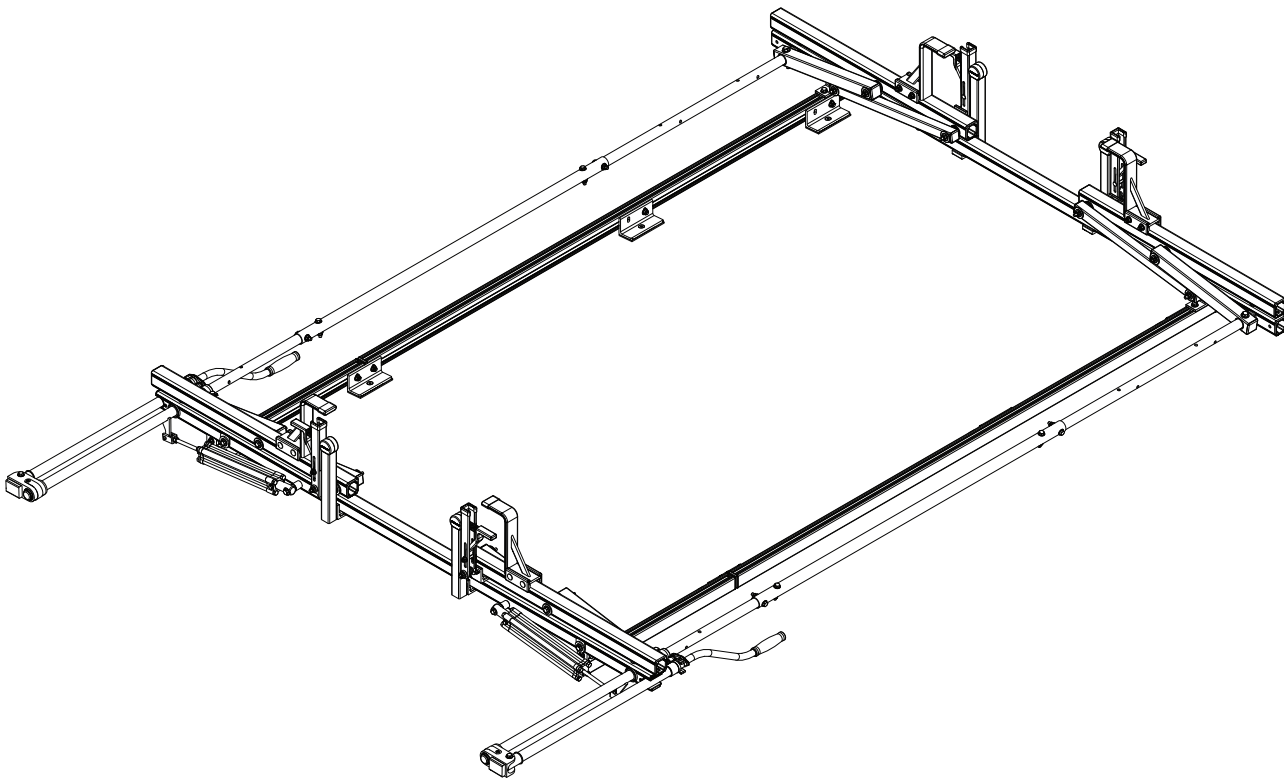


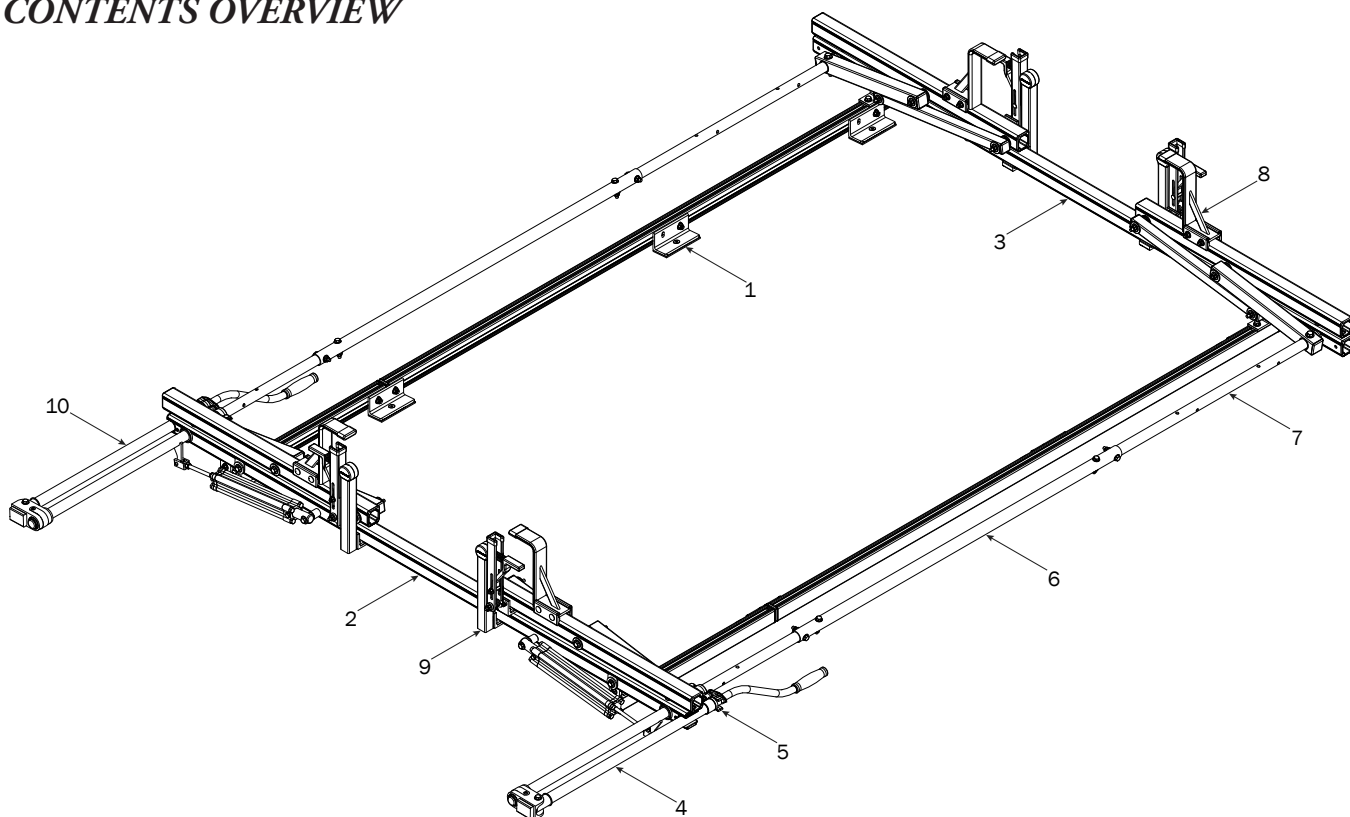
**PRIME DESIGN™**

A Safe Fleet Brand



**VPR** **431B**

# CONTENTS OVERVIEW



1—FBM-0095 ..... (Qty 1)  
Channels w/ Hardware



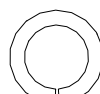
23" Channels (2X)



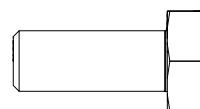
74" Channels, Pre-assembled (2X)



Channel Bracket (4X)



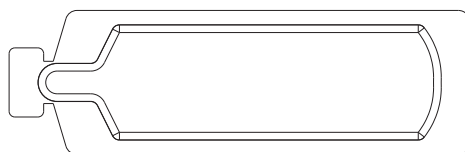
5/16" Lock Washer (4X)



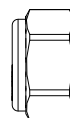
M8 x 20MM (4X)



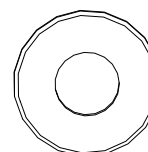
M8 X 25MM (8X)



Anti-Seize (1X)



M8 Lock Nut (10X)



5/16" Flat Washer (14X)

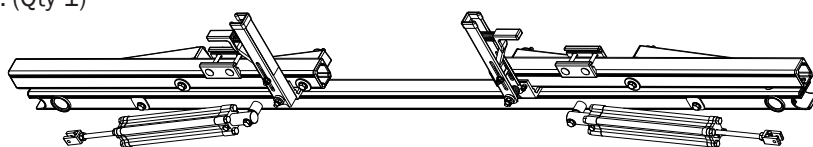


Mounting Bracket (8X)

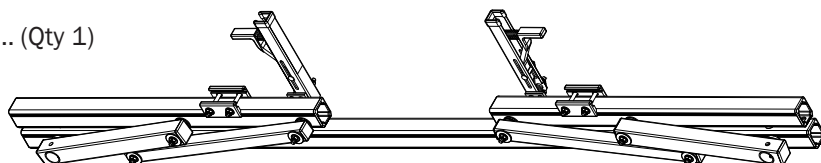


Foam Pad (8X)

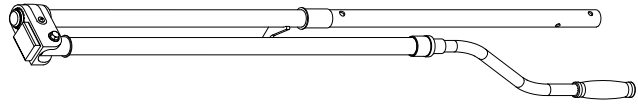
2—Rear Crossbar Assembly ..... (Qty 1)



3—Front Crossbar Assembly ..... (Qty 1)



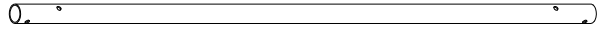
4—Rear Drive Shaft..... (Qty 1)  
Right Hand, B4 Version, 46.00"



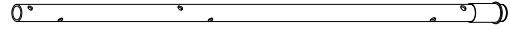
5—Handle Latch Assembly ..... (Qty 1)  
Right Hand



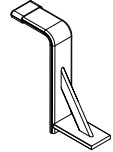
6—Connecting Bar..... (Qty 2)  
4.00'



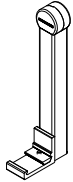
7—Front Drive Shaft..... (Qty 2)  
B Version, 35.75"



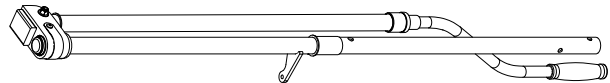
8—Z Post..... (Qty 4)  
Adjustable, 7.25"



9—L Post..... (Qty 4)  
Roller Cap, 9.25"  
(Requires partial disassembly for installation)



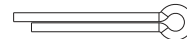
10—Rear Drive Shaft..... (Qty 1)  
Left Hand, B4 Version, 46.00"



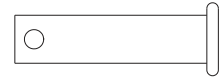
11—Handle Latch Assembly ..... (Qty 1)  
Left Hand



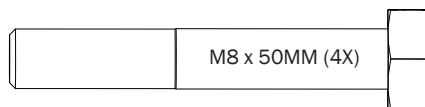
HKT-8162 Rotation Hardware Kit



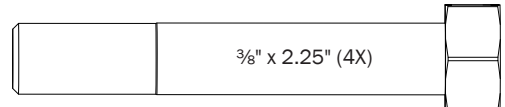
Cotter Pin (2X)



Clevis Pin (2X)



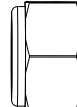
M8 x 50MM (4X)



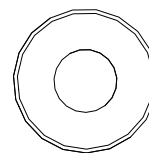
3/8" x 2.25" (4X)



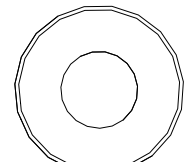
M8 Lock Nut (8X)



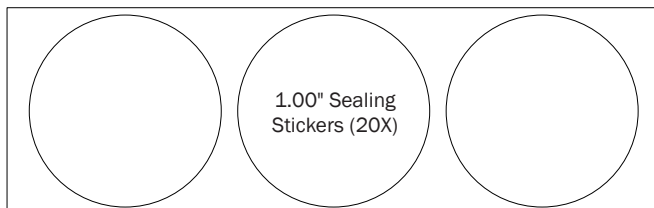
3/8" Lock Nut (4X)



5/16" Flat Washer (16X)



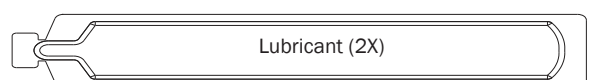
3/8" Flat Washer (8X)



1.00" Sealing  
Stickers (20X)



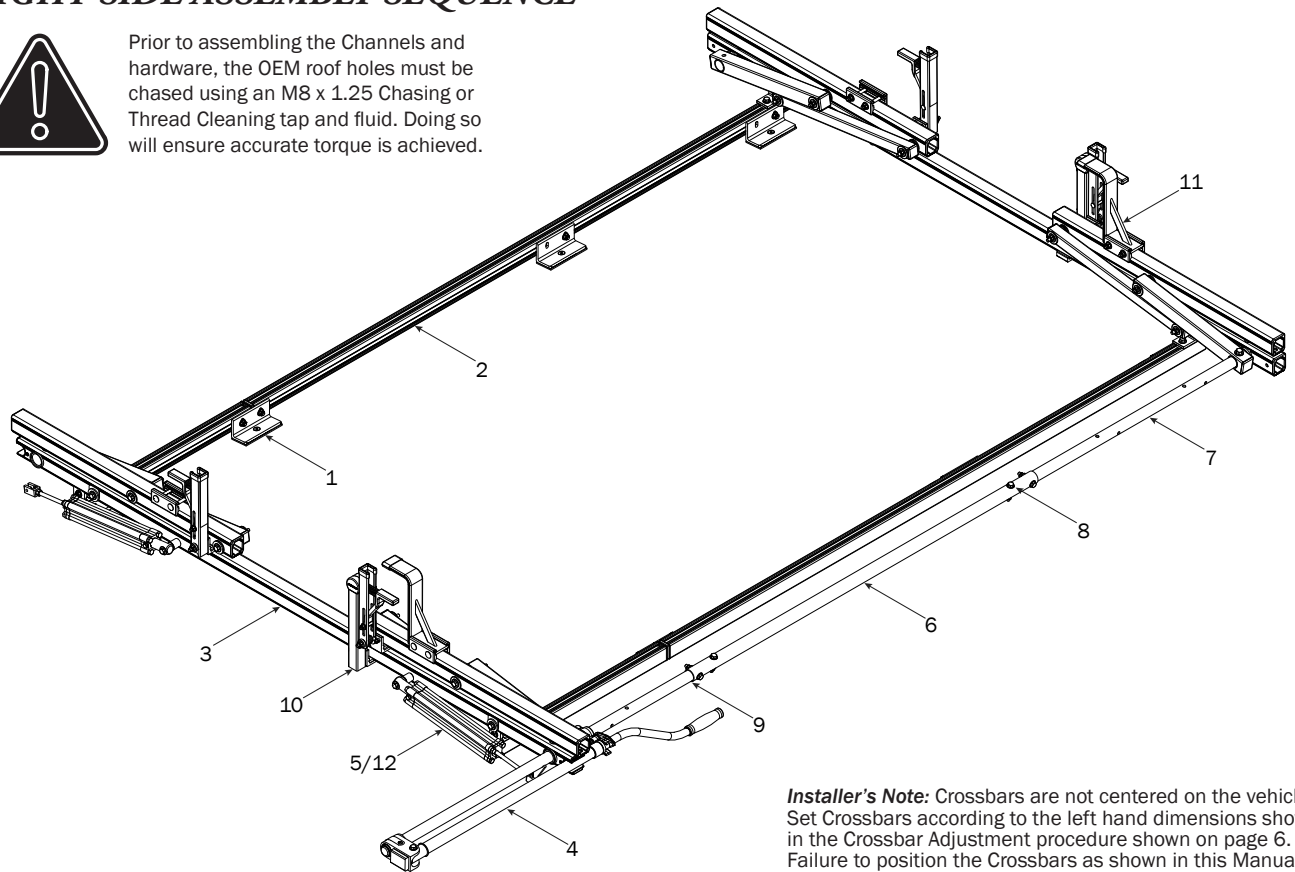
Anti-Seize (2X)



Lubricant (2X)

**RIGHT SIDE ASSEMBLY SEQUENCE**

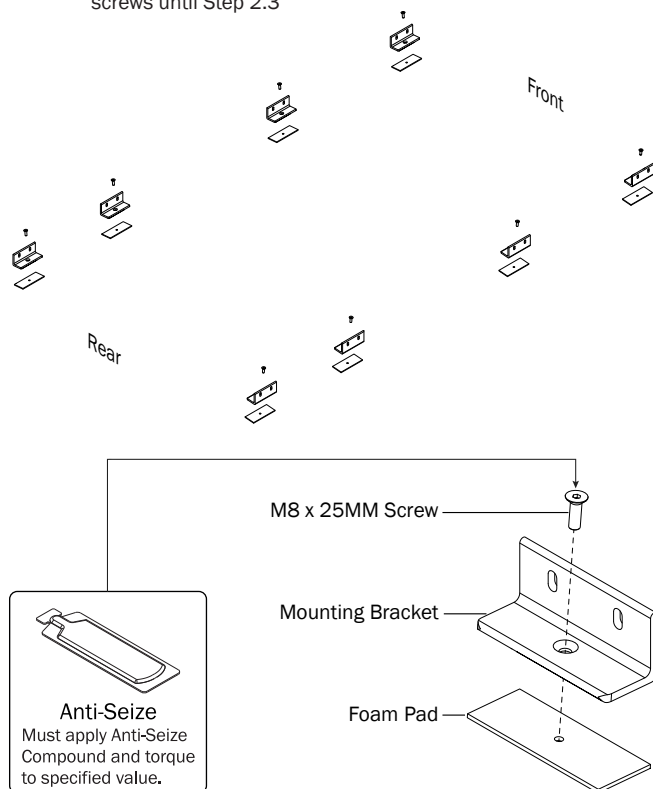
Prior to assembling the Channels and hardware, the OEM roof holes must be chased using an M8 x 1.25 Chasing or Thread Cleaning tap and fluid. Doing so will ensure accurate torque is achieved.



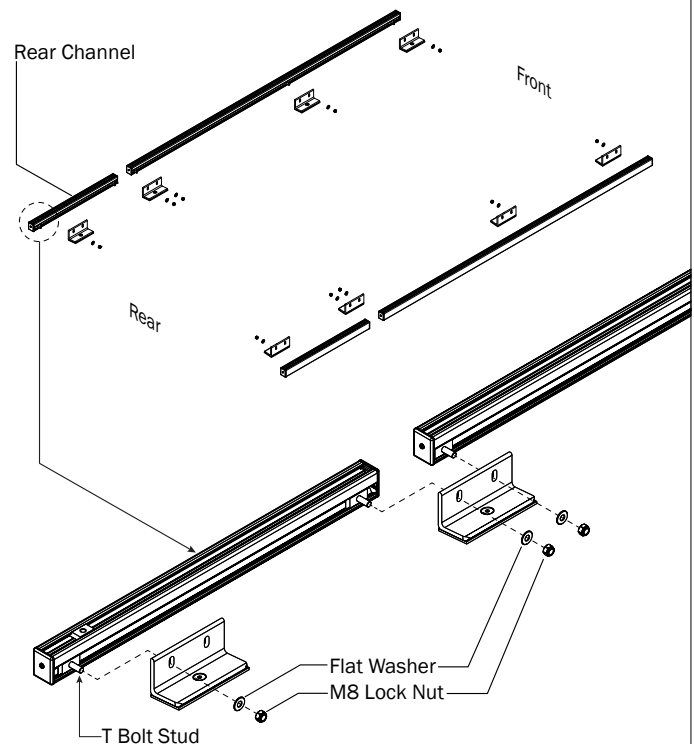
**Installer's Note:** Crossbars are not centered on the vehicle. Set Crossbars according to the left hand dimensions shown in the Crossbar Adjustment procedure shown on page 6. Failure to position the Crossbars as shown in this Manual may result in damage to the sliding door and/or ladder rack.

**MOUNTING BRACKETS****1**

Apply Anti-Seize to all M8 x 25MM Flat Head Screws and install the Channel Mounting Brackets with Foam Pads onto the vehicle's roof mounting holes. Do not tighten screws until Step 2.3

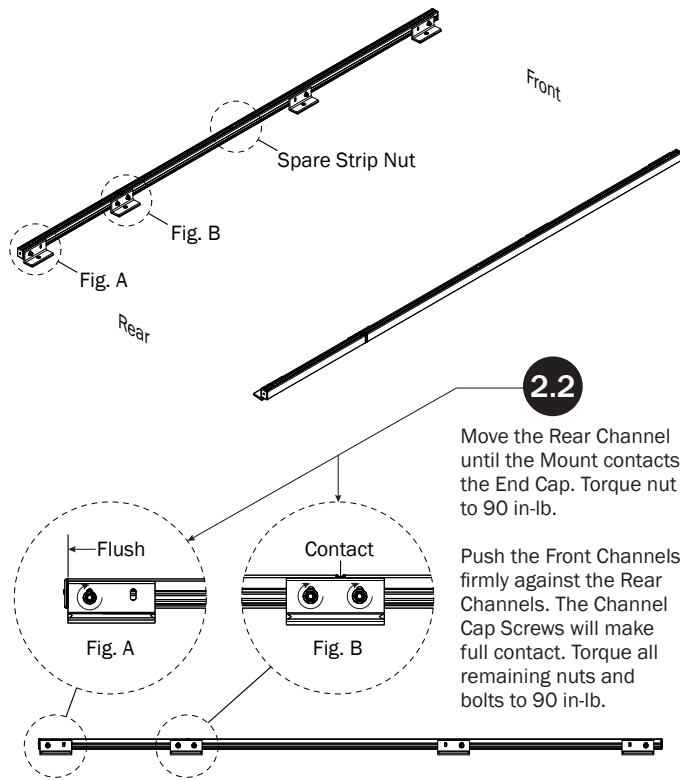
**CHANNELS****2.1**

Apply Anti-Seize to all M8 T Bolt studs, then attach to Mounts using the indicated hardware. Do not tighten until Step 2.2



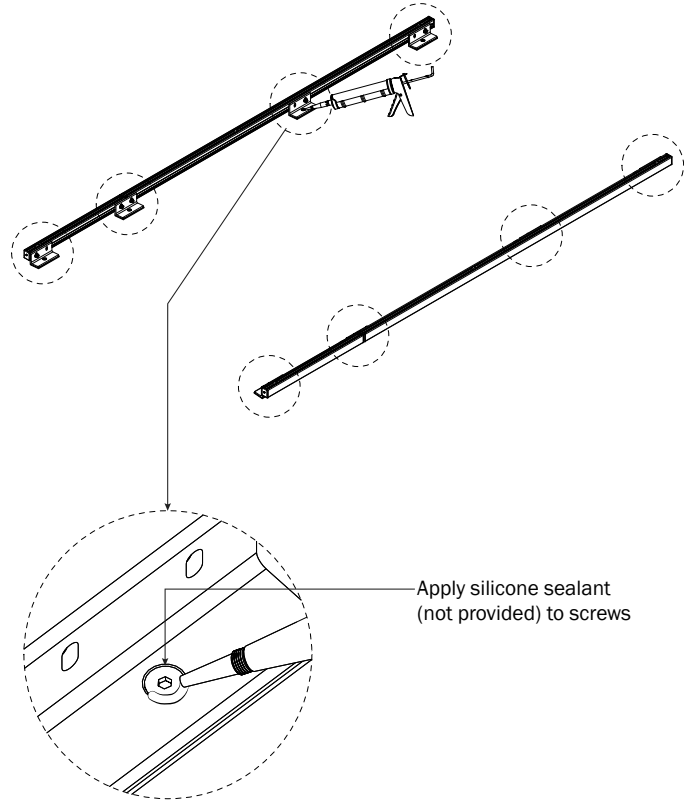


The Front Channels include two aluminum Strip Nuts per Channel for use in a three Crossbar configuration. For two Crossbar configurations, disregard the rear Strip Nut in each Front Channel.



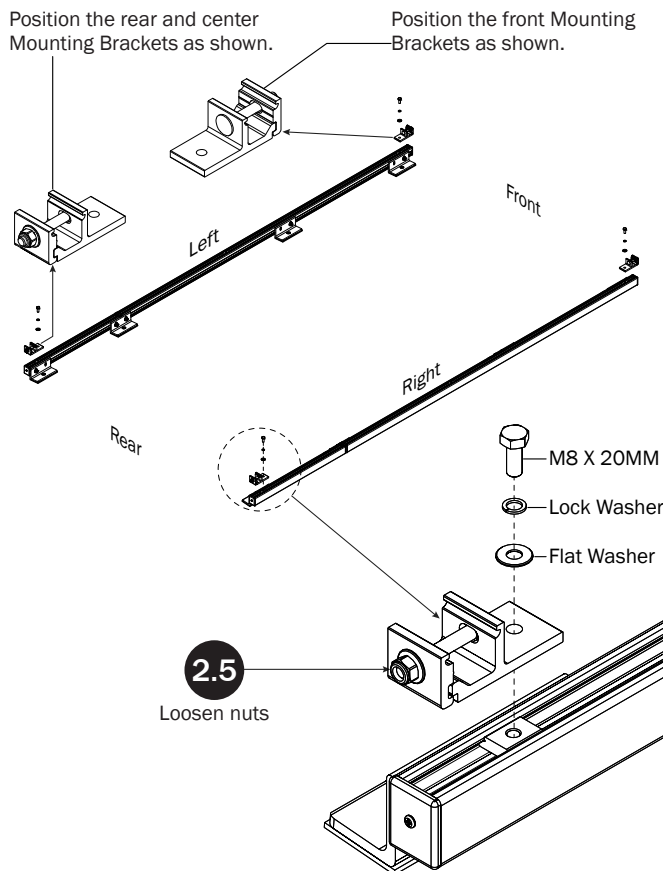
2.3

Torque all M8 x 25MM Flat Head Screws to 150 in-lbs. Apply Silicone Sealant to screw heads to seal against water intrusion.



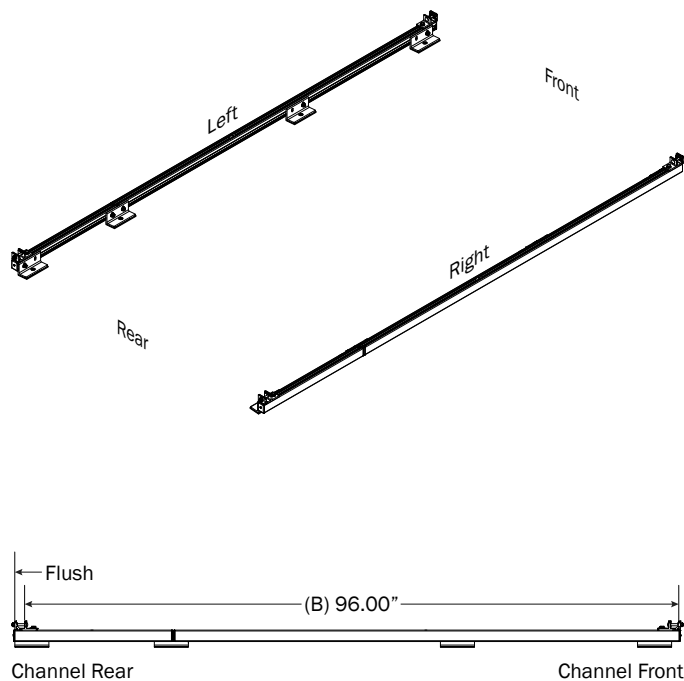
2.4

Attach Mounting Brackets to the Aluminum Strip Nuts located in the Channels



2.6

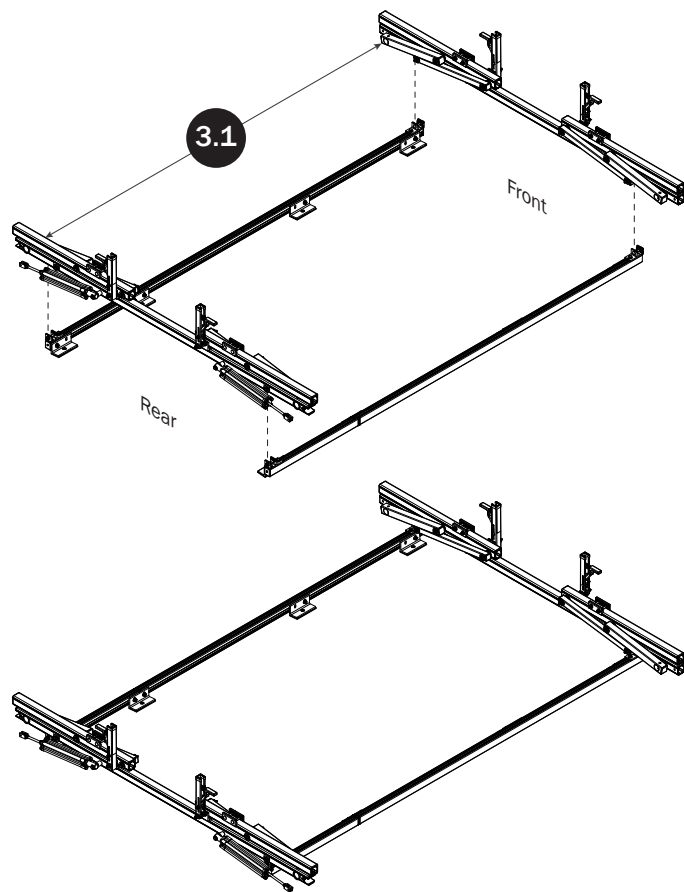
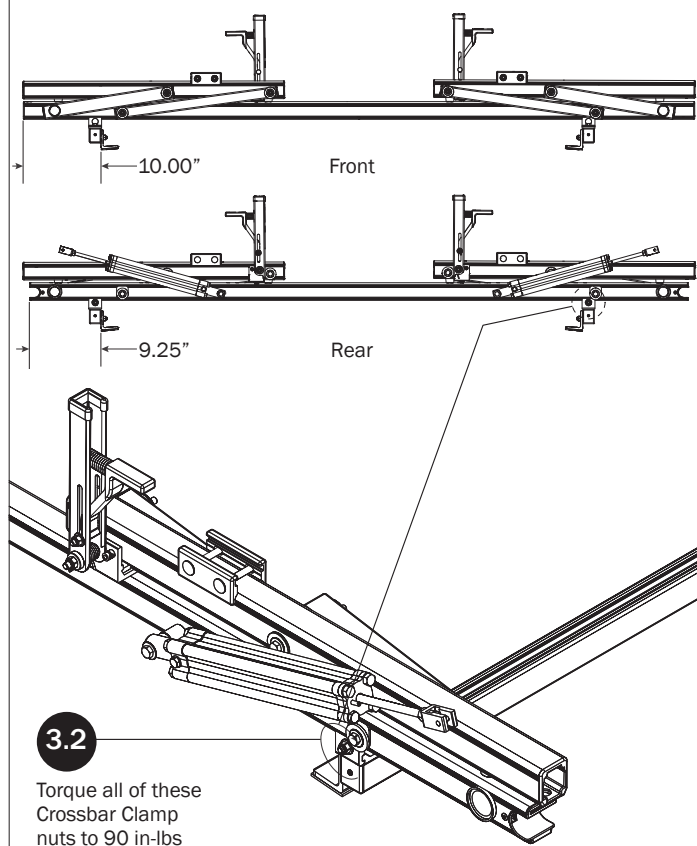
Position Mounting Brackets to designated dimension shown below, then torque the M8 X 20MM bolt to 90 in-lbs. Proceed to Step 3.1.



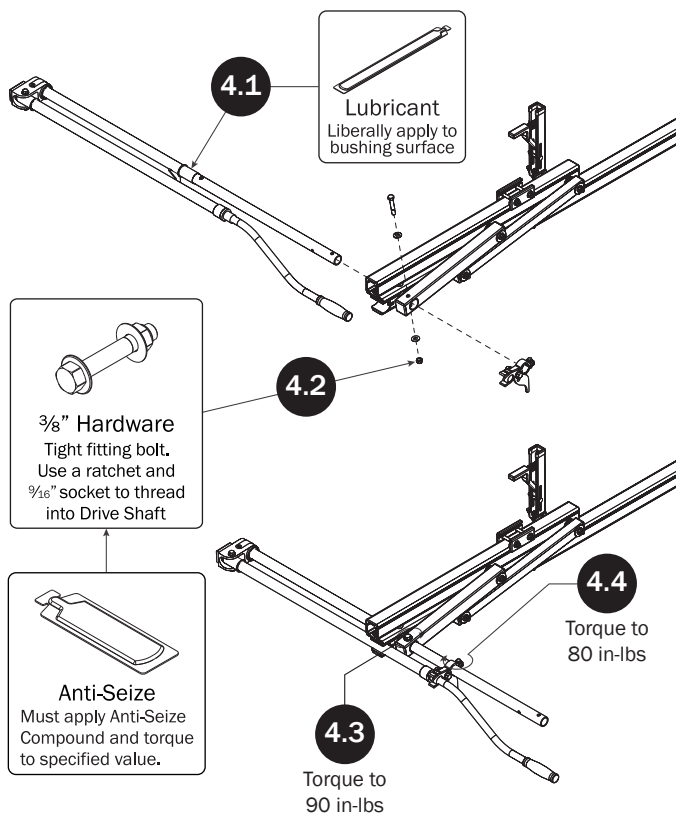
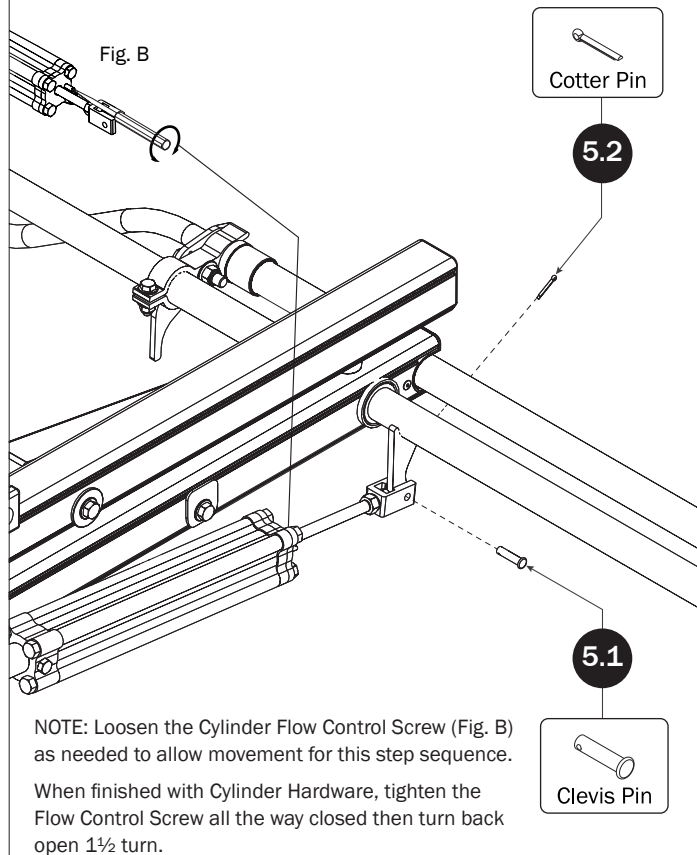
5

VRR-FT31B ASSEMBLY INSTRUCTIONS—RIGHT SIDE ROTATION

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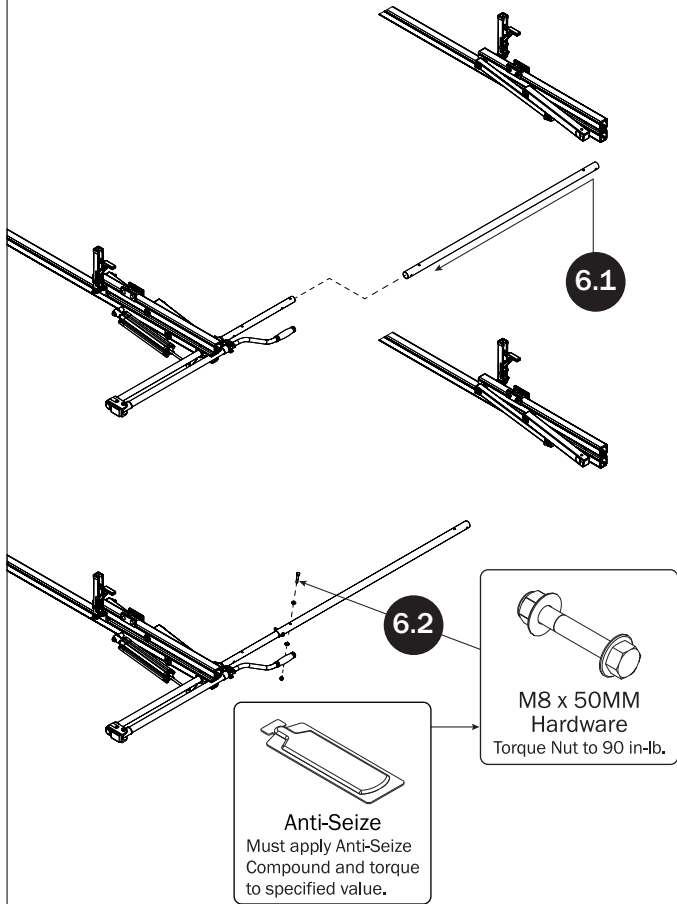
**CROSSBARS****CROSSBAR ADJUSTMENT****REAR DRIVE SHAFT**

NOTE: For instructional clarity, the FBM Mounting System will not be shown for the remainder of this Assembly Manual.

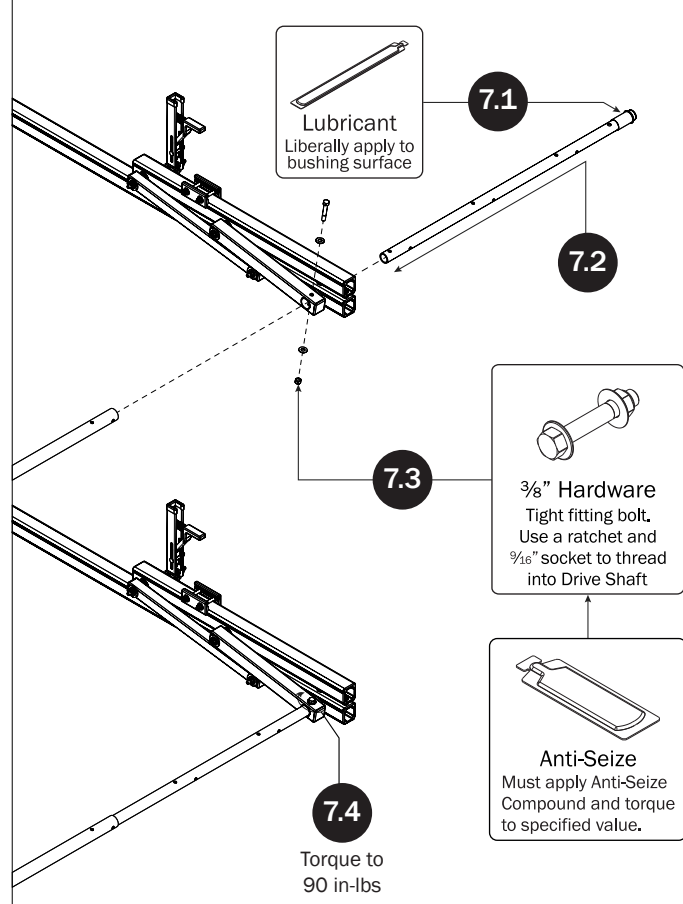
**CYLINDER HARDWARE**



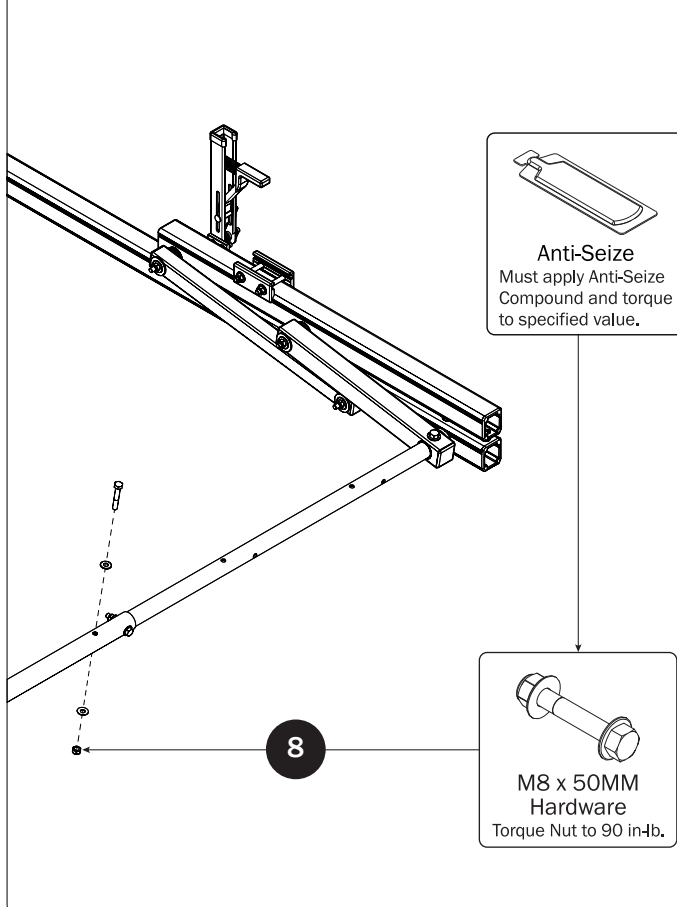
## CONNECTING BAR



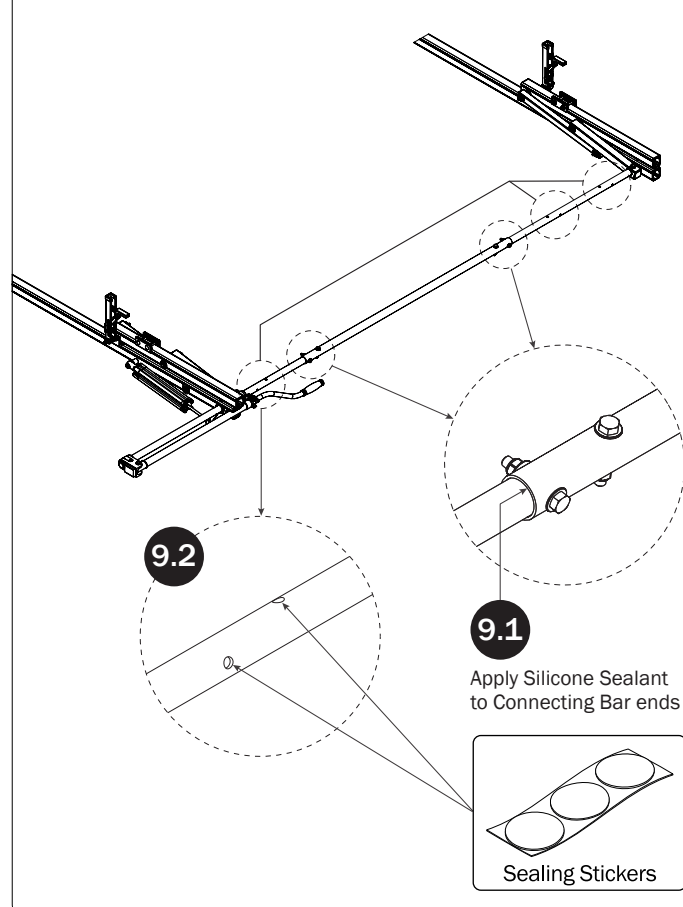
## FRONT DRIVE SHAFT



## CONNECTING BAR FASTENERS



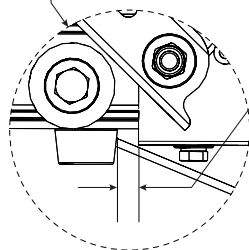
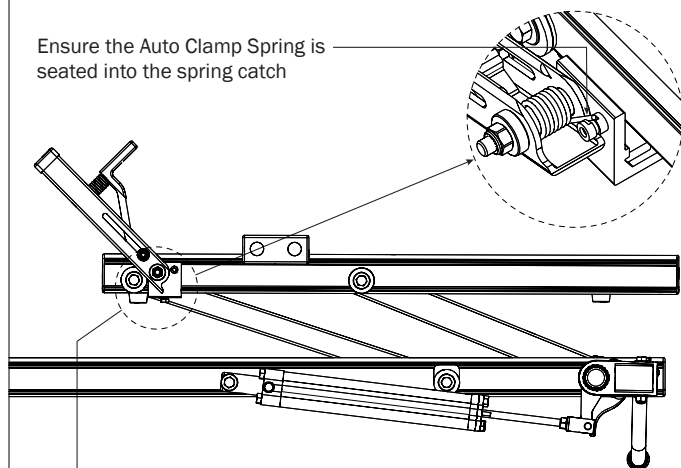
## DRIVE SHAFT SEALING



**L POSTS****SEE QUICK START GUIDE FOR ADJUSTMENTS**

**NOTE:** The Auto Clamps may come preset from the factory for packaging purposes only. To assemble the L Posts to the Crossbars, the Auto Clamps may need to be repositioned.

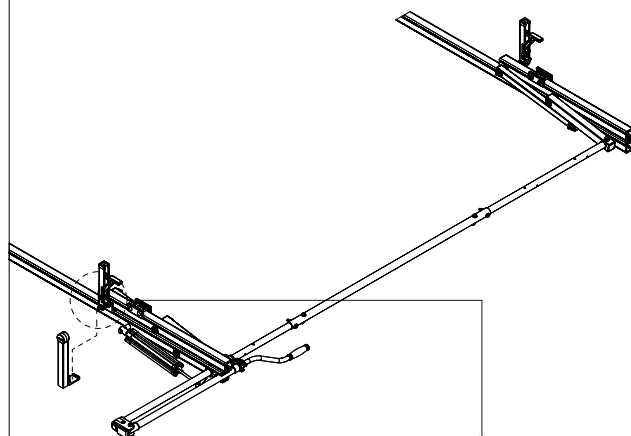
Ensure the Auto Clamp Spring is seated into the spring catch



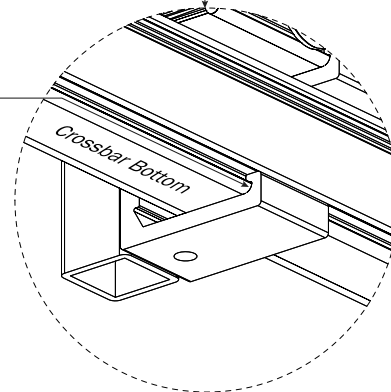
- 10.1** Beginning with the Rear Crossbar, loosen the bolt at the bottom of the Auto Clamp, then slide the Auto Clamp toward the inside end of the Rotation Upper. Reposition the Auto Clamp leaving a minimum of 1/4" distance from the rubber bumper to the edge of the Auto Clamp Bracket as shown, then finger-tighten if adjusting later, or torque to 80 in-lbs.

**10.2**

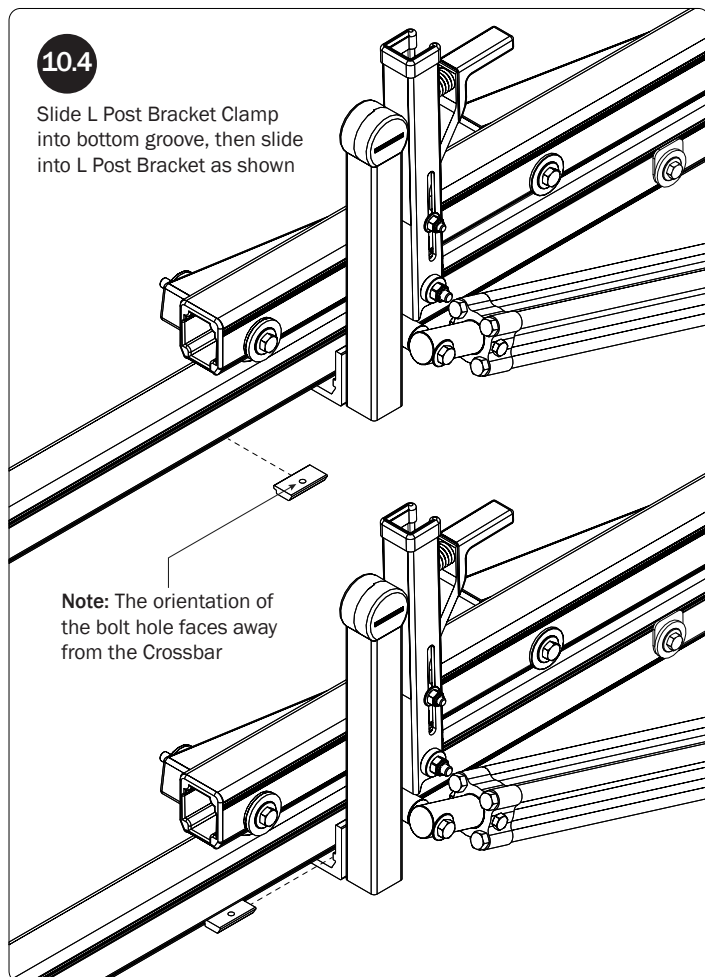
Prepare the L Post by removing the hex head bolt, lock washer, flat washer, and Bracket Clamp. Retain for installation Steps 10.4—10.8.

**10.3**

Place the L Post into the bottom groove of the Rear Crossbar, ensuring the L Post seats into the Crossbar's inside bottom groove as seen from the front of the Rear Crossbar

**10.4**

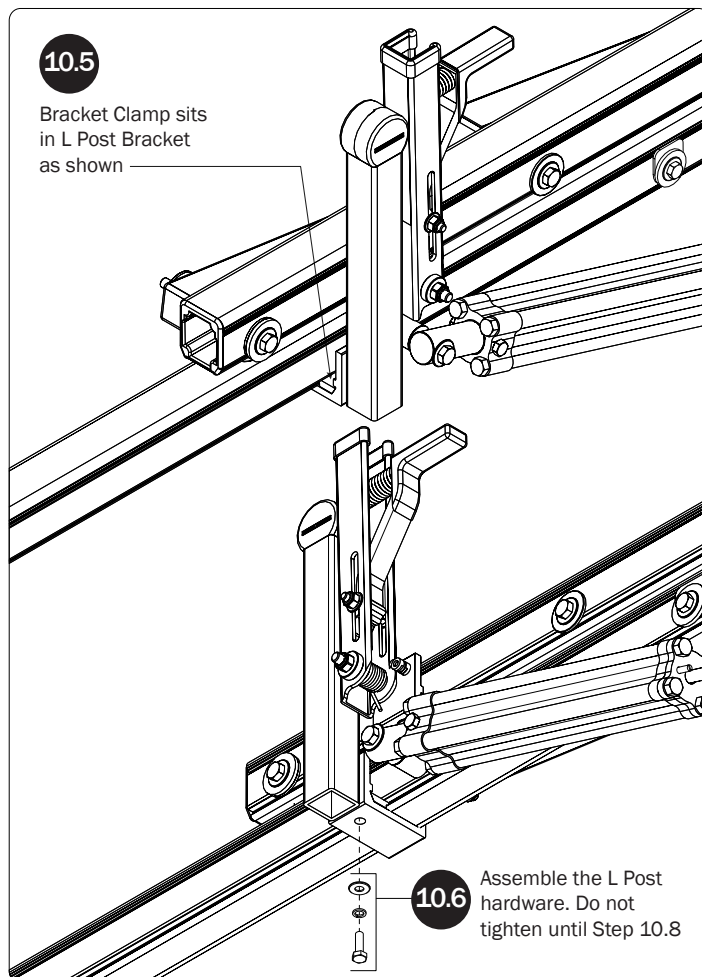
Slide L Post Bracket Clamp into bottom groove, then slide into L Post Bracket as shown



**Note:** The orientation of the bolt hole faces away from the Crossbar

**10.5**

Bracket Clamp sits in L Post Bracket as shown

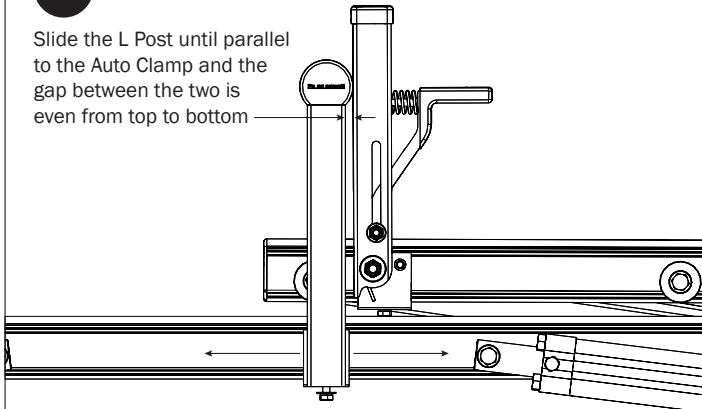
**10.6**

Assemble the L Post hardware. Do not tighten until Step 10.8



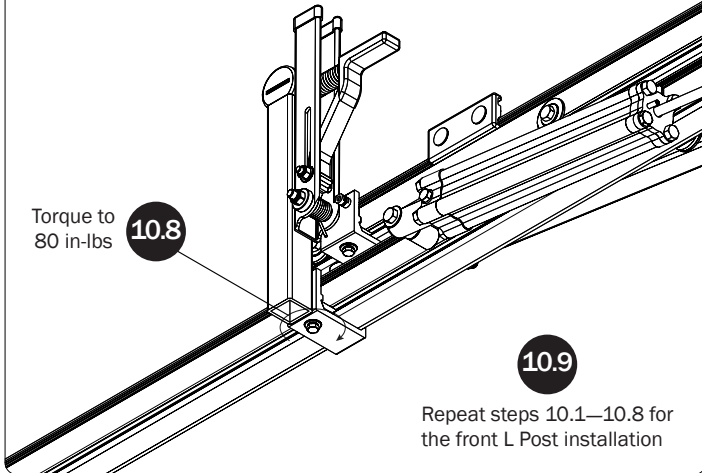
10.7

Slide the L Post until parallel to the Auto Clamp and the gap between the two is even from top to bottom



Torque to 80 in-lbs

10.8

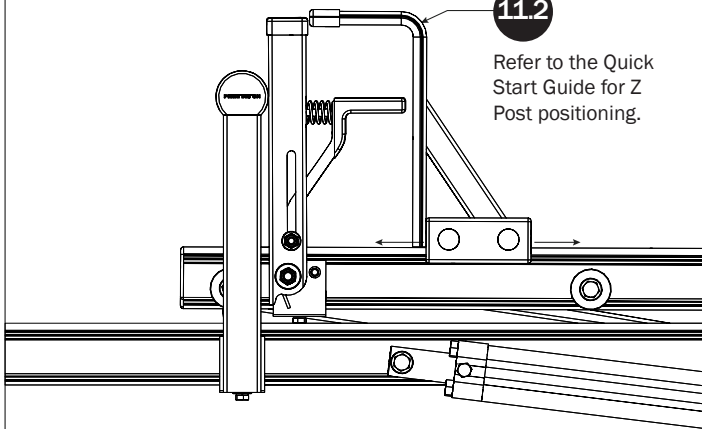


10.9

Repeat steps 10.1—10.8 for the front L Post installation

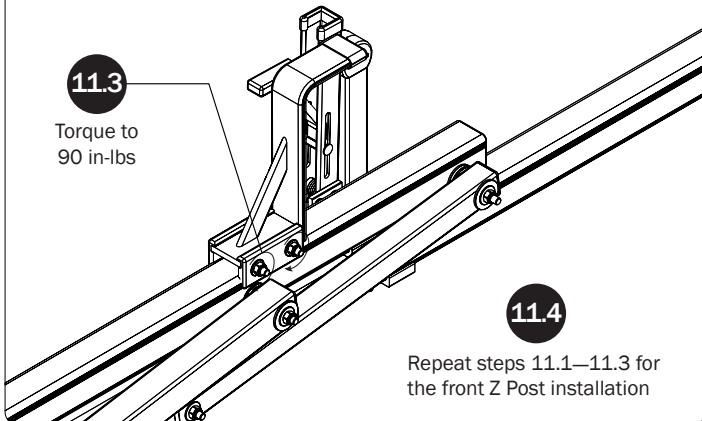
11.2

Refer to the Quick Start Guide for Z Post positioning.



11.3

Torque to 90 in-lbs



11.4

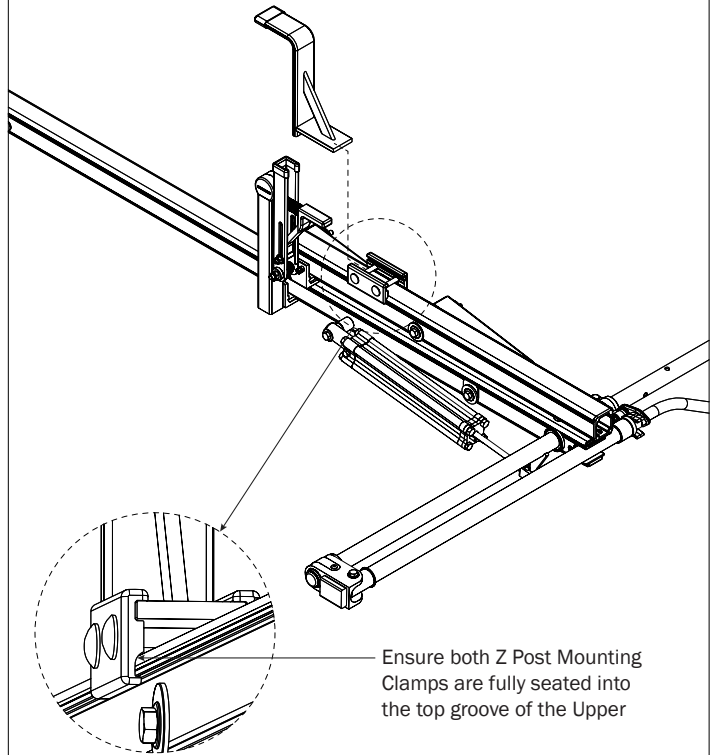
Repeat steps 11.1—11.3 for the front Z Post installation

## Z POSTS

SEE QUICK START GUIDE FOR ADJUSTMENTS

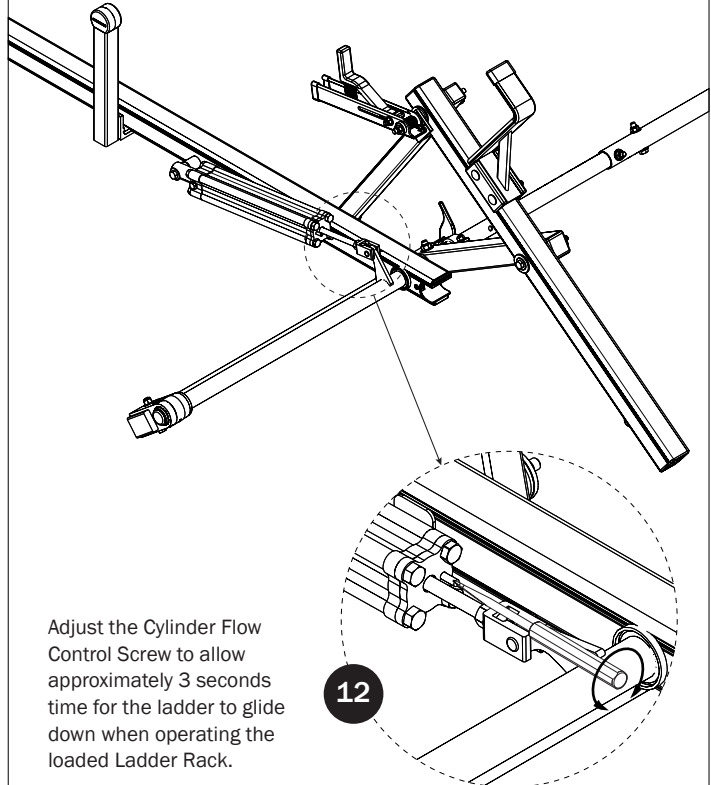
11.1

Slide the Z Post into the Mounting Clamp Assembly



Ensure both Z Post Mounting Clamps are fully seated into the top groove of the Upper

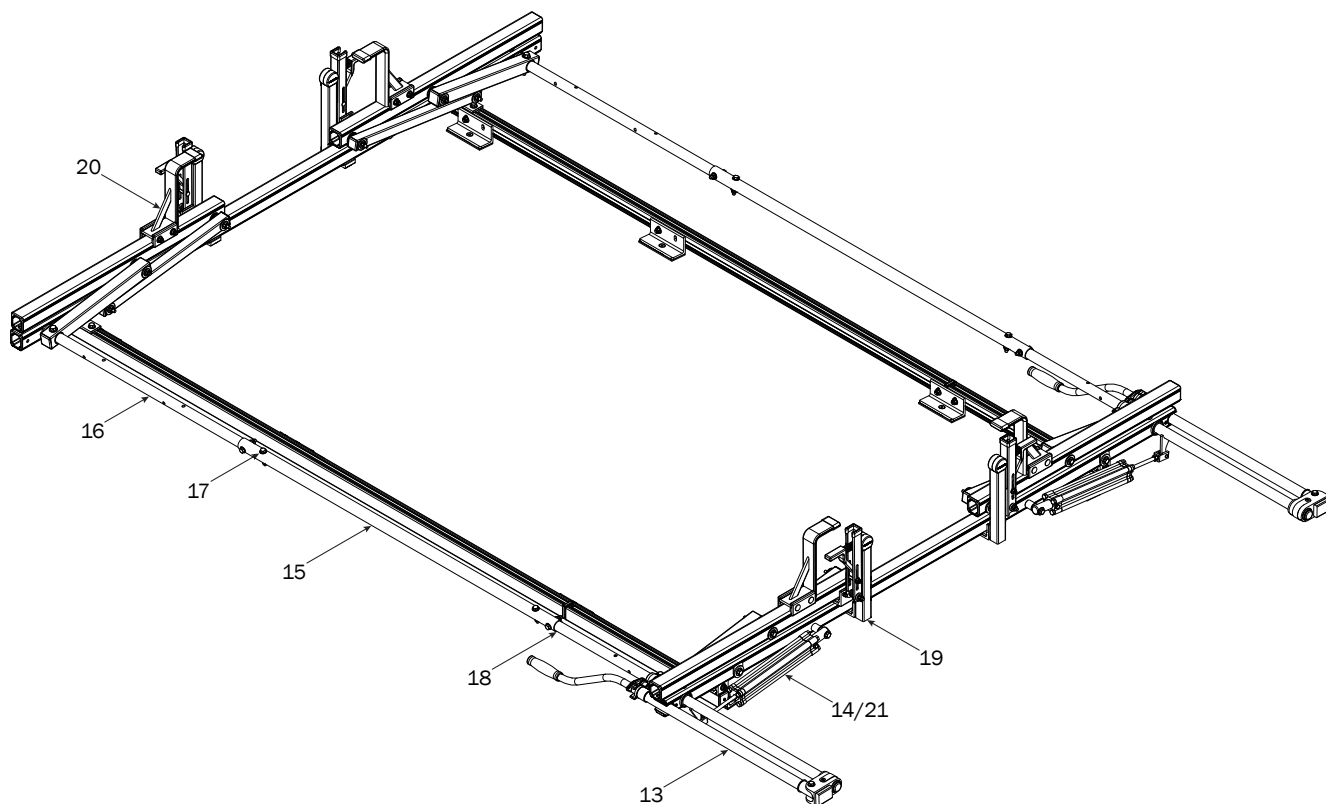
## CYLINDER ADJUSTMENT



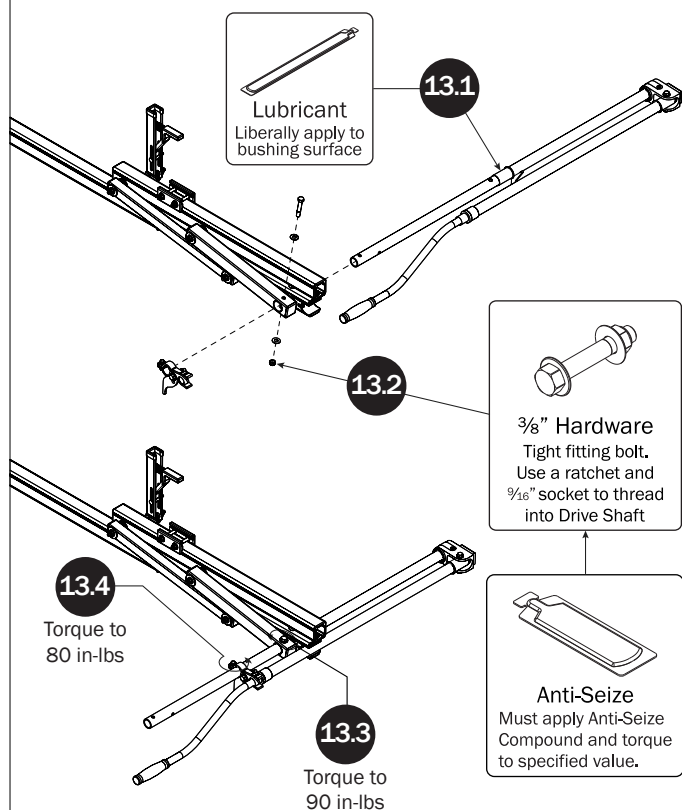
12

Adjust the Cylinder Flow Control Screw to allow approximately 3 seconds time for the ladder to glide down when operating the loaded Ladder Rack.

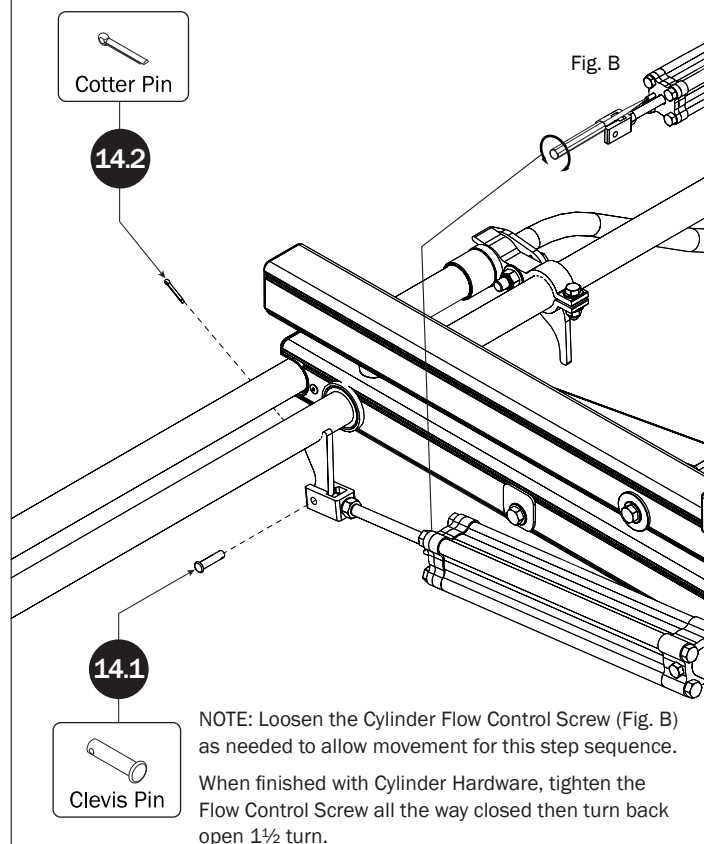
## LEFT SIDE ASSEMBLY SEQUENCE

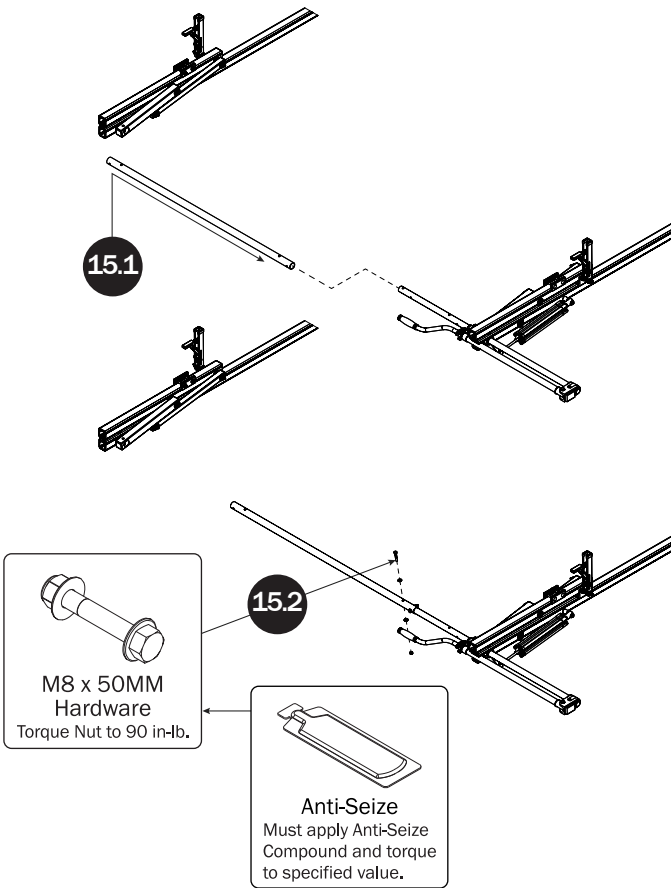
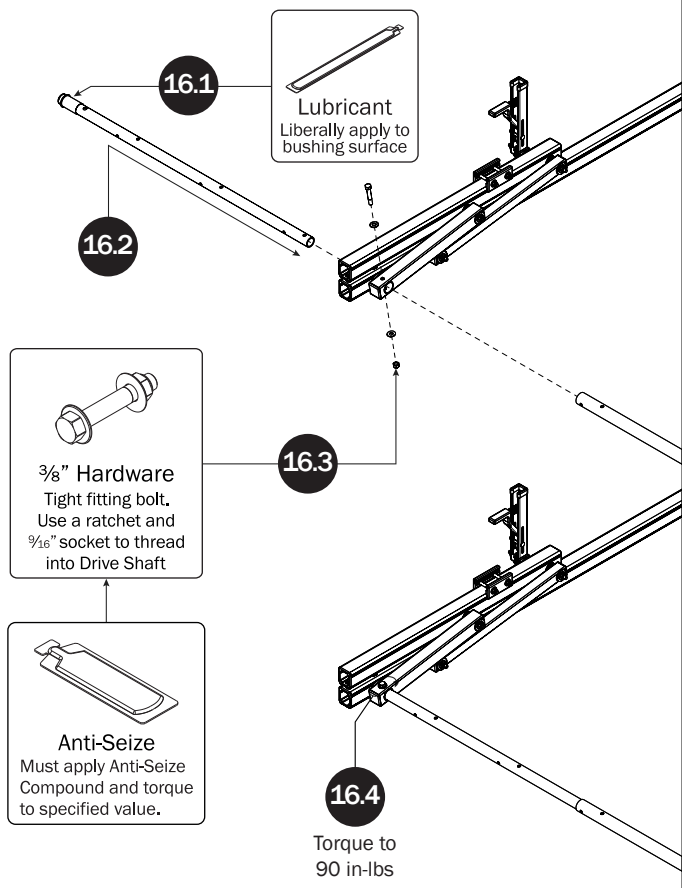
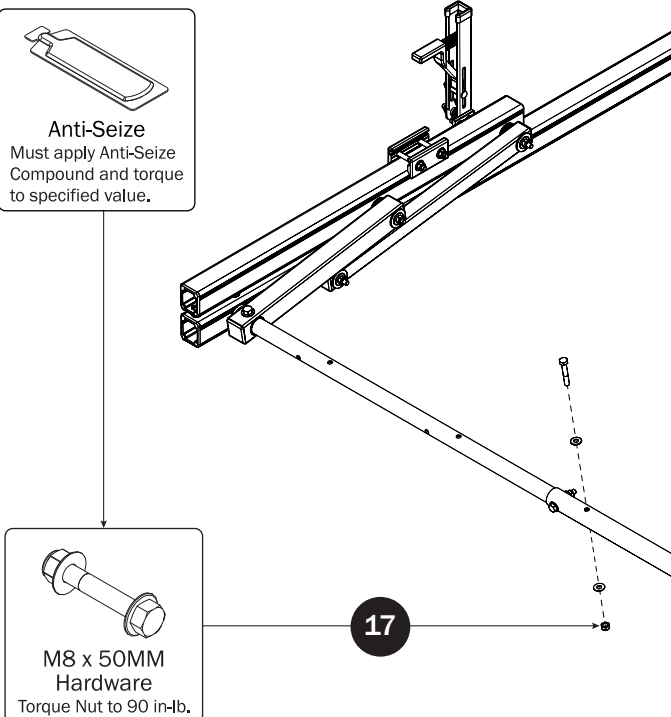
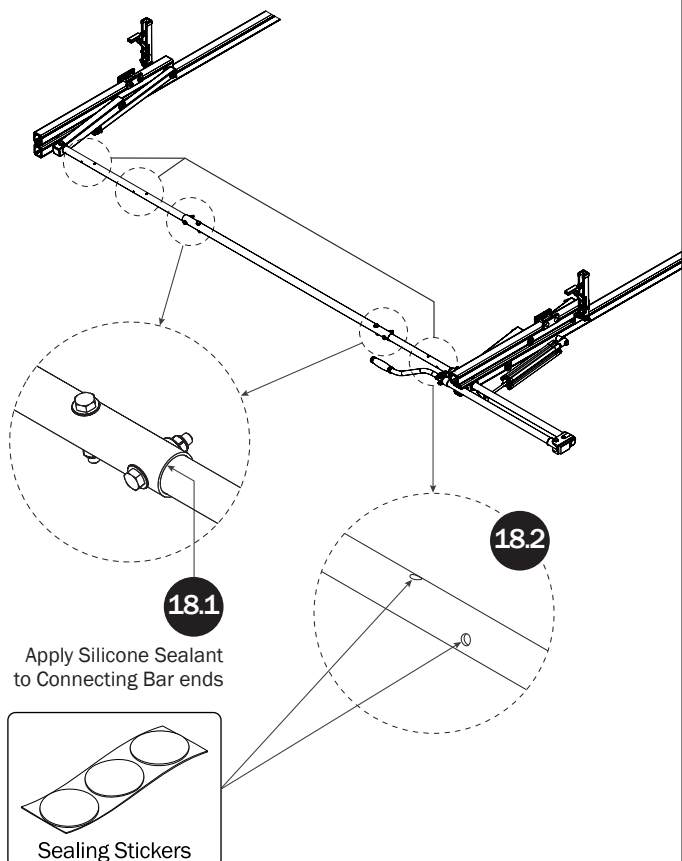


## REAR DRIVE SHAFT



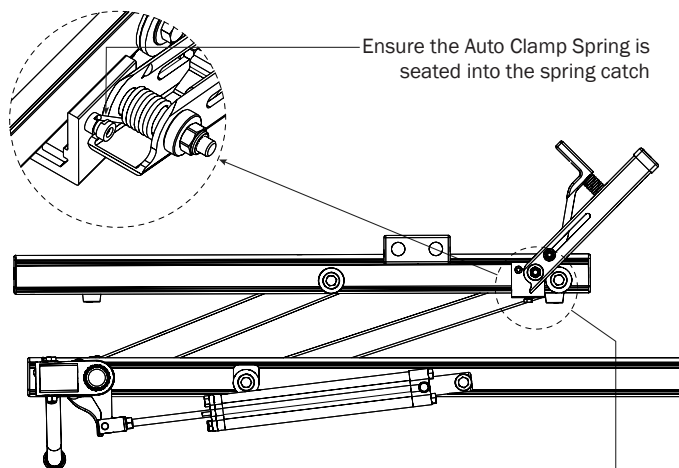
## CYLINDER HARDWARE



**CONNECTING BAR****FRONT DRIVE SHAFT****CONNECTING BAR FASTENERS****DRIVE SHAFT SEALING**

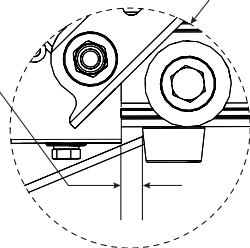
**L POSTS****SEE QUICK START GUIDE FOR ADJUSTMENTS**

**NOTE:** The Auto Clamps may come preset from the factory for packaging purposes only. To assemble the L Posts to the Crossbars, the Auto Clamps may need to be repositioned.

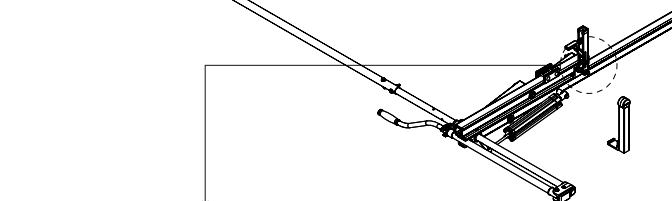
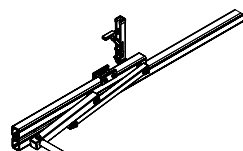


Ensure the Auto Clamp Spring is seated into the spring catch

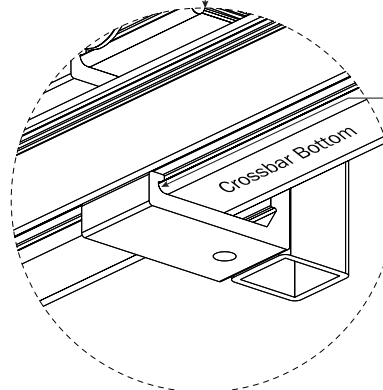
Beginning with the Rear Crossbar, loosen the bolt at the bottom of the Auto Clamp, then slide the Auto Clamp toward the inside end of the Rotation Upper. Reposition the Auto Clamp leaving a minimum of 1/4" distance from the rubber bumper to the edge of the Auto Clamp Bracket as shown, then finger-tighten if adjusting later, or torque to 80 in-lbs.

**19.1****19.2**

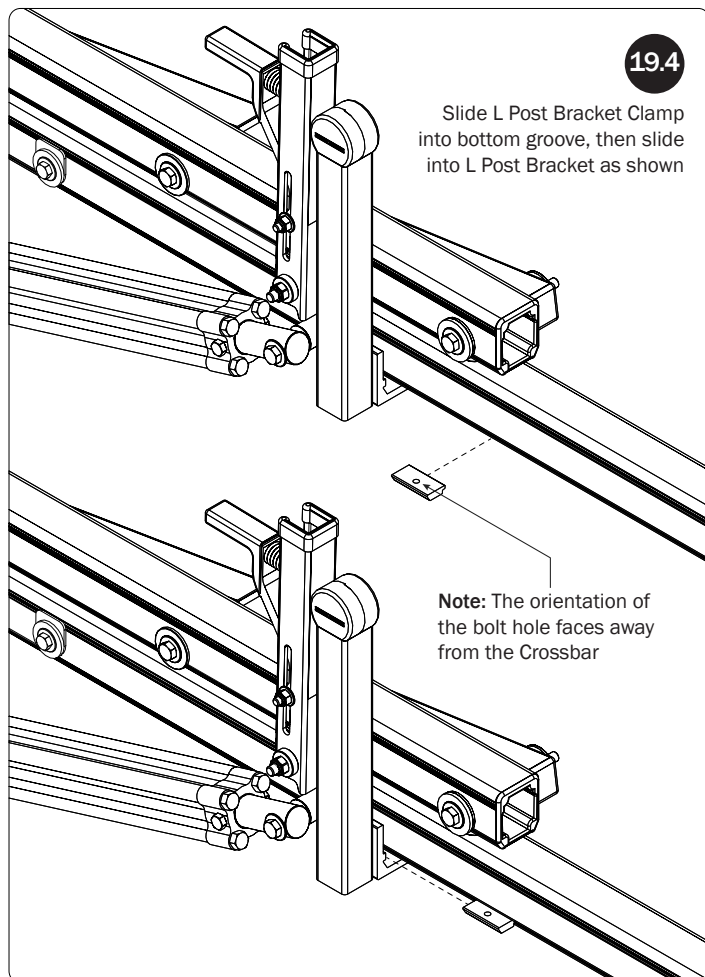
Prepare the L Post by removing the hex head bolt, lock washer, flat washer, and Bracket Clamp. Retain for installation Steps 19.4—19.8.

**19.3**

Place the L Post into the bottom groove of the Rear Crossbar, ensuring the L Post seats into the Crossbar's inside bottom groove as seen from the front of the Rear Crossbar

**19.4**

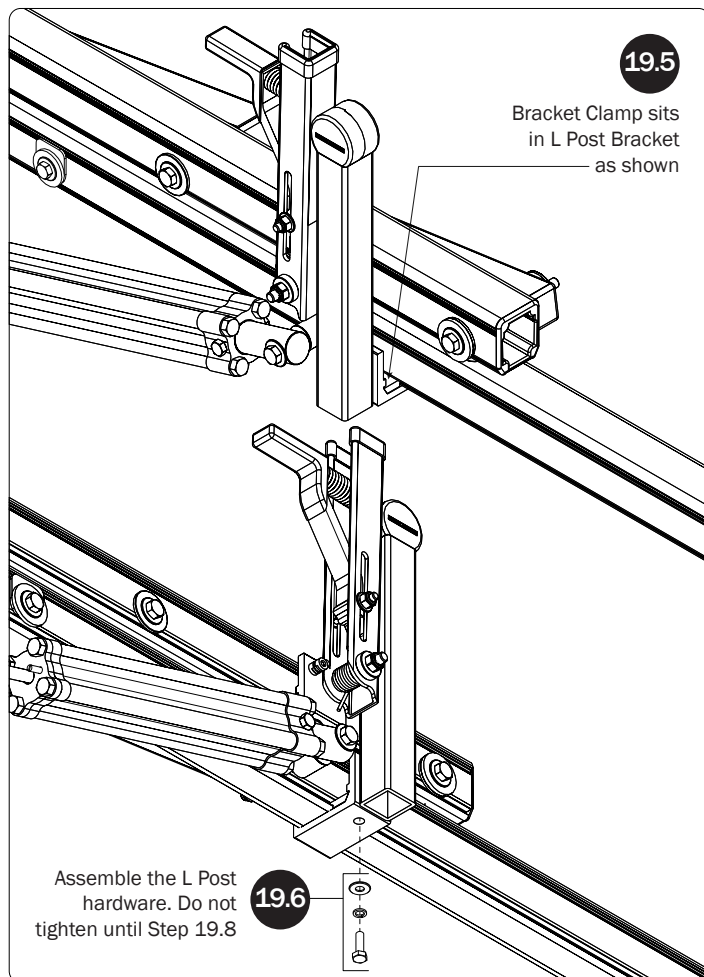
Slide L Post Bracket Clamp into bottom groove, then slide into L Post Bracket as shown



**Note:** The orientation of the bolt hole faces away from the Crossbar

**19.5**

Bracket Clamp sits in L Post Bracket as shown

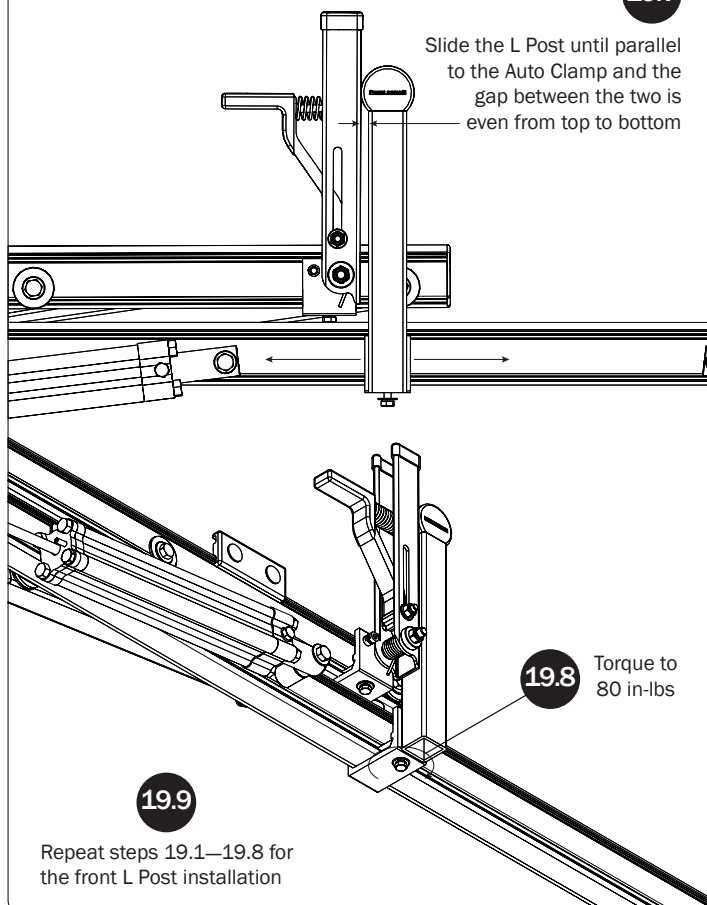


Assemble the L Post hardware. Do not tighten until Step 19.8

**19.6**

19.7

Slide the L Post until parallel to the Auto Clamp and the gap between the two is even from top to bottom



19.8 Torque to 80 in-lbs

19.9

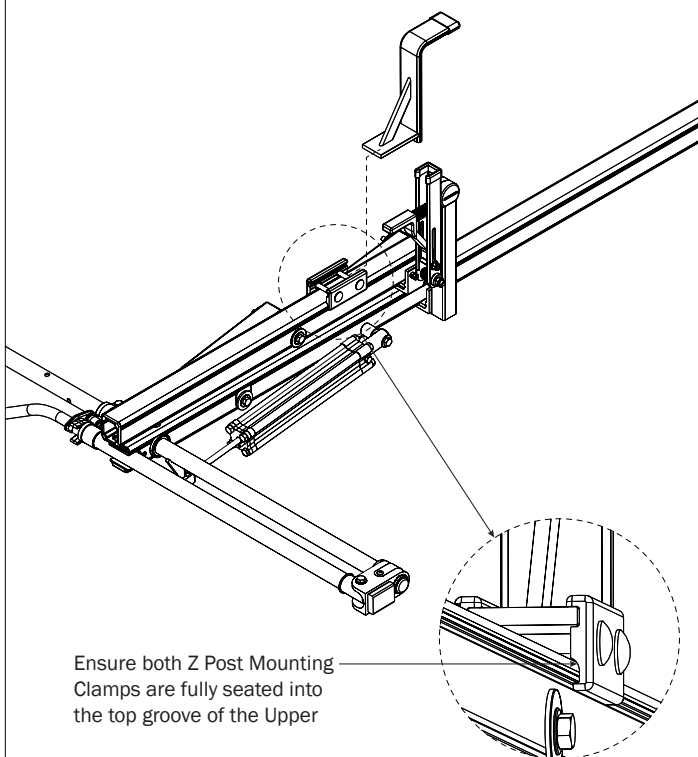
Repeat steps 19.1—19.8 for the front L Post installation

**Z POSTS**

SEE QUICK START GUIDE FOR ADJUSTMENTS

20.1

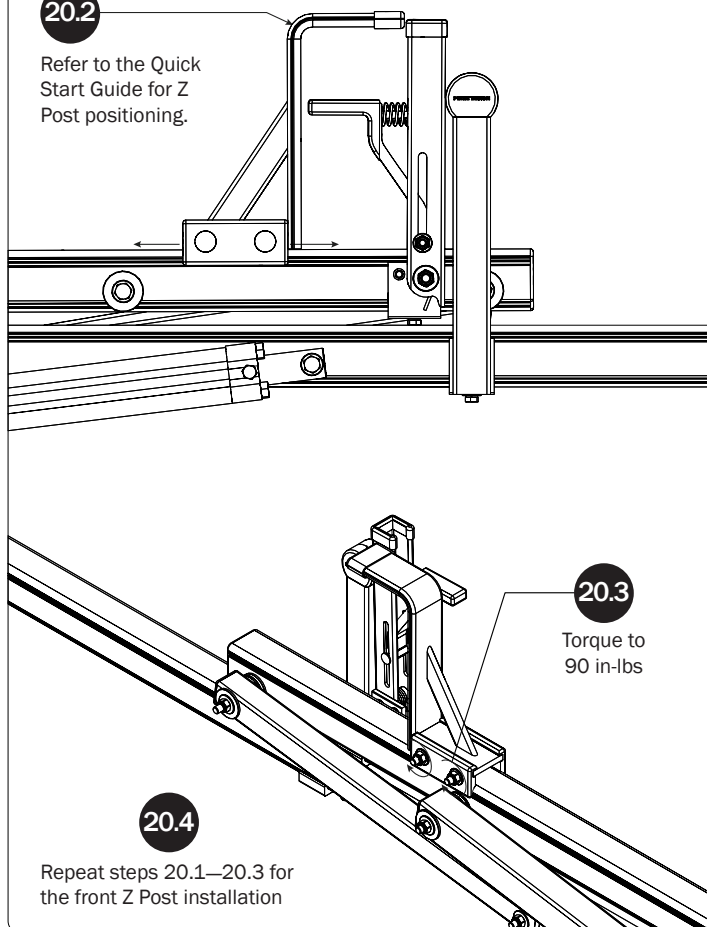
Slide the Z Post into the Mounting Clamp Assembly



Ensure both Z Post Mounting Clamps are fully seated into the top groove of the Upper

20.2

Refer to the Quick Start Guide for Z Post positioning.

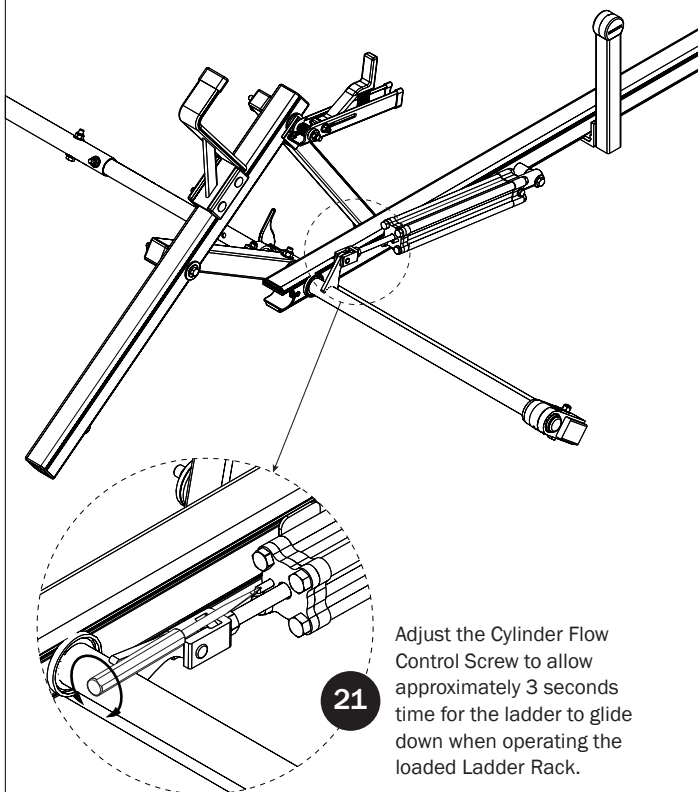


20.3

Torque to 90 in-lbs

20.4

Repeat steps 20.1—20.3 for the front Z Post installation

**CYLINDER ADJUSTMENT**

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Adjust the Cylinder Flow Control Screw to allow approximately 3 seconds time for the ladder to glide down when operating the loaded Ladder Rack.

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