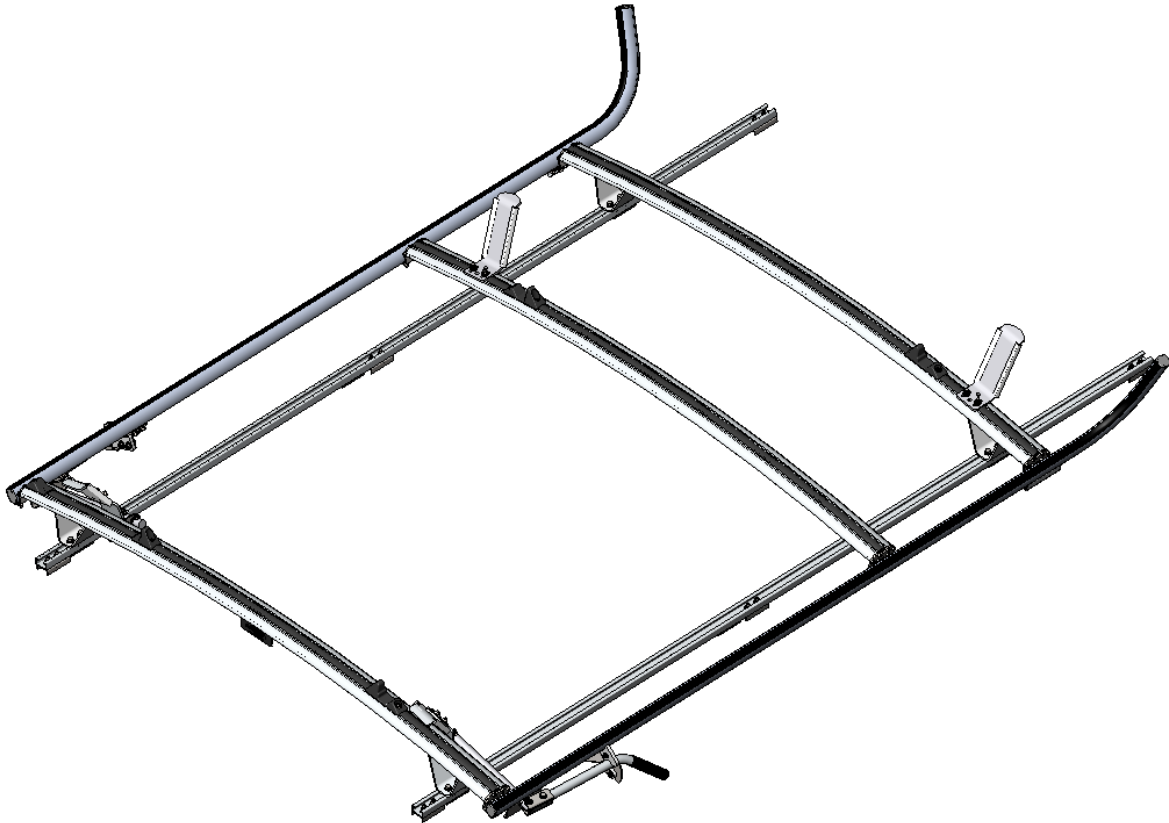


# INSTALLATION GUIDE



## 1525-PHM Combination Ladder Rack

Promaster 136" Wheelbase ( Aluminum )



# QUICK START GUIDE

## Phase 1 - Assembly

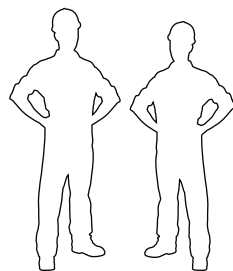
❑ 1.1 Setup.....	3 - 4
❑ 1.2 Ladder Rack Assembly.....	5 - 16

## Phase 2 - Installation

❑ 2.1 Mounting Tracks Installation.....	17 - 19
❑ 2.2 Ladder Rack Installation.....	20 - 24
❑ 2.3 Note.....	25

# REQUIRED ITEMS

**NOTE:** Use Sawhorses if possible, or use the box as a flat protective surface on the ground or table.



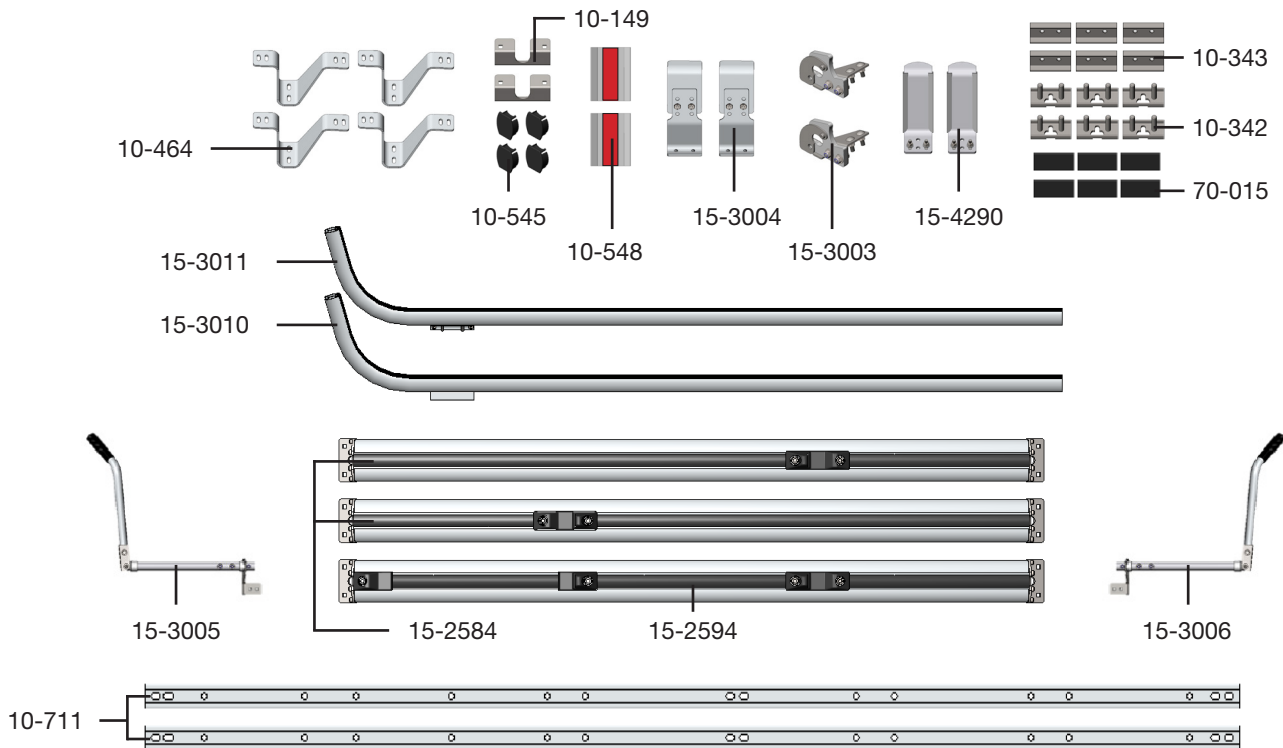
**2  
PERSONS**

- ❑ Cordless Impact
- ❑ Ratchet
- ❑ Tape Measure
- ❑ Mallet
- ❑ Marker
- ❑ Ladder
- ❑ Cutter
- ❑ 1/2" Socket
- ❑ Sawhorse ( Optional )
- ❑ Box
- ❑ Knife
- ❑ 1/2" Wrench

# PHASE 1 – ASSEMBLY

## 1.1 SETUP

1.1.1 Unpack components; compare with the bill of materials.









1.1.2 Verify all parts are present.

### BILL OF MATERIALS

Item No.	Description	Qty.
10-149	Clamp Handle Support	2
10-342	Roof Clamp	6
10-343	Top Roof Clamp	6
10-464	“V” Foot	4
10-545	Ski Plastic Plug	4
10-548	Hook Protector ( 4 - 3/8" L )	2
10-711	Mounting Track	2
70-015	Foam Sheet	6
15-2584	Front Crossbow	2
15-2594	Rear Crossbow	1
15-3003	Ladder Clamp Hasp	2
15-3004	Ladder Clamp Rear Hook	2
15-3005	Ladder Clamp Bar ( Driver Side )	1
15-3006	Ladder Clamp Bar ( Passenger Side )	1
15-3010	Ski ( Left )	1
15-3011	Ski ( Right )	1
15-4290	Front Hook	2
94-1009	Assembly Fastener Kit	1
96-1005	Install Fastener Kit	1

### 1.1.3 Fastener kits.

#### 94-1009 Fastener Kit

4x		# 90-487	Carriage Bolt 5/16"-18 x 3/4" SS304
26x		# 90-491	Carriage Bolt 5/16"-18 x 1" SS304
34x		# 94-105	Hex Nut 5/16"-18 SS316wax
2x		# 98-160	Spacer SS18-8
34x		# 98-117	Flat Washer 5/16", O.D 3/4" SS18-8
34x		# 98-123	Lock Washer Regular 5/16" SS304

#### Fastener Assembly

4x



#90-487 Carriage Bolt 5/16" x 3/4"  
#98-117 Flat Washer  
#98-123 Lock Washer  
#94-105 Hex Nut

24x



#90-491 Carriage Bolt 5/16" x 1"  
#98-117 Flat Washer  
#98-123 Lock Washer  
#94-105 Hex Nut

4x




#98-117 Flat Washer  
#98-123 Lock Washer  
#94-105 Hex Nut

2x



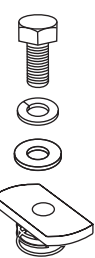
#90-491 Carriage Bolt 5/16" x 1"  
#98-160 Spacer  
#98-117 Flat Washer  
#98-123 Lock Washer  
#94-105 Hex Nut

#### 96 - 1005 Fastener Kit

8x		# 90-209	Hex Bolt 5/16"-18 x 1" SS304
12x		# 94-105	Hex Nut 5/16"-18 SS316wax
8x		# 94-150	Channel Nut 5/16"
20x		# 98-117	Flat Washer 5/16", OD 3/4" SS18-8
20x		# 98-123	Lock Washer 5/16" SS304

#### Fastener Assembly

8x



#90-209 Hex Bolt 5/16" x 1"  
#98-123 Lock Washer  
#98-117 Flat Washer  
#94-150 Channel Nut

12x

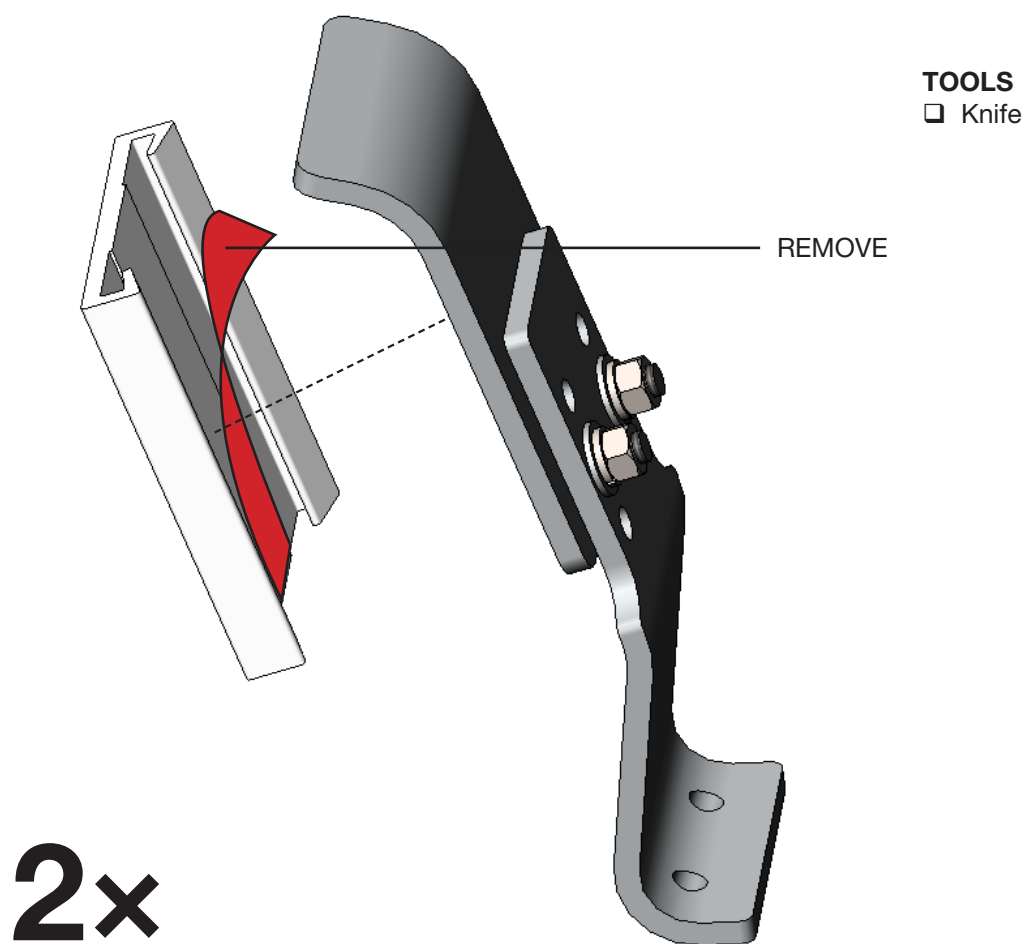


#98-117 Flat Washer  
#98-123 Lock Washer  
#94-105 Hex Nut

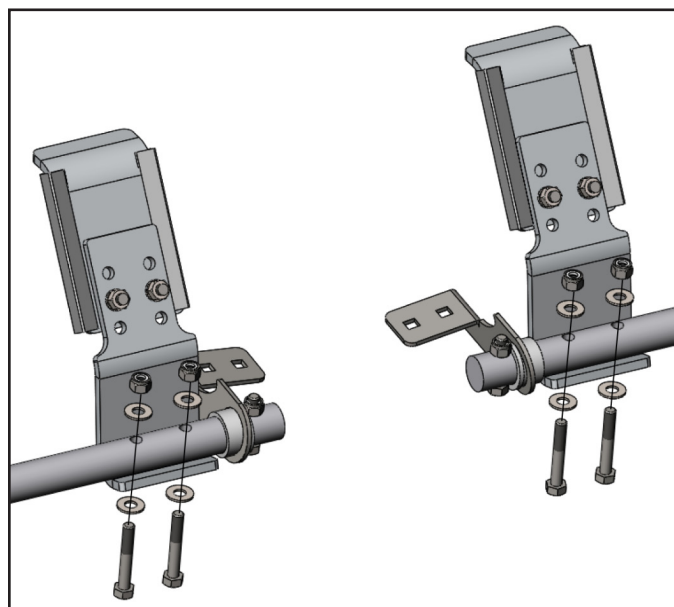
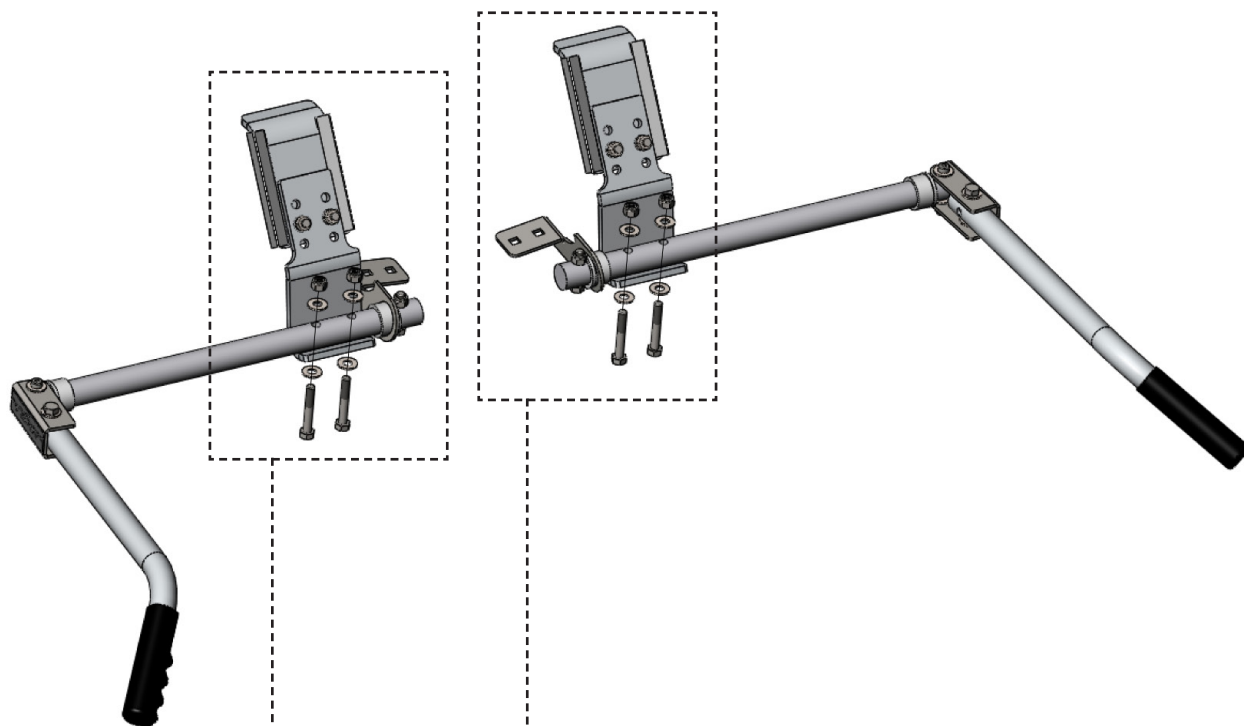
# PHASE 1 – ASSEMBLY

## 1.2 LADDER RACK ASSEMBLY

- 1.2.1** Peel the backer off of the adhesive on the hook protector, then attach the hook protector to the upper rear hook.



**1.2.2** Attach the rear hooks to the ladder clamps, with the pre-assembled hardware on the pivot bars.



#### TOOLS

- ☐ Cordless Impact
- ☐ 1/2" Socket
- ☐ 1/2" Wrench

#### HARDWARE USED

**4x** HARDWARE IS PRE-ASSEMBLED.



#90-225 Hex Bolt  
5/16" - 18 x 2" SS304

#98-117 Flat Washer

#98-117 Flat Washer

#94-111 Lock Nut

### 1.2.3 Slide carriage bolts on the bottom face of the crossbows.

**NOTE:** The track plug must be removed from the underneath of the crossbows, and reinstalled after the feet have been installed in the final position.

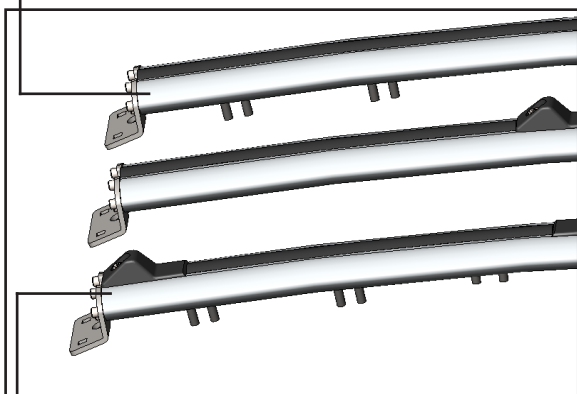
**TIPS:** Use tape to keep the bolts from sliding off.



#### DRIVER SIDE

##### First Front crossbow

- Slide 4 pcs. of 1" carriage bolts.



##### Rear crossbow

- Slide 2 pcs. of 3/4" carriage bolts.
- Slide 4 pcs. of 1" carriage bolts.

#### HARDWARE USED

2x



#90-487 Carriage Bolt  
5/16" x 3/4" SS304

8x

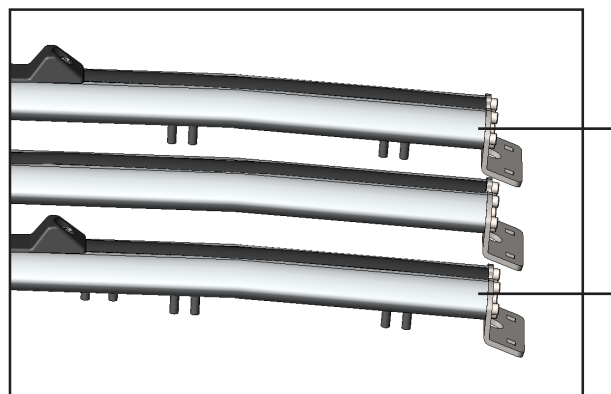


#90-491 Hex Bolt  
5/16" x 1" SS304

#### PASSENGER SIDE

##### First Front crossbow

- Slide 4 pcs. of 1" carriage bolts.



##### Rear crossbow

- Slide 2 pcs. of 3/4" carriage bolts.
- Slide 4 pcs. of 1" carriage bolts.

#### HARDWARE USED

2x



#90-487 Carriage Bolt  
5/16" x 3/4" SS304

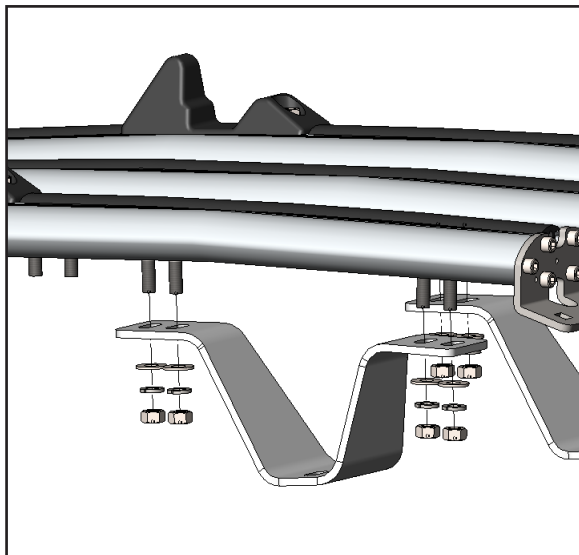
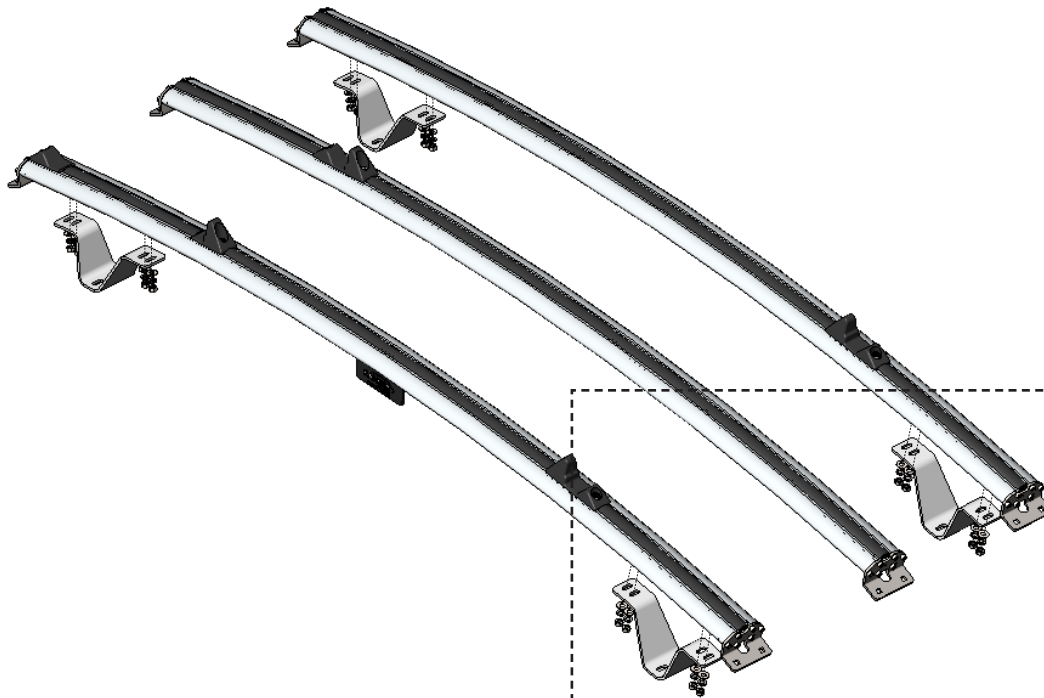
8x



#90-491 Hex Bolt  
5/16" x 1" SS304

**1.2.4** Install the feet on the first Front, and Rear Crossbows.

**NOTE:** The more slanted side of the V foot should be closer to the center of the crossbow.



#### HARDWARE USED

**16x** HAND-TIGHTEN THE NUTS.



Carriage bolts are already on the crossbows.



#98-117 Flat Washer



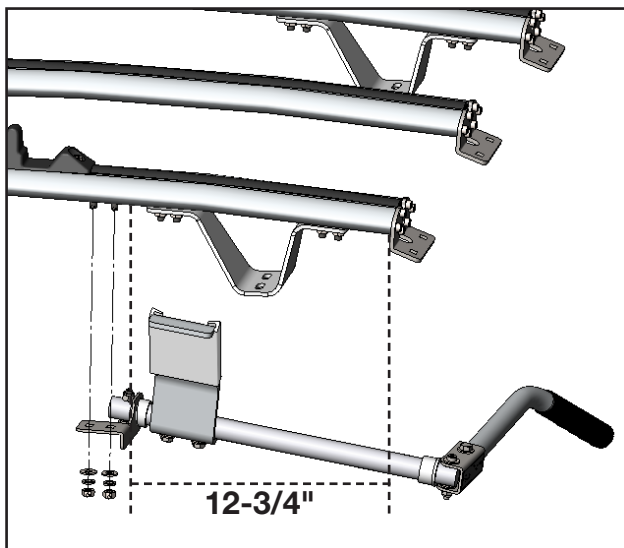
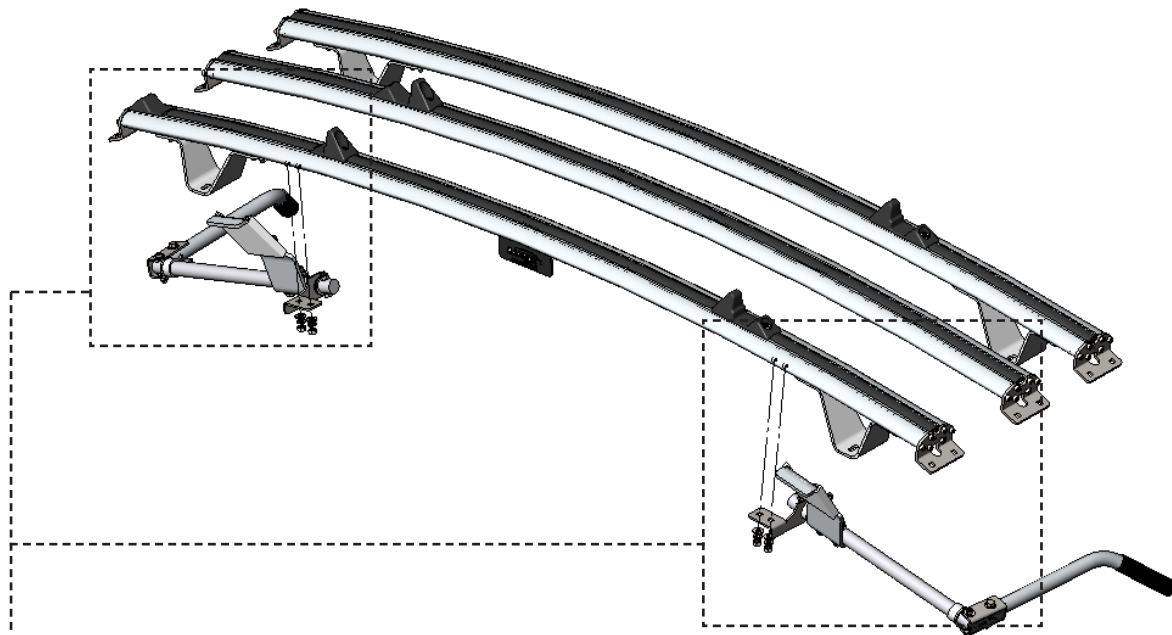
#98-123 Lock Washer



#94-105 Hex Nut



**1.2.5** Fasten the ladder clamp assemblies to the rear crossbow.



**TOOLS**

- ☐ Cordless Impact
- ☐ 1/2" Socket
- ☐ Tape Measure
- ☐ Marker

**HARDWARE USED**

**4x**



Carriage bolts are already on the crossbows.



#98-117 Flat Washer

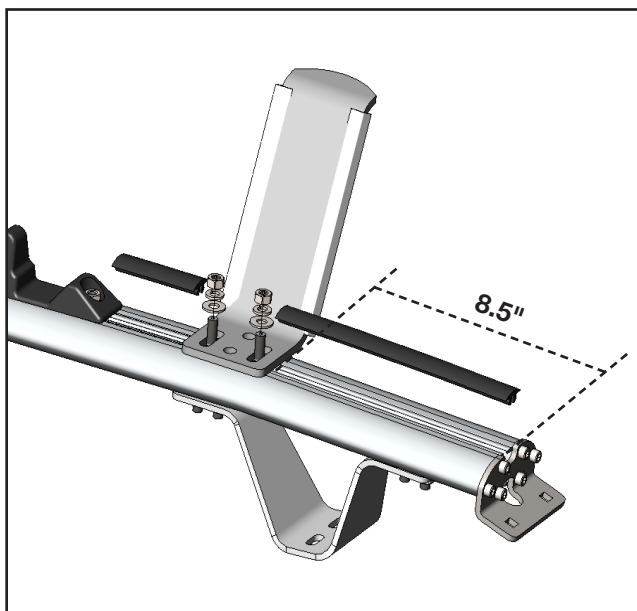
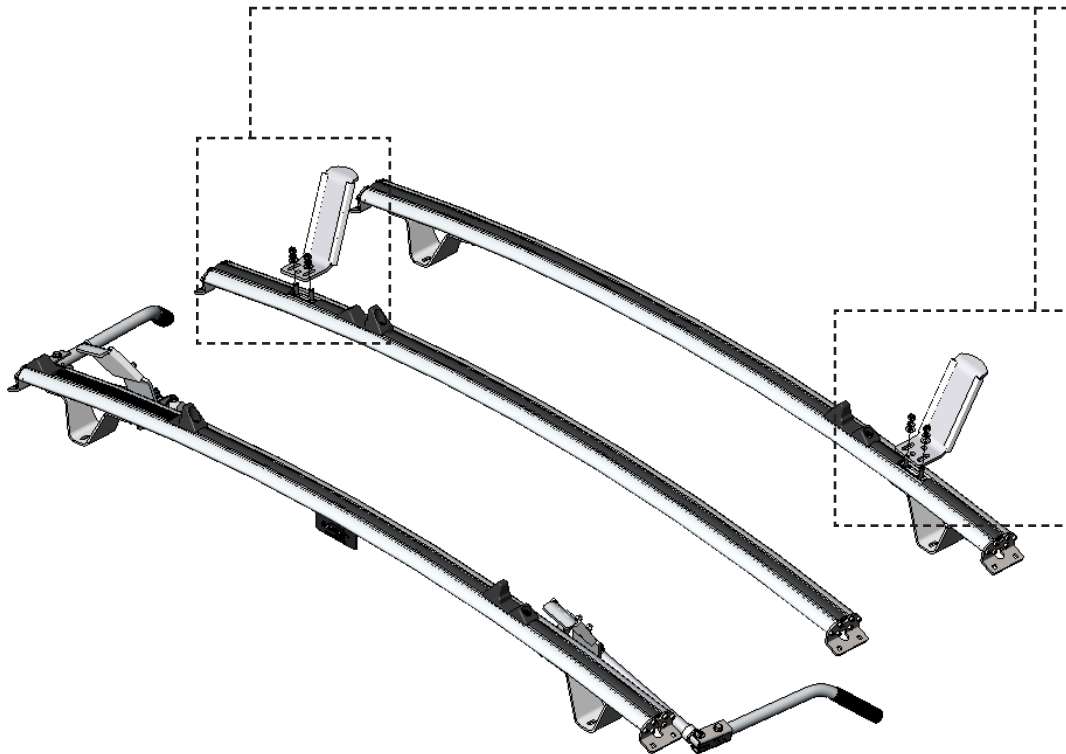


#98-123 Lock Washer



#94-105 Hex Nut

- 1.2.6** • Pull out the 14.5" track plug on the passenger side of the first front crossbow and the driver side of the adjustable front crossbow.
- Loosen the pre-assembled hardware on the front hooks and slide the hooks onto the front crossbows to the position shown below.
  - Cut the track plug, then attach it back to the crossbows.







Tighten the nuts just to hold the front hook for adjustment.

#### TOOLS

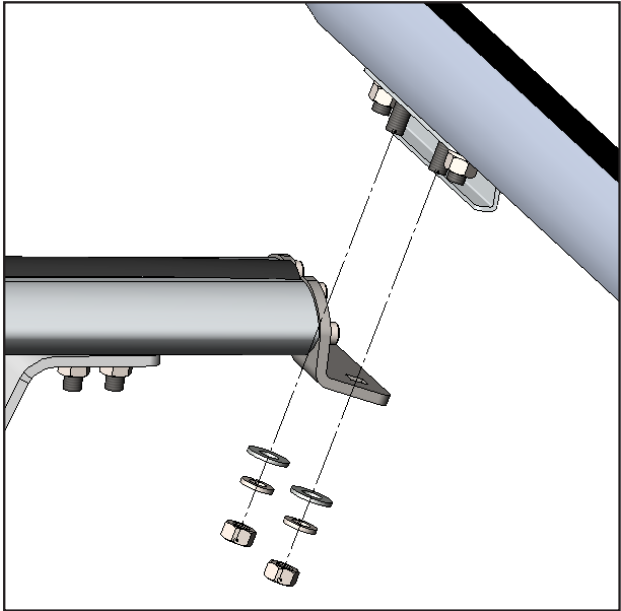
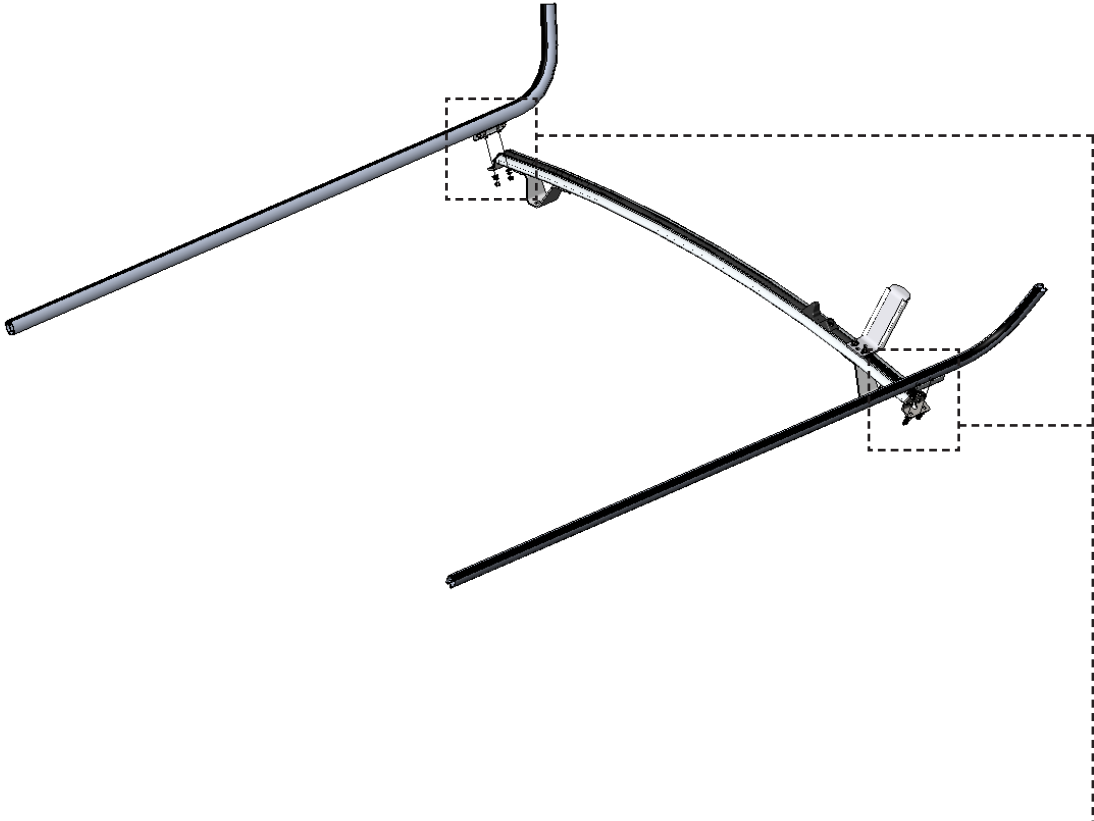
- ☐ Marker
- ☐ Cutter

#### HARDWARE USED

**4x** HARDWARE IS PRE-ASSEMBLED.

- |   |                                  |
|---|----------------------------------|
|  | #90-491 Carriage Bolt 5/16" x 1" |
|  | #98-117 Flat Washer              |
|  | #98-123 Lock Washer              |
|  | #94-105 Hex Nut                  |

1.2.7 Install the left and right Skis to the end brackets of the front crossbow.







**TOOLS**

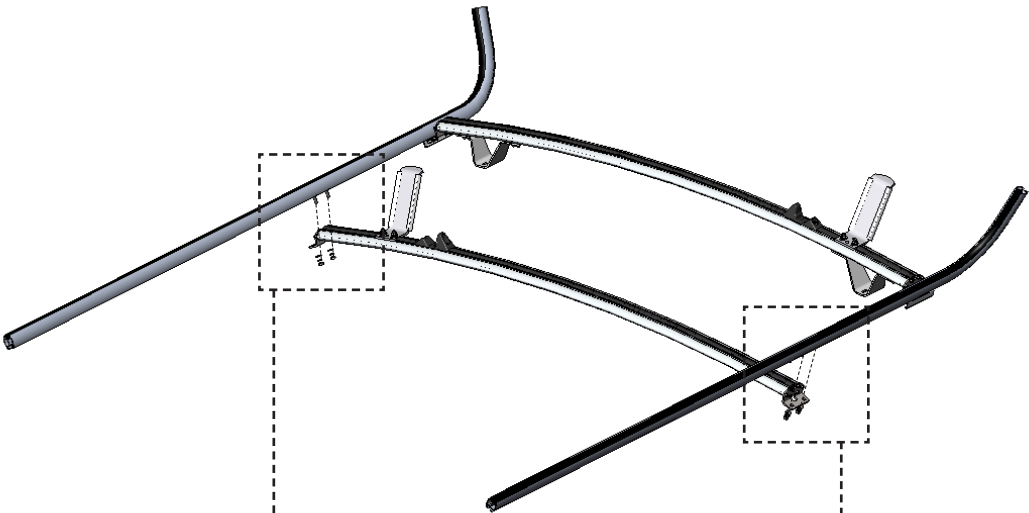
- Cordless Impact
- 1/2" Socket

**HARDWARE USED**

**4x**

- |   |  |
|---|--|
|  | Carriage bolts are already on the ski. |
|  | #98-117 Flat Washer                    |
|  | #98-123 Lock Washer                    |
|  | #94-105 Hex Nut                        |

**1.2.8** Install the adjustable front crossbow to the left and right Skis.



Tighten the nuts just to hold the 2nd front crossbow for adjustment.

**HARDWARE USED**

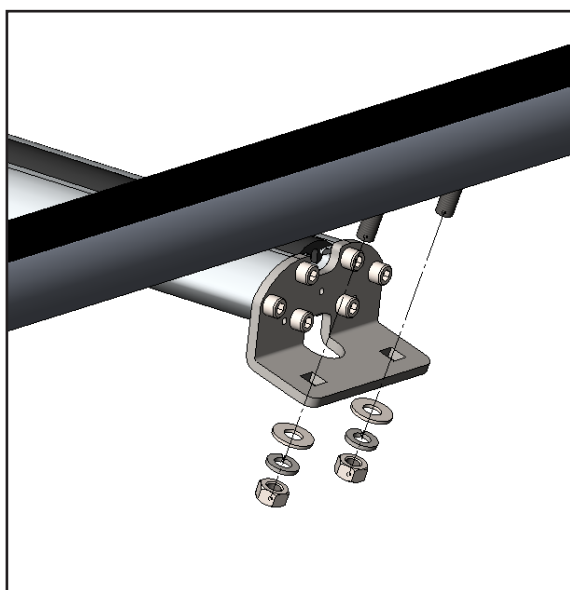
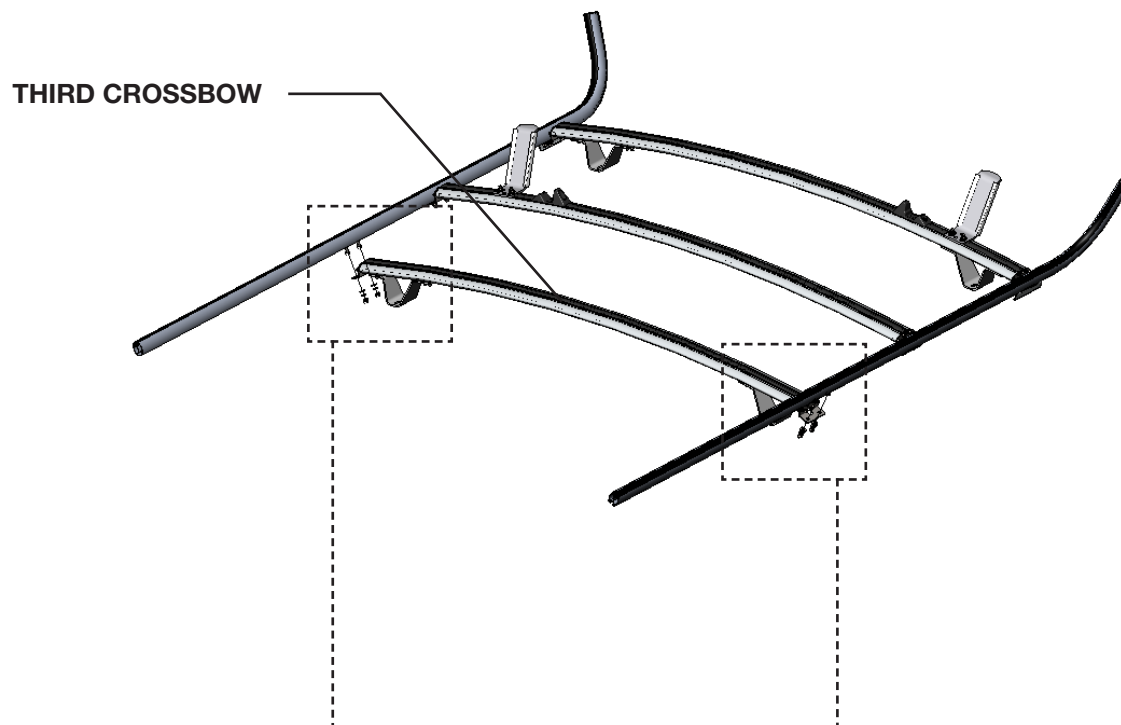
**4x** HAND-TIGHTEN THE NUTS.

- |   |                                  |
|---|----------------------------------|
|  | #90-491 Carriage Bolt 5/16" x 1" |
|  | #98-117 Flat Washer              |
|  | #98-123 Lock Washer              |
|  | #94-105 Hex Nut                  |

**NOTE:** If you have a third crossbow, stop here and open the third crossbow box and follow the installation guide to assemble the third crossbow.

**1.2.9** After assembling the third crossbow attach the third crossbow to the skis.





**NOTE:** Don't do this step if you don't have the third crossbow.



Use the assembly fastener kit of the third crossbow.

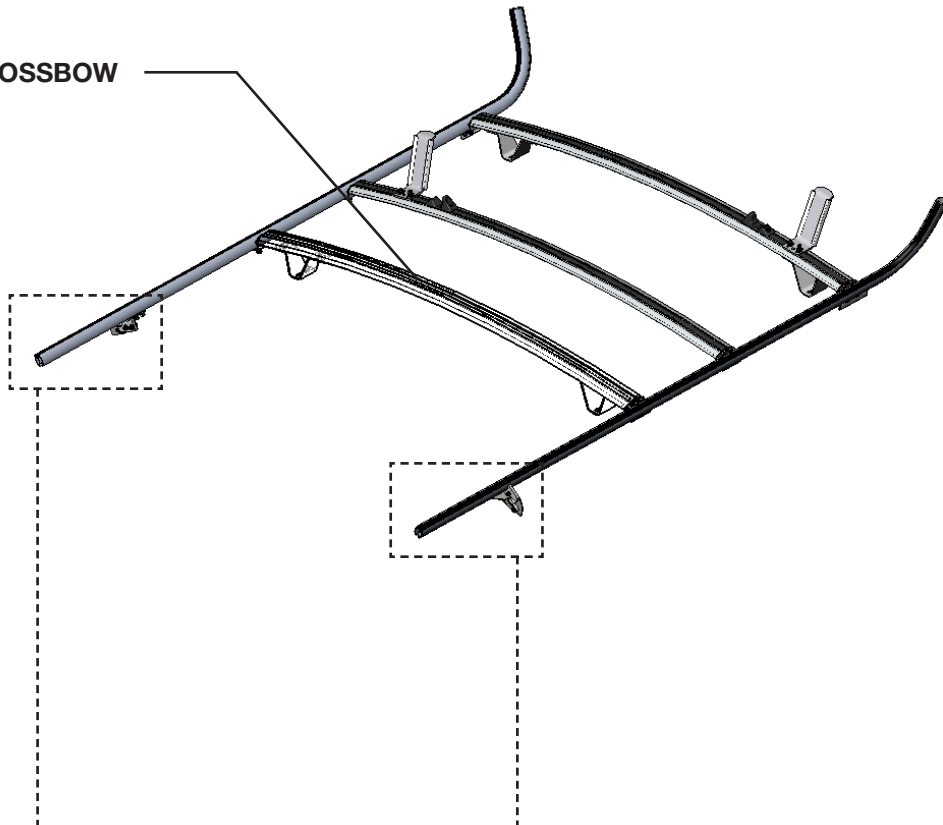
#### HARDWARE USED

**4x** HAND-TIGHTEN THE NUTS.

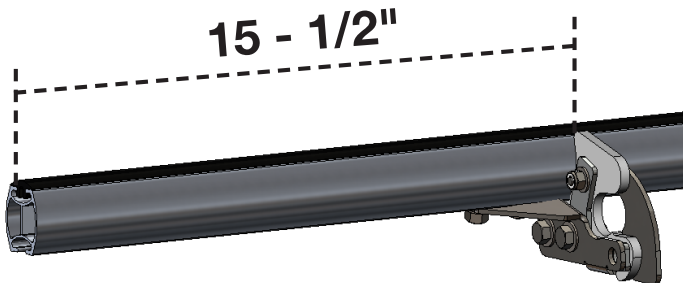
- |   |                                  |
|---|----------------------------------|
|  | #90-491 Carriage Bolt 5/16" x 1" |
|  | #98-117 Flat Washer              |
|  | #98-123 Lock Washer              |
|  | #94-105 Hex Nut                  |

**1.2.10** Loosen the pre-assembled hardware on the ladder clamp hasps, slide the hasps on the ski to the position shown below, and tighten the nuts.

**THIRD CROSSBOW**



**15 - 1/2"**



#### **TOOLS**

- ☐ Cordless Impact
- ☐ 1/2" Socket
- ☐ Tape Measure
- ☐ Marker

#### **HARDWARE USED**

**4×** HARDWARE IS PRE-ASSEMBLED.



#90-487 Carriage Bolt 5/16" x 3/4"



#98-117 Flat Washer

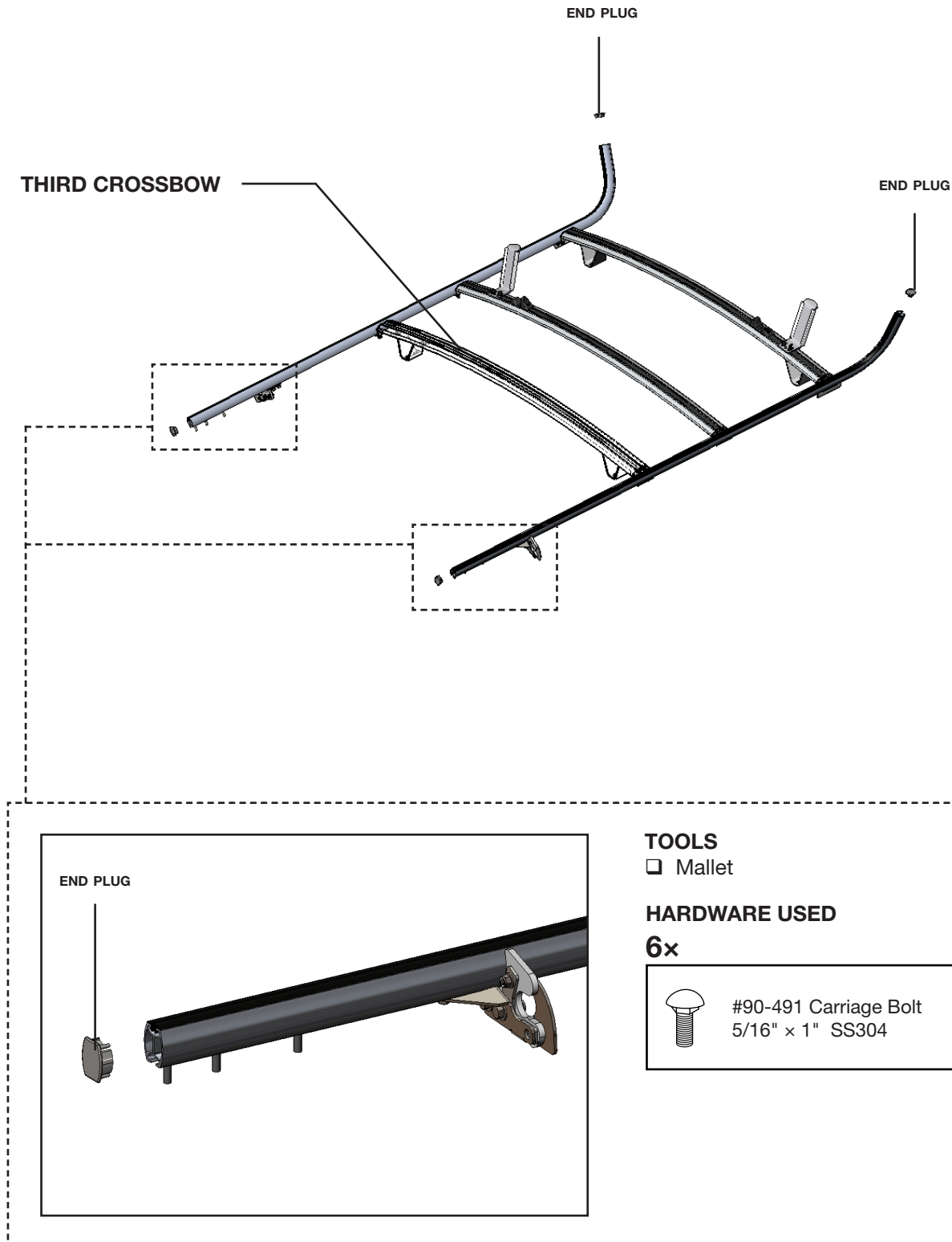


#98-123 Lock Washer

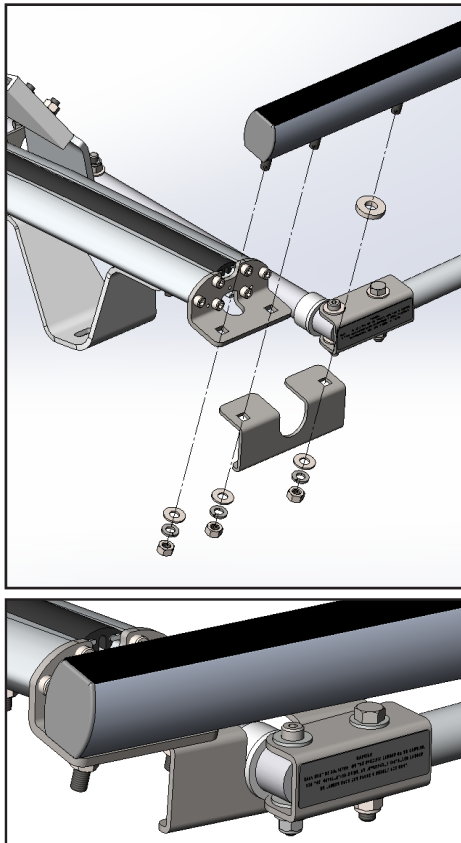
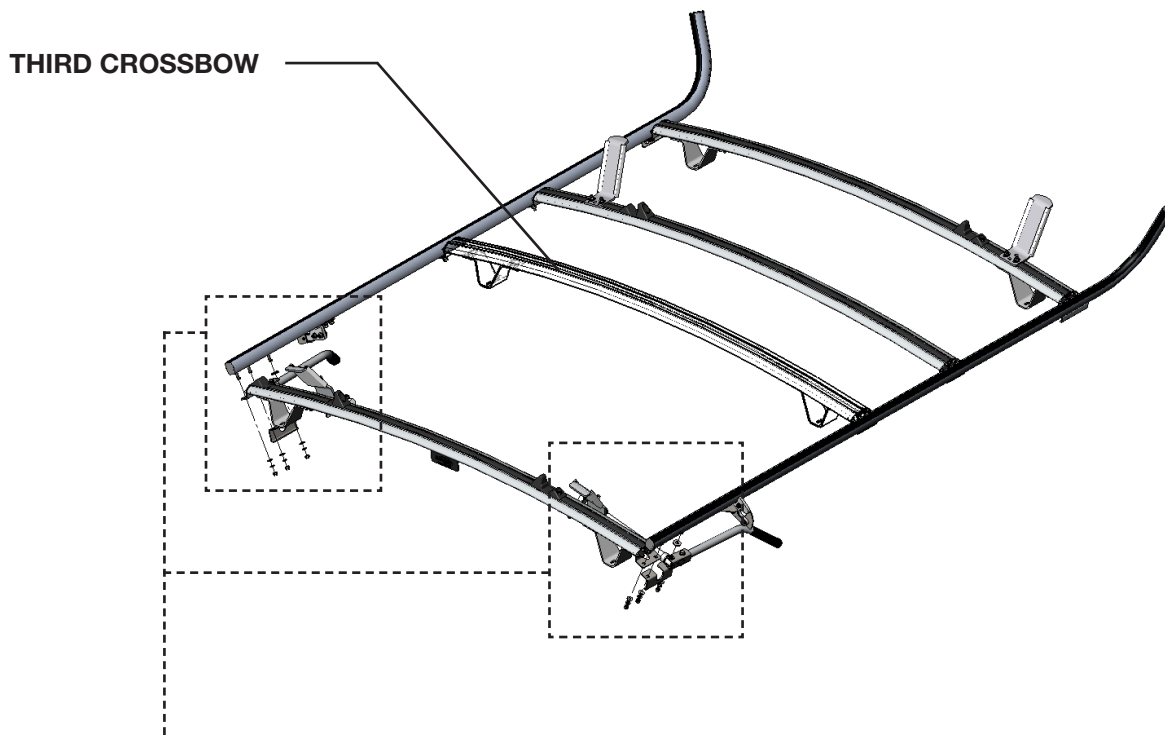


#94-105 Hex Nut

**1.2.11** Slide 3pcs. of carriage bolts on the rear end of the each ski, then attach end plugs on both ends of the skis.



**1.2.12** Install the Rear Crossbow to the skis with the clamp handle supports, aligning the rear surface of the crossbow brackets to the rear surface of the skis.



#### TOOLS

- Cordless Impact
- 1/2" Socket

#### HARDWARE USED

**4x**

- Carriage bolts are already on the ski.
- #98-117 Flat Washer
- #98-123 Lock Washer
- #94-105 Hex Nut

**2x**

- Carriage bolts are already on the ski.
- #98-160 Spacer
- #98-117 Flat Washer
- #98-123 Lock Washer
- #94-105 Hex Nut

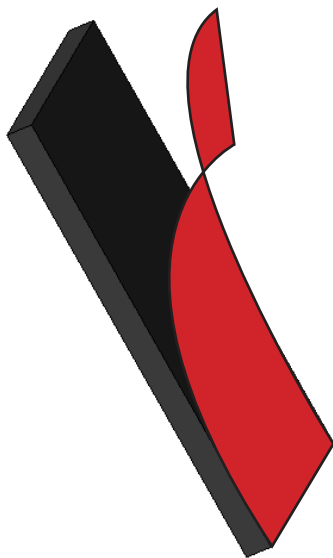


# PHASE 2 – INSTALLATION

## 2.1 MOUNTING TRACKS INSTALLATION

2.1.1 Peel the backer off of the foam sheet.

6x



### TOOLS

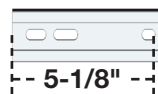
- ☐ Knife

2.1.2 Attach 3 foam sheets, to the back of each mounting track.

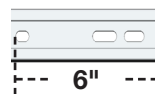
### TOOLS

- ☐ Tape Measure
- ☐ Marker

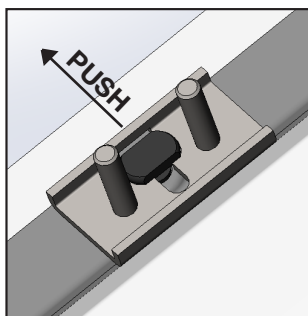
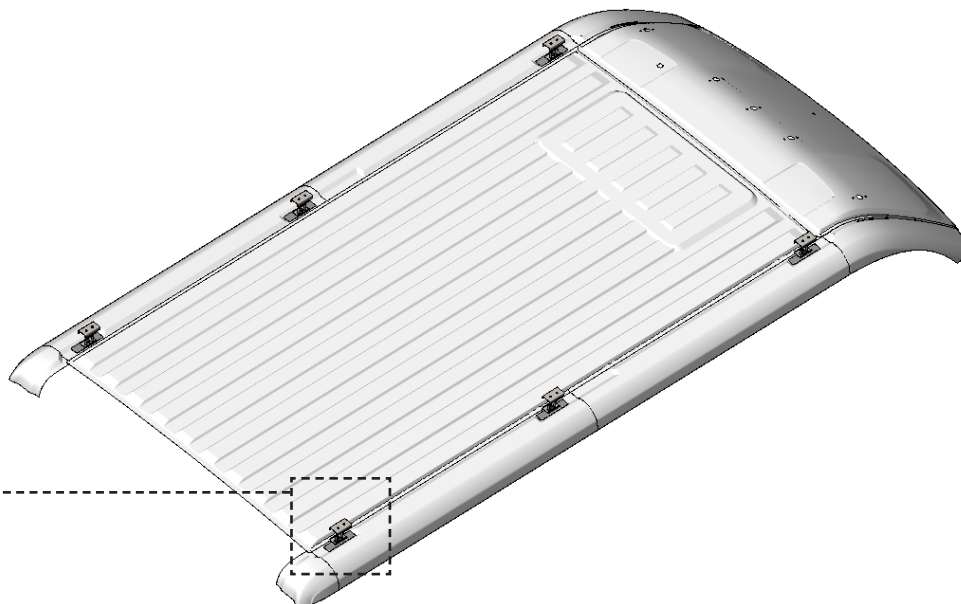
REAR



FRONT

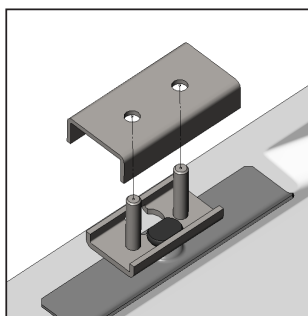


**2.1.3** Attach the roof clamps and top roof clamps onto the roof.



Attach the roof clamps to the roof.

**6x**



Add the top roof clamps on the roof clamps.

**NOTE:** The top roof clamp should lay flat on the roof clamp and not slant.

**6x**

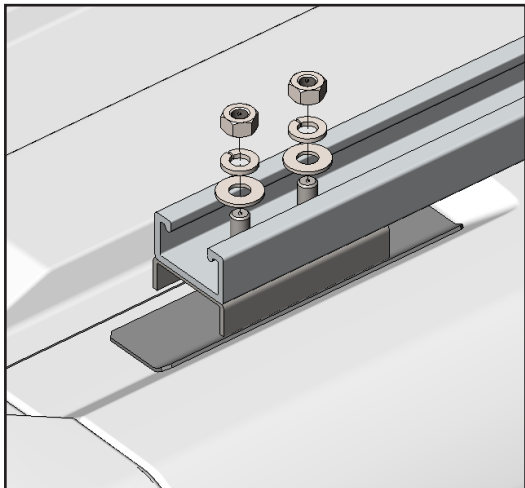
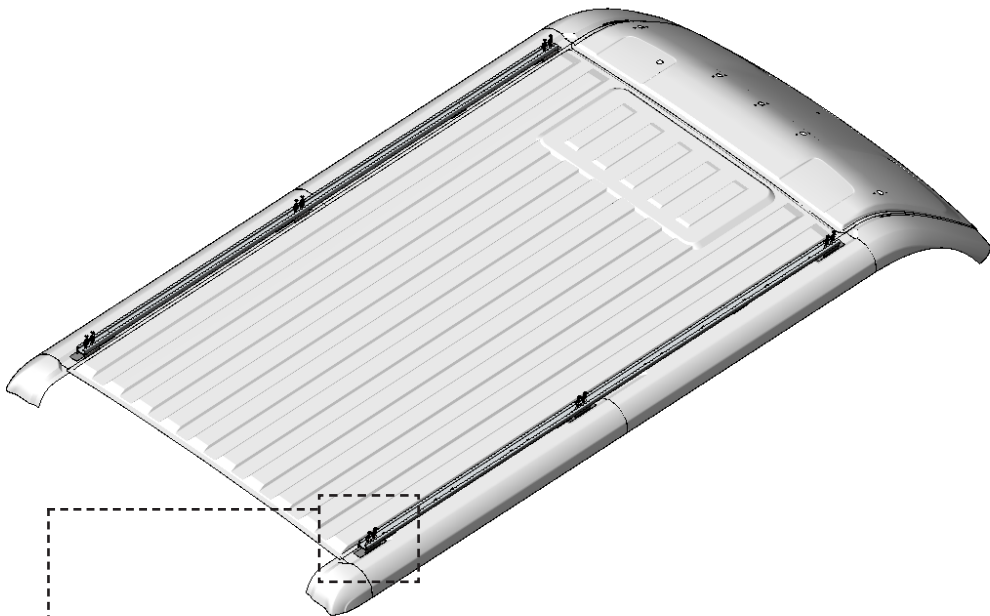
**2.1.4** Install the mounting tracks onto the clamps, aligning the rear surface of the mounting tracks to the rear surface of the last clamps.

**Mounting Track Orientation**

**REAR**



**FRONT**






**TOOLS**

- ☐ Cordless Impact
- ☐ 1/2" Socket

**HARDWARE USED**

**12x**

- |   |                     |
|---|---------------------|
|  | #98-117 Flat Washer |
|  | #98-123 Lock Washer |
|  | #94-105 Hex Nut     |

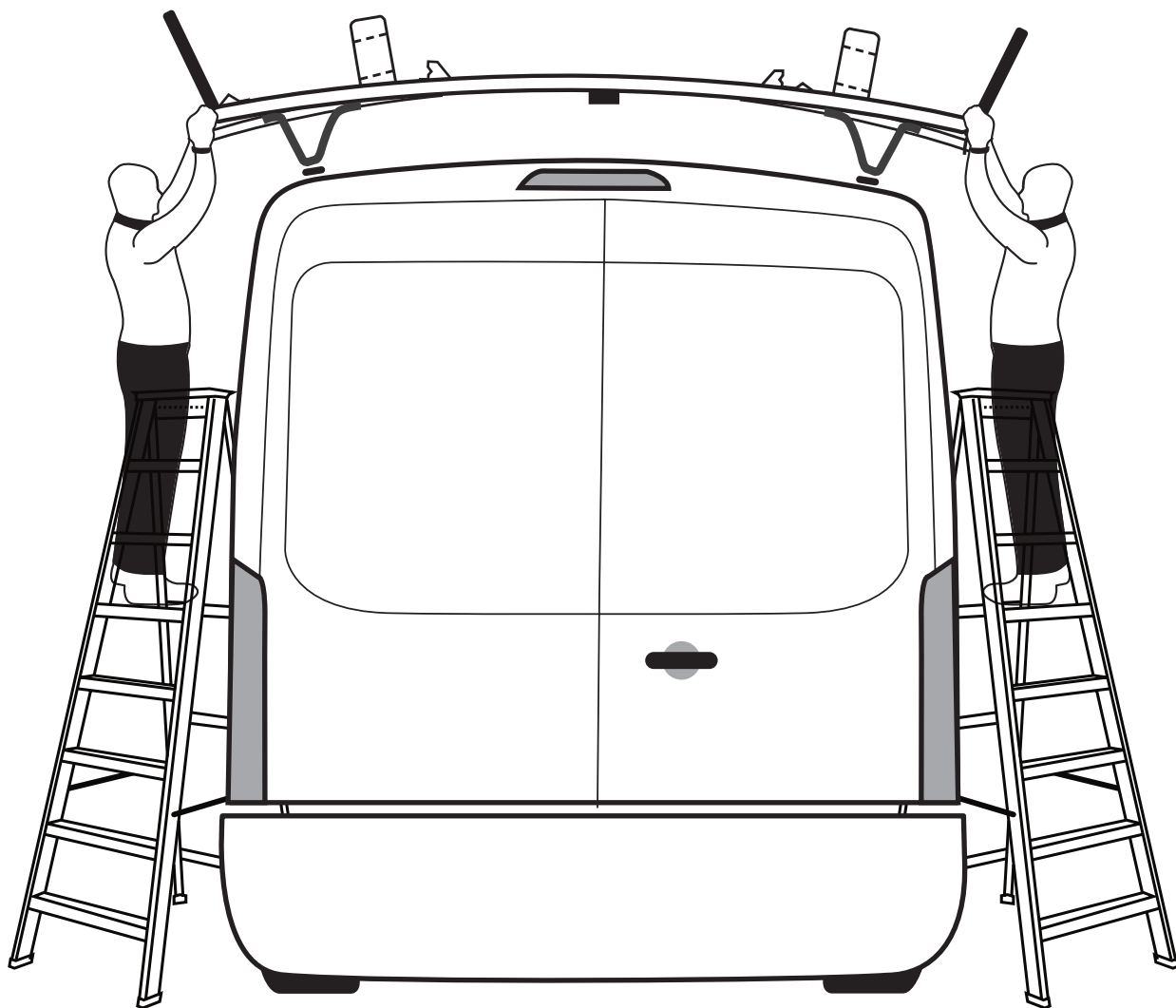
# PHASE 2 – INSTALLATION

## 2.2 LADDER RACK INSTALLATION

**2.2.1** Position the Ladder Rack ( **minimum two persons** ) on the vehicle so that the feet are on the tracks.

**NOTE:** If you do not have a hoist, lift the ladder rack onto the roof manually.

### Ladder Rack

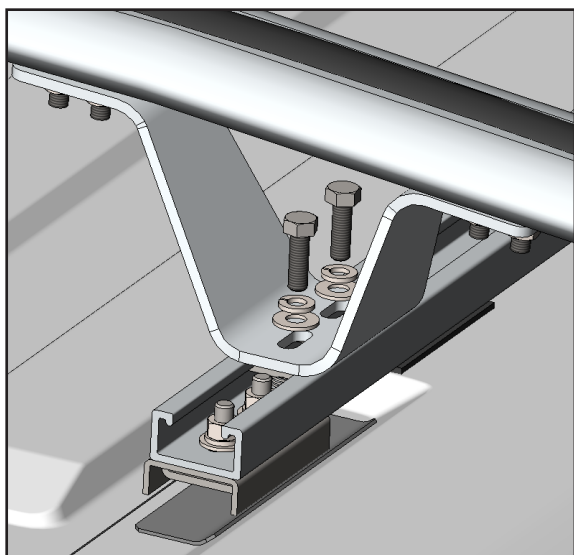
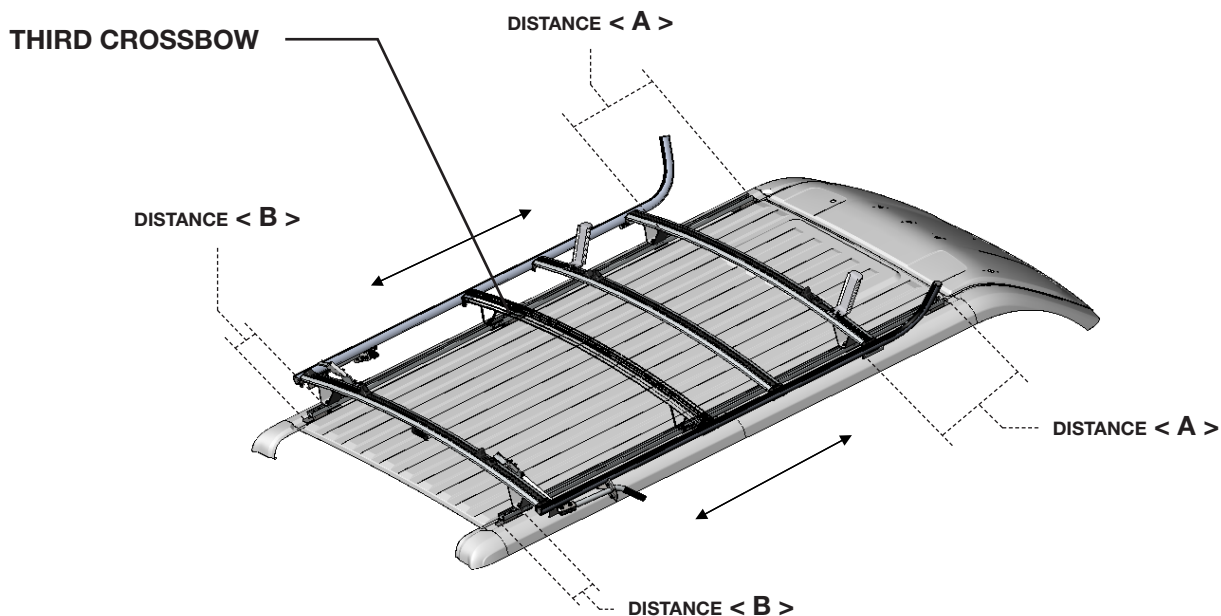


**2.2.2** While making sure the crossbows are parallel to each other, slide the rack to the appropriate position, then attach all the “V” feet to the mounting tracks.

**NOTE:**

- If you have a third crossbow, center the third crossbow between the front and rear crossbows.
- Use the third crossbow install faster kit for the third crossbow feet installation.

DISTANCE < FOOT TO END OF TRACK >

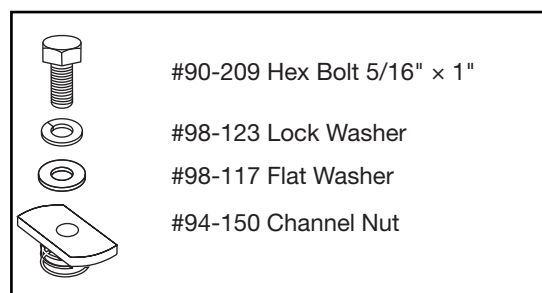


#### TOOLS

- ☐ Ratchet
- ☐ 1/2" Socket
- ☐ Tape Measure

#### FASTENERS USED

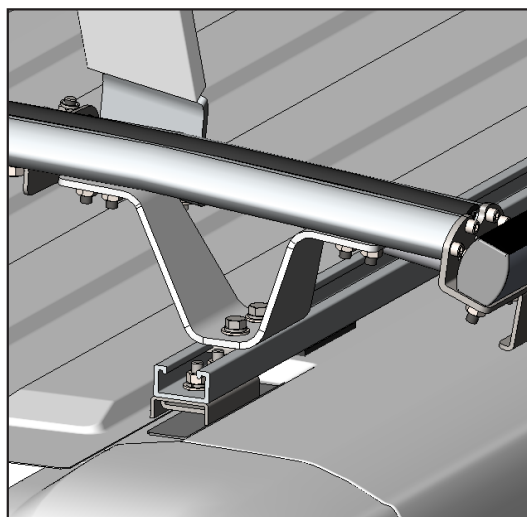
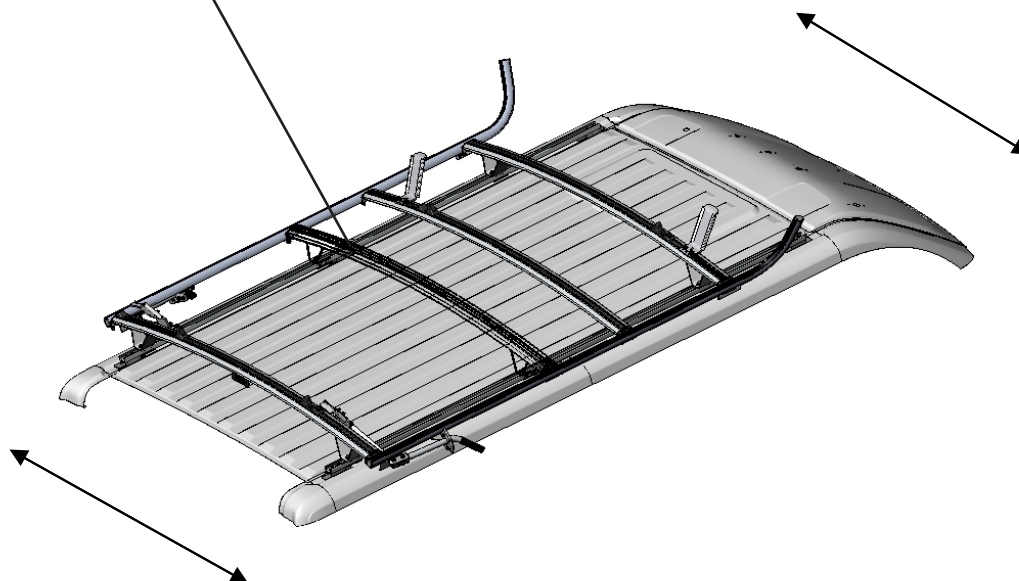
8x



**2.2.3** Center the crossbows on the vehicle, then tighten all the “V” feet to the crossbows.

**NOTE:** If you have a third crossbow, center the third crossbow between the front and rear crossbows.

**THIRD CROSSBOW**



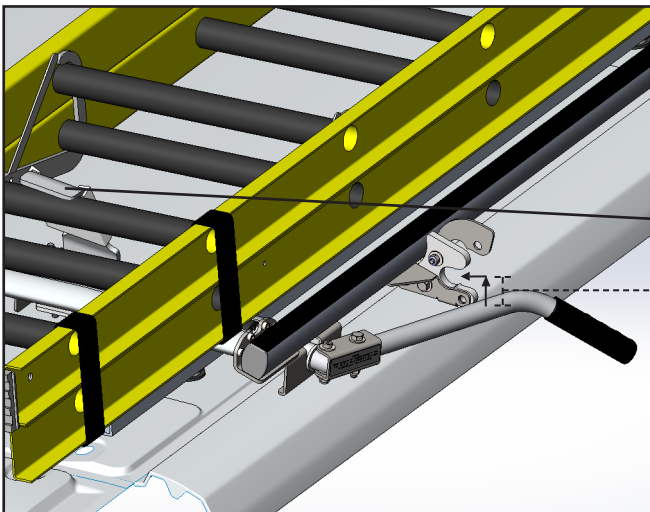
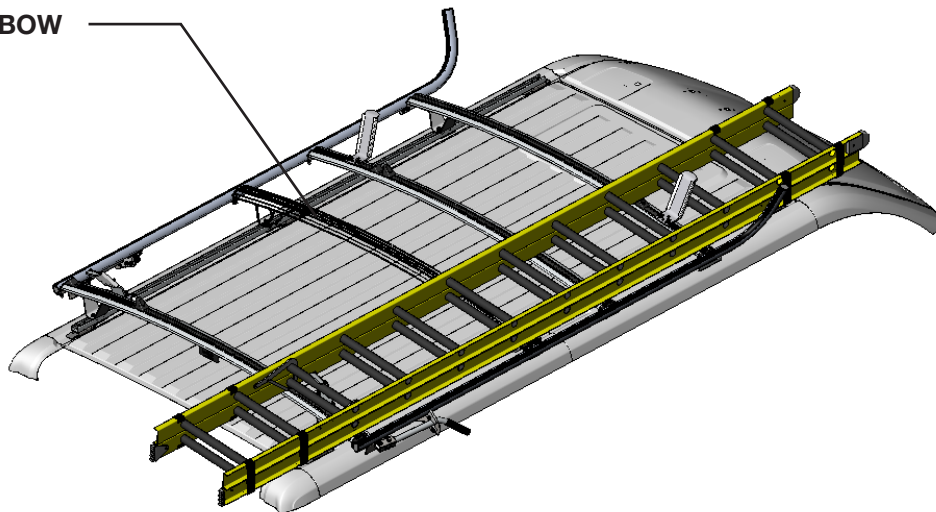
**TOOLS**

- Ratchet
- 1/2" Socket

## 2.2.4 Ladder Rack adjustment for extension ladder.

**NOTE:** The ladder cannot extend beyond the rear bumper of the vehicle.

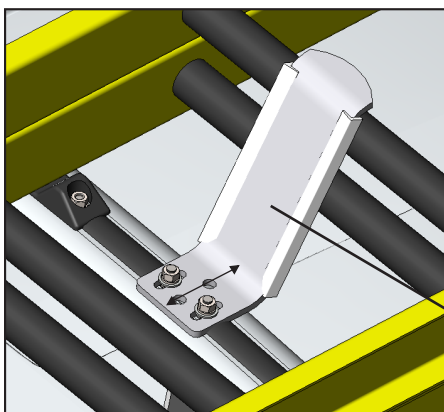
### THIRD CROSSBOW



When the rear hook touches the ladder, the handle should be 1" below the ladder clamp hasp.

REAR HOOK

1"



Now adjust the front hook to be snug against the ladder rung and tighten the bolts on the front crossbow.

### TOOLS

- ☐ Cordless Impact
- ☐ 1/2" Socket

FRONT HOOK

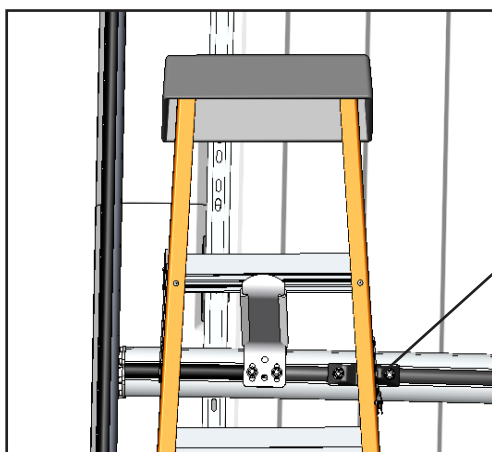
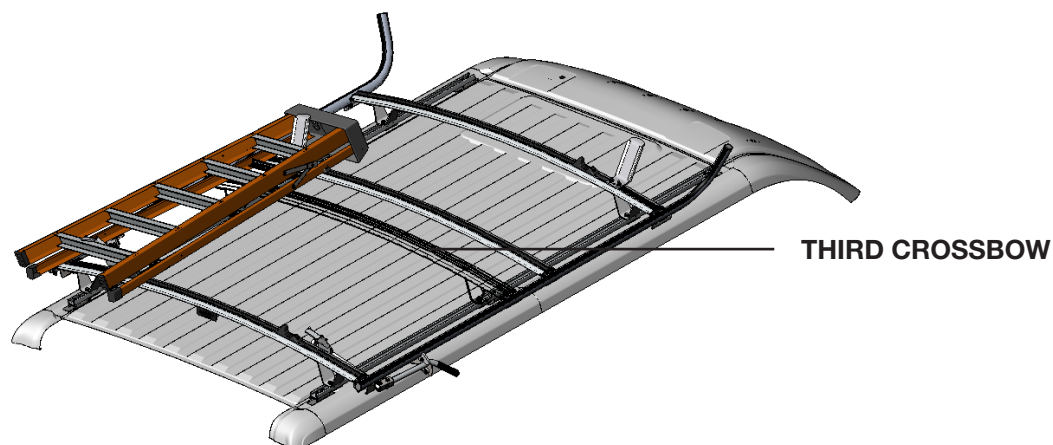
### 2.2.5 Ladder Rack adjustment for stepladder.

**NOTE:**

- The same procedure applies to the hook located on the adjustable front crossbow. The position of the adjustable front crossbow must be adjusted according to the length of the stepladder.
- The ladder cannot extend beyond the rear bumper of the vehicle.

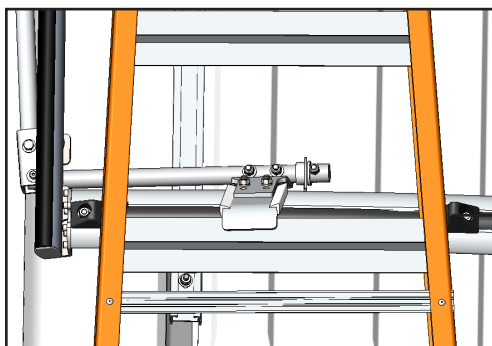
**IMPORTANT:**

- After installation is complete, cut the track plug underneath the crossbows to fill all the unused space.
- Place the ladder rack warning label on a visible area, recommended on a partition.



**NOTE:** Make sure all the bolts are tightened after adjusting.

Be sure that the extrusion of the step ladder is on the ladder side support.



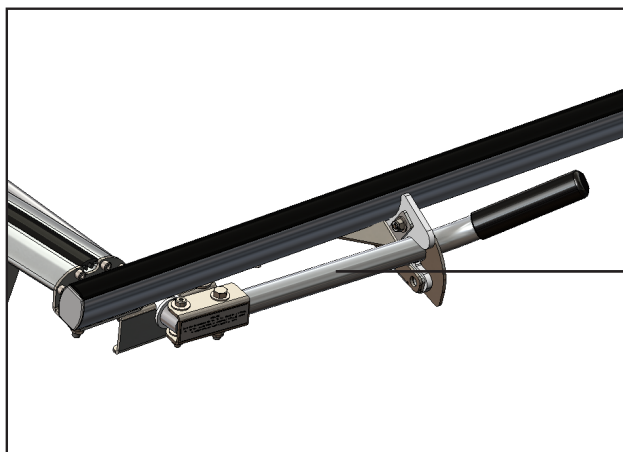
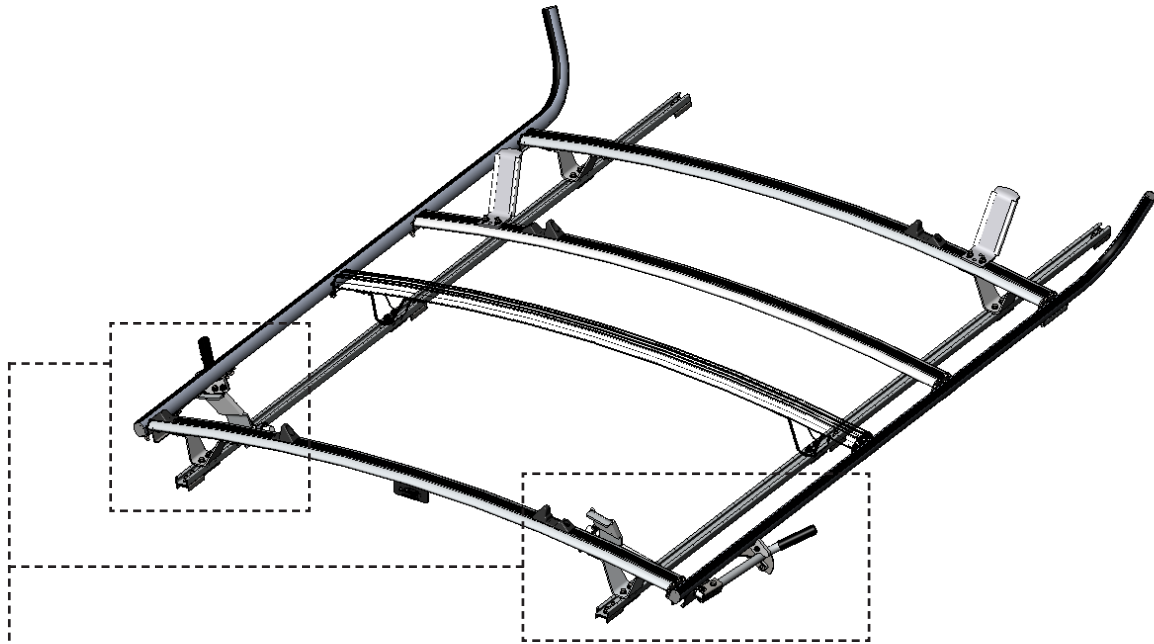
The inner ladder side support must be adjusted according to the width of the step ladder.



# PHASE 2 – INSTALLATION

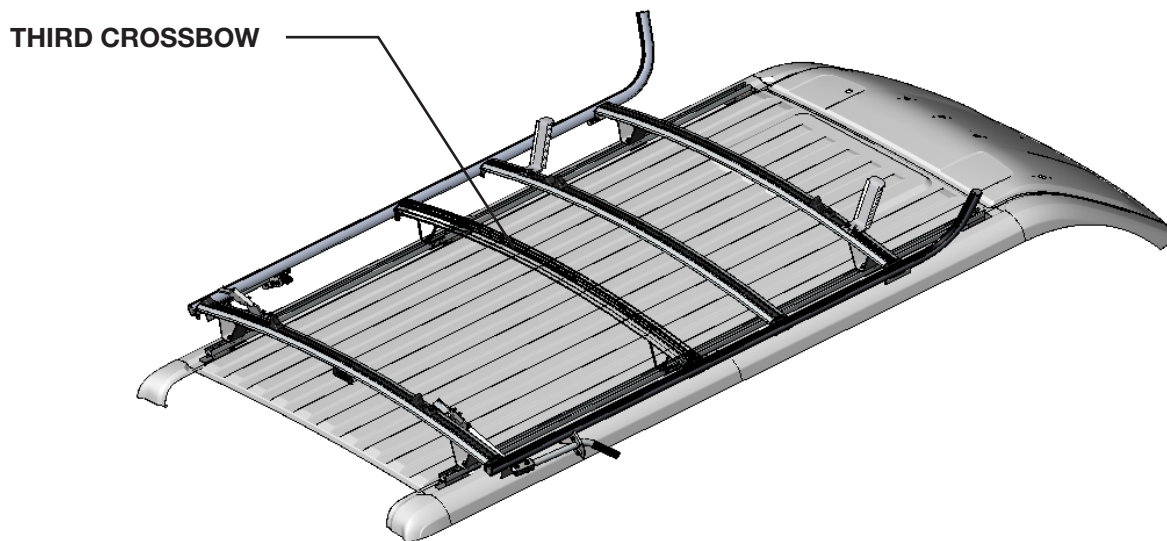
## 2.3 NOTE

**2.3.1** If the handle is interfering with the door or roof of the vehicle, the handle can be installed in an alternate position.



If the handle is interfering with the door or roof of the vehicle, disassemble the handle, then assemble it in an alternate position as shown.

Handle



**“You have successfully installed your  
Ladder Rack**

**Thank you for doing business with us.”**

For any feedback or suggestions you may have, please contact: [cs@rangerdesign.com](mailto:cs@rangerdesign.com)



# INSTALLATION GUIDE



## 15-U2575 THIRD CROSSBOW

Promaster and Nissan NV 140" Wheelbase Low Roof ( Aluminum )



# LADDER RACK WITH THIRD CROSSBOW



## Combination Ladder Rack



## Double Clamp Ladder Rack



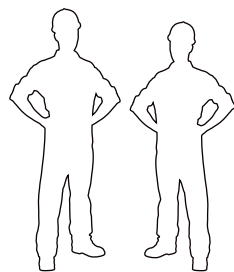
# QUICK START GUIDE

## Phase 1 - Assembly

❑ 1.1 Setup.....	4 - 5
❑ 1.2 Third Crossbow Assembly.....	6 - 7

# REQUIRED ITEMS

**NOTE:** Use Sawhorses if possible, or use the box as a flat protective surface on the ground or table.



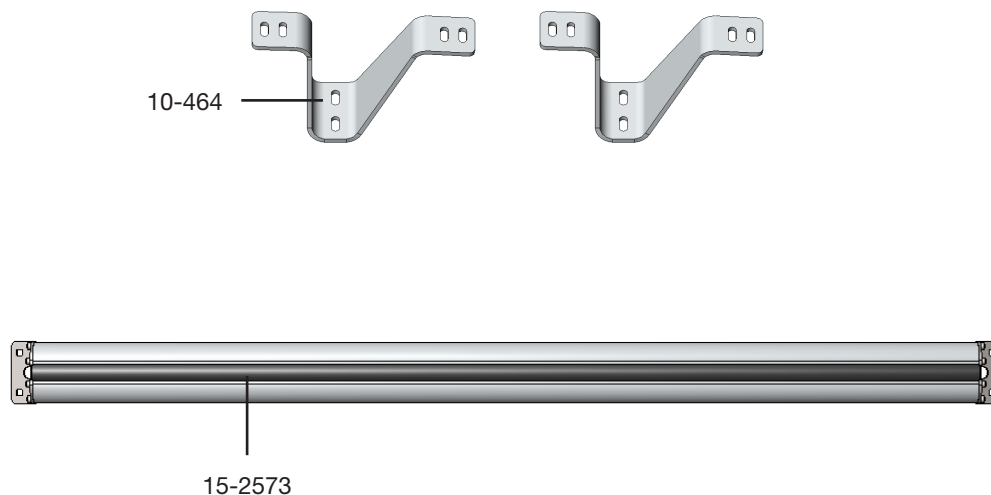
**2  
PERSONS**

- ❑ Sawhorse ( Optional )
- ❑ Box

# PHASE 1 – ASSEMBLY

## 1.1 SETUP

1.1.1 Unpack components; compare with the bill of materials.



1.1.2 Verify all parts are present.

### BILL OF MATERIALS

Item No.	Description	Qty.
10-464	"V" Foot	2
15-2573	Third Crossbow	1
94-1016	Assembly Fastener Kit	1
96-1021	Install Fastener Kit	1


1.1.3 Fastener kits.

94-1016 Fastener Kit




Fastener Assembly

- 12x




# 90-491

Carriage Bolt  
5/16"-18 x 1"  
SS304
- 12x




# 94-105

Hex Nut  
5/16"-18  
SS316wax
- 12x



# 98-117

Flat Washer  
5/16", O.D 3/4"  
SS18-8
- 12x



# 98-123

Lock Washer  
Regular 5/16"  
SS304

8x FOR THIRD CROSSBOW ASSEMBLY

- 

#90-491 Carriage Bolt 5/16" x 1"
- 

#98-117 Flat Washer
- 

#98-123 Lock Washer
- 

#94-105 Hex Nut

4x FOR THIRD CROSSBOW TO LADDER RACK

- 

#90-491 Carriage Bolt 5/16" x 1"
- 

#98-117 Flat Washer
- 

#98-123 Lock Washer
- 

#94-105 Hex Nut

96-1021 Fastener Kit



Fastener Assembly

- 4x



# 90-209

Hex Bolt  
5/16"-18 x 1"  
SS304
- 4x



# 94-150

Channel Nut  
5/16"
- 4x



# 98-117


Flat Washer  
5/16", OD 3/4"  
SS18-8
- 4x





# 98-123


Lock Washer  
5/16"  
SS304

4x FOR FEET TO MOUNTING TRACK

- 

#90-209 Hex Bolt 5/16" x 1"
- 

#98-123 Lock Washer
- 

#98-117 Flat Washer
- 

#94-150 Channel Nut

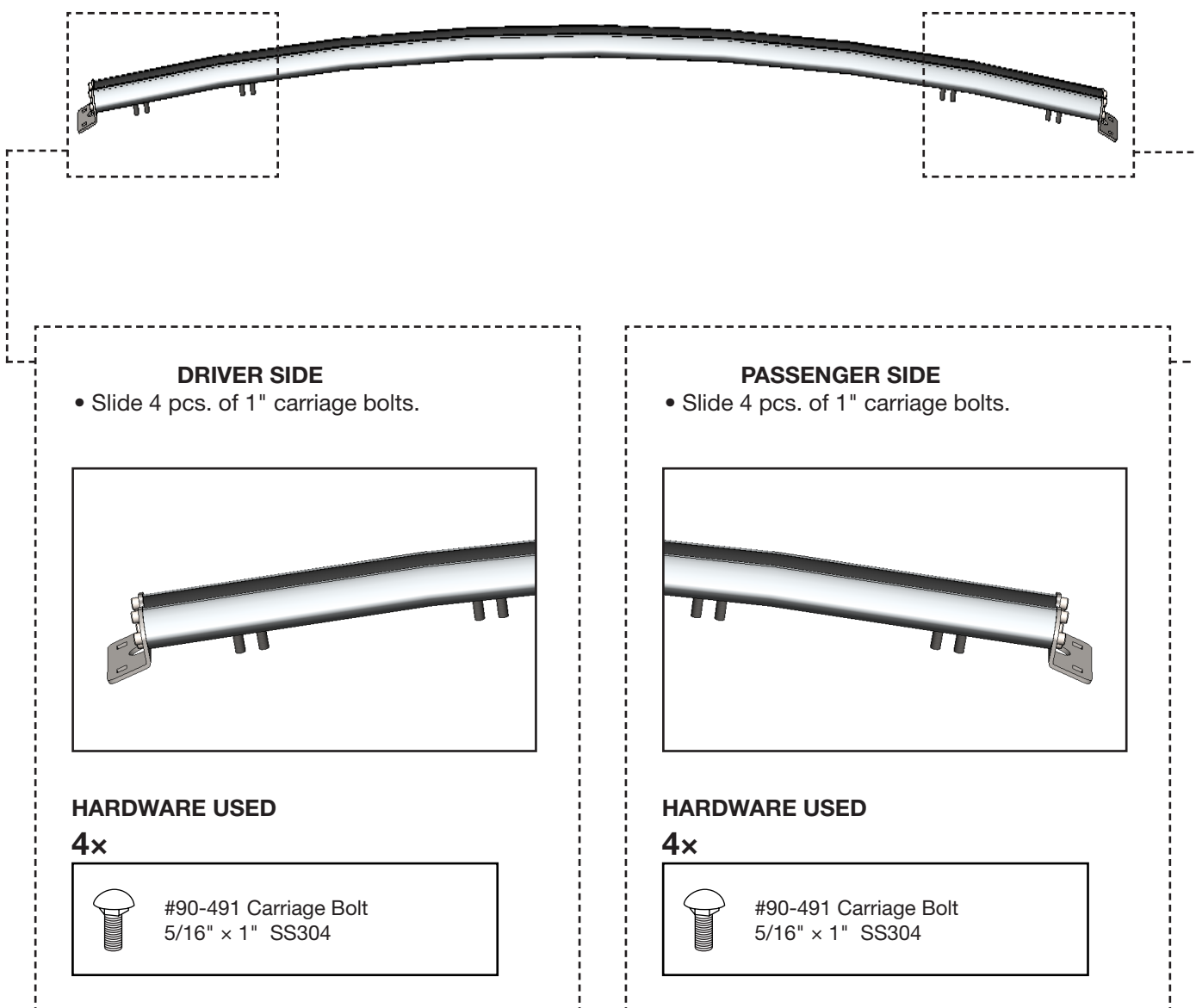
# PHASE 1 – ASSEMBLY

## 1.2 THIRD CROSSBOW ASSEMBLY

**1.2.1** Slide carriage bolts on the bottom face of the crossbow.

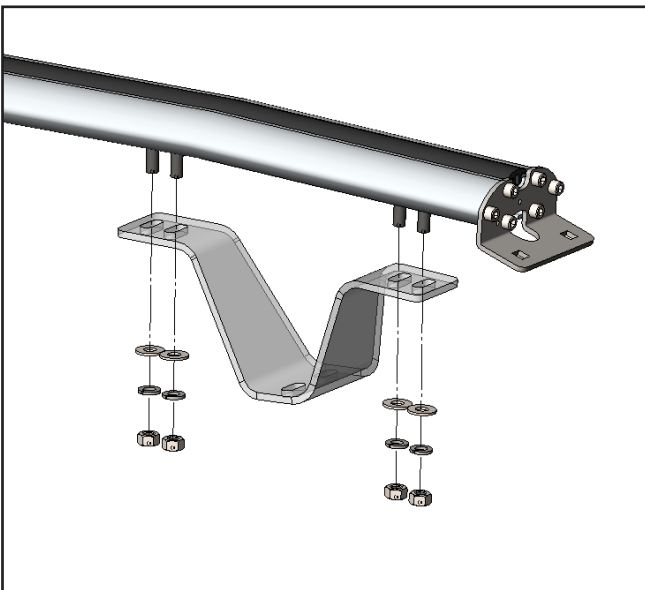
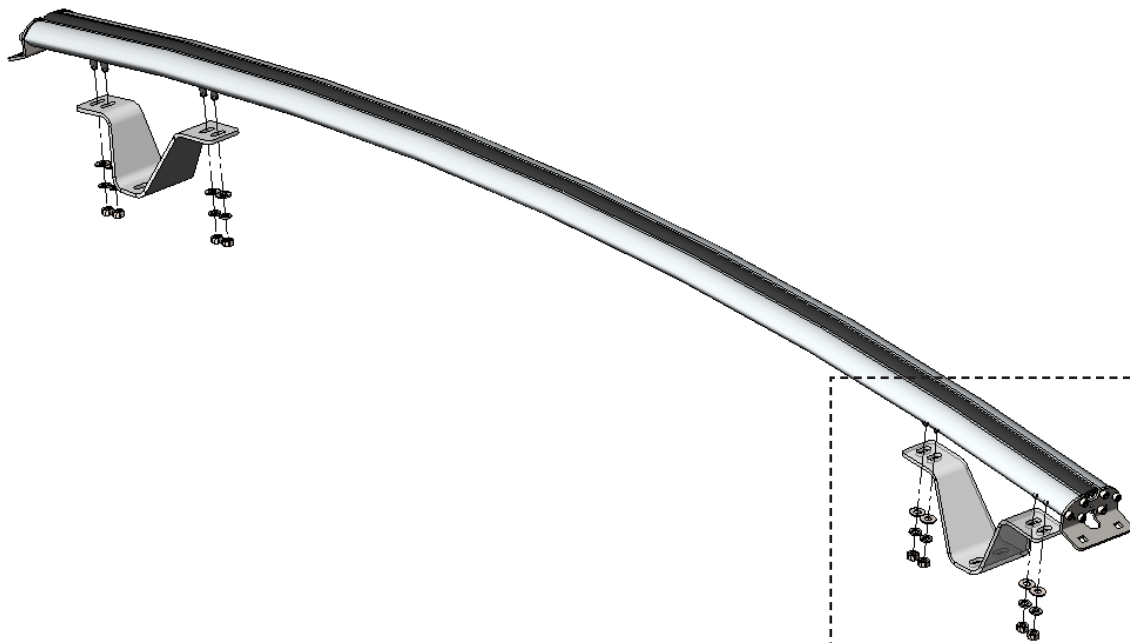
**NOTE:** The track plug must be removed from the underneath of the crossbow, and reinstalled after the feet have been installed in the final position.

**TIPS:** Use tape to keep the bolts from sliding off.





### 1.2.2 Install the feet on the crossbow.



#### HARDWARE USED

**8x** HAND-TIGHTEN THE NUTS.



Carriage bolts are already on the crossbows.



#98-117 Flat Washer



#98-123 Lock Washer



#94-105 Hex Nut



**“You have successfully assembled your  
Third Crossbow**

**Your third crossbow is now ready to be incorporated into the ladder rack  
installation, please return to the install guide to complete installing your  
ladder rack.”**

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