

INSTALLATION INSTRUCTIONS

PREMIUM BALANCED DOOR WITH GEARBOX TENSIONER



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ORDER OF ASSEMBLY AND INSTALLATION

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IMPORTANT: READ THIS MANUAL THOROUGHLY BEFORE BEGINNING INSTALLATION.

C.R. Laurence, Inc. warrants all products manufactured by it and supplied hereunder to be free from defects in material and workmanship in accordance to our contract.

This warranty shall not apply to any products not manufactured by CRL, nor to any products which have been repaired or altered by others without CRL's written consent. This warranty shall not include failure of parts and materials due to improper installation, inadequate support of surrounding structures, and/or lack of proper maintenance.

INTRODUCTION

Thank you for choosing the Premium Balanced Door System by C.R. Laurence. We have made every effort to assure the utmost quality in materials and craftsmanship. Each unit has been fully assembled and factory tested prior to shipping. Please read this manual thoroughly before beginning installation.

STEP 1: CONFIRM YOUR SHIPMENT

Carefully open the shipping container and look for any damaged parts. Most orders are shipped knocked down and will require on-site assembly. Confirm that the door(s) height and width are approximately the same as the rough opening. Your package should include:

- Fully Glazed Door(s)
- Hinge Tube with Top and Bottom Pivot Arms
- Header Assembly
- Floor Mounted Gearbox
- Threshold and Side Jambs

Options may include **Hinge Tube Cover, Handles, Stanley Operator Motor** and **Stanley Electrical Control Units**. Refer to your packing list for details.

If any parts are missing or damaged, call the C.R. Laurence Technical Sales Department immediately at **1-(800)-421-6144**. Refer to the order number on the packing list.

STEP 2: CHECK ROUGH OPENING

Verify that the rough opening is square and plumb. Refer to CRL Shop Drawings to confirm rough opening dimensions. It should be slightly larger than the finished door frame including header and threshold.

If automatic door options are required, make sure that all electrical wiring is completed to the rough opening and **NOT ENERGIZED**. Refer to the C.R. Laurence "Site Preparation" drawing and/or your job drawings to confirm all required electrical connections.

STEP 3: VERIFY FLOOR CONDITION

The floor directly below the rough opening should be clean and in good condition. It is critical that the floor be sound and level. The Premium Balanced Door threshold and pivot gear box mounts directly to the floor or sub floor surface. It must be able to support the system's weight and firmly hold the fasteners in place for the lifetime of the installation. It is also necessary for the floor to be level and square to the jambs to allow a smooth operation of the Balanced Door.

CRL PREMIUM BALANCED DOOR WITH GEARBOX



NOTE: Medium to heavy usage of specified components may cause critical fasteners to loosen over time. C.R. Laurence recommends the use of **Cat. No. 24221** Loctite® 242®. It is designed for the locking and sealing of threaded fasteners which require normal disassembly with standard hand tools. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. Suitable for applications on less active substrates such as plated surfaces, where disassembly with hand tools is required for servicing.

STEP 4: ASSEMBLE THE FRAME

Open the interior header access panel(s) and remove all components except the cam assembly as shown. This reduces the weight of the header and allows access to any predrilled mounting holes. Be sure to mark the parts (L/R) because they are matched to the cam assembly.

1. Remove (4) 1/4" - 20 x 1" Socket Head Cap screws.
2. Use a large screw driver through Pry Holes of Damper Plate to compress damper plate spring tension.
3. Lever off Damper Assembly from door header.

Lay the frame component parts on the floor and assemble with the appropriate fasteners. C.R. Laurence offers a variety of optional jamb configurations that will be covered in more detailed supplements attached to this guide. In general, most systems will consist of the parts shown below:

FRAME SHOWN:
RIGHT HAND REVERSED
EXPOSED HINGE TUBE

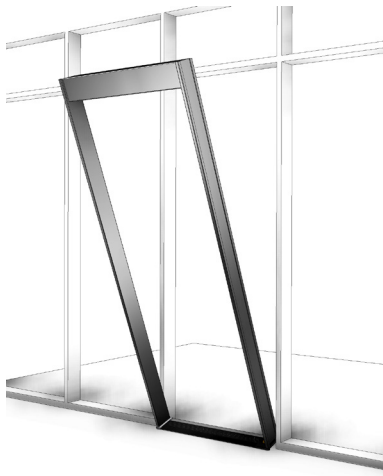
Cat. No. 24221
Loctite

GEARBOX

CRL PREMIUM BALANCED DOOR WITH GEARBOX

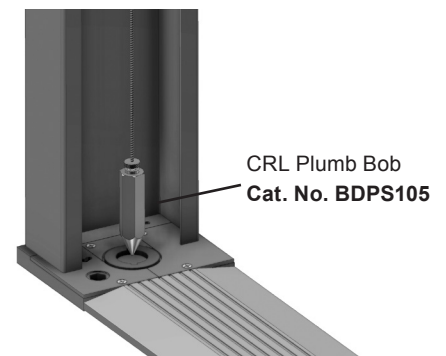
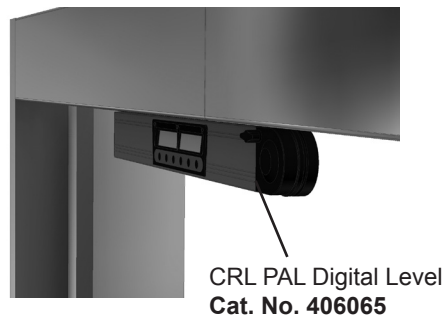
STEP 5: INSTALL THE FRAME

Stand the frame up and work it into the prepared opening. If electrical connections are present, route them into the header as you proceed. (Refer to the CRL shop drawings). Temporarily secure the frame in place with shims.



Using **Cat. No. 406065** Digital Level and **Cat. No. BDPS105** Plumb Bob, adjust the frame so it is completely level and plumb. Proper operation of the Premium Balanced Door System depends on the squareness of the frame. Tolerance is (+/-) 1/32" (1 mm).

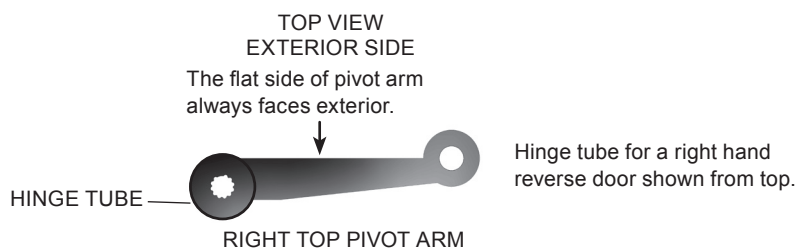
When the door frame is in the desired position, permanently mount with fasteners.



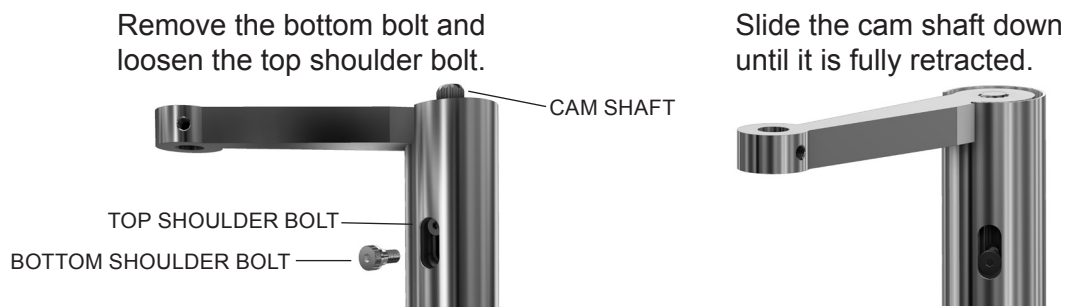
STEP 6: INSTALL THE HINGE TUBE

The hinge tube assembly carries the full weight of the glazed door and acts as an intermediate hinge to the Balanced Door System. It is very important to install and adjust it properly to achieve free and unrestricted movement.

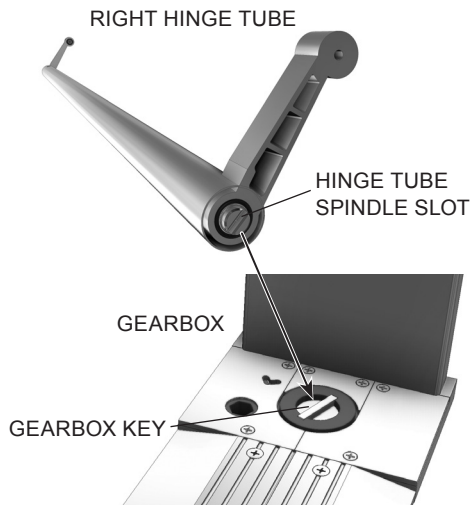
(A) If double doors are supplied, use the shape of the pivot arms to identify the left and right hinge tubes.



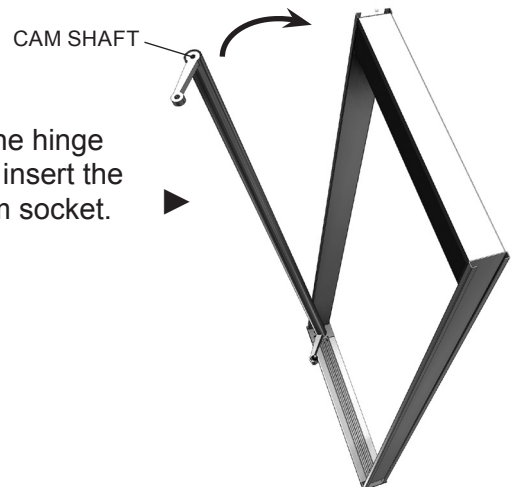
(B) Temporarily lower the cam to install the hinge tube.



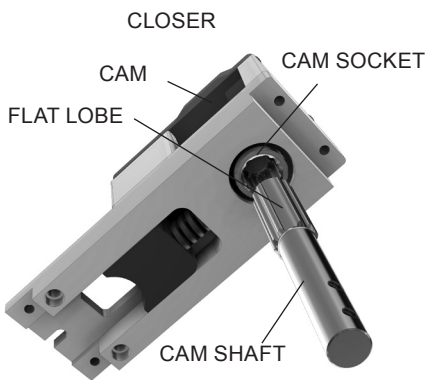
STEP 6: INSTALL THE HINGE TUBE (CONTINUED)



◀ (C) Turn gearbox key until it is perpendicular to the jamb. Place the spindle slot of the right hinge tube over the gearbox key and stand vertically.



(D) Swing the top of the hinge tube into position and insert the cam shaft into the cam socket.

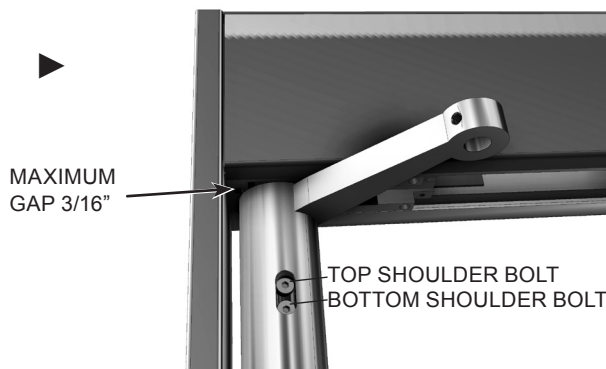


NOTE: The cam shaft fits only one way into the cam socket.

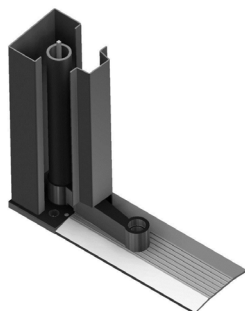
◀ (E) Line the flat lobe of the cam shaft with the flat section in the cam socket. Apply upward sliding pressure on the cam shaft as you turn the cam from above. When they engage, raise the cam shaft until it stops. Apply **Cat. No. 24221** Loctite to bottom shoulder bolt and insert to hold cam in place. Remove the top shoulder bolt. Apply Loctite and re-insert. Tighten bolts completely.

When properly installed, the pivot arms swing freely in either direction without rubbing the header or threshold.

WARNING: In order to maintain full engagement of the cam shaft, do not exceed the 3/16" (5 mm) maximum gap between the top pivot arm and the bottom of the header. A greater gap will result in an unsafe condition.

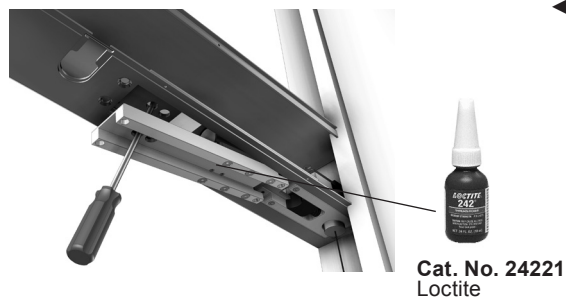


Cat. No. 24221 Loctite



◀ **NOTE:** For installations using optional concealed hinge tubes, snap hinge tube cover into place after installing the hinge tube.

STEP 7: INSTALL THE DOOR

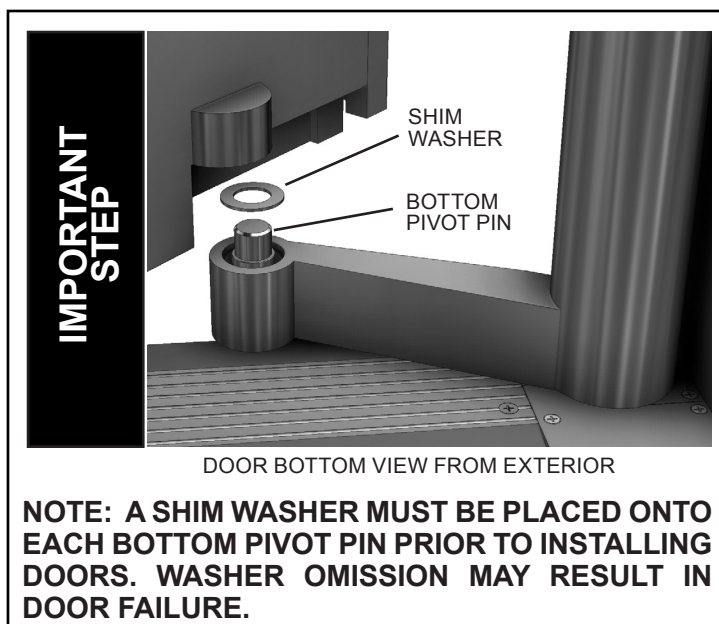


- ◀ (A) Replace the matched damper assembly. Using a large flat head screwdriver, pry the track up and into position. This will give you the leverage necessary to overcome the return spring pressure of the damper. When in place, attach the damper plate with 4 - 1/4" - 20 X 1" Socket Head Cap screws. Apply **Cat. No. 24221** to each screw and tighten securely.

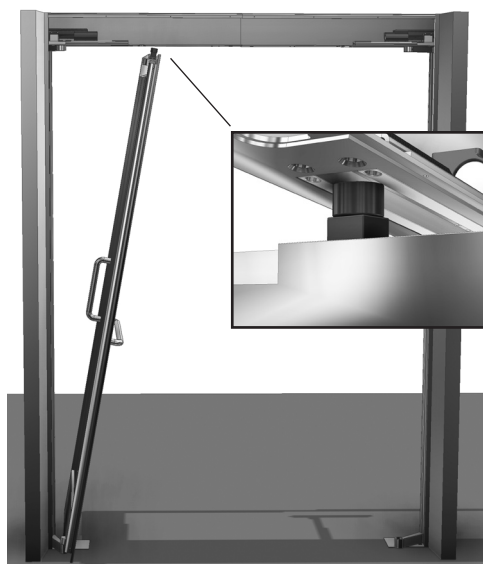
- (B) Place the correct Shim Washer onto the Bottom Pivot Pin to prevent the door from rubbing the Pivot Arm. (3 sizes supplied) A 3/32"-1/8" (2-3 mm) gap is recommended.

Have an assistant hold the bottom pivot arm to keep the hinge tube stationary while installing the door.

Lift the door at an angle and set the bottom cup of the pivot block onto the pivot arm pin as shown. Hold the top of the door at an angle so it clears the header. Make sure the door is securely seated onto the bottom pivot arm by gently rocking it.



- ◀ (C) Swing the door upwards as you guide the top roller into the track. If necessary, pry the top pivot arm up slightly until it clears the pivot block. Have an assistant hold the door vertical while you align the top pivot arm with the top pivot block.



- (D) Insert the top pivot arm shaft into top pivot arm as shown. The set screw fits into the groove to hold the top pivot arm shaft in place. Apply Loctite to set screw and tighten securely.



- (E) Make sure the closing speed and latching speed valves are FULLY OPENED to allow the door to swing unrestricted. (Page 8, Step 9)

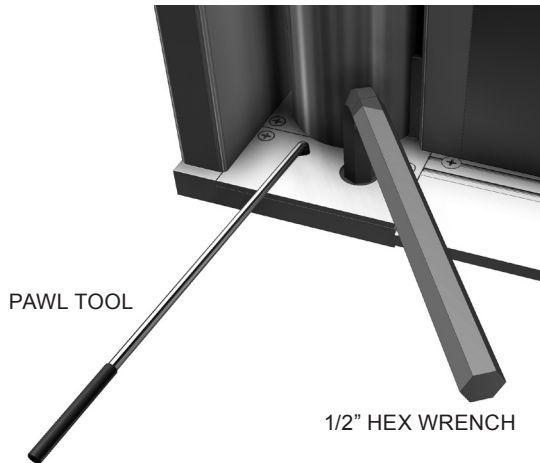
CAUTION: Use care when adjusting the damper valves. Excessive pressure may strip the threads. To fully open, gently turn each valve counterclockwise until it bottoms out against the damper body.

CRL PREMIUM BALANCED DOOR WITH GEARBOX

STEP 8: ADJUST CLOSING FORCE

Use the tension adjustment gearbox at the base of each hinge tube to adjust the closing force of the doors.

TENSION ADJUSTMENT GEARBOX
RIGHT SIDE

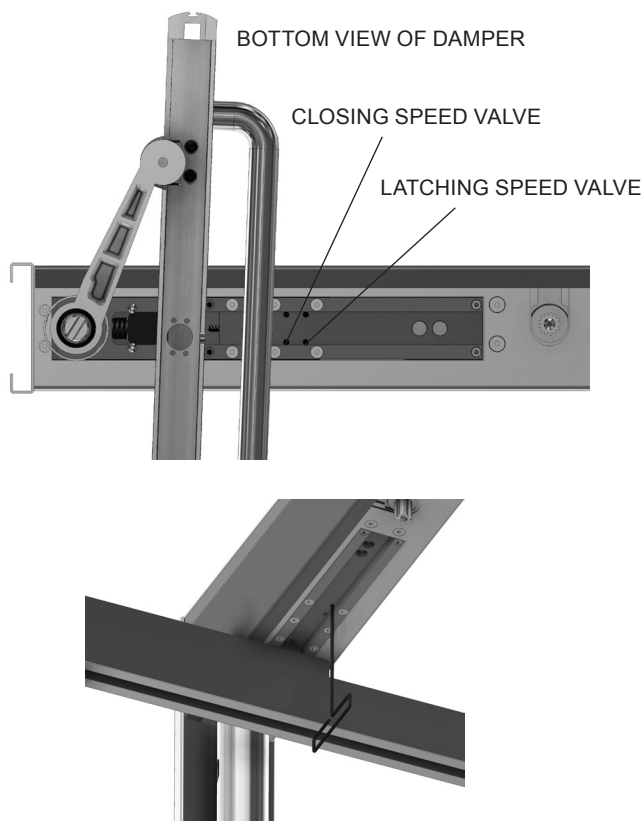


NOTE: Both damper valves should be fully open from Step 7E. If not, carefully open them before adjusting the closing spring force.

Use the Pawl Tool to release the force of the torsion tube spring. Pulling back on the Pawl Tool while holding the Hex Wrench allows the spring tension to relax in a controlled manner. Without the Hex Wrench in place the torsion spring will rapidly unwind to zero force.

Remove the Pawl Tool and use the Hex Wrench to ratchet up the torsion spring force to the desired level. For a right side gearbox, as illustrated, a counterclockwise motion will **INCREASE** the tube tension.

STEP 9: ADJUST CLOSER SPEED



USE 5/16" HEX WRENCH TO ADJUST DAMPER VALVES.
(LOOSEN=COUNTERCLOCKWISE)

The damper is a two stage device that regulates the speed at which manual closing occurs. The valves should be fully opened from Step 8.

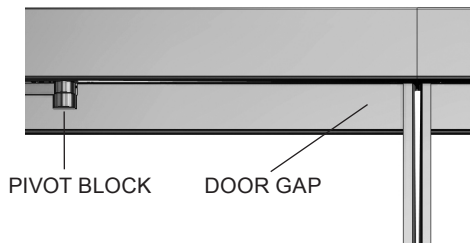
Have an assistant open the door from the exterior side to the maximum position. Turn the closing speed valve 1/4 turn. While gently holding it to prevent slamming, let the door fully close two times. Repeat the procedure until the door closes at a desired rate of speed.

Repeating the same cycling procedure, close the latching speed valve until you see a noticeable speed drop at the last 10 -12" of travel. You may need to readjust the closing speed valve until you reach a desired overall performance. Each valve adjustment affects the other.

Optimum closing action requires a delicate balance between the closing speed, latching speed and spring tension. Adjustment patterns will also vary from one door to another. Be sure to let the door cycle several times before changing the settings.

STEP 10: ADJUST PIVOT BLOCK

VIEW FROM EXTERIOR



The adjustable pivot blocks located on the top and bottom of each door can be used to reduce small gaps and misalignments. The retaining screws are easily accessible without removing the door.

Open the door 45 degrees and block the bottom outside stile up off the floor with tapered wood shims. Only adjust one pivot block at a time. Loosen but do NOT remove the retaining screws. Adjust to the desired gap by adding or removing shims. Tighten the retaining screws, close door and check gaps. Misalignments up to 1/4" can be corrected with this procedure.

WARNING: Do not attempt this procedure without an assistant. Heavy, uncontrolled doors can cause serious injuries. Do NOT remove the retaining screws.

TOP PIVOT ARM



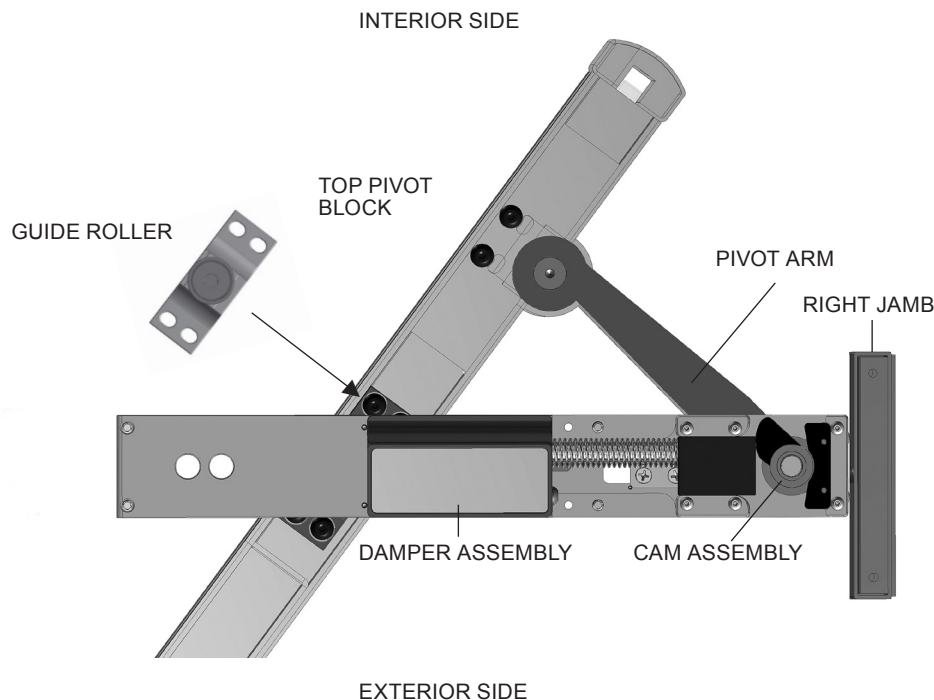
PIVOT BLOCK
RETAINING SCREWS

Cat. No. 24221
Loctite



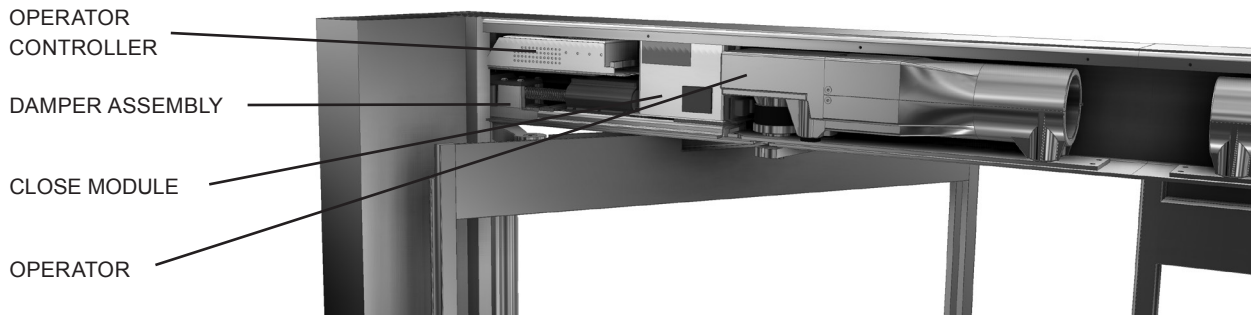
NOTE: After adjusting door alignment. Remove one screw at a time. Apply **Cat. No. 24221** Loctite® 242® to threads and re-insert.

TOP VIEW REFERENCE
RIGHT HAND REVERSED DOOR SHOWN

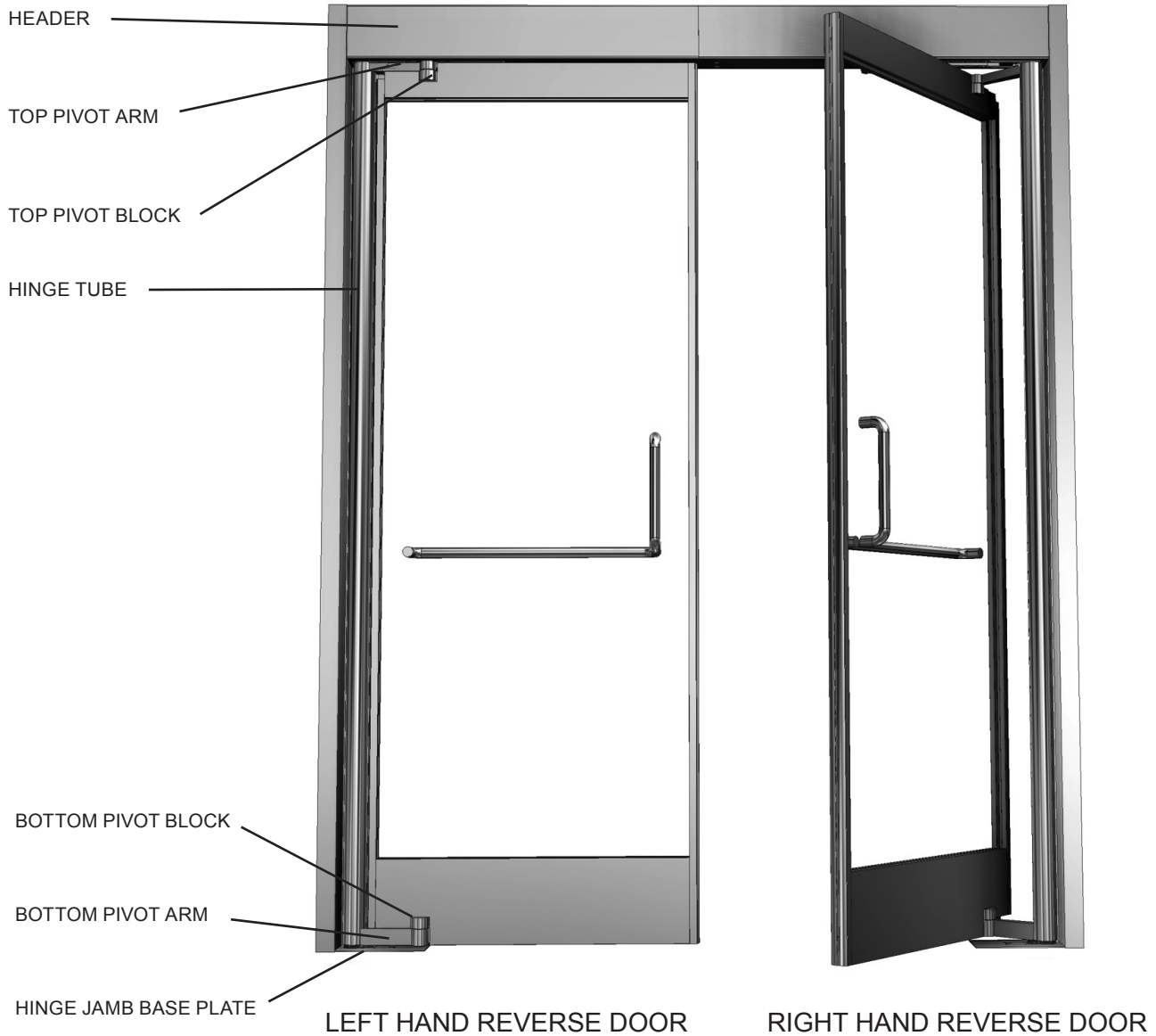


COMPONENT OVERVIEW

HEADER DETAIL SHOWN FROM INTERIOR



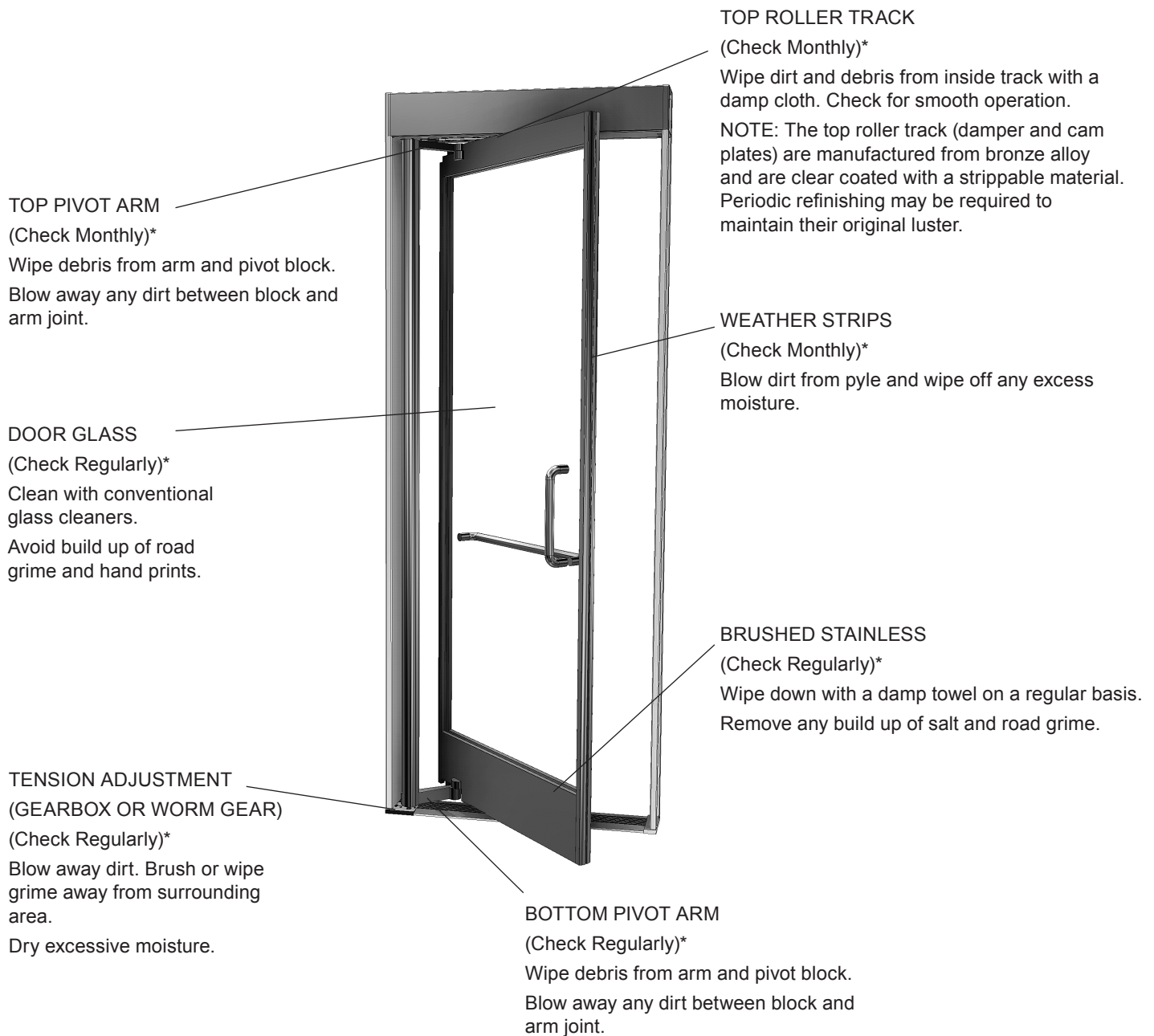
EXTERIOR VIEW



MAINTENANCE

Proper maintenance is critical to the life and operation of the Premium Balanced Door System. It is important to regularly clean environmental debris from areas adjacent to moving parts such as bearings, roller tracks and gear assemblies.

DO NOT LUBRICATE MOVING PARTS. Each component is shipped from the factory with ample lubrication and if kept clean will provide a long service life. Compressed air, soft clean towels and a small brush are recommended for most cleaning and maintenance procedures.



*Inspection intervals are suggestions. Inspection and maintenance should be based on actual cycle levels and environmental conditions.