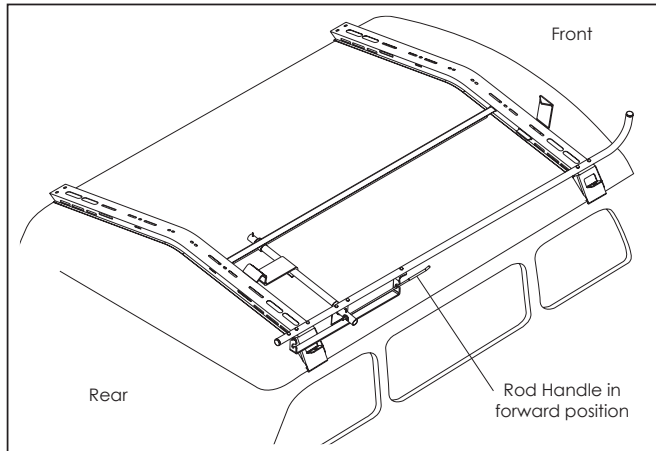


USE BOOKMARKS TO NAVIGATE THROUGH THIS DOUCUMENT

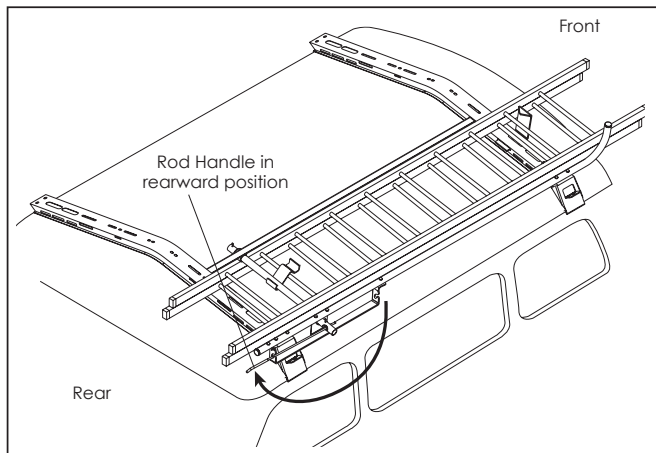


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Figure 19



UNLOCKED



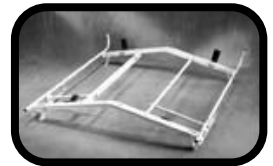
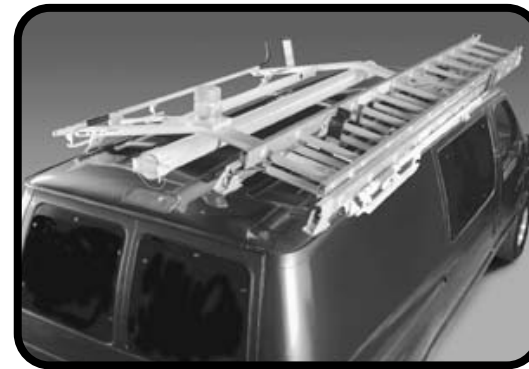
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2400 Mellon Court, Decatur, GA 30035
Phone: 1-800-222-8785
www.masterack.com



Ladder Rack

Bolt Through/Outer Clamp Assemblies



Review all installation instructions before proceeding with the assembly.

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PACKAGES

025540 - Double Ladder Rack Full Size [Includes: (1) 020245, (1) 021066, and (1) 021226]

025539 - Single Ladder Rack Full Size [Includes: (1) 020245, and (1) 021066]

NOTE:

The Ladder Rack is intended to carry ladders on your roof top. Masterack offers Crossbow Tie-Down Kits and Ladder Rack Extensions for additional security on longer ladders (optional). Before using, make sure that the Crossbows are securely mounted to the vehicle as described. **DO NOT OVERLOAD** the Ladder Rack; this may pose a safety hazard and damage to the vehicle could occur.

****MAXIMUM LADDER LENGTHS ON LADDER RACKS IS 14 FT (28FT EXTN)****

Part 1 - CROSSBOW ASSEMBLY

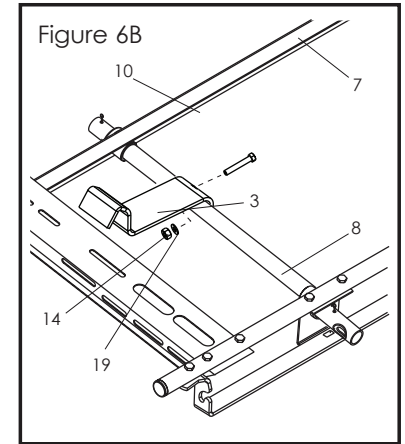
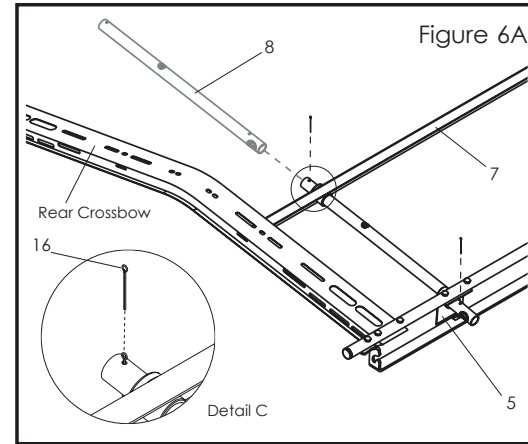
SECTION 1: FULL SIZE CROSSBOW KIT

PARTS LIST

Components			RECOMMENDED TOOLS
ITEM	QTY	DESCRIPTION	
1	2	Crossbow - 72"	Wrench or Socket: 1/2"
2	4	Outer Clamp	
3	4	Inner Clamp	

Hardware

4	8	Carriage Bolt - 3/8"-16 x 3/4"
5	12	Nut - 3/8"
6	12	Washer - Flat 3/8"



STEP 7

Rotate the RUNG HOOK until it rests on the rear CROSSBOW as shown in Figure 7A.

Insert (1) 3/8" SPACER (Item 15) into AXLE TUBE and orient so that the hole in the SPACER is facing outward. Once the RUNG HOOK is positioned properly, insert the ROD HANDLE (Item 2) through the AXLE TUBE and the SPACER. Tighten the HEX SOCKET SCREW SET (Item 11) in the SPACER so that it seats in the pre-drilled area in the ROD HANDLE. The ROD HANDLE should now lock into the forward lock position on the HANDLE LOCK. See Figure 7B.

Figure 7A

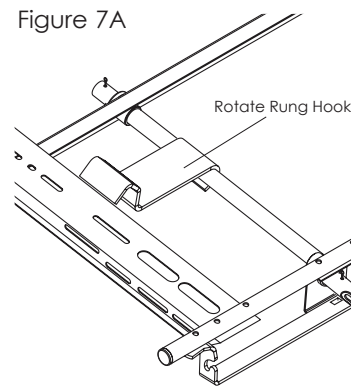
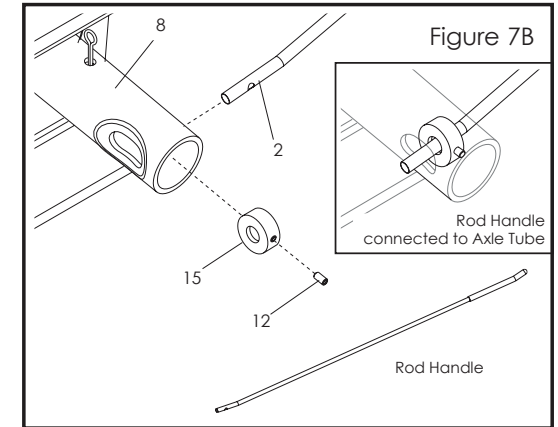


Figure 7B



Part 3 - OPERATING INSTRUCTIONS

In the UNLOCKED position, the ROD HANDLE should be securely seated in the forward position of the HANDLE LOCK.

To LOAD the ladder, lay it across and to the inside of the OUTER TUBE. Pivot the rear of the ladder up onto the ladder rack and push it firmly against the FRONT STOP.

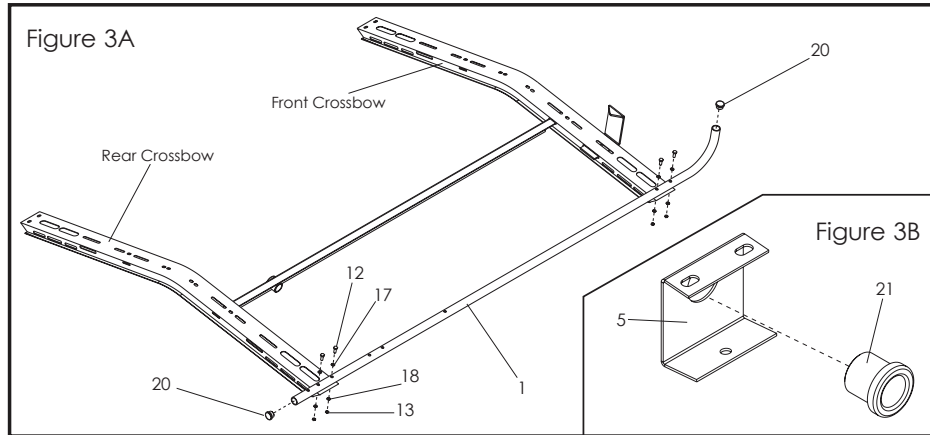
LOCK the ladder in place on the ladder rack by rotating the ROD HANDLE to the rearward position of the HANDLE LOCK.

UNLOAD the ladder by lifting the rear of the ladder and pivoting it downward.

The FRONT STOP may be adjusted forward or backward to establish proper tension on the ladder. During use, periodically check the ladder for proper tension and check the fasteners at all points where the ladder rack is attached to the vehicle. Tighten as necessary.

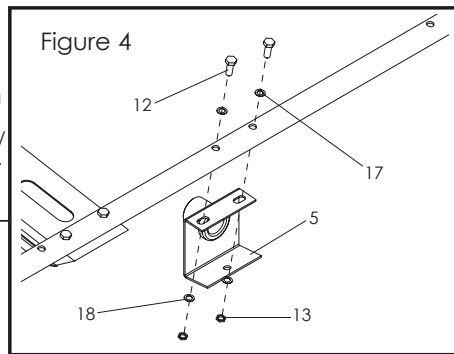
STEP 3

Place (2) TUBE INSERTS (Item 20) into the ends of the OUTER TUBE (Item 1). See Figure 3A. Attach the OUTER TUBE (Item 1) to the front and rear CROSSBOWS using (4) 5/16" X 2" SCREW CAPS (Item 12), (4) 5/16" NEOPRENE WASHERS (Item 17) directly under the screw heads, (4) 5/16" FLAT WASHERS (Item 18), and (4) 5/16" NUTS (Item 13). The curved end on OUTER TUBE should be facing upward. See Figure 3A.



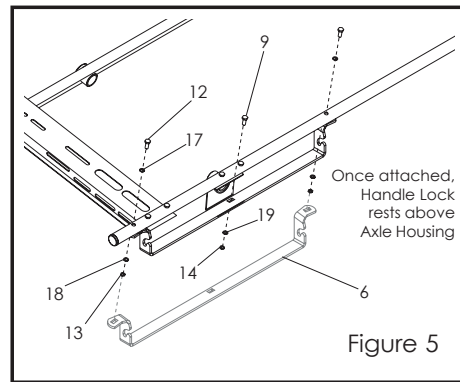
STEP 4

Insert the other BEARING (Item 21) into the AXLE HOUSING (Item 5). See Figure 3B. Next, attach the AXLE HOUSING to the OUTER TUBE using (2) 5/16" X 2" SCREW CAPS (Item 12), (2) 5/16" NEOPRENE WASHERS (Item 17) directly under the screw heads, (2) 5/16" FLAT WASHERS (Item 18), and (2) 5/16" NUTS (Item 13). Tighten securely. All bolt heads face upward. See Figure 4.



STEP 5

Orient the HANDLE LOCK (Item 6) as shown in Figure 5, and attach it to the OUTER TUBE using (2) 5/16" X 2" SCREW CAPS (Item 12), (2) 5/16" NEOPRENE WASHERS (Item 17) directly under the screw heads, (2) 5/16" FLAT WASHERS (Item 18), and (2) 5/16" NUTS (Item 13). Once this is completed, connect the AXLE HOUSING (Item 5) to the HANDLE LOCK with (1) 3/8" X 1" CARRIAGE BOLT (Item 9), (1) 3/8" FLAT WASHER (Item 19), and (1) 3/8" NUT (Item 14). Tighten securely. See Figure 5.



STEP 6

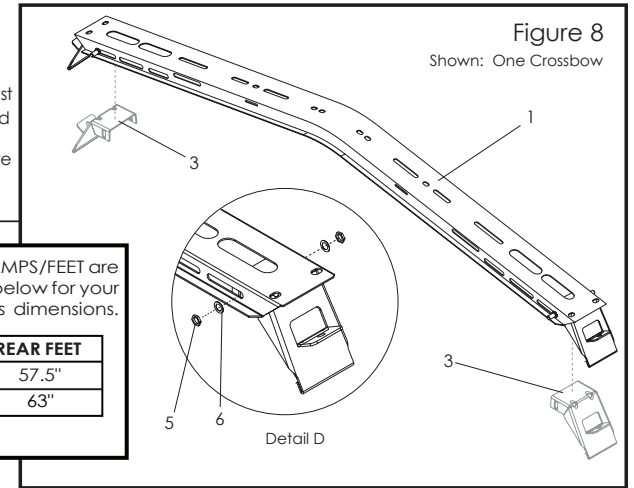
Slip the AXLE TUBE (Item 8) through the BEARINGS in the AXLE HOUSING and the INBOARD RAIL. Secure with (2) 3/16" X 2" PINS (Item 16). See Figure 6A and Detail C. Place the RUNG HOOK (Item 3) on the AXLE TUBE and attach with (1) 3/8" X 2-1/4" CARRIAGE BOLT (Item 10), (1) 3/8" FLAT WASHER (Item 19), and (1) 3/8" NUT (Item 14). Tighten. See Figure 6B.

STEP 1

Locate (4) INNER CLAMPS (Item 3) and (2) CROSSBOWS (Item 1). Fasten one INNER CLAMP to each end of the CROSSBOWS using (2) 3/8" CARRIAGE BOLTS (Item 4), (2) 3/8" WASHERS (Item 6), and (2) 3/8" NUTS (Item 5) **per clamp**. The WASHERS and NUTS go on the outside of the crossbow. Do not tighten - allow the bracket to slide in the slot. See Figure 8 and Detail D.

STEP 2

Carefully place the Ladder Rack Assembly on top of the vehicle. See PLACEMENT GUIDE on next page. Adjust the INNER CLAMPS inward or outward so that they sit firmly and squarely in the rain gutter and the Crossbows are centered on top of the van. Tighten all fasteners.

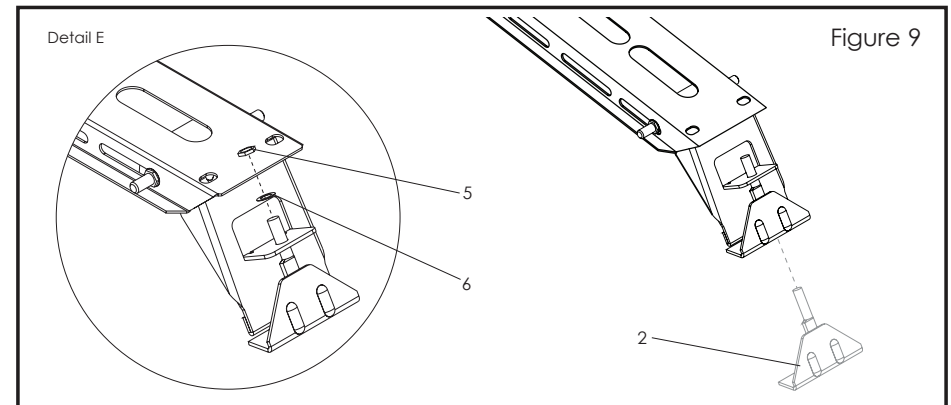


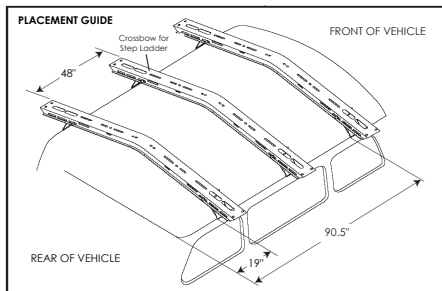
The distance between CLAMPS/FEET are make specific. Use the chart below for your FULL SIZE VAN's dimensions.

MAKE	FRONT FEET	REAR FEET
Chevy	58.5"	57.5"
Ford	64.5"	63"

STEP 3

Locate the (4) OUTER CLAMPS (Item 2). Attach one OUTER CLAMP firmly to each INNER CLAMP so that the OUTER CLAMP firmly grips the bottom of the rain gutter and the threaded end goes through the hole in the flange of the INNER CLAMP. Use (1) 3/8" WASHER (Item 6), and (1) 3/8" ESN (Item 5) to tighten each. Push the OUTER CLAMP firmly against the vehicle while tightening to a recommended torque of 30 ft. lbs. See Figure 9 and Detail E.
Note: The OUTER CLAMP may loosen over a period of time due to the soft material in the rain gutter. Be sure to check that all fasteners are tight before loading.





SECTION 2: UPLANDER/CARAVAN CROSSBOW KIT

PARTS LIST

Components

ITEM	QTY	DESCRIPTION
1	2	Crossbow - 57"
2	4	Mounting Plate
3	2	Mounting Plate Stiffener
4	4	Mounting Foot - 7.125"

Hardware

5	2	Screw - 1/4"-20 x 1" Hex Washerhead
6	8	Screw - 3/8"-16 x 1" Hex Washerhead
7	8	Screw - 3/8"-16 x 1-1/2" Hex Washerhead
8	2	Plusnut
9	16	Nut - Elastic Stop 3/8"-16
10	8	Washer - 3/8" ID Neoprene
11	2	Washer - 1/4" Helical
12	16	Washer - 3/8"
13	8	Sponge - 1/4" x 1-1/2" x 3-1/2"
14	1	Plusnut Tool

RECOMMENDED TOOLS

Drill
 Drill Bit: 7/16", 3/8"
 Carpenter's square or straight edge
 Pencil or marking pen
 Wrench: 7/16"
 Center Punch

Note:

The use of silicone sealant is recommended around all mounting holes drilled in the roof of the vehicle. The Chevrolet Uplander/Dodge Caravan do not have conventional rain gutters. It will be necessary to drill holes in the roof of the vehicle to mount the ladder rack. Please follow the instructions to insure your long term satisfaction.

STEP 1

Loosely attach the (4) MOUNTING FEET (Item 4) to the (2) CROSSBOWS (Item 1) assembly using (2) 3/8"-16 x 1" HWH SCREWS (Item 6), (2) 3/8" WASHERS (Item 12), and (2) 3/8" ESN (Item 9) **per MOUNTING FOOT**. Do not tighten yet. Place the ladder rack assembly on top of the vehicle. Adjust the mounting feet in or out while centering the ladder rack. See Figure 10 and Detail F.

Hardware

9	4	Carriage Bolt - 3/8" x 1"
10	1	Carriage Bolt - 3/8" x 2-1/4"
11	1	Hex Socket Screw Set - Nylon
12	8	Screw Cap - 5/16" x 2"
13	8	Nut - 5/16"
14	5	Nut - 3/8"
15	1	Spacer - 3/8"
16	2	Pin - 3/16" x 2"
17	8	Washer - 5/16" Neoprene
18	8	Washer - 5/16" Flat
19	5	Washer - 3/8" Flat
20	2	Tube Insert
21	2	Bearing
	1	3/16" Allen Key
	1	1/8" Allen Key

STEP 1

Insert the (1) FRONT STOP (Item 4) through the slots in the **front** CROSSBOW, and align so that the vertical section of the FRONT STOP touches the CROSSBOW. Secure together with (1) 3/8" x 1" CARRIAGE BOLT (Item 9), (1) 3/8" FLAT WASHER (Item 19), and (1) 3/8" NUT (Item 14). Bolt head should be facing upward. See Figure 1.

Note: Front Stop may require further adjustment for proper operation. See Operating Instructions.

STEP 2

Locate the INBOARD RAIL (Item 7) and (1) BEARING (Item 21). Insert BEARING into pre-punched hole in INBOARD RAIL. See Detail B. Insert each end of the INBOARD RAIL into the front and rear CROSSBOWS and attach using (2) 3/8" x 1" CARRIAGE BOLTS (Item 9), (2) 3/8" FLAT WASHERS (Item 19), and (2) 3/8" NUTS (Item 14). Bolt head should be facing upward. See Figure 2 and Detail A.

Note: Flat side of INBOARD RAIL (with holes) always faces the inside of the assembly. Flanges should be facing outward. See Figure 2.

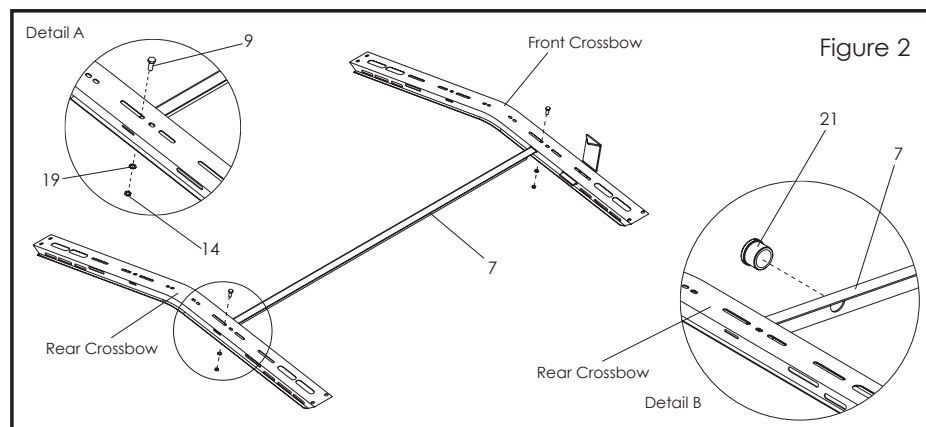
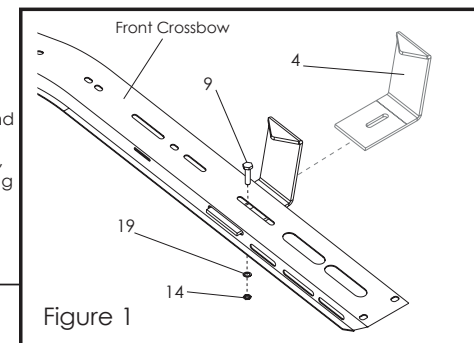
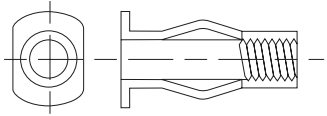
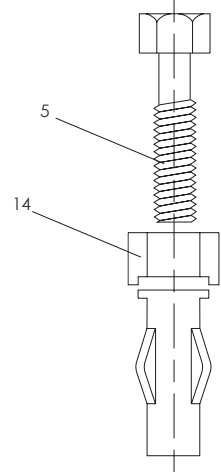


Figure 18
Plusnut Installation

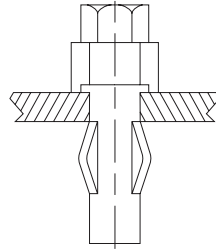
1. The Plusnut is pre-bulbed for easy installation.



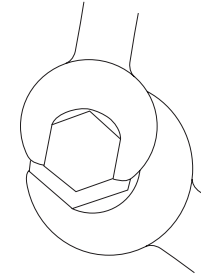
2. The Plusnut is preassembled with a hex cap and hex bolt. Then it is inserted into a predrilled hole.



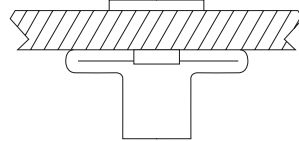
3. As the bolt is tightened, the Plusnut upsets and provides outstanding fastening holding power.



4. The C-500 Plusnut (Item 14) tool tightens bolt through hex head cap into Plusnut. A ratchet, open-end or closed-end wrench can be used.



5. A fully upset Plusnut provides a reliable nut for fastening.



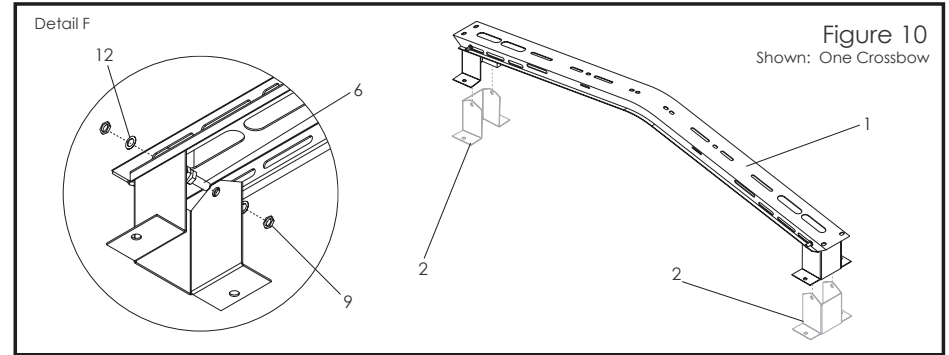
Part 2 - LADDER RACK ASSEMBLY (For Models: 020245, 020796, 021226, 028064 and 028601)

PARTS LIST

Components		
ITEM	QTY	DESCRIPTION
1	1	Outer Tube
2	1	Rod Handle
3	1	Rung Hook
4	1	Front Stop (8" Stop on model 021226)
5	1	Axle Housing
6	1	Handle Lock
7	1	Inboard Rail
8	1	Axle Tube

RECOMMENDED TOOLS

Wrench or Socket: 1/2"



STEP 2

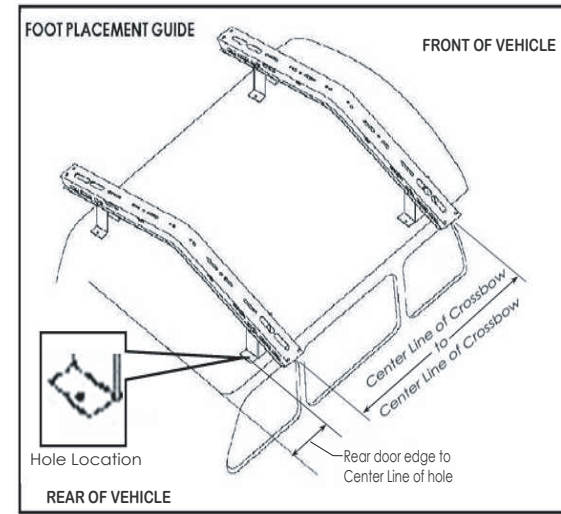
Once the MOUNTING FEET are properly adjusted, tighten all ladder rack fasteners and mark all eight mounting holes using a center punch. See **FOOT PLACE MENT GUIDE**.

STEP 3

Move the ladder rack to allow working space and drill eight 7/16" diameter holes through the roof where marked. Your drilled holes should straddle the roof crossmember at the rear. At the front, one hole will fall to the front of the roof crossmember and the other hole will go through the roof crossmember. See Figure 12.

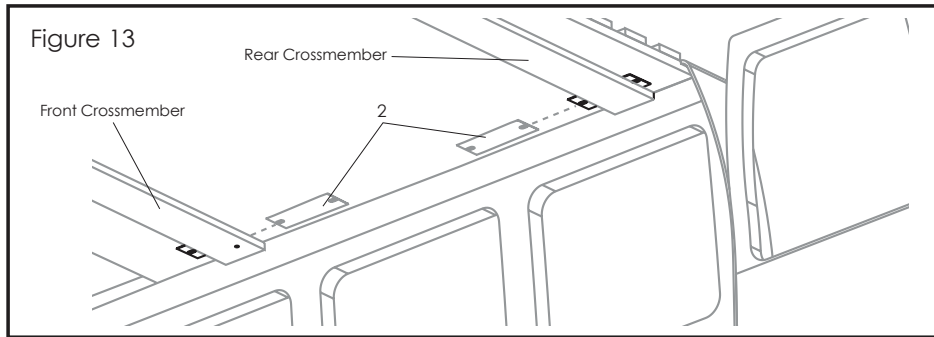
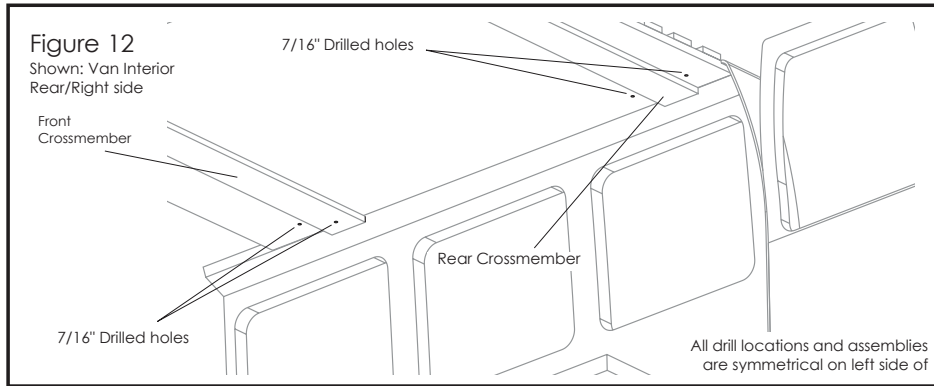
STEP 4

Locate the (4) MOUNTING PLATES (Item 2). Position each of the four flat MOUNTING PLATES by sliding them between the roof crossmembers and the roof at all four mounting locations. Push each MOUNTING PLATE through the sealant, then align the holes in each bracket with the drilled holes in the roof. See Figure 13.



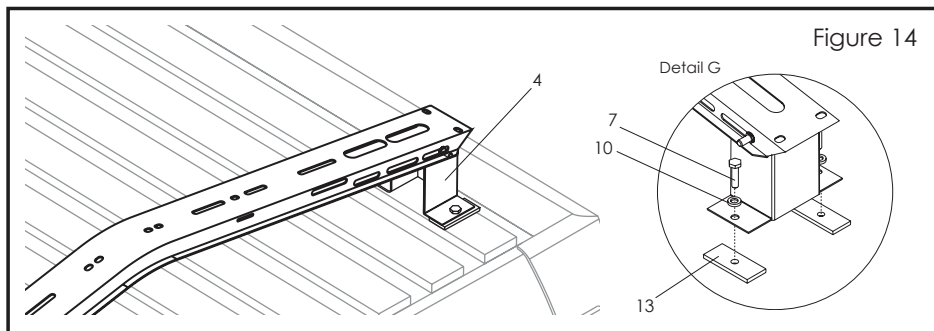
Dodge Caravan:
18 3/4" Rear door edge to Center Line of hole.
60 1/4" Center Line to Center Line.

Uplander:
17 3/4" Rear door edge to Center Line of hole.
60 3/8" Center Line to Center Line.



STEP 5

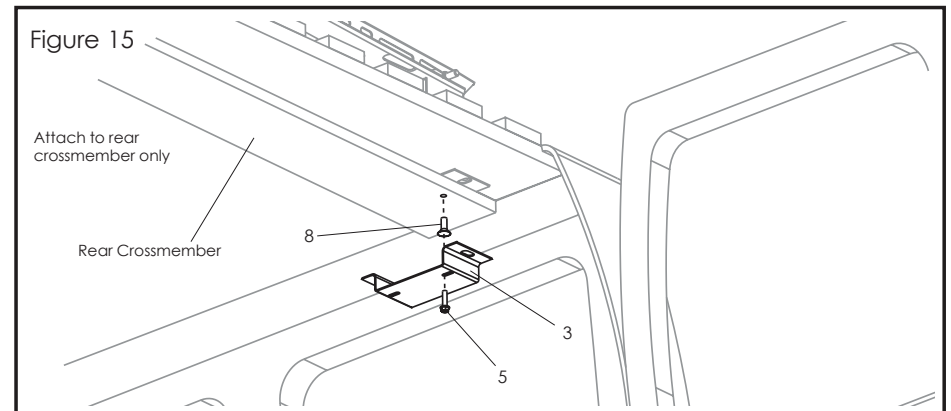
Reposition the ladder rack and place the (8) SPONGES (Item 13) between each of the MOUNTING FEET and the roof. Insert (8) 3/8" NEOPRENE WASHERS (Item 10) and (8) 3/8" x 1-1/2" SCREWS (Item 7) through each of the holes in the MOUNTING FEET from the top. See Figure 14 and Detail G.



5

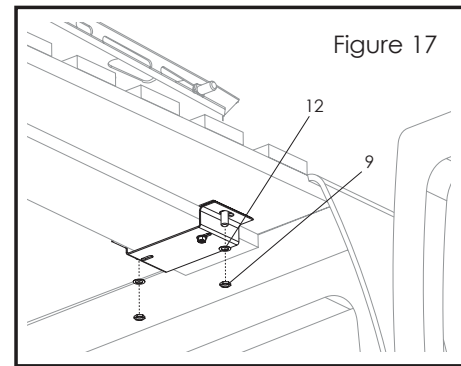
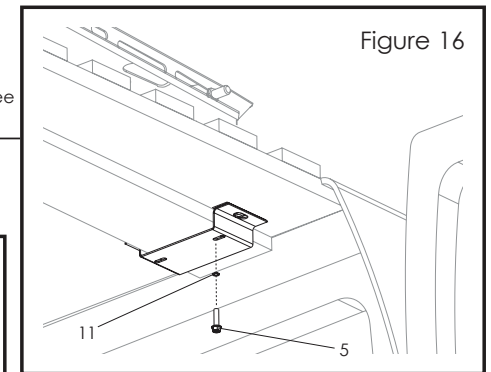
STEP 6

Place the (2) STIFFENER PLATES (Item 3) over the rear crossmember so that the holes in the STIFFENER PLATE line up with the holes in the MOUNTING PLATES. **Do not attach to the MOUNTING PLATE yet.**
Note: The slots in the STIFFENER PLATES should be offset to the center of the vehicle. Mark through the rearmost slot in each STIFFENER PLATE onto the crossmember. Remove the STIFFENER PLATE to allow for drilling. Center punch the marks and drill a 3/8" diameter hole into the crossmember on each side. See Figure 15. Install (2) PLUSNUTS (Item 8) into 3/8" pilot holes using (1) 1/4"-20 x 1" HWH SCREW (Item 5). Remove SCREW after installation of PLUSNUT. See Figure 18 for PLUSNUT installation.



STEP 7

Replace the STIFFENER PLATES over the MOUNTING PLATES, and secure with (2) 1/4" SPLIT LOCK WASHER (Item 11) AND (2) 1/4"-20 X 1" HWH SCREW (Item 5). See Figure 16.



STEP 8

Place (8) 3/8" WASHERS (Item 12), and (8) 3/8" ESN (Item 9) on all 3/8" x 1-1/2" SCREWS and tighten to a recommended torque of 30ft-lbs. See Figure 17.
Failure to perform this step could result in vehicle damage.

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