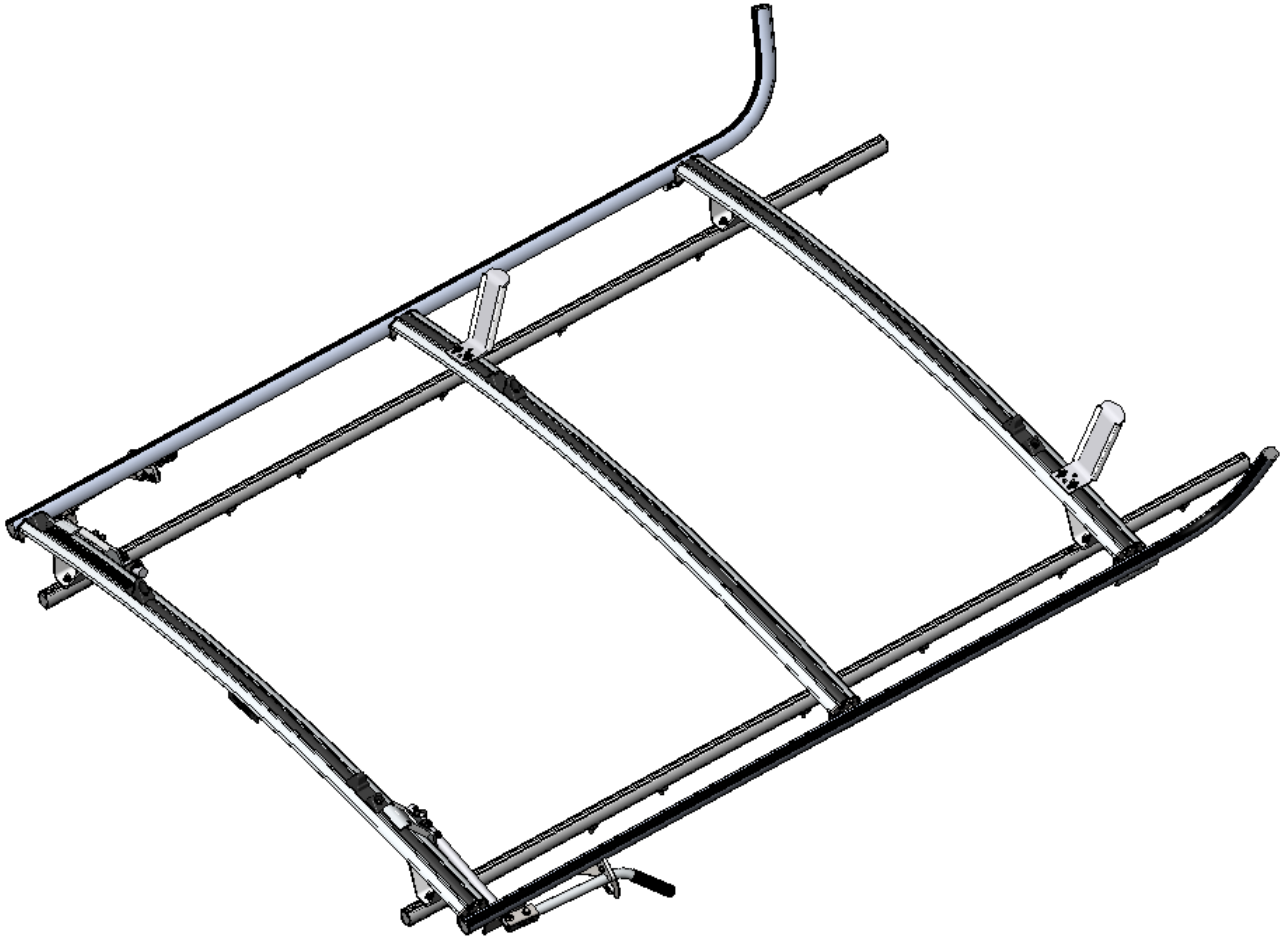


INSTALLATION GUIDE



1525-DH Combination Ladder Rack

Sprinter Universal Wheelbase (Aluminum)



QUICK START GUIDE

Phase 1 - Assembly

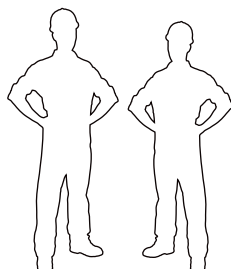
❑ 1.1 Setup.....	3 - 5
❑ 1.2 Ladder Rack Assembly.....	6 - 16

Phase 2 - Installation

❑ 2.1 Mounting Tracks Preparation for Ladder Rack with 3 rd Crossbow.....	17 - 18
❑ 2.2 Mounting Tracks Preparation for Ladder Rack without 3 rd Crossbow.....	19 - 20
❑ 2.3 Mounting Tracks Installation.....	21 - 22
❑ 2.4 Ladder Rack Installation.....	22 - 26
❑ 2.5 Note.....	27

REQUIRED ITEMS

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



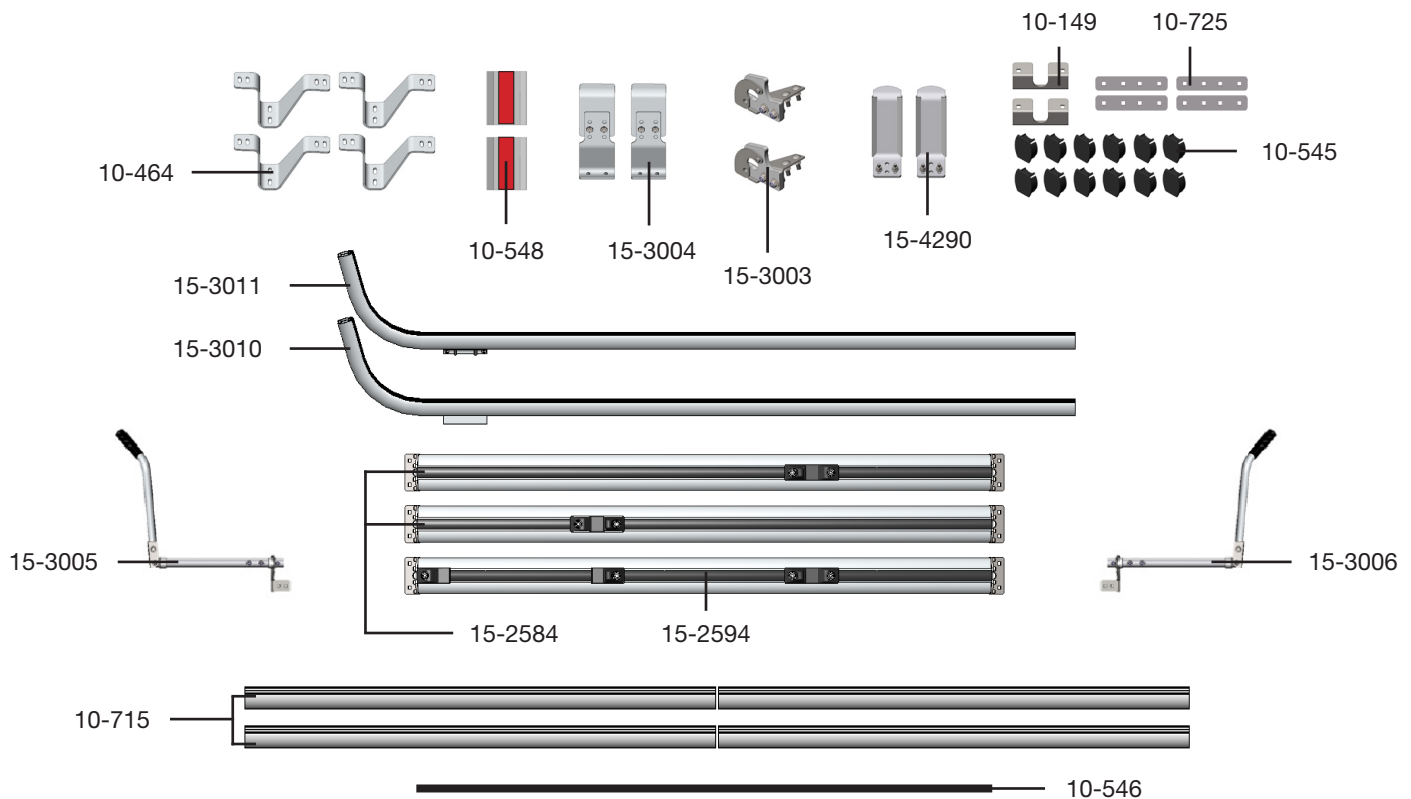
**2
PERSONS**

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

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.

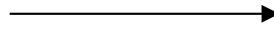
BILL OF MATERIALS

Item No.	Description	Qty.
10-149	Clamp Handle Support	2
10-464	“V” Foot	4
10-545	Ski Plastic Plug	12
10-546	Track Plug Extrusion (QTY in Inches)	48
10-548	Hook Protector (4 - 3/8" L)	2
10-715	Mounting Track	4
10-725	Support Plate	4
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
96-1001	Install Fastener Kit	1

1.1.3 Fastener kits.

94-1009 Fastener Kit			Fastener Assembly
4x		# 90-487 Carriage Bolt 5/16"-18 x 3/4" SS304	4x <div> #90-487 Carriage Bolt 5/16" x 3/4"  #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>
26x		# 90-491 Carriage Bolt 5/16"-18 x 1" SS304	24x <div> #90-491 Carriage Bolt 5/16" x 1"  #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>
34x		# 94-105 Hex Nut 5/16"-18 SS316wax	
2x		# 98-160 Spacer SS18-8	4x <div> #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>
34x		# 98-117 Flat Washer 5/16", O.D 3/4" SS18-8	
34x		# 98-123 Lock Washer Regular 5/16" SS304	2x <div> #90-491 Carriage Bolt 5/16" x 1"  #98-160 Spacer  #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>

96-1001 Fastener Kit



Fastener Assembly

8x



90-491

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

16x



90-495

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

8x



94-105

Hex Nut
5/16"-18
SS316wax

16x



94-116

Serrated Nut
5/16"-18
ZINC

16x



98-109

Flat Washer
SAE 3/8"
SS304

8x



98-117

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

8x



98-123

Lock Washer
5/16"
SS304

16x



98-149

Spacer
0.290" ID x 1.375" OD x 0.125" L
NEOPRENE

8x



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



#98-117 Flat Washer



#98-123 Lock Washer



#94-105 Hex Nut

16x

RANGER DESIGN TRACKS ONLY



#90-495 Carriage Bolt 5/16" x 1-1/4"



#98-109 Flat Washer



#98-149 Neoprene Spacer



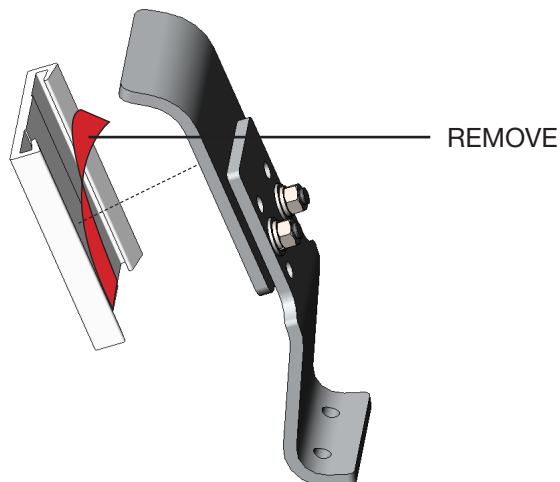
#94-116 Serrated Nut

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.

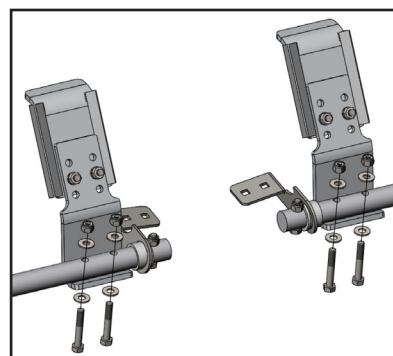
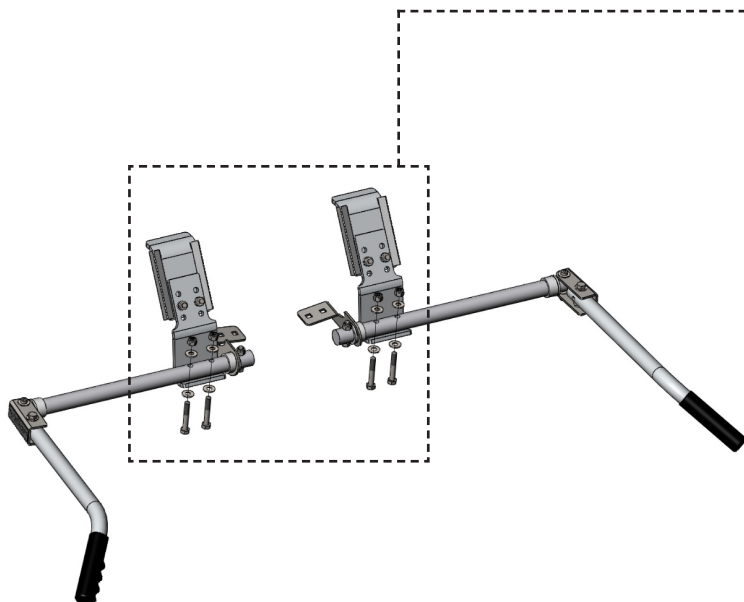
2x



TOOLS

- ☐ Knife

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

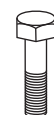


TOOLS

- ☐ 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.

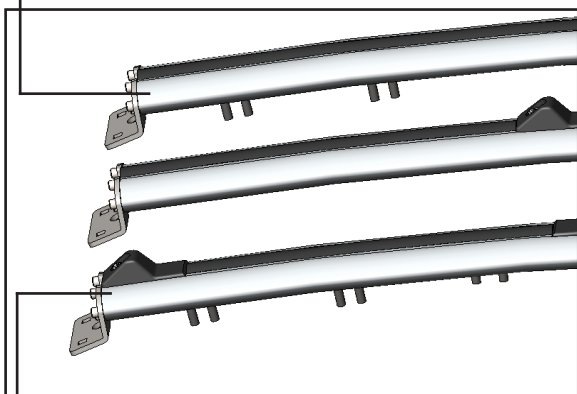
TIPS: Use tape to keep the bolts from sliding off.



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

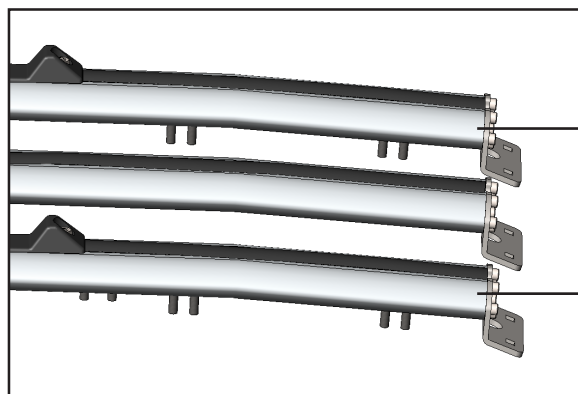


#90-491 Hex Bolt
5/16" x 1" SS304

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

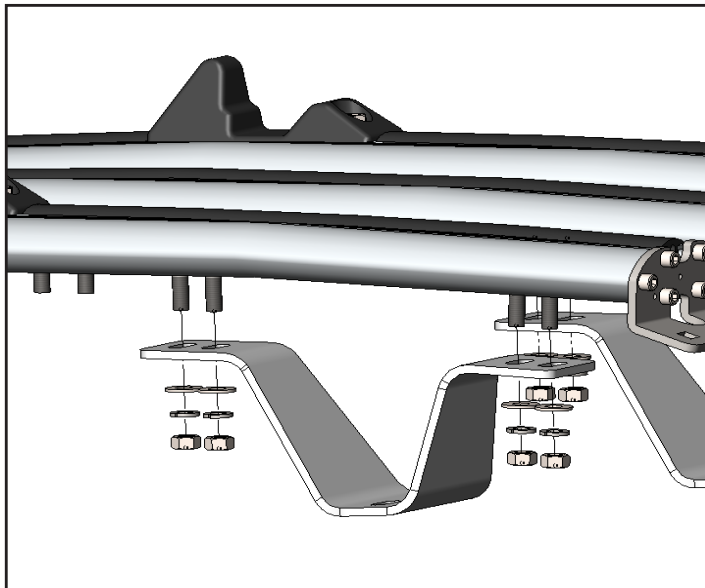
8x



#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

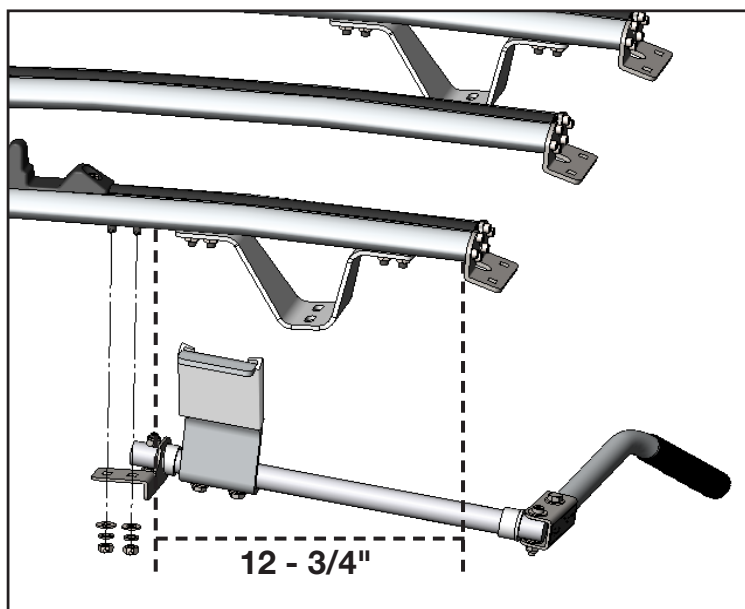
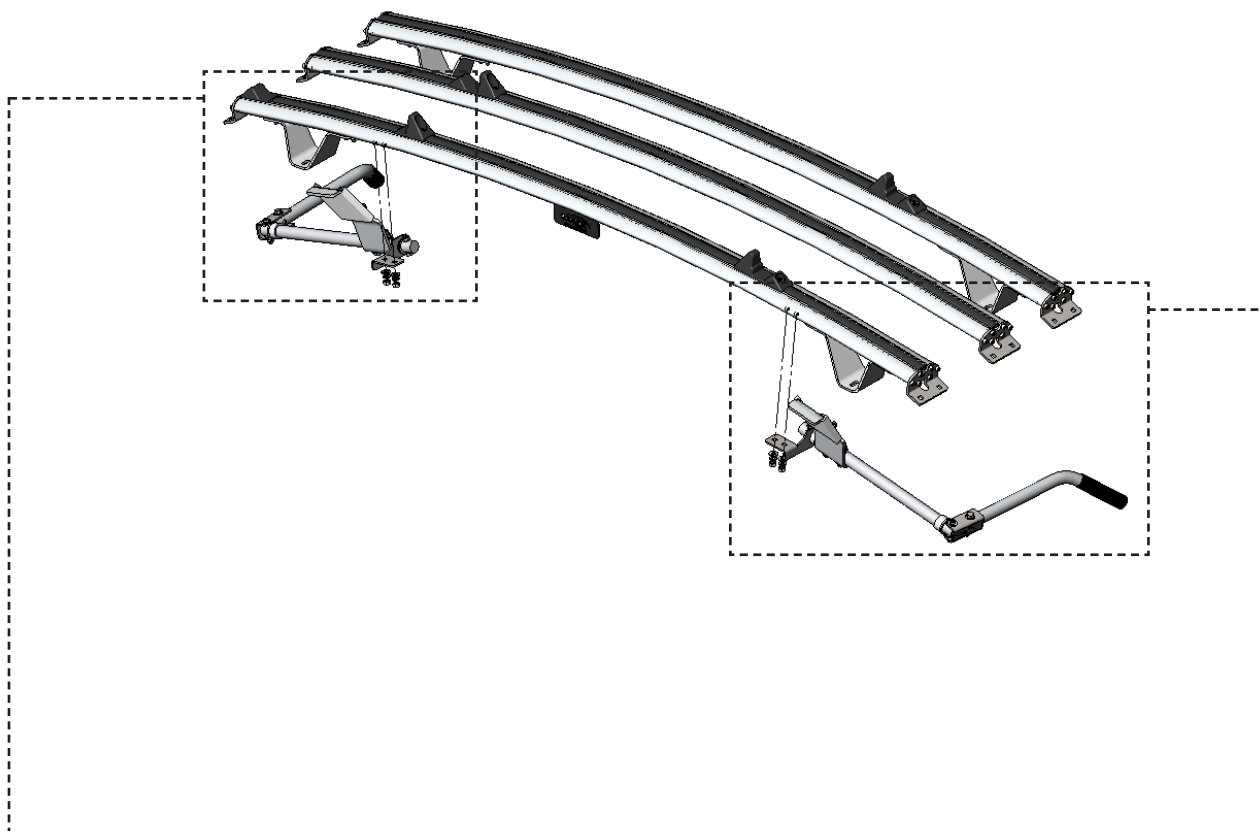


#98-123 Lock Washer



#94-105 Hex Nut

1.2.5 Fasten the left and right ladder clamp assemblies to the Rear Crossbow.



TOOLS

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> Cordless Impact | <input type="checkbox"/> 1/2" Socket |
| <input type="checkbox"/> Tape Measure | <input type="checkbox"/> Marker |

HARDWARE USED

4x



Carriage bolts are already on the crossbows.



#98-117 Flat Washer

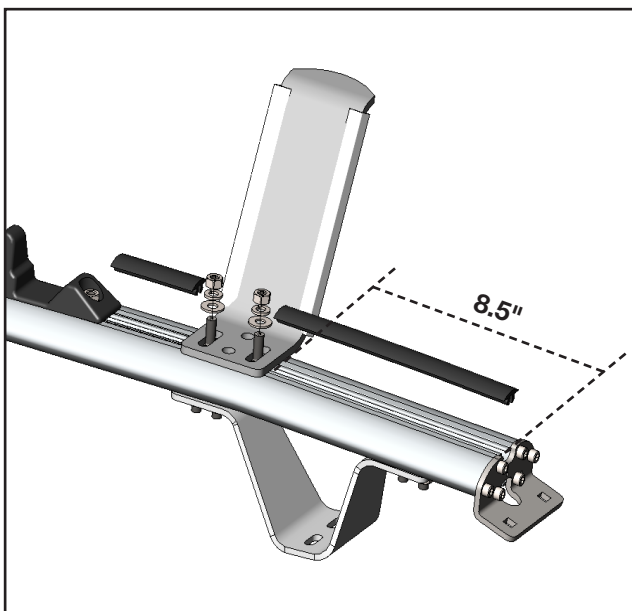
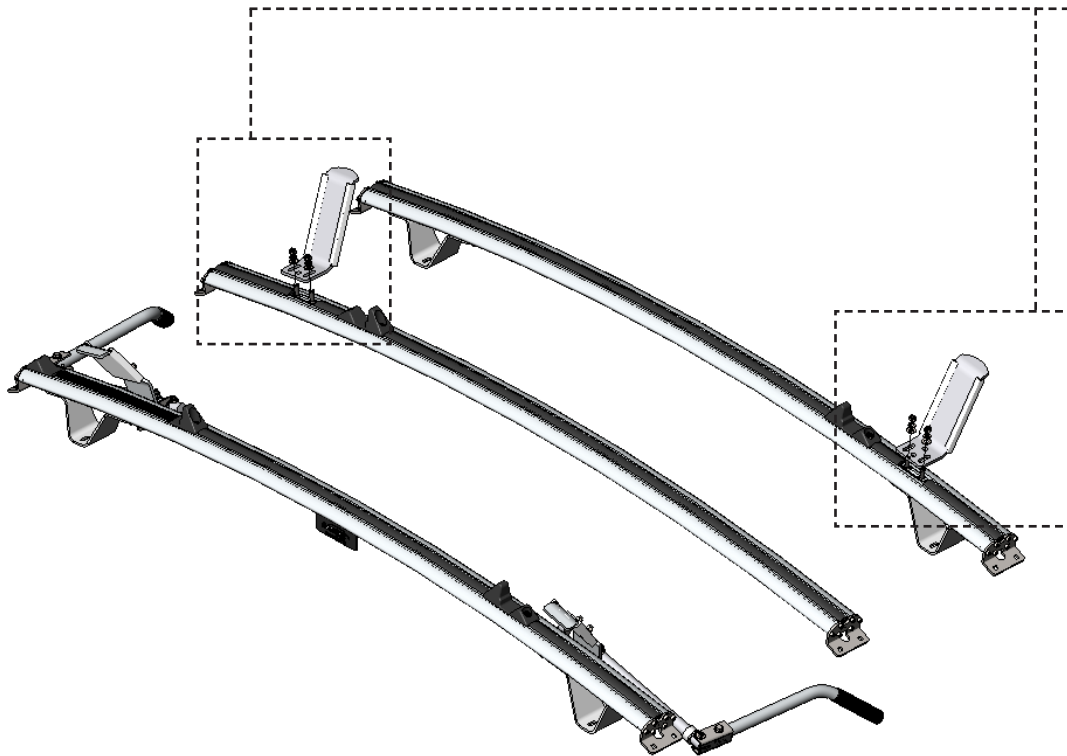


#98-123 Lock Washer



#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

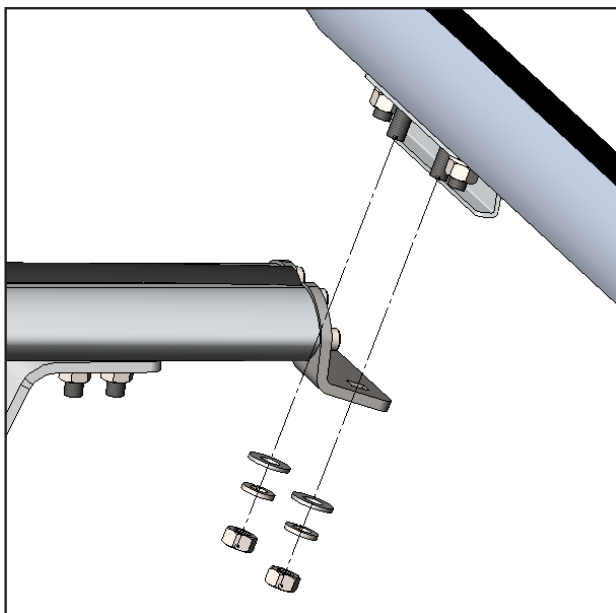
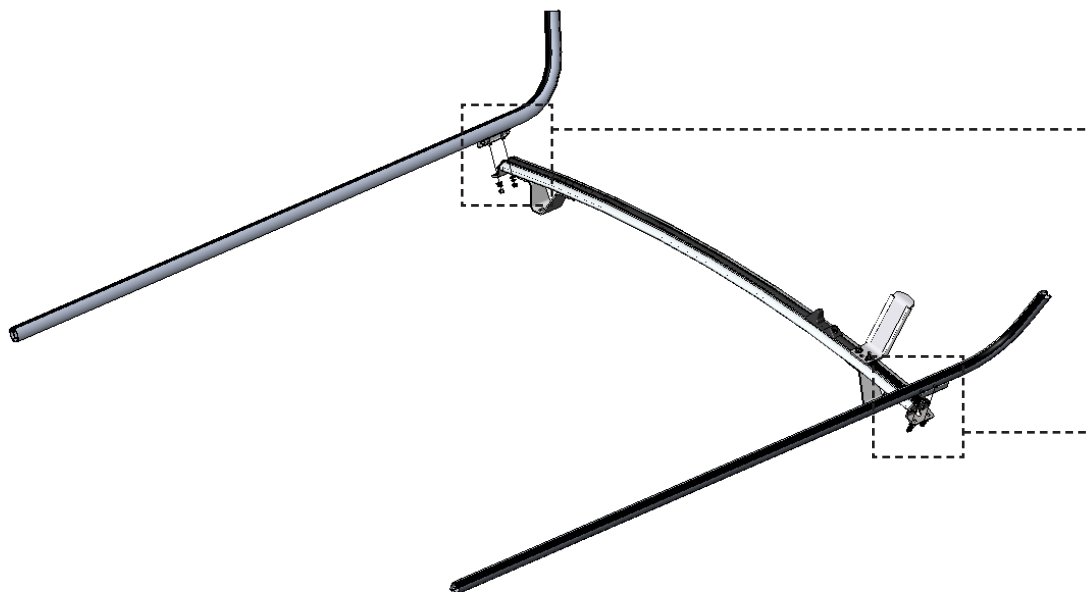
- ☐ Marker
- ☐ Cutter

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

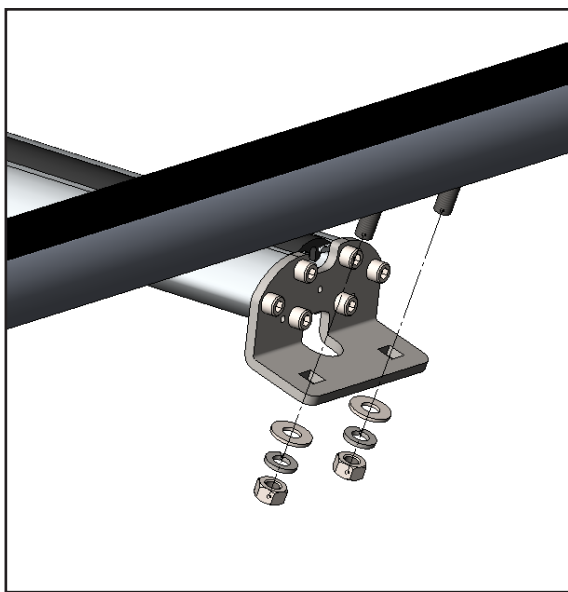
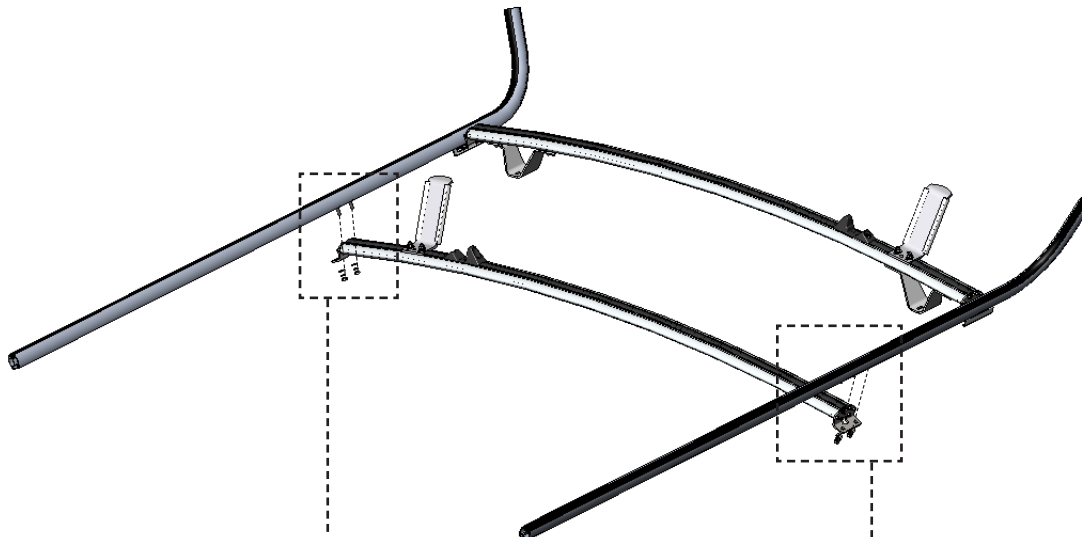


#98-123 Lock Washer



#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

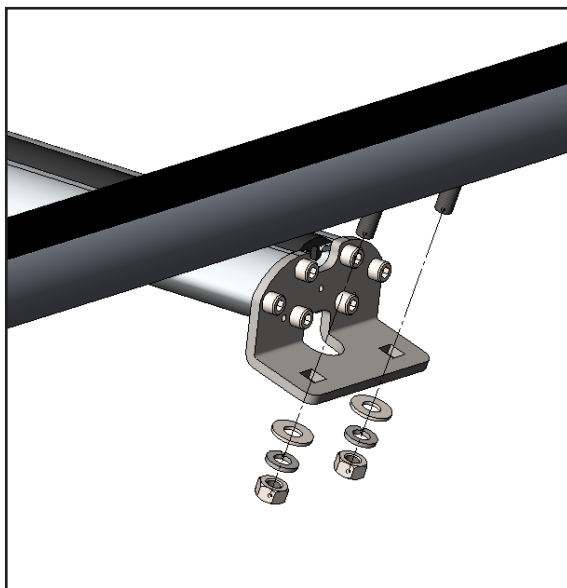
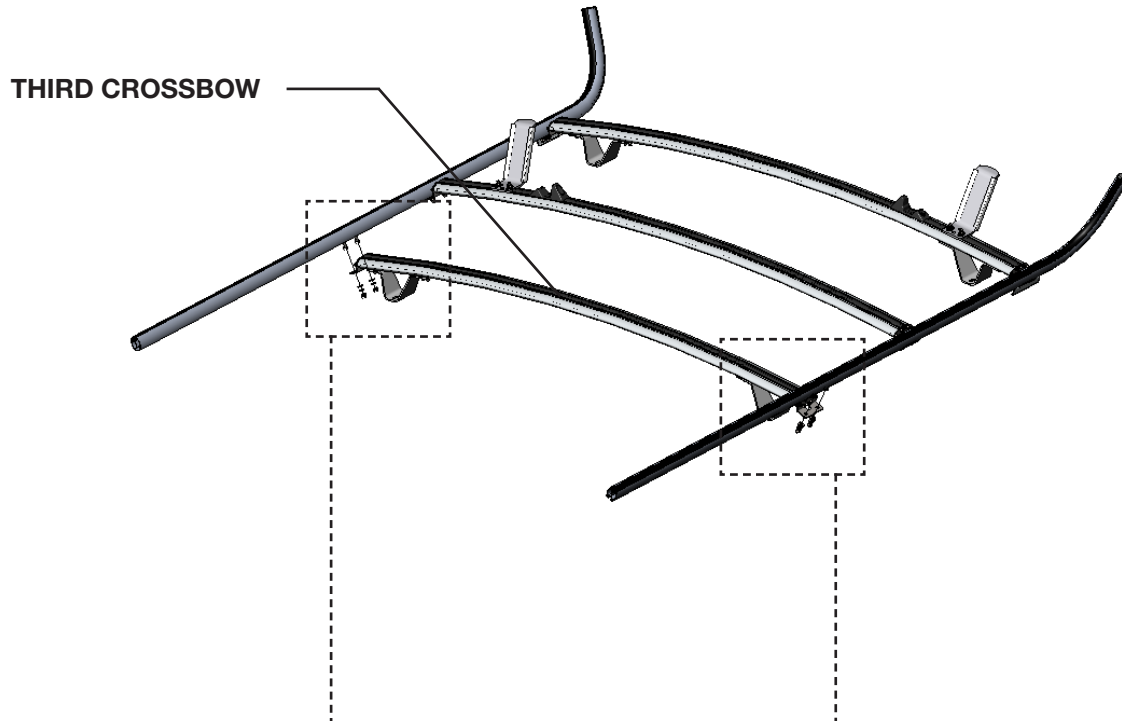


#94-105 Hex Nut

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.

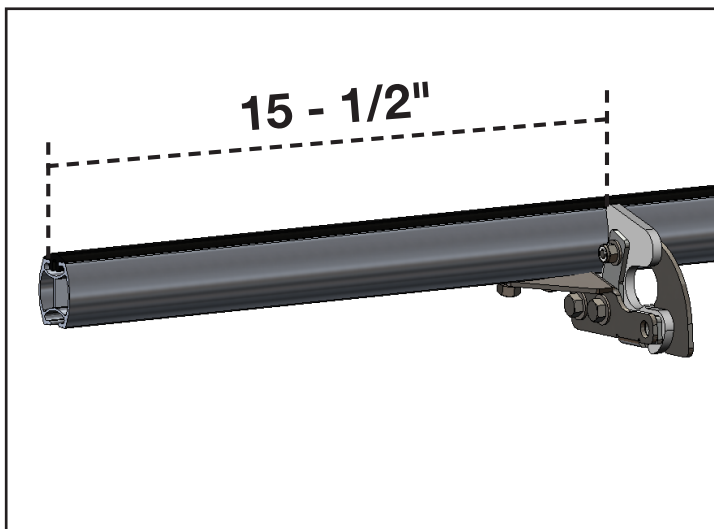
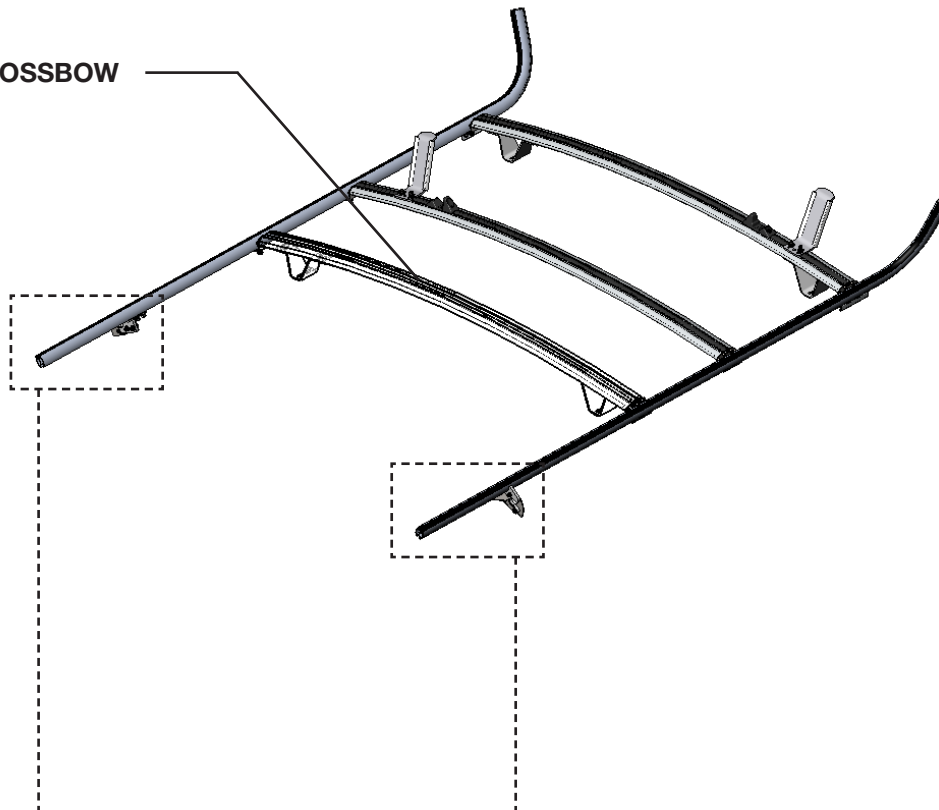
HARDWARE USED

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



TOOLS

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

HARDWARE USED

4x HARDWARE IS PRE-ASSEMBLED.



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



#98-117 Flat Washer

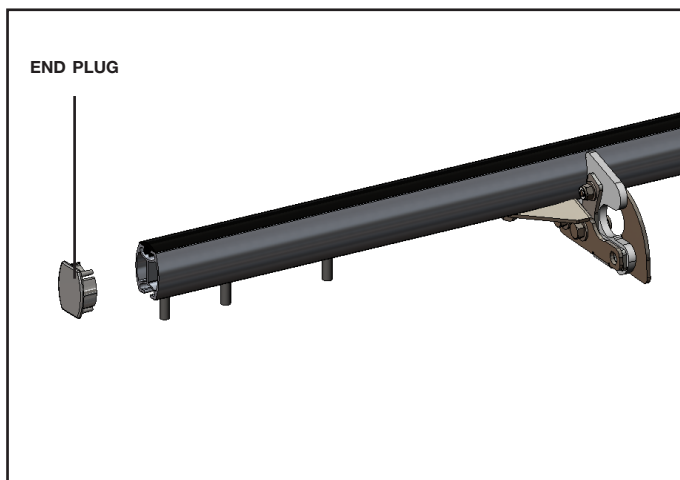
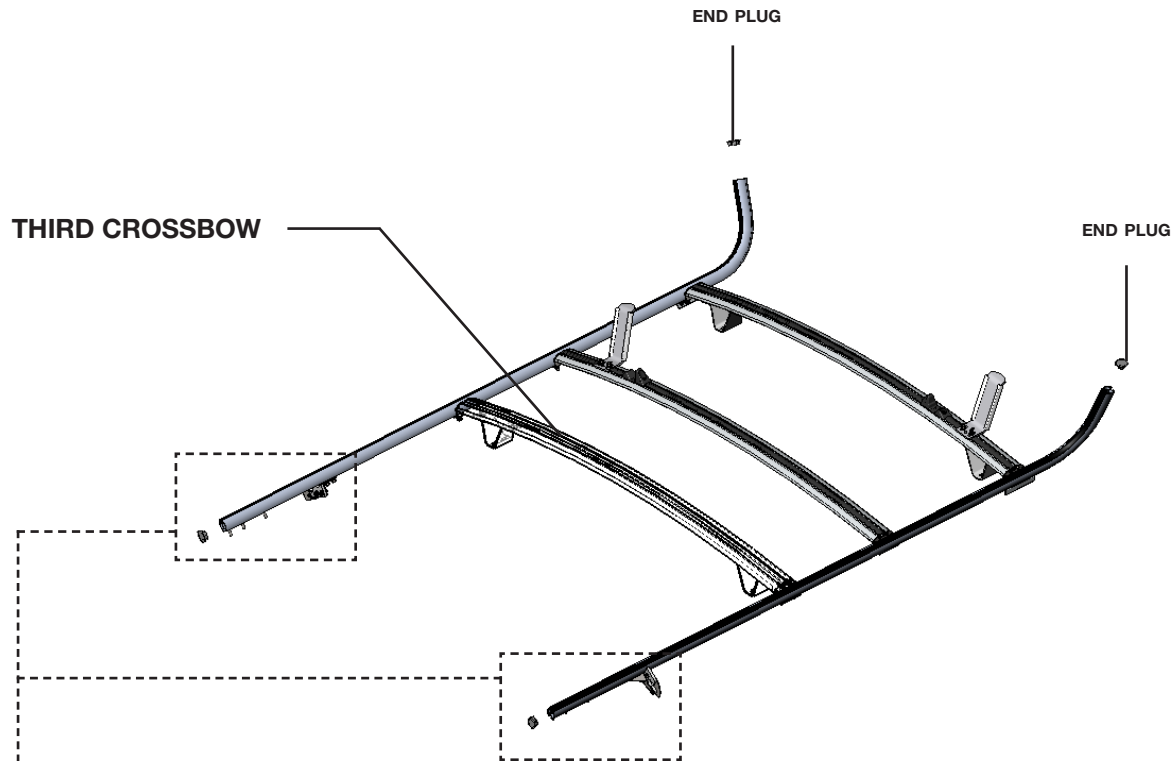


#98-123 Lock Washer



#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.



TOOLS

□ Mallet

HARDWARE USED

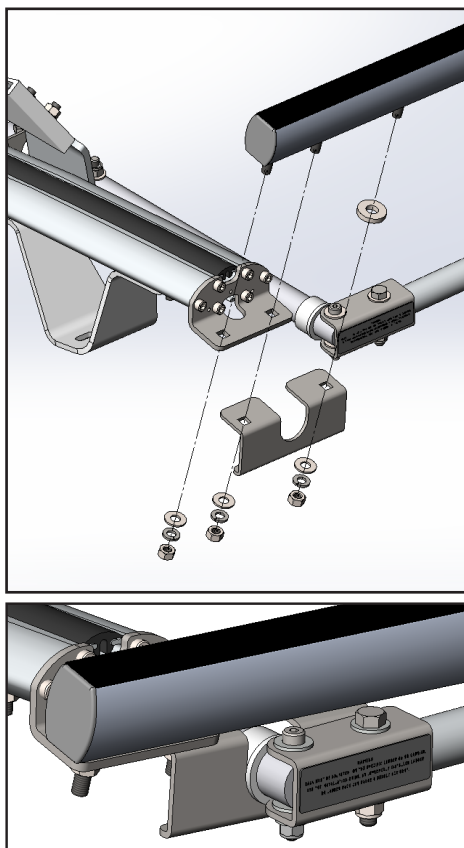
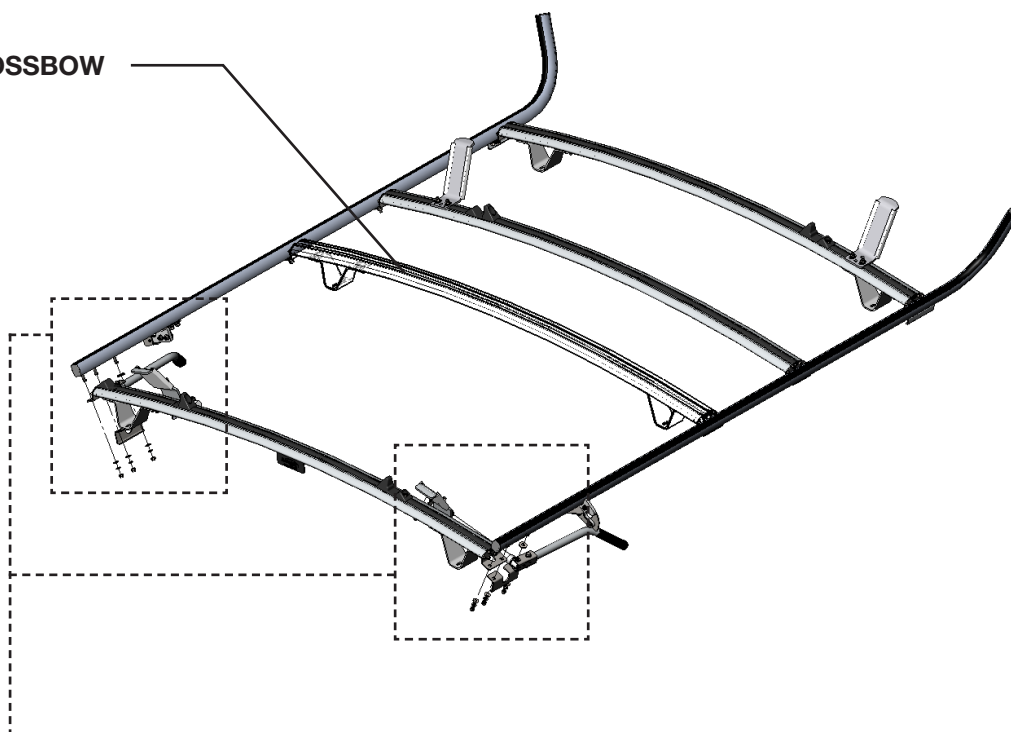
6x



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

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.

THIRD 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

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

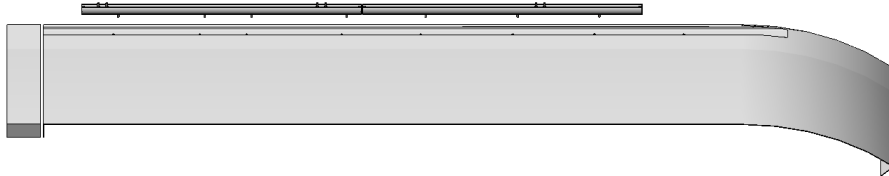
2.1 MOUNTING TRACKS PREPARATION FOR LADDER RACK WITH 3RD CROSSBOW

NOTE: This mounting preparation is for ladder rack with 3RD crossbow only.

2.1.1 Mounting tracks preparation for ladder rack with 3rd crossbow.

Ranger Design Tracks

Regular



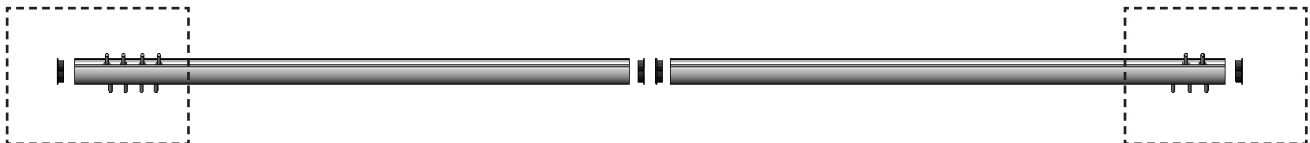
2x

Slide bolts on top and bottom side of the mounting tracks, then attach the end caps on both ends of the mounting tracks.

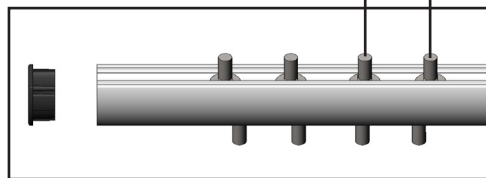
NOTE: Use the bolts in 96-1020 fastener kit of the 3rd crossbow for the top of the rear tracks.

Rear

Front



USE THE BOLTS IN 96-1020 FASTENER KIT OF 3RD CROSSBOW



HARDWARE USED

4x TOP

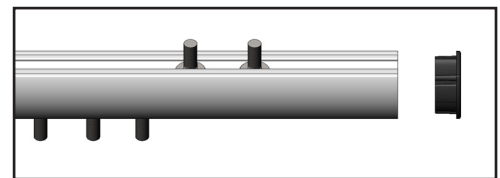


#90-491 Carriage Bolt
5/16" x 1" SS304

4x BOTTOM



#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304



HARDWARE USED

2x TOP



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

3x BOTTOM



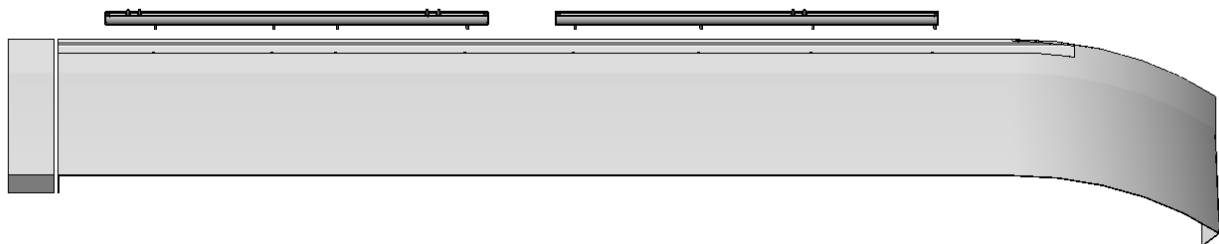
#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

NOTE: This mounting preparation is for ladder rack with 3RD crossbow only.

2.1.2 Mounting tracks preparation for ladder rack with 3rd crossbow.

Ranger Design Tracks

Extended



2x

Slide bolts on top and bottom side of the mounting tracks, then attach the end caps on both ends of the mounting tracks.

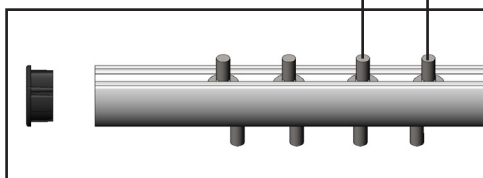
NOTE: Use the bolts in 96-1020 fastener kit of the 3rd crossbow for the top of the rear tracks.

Rear

Front



USE THE BOLTS IN 96-1020 FASTENER KIT OF 3RD CROSSBOW



HARDWARE USED

4x TOP

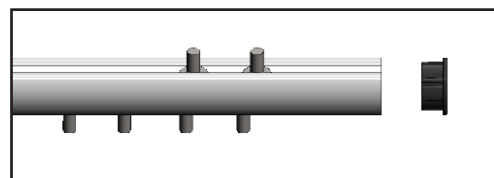


#90-487 Carriage Bolt
5/16" x 3/4" SS304

4x BOTTOM



#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304



HARDWARE USED

2x TOP



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

4x BOTTOM



#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

PHASE 2 – INSTALLATION

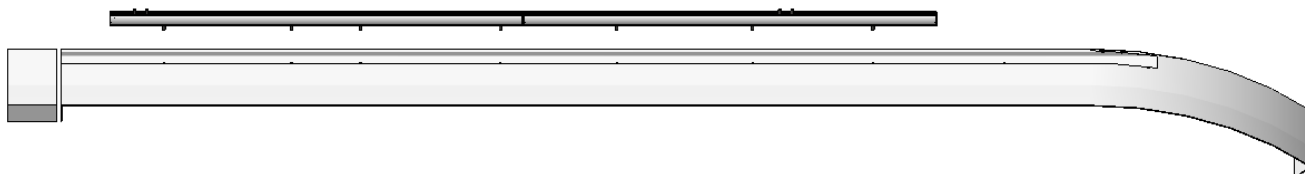
2.2 MOUNTING TRACKS PREPARATION FOR LADDER RACK WITHOUT 3RD CROSSBOW

NOTE: This mounting preparation is for ladder rack without 3rd crossbow ladder rack only.

2.2.1 Mounting tracks preparation for ladder rack without 3rd crossbow.

Ranger Design Tracks

Regular

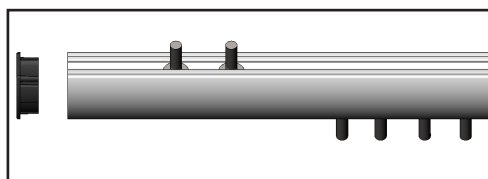
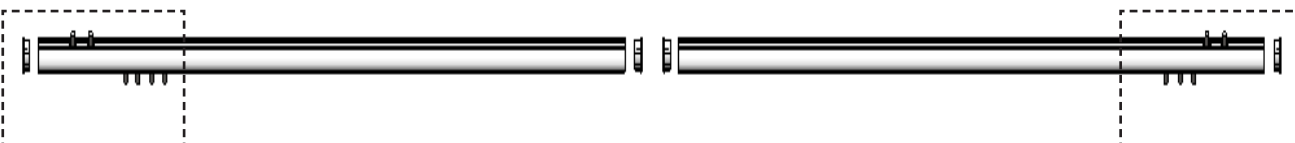


2x

Slide bolts on top and bottom side of the mounting tracks, then attach the end caps on both ends of the mounting tracks.

Rear

Front



HARDWARE USED

2x TOP

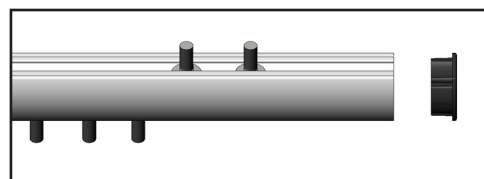


#90-491 Carriage Bolt
5/16" x 1" SS304

4x BOTTOM



#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304



HARDWARE USED

2x TOP



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

3x BOTTOM

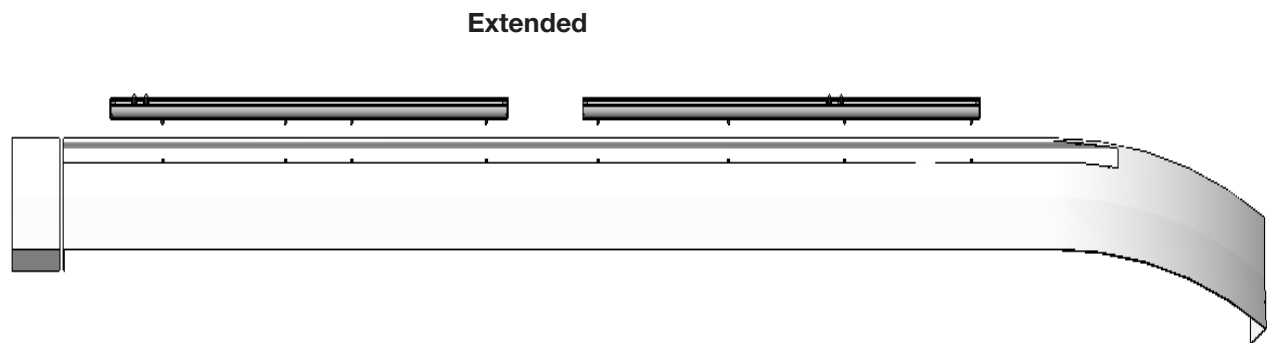


#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

NOTE: This mounting preparation is for ladder rack without 3rd crossbow ladder rack only.

2.2.2 Mounting tracks preparation for ladder rack without 3rd crossbow.

Ranger Design Tracks

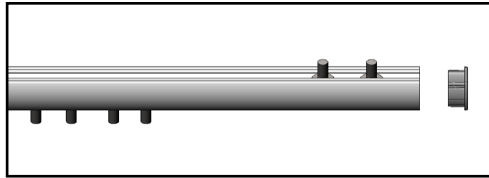
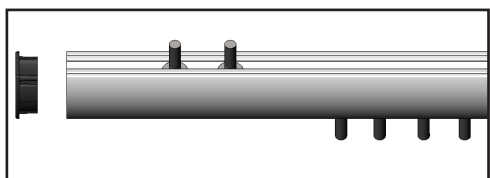


2x

Slide bolts on top and bottom side of the mounting tracks, then attach the end caps on both ends of the mounting tracks.

Rear

Front



HARDWARE USED

2x TOP



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

4x BOTTOM



#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

HARDWARE USED

2x TOP



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

4x BOTTOM



#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

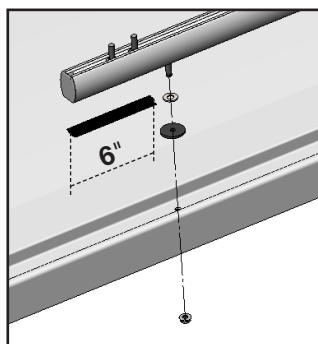
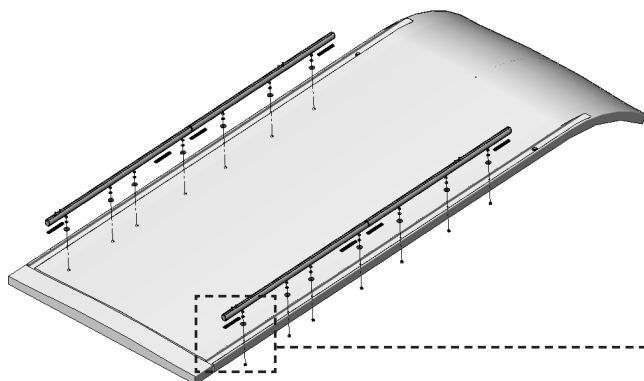
PHASE 2 – INSTALLATION

2.3 MOUNTING TRACKS INSTALLATION

Ranger Design Tracks

- 2.3.1**
- Remove the plugs on the roof holes, then apply a bead of silicone around each hole.
 - Put flat washers and neoprene spacers on the bottom bolts, then cut the plug extrusion into 8 pieces of 6" and attach one piece on both ends of the mounting tracks.
 - Align the bottom bolts to the roof holes, then install the mounting tracks onto the roof.





Regular



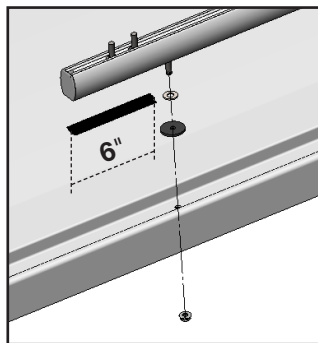
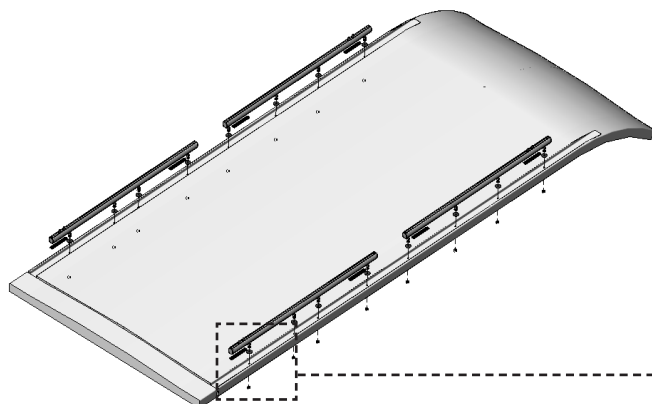
TOOLS

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

14x

-  #90-495 Carriage Bolt 5/16" x 1-1/4"
-  #98-109 Flat Washer
-  #98-149 Neoprene Spacer
-  #94-116 Serrated Nut





Extended



TOOLS

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

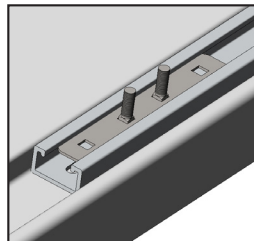
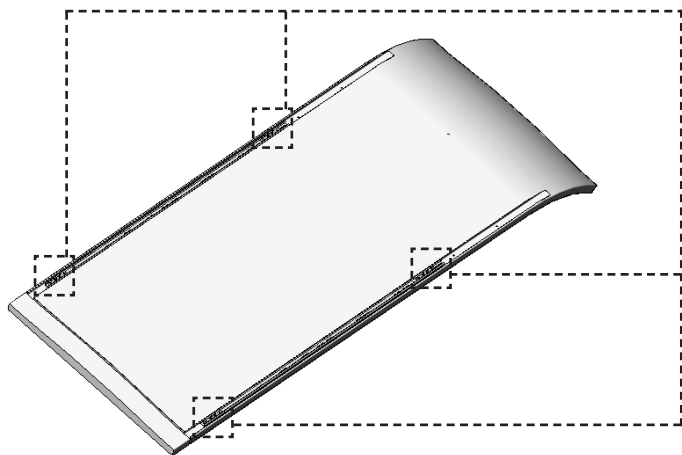
16x

-  #90-495 Carriage Bolt 5/16" x 1-1/4"
-  #98-109 Flat Washer
-  #98-149 Neoprene Spacer
-  #94-116 Serrated Nut

With OEM Tracks

2.3.2 Put bolts on the 2 middle holes of the support plates, then slide the plates on the ends of the OEM mounting tracks.

WARNING: If you have ladder rack 3rd crossbow slide 3 support plates each OEM mounting track.



FASTENERS USED

8x



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

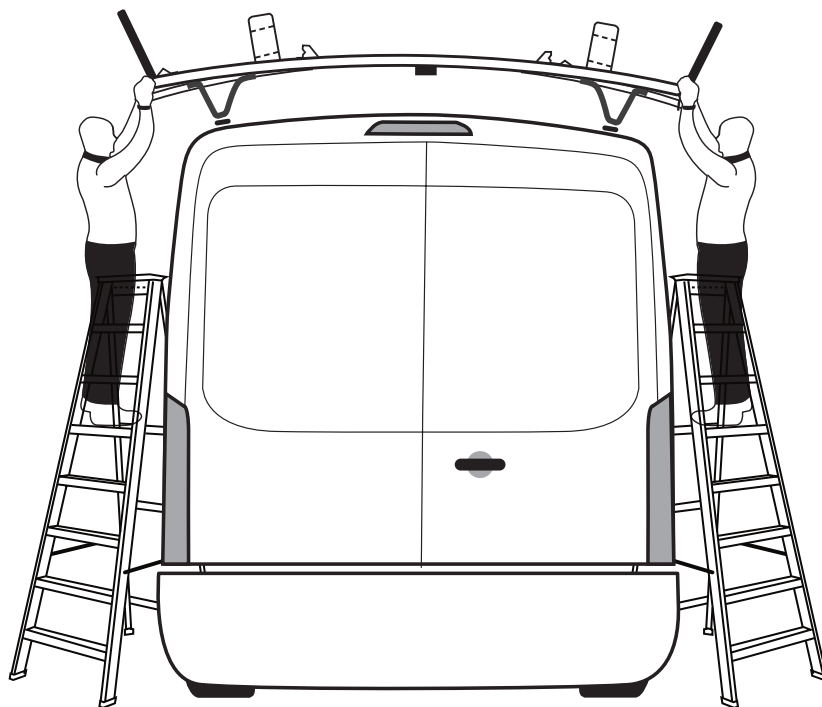
PHASE 2 – INSTALLATION

2.4 LADDER RACK INSTALLATION

2.4.1 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.

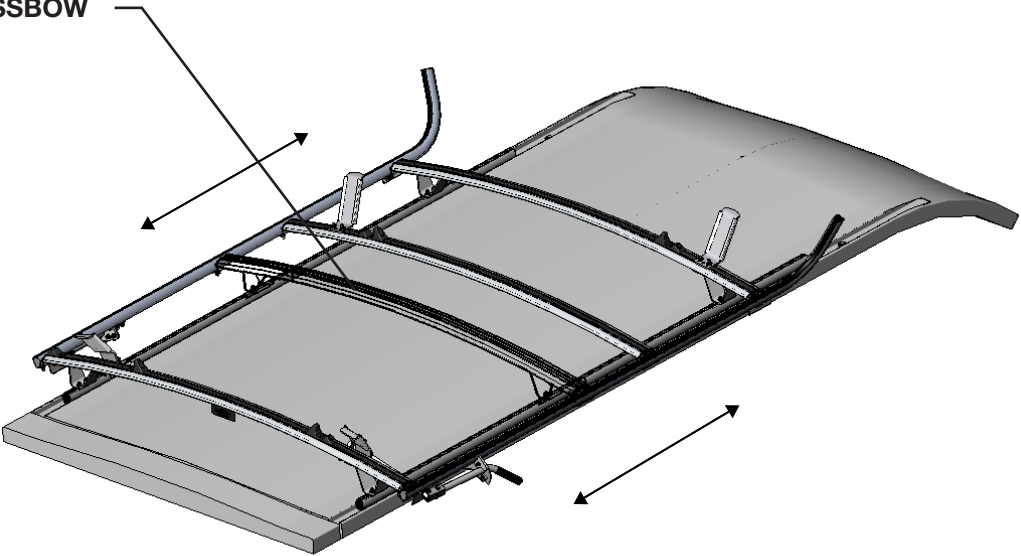
Ladder Rack



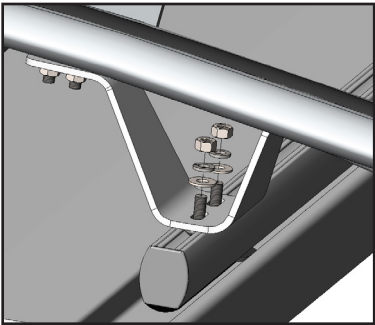
2.4.2 While making sure the crossbows are parallel to each other, slide the rack to the appropriate position, then attach all the “V” feet to the mounting tracks.

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

THIRD CROSSBOW



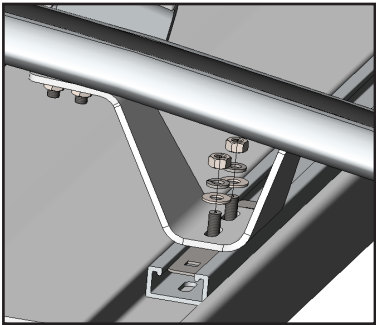
Ranger Design Tracks



TOOLS

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

With OEM Tracks



FASTENERS USED

8x



Carriage bolts are already on the tracks or plates

#98-117 Flat Washer

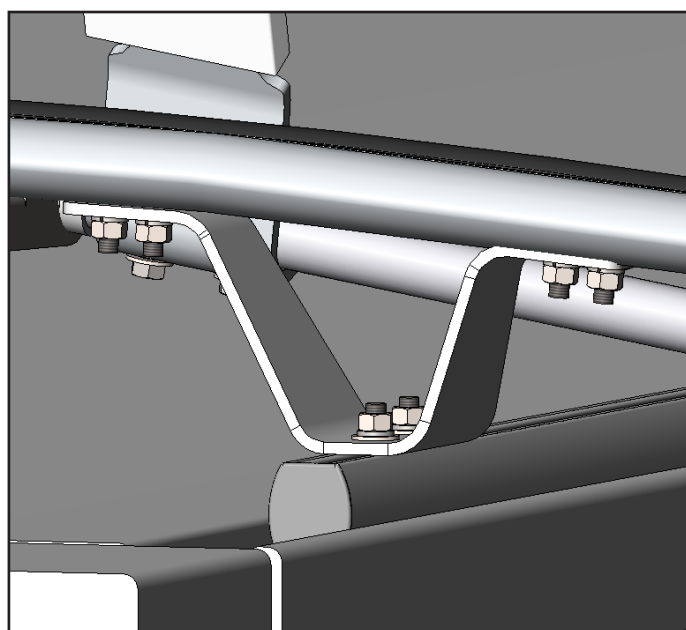
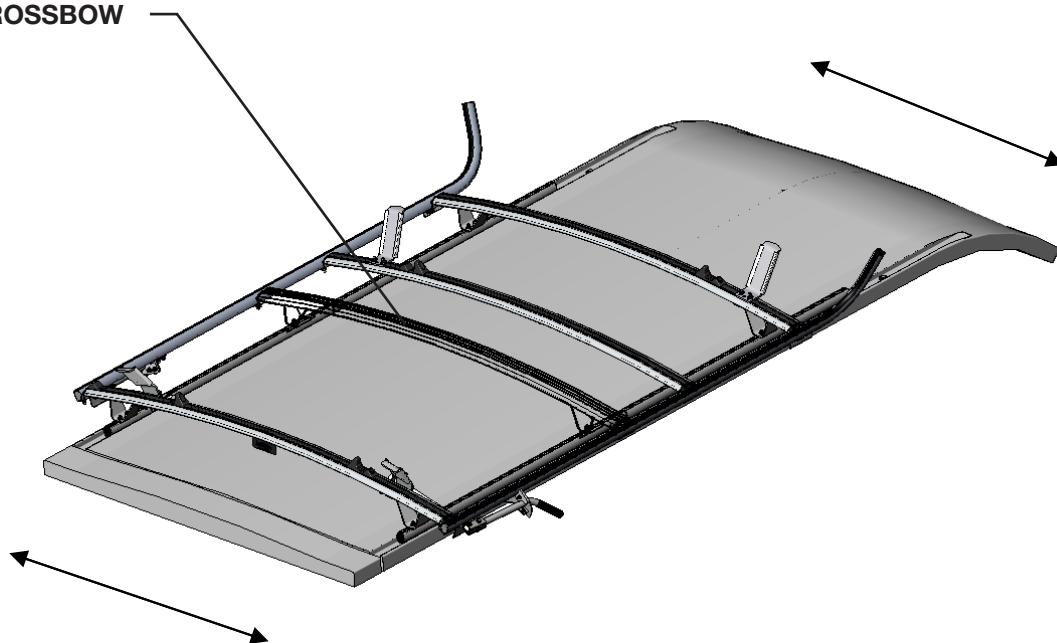
#98-123 Lock Washer

#94-105 Hex Nut

2.4.3 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.
• Use the third crossbow install faster kit for the third crossbow feet installation.

THIRD CROSSBOW

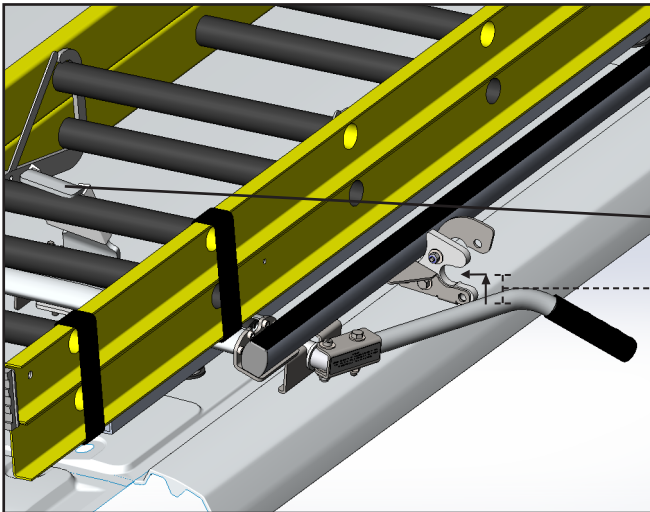
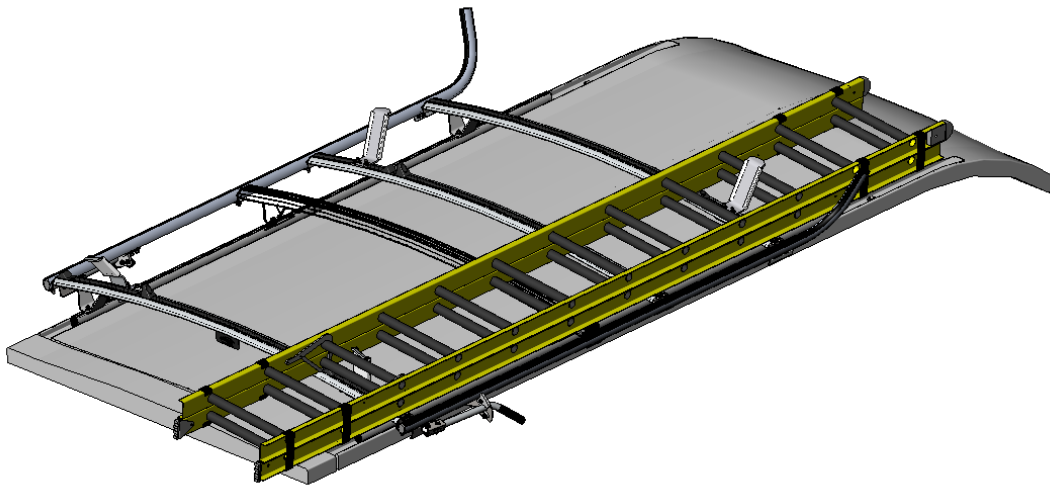


TOOLS

- Ratchet
- 1/2" Socket

2.4.4 Ladder Rack adjustment for extension ladder.

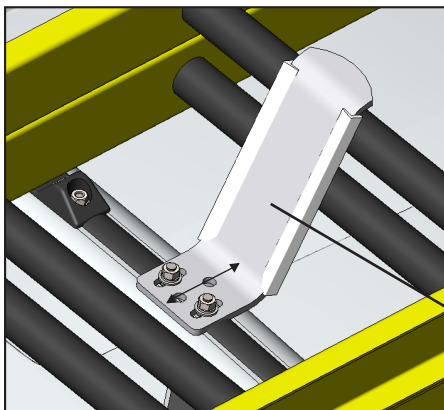
NOTE: The ladder cannot extend beyond the rear bumper of the vehicle.



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

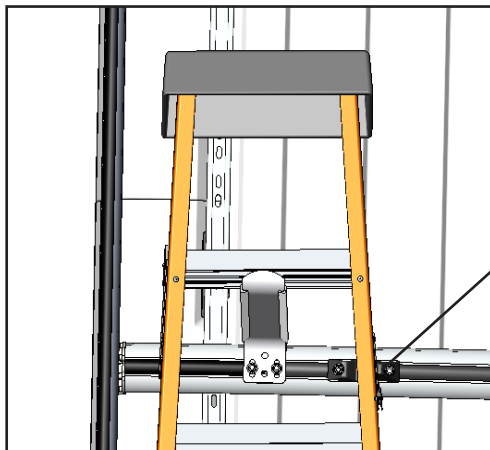
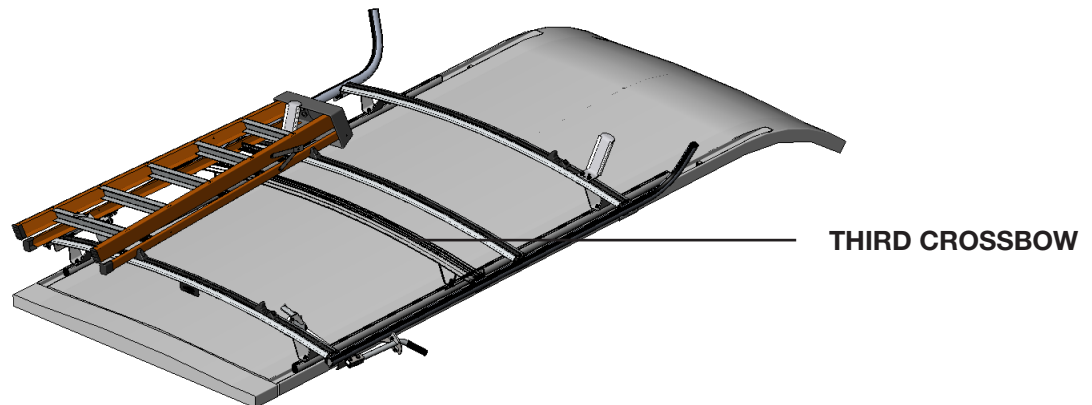
2.4.5 Ladder Rack adjustment for stepladder.

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.

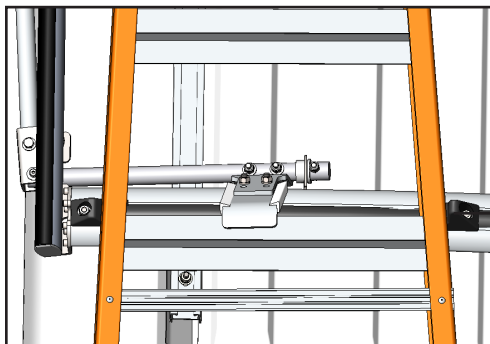
IMPORTANT:

- 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.

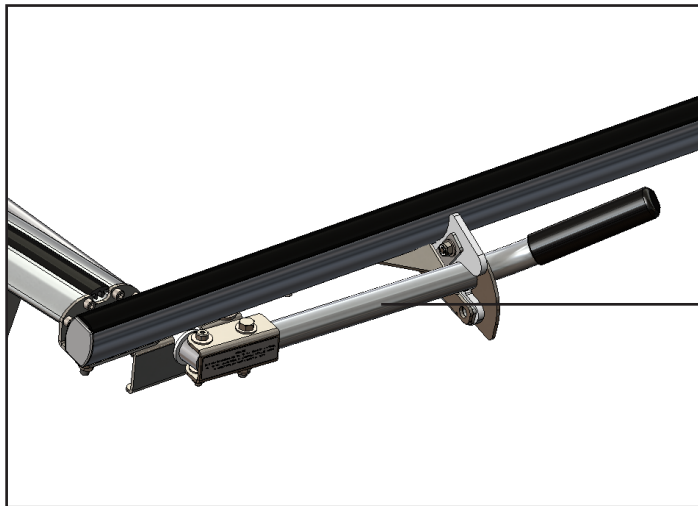
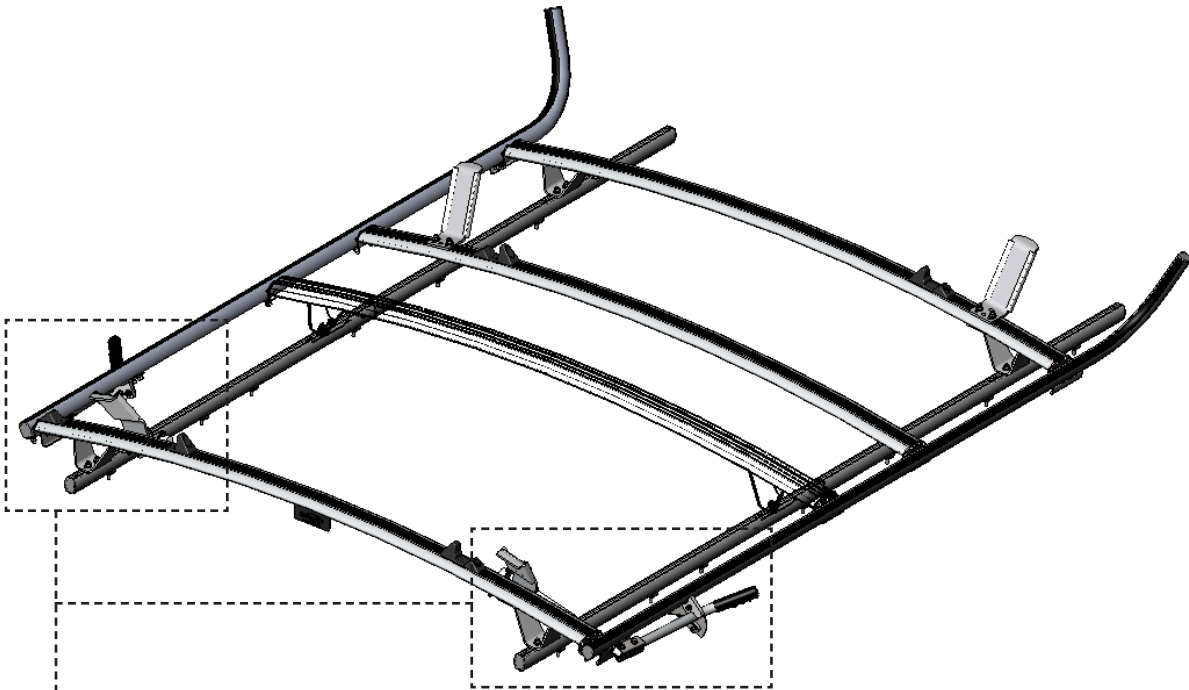


The inner ladder side support must be adjusted according to the width of the step ladder.

PHASE 2 – INSTALLATION

2.5 NOTE

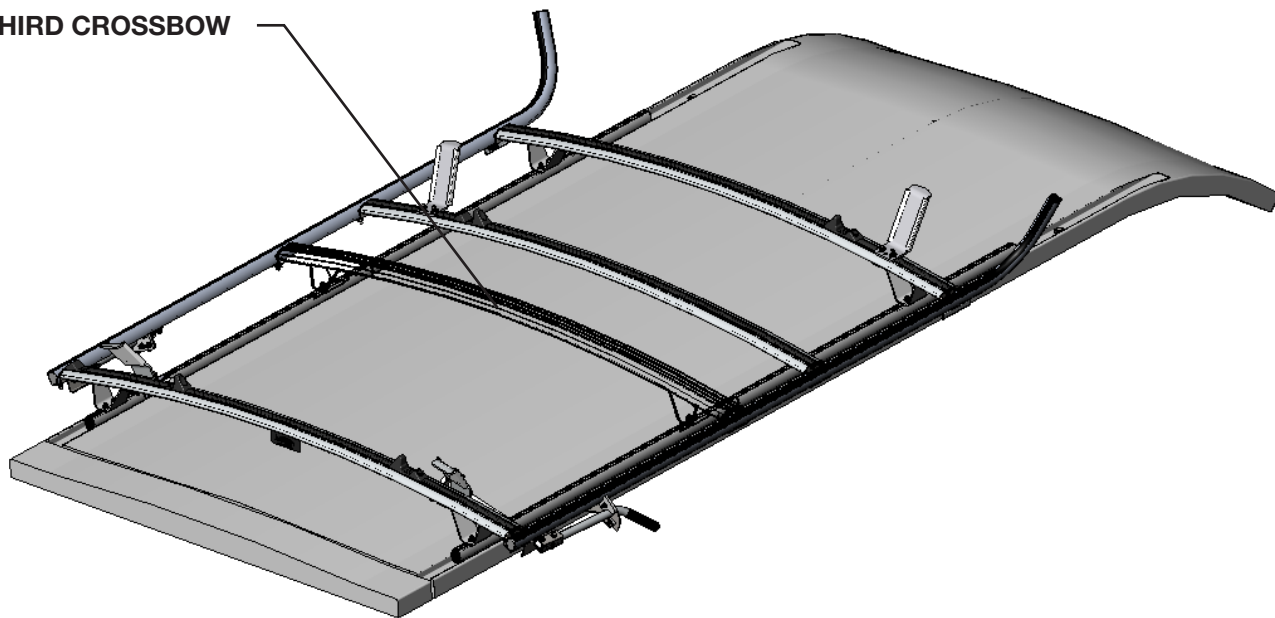
2.5.1 If the handle is interfering with the door or roof of the vehicle, the handle can be installed in an alternate position.



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

THIRD CROSSBOW



**“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

