  | Zone n (n = 1-9)      |

Devices (both Input & Output)

|        |  |
|--------|--|
| CH     | Chiller                                    |
| CHn    | Chiller n (n = 1-9)                        |
| BLR    | Boiler                                     |
| BLRn   | Boiler n (n = 1-9)                         |
| CT     | Cooling Tower                              |
| CTn    | Cooling Tower n (n = 1-9)                  |
| CTVS   | Cooling Tower Vibration Switch             |
| CTnVS  | Cooling Tower n (n = 1-9) Vibration Switch |
| CTnD   | Cooling Tower n (n = 1-4) Damper           |
| CTnL   | Cooling Tower n (n = 1-4) Lo Speed         |
| CTnH   | Cooling Tower n (n = 1-4) Hi Speed         |
| CTnC1L | Cooling Tower n (n = 1-4) Cell 1 Lo Speed  |
| CTnC1H | Cooling Tower n (n = 1-4) Cell 1 Hi Speed  |
| CTnC2L | Cooling Tower n (n = 1-4) Cell 2 Lo Speed  |
| CTnC2H | Cooling Tower n (n = 1-4) Cell 2 Hi Speed  |

|        |  |
|--------|--|
| P      | Pump   |
| Pn     | Pump n (n = 1-9)                               |
| CHP    | Chilled Water Pump                             |
| CHPn   | Chilled Water Pump n (n = 1-9)                 |
| PCHP   | Primary Chilled Water Pump                     |
| PCHPn  | Primary Chilled Water Pump n (n = 1-9)         |
| SCHP   | Secondary Chilled Water Pump                   |
| SCHPn  | Secondary Chilled Water Pump n (n = 1-9)       |
| CWP    | Condenser Water Pump                           |
| CWPn   | Condenser Water Pump n (n = 1-9)               |
| HWP    | Hot Water Pump                                 |
| HWPn   | Hot Water Pump n (n = 1-9)                     |
| PHWP   | Primary HW Pump                                |
| PHWPn  | Primary HW Pump n (n = 1-9)                    |
| SHWP   | Secondary HW Pump                              |
| SHWPn  | Secondary HW Pump n (n = 1-9)                  |
| DHWP   | Domestic HW Pump                               |
| DHWPn  | Domestic HW Pump n (n = 1-4)                   |
| DWP    | Domestic Water Pump                            |
| DWPn   | Domestic Water Pump n (n = 1-4)                |
| CHISO  | Chilled Water Isolation Valve                  |
| CWISO  | Condenser Water Isolation Valve                |
| CWnISO | Condenser Water n (n = 1-9) Isolation Valve    |
| CTISO  | Cooling Tower Isolation Valve                  |
| CTnISO | Cooling Tower n (n = 1-9) Isolation Valve      |
| CHISO  | Chiller Isolation Valve                        |
| CHnISO | Chiller n (n = 1-9) Isolation Valve            |
| BISO   | Boiler Isolation Valve                         |
| BnISO  | Boiler n (n = 1-9) Isolation Valve             |
| HXISO  | Heat Exchanger Isolation Valve                 |
| HXnCHI | Heat Exchanger n (n = 1-4) CHW Isolation Valve |
| HXnCWI | Heat Exchanger n (n = 1-4) CWW Isolation Valve |
| HXnHWI | Heat Exchanger n (n = 1-4) HW Isolation Valve  |

Analog Inputs

|      |                      |
|------|----------------------|
| PCHS | Primary CH Supply    |
| PCHR | Primary CH Return    |
| CHS  | Chilled Water Supply |
| CHR  | Chilled Water Return |
| CWS  | Cond Water Supply    |
| CWR  | Cond Water Return    |
| SCHS | Secondary CH Supply  |
| SCHR | Secondary CH Return  |
| DTS  | Dual Temp Supply     |
| DTR  | Dual Temp Return     |
| TCHS | Tertiary CH Supply   |
| TCHR | Tertiary CH Return   |
| PHWS | Primary HW Supply    |
| PHWR | Primary HW Return    |
| HWS  | Hot Water Supply     |
| HWR  | Hot Water Return     |
| SHWS | Secondary HW Supply  |
| SHWR | Secondary HW Return  |
| ITS  | Ice Tank Supply      |
| ITR  | Ice Tank Return      |
| STM  | Steam                |

CENTRAL PLANT PREFIXES

Analog Inputs (continued)

|        |  |
|--------|--|
| HXnCHS | Heat Exchanger n (n = 1-4) CHS         |
| HXnCHR | Heat Exchanger n (n = 1-4) CHR         |
| HXnCWS | Heat Exchanger n (n = 1-4) CWS         |
| HXnCWR | Heat Exchanger n (n = 1-4) CWR         |
| HXnHWS | Heat Exchanger n (n = 1-4) HWS         |
| HXnHWR | Heat Exchanger n (n = 1-4) HWR         |
| HXnSTM | Heat Exchanger n (n = 1-4) STM         |
| HXnPW  | Heat Exchanger n (n = 1-4) Process     |
| HXnDHW | Heat Exchanger n (n = 1-4) Domestic HW |

|       |                   |
|-------|-------------------|
| CHCHS | Chiller CH Supply |
| CHCHR | Chiller CH Return |
| CHCWS | Chiller CW Supply |
| CHCWR | Chiller CW Return |

|       |                               |
|-------|-------------------------------|
| CnCHS | Chiller n (n = 1-9) CH Supply |
| CnCHR | Chiller n (n = 1-9) CH Return |
| CnCWS | Chiller n (n = 1-9) CW Supply |
| CnCWR | Chiller n (n = 1-9) CW Return |

|       |                         |
|-------|-------------------------|
| TnBSN | Tower n (n = 1-9) Basin |
|-------|-------------------------|

|       |                              |
|-------|------------------------------|
| BnHWS | Boiler n (n = 1-9) HW Supply |
| BnHWR | Boiler n (n = 1-9) HW Return |

|     |                       |
|-----|-----------------------|
| HPS | High Pressure Steam   |
| MPS | Medium Pressure Steam |
| LPS | Low Pressure Steam    |

|      |                       |
|------|-----------------------|
| HTHW | High Temp Hot Water   |
| MTHW | Medium Temp Hot Water |

|     |                    |
|-----|--------------------|
| DW  | Domestic Water     |
| DHW | Domestic Hot Water |

|     |                            |
|-----|----------------------------|
| EM  | Electric Meter             |
| EMn | Electric Meter n (n = 1-4) |

|     |                       |
|-----|-----------------------|
| GM  | Gas Meter             |
| GMn | Gas Meter n (n = 1-4) |

Binary Inputs

|        |                                    |
|--------|------------------------------------|
| SPVSD  | Secondary CHW Pump VSD             |
| SPnVSD | Secondary CHW Pump n (n = 1-9) VSD |
| SPVSD  | Secondary HW Pump VSD              |
| SPnVSD | Secondary HW Pump n (n = 1-9) VSD  |
| TVIB   | Tower Vibration                    |
| LW     | Low Water                          |
| BFF    | Boiler Flame Failure               |
| BnFF   | Boiler n (n = 1-9) Flame Failure   |

Analog and Binary Outputs

|        |  |
|--------|--|
| CTBYP  | Cooling Tower Bypass Valve             |
| CTnBYP | Cooling Tower n (n = 1-9) Bypass Valve |
| HX     | Heat Exchanger Valve                   |
| HXn    | Heat Exchanger n (n = 1-9) Valve       |

SUFFIXES

Binary Outputs

|     |         |         |
|-----|---------|---------|
| -C  | Command | Off/On  |
| -EN | Enable  | Dis/Ena |
| -OP | Open    | Off/On  |
| -CL | Close   | Off/On  |

Analog Outputs


|     |          |   |
|-----|----------|---|
| -O  | Output   | % |
| -O1 | Output 1 | % |
| -O2 | Output 2 | % |

Binary Inputs

|     |                |              |
|-----|----------------|--------------|
| -S  | Status         | Off/On       |
| -A  | Alarm          | Normal/Alarm |
| -ES | End Switch     | Close/Open   |
| -FS | Flow Switch    | Off/On       |
| -SD | Smoke Detector | Normal/Alarm |
| -S  | Status         | Clean/Dirty  |

Analog Inputs

|      |                   |        |
|------|-------------------|--------|
| -T   | Temp              | Deg F  |
| -H   | Humidity          | % RH   |
| -WB  | Wetbulb           | Deg F  |
| -Q   | Air Quality       | PPM    |
| -L   | Level             | % Full |
| -P   | Static Pressure   | In WC  |
| -DP  | Diff Pressure     | In WC  |
| -VP  | Velocity Pressure | In WC  |
| -E   | Enthalpy          | BTU/Lb |
| -DEW | Dewpoint          | Deg F  |
| -F   | Flow              | CFM    |
| -F   | Flow              | GPM    |
| -F   | Flow              | Lb/Hr  |
| -%   | Speed             | %      |
| -I   | Amps              | Amps   |
| -V   | Volts             | Volts  |
| -KW  | Kilowatts         | KW     |
| -W   | Watts             | Watts  |
| -TON | Tons              | Tons   |
| -CO  | CO                | PPM    |
| -CO2 | CO2               | PPM    |
| -HP  | Horsepower        | HP     |
| -P   | Pressure          | psi    |
| -DP  | Diff Pressure     | psi    |
| -POS | Position          | %      |
| -BTU | BTUs              | BTU    |

|   |                 |   |       |  |                   |                                   |     |
|---|-----------------|---|-------|--|-------------------|-----------------------------------|-----|
| Drawing Title<br><b>Standard Hardware Naming Conventions</b>    |                 |   |       |  |                   |                                   |     |
|   |                 |   |       |  |                   |                                   |     |
|   |                 |   |       |  |                   |                                   |     |
|   |                 | REFERENCE DRAWING   |       | NO.  | REVISION-LOCATION |                                   | ECN |
| Sales Engineer  | Project Manager | Application Engineer  | DRAWN |  | APPROVED          |                                   |     |
| Mary Pullo  | Jeffrey Loupee  | Qusai Alqadi  | BY    | DATE   | BY                | DATE                              |     |
| Project Title<br><b>Bailly Elem School Nurse Renov Duneland</b> |                 |  |       | Branch Information   |                   | CONTRACT NUMBER                   |     |
|   |                 |   |       | Johnson Controls, Inc.<br>1500 Huntington Drive<br>Calumet City, IL 60409-5402<br>Phone: (708) 474-1717<br>Fax: (708) 474-6551 |                   | <b>0N02-0154</b>                  |     |
|   |                 |   |       |  |                   | DRAWING NUMBER<br><b>00.02-00</b> |     |

STANDARD SOFTWARE NAMING CONVENTIONS

AIR HANDLING UNIT PREFIXES

Setpoints

|       |                               |
|-------|-------------------------------|
| DAT   | Discharge Air Temperature     |
| SAT   | Supply Air Temperature        |
| DAP   | Discharge Air Static Pressure |
| SAP   | Supply Air Static Pressure    |
| RAP   | Return Air Static Pressure    |
| DAH   | Discharge Air Humidity        |
| MAT   | Mixed Air Temperature         |
| RAT   | Return Air Temperature        |
| RAH   | Return Air Humidity           |
| RMT   | Room Temperature              |
| RMH   | Room Humidity                 |
| ZNT   | Zone Temperature              |
| ZNH   | Zone Humidity                 |
| MALT  | Mixed Air Low Temperature     |
| HDT   | Hot Deck Temperature          |
| CDT   | Cold Deck Temperature         |
| CDLT  | Cold Deck Low Temperature     |
| PHT   | Preheat Temperature           |
| PCT   | PreCool Temperature           |
| ACLG  | Actual Cooling                |
| AHTG  | Actual Heating                |
| ASCLG | Actual Supply Cooling         |
| ACDT  | Actual Cold Deck Temperature  |
| ASHTG | Actual Supply Heating         |
| AHDT  | Actual Hot Deck Temperature   |
| OCLG  | Occupied Cooling              |
| OHTG  | Occupied Heating              |
| UCLG  | Unoccupied Cooling            |
| UHTG  | Unoccupied Heating            |
| ZNCLG | Zone Cooling                  |
| ZNHTG | Zone Heating                  |
| BBHTG | Baseboard Heating             |
| FTHTG | Fin Tube Heating              |
| SAF   | Supply Air Flow               |
| RAF   | Return Air Flow               |
| OAF   | Outside Air Flow              |
| EAF   | Exhaust Air Flow              |
| DAF   | Discharge Air Flow            |
| MOAF  | Minimum Outside Air Flow      |
| SAH   | Supply Air Humidity           |
| ZNnT  | Zone n (n = 1-9) Temperature  |
| ZNnH  | Zone n (n = 1-9) Humidity     |
| HDH   | Hot Deck Humidity             |

Reset Parameters

|     |                         |
|-----|-------------------------|
| SAT | Supply Air Temperature  |
| HDT | Hot Deck Temperature    |
| CDT | Cold Deck Temperature   |
| ZNT | Zone Temperature        |
| OAT | Outside Air Temperature |

Modes

|      |                 |
|------|-----------------|
| ECON | Economizer Mode |
|------|-----------------|

CENTRAL PLANT PREFIXES

Devices (both Input & Output)

|       |  |
|-------|--|
| CH    | Chiller                                  |
| CHn   | Chiller n (n = 1-9)                      |
| BLR   | Boiler                                   |
| BLRn  | Boiler n (n = 1-9)                       |
| CT    | Cooling Tower                            |
| CTn   | Cooling Tower n (n = 1-9)                |
| P     | Pump                                     |
| Pn    | Pump n (n = 1-9)                         |
| CHP   | Chilled Water Pump                       |
| CHPn  | Chilled Water Pump n (n = 1-9)           |
| PCHP  | Primary Chilled Water Pump               |
| PCHPn | Primary Chilled Water Pump n (n = 1-9)   |
| SCHP  | Secondary Chilled Water Pump             |
| SCHPn | Secondary Chilled Water Pump n (n = 1-9) |
| CWP   | Condenser Water Pump                     |
| CWPn  | Condenser Water Pump n (n = 1-9)         |
| HWP   | Hot Water Pump                           |
| HWPn  | Hot Water Pump n (n = 1-9)               |
| PHWP  | Primary HW Pump                          |
| PHWPn | Primary HW Pump n (n = 1-9)              |
| SHWP  | Secondary HW Pump                        |
| SHWPn | Secondary HW Pump n (n = 1-9)            |

Setpoints

|         |  |
|---------|--|
| CHDL    | Chiller Demand Limit                       |
| CHnDL   | Chiller n (n = 1-9) Demand Limit           |
| PCHST   | Primary CH Supply Temperature              |
| PCHRT   | Primary CH Return Temperature              |
| CHST    | Chilled Water Supply Temperature           |
| CHRT    | Chilled Water Return Temperature           |
| CWST    | Cond Water Supply Temperature              |
| CWRT    | Cond Water Return Temperature              |
| SCHST   | Secondary CH Supply Temperature            |
| SCHRT   | Secondary CH Return Temperature            |
| DTST    | Dual Temperature Supply Temperature        |
| DTRT    | Dual Temperature Return Temperature        |
| TCHST   | Tertiary CH Supply Temperature             |
| TCHRT   | Tertiary CH Return Temperature             |
| PHWST   | Primary HW Supply Temperature              |
| PHWRT   | Primary HW Return Temperature              |
| HWST    | Hot Water Supply Temperature               |
| HWRT    | Hot Water Return Temperature               |
| SHWST   | Secondary HW Supply Temperature            |
| SHWRT   | Secondary HW Return Temperature            |
| HXnCHST | Heat Exchanger n (n = 1-4) CHS Temperature |
| HXnCWS  | Heat Exchanger n (n = 1-4) CWS Temperature |
| HXnHWS  | Heat Exchanger n (n = 1-4) HWS Temperature |
| CHCHST  | Chiller CH Supply Temperature              |
| CHnCHST | Chiller n (n = 1-9) CH Supply Temperature  |
| CHCWST  | Chiller CW Supply Temperature              |
| CHnCWST | Chiller n (n = 1-9) CH Supply Temperature  |
| BnHWST  | Boiler n (n = 1-9) HW Supply Temperature   |

Reset Parameters

|       |                                  |
|-------|----------------------------------|
| HWST  | Hot Water Supply Temperature     |
| SHWST | Secondary HW Supply Temperature  |
| CHST  | Chilled Water Supply Temperature |

TERMINAL BOX PREFIXES

Setpoints

|       |                                   |
|-------|-----------------------------------|
| AZNT  | Actual Zone Temperature           |
| OCCFM | Occupied CFM                      |
| UNCFM | Unoccupied CFM                    |
| WUCFM | Warmup CFM                        |
| OCSAC | Occupied Supply Air CFM           |
| UNSAC | Unoccupied Supply Air CFM         |
| WUSAC | Warmup Supply Air CFM             |
| OCRAC | Occupied Return Air CFM           |
| UCRAC | Unoccupied Return Air CFM         |
| WURAC | Warmup Return Air CFM             |
| OCEAC | Occupied Exhaust Air CFM          |
| UNEAC | Unoccupied Exhaust Air CFM        |
| WUEAC | Warmup Exhaust Air CFM            |
| OCLGC | Occupied Cooling CFM              |
| UCLGC | Unoccupied Cooling CFM            |
| OHTGC | Occupied Heating CFM              |
| UCLGC | Unoccupied Cooling CFM            |
| OBMNC | Occupied Base Board Minimum CFM   |
| UBMNC | Unoccupied Base Board Minimum CFM |
| OBMXC | Occupied Base Board Maximum CFM   |
| UBMXC | Unoccupied Base Board Maximum CFM |
| OCDMN | Occupied Cold Deck Minimum CFM    |
| UCDMN | Unoccupied Cold Deck Minimum CFM  |
| OCDMX | Occupied Cold Deck Maximum CFM    |
| UCDMX | Unoccupied Cold Deck Maximum CFM  |
| OHDMN | Occupied Hot Deck Minimum CFM     |
| UHDMN | Unoccupied Hot Deck Minimum CFM   |
| OHDMX | Occupied Hot Deck Maximum CFM     |
| UHDMX | Unoccupied Hot Deck Maximum CFM   |
| OCMNC | Occupied Cooling Minimum CFM      |
| UCMXC | Unoccupied Cooling Maximum CFM    |
| OHMNC | Occupied Hot Deck Minimum CFM     |
| UHMXC | Unoccupied Hot Deck Maximum CFM   |
| WCMNC | Warmup Cooling Minimum CFM        |
| WCMXC | Warmup Cooling Maximum CFM        |
| WHMNC | Warmup Heating Minimum CFM        |
| WHMXC | Warmup Heating Maximum            |
| WCDMN | Warmup Cold Deck Minimum CFM      |
| WCDMX | Warmup Cold Deck Maximum CFM      |
| WHDMN | Warmup Hot Deck Minimum CFM       |
| WHDMX | Warmup Hot Deck Maximum CFM       |

SUFFIXES

Analog Outputs

|     |            |      |
|-----|------------|------|
| -SP | Setpoint   | Setp |
| -RB | Reset Band | Setp |
| -LL | Low Limit  | Setp |
| -HL | High Limit | Setp |

Analog Inputs


|     |          |      |
|-----|----------|------|
| -SP | Setpoint | Setp |
|-----|----------|------|

Analog Datapoints

|     |                |      |
|-----|----------------|------|
| -SQ | Sequence       | of X |
| -Z  | PID Controller |      |

Binary Datapoints

|     |          |     |
|-----|----------|-----|
| -SQ | Sequence | 1/2 |
|-----|----------|-----|

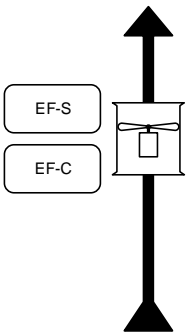
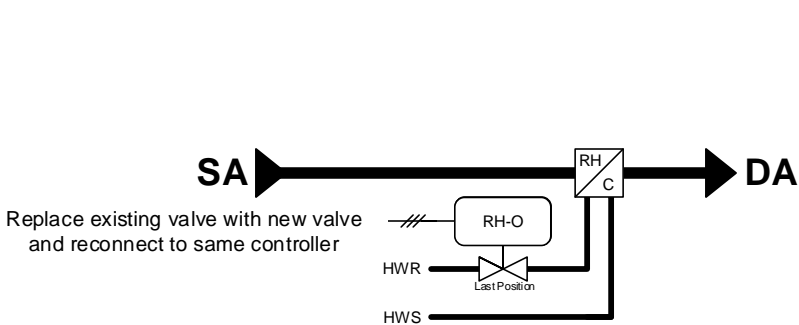
|  |                 |   |       |                    |                   |                 |     |
|--|-----------------|---|-------|--------------------|-------------------|-----------------|-----|
| Drawing Title<br>Standard Software Naming Conventions  |                 |   |       |                    |                   |                 |     |
|  |                 |   |       |                    |                   |                 |     |
|  |                 |   |       |                    |                   |                 |     |
|  |                 | REFERENCE DRAWING   |       | NO.                | REVISION-LOCATION |                 | ECN |
| Sales Engineer   | Project Manager | Application Engineer  | DRAWN |                    | APPROVED          |                 |     |
| Mary Pullo   | Jeffrey Loupee  | Qusai Alqadi  | BY    | DATE               | BY                | DATE            |     |
| Project Title<br>Bailly Elem School Nurse Renov Duneland   |                 |  |       | Branch Information |                   | CONTRACT NUMBER |     |
| Johnson Controls, Inc.<br>1500 Huntington Drive<br>Calumet City, IL 60409-5402<br>Phone: (708) 474-1717<br>Fax: (708) 474-6551 |                 |   |       | 0N02-0154          |                   |                 |     |
|  |                 |   |       |                    |                   | DRAWING NUMBER  |     |
|  |                 |   |       |                    |                   | 00.03-00        |     |



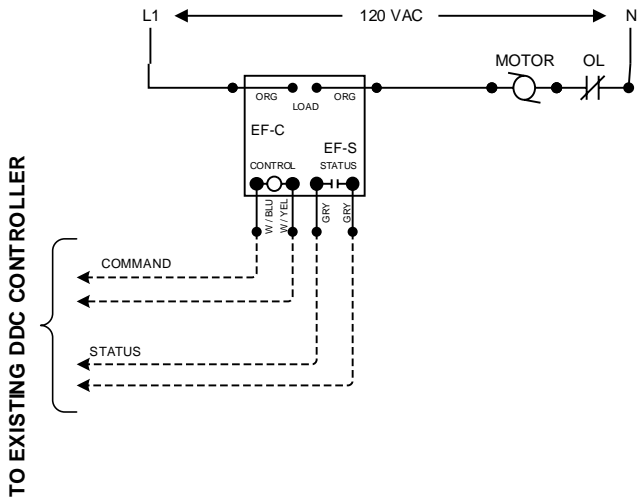
MISC CONTROLS

BILL OF MATERIALS

| Designation    | Qty | Part Number        | Description                           |
|----------------|-----|--------------------|---------------------------------------|
| PANEL          | 1   | EXISTING PANEL     |                                       |
| CONTROLLER     | 1   | MS-FEC2611-0       | EXISTING CONTROLLER                   |
| Field Devices: |     |                    |                                       |
| EF-C, -S       | 1   | H120               | CSR, N.O., 24V, FRAC HP, N.O., SERIES |
| RH-O           | 1   | SEE VALVE SCHEDULE |                                       |



EXHAUST FAN MOTOR WIRING




- xxxxxx

SOLID BOX = FIELD DEVICE REQUIRED  
( DESIGNATED AS EITHER FIELD OR PANEL IN BOM )
- xxxxxx

DASHED BOX = FIELD CONNECTION POINT ONLY  
( DESIGNATED AS OTHER IN BOM )
- xxxxxx


DOTTED BOX = SOFTWARE MAPPED POINT  
( DESIGNATED AS OTHER IN BOM )

|   |                 |  |       |                   |                                     |      |
|---|-----------------|--|-------|-------------------|-------------------------------------|------|
| Drawing Title<br><b>Misc Controls</b>                               |                 |  |       |                   |                                     |      |
|   |                 |  |       |                   |                                     |      |
|   |                 |  |       |                   |                                     |      |
|   |                 | REFERENCE DRAWING  | NO.   | REVISION-LOCATION | ECN                                 | DATE |
| Sales Engineer  | Project Manager | Application Engineer   | DRAWN | APPROVED          |                                     |      |
| Mary Pullo  | Jeffrey Loupee  | Qusai Alqadi   | BY    | DATE              | BY                                  | DATE |
| Project Title<br><b>Bailly Elem School Nurse Renov<br/>Duneland</b> |                 |   |       |                   | CONTRACT NUMBER<br><b>0N02-0154</b> |      |
|   |                 |  |       |                   | DRAWING NUMBER<br><b>02.00-00</b>   |      |
|   |                 | Branch Information<br>Johnson Controls, Inc.<br>1500 Huntington Drive<br>Calumet City<br>IL 60409-5402<br>Phone: (708) 474-1717<br>Fax: (708) 474-6551 |       |                   |                                     |      |



VALVE SCHEDULE

| Tag  |        |         |      |           | Valve Information |              |               |               |                      |                 |        |                      |                      |                     |                         |                        |                        |                       |                 |            | Actuator Information |                  |
|------|--------|---------|------|-----------|-------------------|--------------|---------------|---------------|----------------------|-----------------|--------|----------------------|----------------------|---------------------|-------------------------|------------------------|------------------------|-----------------------|-----------------|------------|----------------------|------------------|
| Item | System | Service | Qty. | Ref. Dwg. | <div>Select</div> | Valve Family | Configuration | Fail Position | Inlet Pipe Size (in) | Valve Size (in) | Medium | Flow (gpm or lbs/hr) | Design Delta P (psi) | Valve Delta P (psi) | Design Coefficient (Cv) | Valve Coefficient (Cv) | Design Close Off (psi) | Valve Close Off (psi) | Trim Material   | Connection | Code Number          | Actuator Control |
|      |        |         |      |           | Code Number       |              |               |               |                      |                 |        |                      |                      |                     |                         |                        |                        |                       |                 |            |                      |                  |
| 1    | RHC    | RH-O    | 1    |           | VG1245AG+943GGA   | Ball Valve   | 2-Way         | Valve Closed  | 3/4                  | 1/2             | Water  | 8.9                  | 4.0                  | 3.6                 | 4.5                     | 4.7                    | 200.0                  | 200.0                 | Stainless Steel | Threaded   | VA9203-GGA-2Z        | 0-10VDC PROP     |

|   |                 |   |     |  |     |                                     |    |
|---|-----------------|---|-----|--|-----|-------------------------------------|----|
| Drawing Title<br><b>Valve Schedule</b>                          |                 |   |     |  |     |                                     |    |
|   |                 |   |     |  |     |                                     |    |
|   |                 |   |     |  |     |                                     |    |
|   |                 | REFERENCE DRAWING   | NO. | REVISION-LOCATION  | ECN | DATE                                | BY |
| Sales Engineer  | Project Manager | Application Engineer  |     | DRAWN  |     | APPROVED                            |    |
| Mary Pullo  | Jeffrey Loupee  | Qusai Alqadi  | BY  | DATE   | BY  | DATE                                |    |
| Project Title<br><b>Bailly Elem School Nurse Renov Duneland</b> |                 |  |     | Branch Information<br>Johnson Controls, Inc.<br>1500 Huntington Drive<br>Calumet City, IL 60409-5402<br>Phone: (708) 474-1717<br>Fax: (708) 474-6551 |     | CONTRACT NUMBER<br><b>0N02-0154</b> |    |
|   |                 |   |     |  |     | DRAWING NUMBER<br><b>VS-1</b>       |    |



P.O. Box 2232, Chesterton, IN 46304  
PHONE (219) 926-7400 WEBSITE: EllisElectricNWI.com

August 3, 2020

**WARRANTY**

Duneland School Corporation  
601 West Morgan Avenue  
Chesterton, IN 46304

Re: 2020 Nurse's Office Renovations at Bailly Elementary School  
Chesterton, Indiana

We hereby warrant that the work we have installed on the above mentioned project has been done in strict accordance with the drawings and specifications and that the work will fulfill the requirements of those specifications.

We agree to repair or replace, or cause to be repaired or replaced, any or all of the work which may prove to be defective in workmanship or materials within a period of one (1) year from the date of substantial completion, August 3, 2020, for the 2020 Nurse's Office Renovations at Bailly Elementary School Project for Duneland School Corporation, ordinary wear and tear and unusual abuse or neglect excepted.

Sincerely,

A handwritten signature in dark ink that reads "David Ellis". The signature is written in a cursive, flowing style.

David Ellis  
President, Ellis Electric Inc.



302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Transmittal #:** 15

**Date:** 6/3/2020

**L-D Job #:** 56-521

**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**Subject:** 16111 Conduit Submittal

### WE ARE SENDING YOU

☒ Attached

☐ Under separate cover via the following items:

☐ Shop drawings

☐ Sketch(s)

☐ Plans

☐ Samples

☐ O&M Manual

☐ Change order

☐ Specifications

☒ Submittal

| Document Type | Copies | Date | No.           | Description          |
|---------------|--------|------|---------------|----------------------|
| Submittal     | 1      |      | 16111-1 Rev 0 | Conduit Product Data |

### THESE ARE TRANSMITTED as checked below:

☒ For approval

☐ Reviewed as submitted

☐ Resubmit \_\_\_ copies for approval

☐ For your use

☐ Reviewed as noted

☐ Submit \_\_\_ copies for distribution

☐ As requested

☐ Returned for corrections

☐ Return \_\_\_ corrected prints

☐ For review and comment

☐ Other

☐ FOR BIDS DUE

☐ PRINTS RETURNED AFTER LOAN TO US

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_



## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.

800 S 5TH STREET

CHESTERTON, IN 46304

**Spec Section No:** 16111

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/3/2020

**Spec Section Title:** Conduit

**Submittal Title:** Conduit Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.

Contractor's Stamp



**Architect:**

TRIA ARCHITECTURE

Margaret Gory

Architect's Stamp



☐ REVIEWED AS SUBMITTED

☒ REVIEWED AS NOTED

☐ REVISE AND RESUBMIT

☐ NOT ACCEPTED

THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.

BY

Keith O'Higgins

DATE

06-09-20

Engineer's Stamp

# Steel EMT

## Submittal Sheet



Wheatland Tube's steel EMT is a lightweight wiring solution tough enough for any environment. Our steel EMT is produced from mild steel strip in our state-of-the-art ERW mills using the industry's leading in-line galvanizing process. It is easy to bend, and the proprietary ID coating allows for faster wire-pulling. Wheatland Tube's steel EMT is available in trade sizes ½-4 in eight vivid colors and 10' and 20' lengths.

### Listing

Wheatland Tube steel EMT is UL® Listed to UL-797. It is manufactured in accordance with ANSI® C80.3 and federal specification WW-C-563, and it complies with CSA C22.2 No. 83.1.



### Locations

Wheatland Tube steel EMT meets the requirements of National Electrical Code® Article 358 for open, concealed and concrete slab installations. It is compatible with all types of building materials.

### Testing

Wheatland Tube performs regular tests of its steel EMT for weld strength, bendability, plating thickness, all dimensions, and uniform smoothness of the interior coating.

### Coatings

Wheatland Tube steel EMT is in-line galvanized to prevent chipping, cracking and peeling, and a secondary clear coating provides further protection against corrosion. A special polymer ID coating protects against corrosion and speeds up wire installation.

### Color

Color EMT from Wheatland Tube is constructed the same way and meets the same requirements as our standard steel EMT, and it is available in red, white, blue, green, yellow, orange, purple and black.

## SUBMITTAL INFORMATION

PROJECT: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

DATE: \_\_\_\_\_

ENGINEER: \_\_\_\_\_

SPECIFICATION REFERENCE: \_\_\_\_\_

SYSTEM TYPE: \_\_\_\_\_

LOCATIONS: \_\_\_\_\_

COMMENTS: \_\_\_\_\_



700 South Dock Street  
Sharon, PA 16146  
P 800.257.8182  
F 724.346.7260

info@wheatland.com  
wheatland.com  
Follow us on Twitter:  
@WheatlandTube



**Wheatland** Tube  
A DIVISION OF ZEKELMAN INDUSTRIES

# Steel EMT

## Submittal Sheet



1/2 inch not allowed

### EMT WEIGHTS, DIMENSIONS AND PACKAGING (10' LENGTHS)

| TRADE SIZE     | WEIGHT/100 FT. | MASTER BUNDLE QUANTITY |      | MASTER BUNDLE WEIGHT | OUTSIDE DIAMETER |        | INSIDE DIAMETER* |        |
|----------------|----------------|------------------------|------|----------------------|------------------|--------|------------------|--------|
|                | lbs.           | Pieces                 | ft.  | lbs.                 | in.              | mm     | in.              | mm     |
| <del>1/2</del> | 30             | 700                    | 7000 | 2100                 | 0.706            | 17.93  | 0.622            | 15.80  |
| 3/4            | 46             | 500                    | 5000 | 2300                 | 0.922            | 23.42  | 0.824            | 20.93  |
| 1              | 67             | 300                    | 3000 | 2010                 | 1.163            | 29.54  | 1.049            | 26.64  |
| 1 1/4          | 101            | 200                    | 2000 | 2020                 | 1.510            | 38.35  | 1.380            | 35.05  |
| 1 1/2          | 116            | 150                    | 1500 | 1740                 | 1.740            | 44.20  | 1.610            | 40.89  |
| 2              | 148            | 120                    | 1200 | 1776                 | 2.197            | 55.80  | 2.067            | 52.50  |
| 2 1/2          | 216            | 61                     | 610  | 1317.6               | 2.875            | 73.03  | 2.731            | 69.37  |
| 3              | 263            | 51                     | 510  | 1341.3               | 3.500            | 88.90  | 3.356            | 85.24  |
| 3 1/2          | 349            | 37                     | 370  | 1291.3               | 4.000            | 101.60 | 3.834            | 97.38  |
| 4              | 393            | 30                     | 300  | 1179                 | 4.500            | 114.30 | 4.334            | 110.08 |

\* For information only, not a UL-797 requirement.

Silver (traditional galvanized EMT) is available from stock 1/2-4. Minimum order quantities may apply.

### EMT WEIGHTS, DIMENSIONS AND PACKAGING (20' LENGTHS)

| TRADE SIZE | WEIGHT/100 FT. | MASTER BUNDLE QUANTITY |      | MASTER BUNDLE WEIGHT | OUTSIDE DIAMETER |        | INSIDE DIAMETER* |        |
|------------|----------------|------------------------|------|----------------------|------------------|--------|------------------|--------|
|            | lbs.           | Pieces                 | ft.  | lbs.                 | in.              | mm     | in.              | mm     |
| ½          | 30             | 175                    | 3500 | 1050                 | 0.706            | 17.93  | 0.622            | 15.80  |
| ¾          | 46             | 125                    | 2500 | 1150                 | 0.922            | 23.42  | 0.824            | 20.93  |
| 1          | 67             | 75                     | 1500 | 1005                 | 1.163            | 29.54  | 1.049            | 26.64  |
| 1¼         | 101            | 50                     | 1000 | 1010                 | 1.510            | 38.35  | 1.380            | 36.05  |
| 1½         | 116            | 37                     | 740  | 858                  | 1.740            | 44.20  | 1.610            | 40.89  |
| 2          | 148            | 37                     | 740  | 1095                 | 2.197            | 55.80  | 2.067            | 52.50  |
| 2½         | 216            | 19                     | 380  | 821                  | 2.875            | 73.03  | 2.731            | 69.37  |
| 3          | 263            | 19                     | 380  | 999                  | 3.500            | 88.90  | 3.356            | 85.24  |
| 3½         | 349            | 19                     | 380  | 1326                 | 4.000            | 101.60 | 3.834            | 97.38  |
| 4          | 393            | 10                     | 200  | 786                  | 4.500            | 114.30 | 4.334            | 110.08 |

\* For information only, not a UL-797 requirement.

Silver (traditional galvanized EMT) is available from stock 1/2-4. Minimum order quantities may apply.

WEL-022719



# EMT SET SCREW COUPLINGS STEEL

**USES**  
Connects two lengths of EMT conduit

**MATERIAL**  
Steel

**FEATURES**  
Concrete-tight when taped.

**NOTES**  
1-1/4" thru 4" include 2 set screws.  
P suffix denotes pail pack.



| ITEM#   | TRADE SIZE      | INNER QTY | MASTER QTY | MASTER WEIGHT (LB) | UPC          |
|---------|-----------------|-----------|------------|--------------------|--------------|
| MES-760 | <del>1/2"</del> | 50        | 250        | 21.350             | 784297200205 |
| MES-761 | 3/4"            | 25        | 125        | 15.700             | 784297200212 |
| MES-762 | 1"              | 20        | 100        | 17.950             | 784297200229 |
| MES-763 | 1-1/4"          | 5         | 25         | 8.050              | 784297200236 |
| MES-764 | 1-1/2"          | N/A       | 10         | 3.650              | 784297200243 |
| MES-765 | 2"              | N/A       | 10         | 4.750              | 784297200250 |
| MES-766 | 2-1/2"          | N/A       | 8          | 11.100             | 784297200267 |

| ITEM#   | TRADE SIZE | INNER QTY | MASTER QTY | MASTER WEIGHT (LB) | UPC          |
|---------|------------|-----------|------------|--------------------|--------------|
| MES-767 | 3"         | N/A       | 4          | 7.350              | 784297200274 |
| MES-768 | 3-1/2"     | N/A       | 4          | 8.850              | 784297200281 |
| MES-769 | 4"         | N/A       | 4          | 10.250             | 784297200298 |







# EMT SET SCREW BOX CONNECTORS STEEL

**USES**  
Connects EMT conduit to box or enclosure

**MATERIAL**  
Steel

**FEATURES**  
Tubular construction w/staked robertson head screws.  
Concrete-tight when taped.  
Insulated throat.

**NOTES**  
1-1/4" thru 4" include 2 set screws.  
P suffix denotes pail pack.

**CERTIFICATIONS**  
cULus Listed for EMT conduit only.  
Federal Spec. W-F408E. NEMA FB-1



| ITEM#   | TRADE SIZE | INNER QTY | MASTER QTY | MASTER WEIGHT (LB) | UPC          |
|---------|------------|-----------|------------|--------------------|--------------|
| MES-750 | 1/2"       | 50        | 250        | 23.750             | 784297200007 |
| MES-751 | 3/4"       | 25        | 125        | 18.100             | 784297200014 |
| MES-752 | 1"         | 20        | 100        | 19.950             | 784297200021 |
| MES-753 | 1-1/4"     | 5         | 25         |                    |              |
| MES-754 | 1-1/2"     | N/A       | 10         | 4.200              | 784297200045 |

| ITEM#   | TRADE SIZE | INNER QTY | MASTER QTY | MASTER WEIGHT (LB) | UPC          |
|---------|------------|-----------|------------|--------------------|--------------|
| MES-755 | 2"         | N/A       | 10         | 6.600              | 784297200052 |
| MES-756 | 2-1/2"     | N/A       | 8          |                    |              |
| MES-757 | 3"         | N/A       | 4          | 6.500              | 784297200076 |
| MES-758 | 3-1/2"     | N/A       | 4          | 7.900              | 784297200083 |
| MES-759 | 4"         | N/A       | 4          | 8.950              | 784297200090 |



# Type EF

General Construction Grade  
Liquid-Tight Flexible Metal Conduit (LFMC)



## Construction

- Constructed of continuously interlocked hot dipped zinc galvanized steel core for exceptional crush and corrosion resistance.
- Durable, sunlight resistant thermoplastic PVC jacket that resists heat, oil and chemical breakdown.



Square-Locked Design 3/8" through 2"

## Installation

- Conduit used with standard liquid-tight fitting for easy installation. IP 66/67 Rated when installed with approved fittings.
- Delivers superior wiring protection where agency approvals are not required.
- Manufactured in a full range of trade sizes from 3/8" through 2".
- Smooth appearing jacket for exposed applications.
- Rated for temperature range of -4°F to +176°F (-20°C to +80°C).
- Provides liquid-tight raceway for electrical conductors.

[www.naed.org](http://www.naed.org)

[www.nema.org](http://www.nema.org)

[www.anametelectrical.com](http://www.anametelectrical.com)

See pages 23-28 for fittings



• RoHS WEEE COMPLIANT

## Type EF

Gray thermoplastic PVC jacket  
no bonding wire



## Product Specifications

## Ordering Information

| Electrical Trade Size |    | Inside Diameter |       | Outside Diameter |       | Approx Inside Bend Radius | Approx Weight lbs. | Small Carton |       | Standard Carton |       | Small Reels |       | Standard Reels |       |
|-----------------------|----|-----------------|-------|------------------|-------|---------------------------|--------------------|--------------|-------|-----------------|-------|-------------|-------|----------------|-------|
| Inches                | mm | Inches          |       | Inches           |       | Inches                    | PER 100 FT.        | Length       | NAED  | Length          | NAED  | Length      | NAED  | Length         | NAED  |
|                       |    | MIN.            | MAX.  | MIN.             | MAX.  |                           |                    | Feet         | PIN   | Feet            | PIN   | Feet        | PIN   | Feet           | PIN   |
| 3/8                   | 12 | .485            | .505  | .690             | .710  | 2.0                       | 17                 | 100          | 39402 | 250             | 39401 | 800         | 39404 |                |       |
| 1/2                   | 16 | .620            | .640  | .820             | .840  | 2.5                       | 19                 | 100          | 39412 | 200             | 39411 | 500         | 39414 | 1000           | 39413 |
| 3/4                   | 21 | .815            | .835  | 1.030            | 1.050 | 3.0                       | 26                 |              |       | 100             | 39422 | 500         | 39428 | 1000           | 39429 |
| 1                     | 27 | 1.030           | 1.055 | 1.290            | 1.315 | 4.0                       | 45                 |              |       | 100             | 39431 | 400         | 39438 |                |       |
| 1-1/4                 | 35 | 1.370           | 1.395 | 1.635            | 1.660 | 4.5                       | 65                 |              |       | 50              | 39441 | 250         | 39448 |                |       |
| 1-1/2                 | 41 | 1.575           | 1.600 | 1.865            | 1.900 | 5.5                       | 95                 |              |       | 50              | 39451 | 150         | 39454 |                |       |
| 2                     | 53 | 2.020           | 2.045 | 2.340            | 2.375 | 7.0                       | 120                |              |       | 50              | 39461 | 100         | 39468 |                |       |

NOTE: 1. Other colors available upon request.  
2. Standard SEALTITE® Type EFST is recommended in sizes above 2"

### TYPICAL SPECIFICATION:

Conduit shall be Anaconda SEALTITE® Type EF. Conduit shall provide a flexible liquid-tight raceway for wiring and shall be constructed of continuously interlocked hot dipped zinc galvanized steel core with sunlight resistant PVC outer jacket. Type EF conduit shall be used for applications where agency approvals are not required. Conduit IP 66/67 rated when installed with approved end fittings.

# Alflex™

## Type RWA Reduced Wall Aluminum Flexible Metal Conduit



Aluminum Flexible Metal Conduit. High Strength Aluminum Alloy Strip. 5/16" is UL Recognized Component. UL Listed in sizes 3/8" to 3".

### APPLICATIONS

**Alflex™ Type RWA (Reduced Wall Aluminum) Flexible Metal Conduit is suitable for the following installations:**

- Environmental air-handling spaces per NEC 300.22(C)
- Power and lighting branch circuit conductors and cables for connecting receptacles, luminaires, equipment, office partitions, etc.
- Metal raceway for wires and cables per NEC (ANSI/NFPA-70) Article 348
- Motor feeder, branch, and control circuit conductors and cables
- Class 1, Class 2, Class 3 Remote-control, signaling, and power-limited circuit conductors and cables
- Fire alarm system conductors and cables of power-limited or non-power-limited fire alarm circuits
- Voice, data, communications and video cables including CATV and optical fiber cables
- Concealed or exposed installations per NEC 348 and the applicable NEC provisions
- Elevators, hoistways, and escalators per NEC 620.21
- Listed wired fixtures per NEC 410.77(C)
- Raised floors for connection of information technology per NEC 645.5(D)(2) and 645.5(D)
- Places of assembly and theaters per NEC 518 and 520
- Cranes & hoists per NEC 610.11(C)
- As a grounding conductor for lengths up to 6 feet (20A max) as per NEC 250.118(5)
- Electric signs and outline lighting per NEC 600.7, 600.31 (1000 volts or less), and 600.32 (>1000 volts)
- Hazardous location, Class 1, Div. 2, for flexible connectors only per NEC 501.10(B)(2) & 501.30(B)
- UL 1, 2, & 3 Hour Through-Penetration Firestop Systems: C-AJ-1462, C-AJ-1463, C-AJ-1464, W-L-1308, and W-L-1309

### STANDARDS & REFERENCES

**Alflex™ Type RWA Flexible Metal Conduit meets or exceeds the following requirements:**

- UL Listed per UL 1, Standard for Safety for Flexible Metal Conduit, ANSI/UL-1
- Meets federal specification WW-C-566c
- NEC Type Designation - Article 348, Type FMC (flexible metal conduit)
- UL Product Category- DXUZ
- REACH/RoHS-2 (Chemical Limit) Compliant

### CONSTRUCTION

Alflex™ Type RWA is manufactured with a lightweight, high strength aluminum alloy. Metal strip is helically formed into continuously interlocked flexible metal conduit that can withstand impact and crushing forces.



The Power of Connections.™

©2016 Southwire Company, LLC. All rights reserved. \*Registered Trademark of Southwire Company, LLC.  
One Southwire Drive, Carrollton, GA 30119, USA



**Southwire®**

| TRADE SIZE<br>(INCHES)   | STOCK NUMBER          |                        |                        | DIAMETER<br>(INCHES) |                    | WEIGHT<br>(LBS/100') | MINIMUM<br>BEND RADIUS<br>(INCHES) |
|--|-----------------------|------------------------|------------------------|----------------------|--------------------|----------------------|------------------------------------|
|  |                       |                        |                        | INNER<br>(MIN/MAX)   | OUTER<br>(MIN/MAX) |                      |                                    |
| 5/16   | 55-28-53-01<br>(100') | 55-28-53-02<br>(1000') |                        | .312/.337            | .470/.510          | 5.5                  | 2                                  |
| 3/8  | 55-08-20-03<br>(100') | 55-08-20-06<br>(250')  | 55-08-20-04<br>(1000') | .375/.393            | .56/.61            | 7                    | 2                                  |
| 1/2  | 55-08-21-03<br>(100') | 55-08-21-02<br>(500')  | 55-08-21-04<br>(1000') | .625/.645            | .86/.92            | 9                    | 3                                  |
| 3/4  | 55-08-23-03<br>(100') | 55-08-23-04<br>(500')  | 55-08-23-06<br>(1000') | .812/.835            | 1.045/1.105        | 13                   | 4                                  |
| 1  | 55-09-25-01<br>(50')  | 55-09-25-02<br>(400')  |                        | 1/1.04               | 1.3/1.38           | 20                   | 5                                  |
| 1-1/4  | 55-09-26-01<br>(50')  | 55-09-26-03<br>(250')  | 55-09-26-02<br>(400')  | 1.25/1.3             | 1.55/1.63          | 24                   | 6.25                               |
| 1-1/2  | 55-09-27-01<br>(25')  | 55-09-27-03<br>(150')  | 55-09-27-02<br>(300')  | 1.5/1.575            | 1.85/1.95          | 31                   | 7.5                                |
| 2  | 55-09-28-01<br>(25')  | 55-09-28-03<br>(100')  | 55-09-28-02<br>(150')  | 2/2.08               | 2.35/2.45          | 40                   | 10                                 |
| 2-1/2  | 55-10-60-01<br>(25')  | 55-10-60-02<br>(150')  |                        | 2.5                  | 2.86/3.06          | 65                   | 12.5                               |
| 3  | 55-10-61-01<br>(25')  | 55-10-61-02<br>(100')  |                        | 3                    | 3.36/3.56          | 77                   | 15                                 |
| 3-1/2  | 55-10-62-01<br>(25')  |                        |                        | 3.5                  | 3.86/4.06          | 67                   | 17                                 |
| 4  | 55-10-63-01<br>(25')  |                        |                        | 4                    | 4.36/4.56          | 76                   | 20                                 |
| Trade size 5/16" is provided as UL Recognized construction.<br>Trade sizes 3-1/2" and 4" are non-UL.<br>Minimum bend radius based on NEC Chapter 9, Table 2 (other bends). |                       |                        |                        |                      |                    |                      |                                    |

## FEATURES

- Provides mechanical protection for conductors and cable
- For use with listed connectors intended for NEC Type FMC (Flexible Metal Conduit)
- 66% lighter than steel
- Cuts 80% faster than steel
- Smooth interior for easy wire pulling
- High strength aluminum alloy construction
- Superior corrosion resistance
- Built in flexibility for simplified positioning





302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Subject:** 16112 Surface Raceways Submittal

**Transmittal #:** 20  
**Date:** 6/8/2020  
**L-D Job #:** 56-521  
**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**WE ARE SENDING YOU**

|  |  |   |   |
|--|--|---|---|
| <input checked="" type="checkbox"/> Attached | <input type="checkbox"/> Under separate cover via the following items: |   |   |
| <input type="checkbox"/> Shop drawings       | <input type="checkbox"/> Sketch(s)                                     | <input type="checkbox"/> Plans          | <input type="checkbox"/> Samples              |
| <input type="checkbox"/> O&M Manual          | <input type="checkbox"/> Change order                                  | <input type="checkbox"/> Specifications | <input checked="" type="checkbox"/> Submittal |

| Document Type | Copies | Date | No.           | Description                   |
|---------------|--------|------|---------------|-------------------------------|
| Submittal     | 1      |      | 16112-1 Rev 0 | Surface Raceways Product Data |

### THESE ARE TRANSMITTED as checked below:

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> For approval | <input type="checkbox"/> Reviewed as submitted            | <input type="checkbox"/> Resubmit ___ copies for approval   |
| <input type="checkbox"/> For your use            | <input type="checkbox"/> Reviewed as noted                | <input type="checkbox"/> Submit ___ copies for distribution |
| <input type="checkbox"/> As requested            | <input type="checkbox"/> Returned for corrections         | <input type="checkbox"/> Return ___ corrected prints        |
| <input type="checkbox"/> For review and comment  | <input type="checkbox"/> Other                            |   |
| <input type="checkbox"/> FOR BIDS DUE            | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US |   |

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_

## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.

800 S 5TH STREET

CHESTERTON, IN 46304

**Spec Section No:** 16112

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/8/2020

**Spec Section Title:** Surface Raceways

**Submittal Title:** Surface Raceways Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.

Contractor's Stamp




**Architect:**

TRIA ARCHITECTURE

Margaret Gory

Architect's Stamp

|   |                       |
|---|-----------------------|
|    |                       |
| <input checked="" type="checkbox"/>   | REVIEWED AS SUBMITTED |
| <input type="checkbox"/>  | REVIEWED AS NOTED     |
| <input type="checkbox"/>  | REVISE AND RESUBMIT   |
| <input type="checkbox"/>  | NOT ACCEPTED          |
| <p>THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.</p> |                       |
| BY  | DATE                  |
| Keith O'Higgins   | 06-09-20              |

Engineer's Stamp

### Single-Channel, One-Piece Steel Surface Raceway

500® and 700® Series Raceway is ideal for surface mounting small amounts of electrical wiring or communication cables. These rugged raceways offer a low profile appearance which blend with any decor. 500® and 700® Series Raceway all come with our exclusive ScuffCoat™ finish for increased durability and scratch-resistance.

500 and 700 Series  
Raceway profiles.



500 Series Raceway and components  
used in a ceiling fan installation.



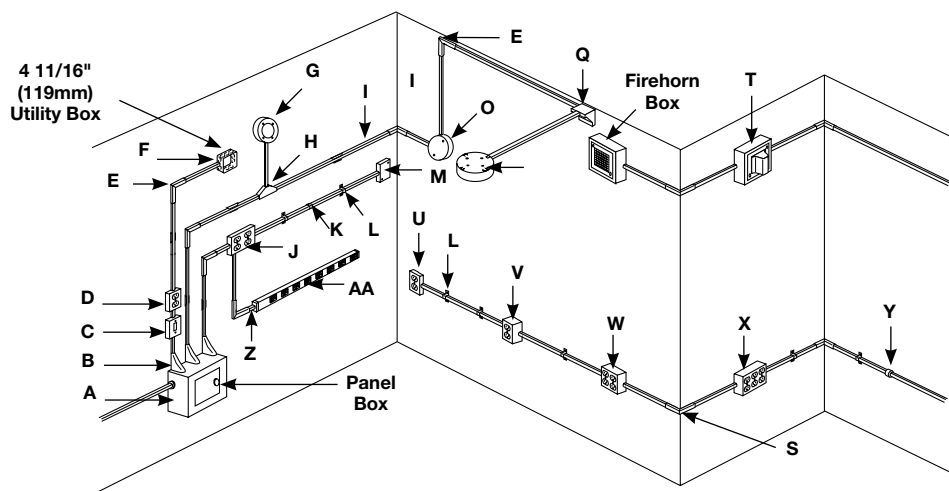
#### FEATURES & BENEFITS

- **Low-profile, unobtrusive appearance.** Blends with any decor or setting. Excellent for low-voltage wiring.
- **ScuffCoat finish.** Tough, durable, scratch-resistant finish which can be overpainted with latex paint.
- **Surface mounting.** Eliminates disturbing the building structure or wall finish to make renovations easy.
- **V5748-3 Device Box accommodates wireless.** Designed for use with Ortronics® Wi-Jack™ Wireless Access Points.
- **Full line of fittings.** Provides unlimited wiring solutions and interconnection between raceway systems.
- **More choice of colors.** 700 Series Raceway and Fittings are available in ivory and white.
- **Fittings have removable covers.** Allows easy access to wiring for changes and additions.
- **Raceway cutters with replaceable blades.** Cuts raceway cleanly, reduces labor, and installation time.
- **Datacom connectivity options.** Accepts industry standard and proprietary devices from a wide range of manufacturers to provide a seamless and aesthetically pleasing interface for voice, data, audio, and video applications at the point of use.
- **UL5 and ADA compliant.** Raceway and fittings meet UL5 specifications and can be installed in conformance with ADA requirements.
- **UL and cUL Listed component raceways.** File E4376 Guide RJBT, Fittings: File E41751 Guide RJPR. Meets Article 386 of NEC and meets Section 12-600 of CEC.



Typical applications for 500 & 700 Series Raceway.

## 500 & 700 Series System Product Applications



- |             |                             |            |                        |             |                                 |
|-------------|-----------------------------|------------|------------------------|-------------|---------------------------------|
| A — 5781A   | 3/4" (19.1mm) Box Connector | J — 5747-2 | Shallow Device Box     | S — V718    | External Elbow                  |
| B — V5786   | Adjustable Offset Connector | K — V706   | Cover Clip             | T — R5753   | Extra Deep Alarm Device Box     |
| C — V57240  | Single Pole Switch and Box  | L — V704   | Mounting Strap         | U — V5747S  | Shallow Device Box              |
| D — V57243G | Duplex Receptacle and Box   | M — V57242 | Utility Box            | V — V5744   | Extra Deep Device Box           |
| E — V711    | Flat Elbow                  | N — V717   | Internal Elbow         | W — V5748-2 | Device Box                      |
| F — V5785   | Combination Connector       | O — V5734A | Utility Box            | X — V5748-3 | Device Box                      |
| G — V5738   | Fixture Box Solid Base      | P — V5739  | Fixture Box Solid Base | Y — 5782    | 1/2" (12.7mm) Conduit Connector |
| H — V5715   | Tee Fitting                 | Q — V5719  | Corner Box             | Z — V2089E  | Reducing Fitting                |
| I — V5703   | Supporting Clip             | R — R5752  | Alarm Device Box       | AA —        | Plugmold Multioutlet System     |

## V500 & V700 Series Wire Fill Capacity Charts

### V500/V700 Series Raceway Wire Fill Capacities for Power

| WIRE SIZE<br>THHN/THWN | O.D.   |       | NUMBER OF CONDUCTORS 40% FILL |             |
|------------------------|--------|-------|-------------------------------|-------------|
|                        | inches | (mm)  | V500 SERIES                   | V700 SERIES |
| 14 AWG                 | 0.111  | (2.8) | 7                             | 10          |
| 12 AWG                 | 0.130  | (3.3) | 5                             | 7           |
| 10 AWG                 | 0.164  | (4.2) | 3                             | 4           |

### V500/V700 Series Raceway Wire Fill Capacities for Communications

|                            | CABLE/WIRE SIZE        | O.D.          |         | V500 SERIES |            | V700 SERIES |            |
|----------------------------|------------------------|---------------|---------|-------------|------------|-------------|------------|
|                            |                        | inches        | (mm)    | 20% FILL*   | 40% FILL** | 20% FILL*   | 40% FILL** |
| UNSHIELDED<br>TWISTED PAIR | 4-pair, 24 AWG, Cat 3  | 0.190         | (4.8)   | 1           | 2          | 1           | 3          |
|                            | 4-pair, 24 AWG, Cat 5e | 0.210         | (5.3)   | 1           | 2          | 1           | 3          |
|                            | 4-pair, 24 AWG, Cat 6  | 0.250         | (6.3)   | 0           | 1          | 1           | 2          |
| TELEPHONE                  | 2-pair, 24 AWG         | 0.140         | (3.6)   | 2           | 4          | 3           | 6          |
|                            | 3-pair, 24 AWG         | 0.150         | (3.8)   | 2           | 4          | 2           | 5          |
|                            | 4-pair, 24 AWG         | 0.190         | (4.8)   | 1           | 2          | 1           | 3          |
|                            | 25-pair, 24 AWG        | 0.410         | (10.4)  | 0           | 0          | 0           | 0          |
| COAXIAL                    | RG58/U                 | 0.195         | (5.0)   | 1           | 2          | 1           | 3          |
|                            | RG59/U                 | 0.242         | (6.1)   | 0           | 1          | 1           | 2          |
|                            | RG62/U                 | 0.242         | (6.1)   | 0           | 1          | 1           | 2          |
|                            | RG6/U                  | 0.270         | (6.9)   | 0           | 1          | 0           | 1          |
| TWINAXIAL                  | 100 Ohm                | 0.330         | (8.4)   | 0           | 0          | 0           | 1          |
| SHIELDED<br>TWISTED PAIR   | TYPE 1                 | 0.390         | (9.9)   | 0           | 0          | 0           | 0          |
|                            | TYPE 2                 | 0.465         | (11.8)  | 0           | 0          | 0           | 0          |
|                            | TYPE 3                 | 0.245         | (6.2)   | 0           | 1          | 0           | 1          |
| FIBER                      | Mini ZipCord           | 0.079 x 0.157 | (2 x 4) | 3           | 6          | 4           | 8          |
|                            | ZipCord                | 0.118 x 0.236 | (3 x 6) | 1           | 2          | 1           | 3          |
|                            | Round 4 Strand Fiber   | 0.187         | (4.8)   | 1           | 2          | 1           | 3          |
|                            | Round 6 Strand Fiber   | 0.256         | (6.5)   | 0           | 1          | 1           | 2          |

\* 20% cable fill is calculated to approximate reduction in cable capacity due to connectors mounted within raceway and fittings that may restrict cross sectional area.

\*\* 40% cable fill is the maximum designed cable fill based on a proposed revision to TIA/EIA 569-A.



Download this product's PEP ecosport<sup>®</sup> environmental product declaration at [www.legrand.us/resources-and-downloads](http://www.legrand.us/resources-and-downloads). This declaration conforms with ISO 14025 and 14040 and is in alignment with EN 15804.

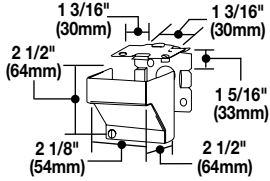
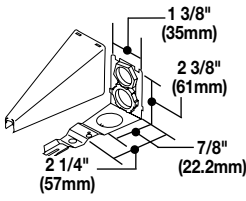
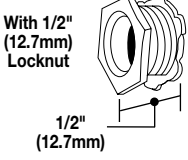
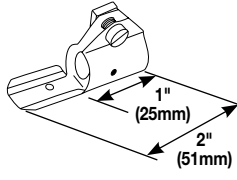
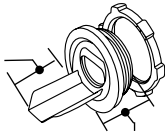
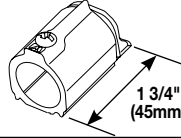
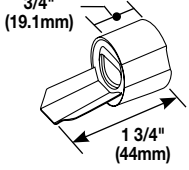
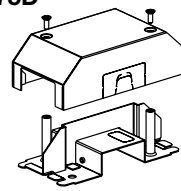
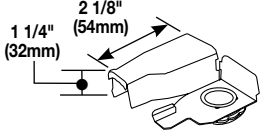
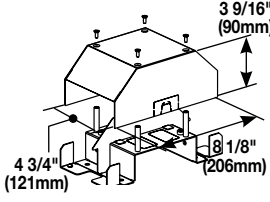
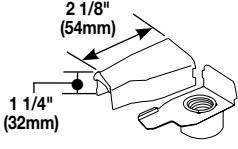
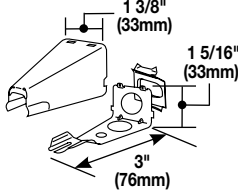
## 500 & 700 Series Raceway & Fittings Ordering Information

| Catalog No./Item   | Description/Specifications   | Catalog No./Item   | Description/Specifications  |      |               |               |      |               |               |  |                  |   |
|--|--|--|---|------|---------------|---------------|------|---------------|---------------|--|------------------|---|
| <b>V500</b><br>  | <b>Raceway</b> – .040" (1.0mm) steel. Comes in 10 ft. (3.05mm) lengths, one 5701 Coupling furnished with each length. Five ft. (1.525m) lengths available, order V500-5. | <b>V518</b><br><b>V718</b><br><b>718WH</b><br>                                 | <b>External Elbow</b> – For outside surfaces at right angles.   |      |               |               |      |               |               |  |                  |   |
| <b>V700</b><br><b>700WH</b><br>  | <b>Raceway</b> – .040" (1.0mm) steel. Comes in 10 ft. (3.05mm) lengths, one 5701 Coupling furnished with each length. Five ft. (1.525m) lengths available, order V700-5. | <b>V5700F</b><br>  | <b>Flexible Section</b> – For getting around difficult angles. End fittings and bulk conduit lengths available. Maximum painted length 3' (915mm) longer lengths furnished unpainted, consult factory for availability. |      |               |               |      |               |               |  |                  |   |
| <b>502</b><br><b>702</b><br>   | <b>Bushing</b> – Protects wires from abrasion. Bushing slips into open end of raceway where it enters a fitting.   | <b>5701</b><br>  | <b>Coupling</b> – For joining and supporting lengths of V500 or 700 Series raceway. One coupling supplied with each length.   |      |               |               |      |               |               |  |                  |   |
| <b>V504</b><br><b>V704</b><br><b>704WH</b><br><table border="1"><thead><tr><th>CAT. #</th><th>A</th><th>B</th></tr></thead><tbody><tr><td>V504</td><td>1 7/8" (47mm)</td><td>1/2" (12.7mm)</td></tr><tr><td>V704</td><td>1 7/8" (47mm)</td><td>5/8" (15.4mm)</td></tr></tbody></table> | CAT. #   | A  | B   | V504 | 1 7/8" (47mm) | 1/2" (12.7mm) | V704 | 1 7/8" (47mm) | 5/8" (15.4mm) | <b>Mounting Strap (1- or 2-Hole)</b> – Convert to one-hole by breaking off at score. Lanced tab holds strap in place while fastening to surface. | <b>V5703</b><br> | <b>Supporting Clip</b> – For supporting lengths of V500 or 700 Series raceway at any point desired. |
| CAT. #   | A  | B  |   |      |               |               |      |               |               |  |                  |   |
| V504   | 1 7/8" (47mm)  | 1/2" (12.7mm)  |   |      |               |               |      |               |               |  |                  |   |
| V704   | 1 7/8" (47mm)  | 5/8" (15.4mm)  |   |      |               |               |      |               |               |  |                  |   |
| <b>V506</b><br><b>V706</b><br><b>706WH</b><br>   | <b>Connection Cover</b> – To cover openings where lengths of V500 or 700 Series, not squarely cut, come together.  | <b>5709</b><br>  | <b>Ground Clamp</b> – Provides additional grounding or to ground remotely located devices. Attach ground wire to screw as required by NEC. Insert into V500 or 700 Series raceway before installing.                    |      |               |               |      |               |               |  |                  |   |
| <b>V511</b><br><b>V711</b><br><b>711WH</b><br>   | <b>90° Flat Elbow</b> – For right angle turns on same surface.   | <b>V5711LHA</b><br><b>V5711RHA</b><br><b>5711LHAWH</b><br><b>5711RHAWH</b><br> | <b>Internal Twisted Elbows</b> – For 90° twist with 90° turn including a flat run on sidewall to a flat run on ceiling or on door edge or window trim. Break out crescent twistout in cover to use with 700 Series.     |      |               |               |      |               |               |  |                  |   |
| <b>V512</b><br><b>V712</b><br>   | <b>45° Flat Elbow</b> – For diagonal 45° turns on same surface.  | <b>V5715</b><br><b>5715WH</b><br>  | <b>Tee</b> – For branches at right angles. Break out crescent twistout in cover to use with V700.   |      |               |               |      |               |               |  |                  |   |
| <b>V517</b><br><b>V717</b><br><b>717WH</b><br>   | <b>Internal Elbow</b> – For inside surfaces at right angles.   |  |   |      |               |               |      |               |               |  |                  |   |

**NOTE:** Use #6 flat head screws with all fittings requiring screws except V504/V704, and V57200 Series; with V504/V704 use #8 pan head screws; with V57200 Series use #8 flat head screws.


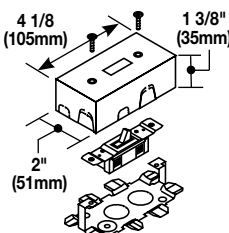




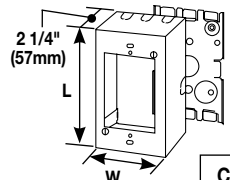
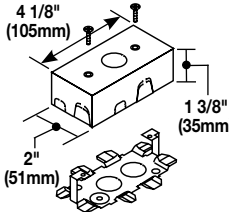










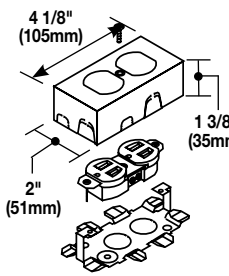




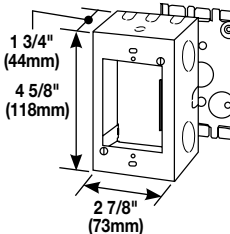


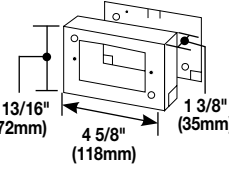




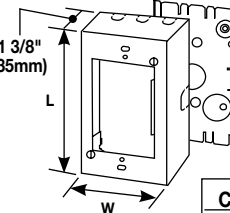




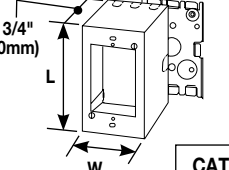



















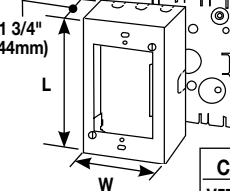























## 500 & 700 Series Raceway Fittings Ordering Information

| Catalog No./Item   | Description/Specifications   | Catalog No./Item   | Description/Specifications  |
|--|--|--|---|
| <b>V5719</b><br>                    | <b>Corner Box</b> – Allows ample splice room. Each leg of base has 1/2" trade size KO.   | <b>V5786</b><br><b>V5786WH</b><br> | <b>Adjustable Offset Connector</b> – Eliminates offsetting raceway when connecting to surface type panel boxes. The adjustment from surface to center of bushings is 5/8" (15.9mm) minimum to 1 3/8" (35mm) maximum. Break out crescent twistout in cover to use with 700 Series. 1/2" (12.7mm) chase nipple and locknut furnished. |
| <b>5780</b><br>                     | <b>Special Nipple (Galvanized)</b> – Has female 3/8" (9.5mm) pipe thread inside and male 1/2" (12.7mm) pipe thread outside. For hanging 3/8" (9.5mm) or 1/2" (12.7mm) fixtures to Wiremold fittings with 1/2" trade size KOs.  | <b>5790B</b><br>                   | <b>Armored Cable Connector (Galvanized)</b> – For connecting 14/2, 14/3, 12/2, and 12/3 armored cable to Wiremold fittings. Use a short piece of V500/V700 raceway (1 5/8" (41mm) min.) between this connector and fitting. Not for connection to 1/2" (12.7mm) Flex Conduit.   |
| <b>5781</b><br><b>5781A</b><br>     | <b>Box Connector (Galvanized)</b> – For connecting raceway to conduit boxes, panel boxes, etc., having a KO for conduit. May also be used with conduit type fittings. Break out crescent twistout to use with V700.  | <b>5791</b><br>                    | <b>5700 Series Box EMT Connector</b> – Joins 1/2" (12.7mm) EMT directly into any V5700 Series Wiremold box.   |
| <b>5782A</b><br>                   | <b>Conduit Connector (Galvanized)</b> – For connecting raceway to conduit. Break out crescent twistout to use with V700.   | <b>V2475D</b><br>                 | <b>2400 Series Raceway Bridge Fitting</b> – For allowing 2400 Series Raceway to bridge over existing installations of V500/V700 Series Raceway  |
| <b>V5783</b><br>                  | <b>Elbow Box Connector</b> – For connecting raceway at right angles to conduit boxes, panel boxes, etc., having a KO for 1/2" (12.7mm) conduit. Break out crescent twistout in cover to use with V700.   | <b>V4075DA</b><br>               | <b>4000 Series Raceway Bridge Fitting</b> – For allowing 4000 Series Raceway to bridge over existing installations of V500/V700 Series Raceway.   |
| <b>V5784</b><br>                  | <b>Elbow Conduit Connector</b> – For connecting raceway at right angles to 1/2" (12.7mm) conduit or armored cable connectors. Break out crescent twistout in cover to use with V700.   |  |   |
| <b>V5785</b><br><b>5785WH</b><br> | <b>Combination Connector</b> – For connecting raceway, without offsetting, to any 3 1/4" (83mm) or 4" (102mm) outlet box mounted on the surface with a KO for 1/2" (12.7mm) conduit. The base end and bottom has two 1/2" trade size KOs. Break off cover extension to use with 700 Series. Spring steel bushing included for end connection to box, eliminating conduit nipple and locknut. |  |   |



**NOTE:** Use #6 flat head screws with all fittings requiring screws except V504/V704, and V57200 Series; with V504/V704 use #8 pan head screws; with V57200 Series use #8 flat head screws.

## 500 & 700 Series Raceway Device Boxes Ordering Information

| Catalog No./Item   | Description/Specifications   | Catalog No./Item  | Description/Specifications   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
|--|--|---|--|--------|---|----------------|---|----------------|---|----------------|---|----------------|---|----------------|---|----------------|----------------|--|--|----------------|------------------|---|---|----------------|------------------|----|---|----------------|-------------------|---|--|
| <b>V57240</b>    | <b>15A, 125V Single Pole Switch and Box</b> – Accommodates other standard single-gang switches in place of furnished standard single pole switch. Cover has twistouts for V500 or V700 on each end. Twistout on ends permits running raceway close to interior trim. Base has 1/2" trade size KO's.  | <b>V5744S</b>  <br><b>5744SWH</b>     | <b>Deep Switch and Receptacle Box</b> – For installing signal system alarm wiring and communication devices. Base has 1/2" trade size and rectangular single-gang KO's.  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| <b>V57242</b>   | <b>Utility Box</b> – For use as tee, cross, pull box, junction box, blank box, etc. Cover has 1/2" trade size KO and twistouts for V500 and V700 on each end and side. End twistouts permit running raceway close to interior trim. Base has 1/2" trade size KO's.   | <table border="1"> <thead> <tr> <th>CAT NO.</th><th>L</th><th>W</th><th>GANG #</th></tr> </thead> <tbody> <tr> <td>V5744S, WH </td><td>4 5/8" (118mm)</td><td>2 7/8" (73mm)</td><td>1</td></tr> <tr> <td>V5744S-2, WH </td><td>4 3/4" (121mm)</td><td>4 3/4" (121mm)</td><td>2*</td></tr> <tr> <td>V5744S-3 </td><td>4 5/8" (118mm)</td><td>6 1/2" (165mm)</td><td>3</td></tr> </tbody> </table>   | CAT NO.  | L      | W   | GANG #         | V5744S, WH   | 4 5/8" (118mm) | 2 7/8" (73mm)   | 1              | V5744S-2, WH   | 4 3/4" (121mm) | 4 3/4" (121mm)  | 2*             | V5744S-3   | 4 5/8" (118mm) | 6 1/2" (165mm) | 3  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| CAT NO.  | L  | W   | GANG #   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5744S, WH    | 4 5/8" (118mm)   | 2 7/8" (73mm)   | 1  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5744S-2, WH    | 4 3/4" (121mm)   | 4 3/4" (121mm)  | 2*   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5744S-3    | 4 5/8" (118mm)   | 6 1/2" (165mm)  | 3  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| <b>V57243G</b>    | <b>15A, 125V Duplex Grounding Receptacle (Nema 5-15R) and Box</b> – Accommodates other standard 15A (NEMA 5-15R) or 20A (NEMA 5-20R) duplex devices in place of furnished duplex grounding receptacle. Cover has twistouts for V500 and V700 on each end and side. End twistouts permit running raceway close to interior trim. Base has 1/2" trade size KO's. | <b>V5745</b>  <br><b>5745WH</b>     | <b>Combination Device Box</b> – For connecting surface runs of 1/2" (12.7mm) conduit, etc. Cover has two raceway twistouts on one end and three on opposite end; also two 1/2" trade size KO's and a raceway twistout on each side. Base has two 1/2" trade size KO's. |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| <b>V5741</b> <br><b>5741WH</b>    | <b>Device Box</b> – For shallow type switches (three-way, single, and double pole) and receptacles, (three-wire locking receptacles and single-gang combination devices). Base has 1/2" trade size KO. End twistout permits running raceway close to interior trim.  | <b>V5747</b>  <br><b>5747WH</b>      | <b>Shallow Device Box</b> – For standard shallow switches, receptacles, communication devices, and single-gang combination devices. Base has two 1/2" trade size KO's.   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| <b>V5744</b>  <br><b>5744WH</b>     | <b>Extra Deep Device Box</b> – Designed for deep devices – momentary contact, and remote control switches, hospital signaling system devices, and deep communication devices. Base has 1/2" trade size KO's.   | <table border="1"> <thead> <tr> <th>CAT NO.</th><th>L</th><th>W</th><th>GANG #</th></tr> </thead> <tbody> <tr> <td>V5747, WH </td><td>4 5/8" (118mm)</td><td>2 7/8" (73mm)</td><td>1</td></tr> <tr> <td>V5747-2, WH </td><td>4 3/4" (121mm)</td><td>4 3/4" (121mm)</td><td>2*</td></tr> <tr> <td>V5747-3 </td><td>4 5/8" (118mm)</td><td>6 1/2" (165mm)</td><td>3</td></tr> </tbody> </table>  | CAT NO.  | L      | W   | GANG #         | V5747, WH  | 4 5/8" (118mm) | 2 7/8" (73mm)   | 1              | V5747-2, WH  | 4 3/4" (121mm) | 4 3/4" (121mm)  | 2*             | V5747-3  | 4 5/8" (118mm) | 6 1/2" (165mm) | 3  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| CAT NO.  | L  | W   | GANG #   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5747, WH   | 4 5/8" (118mm)   | 2 7/8" (73mm)   | 1  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5747-2, WH   | 4 3/4" (121mm)   | 4 3/4" (121mm)  | 2*   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5747-3   | 4 5/8" (118mm)   | 6 1/2" (165mm)  | 3  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| <table border="1"> <thead> <tr> <th>CAT NO.</th><th>L</th><th>W</th><th>GANG #</th></tr> </thead> <tbody> <tr> <td>V5744, WH </td><td>4 5/8" (118mm)</td><td>2 7/8" (73mm)</td><td>1</td></tr> <tr> <td>V5744-2, WH </td><td>4 3/4" (121mm)</td><td>4 3/4" (121mm)</td><td>2*</td></tr> <tr> <td>V5744-3 </td><td>4 5/8" (118mm)</td><td>6 1/2" (165mm)</td><td>3</td></tr> </tbody> </table> | CAT NO.  | L   | W  | GANG # | V5744, WH  | 4 5/8" (118mm) | 2 7/8" (73mm)   | 1              | V5744-2, WH  | 4 3/4" (121mm) | 4 3/4" (121mm)  | 2*             | V5744-3  | 4 5/8" (118mm) | 6 1/2" (165mm)  | 3              |                | <b>V5748</b>  <br><b>5748WH</b>    | <b>Device Box</b> – For deep switches, receptacles and communication devices. Base has two 1/2" trade size KO's. |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| CAT NO.  | L  | W   | GANG #   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5744, WH   | 4 5/8" (118mm)   | 2 7/8" (73mm)   | 1  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5744-2, WH   | 4 3/4" (121mm)   | 4 3/4" (121mm)  | 2*   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5744-3   | 4 5/8" (118mm)   | 6 1/2" (165mm)  | 3  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
|  |  | <table border="1"> <thead> <tr> <th>CAT NO.</th><th>L</th><th>W</th><th>GANG #</th></tr> </thead> <tbody> <tr> <td>V5748, WH </td><td>4 5/8" (118mm)</td><td>2 7/8" (73mm)</td><td>1</td></tr> <tr> <td>V5748-2, WH </td><td>4 3/4" (121mm)</td><td>4 3/4" (121mm)</td><td>2*</td></tr> <tr> <td>V5748-3 </td><td>4 5/8" (118mm)</td><td>6 1/2" (165mm)</td><td>3</td></tr> <tr> <td>V5748-4 </td><td>4 5/8" (118mm)</td><td>8 11/32" (212mm)</td><td>1</td></tr> <tr> <td>V5748-5 </td><td>4 3/4" (121mm)</td><td>10 5/32" (212mm)</td><td>2*</td></tr> <tr> <td>V5748-6 </td><td>4 5/8" (118mm)</td><td>11 31/32" (165mm)</td><td>3</td></tr> </tbody> </table> | CAT NO.  | L      | W   | GANG #         | V5748, WH  | 4 5/8" (118mm) | 2 7/8" (73mm)   | 1              | V5748-2, WH  | 4 3/4" (121mm) | 4 3/4" (121mm)  | 2*             | V5748-3  | 4 5/8" (118mm) | 6 1/2" (165mm) | 3  | V5748-4                     | 4 5/8" (118mm) | 8 11/32" (212mm) | 1 | V5748-5  | 4 3/4" (121mm) | 10 5/32" (212mm) | 2* | V5748-6  | 4 5/8" (118mm) | 11 31/32" (165mm) | 3 |  |
| CAT NO.  | L  | W   | GANG #   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5748, WH   | 4 5/8" (118mm)   | 2 7/8" (73mm)   | 1  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5748-2, WH   | 4 3/4" (121mm)   | 4 3/4" (121mm)  | 2*   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5748-3   | 4 5/8" (118mm)   | 6 1/2" (165mm)  | 3  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5748-4   | 4 5/8" (118mm)   | 8 11/32" (212mm)  | 1  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5748-5   | 4 3/4" (121mm)   | 10 5/32" (212mm)  | 2*   |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |
| V5748-6   | 4 5/8" (118mm)   | 11 31/32" (165mm)   | 3  |        |   |                |   |                |   |                |   |                |   |                |   |                |                |  |  |                |                  |   |   |                |                  |    |   |                |                   |   |  |

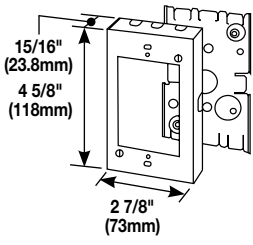
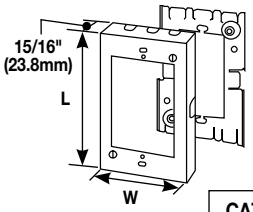
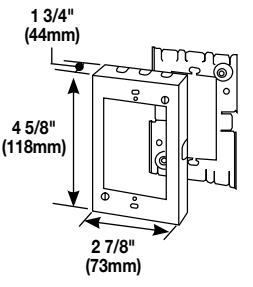
**NOTES:** Covers on this page have double twistouts. Break out lower twistout for use with V500, and both twistouts for use with V700.

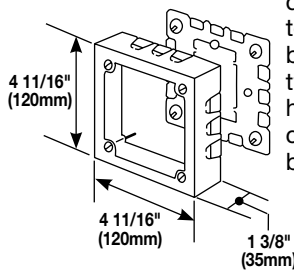
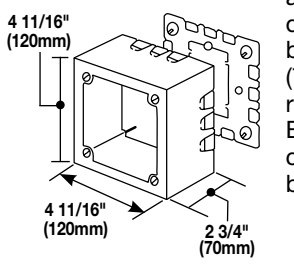
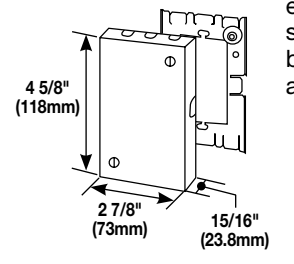
\* V5744-2 and V5744S-2 Base and V5747-2 and V5748-2 Base have 1/2" and 1" concentric trade size KO's and a 1 13/16" x 2 7/8" (47mm x 73mm) rectangular KO to permit mounting on a one-gang in-wall outlet box.

 Replace V with VC or WH with WHC to denote Canadian version — Agency approved for sale in Canada. 

† Larger gangs available, consult factory.



## 500 & 700 Series Raceway Device Boxes Ordering Information (continued)

| Catalog No./Item   | Description/Specifications  |                |        |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
|--|---|----------------|--------|---|--------|-----------------|----------------|---------------|---|--------------------|----------------|----------------|----|----------------|----------------|----------------|---|
| <b>V5748S</b><br><b>5748SWH</b><br>   | <b>Shallow Switch and Receptacle Box</b> – For duplex receptacles (shallow type). Base has 1/2" trade size KOs.               |                |        |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
| <b>V5751</b><br><b>5751WH</b><br>   | <b>Flush-Type Extension Adapter</b> – For extensions from existing flush wall boxes. Larger gangs available, consult factory. |                |        |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
| <table><tr><th>CAT NO.</th><th>L</th><th>W</th><th>GANG #</th></tr><tr><td><b>V5751,WH</b></td><td>4 5/8" (118mm)</td><td>2 7/8" (73mm)</td><td>1</td></tr><tr><td><b>V5751-2, WH</b></td><td>4 3/4" (121mm)</td><td>4 3/4" (121mm)</td><td>2*</td></tr><tr><td><b>V5751-3</b></td><td>4 5/8" (118mm)</td><td>6 1/2" (165mm)</td><td>3</td></tr></table> |   | CAT NO.        | L      | W | GANG # | <b>V5751,WH</b> | 4 5/8" (118mm) | 2 7/8" (73mm) | 1 | <b>V5751-2, WH</b> | 4 3/4" (121mm) | 4 3/4" (121mm) | 2* | <b>V5751-3</b> | 4 5/8" (118mm) | 6 1/2" (165mm) | 3 |
| CAT NO.  | L   | W              | GANG # |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
| <b>V5751,WH</b>  | 4 5/8" (118mm)  | 2 7/8" (73mm)  | 1      |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
| <b>V5751-2, WH</b>   | 4 3/4" (121mm)  | 4 3/4" (121mm) | 2*     |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
| <b>V5751-3</b>   | 4 5/8" (118mm)  | 6 1/2" (165mm) | 3      |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |
| <b>V5751A</b><br><b>5751AWH</b><br>  | <b>Deep Flush-Type Extension Adapter</b> – For deep extensions from existing flush wall boxes.                                |                |        |   |        |                 |                |               |   |                    |                |                |    |                |                |                |   |

| Catalog No./Item   | Description/Specifications  |
|--|---|
| <b>R5752 (Red)</b><br><b>V5752 (Ivory)</b><br> | <b>Two-Gang Alarm Device Box</b> – For surface mounting alarm devices and safety signals designed to fit 4" (102mm) square back boxes. Cover has three raceway twistouts on each side. Base has 1/2" and 1" trade size concentric and single-gang box KOs.                                      |
| <b>R5753 (Red)</b><br><b>V5753 (Ivory)</b><br> | <b>Two-Gang Extra Deep Alarm Device Box</b> – For surface mounting alarm devices and safety signals designed to fit 4" (102mm) square back boxes. Cover is 2 3/4" (70mm) deep and has three raceway twistouts on each side. Base has 1/2" and 1" trade size concentric and single-gang box KOs. |
| <b>V5760</b><br>                              | <b>Blank Extension Box</b> – For extending from existing flush switch and receptacle boxes to blank original outlet. Closed base available, consult factory.  |







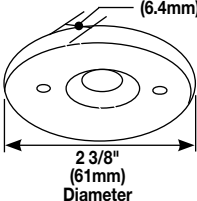
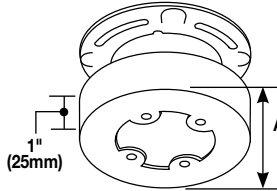

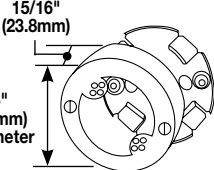






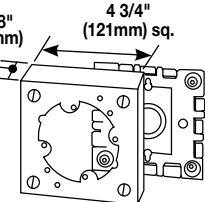
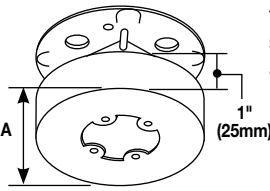

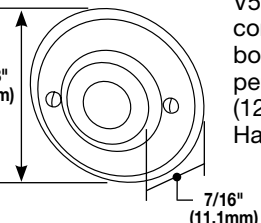
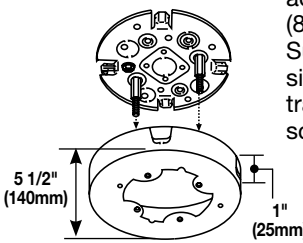
**NOTES:** Covers on this page have double twistouts. Break out lower twistout for use with V500, and both twistouts for use with V700.

\* V5744-2 and V5744S-2 Base and V5747-2 and V5748-2 Base have 1/2" and 1" concentric trade size KOs and a 1 13/16" x 2 7/8" (47mm x 73mm) rectangular KO to permit mounting on a one-gang in-wall outlet box.



 Replace V with VC or WH with WHC to denote Canadian version — Agency approved for sale in Canada. 

† Larger gangs available, consult factory.

## 500 & 700 Series Raceway Round Fixture Boxes Ordering Information

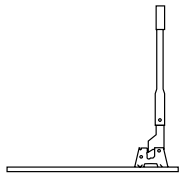
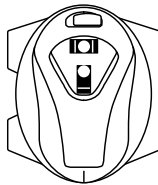
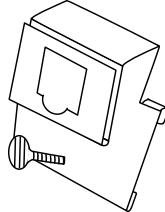
| Catalog No./Item   | Description/Specifications  | Catalog No./Item  | Description/Specifications   |          |         |           |                |            |                |        |                |
|--|---|---|--|----------|---------|-----------|----------------|------------|----------------|--------|----------------|
| <b>V5731</b>  | <b>Blank Cover</b> – Use with V5733 to convert into a pull or junction box. Has 1/2" trade size KO in center.   | <b>V5737</b> <br><b>V5737A</b> <br><b>V5739A</b> <br><b>5737WH</b> <br><b>5737AWH</b>  | <b>Extension Box/Open Base</b> – For mounting on 3 1/4" (83mm), 4" (102mm) conduit boxes, or other recessed outlets. Cover takes devices with mounting screw centers of 2 3/4", 3 1/2", or 4 1/16" (70mm, 89mm, or 104mm). Use as a pull or junction box with V5736.   |          |         |           |                |            |                |        |                |
|               |   |   | <table><tr><th>CAT. NO.</th><th>DIA. A.</th></tr><tr><td>V5737, WH</td><td>4 3/4" (121mm)</td></tr><tr><td>V5737A, WH</td><td>5 1/2" (140mm)</td></tr><tr><td>V5739A</td><td>6 3/8" (162mm)</td></tr></table>  | CAT. NO. | DIA. A. | V5737, WH | 4 3/4" (121mm) | V5737A, WH | 5 1/2" (140mm) | V5739A | 6 3/8" (162mm) |
| CAT. NO.   | DIA. A.   |   |  |          |         |           |                |            |                |        |                |
| V5737, WH  | 4 3/4" (121mm)  |   |  |          |         |           |                |            |                |        |                |
| V5737A, WH   | 5 1/2" (140mm)  |   |  |          |         |           |                |            |                |        |                |
| V5739A   | 6 3/8" (162mm)  |   |  |          |         |           |                |            |                |        |                |
| <b>V5733</b>  | <b>Outlet Box</b> – Designed for devices with mounting screw centers of 1 15/32", 1 5/8", 1 22/32", or 1 27/32" (37mm, 41mm, 60mm, or 45mm). Accepts any device that mounts on G or H type conduit fittings.  |   |  |          |         |           |                |            |                |        |                |
|               |   |   |  |          |         |           |                |            |                |        |                |
| <b>V5735</b>  | <b>Distribution Box</b> – Each side accepts three parallel raceway runs. Base has 1/2" and 1" concentric trade size KOs and a 1 13/16" x 2 7/8" trade size KO to mount on a one-gang in-wall outlet box. Cover takes devices with mounting screw centers of 2 3/4", 3 1/2", and 4 1/16" (70mm, 89mm, and 104mm), and canopy fixtures 4 5/8" (118mm) diameter or smaller. Used as a pull or junction box with V5736. | <b>V5738</b> <br><b>V5738A</b> <br><b>V5739</b> <br><b>5738WH</b> <br><b>5738AWH</b>   | <b>Fixture Box/Solid Base</b> – For hanging fixtures. Cover takes devices with mounting screw centers of 2 3/4", 3 1/2", or 4 1/16" (70mm, 89mm, or 104mm). Base has four holes for fixture studs; five 1/2" trade size KOs and raised section for no-bolt fixture-stud. Use as a junction or pull box with V5736. |          |         |           |                |            |                |        |                |
|               |   |   | <table><tr><th>CAT. NO.</th><th>DIA. A.</th></tr><tr><td>V5738, WH</td><td>4 3/4" (121mm)</td></tr><tr><td>V5738A, WH</td><td>5 1/2" (140mm)</td></tr><tr><td>V5739</td><td>6 3/8" (162mm)</td></tr></table>   | CAT. NO. | DIA. A. | V5738, WH | 4 3/4" (121mm) | V5738A, WH | 5 1/2" (140mm) | V5739  | 6 3/8" (162mm) |
| CAT. NO.   | DIA. A.   |   |  |          |         |           |                |            |                |        |                |
| V5738, WH  | 4 3/4" (121mm)  |   |  |          |         |           |                |            |                |        |                |
| V5738A, WH   | 5 1/2" (140mm)  |   |  |          |         |           |                |            |                |        |                |
| V5739  | 6 3/8" (162mm)  |   |  |          |         |           |                |            |                |        |                |
| <b>V5736</b>   | <b>Blank Cover</b> – Use with V5735, V5737, V5737A, V5738, V5738A, V5739, or V5739A, or V2135 converting them to pull or junction boxes and for hanging lightweight pendant fixtures having 1/2" (12.7mm) pipe stems, etc. Has 1/2" trade size KO.  | <b>V5738AF</b><br><b>5738AFWH</b>    | <b>Fan Box/Solid Base</b> – UL approved fixture box for ceiling fans. Cover accepts fan brackets with 3.2" (82mm) mounting centers. Supports up to 50 lbs. Base has six mounting holes and four 1/2" trade size KOs. #10 mounting screws provided.   |          |         |           |                |            |                |        |                |
|             |   |   |  |          |         |           |                |            |                |        |                |

**NOTE:** Covers have double twistouts; Lower twistout for V500, and both twistouts for V700.

 Replace V with VC or WH with WHC to denote Canadian version — Agency approved for sale in Canada. 

\* These boxes are not designed to support ceiling fans. For fan applications, use V5738AF.

## 500 & 700 Series Raceway Tools Ordering Information

| Catalog No./Item | Description/Specifications  | Catalog No./Item | Description/Specifications  |
|------------------|---|------------------|---|
| 605<br>607       |  <b>V500 Raceway Cutter</b><br><b>700 Series Raceway Cutter</b> – Single action portable cutter. | 5700LL           |  <b>Laser Level for 500/700 Series Raceway</b> – Attaches to outlet box base and raceway fittings for perfect alignment of runs of raceway. |
| 605K<br>607K     | <b>Replacement blade for 605 and 607 cutters</b> – Replacement case-hardened steel blades cut clean and square.   | 5700CG           |  <b>Cutting Guide for 500/700 Series Raceway</b> – Attaches to step ladder and holds raceway channel securely for accurate cuts.            |

**NOTE:** All brand and product names referenced in this document are registered trademarks or trademarks of their respective holders.



**NOTE:** The paper used to print this document is an environmentally responsible paper with 10% post consumer waste, with FSC and SFI Chain of Custody certifications, Lacey Act compliant. 100% of the electricity used to manufacture Flo sheets is generated with Green-e certified renewable energy.



### Electrical Wiring Systems

60 Woodlawn Street  
 West Hartford, CT 06110  
 Phone: 1.877.BY.LEGRAND (295-3472)  
[www.legrand.us/wiremold](http://www.legrand.us/wiremold)  
 570 Applewood Crescent  
 Vaughan, Ontario L4K 4B4  
 Phone: 905.738.9195







302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Subject:** Building Wire & Cable Submittal

**Transmittal #:** 16  
**Date:** 6/3/2020  
**L-D Job #:** 56-521  
**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**WE ARE SENDING YOU**

|  |  |   |   |
|--|--|---|---|
| <input checked="" type="checkbox"/> Attached | <input type="checkbox"/> Under separate cover via the following items: |   |   |
| <input type="checkbox"/> Shop drawings       | <input type="checkbox"/> Sketch(s)                                     | <input type="checkbox"/> Plans          | <input type="checkbox"/> Samples              |
| <input type="checkbox"/> O&M Manual          | <input type="checkbox"/> Change order                                  | <input type="checkbox"/> Specifications | <input checked="" type="checkbox"/> Submittal |

| Document Type | Copies | Date | No.           | Description                        |
|---------------|--------|------|---------------|------------------------------------|
| Submittal     | 1      |      | 16123-1 Rev 0 | Building Wire & Cable Product Data |

**THESE ARE TRANSMITTED as checked below:**

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> For approval | <input type="checkbox"/> Reviewed as submitted            | <input type="checkbox"/> Resubmit ___ copies for approval   |
| <input type="checkbox"/> For your use            | <input type="checkbox"/> Reviewed as noted                | <input type="checkbox"/> Submit ___ copies for distribution |
| <input type="checkbox"/> As requested            | <input type="checkbox"/> Returned for corrections         | <input type="checkbox"/> Return ___ corrected prints        |
| <input type="checkbox"/> For review and comment  | <input type="checkbox"/> Other                            |   |
| <input type="checkbox"/> FOR BIDS DUE            | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US |   |

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_

## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.  
800 S 5TH STREET  
CHESTERTON, IN 46304

**Spec Section No:** 16123

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/3/2020

**Spec Section Title:** Building Wire & Cable

**Submittal Title:** Building Wire & Cable Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.

Contractor's Stamp



**Architect:**

TRIA ARCHITECTURE  
Margaret Gory

Architect's Stamp



☒ **REVIEWED AS SUBMITTED**

☐ **REVIEWED AS NOTED**

☐ **REVISE AND RESUBMIT**

☐ **NOT ACCEPTED**

THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.

BY **Keith O'Higgins**

DATE **06-09-20**

Engineer's Stamp

# TYPE THHN / MTW / THWN-2 / T90 - COPPER CONDUCTOR - SUPERSLICK ELITE - 600V

## ENGINEERING SPECIFICATIONS

### Standards

Underwriters Laboratories Standards UL-83, UL-1063, UL-1581, UL-1685, UL-2556; AWM Spec 1316, 1317, 1318, 1319, 1320, 1321; ASTM Stranding Class B3, B8, B787; Federal Specification A-A-59544; American National Standards Institute; Canadian Standards Association C22.2 No. 75; NEMA WC70/ICEA S-95-658; UL VW-1 Flame Test; UL 1685-FT4/IEEE 1202 (70,000 Btu/hr) Flame Test (1/0 AWG and larger); New York State DOS-16120-87-1222-1048; ICEA T-29-520 (210,000 Btu/hr) Flame Test; NFPA 70 (NEC®) Article 310; ARRA 2009 Section 1605 "Buy American" Compliant; RoHS Compliant; MasterSpec Division 26 Sections 260519, 260523; UL Listing #E-123774, #E-156878, #E-156879

## CONSTRUCTION

### Conductors

Solid, uncoated copper conductors per ASTM-B3; Stranded, uncoated copper conductors per ASTM-B3, ASTM-B8 and ASTM-B787

### Insulation

Color-coded Polyvinyl Chloride (PVC), heat and moisture-resistant, flame retardant compound per UL-83 and UL-1063

### Jacket

A tough, polyamide, Nylon outer covering per UL-83 and UL-1063

## APPLICATIONS

Type THHN/THWN-2 building wire is intended for general purpose applications as defined by the National Electrical Code (NEC). Type THHN/THWN-2 is permitted for new construction or rewiring for 600-volt applications. For applications requiring Type THHN or THWN-2, the conductor is appropriate for use in wet or dry locations at temperatures not to exceed 90°C or not to exceed 75°C in oil or coolants. For applications requiring Type MTW, the conductor is appropriate for use in dry locations at 90°C, or not to exceed 60°C in wet locations or where exposed to oils or coolants.

## FEATURES

A great alternative to eliminate the need for lube. Slick Nylon outer jacket for easy pulling. SuperSlick Elite is available in sizes 14 AWG through 1000 KCMIL. All sizes rated gasoline and oil resistant II. On 250 KCMIL and larger, sequential footage markings located every foot for easy measuring. For 1 AWG through 4/0 AWG sequential foot markings located on master reels only unless otherwise specified. 6 AWG and larger Sunlight Resistant in all colors. For 1/0 AWG and larger conductors are rated for cable tray use and comply with IEEE 1202/FT4 (70,000 Btu/hr.) flame test and ICEA T-29-20 (210,000 Btu/hr.) flame test.



- 1 SuperSlick Elite® Nylon Jacket
- 2 PVC Insulation
- 3 Stranded Copper Conductor

| Size<br>(AWG or KCMIL) | No. of<br>Strands | Cross Sect.<br>Area<br>(mm²) | PVC Insulation<br>Thickness<br>(Conductor) |       | Nylon Jacket<br>Thickness |       | Outside Diameter |       | Approximate<br>Net Weight |               | Allowable Ampacity<br>(Amps) <sup>2</sup> |      |      | Standard Packaging<br>(ft)           |
|------------------------|-------------------|------------------------------|--|-------|---------------------------|-------|------------------|-------|---------------------------|---------------|---|------|------|--------------------------------------|
|                        |                   |                              | (mm)                                       | (in)  | (mm)                      | (in)  | (mm)             | (in)  | (kg/km)                   | (lbs/1000 ft) | 60°C                                      | 75°C | 90°C |                                      |
| 14                     | Solid             | 6.258                        | 0.38                                       | 0.015 | 0.10                      | 0.004 | 2.593            | 0.101 | 22                        | 15            | 15  | 15   | 15   | 2000' carton (4 x 500'), 2500' Reels |
| 12                     | Solid             | 8.581                        | 0.38                                       | 0.015 | 0.10                      | 0.004 | 3.05             | 0.120 | 34                        | 23            | 20  | 20   | 20   | 2000' carton (4 x 500'), 2500' Reels |
| 10                     | Solid             | 13.62                        | 0.51                                       | 0.020 | 0.10                      | 0.004 | 3.78             | 0.149 | 55                        | 37            | 30  | 30   | 30   | 1000' carton (2x500'), 2500' Reels   |
| 14                     | 19                | 6.258                        | 0.38                                       | 0.015 | 0.10                      | 0.004 | 2.77             | 0.109 | 25                        | 16            | 15  | 20   | 25   | 2000' carton (4 x 500'), 2500' Reels |
| 12                     | 19                | 8.581                        | 0.38                                       | 0.015 | 0.10                      | 0.004 | 3.25             | 0.128 | 36                        | 23            | 20  | 25   | 30   | 2000' carton (4 x 500'), 2500' Reels |
| 10                     | 19                | 13.62                        | 0.51                                       | 0.020 | 0.10                      | 0.004 | 4.09             | 0.161 | 57                        | 38            | 30  | 35   | 40   | 1000' carton, 2500' Reels            |
| 8                      | 19                | 23.61                        | 0.76                                       | 0.030 | 0.13                      | 0.005 | 5.41             | 0.213 | 94                        | 62            | 40  | 50   | 55   | 500' 1000' 2500' 5000' Reels         |
| 6                      | 19                | 32.71                        | 0.76                                       | 0.030 | 0.13                      | 0.005 | 6.32             | 0.249 | 141                       | 94            | 55  | 65   | 75   | 500' 1000' 2500' 5000' Reels         |
| 4                      | 19                | 53.16                        | 1.02                                       | 0.040 | 0.15                      | 0.006 | 8.08             | 0.318 | 228                       | 153           | 70  | 85   | 95   | 500' 1000' 2500' 5000' 20,000' Reels |
| 3                      | 19                | 62.77                        | 1.02                                       | 0.040 | 0.15                      | 0.006 | 8.79             | 0.346 | 281                       | 189           | 85  | 100  | 115  | 500' 1000' 2500' 5000' 15,000' Reels |
| 2                      | 19                | 74.71                        | 1.02                                       | 0.040 | 0.15                      | 0.006 | 9.60             | 0.378 | 348                       | 233           | 95  | 115  | 130  | 500' 1000' 2500' 5000' 14,000' Reels |
| 1                      | 19                | 100.80                       | 1.27                                       | 0.050 | 0.18                      | 0.007 | 11.05            | 0.435 | 445                       | 298           | 110                                       | 130  | 145  | 500' 1000' 2500' 5000' 22,000' Reels |
| 1/0                    | 19                | 119.70                       | 1.27                                       | 0.050 | 0.18                      | 0.007 | 12.04            | 0.474 | 554                       | 372           | 125                                       | 150  | 170  | 500' 1000' 2500' 5000' 16,000' Reels |
| 2/0                    | 19                | 143.40                       | 1.27                                       | 0.050 | 0.18                      | 0.007 | 13.16            | 0.518 | 687                       | 462           | 145                                       | 175  | 195  | 500' 1000' 2500' 5000' 14,000' Reels |
| 3/0                    | 19                | 172.80                       | 1.27                                       | 0.050 | 0.18                      | 0.007 | 14.43            | 0.568 | 851                       | 572           | 165                                       | 200  | 225  | 500' 1000' 2500' 5000' 12,000' Reels |
| 4/0                    | 19                | 208.80                       | 1.27                                       | 0.050 | 0.18                      | 0.007 | 15.85            | 0.624 | 1059                      | 712           | 195                                       | 230  | 260  | 500' 1000' 2500' 5000' 9000' Reels   |
| 250                    | 37                | 256.10                       | 1.52                                       | 0.060 | 0.20                      | 0.008 | 17.22            | 0.678 | 1266                      | 849           | 215                                       | 255  | 290  | 500' 1000' 2500' 4000' 8500' Reels   |
| 300                    | 37                | 297.30                       | 1.52                                       | 0.060 | 0.20                      | 0.008 | 18.54            | 0.730 | 1503                      | 1010          | 240                                       | 285  | 320  | 500' 1000' 3500' 7000' Reels         |
| 350                    | 37                | 338.20                       | 1.52                                       | 0.060 | 0.20                      | 0.008 | 19.74            | 0.777 | 1741                      | 1170          | 260                                       | 310  | 350  | 500' 1000' 3000' 6000' Reels         |
| 400                    | 37                | 378.30                       | 1.52                                       | 0.060 | 0.20                      | 0.008 | 20.85            | 0.821 | 1979                      | 1330          | 280                                       | 335  | 380  | 500' 1000' 3000' 5000' Reels         |
| 500                    | 37                | 456.30                       | 1.52                                       | 0.060 | 0.20                      | 0.008 | 22.91            | 0.902 | 2455                      | 1650          | 320                                       | 380  | 430  | 500' 1000' 2500' 4000' Reels         |
| 600                    | 61                | 559.70                       | 1.78                                       | 0.070 | 0.23                      | 0.009 | 26.70            | 1.051 | 3004                      | 2019          | 350                                       | 420  | 475  | 500' 1000' 2000' 3000' Reels         |
| 750                    | 61                | 677.20                       | 1.78                                       | 0.070 | 0.23                      | 0.009 | 29.36            | 1.156 | 3670                      | 2466          | 400                                       | 475  | 535  | 500' 1000' 1500' 2500' Reels         |
| 1000                   | 61                | 869.50                       | 1.78                                       | 0.070 | 0.23                      | 0.009 | 33.27            | 1.310 | 4851                      | 3260          | 455                                       | 545  | 615  | 500' 1000' Reels                     |

<sup>1</sup> SuperSlick Elite manufactured under Patent No. 8,658,576

<sup>2</sup> Ampacity of conductors are based on NFPA 70 (NEC) Table 310.15(B)(16). See 110.14(C), 240.4(D) and 310.15(B) for other limitations where applicable.

The above data is approximate and subject to normal manufacturing tolerances.

### PRINT LEGEND:

**SOLID CONDUCTOR SIZES 14 AWG THROUGH 10 AWG:** ENCORE WIRE CORPORATION (SIZE) AWG TYPE THHN OR THWN-2 GR II VW-1 600 VOLTS (UL) OR AWM OR C-(UL) TYPE T90 NYLON OR TWN 75. DATE/TIME/OPER/OC

**14 AWG THROUGH 8 AWG:** ENCORE WIRE CORP (SIZE) TYPE MTW OR THHN OR THWN-2 GR2 VW-1 600V (UL) OR AWM OR C(UL) TYPE T90 NYLON OR TWN 75 **SUPERSLICK ELITE**

**6 AWG THROUGH 1 AWG:** ENCORE WIRE CORP (SIZE) TYPE MTW OR THHN OR THWN-2 GR2 SUN-RES VW-1 600V (UL) OR AWM OR C(UL) TYPE T90 NYLON OR TWN 75 DATE TIME OPERATOR OC **SUPERSLICK ELITE**

**1/0 AWG THROUGH 1000 KCMIL:** ENCORE WIRE CORP (SIZE) TYPE MTW OR THHN OR THWN-2 GR2 SUN-RES VW-1 FT4 IEEE 1202 600V FOR CT USE (UL) OR C(UL) TYPE T90 NYLON OR TWN 75 DATE TIME OPERATOR OC **SUPERSLICK ELITE**

**PACKAGING:** Available in Encore's Cyclone Barrel Packs, Reel Payoff and Reel Deal.

800.962.9473

www.encorewire.com





# WIRE TERMINATION

WWW.IDEALIND.COM • 1-800-435-0705 CUSTOMER ASSISTANCE

## Wire-Nut® Wire Connectors



- Fixed square spring for a secure hold
- Refined range to handle all common applications
- Positive grip shell that is perfect to twist-on with fingers
- Excellent for fine stranded wire applications



Wire Connector  
774A

Cu/Cu  
Only



| Model | Color  | Wire Combination Range                                    | Wire Combination Range (mm)   | Quantity         | Part No.       |
|-------|--------|---|---|------------------|----------------|
| 71B®  | Gray   | 300V<br>22 to 16 AWG<br>Min. 2 #22 – Max. 2 #16           | 300V<br>,34mm <sup>2</sup> to 1,5mm <sup>2</sup><br>Min. 2-,34mm <sup>2</sup> Max. 3-1,5mm <sup>2</sup>   | Box of 100       | <b>30-071</b>  |
|       |        |   |   | Keg of 25,000    | <b>30-271</b>  |
| 72B®  | Blue   | 300V<br>22 to 14 AWG<br>Min. 2 #22 – Max. 3 #16           | 300V<br>,34mm <sup>2</sup> to 2,5mm <sup>2</sup><br>Min. 2-,34mm <sup>2</sup> Max. 3-1,5mm <sup>2</sup>   | Box of 100       | <b>30-072</b>  |
|       |        |   |   | Keg of 10,000    | <b>30-272</b>  |
|       |        |   |   | Barrel of 85,000 | <b>30-872</b>  |
| 73B®  | Orange | 600V*<br>22 to 14 AWG<br>Min. 1 #18 & 1 #20<br>Max. 2 #14 | 600V*<br>,34mm <sup>2</sup> to 2,5mm <sup>2</sup><br>Min. 1-,75mm <sup>2</sup> w/1-,50mm <sup>2</sup><br>Max. 4-1,5mm <sup>2</sup> w/1-,50mm <sup>2</sup> | Box of 100       | <b>30-073</b>  |
|       |        |   |   | Jar of 300       | <b>30-073J</b> |
|       |        |   |   | Bag of 500       | <b>30-273</b>  |
|       |        |   |   | Keg of 10,000    | <b>30-673</b>  |
|       |        |   |   | Barrel of 50,000 | <b>30-873</b>  |
| 74B®  | Yellow | 600V*<br>18 to 12 AWG<br>Min. 2 #18<br>Max. 4 #14 & 1 #18 | 600V*<br>,75mm <sup>2</sup> to 4,0mm <sup>2</sup><br>Min. 2-,75mm <sup>2</sup><br>Max. 4-2,5mm <sup>2</sup> w/1-,75mm <sup>2</sup>                        | Box of 100       | <b>30-074</b>  |
|       |        |   |   | Jar of 175       | <b>30-074J</b> |
|       |        |   |   | Bag of 500       | <b>30-274</b>  |
|       |        |   |   | Keg of 5,000     | <b>30-674</b>  |
| 76B®  | Red    | 600V*<br>18 to 6 AWG<br>Min. 2 #14<br>Max. 4 #12          | 600V*<br>,75mm <sup>2</sup> to 16,0mm <sup>2</sup><br>Min. 2-2,5mm <sup>2</sup><br>Max. 2-4,0mm <sup>2</sup>  | Box of 100       | <b>30-076</b>  |
|       |        |   |   | Jar of 150       | <b>30-076J</b> |
|       |        |   |   | Bag of 250       | <b>30-276</b>  |

\*1,000V maximum in fixtures and signs

## High-Temp Wire-Nut® Wire Connectors



All of the same features as the Wire-Nut® Wire Connector, plus:

- Black, thermoplastic shell designed to withstand extreme heat build-up found in high-wattage light fixtures and signs
- UL Listed to 150°C (302°F)



Wire Connector  
774A

Cu/Cu  
Only



| Model | Color | Wire Combination Range                                    | Wire Combination Range (mm)   | Quantity         | Part No.       |
|-------|-------|---|---|------------------|----------------|
| 71B®  | Black | 300V<br>22 to 16 AWG<br>Min. 2 #22 Str – Max. 2 #16       | 300V<br>,34mm <sup>2</sup> to 1,5mm <sup>2</sup><br>Min. 2-,34mm <sup>2</sup> – Max. 2-1,5mm <sup>2</sup>   | Box of 100       | <b>30-3627</b> |
|       |       |   |   | Keg of 25,000    | <b>30-251</b>  |
| 72B®  | Black | 300V<br>22 to 14 AWG<br>Min. 2 #22 – Max. 3 #16           | 300V<br>,34mm <sup>2</sup> to 2,5mm <sup>2</sup><br>Min. 2-,34mm <sup>2</sup> – Max. 3-1,5mm <sup>2</sup>   | Box of 100       | <b>30-3628</b> |
|       |       |   |   | Keg of 10,000    | <b>30-252</b>  |
| 73B®  | Black | 600V*<br>22 to 14 AWG<br>Min. 1 #18 w/1 #20<br>Max. 2 #14 | 600V*<br>,34mm <sup>2</sup> to 2,5mm <sup>2</sup><br>Min. 1-,75mm <sup>2</sup> w/1-,50mm <sup>2</sup><br>Max. 4-1,5mm <sup>2</sup> w/1-,50mm <sup>2</sup> | Box of 100       | <b>30-3629</b> |
|       |       |   |   | Keg of 10,000    | <b>30-253</b>  |
|       |       |   |   | Barrel of 50,000 | <b>30-803</b>  |
| 59B™  | Black | 600V*<br>22 to 12 AWG<br>Min. 2 #20 – Max. 3 #14          | 600V*<br>,34mm <sup>2</sup> to 4,0mm <sup>2</sup><br>Min. 2-,5mm <sup>2</sup> – Max. 3-2,5mm <sup>2</sup>   | Box of 100       | <b>30-059</b>  |
|       |       |   |   | Keg of 5,000     | <b>30-259</b>  |

\*1,000V maximum in fixtures and signs

## Wing-Nut® Wire Connectors

- Contoured wing profile provides extra leverage for superior torque
- Expanding, live-action spring expands to accommodate a wide range of wire sizes and combinations
- Co-polymer shell expands for smooth, progressive tightening providing dependable connections
- Removable for repeat usage on same size or larger combinations
- Tough, UL94V-2 flame retardant shell rated at 105°C (221°F)



**POWER**  
from the IDEAL family of  
Performance & Reliability



Wire Connector  
774A

Cu/Cu  
Only



| Model | Color  | Wire Combination Range   | Wire Combination Range (mm)  | Quantity         | Part No. |
|-------|--------|--|--|------------------|----------|
| 451®  | Yellow | 600V*<br>18 to 10 AWG<br>Min. 2 #18 – Max. 3 #12   | 600V*<br>,75mm² to 6,0mm²<br>Min. 2-,75mm² – Max. 3-4,0mm²                 | Box of 100       | 30-451   |
|       |        |  |  | Jar of 225       | 30-451J  |
|       |        |  |  | Jar of 500       | 30-651J  |
|       |        |  |  | Bag of 500       | 30-651   |
|       |        |  |  | Barrel of 35,000 | 30-851   |
| 452®  | Red    | 600V*<br>18 to 8 AWG<br><b>Min. 2 #18 – Max. 4 #10</b><br><b>(Widest range in the Industry!)</b> | 600V*<br>,75mm² to 10,0mm²<br>Min. 2-,75mm² – Max. 4-6,0mm²                | Box of 100       | 30-452   |
|       |        |  |  | Jar of 300       | 30-452J  |
|       |        |  |  | Jar of 500       | 30-652J  |
|       |        |  |  | Bag of 500       | 30-652   |
|       |        |  |  | Barrel of 25,000 | 30-852   |
| 454®  | Blue   | 600V*<br>14 to 6 AWG<br>Min. 3 #12 – Max. 1 #6 w/2 #8  | 600V*<br>2,5mm² to 16,0mm²<br>Min. 3-4,0mm² –<br>Max. 2-16,0mm² w/1-4,0mm² | Box of 25        | 30-454   |
|       |        |  |  | Bag of 100       | 30-654   |

\*1,000V maximum in fixtures and signs

## Greenie® Grounding Wire Connectors

- Designed for making ground connections and bonding non-metallic sheathed cable
- Contoured wings for superior leverage
- Live-action, square-wire spring provides quality grounding connections
- Tough, UL 94V-2 flame-retardant shell



Ground Connector  
951L

Cu/Cu  
Only



| Model | Color | Wire Combination Range                  | Wire Combination Range (mm)                                   | Quantity   | Part No. |
|-------|-------|---|---|------------|----------|
| 92®   | Green | 14 to 10 AWG<br>Min. 2 #14 – Max. 4 #12 | 2,5mm² to 6,0mm²<br>Min. 2-2,5mm²<br>Max. 2-4,0mm² w/1-2,5mm² | Box of 100 | 30-092   |
|       |       |   |   | Jar of 150 | 30-092J  |
|       |       |   |   | Bag of 500 | 30-292   |

Greenie® Grounding Connector fully meets the intent of the NEC and specifically aids in compliance with the following:

### ARTICLE 250: GROUNDING

250-146 Connecting Receptacle Grounding Terminal to Box

250-148 Continuity and Attachment of Equipment Grounding Conductors to Boxes

(B) Grounding continuity

(D) Nonmetallic boxes

*See Page A-19 for more IDEAL Grounding Products.*





# WIRE TERMINATION

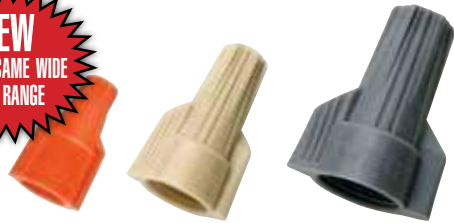
WWW.IDEALIND.COM • 1-800-435-0705 CUSTOMER ASSISTANCE

PREFERRED CHOICE  
FOR RESIDENTIAL  
JOBS

**COMFORT**  
from the IDEAL family of  
Performance & Reliability

## Twister® Wire Connectors

NEW  
COLOR, SAME WIDE  
WIRE RANGE



Wire Connector  
774A

Cu/Cu  
Only



- Swept wings for more comfort, extra leverage, and less effort on large combinations
- Expanding, live-action spring supports a wide range of common wiring configurations
- Polypropylene shell expands for smooth, progressive tightening providing dependable connections
- Hexagonal shape accommodates standard nutdriver for easy installation
- Quick take-up on even the toughest combinations, including solid-to-stranded

| Model | Color  | Wire Combination Range                                 | Wire Combination Range (mm)   | Quantity         | Part No.       |
|-------|--------|--|---|------------------|----------------|
| 340™  | Orange | 600V*<br>22 to 10 AWG<br>Min. 2 #22 – Max. 3 #12       | 600V*<br>,34mm <sup>2</sup> to 4,0mm <sup>2</sup><br>Min. 2-,34mm <sup>2</sup> – Max. 3-4,0mm <sup>2</sup>                          | Box of 100       | <b>30-340</b>  |
|       |        |  |   | Jar of 500       | <b>30-640J</b> |
| 341®  | Tan    | 600V*<br>22 to 8 AWG<br>Min. 3 #22 – Max. 3 #10        | 600V*<br>,34mm <sup>2</sup> to 10,0mm <sup>2</sup><br>Min. 3-,34mm <sup>2</sup> – Max. 3-6,0mm <sup>2</sup>                         | Box of 100       | <b>30-341</b>  |
|       |        |  |   | Jar of 400       | <b>30-441J</b> |
|       |        |  |   | Bag of 500       | <b>30-641</b>  |
|       |        |  |   | Jar of 750       | <b>30-341J</b> |
|       |        |  |   | Barrel of 25,000 | <b>30-841</b>  |
| 342®  | Gray   | 600V*<br>18 to 6 AWG<br>Min. 3 #14 – Max. 2 #8 w/2 #12 | 600V*<br>,75mm <sup>2</sup> to 10,0mm <sup>2</sup><br>Min. 3-2,5mm <sup>2</sup> – Max. 2-10,0mm <sup>2</sup> w/2-4,0mm <sup>2</sup> | Box of 50        | <b>30-342</b>  |
|       |        |  |   | Bag of 250       | <b>30-642</b>  |
|       |        |  |   | Barrel of 15,000 | <b>30-842</b>  |

\*1,000V maximum in fixtures and signs

## Twister® Pro Wire Connectors

**Twister**  
PRO




Wire Connector  
774A

Cu/Cu  
Only



- SureGrip™ overmolding provides improved leverage, more torque, and faster connections
- Comfortable swept wings ease hand fatigue
- Expanding square-wire spring provides a secure connection every time
- Tough, UL 94V-2 flame-retardant shell rated at 105°C (221°F)

| Model | Color      | Wire Combination Range   | Wire Combination Range (mm)  | Quantity         | Part No.       |
|-------|------------|--|--|------------------|----------------|
| 344®  | Red/Yellow |  600V*<br>22 to 8 AWG<br><b>Min. 2 #18 – Max. 4 #10</b><br><b>(Widest range in the Industry!)</b> | 600V*<br>,34mm <sup>2</sup> to 10,0mm <sup>2</sup><br>Min. 2-,75mm <sup>2</sup><br>Max. 4,0-6,0mm <sup>2</sup> | Box of 50        | <b>30-144</b>  |
|       |            |  |  | Jar of 250       | <b>30-244J</b> |
|       |            |  |  | Jar of 500       | <b>30-644J</b> |
|       |            |  |  | Barrel of 20,000 | <b>30-944</b>  |

\*1,000V maximum in fixtures and signs

**COMFORT**  
from the IDEAL family of  
Performance & Reliability



302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Transmittal #:** 17

**Date:** 6/3/2020

**L-D Job #:** 56-521

**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**Subject:** Boxes Submittal

### WE ARE SENDING YOU

☒ Attached

☐ Under separate cover via the following items:

☐ Shop drawings

☐ Sketch(s)

☐ Plans

☐ Samples

☐ O&M Manual

☐ Change order

☐ Specifications

☒ Submittal

| Document Type | Copies | Date | No.           | Description        |
|---------------|--------|------|---------------|--------------------|
| Submittal     | 1      |      | 16130-1 Rev 0 | Boxes Product Data |

### THESE ARE TRANSMITTED as checked below:

☒ For approval

☐ Reviewed as submitted

☐ Resubmit \_\_\_ copies for approval

☐ For your use

☐ Reviewed as noted

☐ Submit \_\_\_ copies for distribution

☐ As requested

☐ Returned for corrections

☐ Return \_\_\_ corrected prints

☐ For review and comment

☐ Other

☐ FOR BIDS DUE

☐ PRINTS RETURNED AFTER LOAN TO US

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_

## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.

800 S 5TH STREET

CHESTERTON, IN 46304

**Spec Section No:** 16130

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/3/2020

**Spec Section Title:** Boxes

**Submittal Title:** Boxes Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.

Contractor's Stamp




**Architect:**

TRIA ARCHITECTURE

Margaret Gory

Architect's Stamp

|   |                       |
|---|-----------------------|
|    |                       |
| <input checked="" type="checkbox"/>   | REVIEWED AS SUBMITTED |
| <input type="checkbox"/>  | REVIEWED AS NOTED     |
| <input type="checkbox"/>  | REVISE AND RESUBMIT   |
| <input type="checkbox"/>  | NOT ACCEPTED          |
| <p>THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.</p> |                       |
| BY  | DATE                  |
| Keith O'Higgins   | 06-09-20              |

Engineer's Stamp

# Steel square boxes

## 4" SQUARE OUTLET BOXES & COVERS

### Applications:

- For use with conduit
- Available in red for fire alarm applications

### Features:

- Ideal for exposed work applications, providing an easy method for the installation of electrical devices (switches, receptacles, fans, lights, etc.)
- Raised ground screw location in the welded boxes saves time in installation
- Available with pre-installed ground screws and pigtails for increased labor savings
- Knockouts are suitable for use without a bonding jumper in circuits above or below 250 volts
- Available in two depths for differing cubic capacity requirements
- Welded or drawn construction to match customer preference
- Extensive cover offering to meet various customer applications and needs



### Certifications and compliances:

- UL Listed

## 4" SQUARE OUTLET BOXES – 18.0 CUBIC INCH CAPACITY

1 1/4" DEEP – FOR CONDUIT

UL LISTED



TP408

Steel boxes

| Cat. # | Bracket | Description | Grounding method | Knockouts |          | Unit qty. | Wt. lbs. per 100 |
|--------|---------|-------------|------------------|-----------|----------|-----------|------------------|
|        |         |             |                  | Sides     | Bottom   |           |                  |
| TP408  | -       | Drawn       | Tapped hole      | 12 – 1/2" | 5 – 1/2" | 50        | 61               |

# Steel square boxes

## 4" SQUARE OUTLET BOXES – 22.0 CUBIC INCH CAPACITY (WELDED) 21.0 CUBIC INCH CAPACITY (DRAWN)

1 1/2" DEEP – FOR CONDUIT

UL LISTED



TP404/TP404PF



TP404SSB



TP404MSB



TP404RED



TP425



TP469



TP830<sup>B</sup>



TP405



TP412  
TP839<sup>B</sup>



TP410



TP414RED



TP414



TP418



TP423RED



TP467MSB

| Cat. #                 | Metal stud sizes | Bracket        | Description | Grounding method       | Knockouts                   |                             | Unit qty. | Wt. lbs. per 100 |
|------------------------|------------------|----------------|-------------|------------------------|-----------------------------|-----------------------------|-----------|------------------|
|                        |                  |                |             |                        | Sides                       | Bottom                      |           |                  |
| TP404                  | -                | -              | Welded      | Ground bump            | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50        | 72               |
| TP404G <sup>F</sup>    | -                | -              | Welded      | Ground bump with screw | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50        | 72               |
| TP404MSB               | -                | MSB            | Welded      | Ground bump            | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 83               |
| TP404RED               | -                | -              | Welded      | Ground bump            | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50        | 72               |
| TP404REDMSB            | -                | MSB            | Welded      | Ground bump            | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 83               |
| TP404PF <sup>C E</sup> | -                | -              | Welded      | Ground bump            | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50        | 72               |
| TP404SSB               | -                | SSB            | Welded      | Ground bump            | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50        | 83               |
| TP425                  | All              | "VP"           | Welded      | Ground bump            | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 82               |
| TP425G <sup>F</sup>    | All              | "VP"           | Welded      | Ground bump with screw | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 82               |
| TP423                  | All              | "VMS"          | Welded      | Ground bump            | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 81               |
| TP423G <sup>F</sup>    | All              | "VMS"          | Welded      | Ground bump with screw | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 81               |
| TP423RED               | All              | "VMS"          | Welded      | Ground bump            | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 81               |
| TP405                  | -                | -              | Drawn       | Tapped hole            | 4 - 1/2", 6 - 1/2" + 3/4" C | 3 - 1/2", 2 - 3/4"          | 50        | 67               |
| TP410                  | -                | -              | Drawn       | Tapped hole            | 12 - 1/2"                   | 5 - 1/2"                    | 50        | 67               |
| TP412                  | -                | -              | Drawn       | Tapped hole            | 8 - 3/4"                    | 3 - 1/2", 2 - 3/4"          | 50        | 67               |
| TP414                  | -                | -              | Drawn       | Ground bump            | 8 - 1/2", 4 - 3/4"          | 2 - 1/2", 2 - 3/4"          | 50        | 67               |
| TP414G <sup>F</sup>    | -                | -              | Drawn       | Ground bump with screw | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | 50        | 67               |
| TP414RED               | -                | -              | Drawn       | Ground bump            | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | 50        | 67               |
| TP418                  | -                | "F", set flush | Welded      | Ground bump            | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 84               |
| TP467                  | -                | -              | Welded      | Ground bump            | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | 50        | 72               |
| TP467MSB               | -                | MSB            | Welded      | Ground bump            | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 78               |
| TP469                  | All              | "VMS"          | Welded      | Ground bump            | 6 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | 25        | 81               |
| <b>Air Plenum</b>      |                  |                |             |                        |                             |                             |           |                  |
| TP830 <sup>B</sup>     | -                | -              | Drawn       | Tapped screw           | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | 50        | 72               |
| TP839 <sup>B</sup>     | -                | -              | Drawn       | Tapped screw           | 8 - 3/4"                    | 3 - 1/2", 2 - 3/4"          | 50        | 72               |

<sup>B</sup> For air plenum (no mounting holes) - not UL Listed.

<sup>C</sup> cUL Listed.

<sup>E</sup> TP catalog numbers ending in PF include ground screw with pigtail lead.

<sup>F</sup> CSA certified.



# Steel square boxes

## 4" SQUARE OUTLET BOXES – 22.0 CUBIC INCH CAPACITY

1½" DEEP

FOR NON-METALLIC CABLE – CLAMPS IN EACH END

UL LISTED



TP444



TP444MSB



TP444SSB



TP449



TP446

| Cat. #              | Bracket        | Description | Knockouts                        |        | Unit qty. | Wt. lbs. per 100 |
|---------------------|----------------|-------------|----------------------------------|--------|-----------|------------------|
|                     |                |             | Sides                            | Bottom |           |                  |
| TP444               | -              | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 50        | 77               |
| TP444MSB            | MSB            | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 25        | 81               |
| TP444SSB            | SSB            | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 50        | 88               |
| TP446               | "F", set flush | Welded      | 4 - cable, 2 - ½", 1 - ½" + ¾" E | 1 - ½" | 25        | 88               |
| TP449               | "VMS"          | Welded      | 4 - cable, 2 - ½", 1 - ½" + ¾" E | 1 - ½" | 25        | 85               |
| TP449G <sup>Ⓕ</sup> | "VMS"          | Welded      | 4 - Cable, 2 - ½", 1 - ½" + ¾" E | 1 - ½" | 25        | 85               |

<sup>Ⓕ</sup> CSA certified. G indicates ground screw installed.

## 4" SQUARE OUTLET BOXES – 22.0 CUBIC INCH CAPACITY

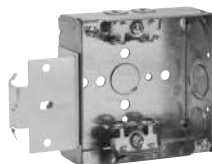
1½" DEEP

FOR ARMORED & METAL-CLAD (MCI) CABLE & HCF CABLE – CLAMPS IN EACH END

UL LISTED



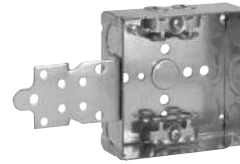
TP454



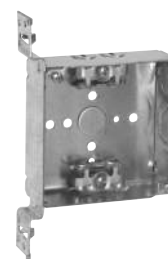
TP454MSB



TP454SSB



TP456



TP459

| Cat. #                           | Bracket        | Description | Knockouts                        |        | Unit qty. | Wt. lbs. per 100 |
|----------------------------------|----------------|-------------|----------------------------------|--------|-----------|------------------|
|                                  |                |             | Sides                            | Bottom |           |                  |
| TP459                            | "VMS"          | Welded      | 4 - cable, 2 - ½", 1 - ½" + ¾" E | 1 - ½" | 25        | 89               |
| TP454 <sup>Ⓐ</sup>               | -              | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 50        | 81               |
| TP454MSB <sup>Ⓐ</sup>            | MSB            | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 25        | 91               |
| TP454G <sup>Ⓐ</sup> <sup>Ⓕ</sup> | -              | Welded      | 4 - Cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 50        | 81               |
| TP454PF <sup>Ⓔ</sup>             | -              | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 50        | 81               |
| TP454SSB <sup>Ⓐ</sup>            | SSB            | Welded      | 4 - cable, 4 - ½", 2 - ½" + ¾" E | 1 - ½" | 25        | 82               |
| TP456 <sup>Ⓐ</sup>               | "F", set flush | Welded      | 4 - cable, 2 - ½", 1 - ½" + ¾" E | 1 - ½" | 25        | 92               |
| TP456PF <sup>Ⓔ</sup>             | "F", set flush | Welded      | 4 - cable, 2 - ½", 1 - ½" + ¾" E | 1 - ½" | 25        | 92               |

<sup>Ⓐ</sup> UL approved for use with aluminum interlocking grounding metal-clad cable, Type MCIA (Southwire MCAP™).

MCAP™ is a registered trademark of Southwire Company.

<sup>Ⓔ</sup> TP catalog numbers ending in PF include ground screw with pigtail lead.

<sup>Ⓕ</sup> CSA certified. G indicates ground screw installed.

# Steel square boxes

## 4" SQUARE OUTLET BOXES – 30.3 CUBIC INCH CAPACITY

2 1/8" DEEP – FOR CONDUIT

UL LISTED



TP403/TP403PF



TP403BH



TP403MSB



TP403SSB



TP403RED



TP403REDBH



TP432



TP432VMS



TP434



TP438/TP831



TP432MSB



TP434RED



TP451RED



TP451

| Cat. #            | Bracket | Description | Grounding method  | Knockouts                   |                             | 16" Fixture weight (lbs.) | 24" Fixture weight (lbs.) | Unit qty. | Wt. lbs. per 100 |
|-------------------|---------|-------------|-------------------|-----------------------------|-----------------------------|---------------------------|---------------------------|-----------|------------------|
|                   |         |             |                   | Sides                       | Bottom                      |                           |                           |           |                  |
| TP403             | -       | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP403BH           | -       | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50                        | 50                        | 25        | 84               |
| TP403G            | -       | Welded      | Grnd bump w/screw | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP403MSB          | MSB     | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 95               |
| TP403RED          | -       | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP403REDBH        | -       | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | 50                        | 50                        | 25        | 84               |
| TP403REDMSB       | MSB     | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 95               |
| TP403PF           | -       | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP403SSB          | SSB     | Welded      | Ground bump       | 8 - 1/2", 4 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 95               |
| TP432             | -       | Welded      | Ground bump       | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP432G            | -       | Welded      | Grnd bump w/screw | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP432RED          | -       | Welded      | Ground bump       | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP432MSB          | MSB     | Welded      | Ground bump       | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 95               |
| TP432REDMSB       | MSB     | Welded      | Ground bump       | 8 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 95               |
| TP432VMS          | "VMS"   | Welded      | Ground bump       | 6 - 3/4"                    | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 99               |
| TP436             | -       | Welded      | Ground bump       | 8 - 1"                      | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP436G            | -       | Welded      | Grnd bump w/screw | 8 - 1"                      | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 84               |
| TP436MSB          | MSB     | Welded      | Ground bump       | 8 - 1"                      | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 95               |
| TP434             | -       | Drawn       | Ground bump       | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 84               |
| TP434G            | -       | Drawn       | Grnd bump w/screw | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 84               |
| TP434RED          | -       | Drawn       | Ground bump       | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 84               |
| TP438             | -       | Drawn       | Ground bump       | 4 - 1/2", 6 - 1/2" + 3/4" C | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 84               |
| TP438G            | -       | Drawn       | Grnd bump w/screw | 4 - 1/2", 6 - 1/2" + 3/4" C | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 84               |
| TP438PF           | -       | Drawn       | Ground bump       | 4 - 1/2", 6 - 1/2" + 3/4" C | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 84               |
| TP451             | "VMS"   | Welded      | Ground bump       | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 96               |
| TP451G            | "VMS"   | Welded      | Grnd bump w/screw | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 96               |
| TP451PF           | "VMS"   | Welded      | Ground bump       | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 96               |
| TP451RED          | "VMS"   | Welded      | Ground bump       | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 96               |
| TP437             | "VP"    | Welded      | Ground bump       | 6 - 1/2", 3 - 1/2" + 3/4" E | 2 - 1/2", 2 - 1/2" + 3/4" E | -                         | -                         | 25        | 98               |
| <b>Air Plenum</b> |         |             |                   |                             |                             |                           |                           |           |                  |
| TP831             | -       | Drawn       | Ground bump       | 8 - 1/2", 4 - 3/4"          | 3 - 1/2", 2 - 3/4"          | -                         | -                         | 25        | 90               |

<sup>B</sup> For Air Plenum (no mounting holes) - not UL Listed.

<sup>C</sup> UL Listed.

<sup>E</sup> TP catalog numbers ending in PF include ground screw with pigtail lead.

<sup>F</sup> CSA certified.

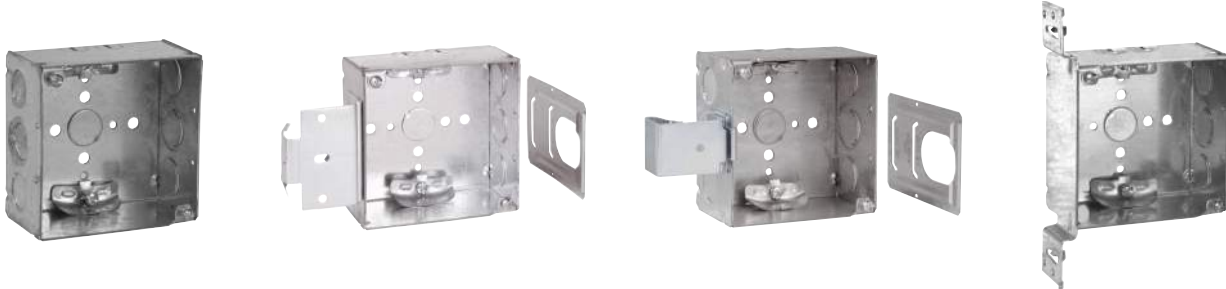
# Steel square boxes

## 4" SQUARE OUTLET BOXES – 30.3 CUBIC INCH CAPACITY

2 1/8" DEEP

FOR NON-METALLIC CABLE – CLAMPS IN EACH END

UL LISTED



TP450

TP450MSB

TP450SSB

TP452

| Cat. #   | Bracket | Description | Knockouts                              |          | Unit qty. | Wt. lbs. per 100 |
|----------|---------|-------------|--|----------|-----------|------------------|
|          |         |             | Sides                                  | Bottom   |           |                  |
| TP450    | -       | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" + 3/4" E | 1 - 1/2" | 25        | 90               |
| TP450MSB | MSB     | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" + 3/4" E | 1 - 1/2" | 25        | 101              |
| TP450SSB | SSB     | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" + 3/4" E | 1 - 1/2" | 25        | 101              |
| TP452    | "VMS"   | Welded      | 4 - cable, 2 - 1/2", 1 - 1/2" + 3/4" E | 1 - 1/2" | 25        | 104              |

## 4" SQUARE OUTLET BOXES – 30.3 CUBIC INCH CAPACITY

2 1/8" DEEP

FOR ARMORED & METAL-CLAD (MCI) CABLE & HCF CABLE – CLAMPS IN EACH END

UL LISTED



TP431

TP431SSB

TP440

| Cat. #                | Metal stud sizes | Bracket | Description | Knockouts                              |          | Unit qty. | Wt. lbs. per 100 |
|-----------------------|------------------|---------|-------------|--|----------|-----------|------------------|
|                       |                  |         |             | Sides                                  | Bottom   |           |                  |
| TP431 <sup>A</sup>    | -                | -       | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 91               |
| TP431G <sup>A F</sup> | -                | -       | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 91               |
| TP431PF <sup>E</sup>  | -                | -       | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 91               |
| TP431MSB <sup>A</sup> | -                | MSB     | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 91               |
| TP431SSB <sup>A</sup> | -                | SSB     | Welded      | 4 - cable, 4 - 1/2", 2 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 102              |
| TP440 <sup>A</sup>    | All              | "VMS"   | Welded      | 4 - cable, 2 - 1/2", 1 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 103              |
| TP440G <sup>A F</sup> | All              | "VMS"   | Welded      | 4 - cable, 2 - 1/2", 1 - 1/2" & 3/4" E | 1 - 1/2" | 25        | 103              |

<sup>A</sup> UL approved for use with aluminum interlocking grounding metal-clad cable, Type MCIA (Southwire MCAP™).

MCAP™ is a registered trademark of Southwire Company.

<sup>E</sup> TP catalog numbers ending in PF include ground screw with pigtail lead.

<sup>F</sup> CSA certified. G indicates ground screw installed.

# Steel square boxes

## 4" SQUARE TWO DEVICE BOXES – 30.3 CUBIC INCH CAPACITY

2 1/8" DEEP – FOR CONDUIT

UL LISTED



TP391



TP395

| Cat. # | Bracket        | Description | Grounding method | Knockouts          |                    | Unit qty. | Wt. lbs. per 100 |
|--------|----------------|-------------|------------------|--------------------|--------------------|-----------|------------------|
|        |                |             |                  | Sides              | Bottom             |           |                  |
| TP391  | "VS", set 7/8" | Drawn       | Ground bump      | 6 - 1/2", 3 - 3/4" | 3 - 1/2", 2 - 3/4" | 25        | 95               |
| TP395  | -              | Drawn       | Ground bump      | 8 - 1/2", 4 - 3/4" | 3 - 1/2", 2 - 3/4" | 25        | 84               |

## 4" SQUARE OUTLET BOXES – 50.0 CUBIC INCH CAPACITY

3 1/2" DEEP – FOR CONDUIT

UL LISTED, FILE NO. E-15022

### Applications:

- 4" square, 3 1/2" deep outlet boxes are ideal for applications requiring increased capacity, including the installation of speaker boxes, fire alarms, strobes, security cameras and other oversized devices
- For use with rigid/IMC and EMT conduit



TP411



TP411RED



TP413



TP413RED

| Cat. #                | Bracket | Description | Grounding method | Knockouts                           |                     | Unit qty. | Wt. lbs. per 100 |
|-----------------------|---------|-------------|------------------|-------------------------------------|---------------------|-----------|------------------|
|                       |         |             |                  | Sides                               | Bottom              |           |                  |
| TP411 <sup>Ⓢ</sup>    | "S"     | Welded      | Tapped hole      | 10 - 1/2" + 3/4" C                  | 4 - 1/2" + 3/4" C   | 10        | 138              |
| TP411RED <sup>Ⓢ</sup> | "S"     | Welded      | Tapped hole      | 10 - 1/2" + 3/4" C                  | 4 - 1/2" + 3/4" C   | 10        | 145              |
| TP413 <sup>Ⓢ</sup>    | -       | Welded      | Ground bump      | 8 - 1/2" + 3/4" C, 4 - 3/4", 4 - 1" | 2 - 1/2" + 2 - 3/4" | 10        | 113              |
| TP413RED <sup>Ⓢ</sup> | -       | Welded      | Ground bump      | 8 - 1/2" + 3/4" C, 4 - 3/4", 4 - 1" | 2 - 1/2" + 2 - 3/4" | 20        | 120              |

<sup>Ⓢ</sup>cUL Listed.

Steel boxes

# Steel square covers

## COVERS FOR 4" SQUARE BOXES – CUBIC INCH CAPACITY (SEE BELOW)

UL LISTED

#8-32 screw used on covers



TP472



TP472RED



TP474



TP478  
TP487



TP473, TP475, TP476,  
TP477, TP479, TP483



TP850<sup>B</sup>



TP854<sup>B</sup>



AMR0

| Cat. #                | Description   | Unit qty. | Wt. lbs. per 100 | Capacity cu. in. |
|-----------------------|---|-----------|------------------|------------------|
| TP472 <sup>H</sup>    | Flat blank  | 50        | 31               | -                |
| TP472RED              | Flat blank, red   | 50        | 31               | -                |
| TP474 <sup>H</sup>    | Flat, open with ears 2 <sup>3</sup> / <sub>4</sub> "          | 50        | 21               | -                |
| TP478 <sup>H</sup>    | Flat, with 1/2" KO  | 50        | 31               | -                |
| TP478RED <sup>H</sup> | Flat, with 1/2" KO  | 50        | 31               | -                |
| TP487 <sup>H</sup>    | Flat, with 3/4" KO  | 50        | 29               | -                |
| TP473 <sup>H</sup>    | Raised 1/4", open with ears 2 <sup>3</sup> / <sub>4</sub> "   | 50        | 23               | 1.3              |
| TP476 <sup>H</sup>    | Raised 1/2", open with ears 2 <sup>3</sup> / <sub>4</sub> "   | 50        | 26               | 4.0              |
| TP477 <sup>H</sup>    | Raised 5/8", open with ears 2 <sup>3</sup> / <sub>4</sub> "   | 50        | 27               | 5.0              |
| TP475 <sup>H</sup>    | Raised 3/4", open with ears 2 <sup>3</sup> / <sub>4</sub> "   | 25        | 31               | 6.0              |
| TP479 <sup>H</sup>    | Raised 1", open with ears 2 <sup>3</sup> / <sub>4</sub> "     | 25        | 34               | 7.0              |
| TP483 <sup>C H</sup>  | Raised 1 1/4", open with ears 2 <sup>3</sup> / <sub>4</sub> " | 25        | 31               | 9.5              |
| AMR0 <sup>I</sup>     | 3/4" - 1 1/2" round adjustable mud ring                       | 25        | 44               | 6.1              |
| <b>Air Plenum</b>     |   |           |                  |                  |
| TP850 <sup>B</sup>    | Flat blank gasketed with captive screws                       | 25        | 31               | -                |
| TP854 <sup>B</sup>    | Flat ring double gasketed                                     | 25        | 12               | -                |

<sup>B</sup> For air plenum (no mounting holes) - not UL Listed.

<sup>C</sup> cUL Listed.

<sup>I</sup> ETL listed.

<sup>H</sup> CSA certified.

## MUD RINGS FOR 4" SQUARE STEEL OUTLET BOXES

UL LISTED



TP480



TP482, TP484,  
TP486, TP489



TP494



TP488, TP490



TP496



TP501, TP502



AMR1



AMR2



AMR158

| Cat. #                | Description                     | Unit qty. | Wt. lbs. per 100 | Capacity cu. in. |
|-----------------------|---------------------------------|-----------|------------------|------------------|
| <b>One Device</b>     |                                 |           |                  |                  |
| TP480 <sup>H</sup>    | Flat                            | 50        | 20               | -                |
| TP482 <sup>H</sup>    | 1/4" raised                     | 50        | 21               | 1.8              |
| TP484 <sup>H</sup>    | 1/2" raised                     | 50        | 23               | 3.8              |
| TP489 <sup>H</sup>    | 5/8" raised                     | 50        | 26               | 4.3              |
| TP489RED <sup>H</sup> | 5/8" raised                     | 50        | 26               | 4.3              |
| TP486 <sup>H</sup>    | 3/4" raised                     | 50        | 30               | 5.5              |
| TP488 <sup>H</sup>    | 1" raised                       | 50        | 34               | 6.8              |
| TP490 <sup>H</sup>    | 1 1/4" raised                   | 25        | 39               | 8.5              |
| AMR1 <sup>C</sup>     | 3/4" - 1 1/2" raised adjustable | 25        | 47               | -                |
| AMR158 <sup>C</sup>   | 5/8" - 1 1/4" raised adjustable | 25        | 44               | 6.0              |
| <b>Two Device</b>     |                                 |           |                  |                  |
| TP494 <sup>H</sup>    | Flat                            | 50        | 12               | -                |
| TP496 <sup>H K</sup>  | 1/4" raised                     | 50        | 13               | 3.0              |
| TP498 <sup>H K</sup>  | 1/2" raised                     | 50        | 18               | 6.0              |
| TP499 <sup>H K</sup>  | 5/8" raised                     | 50        | 22               | 8.0              |
| TP500 <sup>H K</sup>  | 3/4" raised                     | 50        | 24               | 9.0              |
| TP501 <sup>H</sup>    | 1 1/4" raised                   | 25        | 31               | 14.0             |
| TP502 <sup>H</sup>    | 1" raised                       | 25        | 30               | 11.7             |
| AMR2 <sup>C</sup>     | 5/8" - 1 1/2" raised adjustable | 25        | 50               | 11.3             |

<sup>C</sup> cUL Listed.

<sup>H</sup> CSA certified.

<sup>K</sup> Slotted design for use with 4" square box partitions.



# Steel square covers

## 4" SQUARE SURFACE COVERS – 5.5 CUBIC INCH CAPACITY

RAISED 1/2"

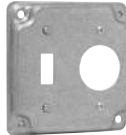
UL LISTED

CSA LISTED

Screw(s) provided in raised cover kit are for use with the center hole on duplex receptacles. Nuts that are provided in kit are to be used in conjunction with the screws that are provided as standard packaging with devices to mount device to raised cover. For GFCI device installation, no screw is needed; please disregard.



TP503



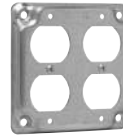
TP504



TP506



TP508



TP510



TP512



TP507, TP514,  
TP519



TP516



TP509 (4 screws),  
TP518 (2 screws)



TP513



TP511



TP515



TP517

| Cat. # | Description   | Unit<br>qty. | Wt. lbs.<br>per 100 |
|--------|---|--------------|---------------------|
| TP503  | Raised blank  | 50           | 35                  |
| TP504  | For one toggle switch and one single receptacle 1 13/32" (1.406) dia. | 50           | 31                  |
| TP506  | For one toggle switch and one duplex receptacle                       | 50           | 31                  |
| TP508  | For two toggle switches   | 50           | 35                  |
| TP510  | For two duplex receptacles  | 50           | 26                  |
| TP512  | For one toggle switch   | 50           | 35                  |
| TP507  | For one single receptacle 1 19/32" (1.594) dia.                       | 50           | 37                  |
| TP514  | For one single receptacle 1 13/32" (1.406) dia.                       | 50           | 34                  |
| TP519  | For one power outlet 1 23/32" (1.719) dia.                            | 50           | 37                  |
| TP516  | For one duplex receptacle   | 50           | 31                  |
| TP509  | For one power outlet 2 7/16" (2.438) dia.                             | 50           | 23                  |
| TP518  | For one power outlet 2 3/4" (2.141) dia.                              | 50           | 34                  |
| TP513  | For one GFCI receptacle   | 50           | 31                  |
| TP511  | For two GFCI receptacles  | 50           | 26                  |
| TP515  | For one toggle switch and one GFCI receptacle                         | 50           | 31                  |
| TP517  | For one duplex receptacle and one GFCI receptacle                     | 50           | 26                  |

# Steel square covers

## UNI-MOUNT™ COVERS

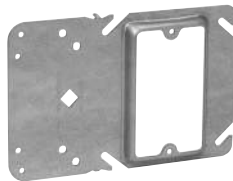
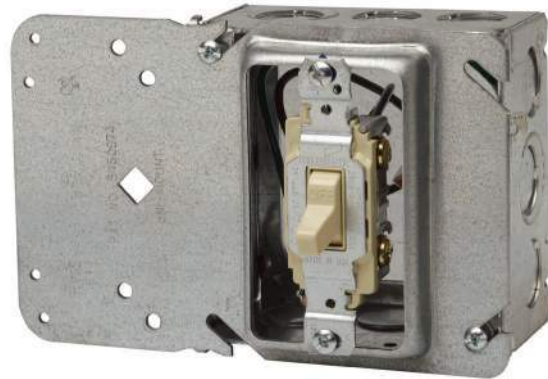
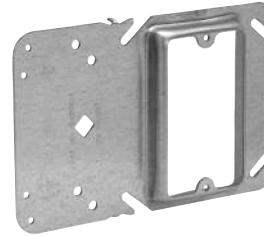
The Uni-Mount combines the features of a mounting device plate with those of a box support, giving you one universal plate for all of your needs. Specifically designed for use with metal or wood studs:

The new and improved version incorporates four small holes on the left side (support side) of the bracket. These holes allow for the attachment of box mounting brackets to allow for use of both sides of the stud. The holes are strategically located to accept either the Eaton's B-Line Series BB423 bracket or the Caddy H23 bracket. Additionally, the viewing hole has been significantly enlarged (and is now diamond shaped) to make it even easier to find mark lines on the stud.

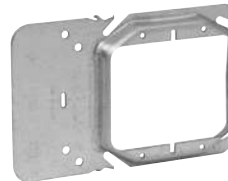
### Features:

- Guide tabs ensure consistent alignment on stud
- Stud alignment hole ensures consistent mounting height
- Rigid bracket design eliminates the need for far side support
- Available as a single or two device cover
- Universal design fits all 4" square boxes
- Available in 1/2", 5/8" and 3/4" raised
- Can be ordered pre-assembled to popular 4" square boxes
- Fast and easy installation
- Can be used in multiple applications, resulting in less items to stock
- Less labor intensive
- Less material handling
- No multiple assemblies to handle
- Can be used in Class II communications outlets for low voltage without a box
- UL Listed and CSA certified<sup>L</sup>
- UL File No. E-23156

<sup>L</sup>CSA requires a far side support.



Single gang



Two gang

| Cat. #  | Description | Capacity cu. in. | Unit qty. | Wt. lbs. per 100 |
|---|-------------|------------------|-----------|------------------|
| <b>Single Gang</b>  |             |                  |           |                  |
| TP30000   | 1/2" raised | 3.8              | 50        | 43               |
| TP31000   | 5/8" raised | 4.3              | 50        | 46               |
| TP32000   | 3/4" raised | 5.5              | 50        | 50               |
| <b>Two Gang</b>   |             |                  |           |                  |
| TP35000   | 1/2" raised | 6.0              | 50        | 38               |
| TP36000   | 5/8" raised | 8.0              | 50        | 52               |
| TP37000   | 3/4" raised | 9.0              | 50        | 54               |
| <b>Low profile screws – reduces risk of sheetrock bulge</b> |             |                  |           |                  |
| TP710   | L.P. screws | -                | 1000      | 0.5              |

# Steel square covers

## TILE WALL COVERS FOR 4" SQUARE BOXES – CUBIC INCH CAPACITY (SEE BELOW)

UL LISTED

CSA LISTED



TP524



TP534



TP540

### Applications:

- Typically used with tile or brick

### Features:

- Rounded corners help guide cuts around devices

| Cat. #            | Description   | Capacity<br>cu. in. | Unit<br>qty. | Wt. lbs.<br>per 100 |
|-------------------|---------------|---------------------|--------------|---------------------|
| <b>One device</b> |               |                     |              |                     |
| TP520             | 1/2" raised   | 3.7                 | 50           | 30                  |
| TP522             | 3/4" raised   | 5.5                 | 50           | 36                  |
| TP524             | 1" raised     | 7.4                 | 50           | 40                  |
| TP526             | 1 1/4" raised | 9.3                 | 25           | 46                  |
| TP528             | 1 1/2" raised | 11.0                | 25           | 50                  |
| TP530             | 2" Raised     | 14.8                | 25           | 62                  |
| <b>Two device</b> |               |                     |              |                     |
| TP532             | 1/2" raised   | 5.0                 | 10           | 24                  |
| TP534             | 3/4" raised   | 7.8                 | 10           | 30                  |
| TP536             | 1" raised     | 10.3                | 10           | 36                  |
| TP538             | 1 1/4" raised | 13.0                | 10           | 44                  |
| TP540             | 1 1/2" raised | 15.5                | 10           | 50                  |
| TP542             | 2" raised     | 20.8                | 10           | 66                  |

## 4" SQUARE BOX PARTITIONS



TP860



TP861



TP862



TP863

| Cat. #   | Description                          | Unit<br>qty. | Wt. lbs.<br>per 100 |
|--|--------------------------------------|--------------|---------------------|
| <b>For 1 1/2" deep box with square cut tile wall two gang covers</b> |                                      |              |                     |
| TP860  | For 1/2", 3/4", 1" raised covers     | 25           | 13                  |
| TP861  | For 1 1/4", 1 1/2", 2" raised covers | 25           | 18                  |
| <b>For 2 1/4" deep box with square cut tile wall two gang covers</b> |                                      |              |                     |
| TP862  | For 1/2", 3/4", 1" raised covers     | 25           | 16                  |
| TP863  | For 1 1/4", 1 1/2", 2" raised covers | 25           | 21                  |



302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Transmittal #:** 18

**Date:** 6/3/2020

**L-D Job #:** 56-521

**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**Subject:** Wiring Devices Submittal

### WE ARE SENDING YOU

☒ Attached

☐ Under separate cover via the following items:

☐ Shop drawings

☐ Sketch(s)

☐ Plans

☐ Samples

☐ O&M Manual

☐ Change order

☐ Specifications

☒ Submittal

| Document Type | Copies | Date | No.           | Description                 |
|---------------|--------|------|---------------|-----------------------------|
| Submittal     | 1      |      | 16140-1 Rev 0 | Wiring Devices Product Data |

### THESE ARE TRANSMITTED as checked below:

☒ For approval

☐ Reviewed as submitted

☐ Resubmit \_\_\_ copies for approval

☐ For your use

☐ Reviewed as noted

☐ Submit \_\_\_ copies for distribution

☐ As requested

☐ Returned for corrections

☐ Return \_\_\_ corrected prints

☐ For review and comment

☐ Other

☐ FOR BIDS DUE

☐ PRINTS RETURNED AFTER LOAN TO US

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_

## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.  
800 S 5TH STREET  
CHESTERTON, IN 46304

**Spec Section No:** 16140

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/3/2020

**Spec Section Title:** Wiring Devices

**Submittal Title:** Wiring Devices Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.

Contractor's Stamp



**Architect:**

TRIA ARCHITECTURE  
Margaret Gory

Architect's Stamp



REVIEWED AS SUBMITTED



REVIEWED AS NOTED



REVISE AND RESUBMIT



NOT ACCEPTED

THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.

BY

Keith O'Higgins

DATE

06-09-20

Engineer's Stamp



Features

- Patented AUTOGUARD® self test technology
- Internal back wiring clamp and guide for quick and secure termination
- Triple wipe construction

Ordering Information

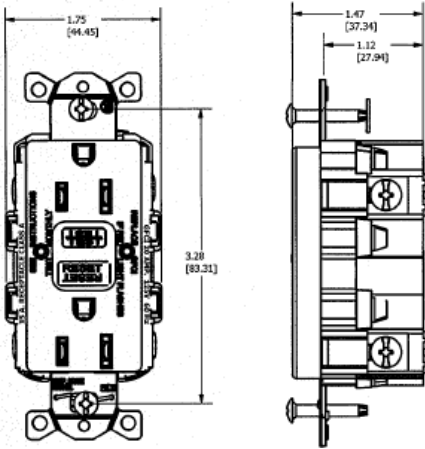
| Description  | Color | UPC          | Catalog Number |
|--|-------|--------------|----------------|
| 20A, 125V, Style Line®, assembled in the USA, AUTOGUARD® self test GFCI receptacle, flush face, back and side wired, multiple drive screws | Ivory | 883778124228 | GFRST20IU      |

Listings

UL Listed - Canadian and U.S.  
Meets ADA Standards  
Meets all NEC® requirements  
CSA Certified  
NEMA® WD-6 Compliant

Specifications

|                 |                   |
|-----------------|-------------------|
| Face            | Nylon             |
| Base            | Nylon             |
| Power Contacts  | Brass             |
| Ground Contacts | Brass             |
| Mounting Strap  | Zinc plated steel |
| Mounting Screws | Zinc plated steel |



Online Resources

Customer Use Drawing  
eCatalog  
Installation Instructions

Straight Blade Devices  
20A, 125V, 2 Pole, 3 Wire Grounding  
Commercial Specification Grade Duplex  
Receptacles

Features

- Easy access split circuit tab
- Nylon face and base
- Wrap-around galvanized steel strap
- Triple wipe contacts

Ordering Information

| Description                       | Device Color | UPC          | Catalog Number |
|-----------------------------------|--------------|--------------|----------------|
| Smooth face, back and side wired. | Ivory        | 783585834887 | BR20I          |

Listings

UL Listed to UL498 File No. E2186  
Certified to CSA 22.2, No. 42  
Fed. Spec. W-C-596  
NEMA® WD-6 Compliant

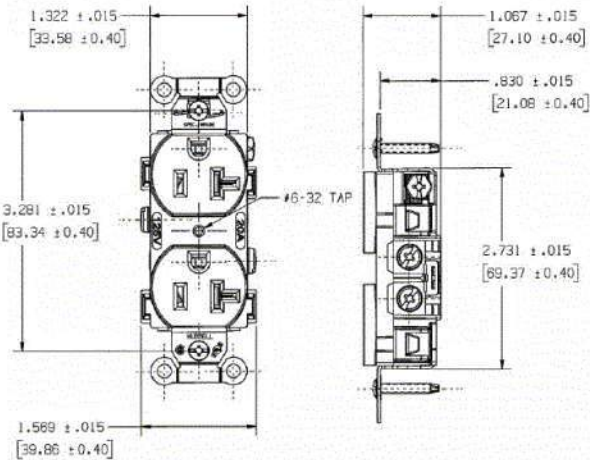
Specifications

|                                 |                                    |
|---------------------------------|------------------------------------|
| Face                            | Nylon                              |
| Base                            | Nylon                              |
| Power Contacts                  | .030 in. (.8) Brass                |
| Ground Contacts                 | Brass                              |
| Wire Clamp                      | .062 in. (1.6) Nickel plated steel |
| Terminal Screws                 | Plated steel                       |
| Mounting Strap                  | .040 in. (1) Galvanized steel      |
| Automatic Self-grounding Staple | Stainless steel                    |
| Mounting Screws                 | Galvanized Steel                   |

Performance

|                         |  |
|-------------------------|--|
| <b>Electrical</b>       |  |
| Current Interrupting    | Certified for current interrupting at full rated current |
| Dielectric Voltage      | Withstands 2,000V minimum                                |
| <b>Mechanical</b>       |  |
| Product Identification  | Ratings are a permanent part of the device               |
| Terminal Accommodation  | #12-#10 AWG copper stranded or solid conductor only      |
| Terminal Identification | Terminals identified in accordance with UL 498 and CSA   |
| <b>Environmental</b>    |  |
| Flammability            | UL 94 V-2  |
| Operating Temperatures  | Maximum continuous 75°C; minimum -40°C (w/o impact)      |

HUBBELL



Accessories

Wallplate or Weatherproof Cover Duplex Opening

Resources

Customer Use Drawing  
eCatalog



Switches, Single Pole  
20A, 120-277V AC  
Specification Grade Commercial Switch

HUBBELL

Features

- Thread cleaning captive mounting screw
- Abuse resistant nylon toggle
- Steel, zinc plated bridge is corrosion resistant

Ordering Information

|                             |              |              |                |
|-----------------------------|--------------|--------------|----------------|
| Description                 | Toggle Color | UPC          | Catalog Number |
| Toggle, back and side wired | Ivory        | 783585154046 | CSB120I        |

Listings

UL Listed  
CSA Certified  
Fed. Spec. W-S-896

Specifications

|                                |                      |
|--------------------------------|----------------------|
| Top Material                   | Thermoplastic, Gray  |
| Base Material                  | Thermoplastic, Black |
| Toggle Material                | Nylon                |
| Contacts                       | Silver Alloy         |
| Terminal Screws                | Brass                |
| Auto Grounding Mounting Bridge | Zinc Plated Steel    |
| Ground Screw                   | Brass (Green)        |

Performance

Electrical

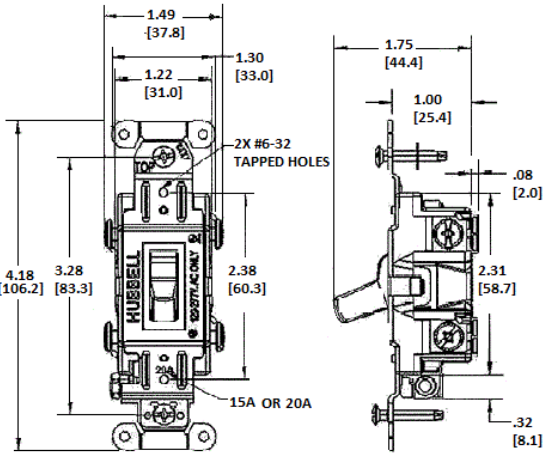
|                         |  |
|-------------------------|--|
| Dielectric Voltage      | Withstands 1500V AC minimum for 1 minute       |
| Max. Continuous Current | 20A  |
| Max. Working Voltage    | 277V AC  |
| Overload                | Minimum 4.8 times rated current for 100 cycles |
| Temperature Rise        | 30°C maximum at rated current                  |

Mechanical

|                         |   |
|-------------------------|---|
| Terminal Accommodations | #14 AWG min. - #10 AWG max. solid and stranded copper wire only |
|-------------------------|---|

Environmental

|                       |  |
|-----------------------|--|
| Flammability          | UL 94V-2   |
| Operating Temperature | Max. continuous: 75°C; Min. continuous: -40°C without impact |



Online Resources

Customer Use Drawing  
eCatalog




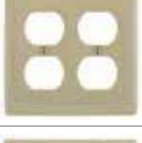
## Wallplates

### Nylon plates—virtually unbreakable

- Rounded corners for stylish look
- Reinforced ribs for extra strength
- Screws are factory-inserted for fumble-free installation

### Stainless Steel plates

- Type 302/304
- Non-magnetic
- Ideal for highly corrosive environments

| Description  | Color                                    | Smooth Nylon   |   | Material                 | Smooth Metal Catalog Number  |
|--|--|--|---|--------------------------|------------------------------|
|  |  | Standard   | Mid-Size  |                          |                              |
|  1-Gang, 1-Toggle                   | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP1BK</b><br><b>NP1</b><br><b>NP1GY</b><br><b>NP1I</b><br><b>NP1W</b>           | <b>NPJ1BK</b><br><b>NPJ1</b><br><b>NPJ1GY</b><br><b>NPJ1I</b><br><b>NPJ1W</b>           | Brass<br>Stainless Steel | <b>SB1</b><br><b>SS1</b>     |
|  1-Gang, 1-Duplex                   | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP8BK</b><br><b>NP8</b><br><b>NP8GY</b><br><b>NP8I</b><br><b>NP8W</b>           | <b>NPJ8BK</b><br><b>NPJ8</b><br><b>NPJ8GY</b><br><b>NPJ8I</b><br><b>NPJ8W</b>           | Brass<br>Stainless Steel | <b>SB8</b><br><b>SS8</b>     |
|  1-Gang, 1-Decorator                | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP26BK</b><br><b>NP26</b><br><b>NP26GY</b><br><b>NP26I</b><br><b>NP26W</b>      | <b>NPJ26BK</b><br><b>NPJ26</b><br><b>NPJ26GY</b><br><b>NPJ26I</b><br><b>NPJ26W</b>      | Brass<br>Stainless Steel | <b>SB26</b><br><b>SS26</b>   |
|  2-Gang, 2-Toggle                  | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP2BK</b><br><b>NP2</b><br><b>NP2GY</b><br><b>NP2I</b><br><b>NP2W</b>           | <b>NPJ2BK</b><br><b>NPJ2</b><br><b>NPJ2GY</b><br><b>NPJ2I</b><br><b>NPJ2W</b>           | Brass<br>Stainless Steel | <b>SB2</b><br><b>SS2</b>     |
|  2-Gang, 2-Duplex                 | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP82BK</b><br><b>NP82</b><br><b>NP82GY</b><br><b>NP82I</b><br><b>NP82W</b>      | <b>NPJ82BK</b><br><b>NPJ82</b><br><b>NPJ82GY</b><br><b>NPJ82I</b><br><b>NPJ82W</b>      | Brass<br>Stainless Steel | <b>SB82</b><br><b>SS82</b>   |
|  2-Gang, 2-Decorator              | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP262BK</b><br><b>NP262</b><br><b>NP262GY</b><br><b>NP262I</b><br><b>NP262W</b> | <b>NPJ262BK</b><br><b>NPJ262</b><br><b>NPJ262GY</b><br><b>NPJ262I</b><br><b>NPJ262W</b> | Brass<br>Stainless Steel | <b>SB262</b><br><b>SS262</b> |
|  2-Gang, 1-Toggle, 1-Duplex       | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP18BK</b><br><b>NP18</b><br><b>NP18GY</b><br><b>NP18I</b><br><b>NP18W</b>      | <b>NPJ18BK</b><br><b>NPJ18</b><br><b>NPJ18GY</b><br><b>NPJ18I</b><br><b>NPJ18W</b>      | Brass<br>Stainless Steel | <b>SB18</b><br><b>SS18</b>   |
|  2-Gang, 1-Toggle, 1-Decorator    | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP126BK</b><br><b>NP126</b><br><b>NP126GY</b><br><b>NP126I</b><br><b>NP126W</b> | <b>NPJ126BK</b><br><b>NPJ126</b><br><b>NPJ126GY</b><br><b>NPJ126I</b><br><b>NPJ126W</b> | Brass<br>Stainless Steel | <b>SB126</b><br><b>SS126</b> |
|  1-Gang, 1-Single 1.40" Dia. Hole | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP7BK</b><br><b>NP7</b><br><b>NP7GY</b><br><b>NP7I</b><br><b>NP7W</b>           | <b>NPJ7BK</b><br><b>NPJ7</b><br><b>NPJ7GY</b><br><b>NPJ7I</b><br><b>NPJ7W</b>           | Brass<br>Stainless Steel | <b>SB7</b><br><b>SS7</b>     |
|  1-Gang, 1-Blank, Box Mount       | Black<br>Brown<br>Gray<br>Ivory<br>White | <b>NP13BK</b><br><b>NP13</b><br><b>NP13GY</b><br><b>NP13I</b><br><b>NP13W</b>      | <b>NPJ13BK</b><br><b>NPJ13</b><br><b>NPJ13GY</b><br><b>NPJ13I</b><br><b>NPJ13W</b>      | Brass<br>Stainless Steel | <b>SB13</b><br><b>SS13</b>   |



302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Transmittal #:** 19

**Date:** 6/3/2020

**L-D Job #:** 56-521

**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**Subject:** Supporting Devices Submittal

### WE ARE SENDING YOU

☒ Attached

☐ Under separate cover via the following items:

☐ Shop drawings

☐ Sketch(s)

☐ Plans

☐ Samples

☐ O&M Manual

☐ Change order

☐ Specifications

☒ Submittal

| Document Type | Copies | Date | No.           | Description                     |
|---------------|--------|------|---------------|---------------------------------|
| Submittal     | 1      |      | 16190-1 Rev 0 | Supporting Devices Product Data |

### THESE ARE TRANSMITTED as checked below:

☒ For approval

☐ Reviewed as submitted

☐ Resubmit \_\_\_ copies for approval

☐ For your use

☐ Reviewed as noted

☐ Submit \_\_\_ copies for distribution

☐ As requested

☐ Returned for corrections

☐ Return \_\_\_ corrected prints

☐ For review and comment

☐ Other

☐ FOR BIDS DUE

☐ PRINTS RETURNED AFTER LOAN TO US

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_



## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.  
800 S 5TH STREET  
CHESTERTON, IN 46304

**Spec Section No:** 16190

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/3/2020

**Spec Section Title:** Supporting Devices

**Submittal Title:** Supporting Devices Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.

Contractor's Stamp



**Architect:**

TRIA ARCHITECTURE  
Margaret Gory

Architect's Stamp



REVIEWED AS SUBMITTED



REVIEWED AS NOTED



REVISE AND RESUBMIT



NOT ACCEPTED

THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.

BY

Keith O'Higgins

DATE

06-09-20

Engineer's Stamp



#### Materials & Finishes - Standard:

- **Pregalvanized (PG):** Conforms to ASTM A653 SS GR 33, G90.
- **Power-Strut Defender (DF):** Conforms to ASTM A1046 SS GR 33
- **Hot Dip Galvanized (HG):** Steel conforms to ASTM A1011 SS GR 33, Finish conforms to ASTM A123
- **Perma-Green (GR):** Steel conforms to ASTM A1011 SS GR 33, E-Coat finish
- **Perma-Gold (ZD):** Steel conforms to ASTM A1011 SS GR 33, Finish conforms to ASTM B633, Type II SC3
- **Plain (PL):** Conforms to ASTM A1011 SS GR 33

#### Materials & Finishes - Special Metals:

- **Stainless Steel, Type 304 (SS):** ASTM A240, Type 304 \*
- **Stainless Steel, Type 316 (ST):** ASTM A240, Type 316 \*
- **Aluminum (EA):** ASTM B221, Type 6063-T6 (Extruded) \*

\* These materials have different physical properties and performance characteristics. Please [contact us](#) for design support.

| Part No. | Length (ft) | Finish | Product Weight / Ft (lbs/ft) |
|----------|-------------|--------|------------------------------|
| PS200    | 10          | PG     | 1.89                         |
| PS200    | 20          | PG     | 1.89                         |
| PS200    | 10          | DF     | 2.014                        |
| PS200    | 20          | DF     | 2.014                        |
| PS200    | 10          | HG     | 2.014                        |
| PS200    | 20          | HG     | 2.014                        |
| PS200    | 10          | GR     | 1.89                         |
| PS200    | 20          | GR     | 1.89                         |
| PS200    | 10          | PL     | 1.89                         |
| PS200    | 20          | PL     | 1.89                         |
| PS200    | 10          | ZD     | 1.89                         |
| PS200    | 20          | ZD     | 1.89                         |
| PS200    | 10          | SS     | 1.89                         |
| PS200    | 20          | SS     | 1.89                         |
| PS200    | 10          | ST     | 1.89                         |
| PS200    | 20          | ST     | 1.89                         |
| PS200    | 10          | EA     | 0.733                        |
| PS200    | 20          | EA     | 0.733                        |

| Beam Loading - PS 200 |                               |                                 |                               |                |                |                                  |
|-----------------------|-------------------------------|---------------------------------|-------------------------------|----------------|----------------|----------------------------------|
| Span (in)             | Max Allow. Uniform Load (lbs) | Deflection at Uniform Load (in) | Uniform Loading at Deflection |                |                | Lateral Bracing Reduction Factor |
|                       |                               |                                 | Span/180 (lbs)                | Span/240 (lbs) | Span/360 (lbs) |                                  |
| 24                    | 1,690                         | 0.06                            | 1,690                         | 1,690          | 1,690          | 1.00                             |
| 36                    | 1,130                         | 0.13                            | 1,130                         | 1,130          | 900            | 0.94                             |
| 48                    | 850                           | 0.22                            | 850                           | 760            | 500            | 0.88                             |
| 60                    | 680                           | 0.35                            | 650                           | 480            | 320            | 0.82                             |
| 72                    | 560                           | 0.5                             | 450                           | 340            | 220            | 0.78                             |
| 84                    | 480                           | 0.68                            | 330                           | 250            | 160            | 0.75                             |
| 96                    | 420                           | 0.89                            | 250                           | 190            | 130            | 0.71                             |
| 108                   | 380                           | 1.14                            | 200                           | 150            | 100            | 0.69                             |
| 120                   | 340                           | 1.40                            | 160                           | 120            | 80             | 0.66                             |
| 144                   | 280                           | 2.00                            | 110                           | 80             | 60             | 0.61                             |
| 168                   | 240                           | 2.72                            | 80                            | 60             | 40             | 0.55                             |
| 192                   | 210                           | 3.55                            | 60                            | 50             | NR             | 0.51                             |
| 216                   | 190                           | 4.58                            | 50                            | 40             | NR             | 0.47                             |
| 240                   | 170                           | 5.62                            | 40                            | NR             | NR             | 0.44                             |
| Note                  | NR - Not Recommended          |                                 |                               |                |                |                                  |

Refer to the General Specifications for loading information.

| Column Loading - PS 200 |                                   |                                 |              |             |             |
|-------------------------|-----------------------------------|---------------------------------|--------------|-------------|-------------|
| Unbraced Height (in)    | Allowable Load at Slot Face (lbs) | Max Column Load Applied at C.G. |              |             |             |
|                         |                                   | K=0.65 (lbs)                    | K=0.80 (lbs) | K=1.0 (lbs) | K=1.2 (lbs) |
| 24                      | 3,550                             | 10,740                          | 9,890        | 8,770       | 7,740       |
| 36                      | 3,190                             | 8,910                           | 7,740        | 6,390       | 5,310       |
| 48                      | 2,770                             | 7,260                           | 6,010        | 4,690       | 3,800       |
| 60                      | 2,380                             | 5,910                           | 4,690        | 3,630       | 2,960       |
| 72                      | 2,080                             | 4,840                           | 3,800        | 2,960       | 2,400       |
| 84                      | 1,860                             | 4,040                           | 3,200        | 2,480       | 1,980       |
| 96                      | 1,670                             | 3,480                           | 2,750        | 2,110       | 1,660       |
| 108                     | 1,510                             | 3,050                           | 2,400        | 1,810       | KL/r>200    |
| 120                     | 1,380                             | 2,700                           | 2,110        | KL/r>200    | KL/r>200    |
| 144                     | 1,150                             | 2,180                           | 1,660        | KL/r>200    | KL/r>200    |

Refer to the General Specifications for loading information.

Project:

Architect / Engineer:

Date:

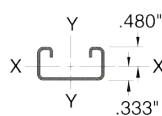
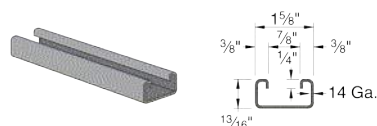
Phone:

Contractor:

Address:

Notes:

Approval Stamp:



#### Materials & Finishes - Standard:

- **Pregalvanized (PG):** Conforms to ASTM A653 SS GR 33, G90.
- **Power-Strut Defender (DF):** Conforms to ASTM A1046 SS GR 33
- **Hot Dip Galvanized (HG):** Steel conforms to ASTM A1011 SS GR 33, Finish conforms to ASTM A123
- **Perma-Green (GR):** Steel conforms to ASTM A1011 SS GR 33, E-Coat finish
- **Perma-Gold (ZD):** Steel conforms to ASTM A1011 SS GR 33, Finish conforms to ASTM B633, Type II SC3
- **Plain (PL):** Conforms to ASTM A1011 SS GR 33

#### Materials & Finishes - Special Metals:

- **Stainless Steel, Type 304 (SS):** ASTM A240, Type 304 \*
- **Stainless Steel, Type 316 (ST):** ASTM A240, Type 316 \*
- **Aluminum (EA):** ASTM B221, Type 6063-T6 (Extruded) \*

\* These materials have different physical properties and performance characteristics. Please [contact us](#) for design support.

| Part No. | Length (ft) | Finish | Product Weight / Ft (lbs/ft) |
|----------|-------------|--------|------------------------------|
| PS 500   | 20          | PG     | 0.98                         |
| PS 500   | 10          | PG     | 0.98                         |
| PS 500   | 10          | DF     | 1.028                        |
| PS 500   | 20          | DF     | 1.028                        |
| PS 500   | 20          | HG     | 1.028                        |
| PS 500   | 10          | HG     | 1.028                        |
| PS 500   | 20          | GR     | 0.98                         |
| PS 500   | 10          | GR     | 0.98                         |
| PS 500   | 10          | PL     | 0.98                         |
| PS 500   | 20          | PL     | 0.98                         |
| PS 500   | 10          | ZD     | 0.98                         |
| PS 500   | 20          | ZD     | 0.98                         |
| PS 500   | 20          | SS     | 0.98                         |
| PS 500   | 10          | SS     | 0.98                         |

| Beam Loading - PS 500 |                               |                                 |                               |                |                |                                  |
|-----------------------|-------------------------------|---------------------------------|-------------------------------|----------------|----------------|----------------------------------|
| Span (in)             | Max Allow. Uniform Load (lbs) | Deflection at Uniform Load (in) | Uniform Loading at Deflection |                |                | Lateral Bracing Reduction Factor |
|                       |                               |                                 | Span/180 (lbs)                | Span/240 (lbs) | Span/360 (lbs) |                                  |
| 24                    | 450                           | 0.11                            | 450                           | 420            | 280            | 1.00                             |
| 36                    | 300                           | 0.24                            | 250                           | 190            | 130            | 0.98                             |
| 48                    | 230                           | 0.44                            | 140                           | 110            | 70             | 0.94                             |
| 60                    | 180                           | 0.67                            | 90                            | 70             | 50             | 0.91                             |
| 72                    | 150                           | 0.96                            | 60                            | 50             | 30             | 0.89                             |
| 84                    | 130                           | 1.32                            | 50                            | 30             | 20             | 0.86                             |
| 96                    | 110                           | 1.67                            | 40                            | 30             | 20             | 0.84                             |
| 108                   | 100                           | 2.16                            | 30                            | 20             | 10             | 0.82                             |
| 120                   | 90                            | 2.67                            | 20                            | 20             | 10             | 0.80                             |
| 144                   | 80                            | 4.09                            | 20                            | NR             | NR             | 0.76                             |
| 168                   | 60                            | 4.88                            | NR                            | NR             | NR             | 0.73                             |
| 192                   | 60                            | 7.28                            | NR                            | NR             | NR             | 0.69                             |
| 216                   | 50                            | 8.64                            | NR                            | NR             | NR             | 0.65                             |
| 240                   | 50                            | 11.85                           | NR                            | NR             | NR             | 0.61                             |
| Note                  | NR - Not Recommended          |                                 |                               |                |                |                                  |

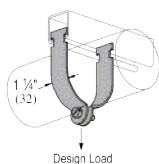
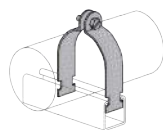
Refer to the General Specifications for loading information.

| Column Loading - PS 500 |                                   |                                 |              |             |             |
|-------------------------|-----------------------------------|---------------------------------|--------------|-------------|-------------|
| Unbraced Height (in)    | Allowable Load at Slot Face (lbs) | Max Column Load Applied at C.G. |              |             |             |
|                         |                                   | K=0.65 (lbs)                    | K=0.80 (lbs) | K=1.0 (lbs) | K=1.2 (lbs) |
| 24                      | 1,840                             | 5,610                           | 5,210        | 4,570       | 3,850       |
| 36                      | 1,640                             | 4,660                           | 3,850        | 2,800       | 1,960       |
| 48                      | 1,310                             | 3,490                           | 2,480        | 1,590       | 1,100       |
| 60                      | 1,000                             | 2,400                           | 1,590        | KL/r>200    | KL/r>200    |
| 72                      | 770                               | 1,670                           | 1,100        | KL/r>200    | KL/r>200    |

Refer to the General Specifications for loading information.

|                              |                      |               |                      |
|------------------------------|----------------------|---------------|----------------------|
| <b>Project:</b>              | <input type="text"/> |               |                      |
| <b>Architect / Engineer:</b> | <input type="text"/> |               |                      |
| <b>Date:</b>                 | <input type="text"/> | <b>Phone:</b> | <input type="text"/> |
| <b>Contractor:</b>           | <input type="text"/> |               |                      |
| <b>Address:</b>              | <input type="text"/> |               |                      |
| <b>Notes:</b>                | <input type="text"/> |               |                      |

**Approval Stamp:**



#### Material:

- The steel meets or exceeds the physical properties of ASTM A1011 GR 33, except with SS, ST & AL finishes.

#### Finishes:

- Electrogalvanized (EG):** Conforms to ASTM B633, Type III SC1
- Power-Strut Defender (DF):** Conforms to ASTM A1059
- Hot Dip Galvanized (HG):** Conforms to ASTM A123 or A153
- Perma-Gold (ZD):** Conforms to ASTM B633, Type II SC1
- Stainless Steel, Type 304 (SS):** ASTM A240, Type 304 \*
- Stainless Steel, Type 316 (ST):** ASTM A240, Type 316 \*
- Aluminum (AL):** TBD

\* These materials have different physical properties and performance characteristics. Please [contact us](#) for design support.

#### Material & Finish Combinations:

| Material / Finish        | Part Number Suffix | Pipe Clamp Material / Finish | Fasteners (Screw & Nut) Material / Finish | Example        |
|--------------------------|--------------------|------------------------------|---|----------------|
| Electro-galvanized       | EG                 | EG                           | EG  | PS 1100 1/2 EG |
| Hot-dipped galvanized    | HG                 | HG                           | SS  | PS 1100 1/2 HG |
| Power-Strut Defender     | DF                 | DF                           | DF  | PS 1100 1/2 DF |
| Stainless Steel Type 304 | SS                 | SS                           | SS  | PS 1100 1/2 SS |
| Stainless Steel Type 316 | ST                 | ST                           | SS  | PS 1100 1/2 ST |
| Aluminum                 | AL                 | AL                           | AL  | PS 1100 1/2 AL |

| Part No.       | Conduit Size | O.D. Size | Ga. (Thickness) | Finish | Product Weight / Piece (lbs) |
|----------------|--------------|-----------|-----------------|--------|------------------------------|
| PS 1100 2"     | 2"           | 2.375"    | 12 (2.7)        | DF     | 0.36                         |
| PS 1100 3/4"   | 3/4"         | 1.050"    | 14 (1.9)        | DF     | 0.159                        |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | EG     | 0.17                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | EG     | 0.17                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | DF     | 0.18                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | HG     | 0.18                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | HG     | 0.17                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | SS     | 0.17                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | ST     | 0.17                         |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | AL     | 0.057                        |
| PS 1100 1"     | 1"           | 1.315"    | 14 (1.9)        | AL     | 0.06                         |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | EG     | 0.11                         |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | EG     | 0.11                         |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | HG     | 0.117                        |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | SS     | 0.11                         |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | ST     | 0.11                         |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | AL     | 0.04                         |
| PS 1100 1/2"   | 1/2"         | 0.840"    | 16 (1.5)        | AL     | 0.037                        |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | EG     | 0.29                         |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | EG     | 0.29                         |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | DF     | 0.307                        |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | HG     | 0.307                        |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | HG     | 0.29                         |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | ZD     | 0.29                         |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | SS     | 0.29                         |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | ST     | 0.29                         |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | AL     | 0.097                        |
| PS 1100 1-1/2" | 1-1/2"       | 1.900"    | 12 (2.7)        | AL     | 0.1                          |
| PS 1100 1-1/4" | 1-1/4"       | 1.660"    | 14 (1.9)        | EG     | 0.19                         |
| PS 1100 1-1/4" | 1-1/4"       | 1.660"    | 14 (1.9)        | EG     | 0.19                         |
| PS 1100 1-1/4" | 1-1/4"       | 1.660"    | 14 (1.9)        | DF     | 0.201                        |
| PS 1100 1-1/4" | 1-1/4"       | 1.660"    | 14 (1.9)        | HG     | 0.201                        |
| PS 1100 1-1/4" | 1-1/4"       | 1.660"    | 14 (1.9)        | SS     | 0.19                         |
| PS 1100 1-1/4" | 1-1/4"       | 1.660"    | 14 (1.9)        | ST     | 0.19                         |

|                |        |        |          |    |       |
|----------------|--------|--------|----------|----|-------|
| PS 1100 1-1/4" | 1-1/4" | 1.660" | 14 (1.9) | AL | 0.063 |
| PS 1100 1-1/4" | 1-1/4" | 1.660" | 14 (1.9) | AL | 0.07  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | EG | 0.34  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | EG | 0.34  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | HG | 0.36  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | HG | 0.34  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | SS | 0.34  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | ST | 0.34  |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | AL | 0.113 |
| PS 1100 2"     | 2"     | 2.375" | 12 (2.7) | AL | 0.12  |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | EG | 0.4   |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | EG | 0.41  |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | DF | 0.424 |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | HG | 0.424 |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | SS | 0.4   |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | ST | 0.4   |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | AL | 0.14  |
| PS 1100 2-1/2" | 2-1/2" | 2.875" | 12 (2.7) | AL | 0.133 |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | EG | 0.47  |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | EG | 0.47  |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | DF | 0.498 |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | HG | 0.498 |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | SS | 0.47  |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | ST | 0.47  |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | AL | 0.16  |
| PS 1100 3"     | 3"     | 3.500" | 12 (2.7) | AL | 0.157 |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | EG | 0.15  |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | EG | 0.15  |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | HG | 0.159 |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | SS | 0.15  |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | ST | 0.15  |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | AL | 0.05  |
| PS 1100 3/4"   | 3/4"   | 1.050" | 14 (1.9) | AL | 0.05  |
| PS 1100 3/8"   | 3/8"   | 0.675" | 16 (1.5) | EG | 0.1   |
| PS 1100 3/8"   | 3/8"   | 0.675" | 16 (1.5) | EG | 0.1   |
| PS 1100 3/8"   | 3/8"   | 0.675" | 16 (1.5) | HG | 0.106 |
| PS 1100 3/8"   | 3/8"   | 0.675" | 16 (1.5) | SS | 0.1   |
| PS 1100 3/8"   | 3/8"   | 0.675" | 16 (1.5) | ST | 0.1   |
| PS 1100 3/8"   | 3/8"   | 0.675" | 16 (1.5) | AL | 0.03  |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | EG | 0.62  |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | EG | 0.62  |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | HG | 0.657 |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | SS | 0.62  |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | ST | 0.62  |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | AL | 0.207 |
| PS 1100 3-1/2" | 3-1/2" | 4.000" | 11 (3.0) | AL | 0.21  |
| PS 1100 4"     | 4"     | 4.500" | 11 (3.0) | EG | 0.67  |
| PS 1100 4"     | 4"     | 4.500" | 11 (3.0) | EG | 0.67  |
| PS 1100 4"     | 4"     | 4.500" | 11 (3.0) | HG | 0.71  |
| PS 1100 4"     | 4"     | 4.500" | 11 (3.0) | SS | 0.67  |



|            |    |        |          |    |       |
|------------|----|--------|----------|----|-------|
| PS 1100 4" | 4" | 4.500" | 11 (3.0) | ST | 0.67  |
| PS 1100 4" | 4" | 4.500" | 11 (3.0) | AL | 0.223 |
| PS 1100 4" | 4" | 4.500" | 11 (3.0) | AL | 0.223 |
| PS 1100 5" | 5" | 5.563" | 11 (3.0) | EG | 0.8   |
| PS 1100 5" | 5" | 5.563" | 11 (3.0) | EG | 0.8   |
| PS 1100 5" | 5" | 5.563" | 11 (3.0) | HG | 0.848 |
| PS 1100 5" | 5" | 5.563" | 11 (3.0) | SS | 0.8   |
| PS 1100 5" | 5" | 5.563" | 11 (3.0) | AL | 0.267 |
| PS 1100 6" | 6" | 6.625" | 10 (3.4) | EG | 1.02  |
| PS 1100 6" | 6" | 6.625" | 10 (3.4) | EG | 1.02  |
| PS 1100 6" | 6" | 6.625" | 10 (3.4) | HG | 1.081 |
| PS 1100 6" | 6" | 6.625" | 10 (3.4) | SS | 1.02  |
| PS 1100 6" | 6" | 6.625" | 10 (3.4) | AL | 0.35  |
| PS 1100 8" | 8" | 8.625" | 10 (3.4) | EG | 1.3   |
| PS 1100 8" | 8" | 8.625" | 10 (3.4) | EG | 1.3   |
| PS 1100 8" | 8" | 8.625" | 10 (3.4) | HG | 1.378 |
| PS 1100 8" | 8" | 8.625" | 10 (3.4) | SS | 1.3   |
| PS 1100 8" | 8" | 8.625" | 10 (3.4) | AL | 0.4   |

Project:

Architect / Engineer:

Date:

Phone:

Contractor:

Address:

Notes:

Approval Stamp:



302 Tyler Street  
LaPorte, IN 46350  
Ph : 219-362-2127  
Fax : 219-362-2848

## Letter of Transmittal

**To:** Margaret Gory  
TRIA ARCHITECTURE  
901 McCLINTOCK DRIVE, STE 100  
BURR RIDGE, IL 60527  
Ph: (630)455-4500  
E-Mail: mgory@tria-arch.com

**Transmittal #:** 10

**Date:** 6/3/2020

**L-D Job #:** 56-521

**Project:** DUNELAND SCH-2020 NURSE'S OFF.

**Subject:** Interior Luminaires Product Data

### WE ARE SENDING YOU

☒ Attached

☐ Under separate cover via the following items:

☐ Shop drawings

☐ Sketch(s)

☐ Plans

☐ Samples

☐ O&M Manual

☐ Change order

☐ Specifications

☒ Submittal

| Document Type | Copies | Date | No.           | Description                      |
|---------------|--------|------|---------------|----------------------------------|
| Submittal     | 1      |      | 16510-1 Rev 0 | Interior Luminaires Product Data |

### THESE ARE TRANSMITTED as checked below:

☒ For approval

☐ Reviewed as submitted

☐ Resubmit \_\_\_ copies for approval

☐ For your use

☐ Reviewed as noted

☐ Submit \_\_\_ copies for distribution

☐ As requested

☐ Returned for corrections

☐ Return \_\_\_ corrected prints

☐ For review and comment

☐ Other

☐ FOR BIDS DUE

☐ PRINTS RETURNED AFTER LOAN TO US

**Remarks:**

**Copy To:**

**From:** Jonathan Foglesong (LARSON-DANIELSON CONST. CO INC)

**Signature:** \_\_\_\_\_

## Submittal

**Job:** 56-521

DUNELAND SCH-2020 NURSE'S OFF.  
800 S 5TH STREET  
CHESTERTON, IN 46304

**Spec Section No:** 16510

**Submittal No:** 1

**Revision No:** 0

**Sent Date:** 6/3/2020

**Spec Section Title:** Interior Luminaires

**Submittal Title:** Interior Luminaires Product Data

**Contractor:**

LARSON-DANIELSON CONST CO. INC.


Contractor's Stamp



**Architect:**

TRIA ARCHITECTURE  
Margaret Gory

Architect's Stamp

|   |                       |
|---|-----------------------|
|    |                       |
| <input type="checkbox"/>  | REVIEWED AS SUBMITTED |
| <input checked="" type="checkbox"/>   | REVIEWED AS NOTED     |
| <input type="checkbox"/>  | REVISE AND RESUBMIT   |
| <input type="checkbox"/>  | NOT ACCEPTED          |
| <p>THIS SUBMITTAL WAS REVIEWED FOR DESIGN INTENT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, QUANTITIES, FABRICATION PROCESSES, CONSTRUCTION TECHNIQUES AND COORDINATION OF WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD DIMENSIONS AND OTHER FIELD VERIFICATIONS THAT EFFECT THIS SUBMITTAL.</p> |                       |
| BY  | DATE                  |
| Keith O'Higgins   | 06-09-20              |

Engineer's Stamp



|                |
|----------------|
| Catalog Number |
| Notes          |
| Type           |

## Contractor Select™ CPX™ LED Panel

CPX™ from Lithonia lighting is the perfect choice for a quality LED panel at an affordable price. The smooth, even lens projects a crisp and clean aesthetic. CPX is the perfect choice for budget-conscious school, commercial office, or small retail footprint projects.

### FEATURES:

- Industry standard wattages
- Long-life LEDs maintain greater than 70% of their lumen output at 50,000 hours
- 0-10V dimming driver, dims to 10%

### WEIGHT:

#### 2x2

Unit: 6.39lbs

Unit Carton: 7.72lbs

Master Carton: 30.42lbs

#### 2x4

Unit: 11.02lbs

Unit Carton: 13.89lbs

Master Carton: 27.78lbs



| Catalog Number        | UPC          | Description   | Lumens | Input Watts | CCT   | CRI | Voltage  | Pallet qty. |
|-----------------------|--------------|---------------|--------|-------------|-------|-----|----------|-------------|
| CPX 2X2 3200LM 35K M4 | 191848338537 | 2x2 LED Panel | 3555   | 31.5        | 3500K | 80  | 120-277V | 40          |
| CPX 2X2 3200LM 40K M4 | 191848338650 | 2x2 LED Panel | 3659   | 31.5        | 4000K | 80  | 120-277V | 40          |
| CPX 2X2 3200LM 50K M4 | 193048313642 | 2x2 LED Panel | 3737   | 31.5        | 5000K | 80  | 120-277V | 40          |
| CPX 2X4 4000LM 35K M2 | 191848338490 | 2x4 LED Panel | 4543   | 38.9        | 3500K | 80  | 120-277V | 20          |
| CPX 2X4 4000LM 40K M2 | 191848338506 | 2x4 LED Panel | 4692   | 38.9        | 4000K | 80  | 120-277V | 20          |
| CPX 2X4 4000LM 50K M2 | 193048313680 | 2x4 LED Panel | 4766   | 38.9        | 5000K | 80  | 120-277V | 20          |

### Accessories: Order as separate catalog number.

|          |  |
|----------|--|
| PS1055CP | 10W constant power <sup>1</sup>                |
| DGA22    | Drywall grid adapter for 2x2 recessed fixture. |
| DGA24    | Drywall grid adapter for 2x4 recessed fixture. |

### NOTES

1. PS1055CP remote mounted only. See Power Sentry [PS1055CP](#) [PS1555CP battery spec sheet here](#) and [ELA-PSMK-PSMKSD-PSDMT-PSRME remote mounting enclosure spec sheet here](#).

Fixture F2 is to be dimmable. Provide dimmer switch as required.



## Specifications

### INTENDED USE:

CPX is a low-glare panel featuring an external driver. This cost-effective, reliable panel is visually comfortable and can be recessed mounted. Suitable for many applications such as schools, offices, retail, convenience stores and other commercial spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

### CONSTRUCTION:

The extruded aluminum frame with satin white lens provides excellent shielding and uniform luminance. The low-profile design of CPX provides increased installation flexibility especially in restricted plenum spaces. The backplate includes integral T-bar clips for installation into T-grid ceilings.

### ELECTRICAL:

Long-life LEDs, coupled with a high-efficiency driver, provide superior illumination for extended service life. Greater than 70% LED lumen maintenance at 50,000 hours (L70>50,000). 0-10V dimming driver, dims to 10% and contains non-isolated dimming leads.

### LISTINGS:

CSA certified to meet US and Canadian standards. Damp location listed. IC rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org/QPL](http://www.designlights.org/QPL) to confirm which versions are qualified.

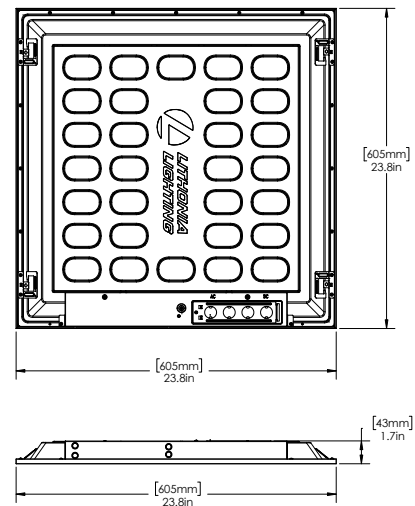
### WARRANTY:

5-year limited warranty. Complete warranty terms located at: [www.acuitybrands.com/support/customer-support/terms-and-conditions](http://www.acuitybrands.com/support/customer-support/terms-and-conditions)

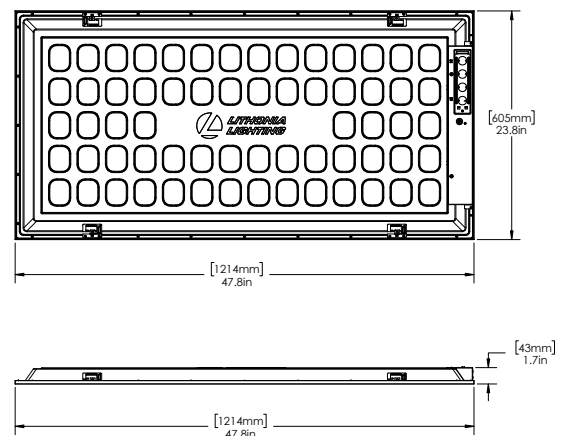
**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

## Dimensions

### 2'x2'



### 2'x4'



All dimensions are inches (millimeters) unless otherwise indicated.

# Multi-Technology Ceiling Occupancy Sensor



## GENERAL OPERATION

Occupancy sensors have two tasks: 1) Keeping the lights ON while the room is occupied, and 2) Saving energy by keeping the lights OFF while the room is unoccupied.

Passive Infrared (PIR) is an excellent and precise technology for initially turning the lights ON, but lacks sensitivity for minor motion at distances. Ultrasonic (U/S) technology provides maximum sensitivity with continuous reflective high frequency waves. This is optimal for keeping the lights ON.

Leviton's multi-technology sensor combines the benefits of both PIR and U/S technologies for unrivaled performance and reliability.

## APPLICATIONS

- Cafeterias
- Computer rooms
- Day care centers
- Workspaces
- Offices with cubicles
- Restrooms
- Storage rooms
- Classrooms
- Conference rooms
- Filing rooms
- Open warehouses
- Open areas
- Stairwells
- Executive, open and private offices

## HOW THE OSCxx-M AUTOMATICALLY ADAPTS

| Condition  | Example  | Self-Adaptive Reaction  |
|--|--|---|
| Timer Left In Test Mode - The sensor remains in an 6 sec. test mode. | An installer accidentally leaves the sensor in the 6 sec. timer test mode and the lights may go off or on every 6 sec. | The sensor automatically resets the timer to 10 min after 15 min of test mode.  |
| False-On - The sensor incorrectly turns the lights on.               | The sensor detects movement in the corridor or hall way and the room lights turn on.                                   | After an initial movement is sensed, if another movement is not sensed within the timer setting then the delayed off time setting is automatically reduced. |
| False-Off - The sensor incorrectly turns the lights off.             | The sensor does not detect movement because an occupant sits virtually motionless at a desk and the lights turn off.   | If motion is sensed within a short period after the lights go off, then the current delayed off-time setting is increased.                                  |

## FEATURES

- Self-adjusting: internal microprocessor continually analyzes, evaluates and adjusts the sensitivity and time delay. Performance is kept at a maximum and user complaints are eliminated.
- Custom off-white color matched for shaded ceilings
- Fast, simple installation: easy ceiling mount, three wire connection (low voltage) and twist-lock sensor attachment for 360° rotation and flexibility
- Maximum reliability, low cost: digital circuitry uses a minimum of components
- Small motion sensitivity: the ultrasonic technology provides excellent small motion sensitivity
- Timer setting feature: automatic—30sec-30min. Test mode—6sec with auto exit programming.
- Non-volatile memory: learned and adjusted settings saved in protected memory are not lost during power outages
- Walk-through: provides increased energy savings by decreasing the time delay to 2.5min when someone momentarily walks through the monitored space
- Wide coverage: units from 500 to 2,000 sq. ft. available
- Power base (OPB15) available for line voltage applications
- Ambient light recognition: a light sensor prevents lights from turning on when the room is adequately lit by natural light
- Ultrasonic (U/S) components: one or two U/S transducers and one or two narrow bandwidth receivers each 16mm in diameter. Frequency—Crystal controlled to  $\pm 0.005\%$ .
- Device: rugged, high-impact, injection molded plastic, off -white. Color coded leads 6" (16.24 cm).



# PRODUCT DATA

| DIP SWITCH SETTINGS |                   |                              |                        |
|---------------------|-------------------|------------------------------|------------------------|
| SWITCH              | BANK A            | SWITCH FUNCTIONS             | SWITCH SETTINGS        |
| A1                  | N/A               | Multi-Tech                   | Single Tech            |
| A2                  | N/A               | PIR                          | Ultrasonic             |
| A3                  | Manual Mode       | <b>Auto Adapting Enabled</b> | Auto Adapting Disabled |
| A4                  | Walk-Thru Disable | <b>Walk-Thru Enabled</b>     | Walk-Thru Disabled     |
| <b>BANK B</b>       |                   |                              |                        |
| B1                  | Override to On    | <b>Auto Mode</b>             | Lights forced On       |
| B2                  | Override to Off   | <b>Auto Mode</b>             | Lights forced Off      |
| B3                  | Test Mode         | <b>OFF'ON'OFF</b>            | Enter/Exit Test Mode   |
| B4                  | LED Disable       | <b>LEDs Enabled</b>          | LEDs Disabled          |

\*Bold items are factory defaults

## SPECIFICATIONS

| ELECTRICAL                  |   |
|-----------------------------|---|
| Frequency                   | OSC05-M0W, <b>OSC10-M0W</b> : 40kHz<br>OSC20-M0W: 32Khz   |
| Power Requirements          | 24 VDC, from OSPxx Power Pack or OPB15 Power Base   |
| Power Consumption           | OSC05: 25mA, OSC10: 35mA, OSC20: 30mA   |
| Output                      | 24 VDC active high logic control signal with short circuit protection                             |
| CONTROLS                    |   |
| Ultrasonic Sensitivity      | 0-100%; green knob (factory setting: 50%)   |
| Infrared Sensitivity        | 0-100%; red knob; (factory setting: 75%)  |
| Light Sensor                | 20 to 3,000 Lux; blue knob; factory set at 100% (*grey wire required)                             |
| Time Delay                  | 30sec-30min; black knob (factory setting: 10min)  |
| INDICATORS                  |   |
| Green LED                   | U/S motion technology   |
| Red LED                     | Infrared motion technology  |
| ENVIRONMENTAL               |   |
| Operating Temperature Range | 32-104°F (0-40°C)   |
| Relative Humidity           | 0-95% non-condensing, for indoor use only   |
| OTHER                       |   |
| Mounting Height             | 8-12 feet   |
| Listings                    | CUL/US Certified, can be used to comply with 2016 Title 24, Part 6 occupancy sensing requirements |
| Warranty                    | Limited Five-Year Warranty  |
| ORDERING INFORMATION        |   |
| CAT NO.                     | DESCRIPTION   |
| OSC05-M0W                   | Multi-Technology Ceiling Sensor, 500 sq. feet of coverage   |
| OSC10-M0W                   | Multi-Technology Ceiling Sensor, 1,000 sq. feet of coverage                                       |
| OSC20-M0W                   | Multi-Technology Ceiling Sensor, 2,000 sq. feet of coverage                                       |

NAFTA compliant and Made in USA models available

## Leviton Manufacturing Co., Inc. Global Headquarters

201 North Service Road, Melville, NY 11747-3138 **tel** 800-323-8920 **fax** 800-832-9538 **tech line** (8:30AM-7:00PM ET Mon-Fri) 800-824-3005

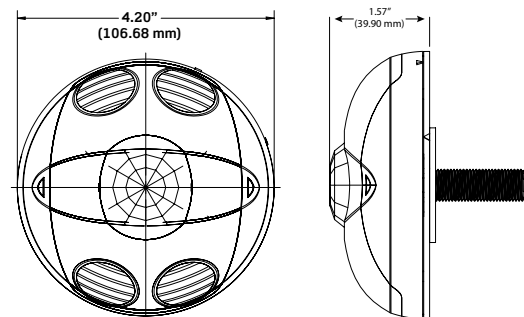
## Leviton Manufacturing Co., Inc. Energy Management, Controls and Automation

20497 SW Teton Avenue, Tualatin, OR 97062 **tel** 800-736-6682 **fax** 503-404-5594 **tech line** (6:00AM-4:00PM PT Mon-Fri) 800-959-6004

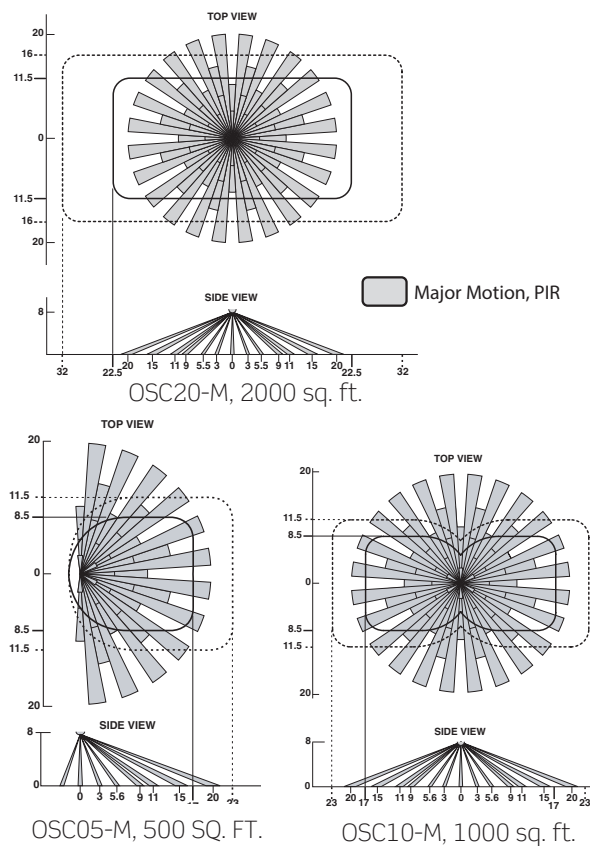
Visit our Website at: [www.leviton.com/sensors](http://www.leviton.com/sensors)

©2017 Leviton Manufacturing Co., Inc. All rights reserved. Subject to change without notice.

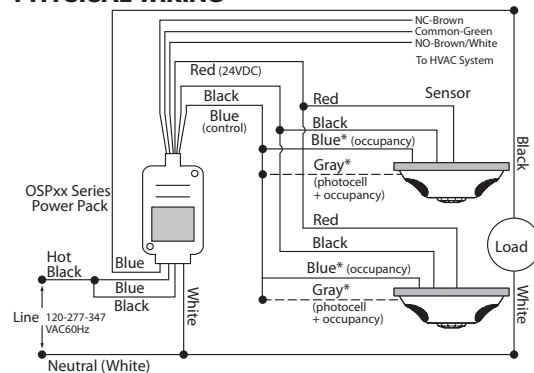
## DIMENSIONS



## FIELD-OF-VIEW



## PHYSICAL WIRING



## FEATURES & SPECIFICATIONS

**INTENDED USE** — Provides a minimum of 90 minutes of illumination for the rated wattage upon loss of AC power. Ideal for applications requiring attractive unit equipment with quick installation. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table, for suitable uses.](#)

**CONSTRUCTION** — White, compact, low-profile contemporary design. Engineering-grade thermoplastic housing is impact-resistant, scratch-resistant and corrosion-proof. UL94V-0 flame rating. UV-stable resin resists discoloration from natural and man-made light sources.

Two LED lamp heads with 12 series-parallel white LEDs each, provide redundant light sources to ensure emergency lighting performance. Typical LED lamp life is 10 years.

Dual-voltage input capability (120/277V). Edge connector on printed circuit board ensures long-term durability. Low-profile, integrated test switch/pilot light. Easily visible bright red status indicator.

Unique track-and-swivel arrangement permits full range of direction of lamp head adjustment. Universal J-box mounting pattern. Tool-less access for maintenance. Flexible conduit entry provision on top of the unit.

Ceiling- or wall-mount standard.

**ELECTRICAL** — Current-limiting charger maximizes battery life and minimizes energy consumption. Provides low operating costs.

Short-circuit protection — current-limiting charger circuitry protects printed circuit board from shorts.

Thermal compensation adjusts charger output to provide optimum charge voltage relative to ambient temperature.

Regulated charge voltage maintains constant-charge voltage over a wide range of line voltages. Prevents over/undercharging that shortens battery life and reduces capacity.

Filtered charger input minimizes charge voltage ripple and extends battery life.

AC/LVD reset allows battery connection before AC power is applied and prevents battery damage from deep discharge.

**BATTERY:** Sealed, maintenance-free nickel-cadmium battery delivers 90 minute capacity to emergency lamps. Two-state constant-current charge maximizes battery life and automatically recharges after battery discharge. Low-voltage disconnect prevents excessively deep discharge that can permanently damage the battery. Optional high-output battery available to power both local and optional LED remote lamp heads simultaneously.

**Wireless Reporting System (WRS option):** Data from self-diagnostics will be communicated via wireless transceivers within their vicinity, creating a self-configuring, self-healing and self-optimizing wireless network that exchanges the data between FIDO-compatible emergency lighting fixtures on an event-driven basis. Wireless communications electronics to operate 2.4GHz mesh network are enclosed entirely within the fixture.

**Self-Diagnostics (SD- Option)** Single multi-color LED indicator to display two-state charging, test activation and three-state diagnostic test. Test switch provides manual activation of 30-second diagnostic testing for on-demand visual inspection. Self-diagnostic testing for 30 seconds every 30 days, 30 minutes at 180-day interval, and 90 minutes annually. Diagnostic evaluation of LED light source, AC to DC transfer, charging and battery condition.

**Wireless Reporting System (WRS option) must be ordered with FIDO edge router.**

|                |
|----------------|
| Catalog Number |
| Notes          |
| Type           |



Thermoplastic Emergency Light

## ELM2 LED



LED Lamp Head  
Ni-Cad Battery



**INSTALLATION** — Radio range is 500' between fixtures in most buildings. Actual performance may vary depending on application environment and electromagnetic interference. Substantially longer distances have been recorded in uninterrupted open air. Consult factory for more details.

**LISTING** — UL damp location listed standard 50-104°F (10-40°C). Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards.

**WARRANTY** — Five-year limited warranty. Full warranty terms located at [www.AcuityBrands.com/CustomerResources/Terms\\_and\\_Conditions.aspx](http://www.AcuityBrands.com/CustomerResources/Terms_and_Conditions.aspx).

Specifications subject to change without notice.

Actual performance may differ as a result of end-user environment and application.

### ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

**Example: ELM2 LED**

| ELM2   | LED                         |                          |   |
|--------|-----------------------------|--------------------------|---|
| Series | Lamp type                   | Housing                  | Options   |
| ELM2   | LED Two 1.5W/3.6V white LED | (blank) White<br>B Black | HO High-output ni-cad battery for 6W remote capacity <sup>1</sup><br>SD Self-diagnostics <sup>1</sup><br>NOM Meets Mexican standards<br>WRS Dual-voltage 120/277, nickel-cadmium battery back-up and self-diagnostics with FIDO wireless reporting system capability <sup>1</sup> |

| Accessories: Order as separate catalog number. |  |                 |   |
|--|--|-----------------|---|
| ELA Q L0304 SD                                 | Single LED indoor remote head, white, self-diagnostics <sup>2,3,4</sup>                | ELA Q L0304     | Single LED indoor remote head, white <sup>2,3,4</sup>     |
| ELA T Q L0304 SD                               | Twin LED indoor remote head, white, self-diagnostics <sup>2,3,4</sup>                  | ELA T Q L0304   | Twin LED indoor remote head, white <sup>2,3,4</sup>       |
| ELA QWP L0304 SD                               | Single LED weather-proof remote head, gray, self-diagnostics <sup>2,3,4</sup>          | ELA QWP L0304   | Single LED weather-proof remote head, gray <sup>2,4</sup> |
| ELA T QWP L0304 SD                             | Twin LED weather-proof remote head, gray, self-diagnostics                             | ELA T QWP L0304 | Twin LED weather-proof remote head, gray <sup>2,4</sup>   |
| ELA WG1  | Wireguard, 15"W x 13-1/2"H x 6"D (See spec sheet <a href="#">ELA-WG</a> )              |                 |   |
| FIDO   | Emergency wireless reporting system edge router (See spec sheet <a href="#">FIDO</a> ) |                 |   |

### Notes

- <sup>1</sup> Not available with NOM.
- <sup>2</sup> Only available with HO option. See spec sheet [ELA Q LED](#).
- <sup>3</sup> Also available in black. Add "B" after ELA to order black finish. Example: ELA B Q L0304 SD. See spec sheet [ELA Q LED](#).
- <sup>4</sup> Only compatible with Quantum LED series.

# ELM2 LED QUANTUM® Thermoplastic Emergency Light

## SPECIFICATIONS

| Electrical                    |                |          |           |              |
|-------------------------------|----------------|----------|-----------|--------------|
| Primary Circuit               |                |          |           |              |
| Typical LED life <sup>1</sup> | Supply voltage | Max amps | Max watts | HO/max watts |
| 10 years                      | 120            | .04      | 1.44      | 2.88         |
|                               | 277            | .03      | 1.44      | 2.88         |

## BATTERY

| Ni-Cad  |                         |                           |                          |                                  |
|---------|-------------------------|---------------------------|--------------------------|----------------------------------|
| Voltage | Shelf life <sup>2</sup> | Typical life <sup>2</sup> | Maintenance <sup>3</sup> | Optimum temperature <sup>4</sup> |
| 3.6     | 3 years                 | 7-9 years                 | none                     | 50-104°F (10-40°C)               |

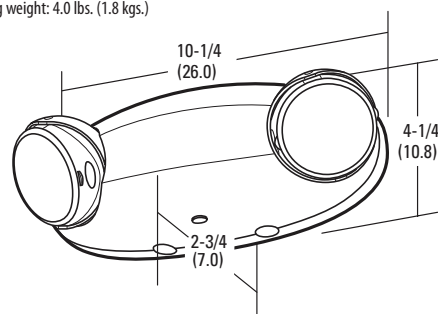
- Based on continuous operation.
- At 77°F (25°C).
- All life safety equipment, including emergency lighting path of egress, must be maintained, serviced and tested in accordance with all National Fire Protection Association and local codes. Failure to perform the required maintenance, service or testing could jeopardize the safety of occupants and will void all warranties.
- Optimum ambient temperature range where unit will provide capacity for 90 minutes. Higher and lower temperatures affect life and capacity. Consult factory for detailed information.

| Remote Output Capacity |                 |
|------------------------|-----------------|
| Standard unit          | Unit/HO battery |
| NA                     | 6W              |

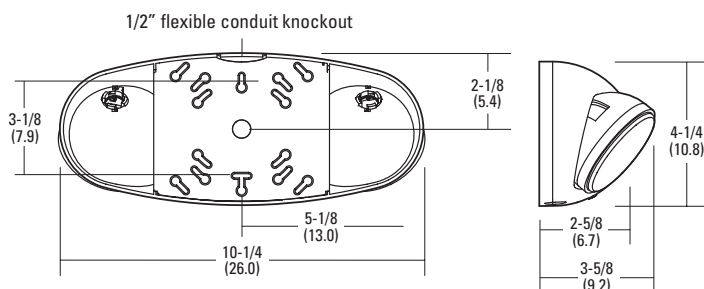
## MOUNTING

All dimensions are inches (centimeters).

Shipping weight: 4.0 lbs. (1.8 kgs.)



## Mounting Plate

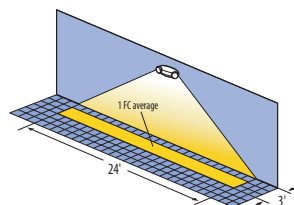


## LAMP PHOTOMETRICS

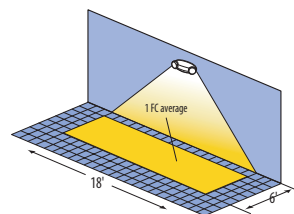
### QUANTUM LED SERIES – SINGLE COVERAGE

3W Total White LEDs

Using a single unit at a typical 7.5' mounting height delivers an average illuminance of 1.0 FC over a distance of 24' on a 3' path of egress and 18' on a 6' path of egress.



Example of single ELM2 LED WRS unit illuminating a 3' path of egress

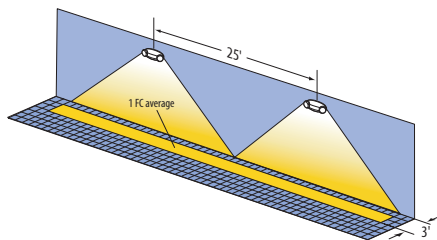


Example of single ELM2 LED WRS unit illuminating a 6' path of egress

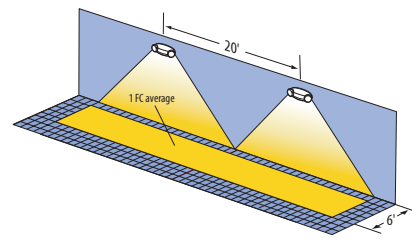
### QUANTUM LED SERIES – MULTIPLE COVERAGE

3W Total White LEDs

Using multiple units at a typical 7.5' mounting height delivers 25' center-to-center spacing on a 3' path of egress and 20' center-to-center spacing on a 6' path of egress.



Example of multiple ELM2 LED WRS units illuminating a 3' path of egress



Example of multiple ELM2 LED WRS units illuminating a 6' path of egress

## EXTENDED RUN-TIME FOR HIGH-OUTPUT UNITS

| Product                      | Run time  |
|------------------------------|-----------|
| ELM2 LED HO WRS (no remotes) | 3.9 hours |

\* Meets Life Safety Code standard minimum illuminance of 0.1 FC and average illuminance of 1.0 FC. Assumes open space with no obstructions, mounting height: 7.5', ceiling height: 9', and reflectances: 80/50/20. Analysis based on independently tested photometrics.

## FEATURES & SPECIFICATIONS

**INTENDED USE** — Ideal for applications requiring attractive die-cast aluminum signage, superior illumination and low energy consumption.

**CONSTRUCTION** — Precision-molded, die-cast aluminum construction — ultra-slim, compact housing. Fine-grain brushed aluminum faceplate with matte black electrostatic polymeric trim. Clear lacquer finish on brushed face inhibits fingerprints and other surface contaminants.

All electronics located inside housing.

Fully overlapping light seal prevents light leaks. Universal directional chevron knockouts are completely concealed and easily removed. Hinged faceplate and spring latches for easy lamp compartment access, no exposed hardware.

Letters 6" high with 3/4" stroke, with 100 ft viewing distance rating, based upon UL924 standards.

**U.S. Patent No. 5,739,639, 5,954,423 and 6,502,044. Canada Patent No. 2,204,218. Other patents pending.**

**OPTICS** — Lamp is constructed using new LED technology. Provides perfectly uniform illumination to meet 3/4" letter stroke required by code.

The typical life of the exit LED lamp is 10 years, based on continuous operation. Unique LED lamp platform accommodates both single-face and double-face exits.

Low energy consumption — red exit consumes std. 81W, 1.3W (120V), green exit consumes std 1W, 1.5W (120V). Universal input voltage capabilities (120V through 277V, 50 or 60 HZ).

**ELECTRICAL** — Solid-state electronic elements to eliminate risk of electromechanical failures.

Surge protection meets ANSI/IEEE C62.41 category B and IEC 1000 immunity standards for high voltage surges, electrostatic discharges, high frequency electrical fast transients and line voltage dips/swells.

**Emergency Operation (for EL N option only):** Battery: Sealed, maintenance-free nickel-cadmium battery delivers 90 minutes capacity to lamp.

**Self-diagnostics (SD option only):** Two-state constant-current charger maximizes battery life and automatically recharges after battery discharge. Test switch provided for manual testing.

Self-diagnostic testing for five minutes every 30 days, 30 minutes at 180-day interval, and 90 minutes annually.

Diagnostic evaluation of LED light source, AC to DC transfer, charging and battery condition.

Continuously monitors AC functionality.

Low voltage disconnect prevents excessive deep discharge that can permanently damage the battery.

Single-point microcomputer control for all electronic features.

Crystal oscillator timing system with watchdog protection for precision accuracy.

AC/LVD reset allows battery connection before AC power is applied and prevents battery damage from deep discharge.

Brownout protection is automatically switched to emergency mode when supply voltage drops below 80% of nominal.

Single multi-chromatic LED indicator to display two-state charging, test activation and three-state diagnostic status.

Test switch provides manual activation of 30-second diagnostic testing for on-demand visual inspection.

|                |
|----------------|
| Catalog Number |
| Notes          |
| Type           |



LE surface



LRE recessed

*Signature*

Die-Cast Aluminum Exits

# LE and LRE



**INSTALLATION** — Universal mounting (top, end or back). Double face available with top or end mounting only. LRE: Trim ring has 3/4" depth adjustment to ensure a flush fit against the surface. Protrudes 1/10" from the surface. No exposed hardware.

Die-cast aluminum canopy provided for surface mount only.

**LISTINGS** — UL damp location listed 50°F - 104°F (10°C - 40°C). Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards. North Carolina Department of Insurance. NEMA Premium certified.

**WARRANTY** — 5-year limited warranty. (Battery is prorated.) Complete warranty terms located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions)

Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Note: Specifications subject to change without notice.

### ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

**Example: LE S 1 R EL N SD**

| Series                       | Face type                                | Housing color   | Number of faces   | Letter color                   | Input voltage   | Operation   | Options   |
|------------------------------|--|---|---|--------------------------------|---|---|---|
| <b>LE</b> LED, surface mount | <b>S</b> Stencil<br>P Panel <sup>1</sup> | (blank) Matte black, brushed aluminum face<br><br>BZ Dark bronze<br><br><b>W</b> White<br>B Matte black | <b>1</b> Single face<br><b>2</b> Double face <sup>2</sup> | <b>R</b> Red<br><b>G</b> Green | (blank) Universal input voltage (120-277V, 50 or 60 HZ) | (blank) AC only<br><b>EL N</b> Nickel-cadmium battery back-up<br><br>X2 Lamp wired on two separate AC circuits <sup>3</sup> | (blank) None<br>TP Two tamper proof Torx-head screws<br>VR Vandal-resistant shield (1/8" thick polycarbonate) <sup>4</sup><br>FI FA Field selectable fire alarm interface or flashing emergency operation with intermittent audible alarm (one flash per minute) <sup>5</sup><br><br>FI Fire alarm flashing interface <sup>6</sup><br>FA Flashing emergency operation and intermittent audible alarm <sup>7</sup><br><br>SD Self-diagnostics <sup>7</sup> |
| <b>LRE</b> LED, recessed     |  |   |   |                                |   |   |   |

#### Accessories: Order as separate catalog number.

|           |   |                    |  |
|-----------|---|--------------------|--|
| ELA US12  | 12" stem kit (see spec sheet <a href="#">ELA-StemKits</a> ) <sup>2,8</sup>  | ELA LEHO 120/277 N | Remote-capable exit with black canopy; provides 90 minutes of 11.1W capacity for remote head (see spec sheet <a href="#">ELA-LEHO</a> ) <sup>2,8</sup> |
| ELA WG1   | Back-mount wire guard (see spec sheet <a href="#">ELA-WG</a> ) <sup>2</sup> |                    |  |
| ELA WGEXT | Top-mount wire guard (see spec sheet <a href="#">ELA-WG</a> ) <sup>2</sup>  | ELA ERK            | Recess mounting rough-in kit for LRE only (see spec sheet <a href="#">ELA-ERK</a> )  |
| ELA WGEXE | End-mount wire guard (see spec sheet <a href="#">ELA-WG</a> ) <sup>2</sup>  |                    |  |

#### Notes

- Panel face available for special wording only (see Custom Signage spec sheet).
- Not available with LRE models.
- UL Listed as emergency lighting.
- VR contains tamper proof screws.
- Available with SD option only.
- Available with AC only or EL N operation only.
- Available with EL N option only.
- Add W for white.

SPECIFICATIONS

| ELECTRICAL          |                   |                |             |           |
|---------------------|-------------------|----------------|-------------|-----------|
| Primary circuit     |                   |                |             |           |
| Type                | Typical LED life¹ | Supply voltage | Input watts | Max. amps |
| Red LED AC only     | 10 Years          | 120            | 0.81        | 0.05      |
|                     |                   | 277            | 1.2         | 0.06      |
| Green LED AC only   | 10 Years          | 120            | 1.05        | 0.05      |
|                     |                   | 277            | 1.32        | 0.06      |
| Red LED emergency   | 10 Years          | 120            | 1.3         | 0.06      |
|                     |                   | 277            | 1.4         | 0.07      |
| Green LED emergency | 10 Years          | 120            | 1.5         | 0.07      |
|                     |                   | 277            | 1.7         | 0.07      |

| BATTERY               |               |              |                               |
|-----------------------|---------------|--------------|-------------------------------|
| Sealed Nickel-Cadmium |               |              |                               |
| Shelf life²           | Typical life² | Maintenance³ | Optimum temperature⁴          |
| 3 years               | 7-9 years     | none         | 50°F – 104°F<br>(10°C – 40°C) |

Notes

- 1 The typical life of the exit LED lamp is 10 years, based on continuous operation.
- 2 At 77°F (25°C).
- 3 All life safety equipment, including emergency lighting for path of egress must be maintained, serviced, and tested in accordance with all National Fire Protection Association (NFPA) and local codes. Failure to perform the required maintenance, service, or testing could jeopardize the safety of occupants and will void all warranties.
- 4 Optimum ambient temperature range where unit will provide capacity for 90 minutes. Higher and lower temperatures affect life and capacity.

SELF-DIAGNOSTICS  
(SD option only)

- Five-minute test every 30 days
- 30-minute test every six months
- 90-minute test annually
- Diagnostics evaluate the battery, lamp, charger and AC to DC transfer.

| Condition       | Indication       |
|-----------------|------------------|
| Normal mode     | Steady green     |
| Self-testing    | Flashing green   |
| Emergency mode  | Off              |
| Hi-charge       | Steady red       |
| Battery failure | Single-flash red |
| Lamp failure    | Double-flash red |
| Circuit failure | Triple-flash red |

KEY FEATURE

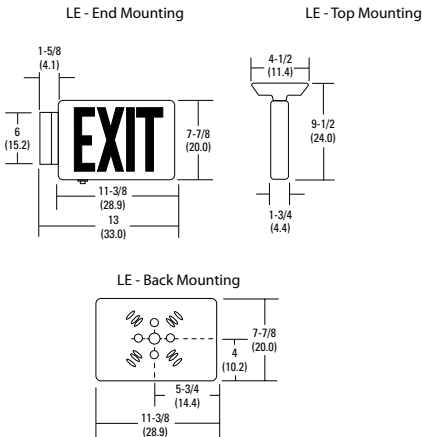


The typical life of the exit LED lamp is 10 years.

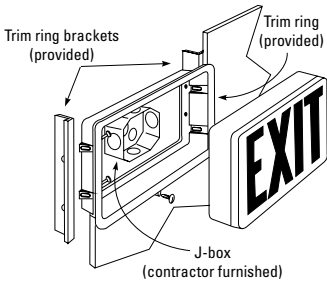
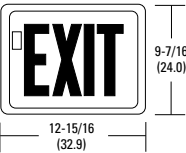
MOUNTING

All dimensions are in inches (centimeters). For VR option, add 1/4" to height and width. Add 1/8" depth for single face; 1/4" depth for double face.

Shipping weight: LE - 4 lbs (1.8 kgs)  
LE EL N - 5 lbs (2.3 kgs)  
LRE - 4 lbs (1.8 kgs)  
LRE EL N - 5 lbs (2.3 kgs)

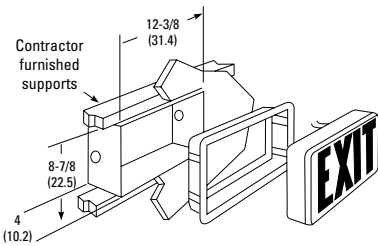


STANDARD MOUNTING



Wall opening dimensions: 8-3/4" H x 12-3/8" W x 1-3/4" D

MOUNTING WITH OPTIONAL ROUGH-IN KIT (ELA ERK)



Wall opening dimensions: 8-7/8" H x 12-3/8" W x 4" D





**STATEMENT OF LIMITED WARRANTY  
FOR ACUITY BRANDS LIGHTING, INC.  
LED COMMERCIAL INDOOR PRODUCTS  
FOR SHIPMENTS WITHIN THE UNITED STATES AND CANADA  
10/01/12**

Subject to the exclusions set forth below, Acuity Brands Lighting, Inc. ("Acuity") warrants its commercial indoor light emitting diode (LED) fixtures, including the LED arrays and the LED drivers and integral control devices ("Product(s)") to be free from defect in material and workmanship (the "General Warranty") for a period of five (5) years from the date of shipment from Acuity's facilities. The LED arrays in the Product(s) will be considered defective in material or workmanship only if a total of 15% or more of the individual light emitting diodes in the Product(s) fail to illuminate.

Ballasts, lamps, emergency batteries and poles are excluded from the General Warranty. Holophane® and Accupro® brand ballasts, Acculamp® brand lamps, emergency batteries, and poles are warranted separately; and the terms of such warranties are located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx). Manufacturers of ballasts, lamps, emergency batteries and poles incorporated into the Product(s) are solely responsible for any costs or expenses related to any claims, repairs, or replacements associated with any such component(s). Assistance with warranty claims for any such component(s), and/or copies of each applicable manufacturer's warranty, may be obtained from an authorized Acuity post-sales or customer service representative.

This Statement of Limited Warranty ("Warranty") applies only when the Product(s) are installed in applications in which ambient temperatures are within the range of specified operating temperatures and are operated within the electrical values shown on the LED driver Label. Acuity will not be responsible under this Warranty for any failure of the Product(s) that results from external causes such as: acts of nature; physical damage; exposure to adverse or hazardous chemical or other substances; use of reactive cleaning agents and/or harsh chemicals to clean the Product(s); environmental conditions; vandalism; fire; power failure, improper power supply, power surges or dips, and/or excessive switching; induced vibration; animal or insect activity; fault or negligence of purchaser, any end user of the Product(s) and/or any third party not engaged by Acuity; improper or unauthorized use, installation, handling, storage, alteration, maintenance or service, including failure to abide by any product classifications or certifications, or failure to comply with any applicable standards, codes, recommendations, product specification sheets, or instructions of Acuity; use of the Product(s) with products, processes or materials supplied by any end user or third party; or any other occurrences beyond Acuity's reasonable control. Acuity also will not be responsible under this Warranty for any substantial deterioration in the Product finish that is caused by failure to clean, inspect or maintain the finish of the Product(s). If the Product(s) are used on existing foundations, anchorages or structures, the end user is solely responsible for the structural integrity of such existing foundations, anchorages or structures and all consequences arising from their use. Adequate records of operating history, maintenance, and/or testing must be kept by the end user and provided to Acuity upon request to substantiate that the Product(s) have failed to comply with the terms of this Warranty. Neither polycarbonate nor acrylic material used in the Products is warranted against yellowing, as yellowing may naturally occur over time due to normal aging. The Product(s) are not warranted against costs that may be incurred in connection with changes or modifications to the Product(s) required to accommodate site conditions and/or faulty building construction or design. In addition, the Product(s) are not warranted against cost resulting from installation of a third party components, failures of third party supplied components, or failures of Acuity supplied Product(s) caused by a third party supplied component. This Warranty only applies to the Product(s) when sold for commercial purposes and does not apply to any consumer product(s), all of which are governed by separate limited warranty terms. For the avoidance of doubt, Acuity emergency fixtures are not covered by this Warranty.

If the Product(s) fail to comply with the terms of this Warranty, Acuity, at its option, will repair or replace the Product(s) with the same or a functionally equivalent Product(s) or component part(s). This Warranty excludes labor and equipment required to remove and/or reinstall original or replacement parts. This Warranty extends only to the Product(s) as delivered to, and is for the sole and exclusive benefit of, the original end user of the Product(s) at the original location. This Warranty may not be transferred or assigned by the original end user. The repair or replacement of any Product(s) or component part within the Product(s) is the sole and exclusive remedy for failure of the Product(s) to comply with the terms of this Warranty and does not extend the Warranty period. Warranty claims regarding the Product(s) must be submitted in writing within (30) days of discovery of the defect or failure to an authorized Acuity post-sales or customer service representative. Product(s) or component part(s) may be required to be returned for inspection and verification of non-conformance by Acuity, but no Product(s) or component part(s) will be accepted for inspection, verification or return unless accompanied by a "return authorization number" which can be obtained only from an authorized Acuity post-sales or customer service representative. Acuity is not responsible for any costs and expenses incurred in connection with shipment of Product(s) to Acuity, but Acuity shall bear all cost and expense incurred in connection with shipment of replacement Product(s) to the customer.

THE FOREGOING WARRANTY TERMS ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, AND ACUITY EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, RELATING DIRECTLY OR INDIRECTLY TO THE PRODUCT(S), WHETHER ORAL, WRITTEN, OR ARISING BY COURSE OF DEALING OR USAGE OF TRADE, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO AGENT, DISTRIBUTOR OR OTHER SUPPLIER OF ACUITY PRODUCTS HAS THE AUTHORITY TO MODIFY OR AMEND THIS WARRANTY WITHOUT EXPRESS WRITTEN AUTHORIZATION FROM ACUITY.

The total liability of Acuity on any and all claims of any kind, whether in contract, warranty, tort (including negligence), strict liability or otherwise, arising out of or in connection with, or resulting from, Acuity's performance or breach of this Warranty, or from Acuity's sale, delivery, resale, repair, or replacement of any Product(s) or the furnishing of any services, shall in no event exceed the purchase price allocable to the Product(s) that give rise to the claim, and any and all such liability shall terminate upon the expiration of the warranty period specified above.





**STATEMENT OF LIMITED WARRANTY  
FOR ACUITY BRANDS LIGHTING, INC.  
LED COMMERCIAL INDOOR PRODUCTS  
FOR SHIPMENTS WITHIN THE UNITED STATES AND CANADA**  
10/01/12

IN NO EVENT SHALL ACUITY BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES, EVEN IF INFORMED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER AS THE RESULT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR ANY OTHER THEORY, INCLUDING WITHOUT LIMITATION LABOR OR EQUIPMENT REQUIRED TO REMOVE AND/OR REINSTALL ORIGINAL OR REPLACEMENT PARTS, LOSS OF TIME, PROFITS OR REVENUES, LACK OR LOSS OF PRODUCTIVITY, INTEREST CHARGES OR COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, SYSTEMS, SERVICES OR DOWNTIME COSTS, DAMAGE TO OR LOSS OF USE OF PROPERTY OR EQUIPMENT OR ANY INCONVENIENCE ARISING OUT OF ANY BREACH OF THE FOREGOING WARRANTY OR OBLIGATIONS UNDER SUCH WARRANTY.

Acuity reserves the right to modify or discontinue this Warranty without notice provided that any such modification or discontinuance will only be effective with respect to any Product(s) purchased after such modification or discontinuance.