

INSTALLATION GUIDE



1510-DH Standard Ladder Rack

Sprinter Universal Wheelbase (Aluminum)



QUICK START GUIDE

Phase 1 - Assembly

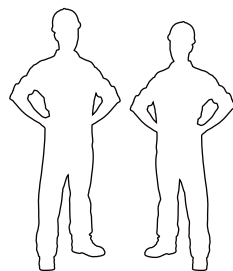
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REQUIRED ITEMS

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



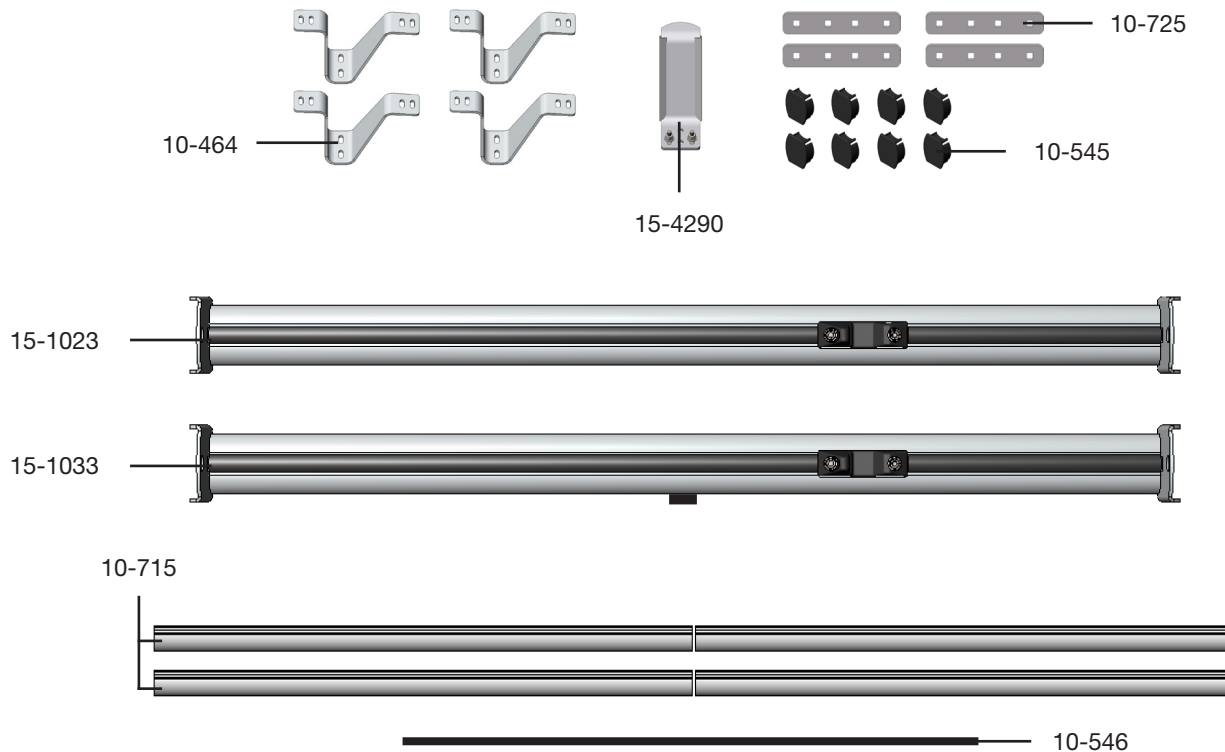
**2
PERSONS**

- ❑ Cordless Impact
- ❑ Ratchet
- ❑ Tape Measure
- ❑ 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.
10-464	“V” Foot	4
10-545	Ski Plastic Plug	8
10-546	Track Plug Extrusion (QTY in Inches)	48
10-715	Mounting Track	4
10-725	Support Plate	4
15-1023	Front Crossbow	1
15-1033	Rear Crossbow	1
15-4290	Front Hook	1
94-1007	Assembly Fastener Kit	1
96-1001	Install Fastener Kit	1

1.1.3 Fastener kits.

94-1007 Fastener Kit			Fastener Assembly
16x		# 90-491 Carriage Bolt 5/16"-18 x 1" SS304	<div>16x</div> <div> #90-491 Carriage Bolt 5/16" x 1"  #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>
16x		# 94-105 Hex Nut 5/16"-18 SS316wax	
16x		# 98-117 Flat Washer 5/16", O.D 3/4" SS18-8	
16x		# 98-123 Lock Washer Regular 5/16" SS304	

96-1001 Fastener Kit			Fastener Assembly
8x		# 90-491 Carriage Bolt 5/16"-18 x 1" SS304	<div>8x</div> <div> #90-491 Carriage Bolt 5/16" x 1"  #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>
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	<div>16x RANGER DESIGN TRACKS ONLY</div> <div> #90-495 Carriage Bolt 5/16" x 1-1/4"  #98-109 Flat Washer  #98-149 Neoprene Spacer  #94-116 Serrated Nut</div>
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	

PHASE 1 – ASSEMBLY

1.2 LADDER RACK ASSEMBLY

1.2.1 Slide carriage bolts on the bottom face of the crossbows.

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

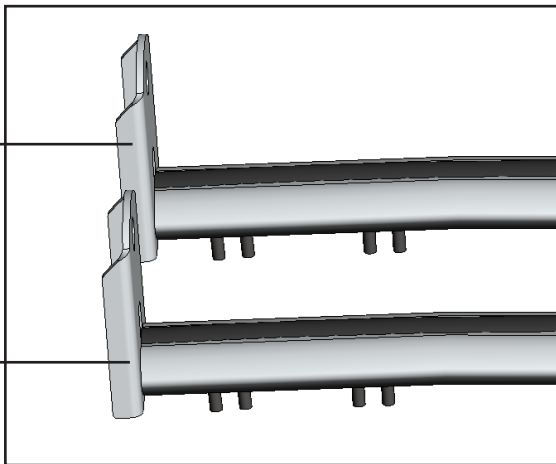
TIPS: Use tape to keep the bolts from sliding off.



DRIVER SIDE

Front crossbow

- Slide 4 pcs. of 1" carriage bolts.



Rear crossbow

- Slide 4 pcs. of 1" carriage bolts.

HARDWARE USED

8x

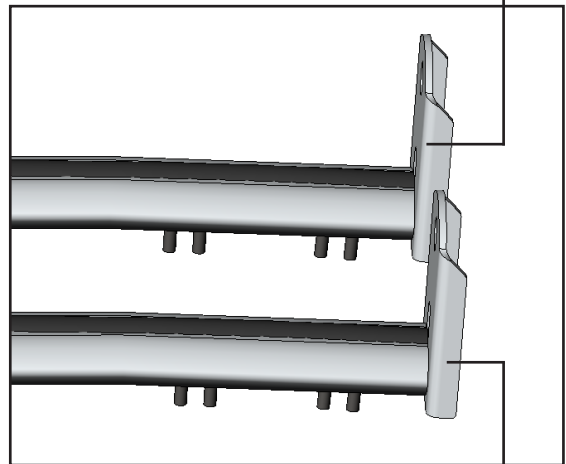


#90-491 Carriage Bolt
5/16" x 1" SS304

PASSENGER SIDE

Front crossbow

- Slide 4 pcs. of 1" carriage bolts.



Rear crossbow

- Slide 4 pcs. of 1" carriage bolts.

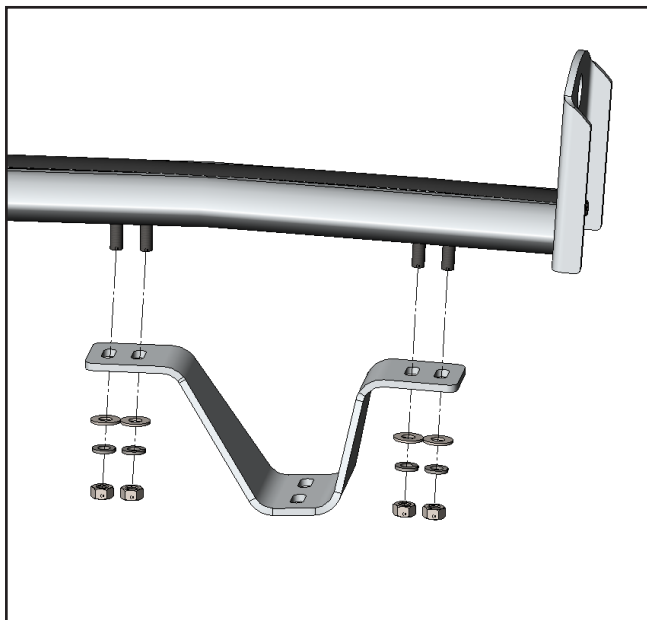
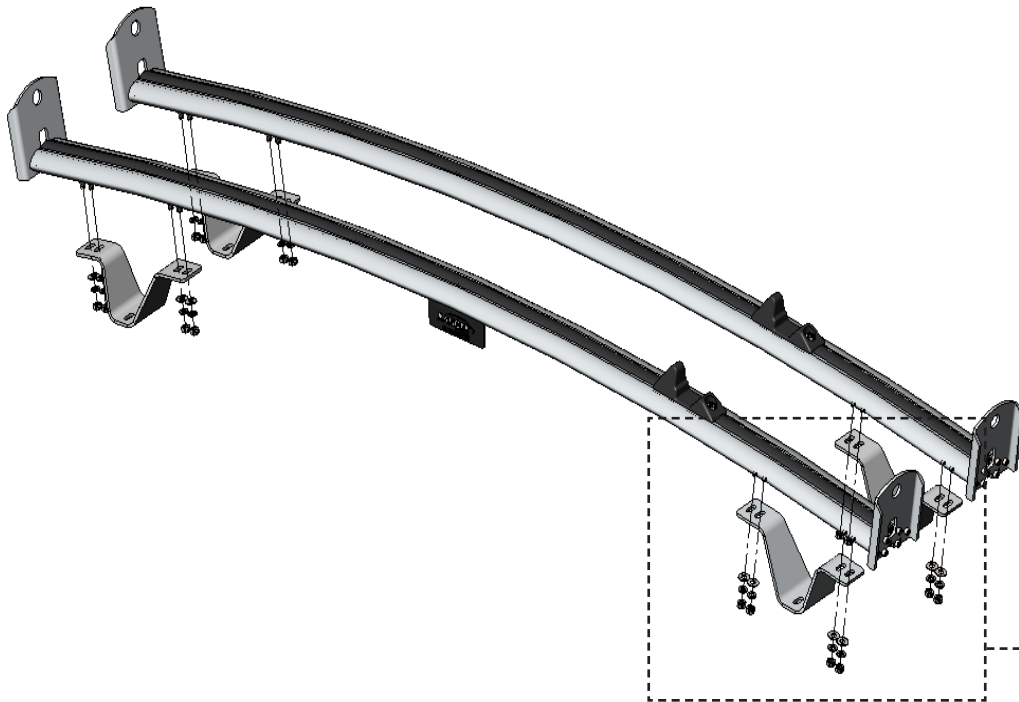
HARDWARE USED

8x



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

1.2.2 Install the feet on the Front, and Rear Crossbows.



HARDWARE USED

16x HAND-TIGHTEN THE NUTS.



Carriage bolts are already on the crossbows.



#98-117 Flat Washer

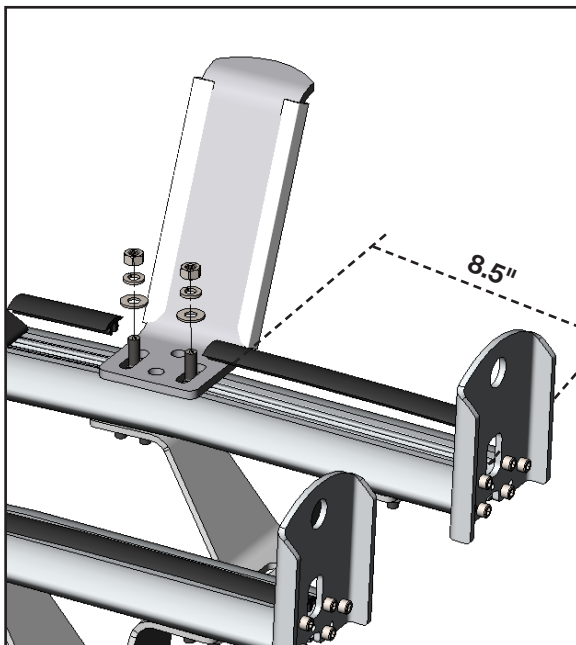


#98-123 Lock Washer



#94-105 Hex Nut

- 1.2.3**
- Pull out the 14.5" track plug on the passenger side of the front crossbow.
 - Remove the pre-assembled hardware on the front hook and slide the bolts onto the passenger side of the front crossbow, and attach the front hook in the position shown below.
 - Cut the track plug, then attach it back to the crossbow.



TOOLS

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

HARDWARE USED

2x HARDWARE IS PRE-ASSEMBLED.



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

PHASE 2 – INSTALLATION

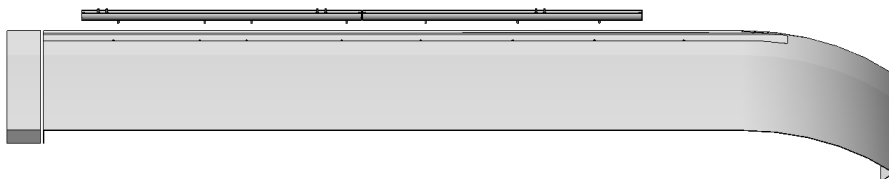
2.1 MOUNTING TRACKS PREPARATION FOR LADDER RACK WITH 3RD CROSSBOW

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



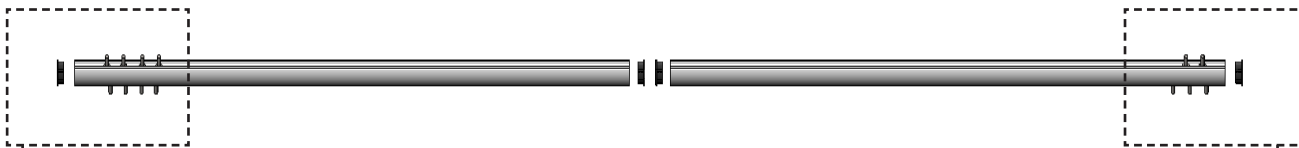
2x

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



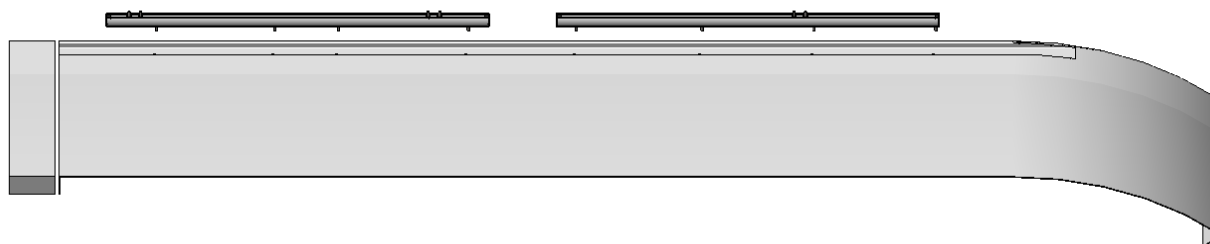
#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

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.

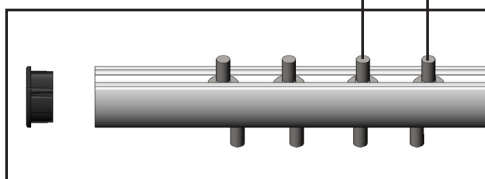
NOTE: Use the bolts in 96-1020 fastener kit of the 3rd crossbow for the top of the rear tracks.

Rear

Front



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



HARDWARE USED

4x TOP

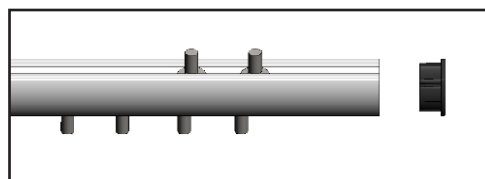


#90-487 Carriage Bolt
5/16" x 3/4" SS304

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

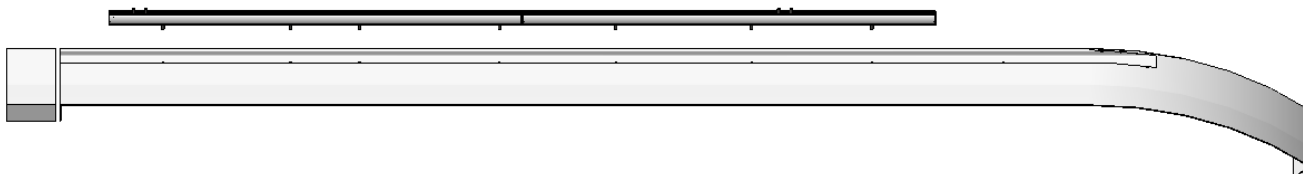
2.2 MOUNTING TRACKS PREPARATION FOR LADDER RACK WITHOUT 3RD CROSSBOW

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

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

Ranger Design Tracks

Regular

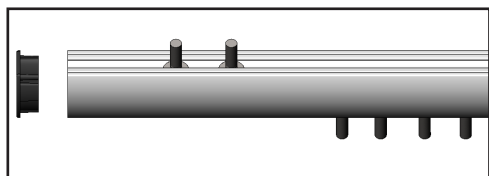
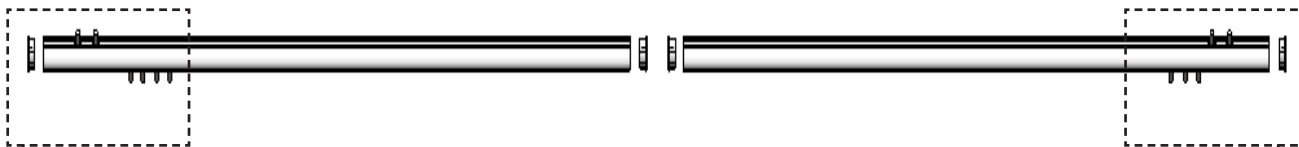


2x

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

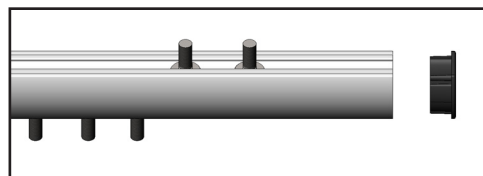


#90-491 Carriage Bolt
5/16" x 1" SS304

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

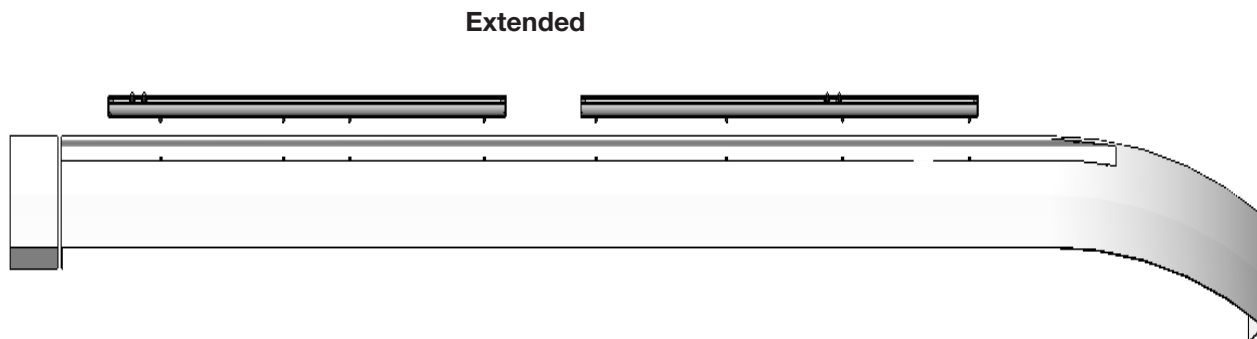


#90-495 Hex Bolt
5/16" x 1 - 1/4" SS304

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

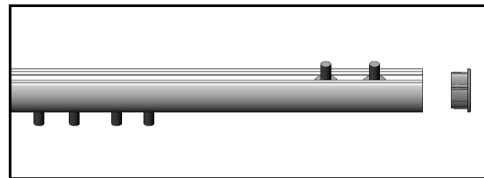
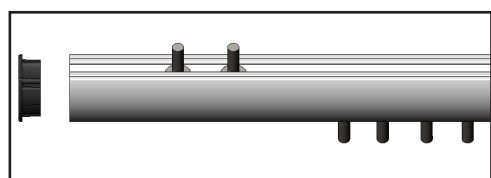


2x

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

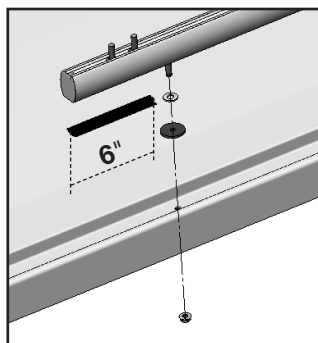
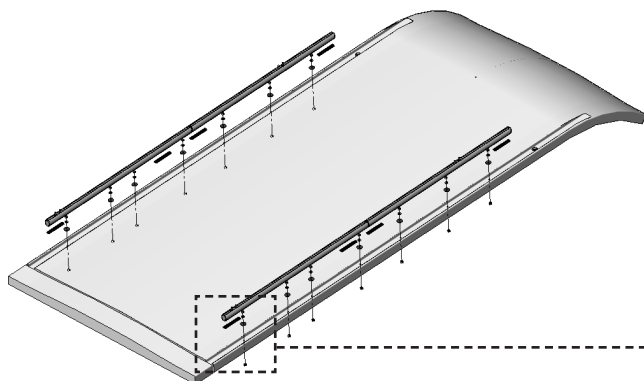
PHASE 2 – INSTALLATION

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" × 1-1/4"



#98-109 Flat Washer

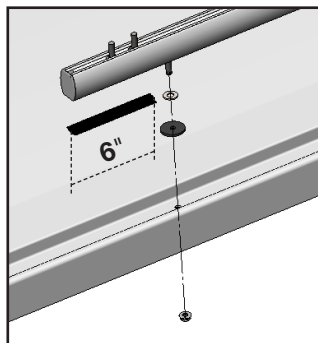
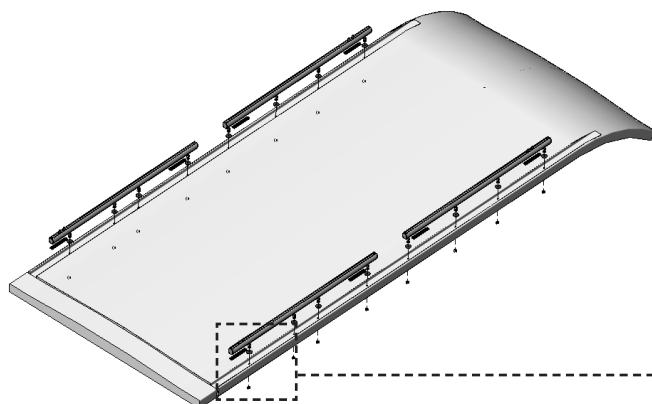


#98-149 Neoprene Spacer



#94-116 Serrated Nut

Extended



TOOLS

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

16x



#90-495 Carriage Bolt 5/16" × 1-1/4"



#98-109 Flat Washer



#98-149 Neoprene Spacer

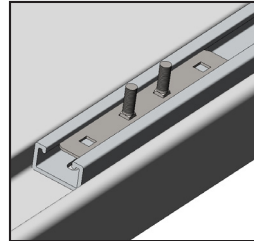
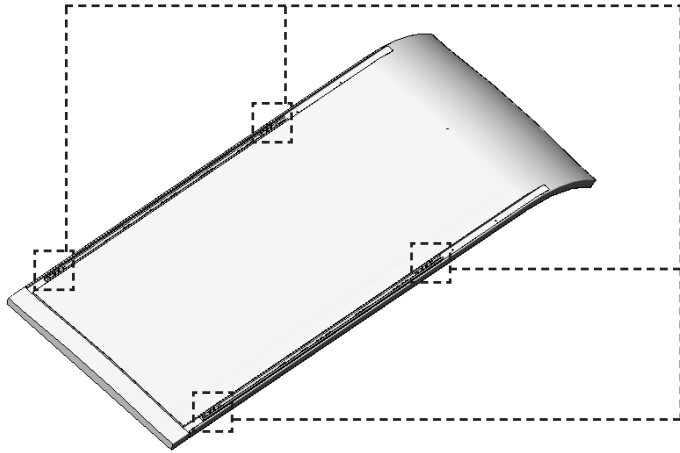


#94-116 Serrated Nut

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.



HARDWARE USED

8x



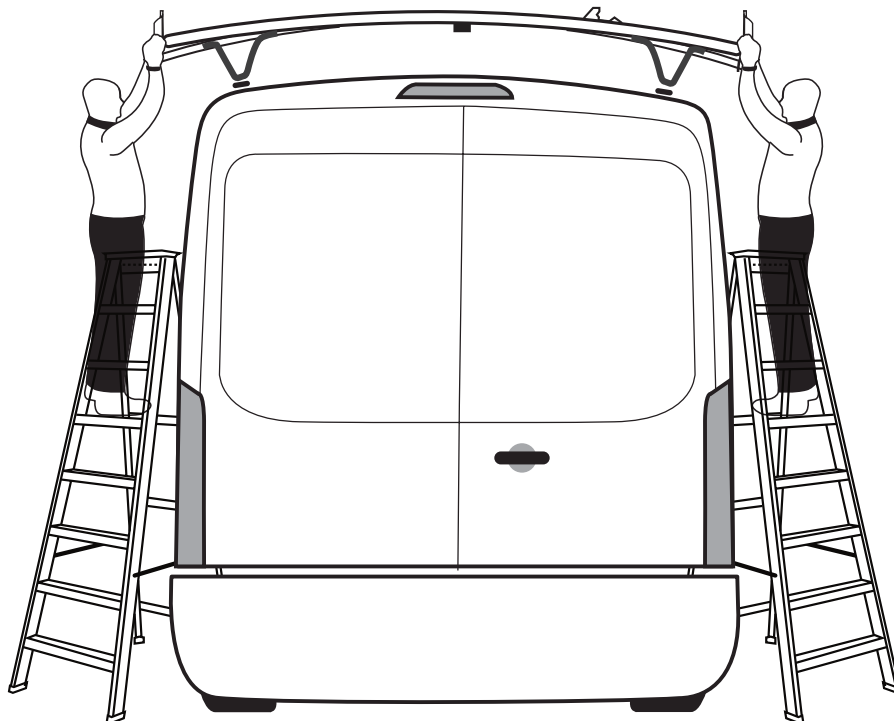
#90-491 Carriage Bolt 5/16" x 1"

PHASE 2 – INSTALLATION

2.4 LADDER RACK INSTALLATION

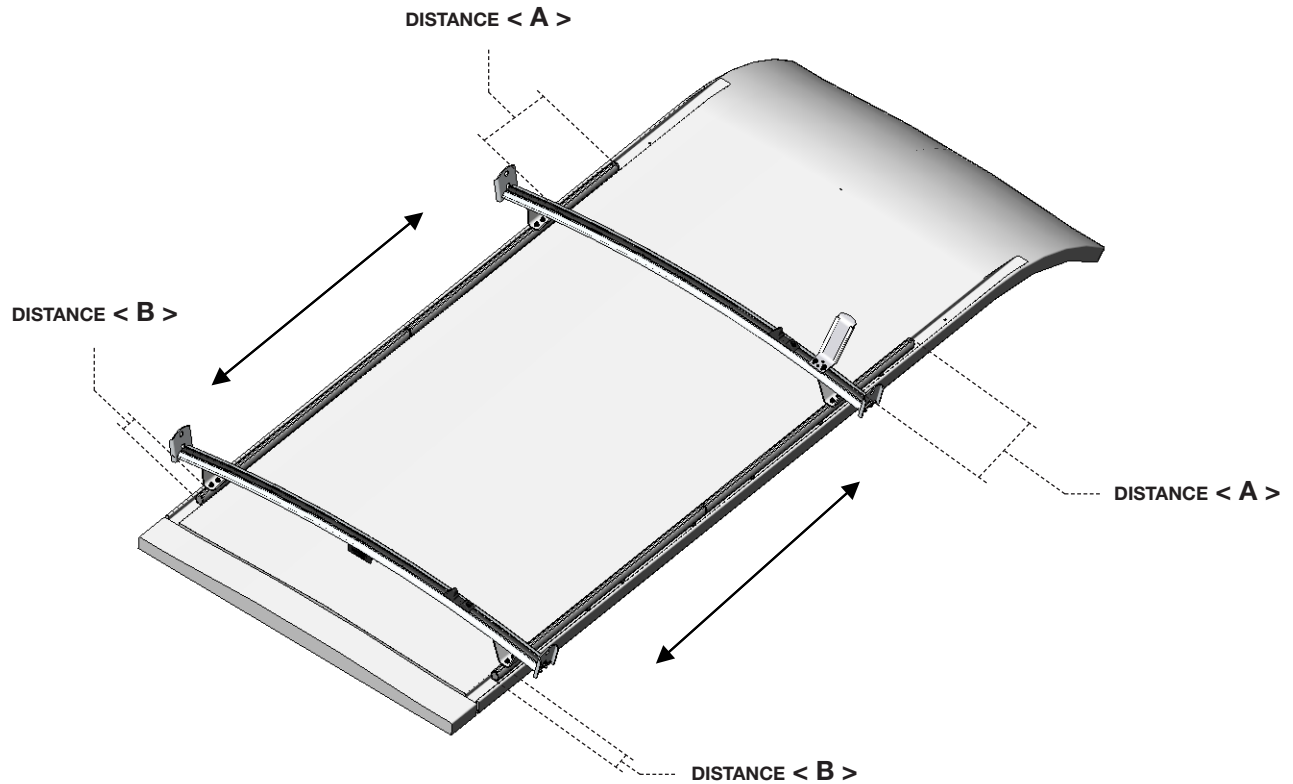
2.4.1 Position the front and rear crossbows (**minimum two persons**) on the vehicle so that the feet are on the mounting tracks.

Ladder Rack

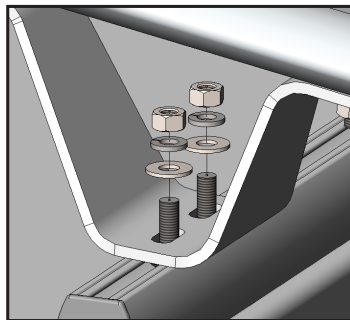


2.4.2 While making sure the crossbows are parallel to each other, slide the rack to the appropriate position, then attach all the “V” feet to the mounting tracks.

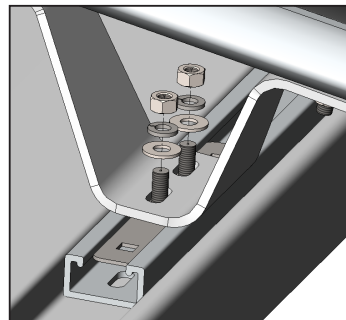
DISTANCE < FOOT TO END OF TRACK >



Ranger Design Tracks



With OEM Tracks



TOOLS

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

HARDWARE USED

8x



Carriage bolts are already on the tracks or plates



#98-117 Flat Washer



#98-123 Lock Washer



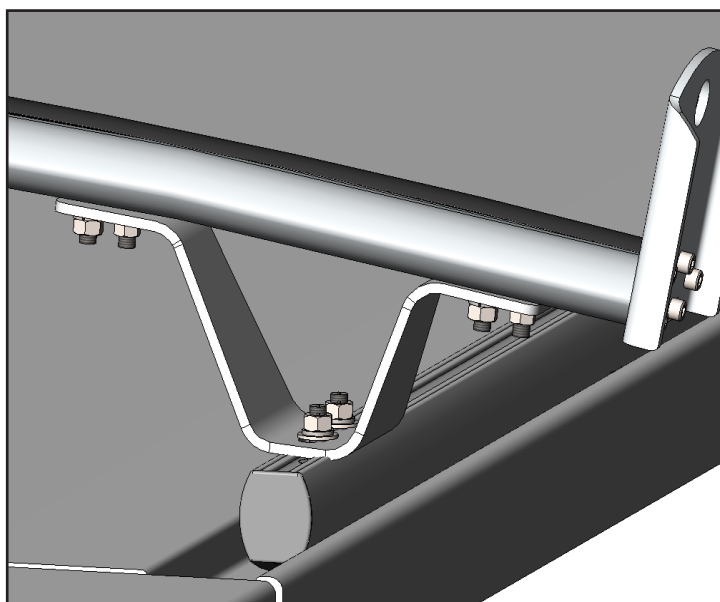
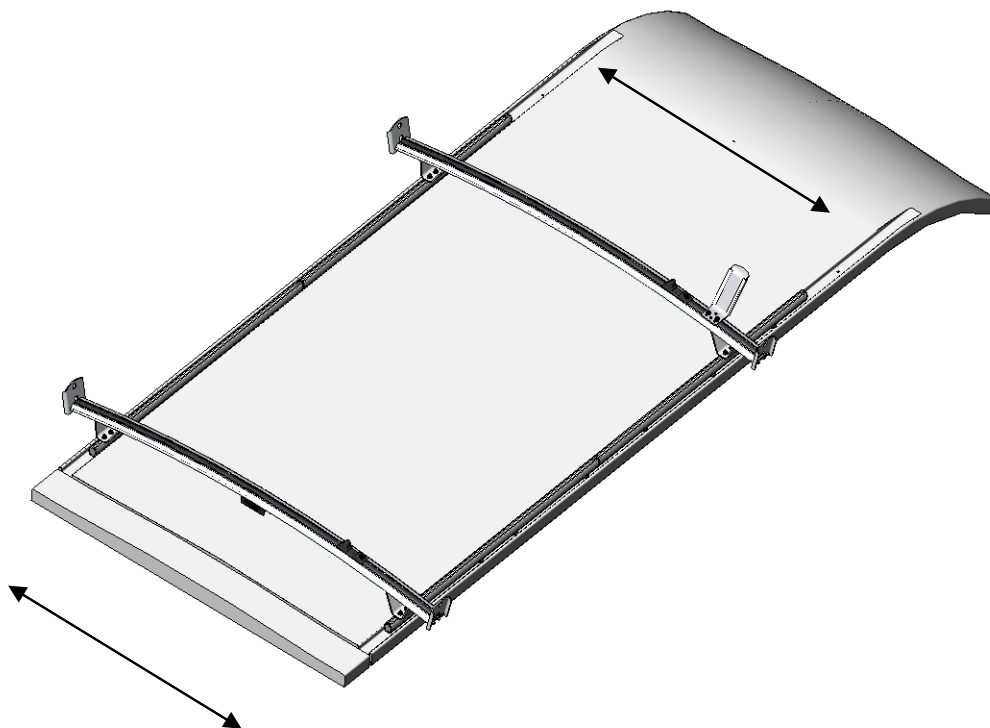
#94-105 Hex Nut

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

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

IMPORTANT:

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



TOOLS

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

IMPORTANT: If you have the third crossbow, open your third crossbow box, then follow the installation guide to guide you how to install your third crossbow.



**“You have successfully installed your
1510-DH Ladder Rack**

Thank you for doing business with us.”

For any feedback or suggestions you may have, please contact: cs@rangerdesign.com

