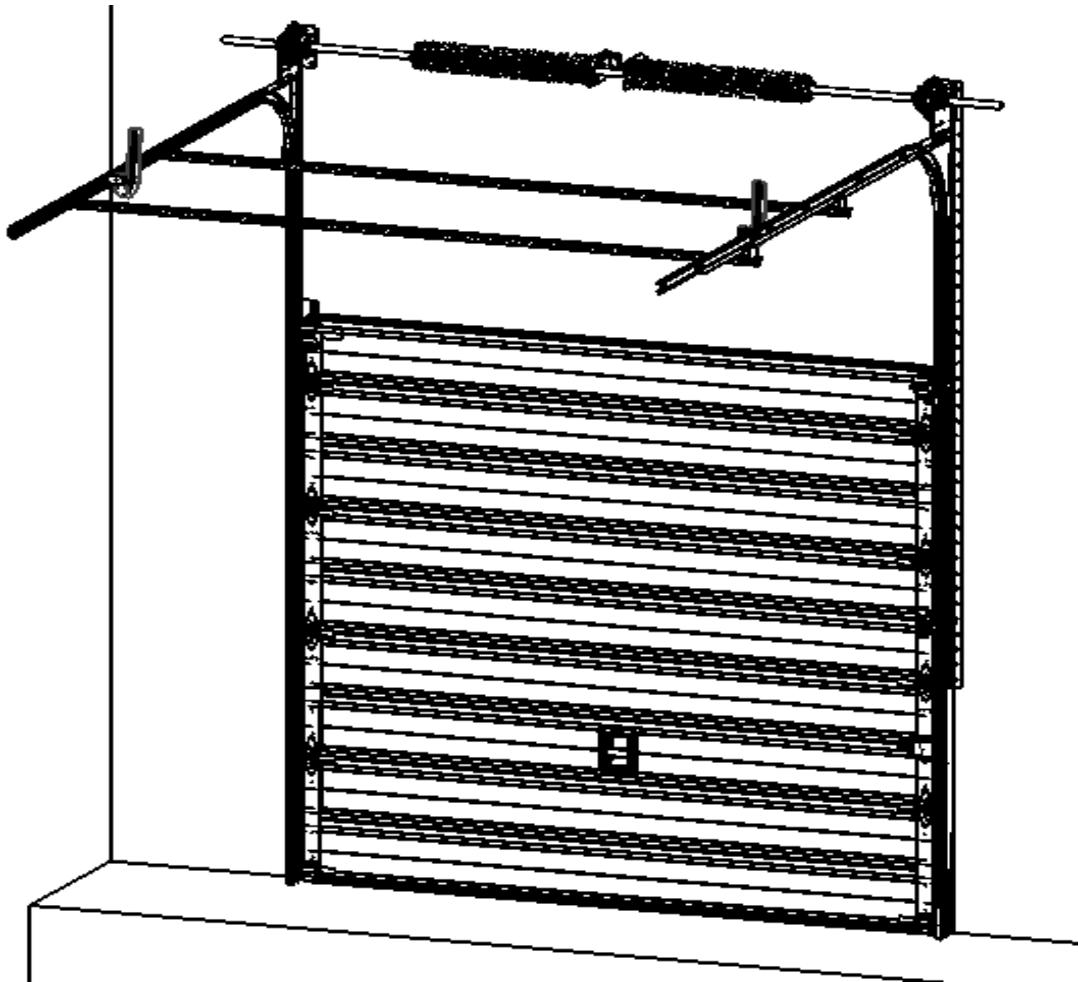


QxV INSTALLATION GUIDE

QxV™ Torsion Spring High Lift Door

Model DR0900-HL – DR0908-HL



A Product of



340 Gateway Park Drive
North Syracuse, NY 13212

Phone: 315-463-7348

Toll Free: 866-235-7468

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Email: sales@dlmanufacturing.com

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QxV™ High-Lift Door Installation Manual

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Owners Responsibilities

1. The owner should understand and comply with all safety standards. The owner is responsible for training and adhering for all safety standards when working with DL products.
2. All posted safety instructions should be visible to all operators or staff involved with the dock door. No posted safety instructions shall be obscured from view.
3. Any dock doors that have experienced issues such as failure or structural damage should be immediately removed from service. Such doors need to be repaired by a qualified technician before returning to service.
4. Any modifications or changes made to this product without written consent from DL Manufacturing will void all warranties.

Door Operation (Normal Usage)

1. Employees should be trained on how to properly use the door.
2. Keep employees clear of door when in operation.
3. Using the door with excessive force may damage the door.
4. Do not use a damaged or malfunctioning door.
5. Do not close the door with an object under the door.
6. Do not use fork truck to open or close a door

>WARNING!!!!

Installers should completely review this manual prior to starting. Please use extreme caution and proper techniques when handling springs and associated parts to avoid injury. Only qualified professionals are recommended for installation of this product.

Do not expose panels to outside elements during storage. Painting of the panels will void DL Manufacturing warranty. Direct handling of panels with forklifts or other machinery is not advised. In all cases above, damage outside of warranty will be caused to product.

QxV™ High-Lift Door Installation Manual

Approved Mounting Styles

Hollow Concrete Block A.	3/8" x 1-7/8" sleeve anchor and 3/8" Washer. Fastenal #50305 or equivalent
Concrete Wall	3/8" x 2-1/4" wedge anchor and 3/8" washer. Fastenal #50204 or equivalent
Tilt Up Panel Figure B.	3/8" x 2-1/4" wedge anchor and 3/8" Washer. Fastenal # 50204 or equivalent
Structural Steel Figure C.	1/4" Tek 5 Screws with flat washer. Fastenal #32109 or equivalent
Wood backed by Solid material. or equivalent	3/8"x3-3/4" anchor with 3/8' washer. Fastenal # 52007 or equivalent 3/8" x 1-1/2 lag bolts (door). Fastenal # 22259



Figure A

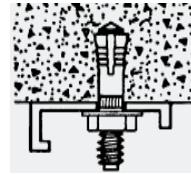


Figure B



Figure C

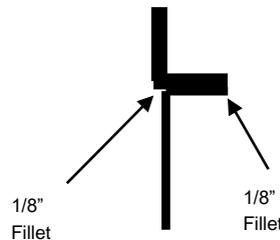


Figure D

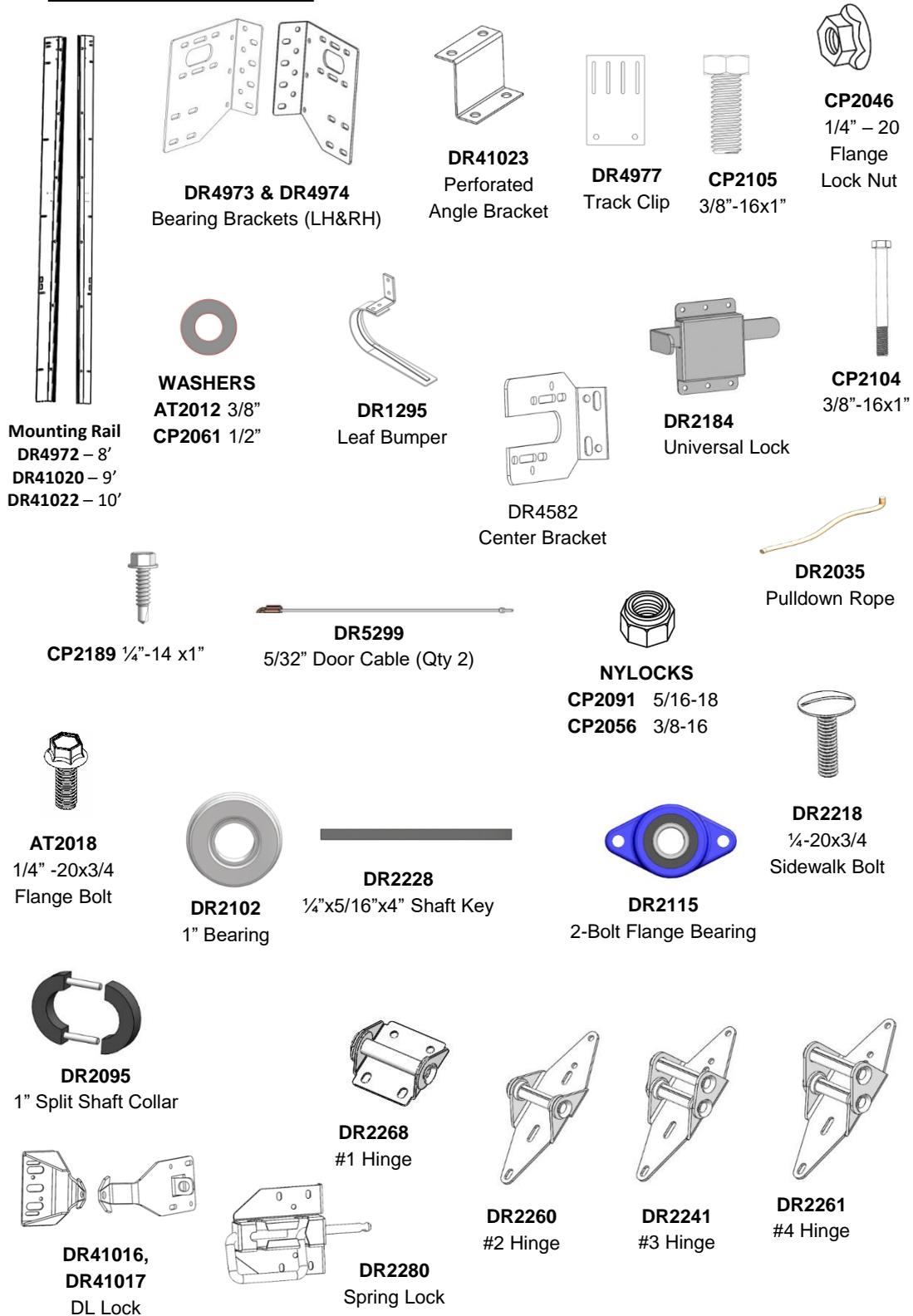
Approved welding methods

Fillet Welds Figure D.	Mounting Rail Bearing Brackets	1/8" fillet weld x 1-1/2 top and bottom then every 18" 3/16" fillet weld x 1-1/2 (4) places
Plug Welds 18"	Mounting Rail Bearing Brackets	Plug weld top and bottom 2 holes then every 18" 3/16" fillet weld x 1-1/2 (4) places

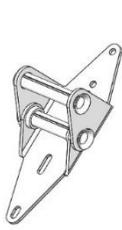
QxV™ High-Lift Door Installation Manual

Manufacturer-supplied hardware & fasteners

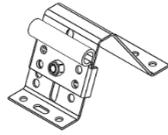
Common Parts



QxV™ High-Lift Door Installation Manual



DR2262
#5 Hinge



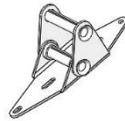
DR2263
Top Hinge



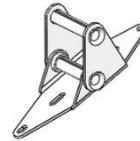
DR2216 – 2" wheel, 4" stem
DR2242 – 2" wheel, 7" stem



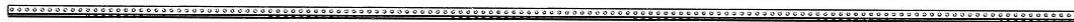
DR2270 – 3" wheel, 4" stem
DR2259 – 3" wheel, 7" stem



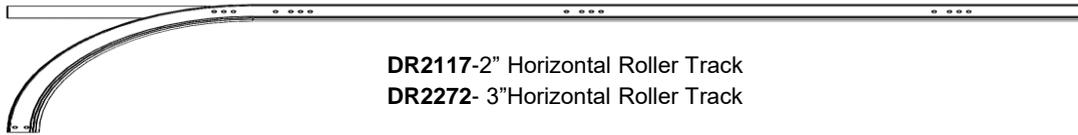
DR2264
#6 Hinge



DR2265
#7 Hinge



CP2123
Perforated Angle



DR2117-2" Horizontal Roller Track
DR2272- 3" Horizontal Roller Track



DR2210 (Length per job)
1" hollow shaft (keyed)



DR4995
Upper Mounting Rail

DR2340

3/8" x 1" polyester foam with PSA one side

Torsion Spring Parts



DR2088/DR2111
(54HL/120HL)
High Lift Drums
1 Left (Red) &
1 Right (Black)



Torsion Springs
1 Left (red) &
1 Right (Black)

QxV™ High-Lift Door Installation Manual

ALL DIMENSIONS ARE FOR REFERENCE ONLY! VERIFY NUMBERS WITH INSTALLATION SHEET IN PARTS BOX

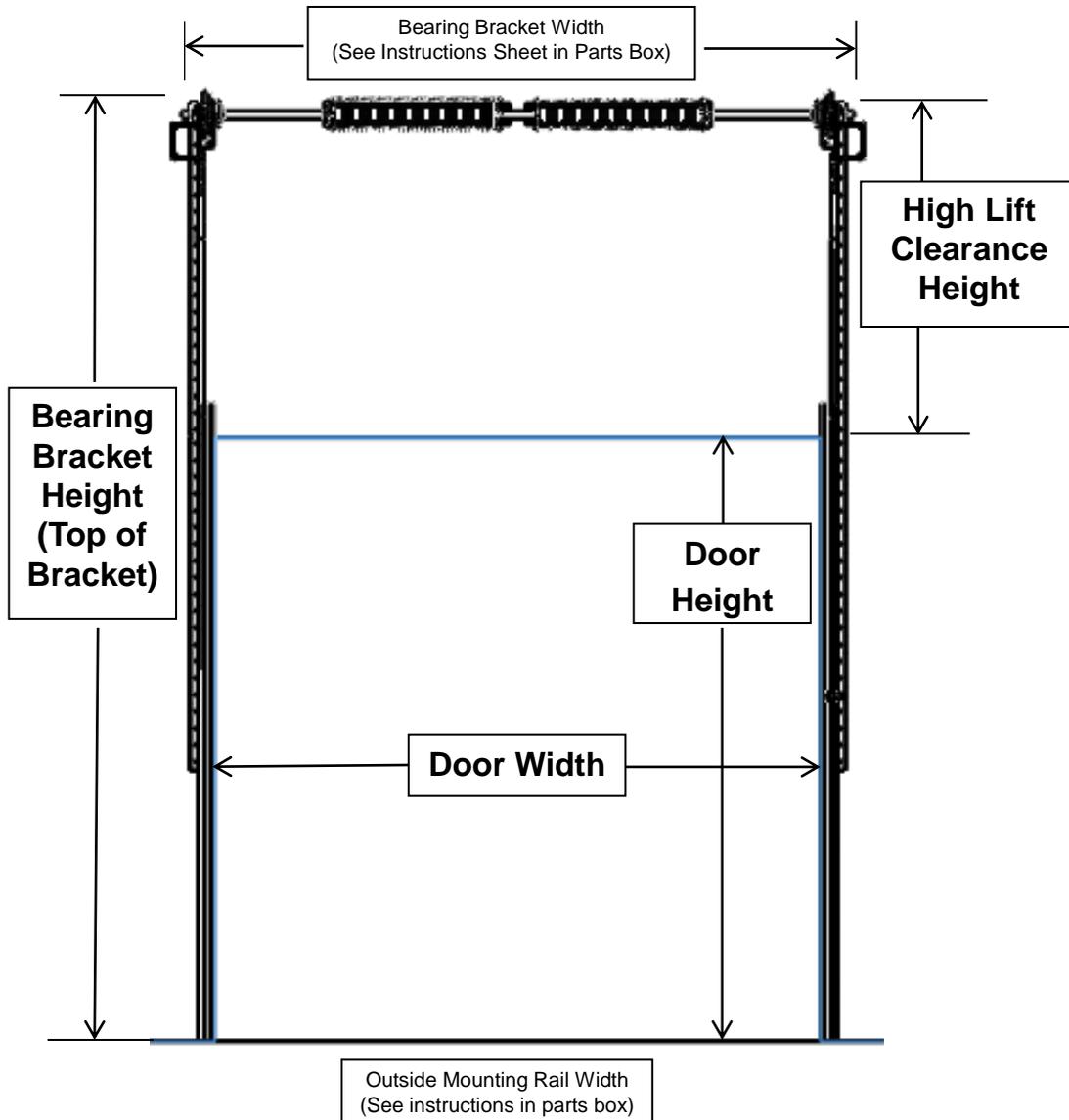


Figure 1 Key measurements and locations of mounting rails and end bearing assemblies.

QxV™ High-Lift Door Installation Manual

>IMPORTANT!!

Track support and alignment are critical!!!

The following conditions are required for the installation of the QxV door:

- Door jamb is plumb and true.
- Adequate mounting surface available for Mounting Rails and End Bearing Assemblies.
- Door jamb and walls must be inspected for decay, damage, crumbling etc. If a solid surface does not exist, the door jamb or wall must be repaired or rebuilt prior to installing the door.

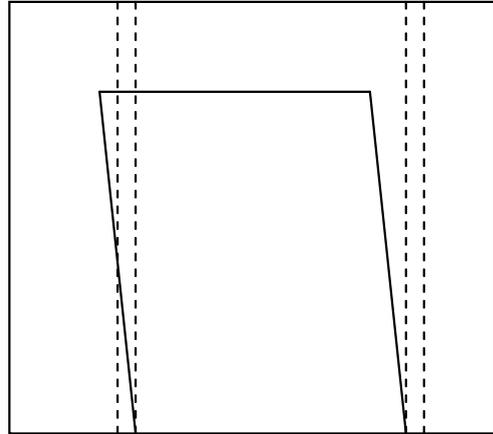


Figure 2 Proper track alignments when door frame is out of square (drawing not to scale).

Required Tools & Supplies

<input type="checkbox"/> Measuring Tape	<input type="checkbox"/> 1/8" Hex Driver
<input type="checkbox"/> Plumb Bob	<input type="checkbox"/> (2) 3/16" Hex Drivers
<input type="checkbox"/> 4' Long Level	<input type="checkbox"/> 3/8" Wrench or nut driver
<input type="checkbox"/> Drill with 1/4" drill bits	<input type="checkbox"/> 7/16" and 1/2" Wrench or Nut Driver
<input type="checkbox"/> Pliers or Vise Grip	
<input type="checkbox"/> Torsion Spring Winding Bars	<input type="checkbox"/> Phillips & Flat Head Screwdrivers

Proper alignment of the Mounting Rails is critical to proper operation of the door. Use a plumb bob and level to ensure that each rail is level and square before fastening it to the door frame. In addition, if the door frame is not square, set rails so that they align with each other rather than with the door frame (SEE FIGURE 2).

INSTALLERS MUST FOLLOW ALL APPLICABLE O.S.H.A. & LOCAL SAFETY STANDARDS!!!

QxV™ Vertical Door Installation Guide

> Preparing To Install QxV Mounting Rail and Track

NOTE:

The QxV door is built to customer specifications. Verify that measurements taken on the job site match those specified in the approval drawing provided with the door. If measurements **DO NOT** match those specified in the approval drawing please call our Service Department toll free for assistance. **1-866-235-7468**

1. Check parts list to verify that all required factory-supplied parts are present.
2. Gather all required installer-supplied fasteners and hardware (**See "Approved Installer-supplied Hardware & Fasteners" See page 5**).
3. Verify the minimum clearance to the sides and above the door. (**SEE FIGURE 1**).

>Installing the Mounting Rails

NOTE:

All four mounting rails are identical and may be reversed. If door jamb or wall conditions restrict you from installing the mounting rails as indicated, flip the rail around and attach them so that the short leg is facing away from the door opening and flush to the wall. Snap a new plumb line $2\frac{1}{4}$ " to the outside of the initial line. The mounting rails should end up $4\frac{1}{2}$ " plus door opening width apart (**SEE FIGURE 3**).

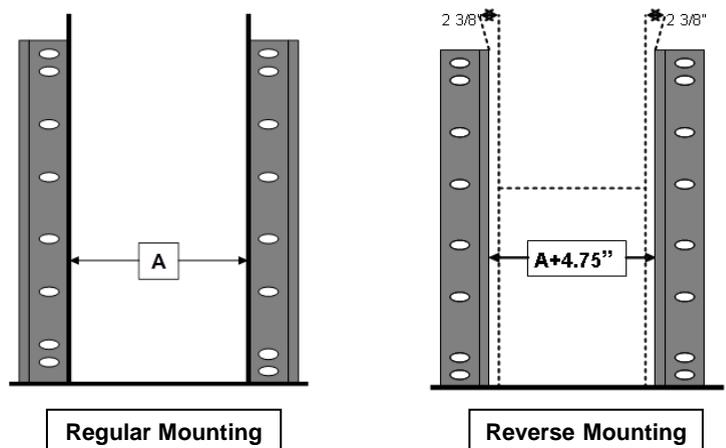


Figure 3. Regular and reverse mounting of Mounting Rails.

1. Take polyester foam strip and stick the side with PSA against mounting rail. Place foam on exterior face of the mounting rail's short leg. The foam should be compressed between the mounting rail and wall when door is installed (**See Figure 4**).
2. Ensure that foam does not totally cover the mounting holes in the short leg of the mounting rail.

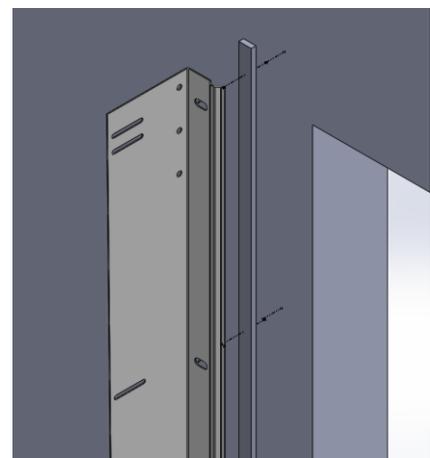


Figure 4

Attaching Mounting Rail Foam

QxV™ High-Lift Door Installation Manual

> Preparing To Install QxV Mounting Rail and Track

NOTE:

The QxV door is built to customer specifications. Verify that measurements taken on the job site match those specified in the approval drawing provided with the door. If measurements DO NOT match those specified in the approval drawing please call our Service Department toll free for assistance. **1-866-235-7468**

- Check parts list to verify that all required factory-supplied parts are present.
- Gather all required installer-supplied fasteners and hardware (**See "Manufacturer supplied Hardware & Fasteners" See page 5**).
- Verify the minimum clearance to the sides and above the door. (**SEE FIGURE 1**).

> Installing the Mounting Rails and Door Tracks

NOTE:

The QxV mounting rail must be positioned so that the inner edge of the shorter leg is flush with the inner edge of the door jamb. If door jamb measurements are incorrect it is possible to offset the mounting rail from the inside of the door jamb (**SEE FIGURES 5-7**).

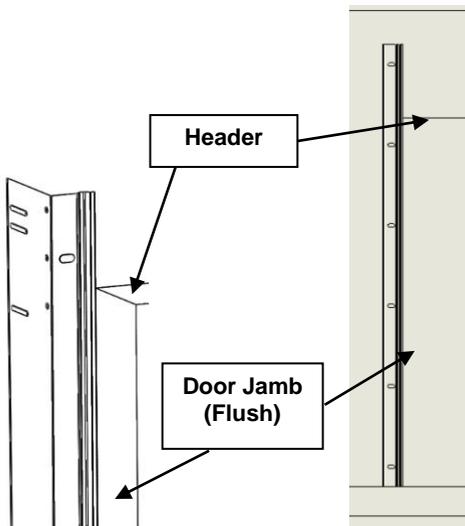


Figure 5 Mounting rail flush with door jamb.

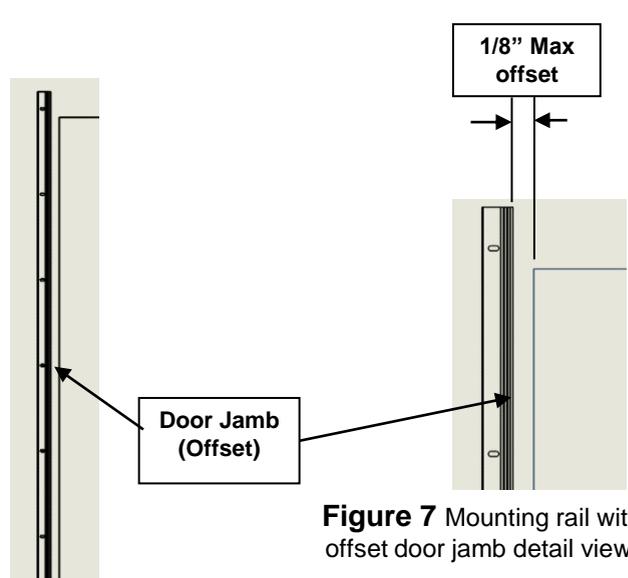


Figure 6 Mounting rail with offset door jamb.

Figure 7 Mounting rail with offset door jamb detail view.

QxV™ High-Lift Door Installation Manual

NOTE:

Mounting Rails may be shimmed out from the door frame up to 1/2" to align them with each other. If the door frame is out of plumb by more than 1/2", contact factory before proceeding with install.

1. Re-measure door jamb width to confirm it matches the dimension on the approval drawing. Align the short leg of Mounting Rails with the door jamb so the shorter leg of the rail is flush with the inside of the door jam. If you cannot locate this measurement in the included paperwork, please call DL Manufacturing.
2. Attach Mounting Rails to wall using approved installer-supplied fasteners. Ensure Mounting Rails maintain the same spacing all the way to the top. Rails **MUST BE** kept level/plumb throughout. Re-measure spacing between Mounting Rails now.
3. Attach upper mounting rail to the mounting rail using 3/8"-16x1" hex head bolts and 3/8"-16 Nylock nuts for each side (**Manufacturer Supplied**)
4. Attach the bearing brackets to the upper mounting rail using 3/8"-16x1" hex head bolts and 3/8"-16 Nylock nuts for each side. Top of bearing bracket should be flush with top of upper mounting rail.
5. Measure the height of the bearing bracket placement as shown on the dimension drawing (**SEE FIGURE 1-Page 7**). Attach upper mounting rail to lower mounting rail using 3/8"-16x1" bolts and 3/8"-16 Nylock nuts (**SEE FIGURE 8**). Re-measure bracket height to confirm the brackets are at the correct height.
6. Verify the height of the bearing bracket placement as shown on the dimension drawing (**SEE FIGURE 1**). Attach upper Mounting Rail to the wall using one of the methods described on Page 4.
7. Attach roller track to mounting rail using flange nut and bolts. (**See Figure 9**).

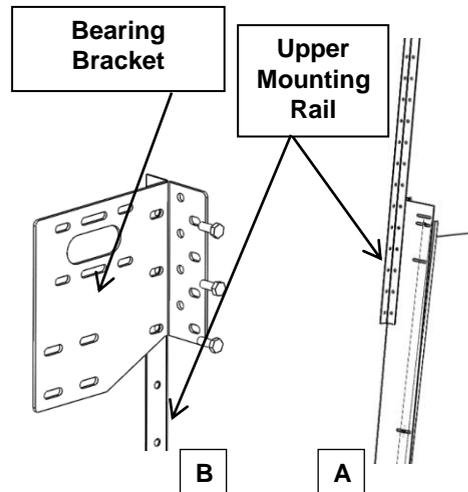


Figure 8 A – Attach upper mounting rail to mounting rail **B** - Attaching right bearing bracket to upper mounting rail and wall. (**Upper mounting rail overlaps mounting rail**).

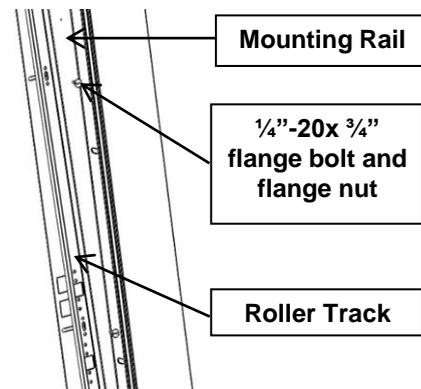


Figure 9 Attaching roller track to mounting rail.

NOTE:

Left side mirrors right side.

QxV™ High-Lift Door Installation Manual

>Installing the Jamb Seals

1. Attach brush seal onto the mounting rail. Use teck screws and screw into the jog of the mounting rail. Use 5 screws for the length of the seal. Choose Figure 10 – A or Figure 10 – B based on mounting rail type.

--Jog or no Jog--

The manufacture determines whether or not to use mounting rail with or without the jog. Special situations require mounting rail without the jog. Most situations have the jog

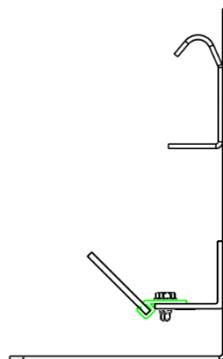
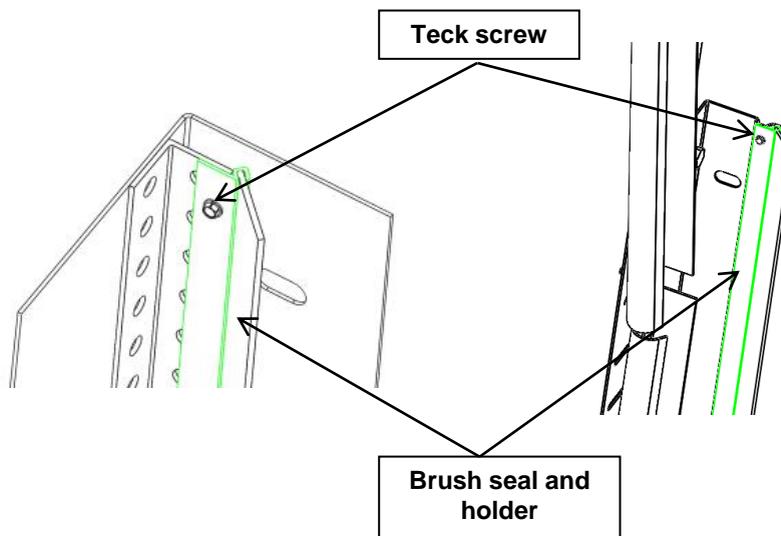


Figure 10 – A
Mounting rail without jog

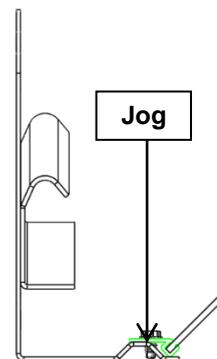


Figure 10 – B
Mounting rail with jog

QxV™ High-Lift Door Installation Manual

>Installing the Door Panels

Door panels are numbered to indicate the order of installation (**SEE FIGURE 11**). Install Panel 1, which has the bottom rubber seal, then install Panel 2 second, Panel 3 third, etc. Install the panel with the header seal last. **Note: Check build sheets provided with door for pick point location.**

NOTE: Be sure to attach the cables to the door panel **before** installing the hinges (**SEE FIGURE 12**). **There is no way to put the cables on after the door is installed.**

1. Position Panel 1 (with the bottom rubber seal) so that the panel lines up with the roller track.
2. Place roller wheel stem in the first hinge, insert wheel into roller track, then slide the hinge down to the correct position on the panel.

IMPORTANT NOTE: There is no way to insert the wheel in the hinge if the hinge is attached to the panel.

3. Attach hinge to panel using supplied $\frac{1}{4}$ "-14 tech screws. The hinges are labeled as well; start with hinge #1, then hinge #2, etc. The bottom of the hinge has the hinge number engraved on it. (Install hinges so you can read the numbers on the hinges, Do not install upside down)
4. Place Panel 2 on top of Panel 1 and attach the next hinge in order. In the designated holes screw in the bottom of the hinge first, then the top of the hinge (**SEE FIGURE 13**). Make sure a good seal is made.

Repeat steps 1-4 for all panels until you reach the last panel (with the rubber header seal).

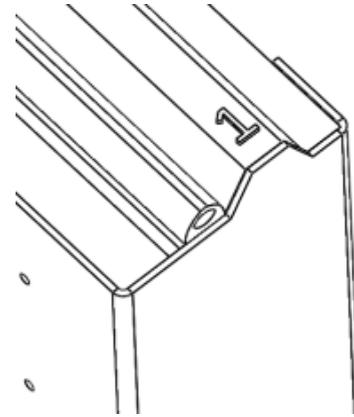


Figure 11 Panel with number indicator.

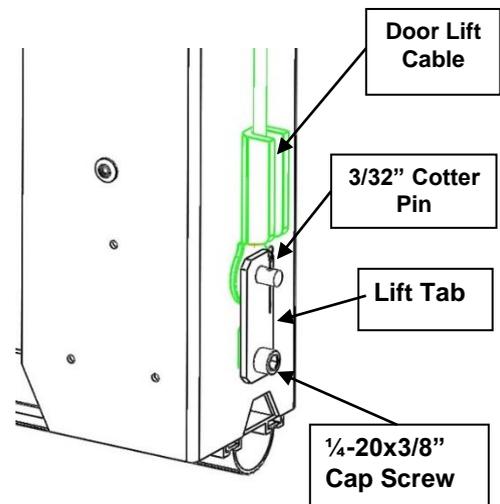


Figure 12 Cable Attachment.

QxV™ High-Lift Door Installation Manual

5. Adjust the track so that all panels of the door are touching the weather seal. Tighten all track sidewalk track bolts so that the track is firmly secured to the mounting rail. The door should not be touching the wall just airtight to the seal.
6. Attach the top panel as in steps 1-4. Adjust the top roller wheel bracket so that the panel is air tight against the seal like the previous panels.

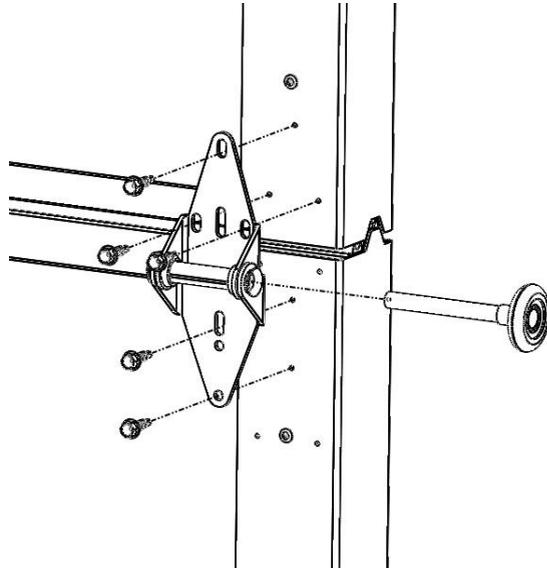


Figure 13 Panel and hinge assembly detail.

>Installing the Locks

1. Attach the slide locks to the right side metal end cap brace on the upper section of panel 2 (fourth panel from the floor) using four (4) CP2189 tech screws on the slide lock (**SEE FIGURE 14**).
2. Ensure that the lock runs through the pre-cut slot in both the roller track and mounting rail.

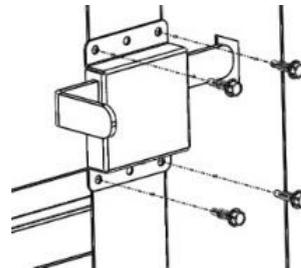


Figure 14 Slide lock fitting into pre-cut lock slot.

QxV™ High-Lift Door Installation Manual

>Installing the Torsion Spring Assembly

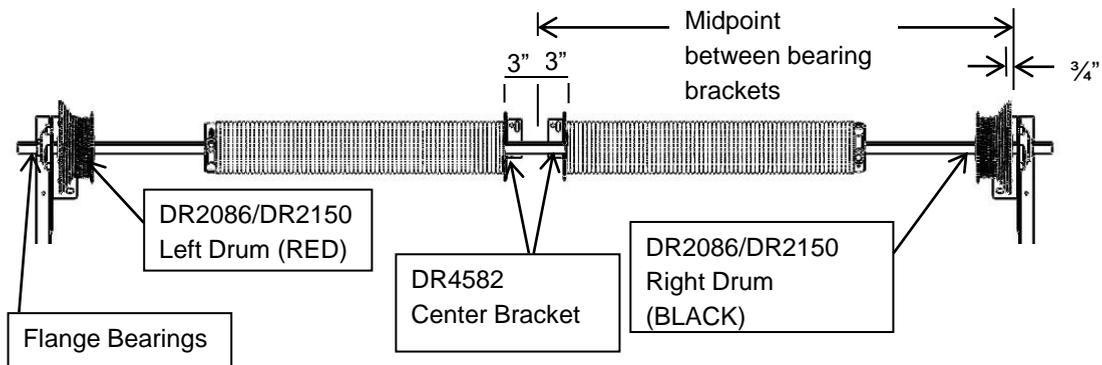


Figure 15 Torsion spring assembly.

1. Attach the center supports (DR4582) using the appropriate hardware. Use a line level to ensure the center of the support brackets are level with the side bearing brackets so the shaft sits on a level plane.
2. Slide the springs on the shaft (**BLACK on right, RED on left**). Check that spring bearings DR2102 are installed.
3. Slide the high lift drums DR2088/DR2111 onto the shaft (**BLACK on right, RED on left**).
4. Install entire shaft/spring assembly into the bearing brackets. The shaft must go through the slot and be pushed the farthest away from the wall as possible.
 - A. Make sure everything fits properly at this point. Slide the flange bearings on the shaft outside of the bearing brackets. Secure bearings using 3/8" hex head bolts and Nylock nuts. Tighten Allen head screw.
 - B. Make sure the shaft rotates freely and does not bind or is hard to turn.
6. Position cable drums 3/4" from the inside edge of the bearing brackets. Insert a key in the keyway on the shaft and cable drum. Position so that the key hangs out on both sides of the drum. Tighten 3/8" bolts on the drum. This keeps the drum attached to the shaft.
7. Attach cables to drums and wind a wrap on the drums until the cable is tight. Make sure that the cable stays tight and attach a vice grip to the shaft and wedge it against the wall on the upper side of the shaft keeping the cables tight.
8. **DO NOT WIND THE SPRINGS**

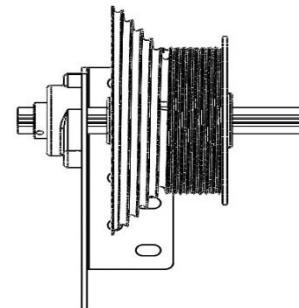


Figure 16 Close up of bearing bracket and drum assembly.

QxV™ High-Lift Door Installation Manual

>Installing the Horizontal Roller Track

1. Attach Horizontal Roller Track Assembly to Upper Mounting Rail Assembly and Bearing Support Assembly. (To ease installation, use rope or bungee cord to support the ends of the Roller Track Assembly. This will also reduce torque on the Roller Track Assembly.) **(SEE FIGURE 17)**

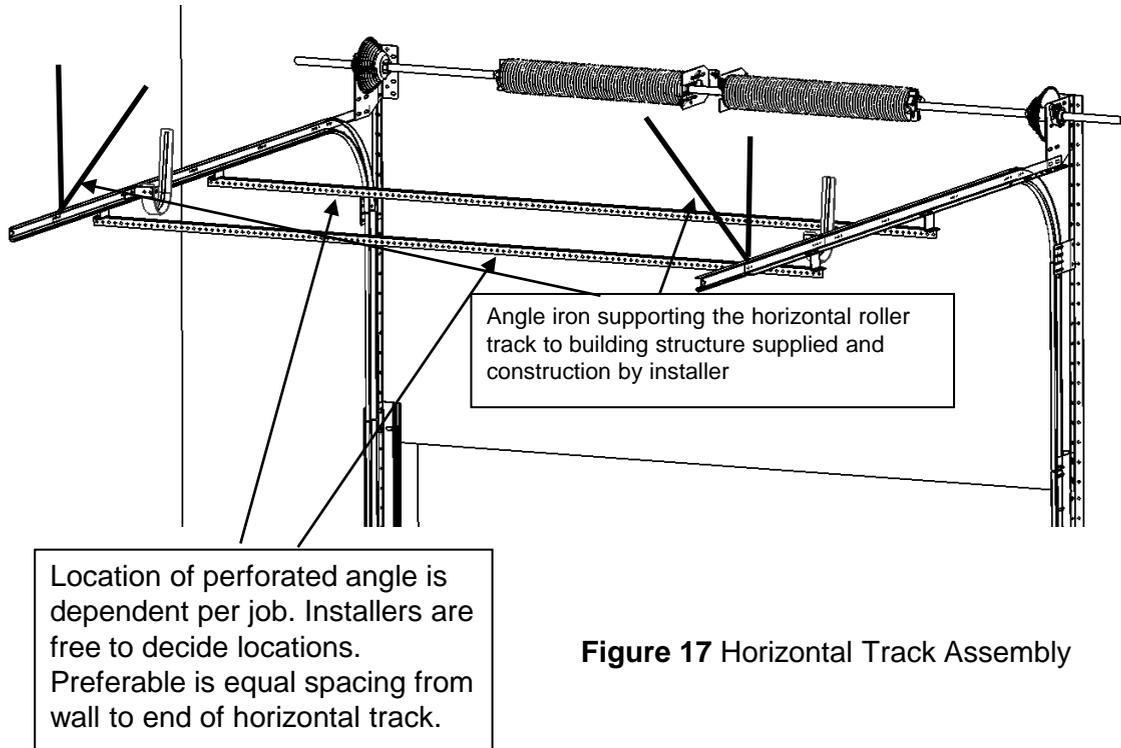


Figure 17 Horizontal Track Assembly

2. Support the far end of the horizontal roller track assembly to the ceiling or other structural support member. Typically, angle iron is used to support the horizontal track to the building structure supplied by the installer.
3. Attach the horizontal rail the lower slots of the bearing bracket and secure with (2) 3/8-16x1 bolts and Nylocks. **(SEE FIGURE 18)**
4. Verify that the entire track structure can safely support the weight of the raised door.
5. Install the upper Vertical roller track (If applicable. Manufacture determines if second vertical roller track is used), ensuring that there is a smooth transition between the joints.
6. Install the track clips to secure both the upper vertical roller track and the lower section of the curved roller track using the DR2218 sidewalk bolts. There should be smooth transition Between the track sections. **(SEE FIGURE 18)**

QxV™ High-Lift Door Installation Manual

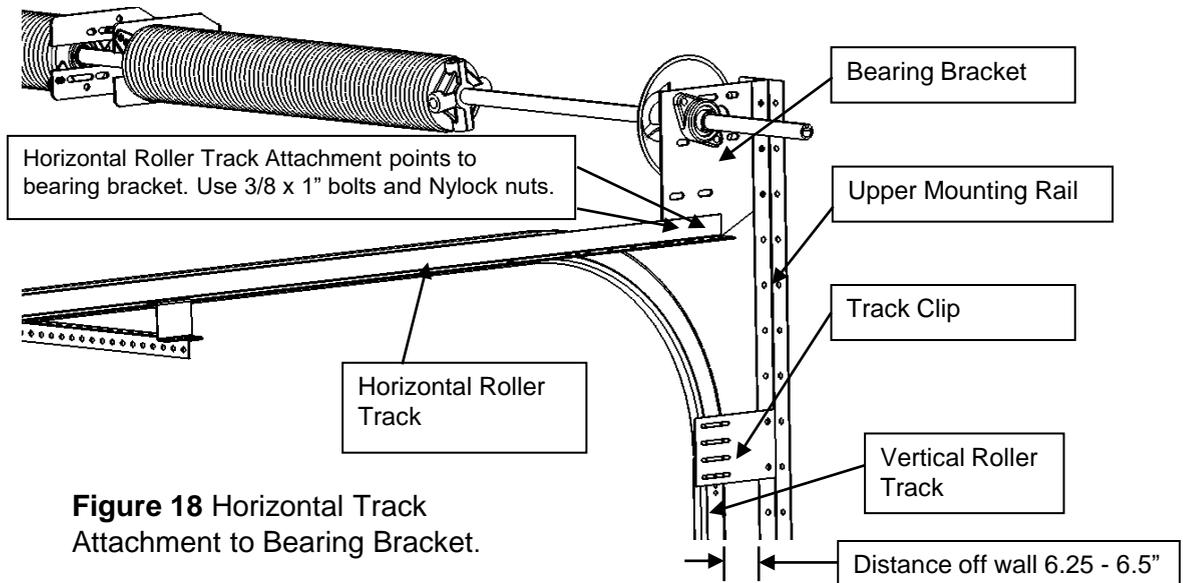


Figure 18 Horizontal Track Attachment to Bearing Bracket.

7. Attach Z-Brackets to High-Lift Roller Track and Perforated Angle to Z-Brackets. This is done to ensure track stays correct distance apart and is used in case the door falls.
(Distance between Roller Tracks should match measurement on Installer Information Sheet Section E) (**SEE FIGURE 20**)

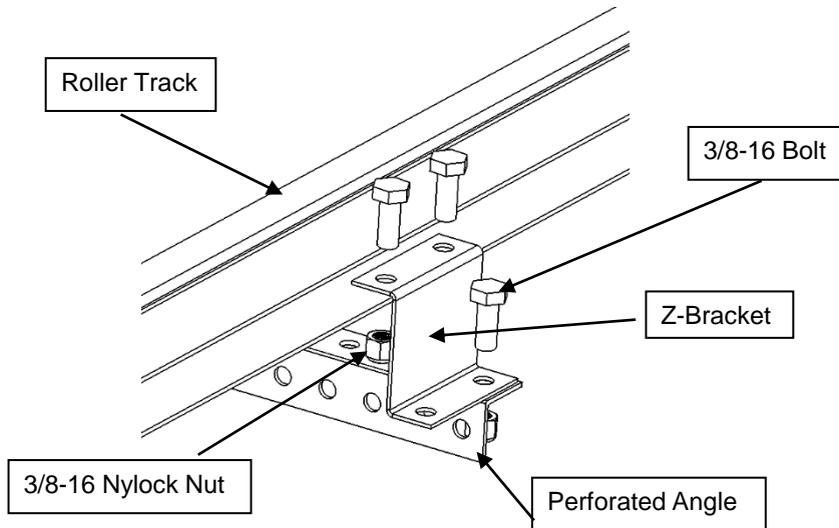


Figure 20 Attaching Perforated Angle and U-Brackets

QxV™ High-Lift Door Installation Manual

>Winding the Springs and Door Adjustment

>WARNING!!!!

High-tension springs can cause injury or death. Repairs and adjustments must be made by trained service personnel.

1. Wind the spring using winding bars. The correct number of winds is listed on the Installer Information Sheet in the parts box.
2. Run the door. The door should be neutral bias at 4ft from the ground. The door should stay closed without engaging the Locks and open completely when given a slight push from half way open.
3. Lubricate springs, rollers, and track.

>Installing the Spring Stops

1. Open the door until it is 2in above the door header
2. Mount the Spring Stops as shown in **FIGURE 22**

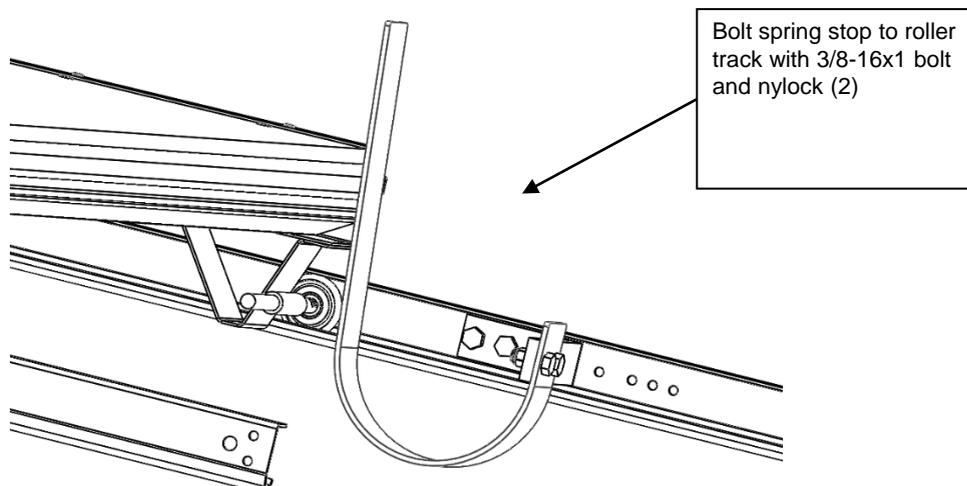


Figure 22 Spring Stop Mounting

QxV™ High-Lift Door Installation Manual

>Final Door Installation Checklist

- 1. Cycle door to confirm smooth, easy operation;
 - Door does not drift down into door opening when fully opened.
 - Once started, door should be downward biased until midpoint and then rise.
 - Wheels do not bind in track. There are no big gaps between sections of track.
 - Hinges rotate freely when the door is moving.
 - Lubricate Springs/Bearings.

- 2. QxV door is sealed at all points;
 - Top brush seal on building (if desired by customer) is in contact with the Header Seal rubber on top panel.
 - Side weather seal is in contact with the whole height of the door when the door is closed.
 - There is no light or air coming from behind the door when the door is closed.
 - The bottom rubber seal does not let any light through when the door is closed.

- 3. Ensure the Mounting Rail and Bearing Assemblies are securely mounted after several cycles of operation.

- 4. If QxV door has lock option, ensure all locks can be engaged.

Installation Company:

Installer Name:

Date of Installation:

Jobsite Name and Location:

Installer Notes:

Fax Sheet to (315) 463-8559

ATTN: Service Department

QxV™ High-Lift Door Installation Manual

>Door Troubleshooting Guide

SYMPTOM	PROBABLE CAUSE	SOLUTION
DOOR RAISES EASILY, CLOSSES HARD	A. Too much spring tension.	A. Remove spring tension.
DOOR RAISES HARD, CLOSSES EASILY	A. Not enough spring tension. B. Horizontal track squeezing on roller wheels.	A. Add more spring tension. B. Widen distance between track, refer to dimension drawings for correct measurement.
DOOR OPERATES WITH TOO MUCH RESISTANCE	A. Door is not level. B. Broken spring. C. Door tracks are not plumb. D. Door Track could be too narrow	A. Check cable length and adjust accordingly. B. Replace spring. C. Re-measure track spacing and adjust accordingly. D. Widen Track
AIR LEAKAGE OR LIGHT SHOWING	A. Side weather seals are pinched or damaged. B. Door tracks are not plumb. C. Side seal not air tight to height of door when closed. D. Top roller pushed door too far from wall.	A. Check and repair side weather seals. B. Re-measure track spacing and adjust accordingly. C. Adjust track as needed. D. Loosen slide bolt on top hinge and adjust as needed. Retighten slide bolt when finished.

QxV™ High-Lift Door Installation Manual

>QxV Maintenance Procedures

	ITEM	PROCEDURE	MAINTENANCE INTERVALS	
			6 Months	12 Months
1	Cable Drums	Check all set screws and shaft keys and securely tighten.	X	
2	Cables	Lube & check for signs of abnormal wear or damage. Inspect all cables. Replace if needed.	X	
3a	Counterweight Doors	Inspect and check cable assembly, safety cog, cable tensioning device and counterweight basket assembly. Check and securely tighten all screws. Looks for signs of wear on cable.	Every 6 months	
3b	Counterweight Doors	Inspect bushing on tensioner arm for signs of wear every 6 months. Replace bushing after 15,000 cycles, or if showing signs of wear.	Every 6 months	
4	Torsion Spring Doors	Lubricate torsion spring, operate door to ensure the door clears the header. Adjust spring as necessary.	Every 6 months	
5	Seals	Check to ensure that seals aren't torn or fray.	As Needed	
6	Brush	Inspect for fraying	X	
7	End Caps/Hinges	Check for signs of abnormal wear or damage.	X	
8	Panels	Check for signs of abnormal wear or damage.		X
9	Track	Check for signs abnormal wear or damage		X
10	Track	Check for proper track spacing and alignment.		X
11	Track	Check and properly secure all track anchors.	X	
12	Track	Inspect corrective slots in tracks to ensure brush is properly resetting in track.	X	
13	Fasteners	Check and properly secure all fasteners.	X	
14	Spring Plate	Check the spring clip for proper positioning.	X	
15	Labels	Inspect all labels. Replace as needed.	X	
16	Panels	Clean with soap and hot water only. Call DL Manufacturing before using other cleaners.	As Needed	

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WARRANTY POLICY

NOTE: Do not paint doors. Painting door without factory written authorization will void all warranties

~ All Products (excluding bulbs) manufactured by DL Manufacturing are warranted to be free from defects for a period of 12 months from the date of shipment, excluding doors, which have a warranty period of 12 months from date of installation or 18 months from shipment, whenever occurs first.

This warranty is subject to unreasonable/improper use or use beyond rated conditions, improper storage, negligence or accident; damage because of incorporated use of equipment with Goods, after Customer has or reasonably should have, knowledge of any defect; or improperly installed by any other Person that is unauthorized by DL Manufacturing.

~This warranty is subject to customer covenants to inform all subsequent buyers of the Goods of the limitation on and exclusive of warranties provided for herein. Customer hereby indemnifies and agrees to hold DL Manufacturing harmless from and against all losses, costs and expenses, including reasonable attorney's fees incurred by DL Manufacturing as a result of any third party claim relating to the purchase, sale or use of, or otherwise relating to, the Goods covered by this Agreement.

~In no event shall DL Manufacturing be required to repair, replace or reimburse Customer for more than the part or material that is found to be defective and DL Manufacturing's liability shall in such event be no greater than the invoiced price of the item and shall not include labor, shipping or other costs incurred in connection with the reshipment of defective Goods to DL Manufacturing or the reinstallation of such Goods after any repair or replacement. The remedy set forth in this paragraph is expressly agreed to be the sole and exclusive remedy for any breach of warranty. This warranty is exclusive and in lieu of all other warranties expressed or implied, including but not limited to any warranty of merchantability or of fitness for a particular purpose.

~Limitation of Liability - In no event as a result of breach of contract, warranty or negligence shall DL Manufacturing be liable for special, or consequential damages including but not limited to loss of profits or revenues, loss of any equipment, cost of capital, cost of substitute equipment, facilities or services, downtime costs or claims of purchasers of the Customer for such damages. Additionally, DL Manufacturing will not be liable for any delay in the performance of contracts and orders, or in the shipment and delivery of goods, or for any damage suffered by the Customer by reason of delay, when such delay is, directly or indirectly, caused by force majeure, including war, Government interference, strikes, embargoes, shortage of labor, fuel, fires, floods, or any other cause or cause whether or not similar in nature to any of those herein before specified beyond DL Manufacturing's control.

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