

INSTALLATION GUIDE



1530-PHL Double Clamp Ladder Rack

Promaster 159" Wheelbase High Roof (Aluminum)



QUICK START GUIDE

Phase 1 - Assembly

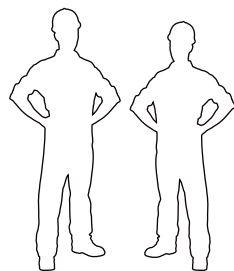
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Phase 2 - Installation

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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.



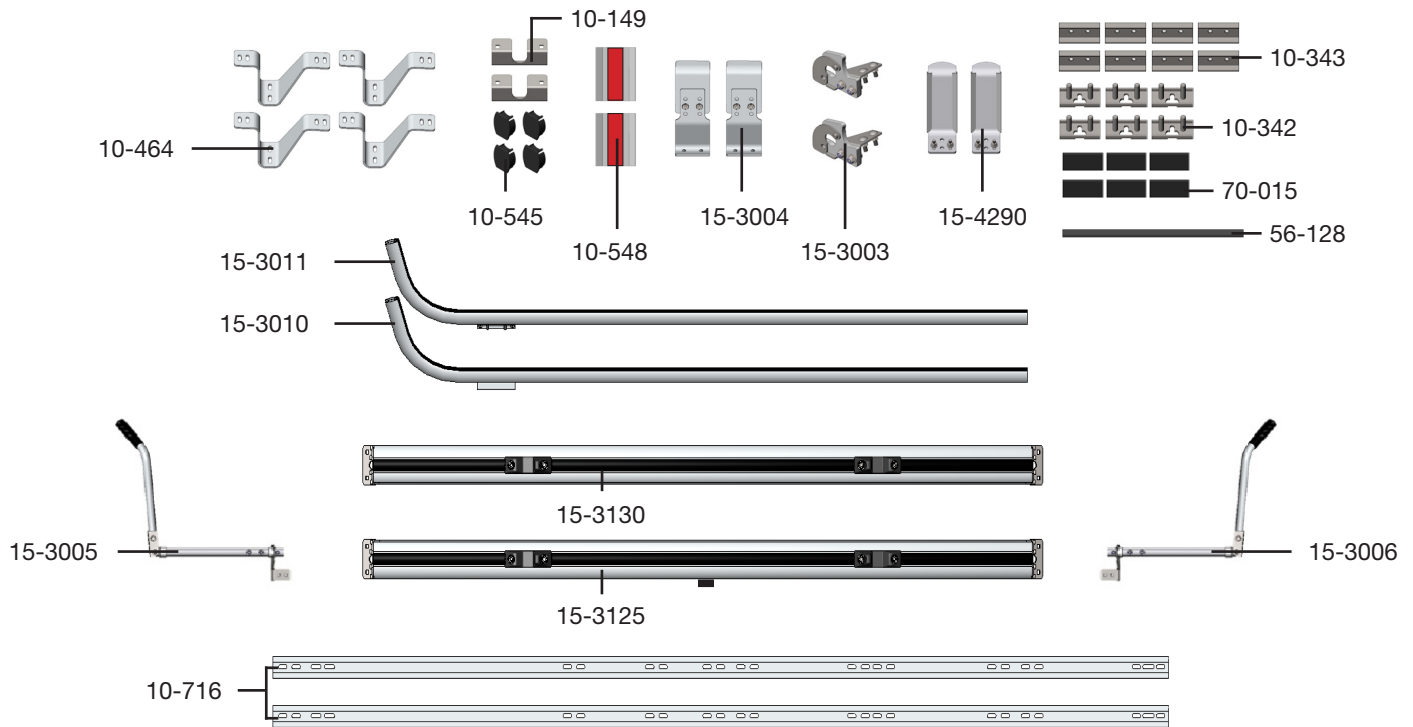
**2
PERSONS**

- ❑ Cordless Impact
- ❑ Ratchet
- ❑ Tape Measure
- ❑ 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.

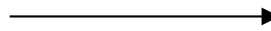
BILL OF MATERIALS

Item No.	Description	Qty.
10-149	Clamp Handle Support	2
10-342	Roof Clamp	6
10-343	Top Roof Clamp	8
10-464	"V" Foot	4
10-545	Ski Plastic Plug	4
10-548	Hook Protector (4 - 3/8" L)	2
10-716	Mounting Track	2
56-128	Rubber Edge Trim (QTY in Inches)	13
70-015	Foam Sheet	6
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
15-3125	Rear Crossbow	1
15-3130	Front Crossbow	1
15-4290	Front Hook	2
94-1012	Assembly Fastener Kit	1
96-1009	Install Fastener Kit	1

1.1.3 Fastener kits.

94-1012 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>
22x		# 90-491 Carriage Bolt 5/16"-18 x 1" SS304	20x <div> #90-491 Carriage Bolt 5/16" x 1"  #98-117 Flat Washer  #98-123 Lock Washer  #94-105 Hex Nut</div>
30x		# 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>
30x		# 98-117 Flat Washer 5/16", O.D 3/4" SS18-8	
30x		# 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>

96-1009 Fastener Kit



Fastener Assembly

- | | | | |
|-----|--|----------|---|
| 4x | | # 90-205 | Hex Bolt
5/16"-18 x 3/4"
SS304 |
| 8x | | # 90-209 | Hex Bolt
5/16"-18 x 1"
SS304 |
| 16x | | # 94-105 | Hex Nut
5/16"-18
SS316wax |
| 8x | | # 94-150 | Channel Nut
5/16" |
| 28x | | # 98-117 | Flat Washer
5/16", OD 3/4"
SS18-8 |
| 24x | | # 98-123 | Lock Washer
5/16"
SS304 |

4x

- | | |
|--|-------------------------------|
| | #90-205 Hex Bolt 5/16" x 3/4" |
| | #98-117 Flat Washer |
| | #98-123 Lock Washer |
| | #98-117 Flat Washer |
| | #94-105 Hex Nut |

8x

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

12x

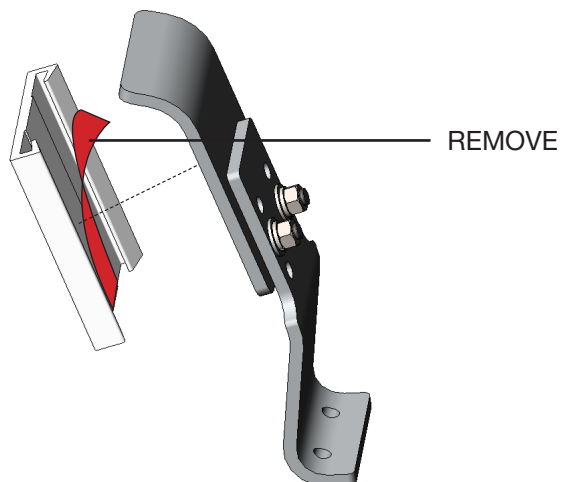
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|--|---------------------|
| | #98-117 Flat Washer |
| | #98-123 Lock Washer |
| | #94-105 Hex Nut |

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.

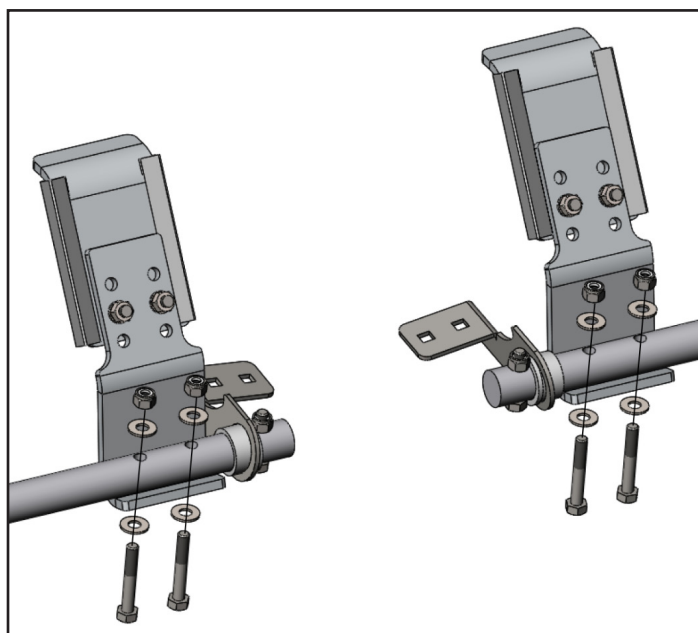
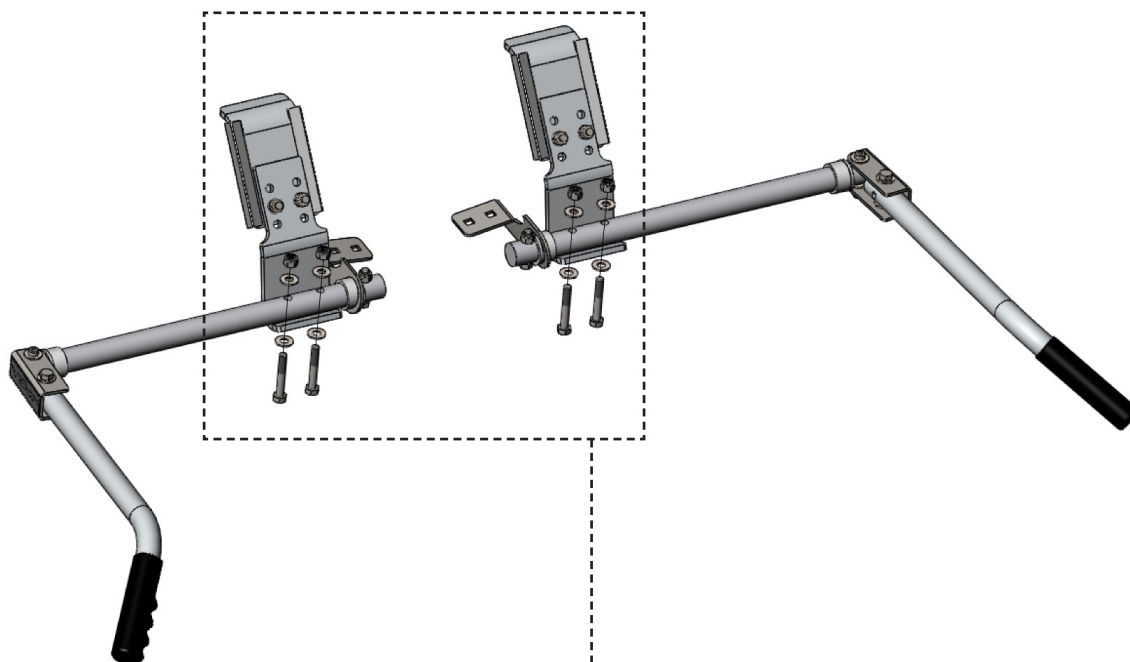
2x



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.

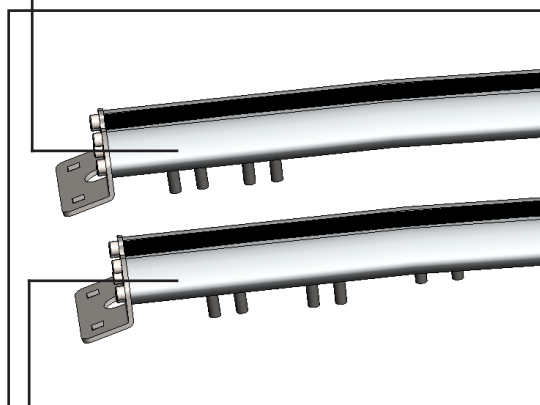
TIPS: Use tape to keep the bolts from sliding off.



DRIVER SIDE

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

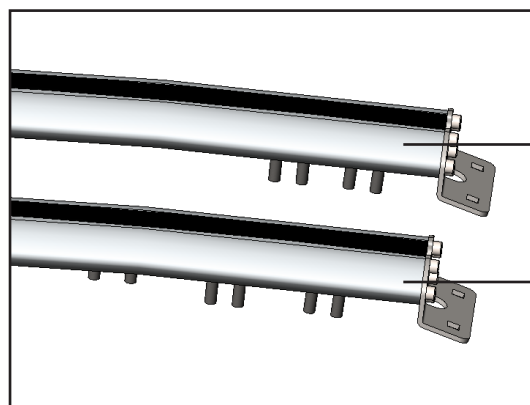


#90-491 Hex Bolt
5/16" x 1" SS304

PASSENGER SIDE

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

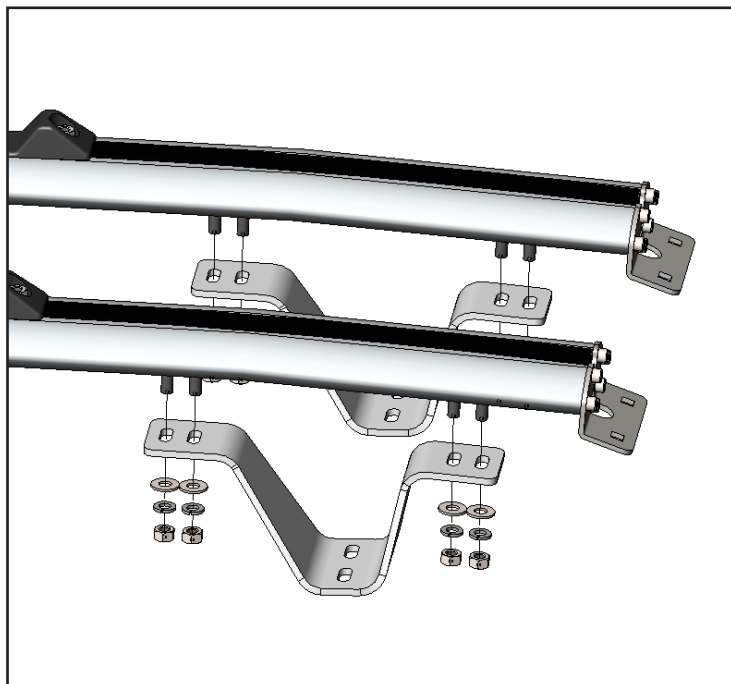
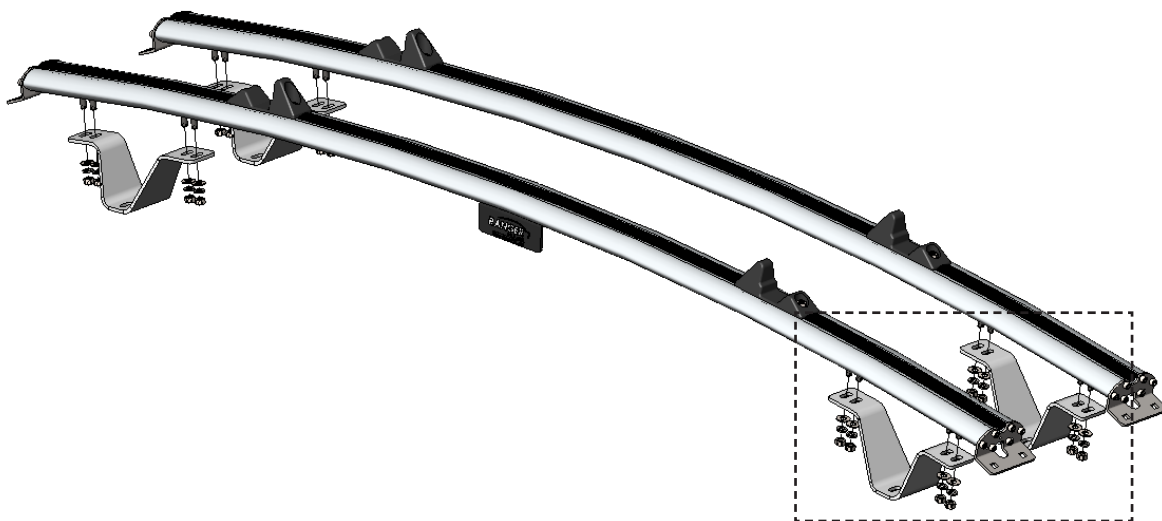
8x



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

1.2.4 Install the feet on the 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

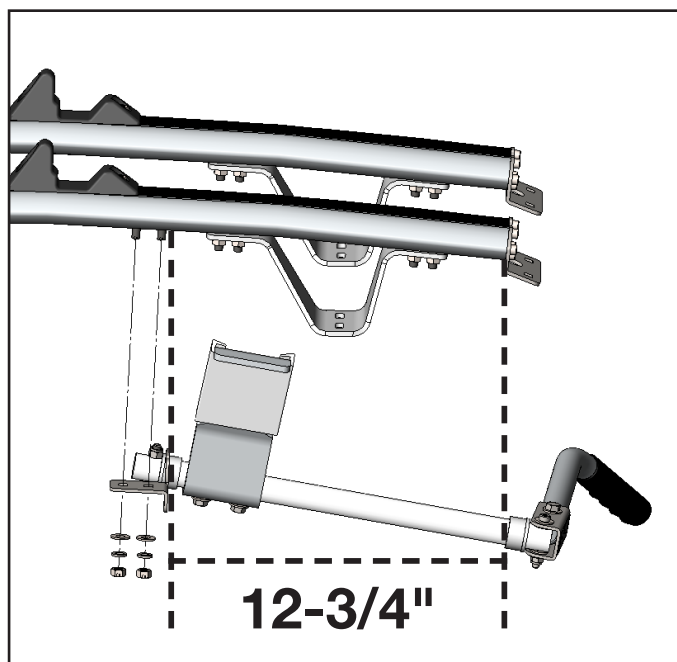
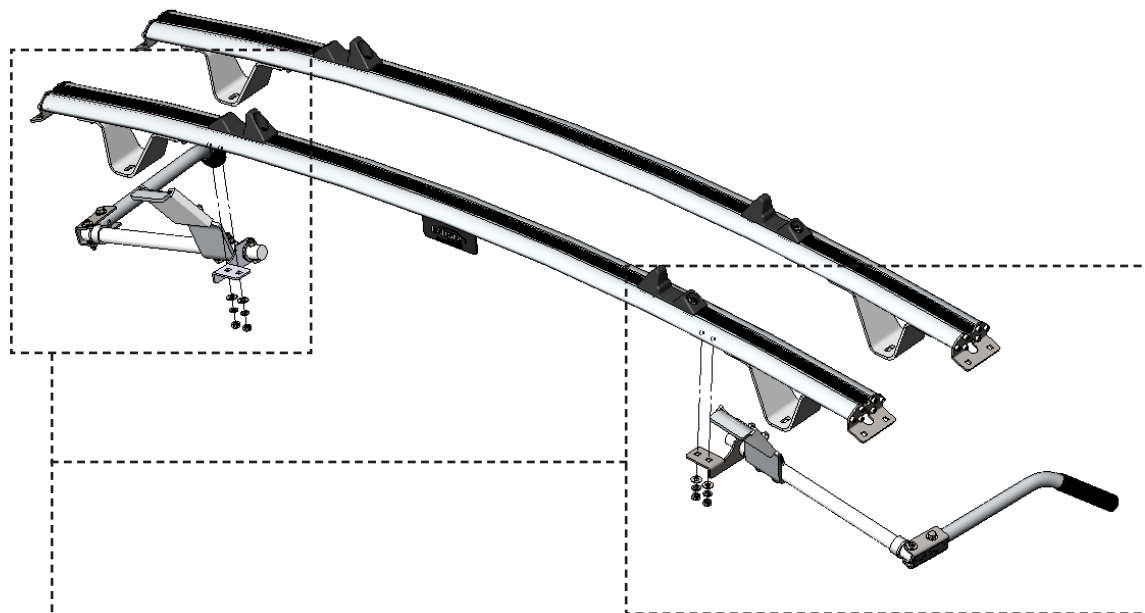


#98-123 Lock Washer



#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

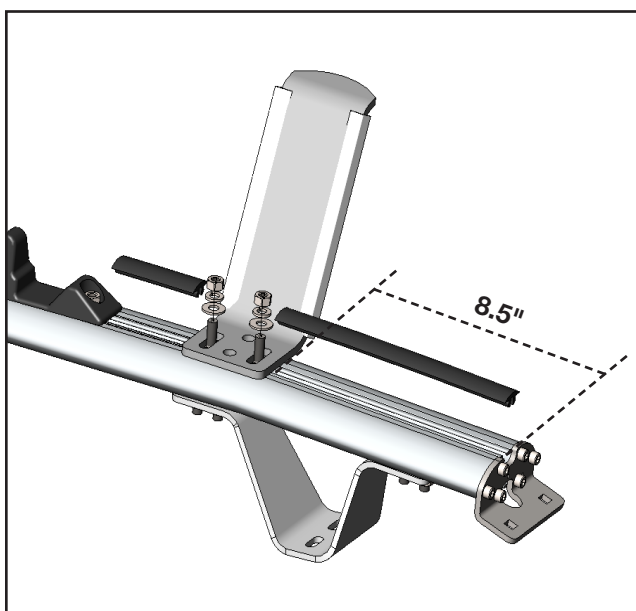
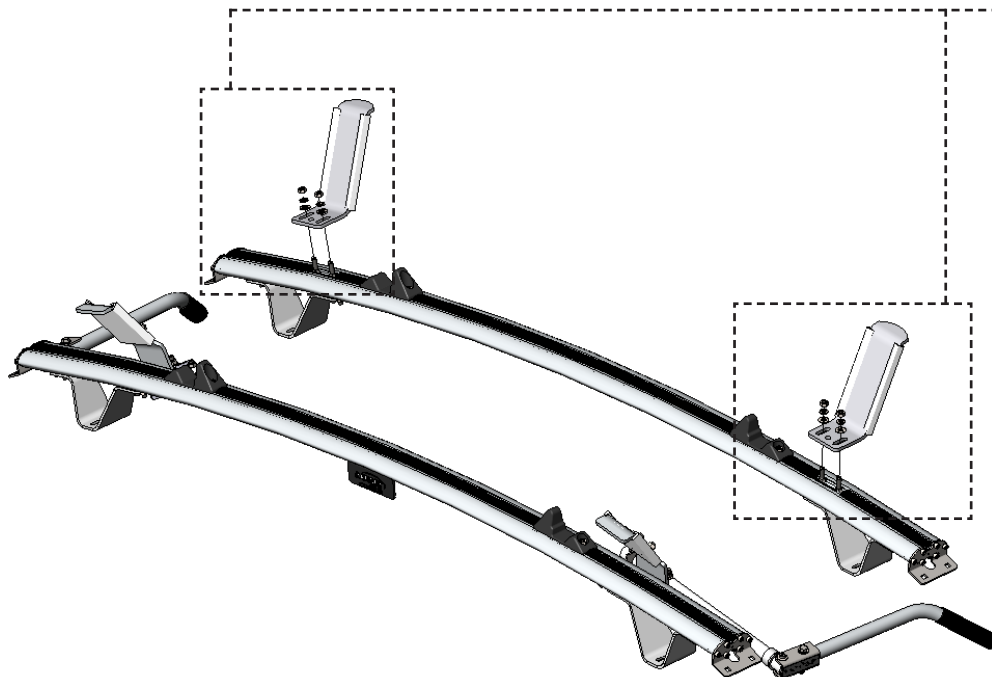


#98-123 Lock Washer



#94-105 Hex Nut

- 1.2.6**
- Pull out the 14.5" track plug on both ends of the front crossbow.
 - Loosen the pre-assembled hardware on the front hooks and slide the hooks onto the front crossbow to the position shown below.
 - Cut the track plug, then attach it back to the crossbow.







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

TOOLS

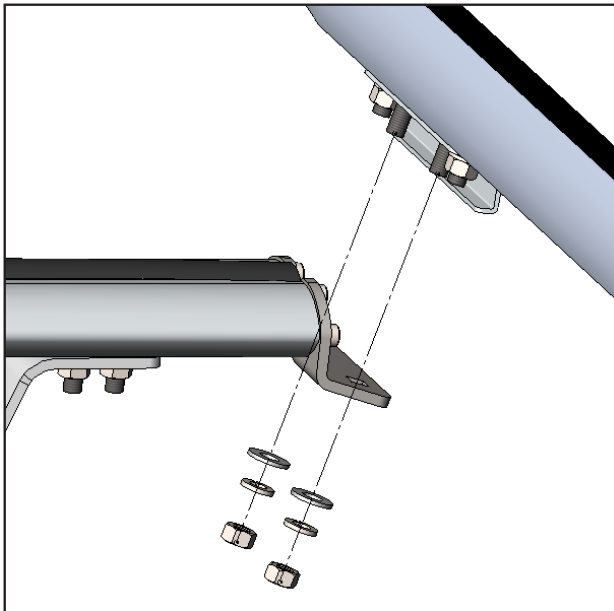
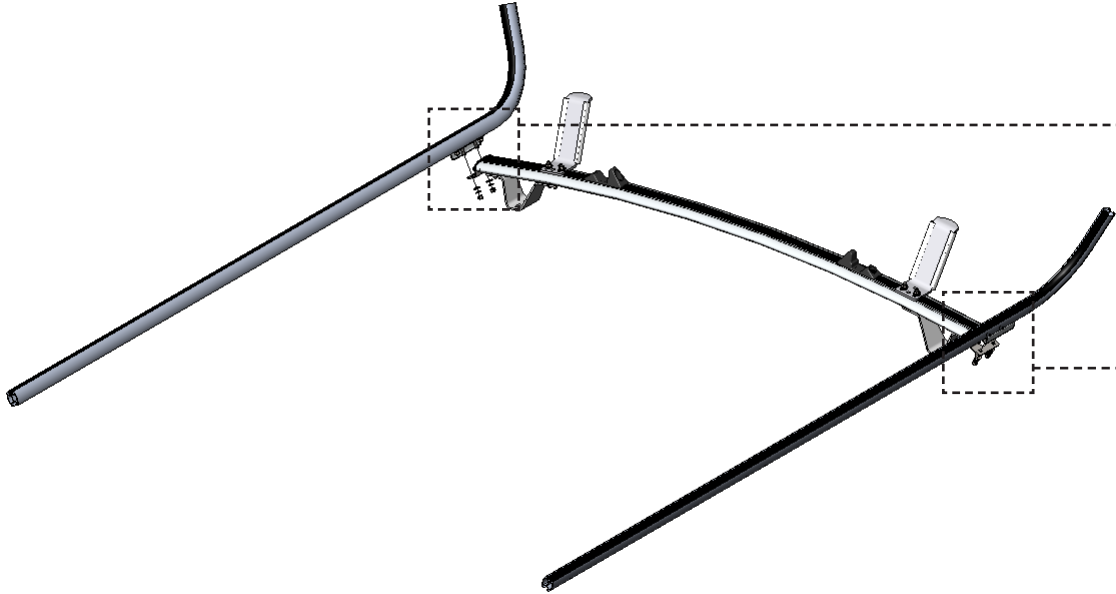
- ☐ Marker
- ☐ Cutter

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

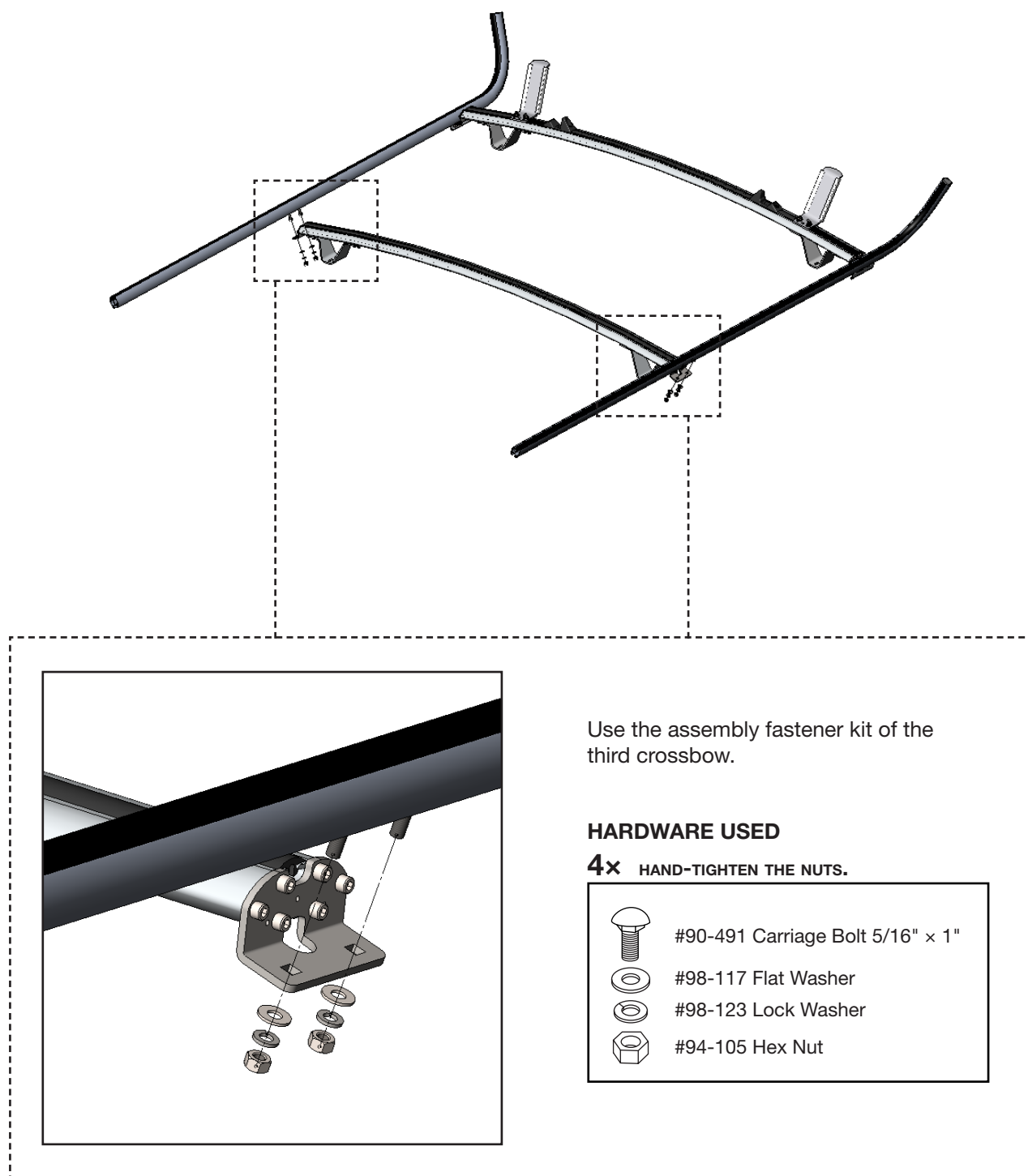


#94-105 Hex Nut

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.

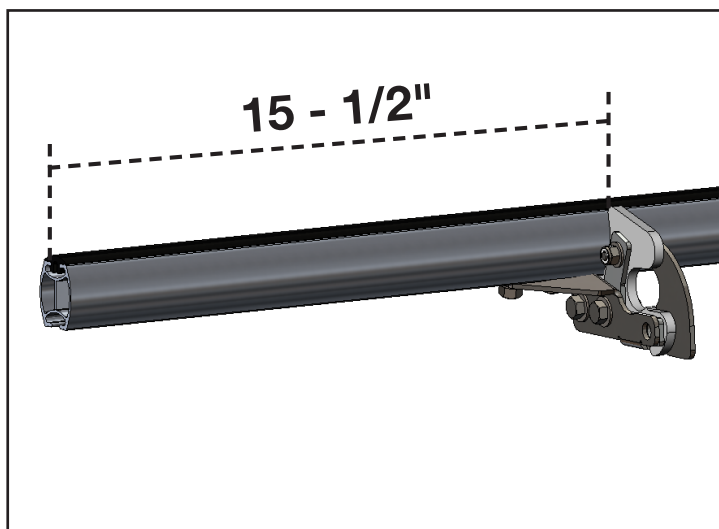
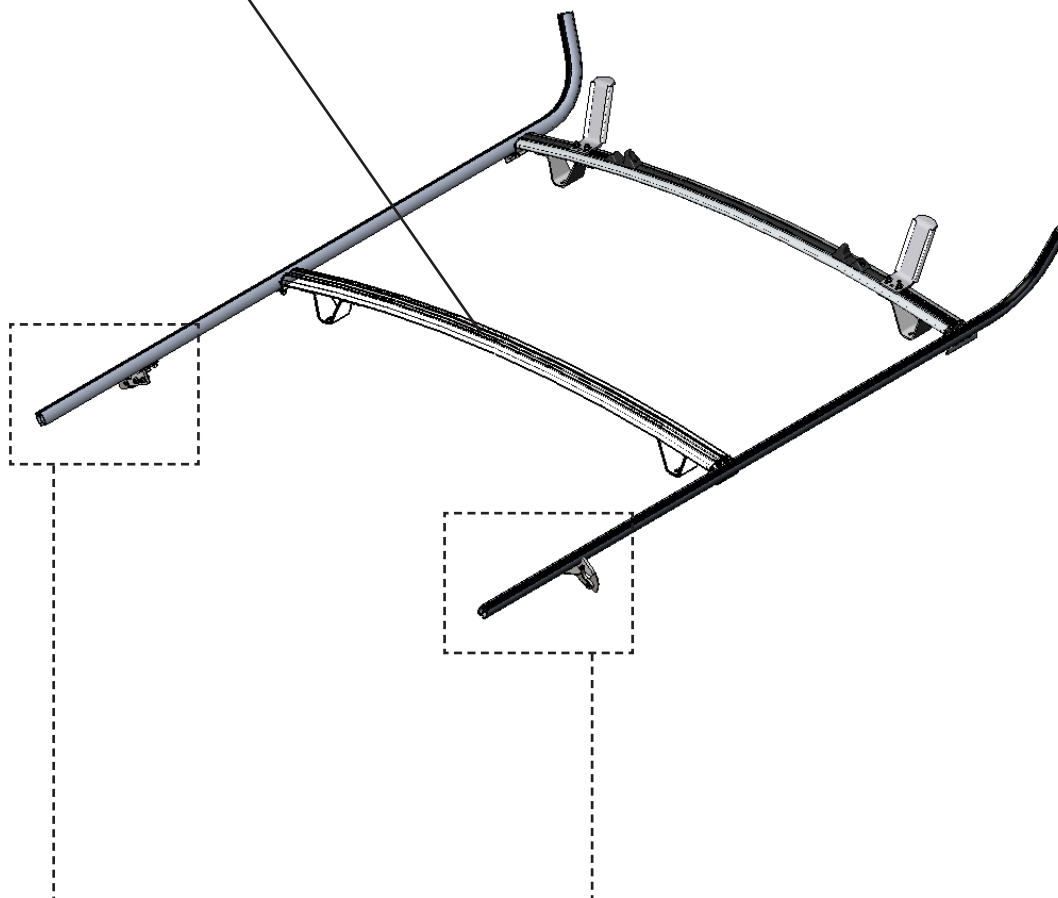
1.2.8 After assembling the third crossbow attach the third crossbow to the skis.

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



1.2.9 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



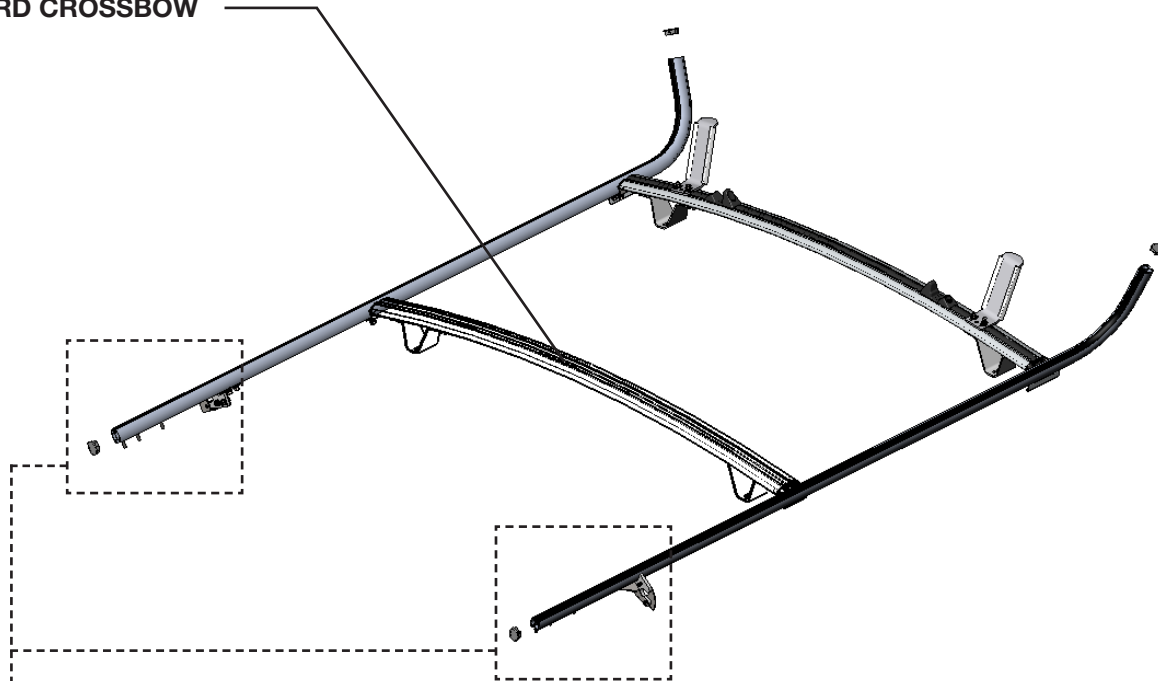
#98-123 Lock Washer



#94-105 Hex Nut

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

THIRD CROSSBOW



END PLUG



TOOLS

□ Mallet

HARDWARE USED

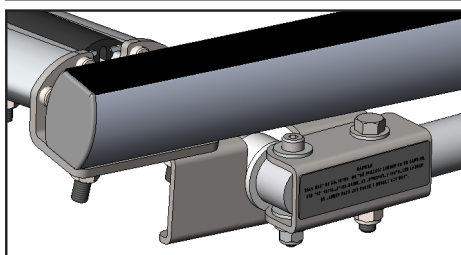
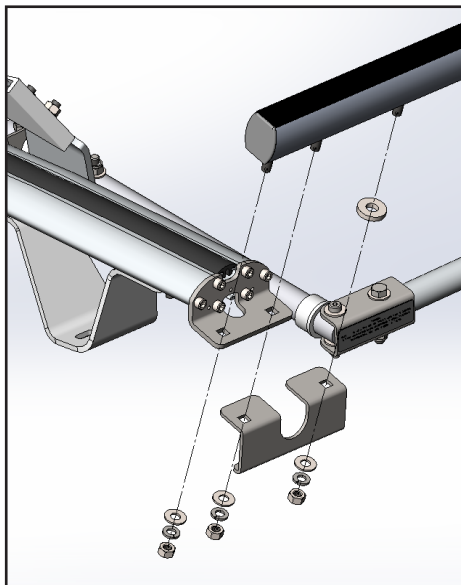
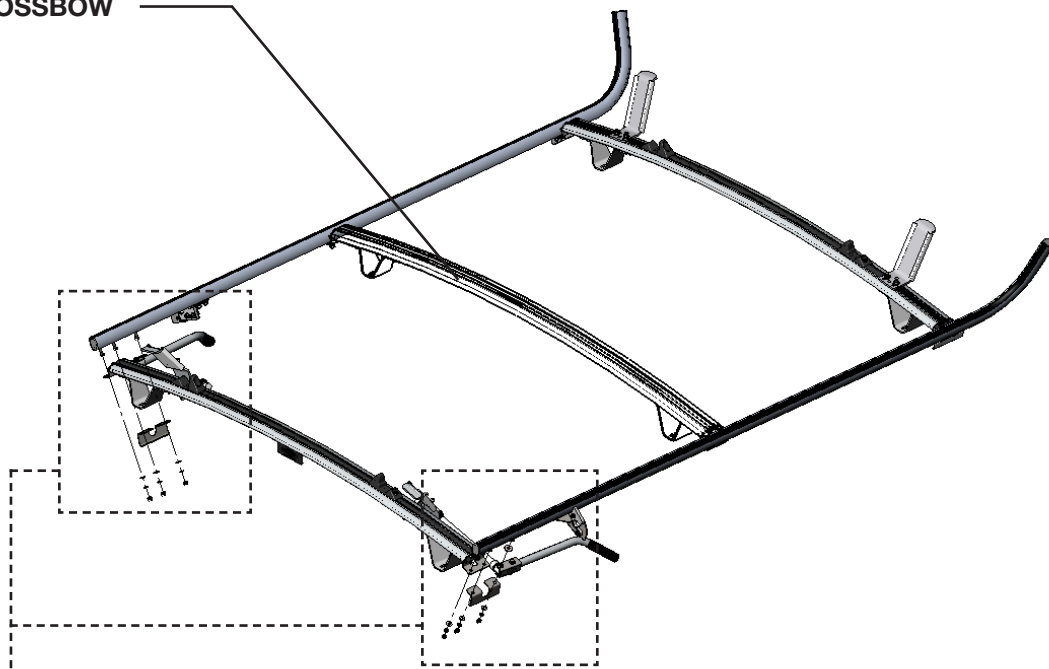
6x



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

1.2.11 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

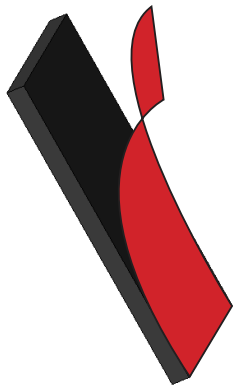
- Carriage bolts are already on the ski.
- #98-160 Spacer
- #98-117 Flat Washer
- #98-123 Lock Washer
- #94-105 Hex Nut

PHASE 2 – INSTALLATION

2.1 MOUNTING TRACKS INSTALLATION

2.1.1 Peel the backer off of the foam sheet.

6x



TOOLS

- Knife

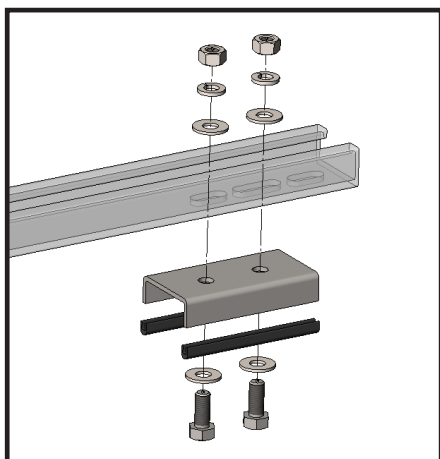
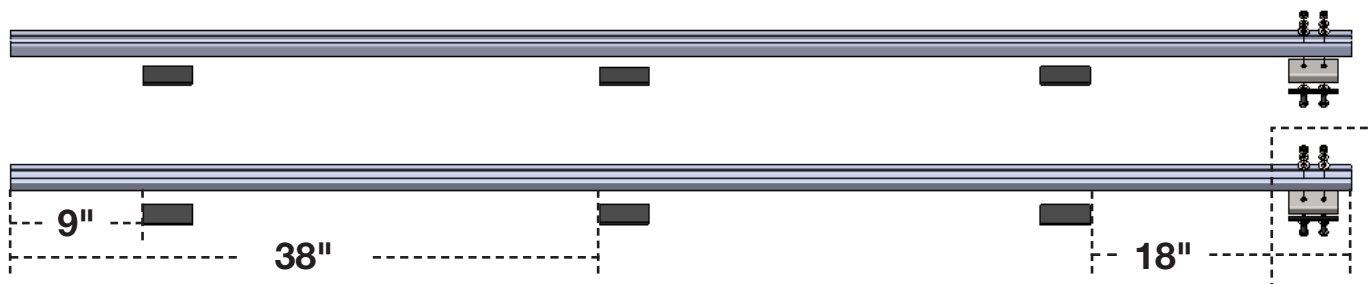
- 2.1.2 • Attach 3 foam sheets, to the back of each mounting track.
• Attach top roof clamps with rubber edge trims on the front end of the mounting tracks.

REAR

4 HOLES

FRONT

3 HOLES



TOOLS

- Cordless Impact
- 1/2" Socket

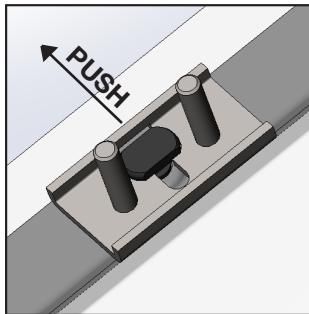
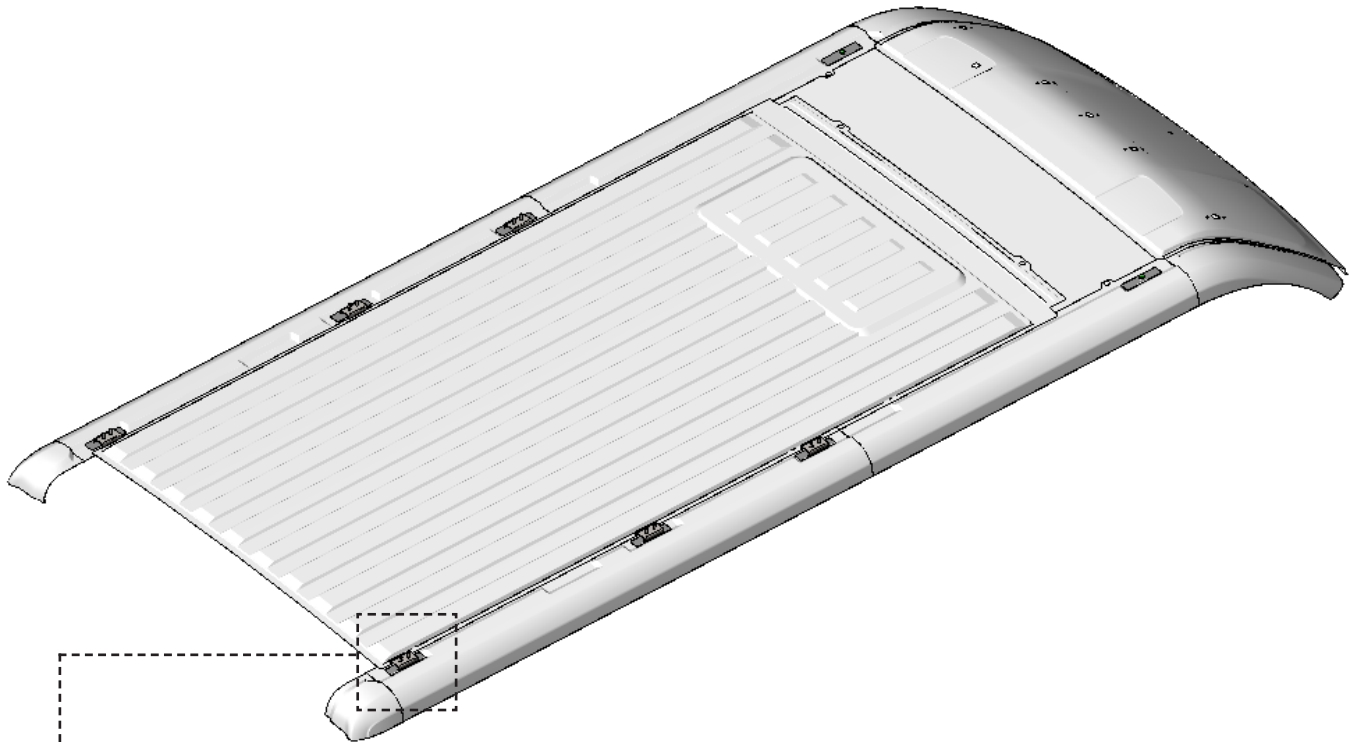
HARDWARE USED

4x



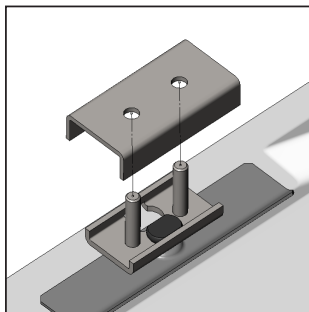
- #90-205 Hex Bolt 5/16" x 3/4"
- #98-117 Flat Washer
- #98-123 Lock Washer
- #98-117 Flat Washer
- #94-105 Hex Nut

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.

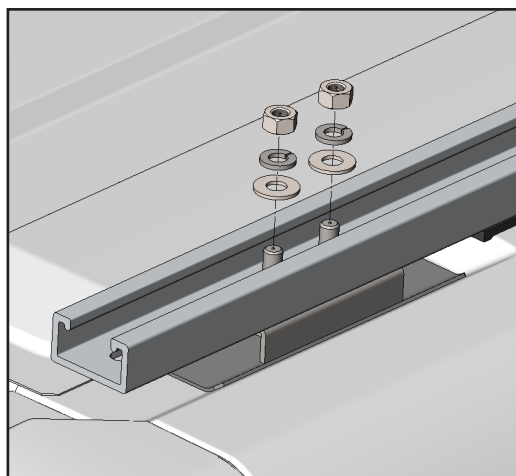
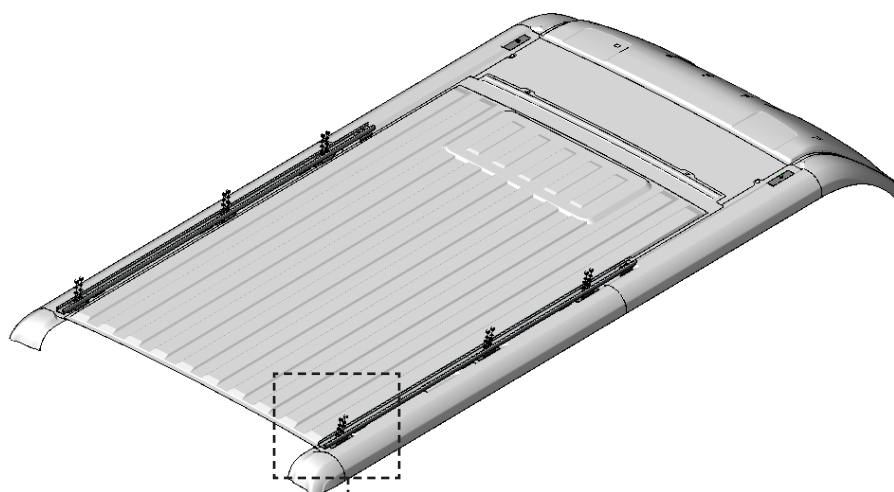
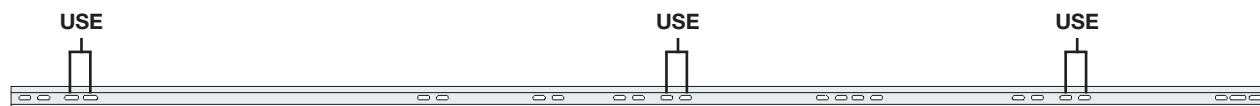
6x

2.1.4 Install the mounting tracks onto the clamps.

Mounting Track Orientation

REAR
4 HOLES

FRONT
3 HOLES






TOOLS

- Cordless Impact
- 1/2" Socket

HARDWARE USED

12x

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

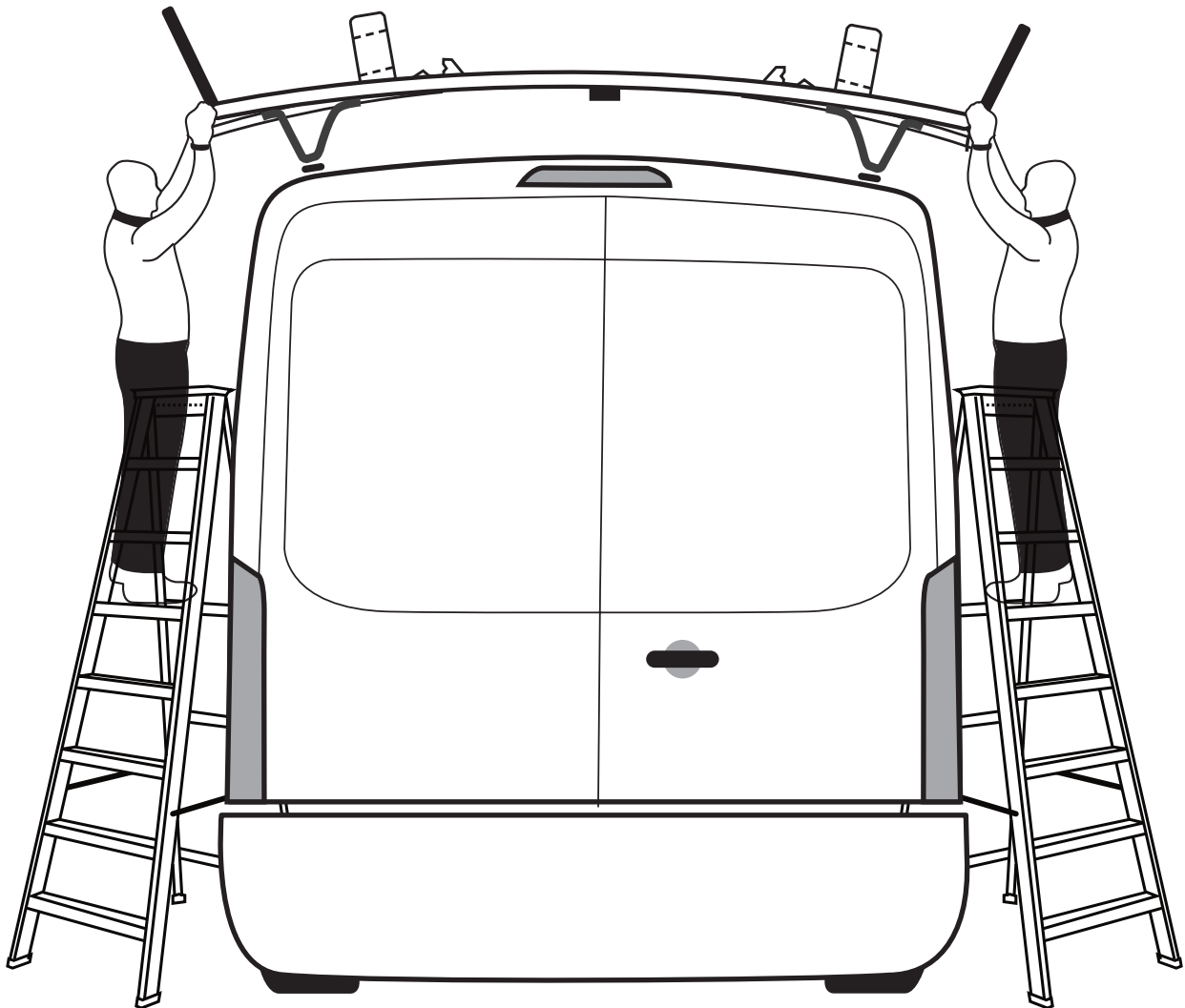
PHASE 2 – INSTALLATION

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.

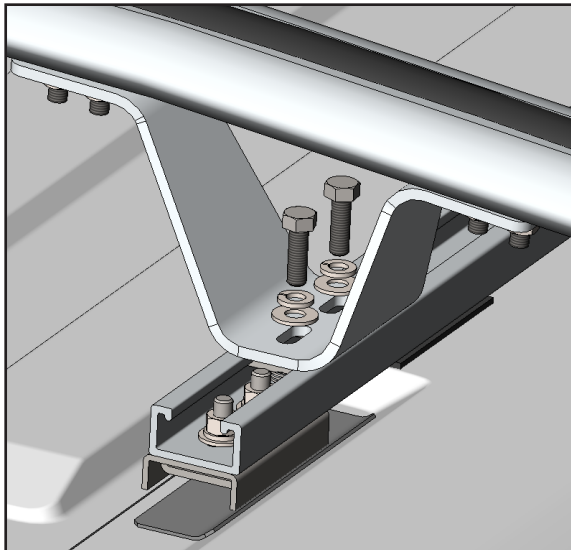
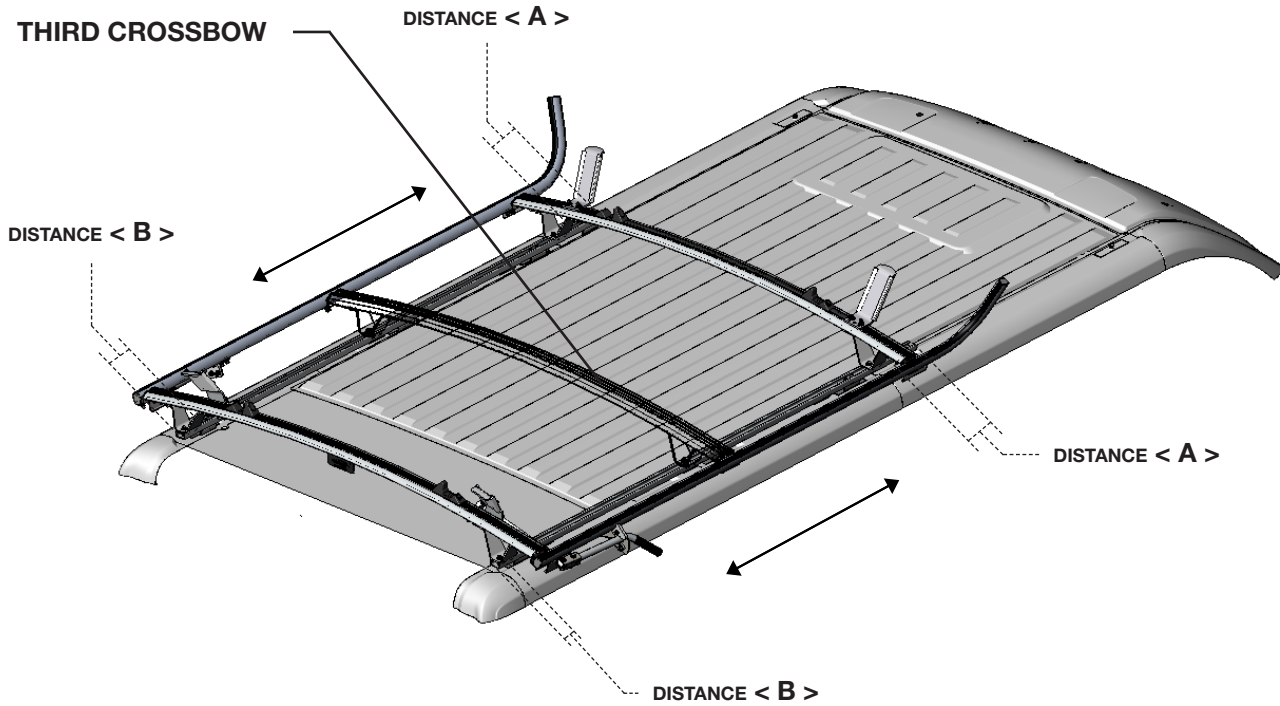
Ladder Rack



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

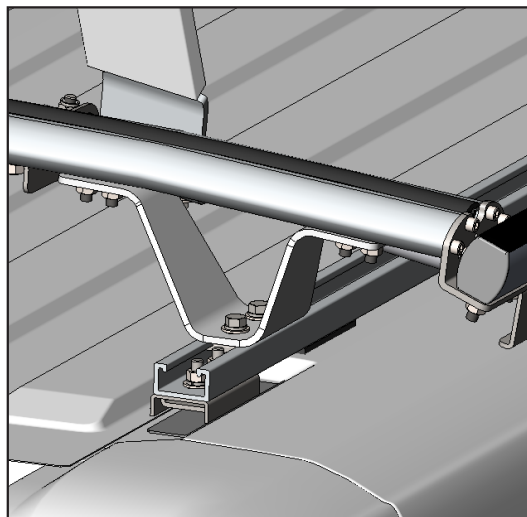
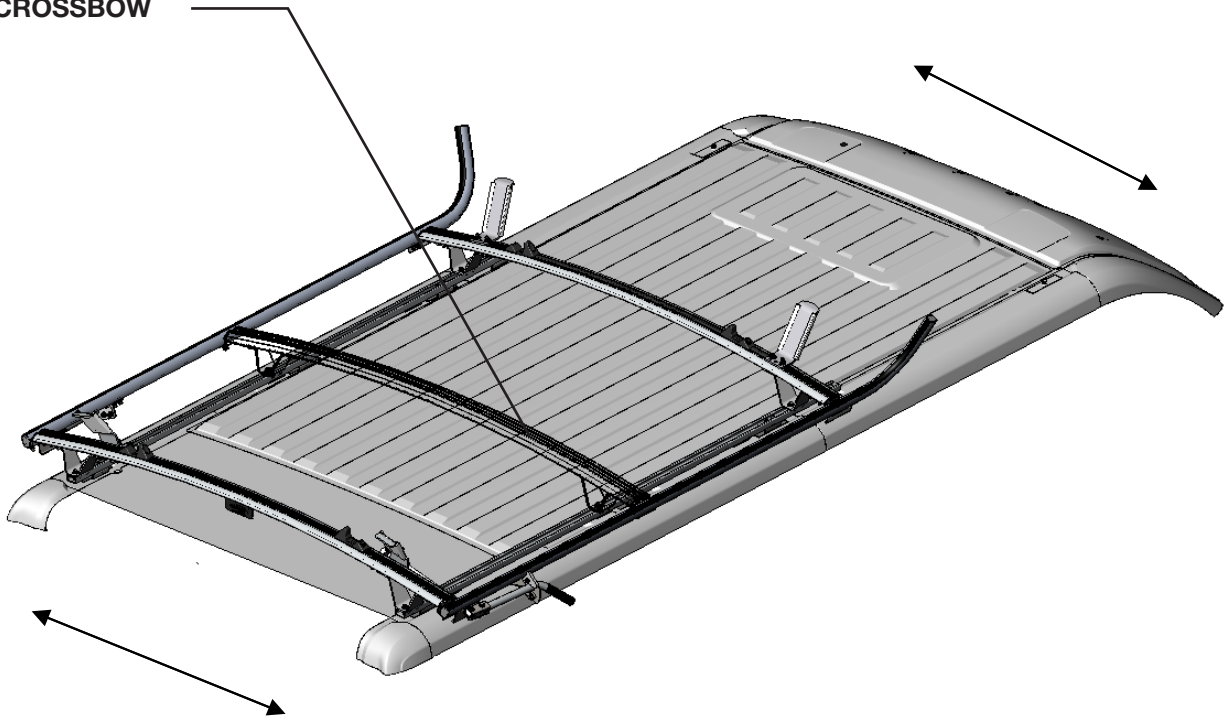
8x



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.

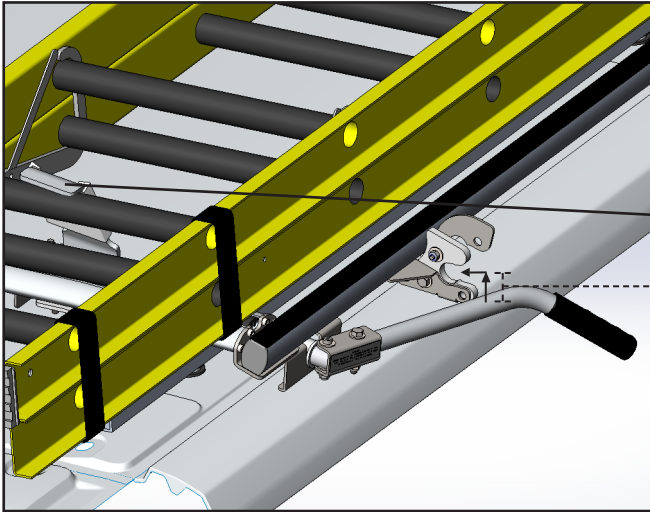
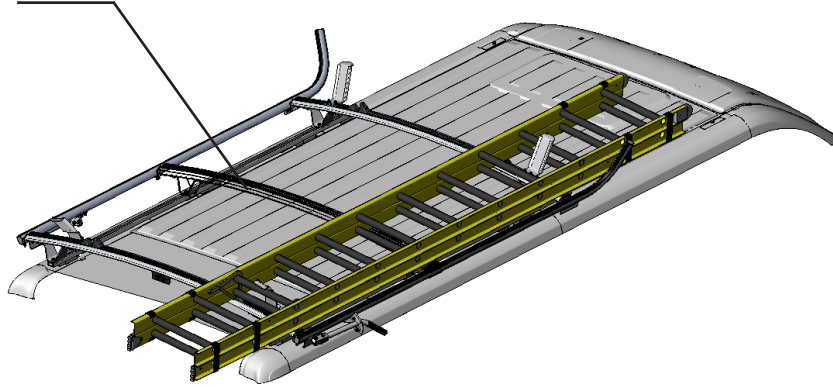
NOTE:

- Do this step on both sides.
- 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.

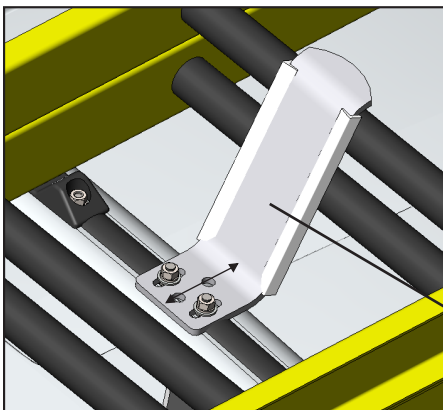
THIRD CROSSBOW



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

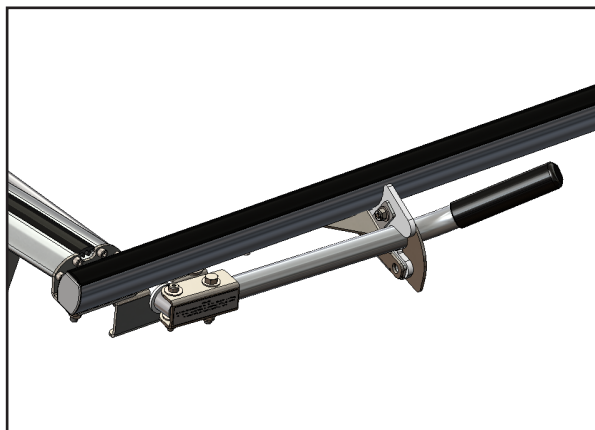
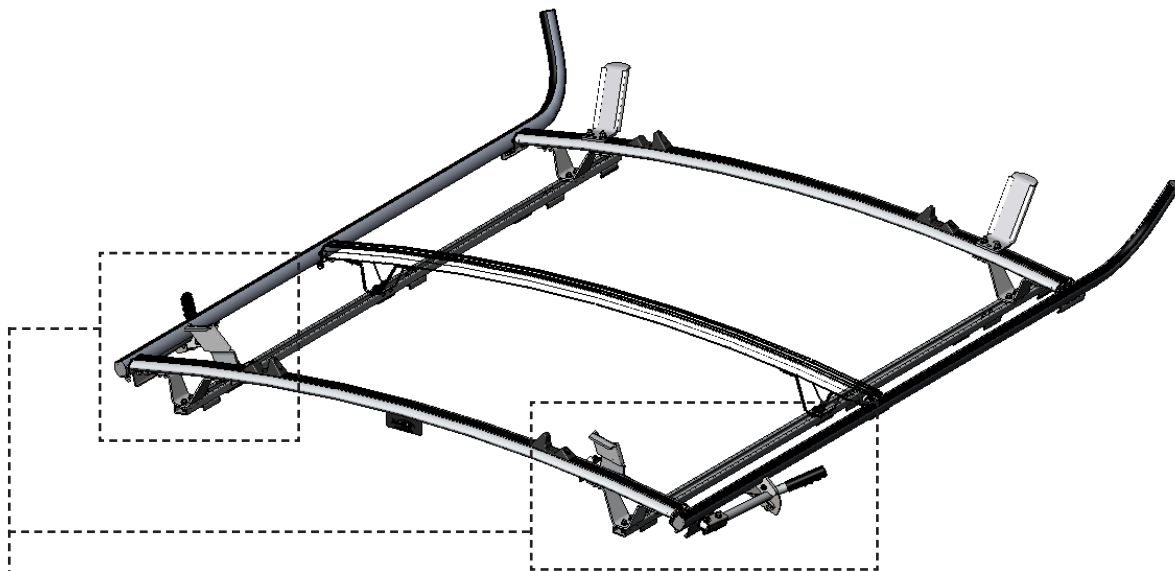
- ☐ Cordless Impact
- ☐ 1/2" Socket

FRONT HOOK

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

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

