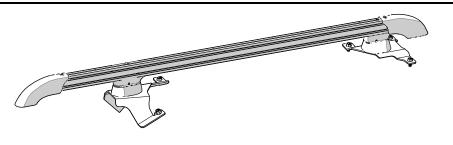
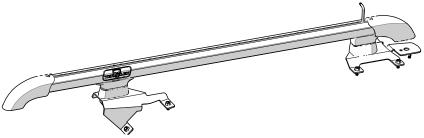


# JK Nebo Roof Rack Main Rail Kit Instructions



KIT# 4722000 KIT# 4722010

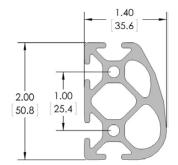


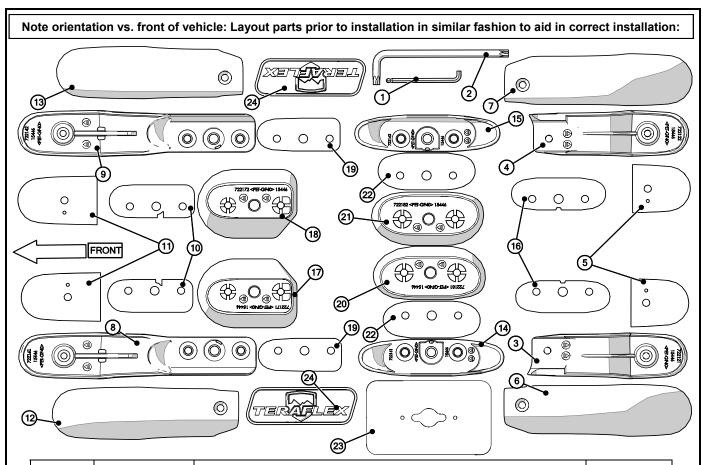
## **Important Notes:**

- Patent Pending Design
- CAUTION: 2007-2010 Hardtops: Before beginning installation, contact TeraFlex (801-288-2585) for different front lower feet, part numbers 722147 & 722148 (replaces 722141 and 722142)
- Prior to beginning this installation, read these instructions to familiarize yourself with the required steps and
  evaluate if you are experienced and capable to personally perform these modifications. A factory service and
  owners manual should be used in conjunction with these installation instructions.
- Refer to the parts list to ensure that all necessary components and hardware has been included. If any parts are missing please contact your local TeraFlex dealer for assistance.
- Width between rails: 43" [1090mm]
- Length of rails between caps: 45.5" [1154mm]
- Height added from crown of hardtop 2-3/8" [60.5mm]
- Load Rating: See section 1 for the owners manual for important notes to help safely load the rack.
  - 850 lbs [385 Kg] static
  - 200 lbs [90 Kg] dynamic.
- Weights:
  - Main rail kit 25 lbs [11.3 Kg]
  - 6 Slat kit: 29lbs [13.2 Kg]

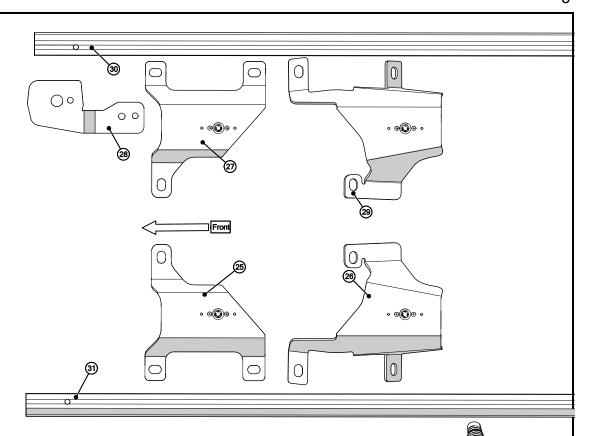
#### Tools needed:

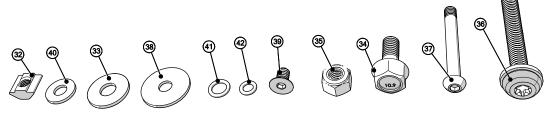
- This installation guide
- 12mm and 13mm Open End Wrench
- 10mm, 12mm and 13mm Sockets and Wrench
- X-ACTO Knife
- Ruler
- Drill
- Helper
- 1/4" and 11/32" Brad tip drill bits for fiberglass, A standard drill bit can be used but may cause more chips. We have found that the Ultra-tool 510BR 1/4" #51216 and 510BR 11/32" #5122 brad tip bits work well.





Item ID	Part Number	Name	Quantity
1	392	4mm Stubby Hex L-Key Allen Wrench	1
2	393	T40 Torx L-Key Tool	1
3	722121	JK Roof Rack Rear Lower Driver Side Foot	1
4	722122	JK Roof Rack Rear Lower Passenger Side Foot	1
5	722123	JK Roof Rack Rear Cap Gasket	2
6	722131	JK Roof Rack Rear Driver Side Upper End Cap	1
7	722132	JK Roof Rack Rear Passenger Side Upper End Cap	1
8	722141	JK Roof Rack Front Lower Driver Side Foot	1
9	722142	JK Roof Rack Front Lower Passenger Side Foot	1
10	722143	JK Roof Rack Front Foot Rear Gasket	2
11	722145	JK Roof Rack Front Cap Gasket	2
12	722151	JK Roof Rack Front Driver Side Upper End Cap	1
13	722152	JK Roof Rack Front Passenger Side Upper End Cap	1
14	722161	JK Roof Rack Rear Driver Side Rear Rail Support	1
15	722162	JK Roof Rack Rear Passenger Side Rear Rail Support	1
16	722163	JK Roof Rack Rear Rear Rail Support Gasket	2
17	722171	JK Roof Rack Front Driver Side Hard Top Spacer	1
18	722172	JK Roof Rack Front Passenger Side Hard Top Spacer	1
19	722173	JK Roof Rack Front Under Roof Support Gasket	2
20	722181	JK Roof Rack Rear Driver Side Hard Top Spacer	1
21	722182	JK Roof Rack Rear Passenger Side Hard Top Spacer	1
22	722183	JK Roof Rack Rear Under Roof Support Gasket	2
23	772218	JK Roof Rack Shim	5
24	801	JK Roof Rack Badge	2





Item ID	Part Number	Name	Quantity
25	772231	JK Roof Rack Front Driver Side Bracket with Floating Nut	1
26	772241	JK Roof Rack Rear Driver Side Bracket with Floating Nut	1
27	772230	JK Roof Rack Front Passenger Side Bracket with Floating Nut	1
28	772238	JK Satellite Antenna Relocation Bracket for JK Roof Rack	1
29	772240	JK Roof Rack Rear Passenger Side Bracket with Floating Nut	1
30	772100 / 772400	JK Roof Rack Extruded Main Rail Passenger Side Natural Silver Color / Black	1
31	772201 / 772401	JK Roof Rack Extruded Main Rail Driver Side Natural Silver Color / Black	1
32	651390	M6 x 1.0 P T-Nut for 10 Series Extrusions	14
33	23	Washer 5/16" Flat	4
34	164	Bolt M8 x 1.25 P x 20mm Long Flanged Hex Head Zinc Plated	3
35	169	Nut M8 x 1.25 pitch Nylock Hex zinc	1
36	220	Bolt M8 x 1.25 x 55mm Long Torx Head	4
37	225	Bolt M6 x 1.0 x 50mm Long Shoulder Button Head Socket Cap Screw	12
38	459	Washer 1/4" Flat SAE Type B	4
39	729	Bolt M6 x 1.0 x 10mm Long Flat Head Socket Cap Screw Stainless	6
40	730	Washer 1/4" SAE Flat	16
41	2035	O-Ring 5/16" I.D. x 7/16" OD x 1/16" Cross Section	8
42	2036	O-Ring 7/32" I.D. x 11/32" OD x 1/16" Cross Section	16

## Hard top Removal

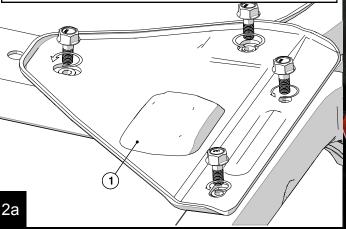
Use the factory supplied owners manual to remove the freedom panels, and then the hard top from the vehicle

# Note to Installer:

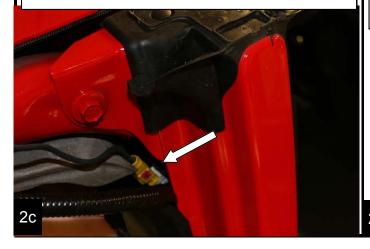
Please be sure that the end user receives the instructions and owners manual after installation.

1

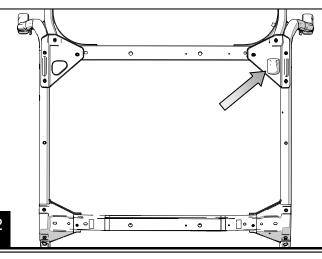
Unzip the sport bar padding at the cross bar behind the passenger seat. Using a 13mm, remove the 4 fasteners to remove the mounting plate with the antenna (1) attached.



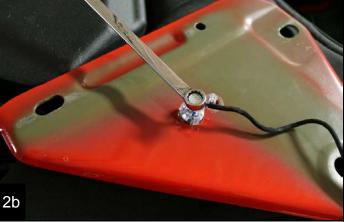
Locate the antenna connector along the passenger side B-pillar, then disconnect the connector



#### Satellite antenna removal



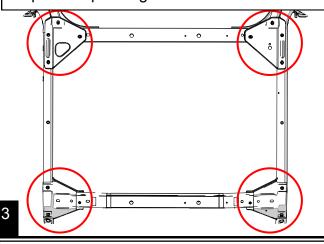
Using an 10mm wrench, remove the antenna mounting bolt and standoff spacer. Press in the lock tabs on the antenna and push the antenna out of the mounting plate.



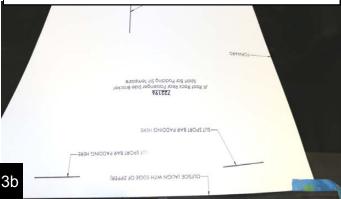
Using a 10mm socket, loosen the three screws on the passenger side of the speaker pod, gently pull down so the antenna connector can be removed. After the connector is removed, tighten the three screws to 90 in-lbs (10 Nm).



Use the following steps to make slits in the sport bar padding at the locations shown.



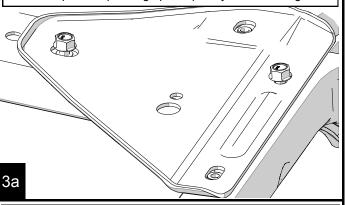
Cut out the templates and align the outside edge of the rear passenger template (722196) to the edge of the zipper tape. The other edges will align to the stitched seams. Use a ruler and sharp X-ACTO knife to slit the padding in the 3 locations marked on the template.



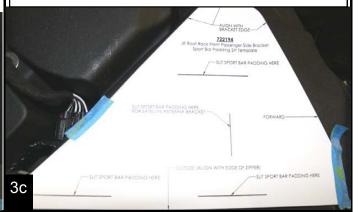
Repeat steps 3 and 4 for the driver side, cutting where indicated. Unzip the padding and discard the cardboard, leave the padding unzipped.



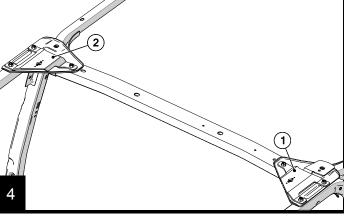
Using 2 of the existing M8 fasteners, temporarily reinstall the passenger side mounting plate as shown. Unzip and insert cardboard under the padding at the 4 locations shown in step 1 to avoid scratching the plates when making the cuts. Zip the sport bar padding up completely before slitting.



Align the outside edge of the front passenger template (722194) to the edge of the zipper tape. The other edges will align with the mounting plate under the padding. Slit the padding in the 4 locations marked on the template.



Install the front #772230 passenger (1) and #772231 driver (2) brackets.



Remove the base plate again as outlined in step 2a. Then slip the antenna bracket through the slit in the padding. Insert the front mounting plate screw (1) though the front hole.

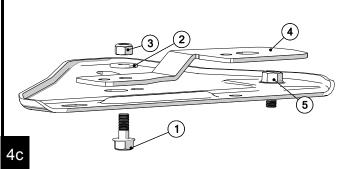
Slip the three tabs of the front passenger support brackets through the padding. It is easiest to slip the inside tab first then the two outer tabs one at a time.

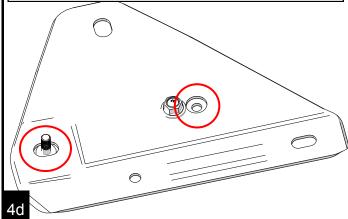




Use a 13mm socket and 12mm open end wrench to attach the new #7722388 satellite antenna bracket (4) to the base plate with the new #164 8mm bolt (1), #23 washer (2), and #169 nut (3). Be sure the OEM M8 bolt (5) is inserted through the hole of the mounting plate. Note: Padding omitted on drawings for clarity, but the tabs should be already inserted in the slits.

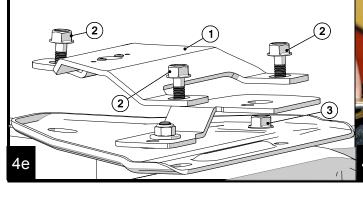
Rotate the satellite bracket until the second holes line up in the satellite and the mounting plate. Note: Be sure the OEM bolt is still inserted in the hole of the mounting plate.



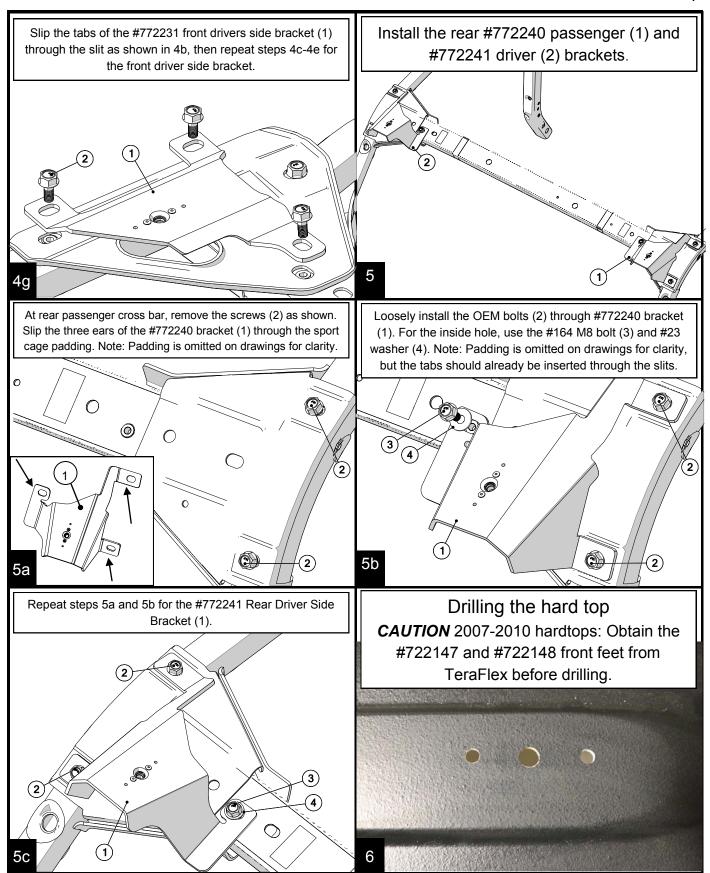


Install the #772230 bracket (1) and OEM mounting plate with the OEM M8 hardware (2) and (3). (APPLY THREAD LOCK TO BOLTS) Use a 13mm open end wrench to tighten screw (3) to 14 ft-lbs (19 Nm). Leave the other three M8 bolts (2) loose so the bracket can be shifted easily.

Caution: Check to be sure that the OEM mounting plate screw that is under the new antenna bracket is tight. The sport cage will squeak if loose!







Cut out the templates, then slip roof rack foot gasket between the front hardtop seal and the edge of the hardtop. Use the gasket as an edge to align the front of the template to the edge of hard top.

Center templates on outside rib as shown. Hold templates with a small length of painters tape.



6b

Adjust templates so they are both centered on the rib and measure 43-15/16" [111.6cm] from centerline to centerline. Measure across hard top at both the front and the rear 11/32" [8.7mm] holes. When the measurement is correct secure template with painters tape.

Note: For the cleanest cut in fiberglass we recommend brad tipped bits. We have found the Ultra Tool #51222 (510BR 11/32) and the #51216 (510BR 1/4) make very clean cuts. If care is taken, a multi-purpose bit may be used, be sure to use light pressure to reduce chipping.

Note: The holes will be completely covered with the gaskets and brackets when the install is completed.

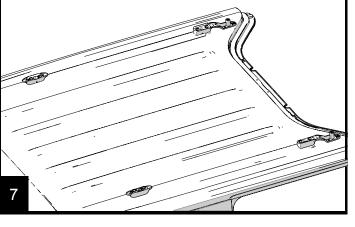


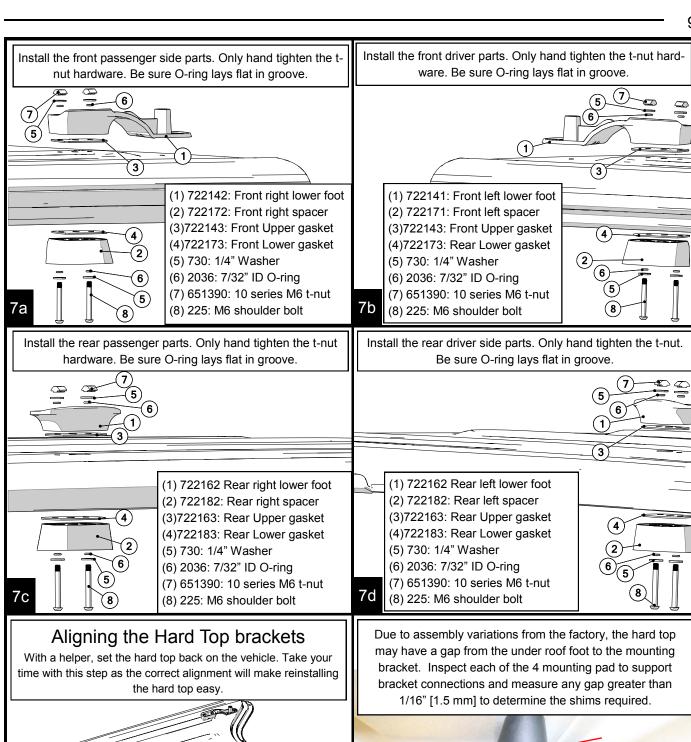
6d

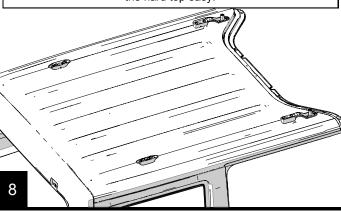
Double check that templates are centered and measurements are correct. Center punch all 16 holes. Using an 11/32" brad tip bit and very light pressure, drill the 4 larger holes. Then drill the smaller holes with 1/4" brad tip bit. Double check all holes are drilled, then remove template.

## Upper and Lower Support Installation



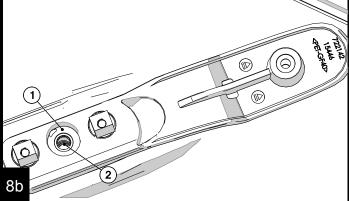




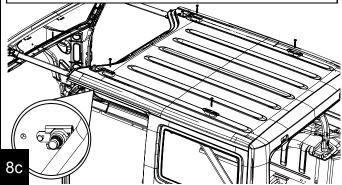




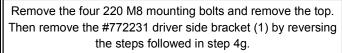
Move each of the brackets until the hole in the bracket (2) is centered with the hole in the support (1).

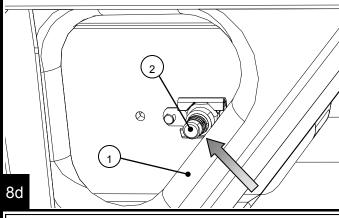


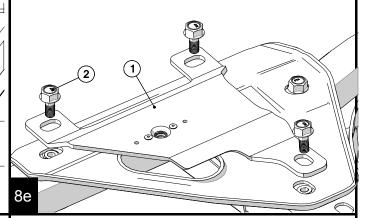
Install the four #220 M8 mounting bolts. Insert each of the bolts into the supports as shown. Due to assembly variations from the factory the front driver OEM mounting plate can interfere with the new mounting bolt. While installing check bolt for interference.



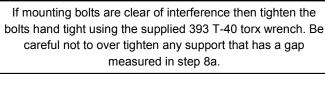
If there is interference with the OEM mounting plate (1) and mounting bolt (2) the hard top will need to be removed again. If there is no interference with bolt skip forward to step 8g.

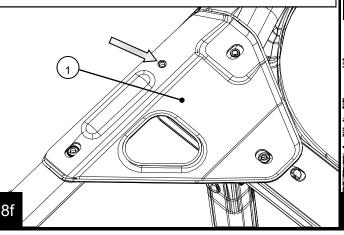


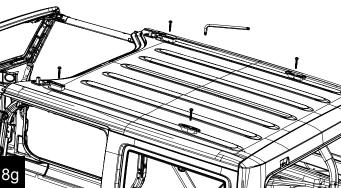




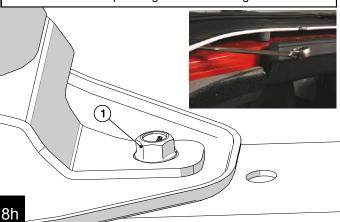
Pull the OEM mounting plate (1) off the Jeep and drill out the hole (shown below) to 3/4 in. (19mm). Now reinstall the OEM mounting plate and repeat step 4g and 8a-8c.



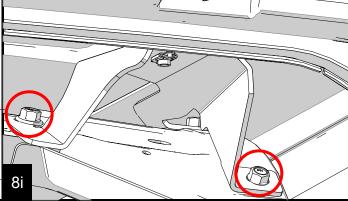




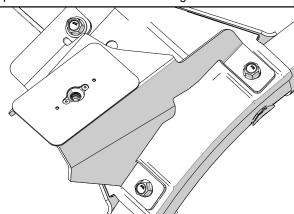
Slide a 13mm open end wrench under the front of the hard top to lightly snug up the (1) OE M8 inner front bolt for both the driver and passenger front mounting brackets.



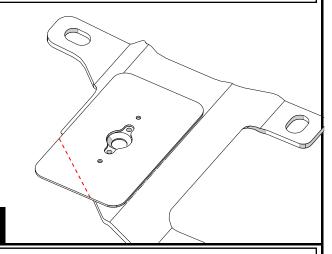
Snug down the 2 rear bolts for both the passenger and driver side rear brackets to keep the bracket from shifting. Remove the four #220 M8 torx bolts installed in 8e. Carefully remove the hard top so the support brackets do not shift positions.



If there are any gaps greater than 1/16" [1.5mm], use shims to provide a better fit. With the measurements from step 8a, determine number of shims required for each location with a gap. Center hole in shim with floating nut as shown.



If using shims in the front, trim the back edge of the front shims with an X-ACTO Knife so it does not overhang.



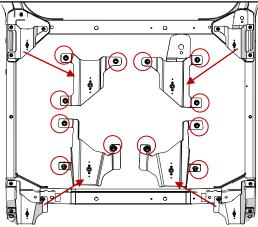
Peel of the backing, then adhere the shim to the bracket. Add additional shims as required. If Desired, two 1/8" rivets can be used to provide a more secure connection for the shims.

Reinstall the hard top.

8j



Tighten the 3 M8 bolts on each of the 4 brackets to 14 ft-lbs [19 Nm]. Also check the bolt under the satellite antenna bracket to be sure it has been sufficiently tightened.



٦m

8k

Route the satellite antenna connector though the large hole in the new bracket, then through the front outside slit. Push the antenna onto the bracket, and connect the connector.

Completely zip up all the sport bar padding

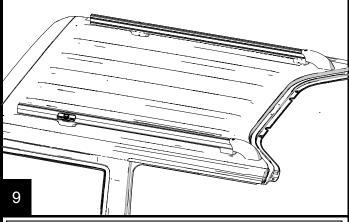


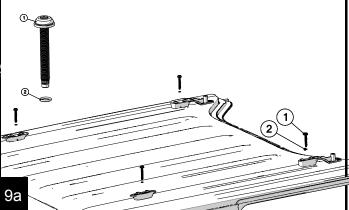


#### Install the main rails

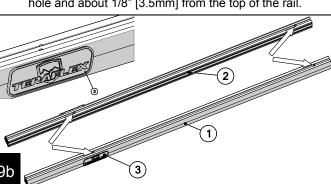
Use the following steps to install the main rail and front caps.

Slide one of the #2035 O-rings (1) onto each of the four #220 M8 mounting bolts(2). Insert each of the bolts into the through hole of the rail supports as shown.

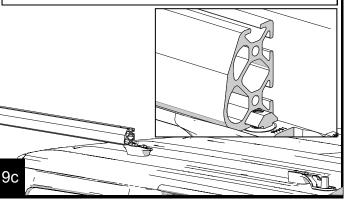


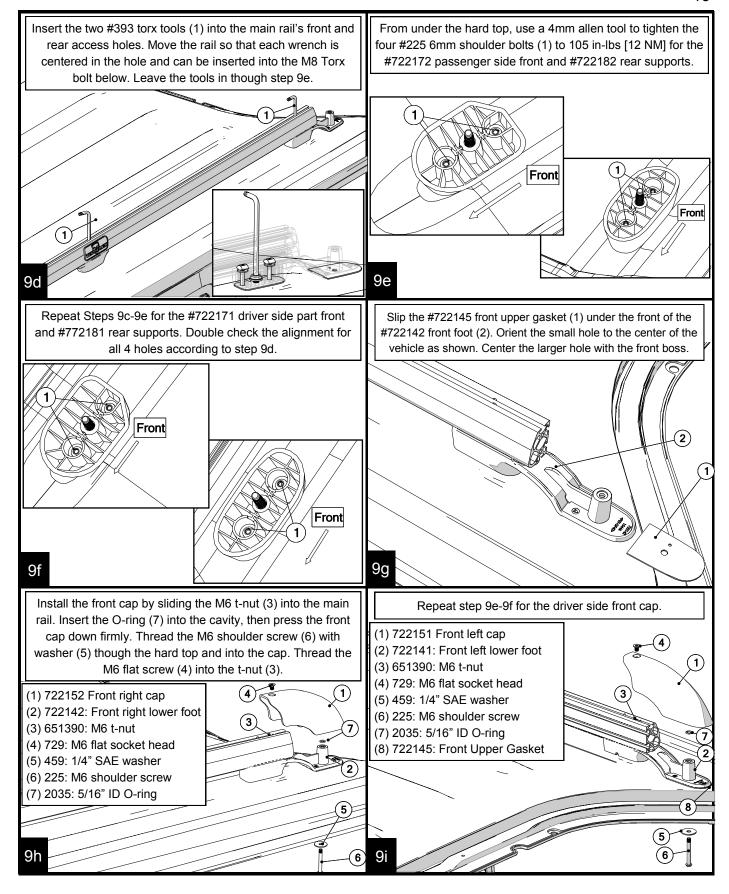


Put the #772100 passenger (1) and the #772201 driver (2) main rails together with the flat edges facing each other. The front hole is 2.5" [63.5mm] from the end. Clean the area by the rear holes with rubbing alcohol, then install the two #801 nameplates (3) so that they are centered with the rear though hole and about 1/8" [3.5mm] from the top of the rail.



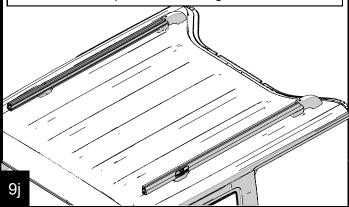
Loosen the t-nuts slightly so the rail can fit under the t-nut. Install the passenger side rail by starting at the rear and sliding the rail forward as the T-nuts slide in the lower track. Stop sliding it forward when the front rail through hole is centered on the now captured #220 M8 torx bolts.



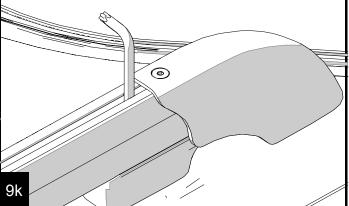


## Reinstall the hardtop

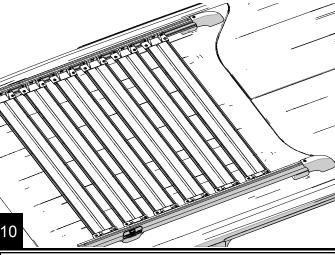
With a helper, lift the hardtop to the correct location and then set it straight down. It should settle in place, if not lift straight up and set it down again.



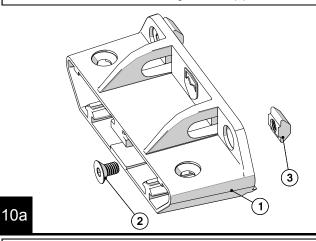
Use the #393 t-40 L-key to start each of the four #220 M8 bolts into the brackets. After the 4 bolts are started, tighten to all; for bolts to 14 ft-lbs [19 Nm] . Then reinstall the OEM fasteners and freedom panels per the owners manual.



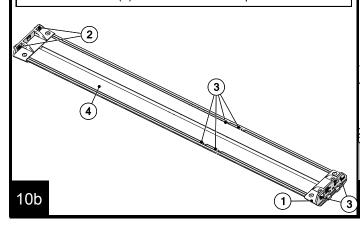
Install the Slat kit (optional accessory)



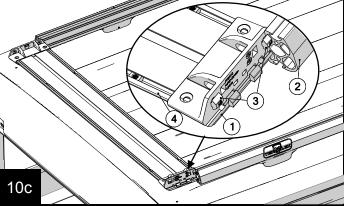
Install two of the #729 M6 flat screws (2) and two of the #651390 M6 t-nuts (3) loosely in the locations shown on all twelve of the #772310 mounting brackets (1).

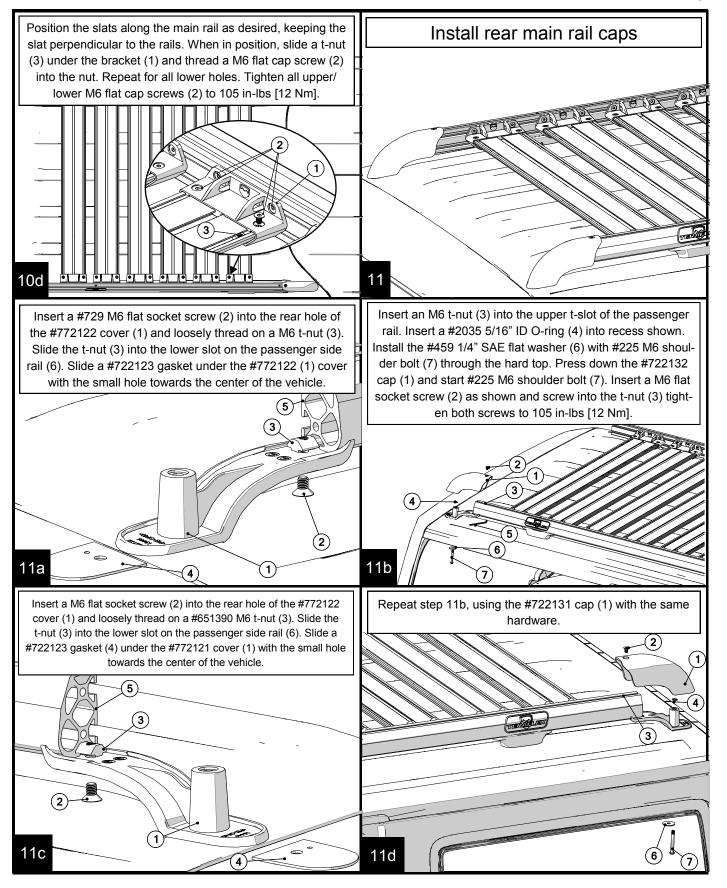


Press on one of the #772310 brackets (1) from the previous step on to a #772300 slat (4). Slide two #651390 t-nuts (3) into each of the two outer tracks, then press another #772310 bracket (1) on the other end. Repeat for all 6 slats.



Slide a slat assembly (4) from the previous step into the main rails (2). Be sure to line up the #651390 t-nut (3) to the upper slot. The tabs on the #772310 bracket (1) will line up with the lower slot. Slide slat forward and repeat for each slat.





#### **User Manual and Hints**

Load Rating:

Static Load: The design of the rack transfers the loads to the sport bar, allowing for a evenly distributed static load of 850 lbs [385 kg]. An example of a static load would be a stationary vehicle with a rooftop tent filled with occupants.

Dynamic Load: We recommend a maximum load of 200 lbs [90 kg] for the roof rack for safe operation of the vehicle. The weight should be evenly distributed and secured appropriately.

The customer should experiment with the load at reduced speeds to determine if it is safe to carry as there are many different lift heights, spring rates, track width, etc. The roof rack does not increase the total carrying capacity for the vehicle, be sure the load inside and out does not

exceed the vehicle load capacity

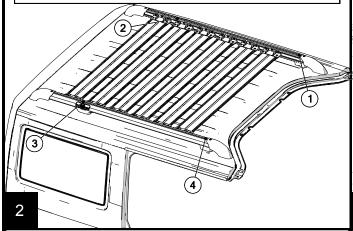
The load carried on the roof rack will make the vehicle's center of gravity higher. Avoid high speeds and abrupt maneuvers, including sharp turns or sudden start or stops. If driving at high speeds, rough road, or long distances, occasionally stop and check that everything is tightly secured.

Long loads like surfboards or wood panels that extend past windshield will be subjected to strong wind forces. They should be secured both in the front and the rear.

Use extreme caution when carrying items with a large flat surface area as wind forces due to natural forces or passing trucks, can add a sudden upward lift on the load

1a

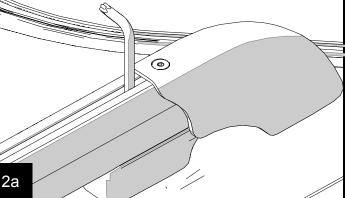
Standard procedure for removing the hard top with the roof rack installed



Follow the owners manual procedures for the rest of the OEM hardware. With a helper, pull the top straight up to free the bolts, then remove the top.

Reinstallation is the reverse, with a helper, replace the top by setting it straight down. Start threading each of the four M8 bolts using the supplied #393 torx wrench as shown in step 12a. If the bolt is not starting, lift the top straight up and set back down to center the bolt. Tighten the 4 M8 torx bolts to 14 ft-lbs [19 Nm], then follow the owners manual for the OEM hardware.

Use the supplied #393 Torx wrench, completely loosen the 4 M8 bolts in the 4 location shown in step 12 by using the four access hole in the main rail.

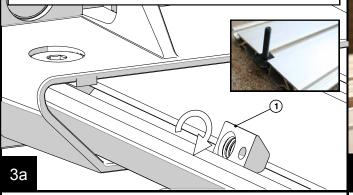


## **Mounting Accessories**

The TeraFlex Slat kits can also be used to carry cargo or mount existing aftermarket carriers. The slats are available in the single kits #4722051 or #4722061 (Silver/Black), or can be purchased in a set of 6 in the kits #4722050 or #4722060 (Silver/Black). There is room for a total of 8 slats to be mounted, but be aware that each slat will add 4.8 lbs (2.2kg).



For convenience in mounting accessories into an assembled rack, use a #651380 (1) roll in t-nut. It can be rolled in and out of the smaller t-slot instead of being slide in from an open end. A 10 pack can be purchased as part #4651380. The larger center slot is for Thule's large headed t-nuts.



Two slats can be used to mount a cargo box. The slats will keep the box lower than using load bars, helping to reduce wind noise. This vehicle has the Thule Sonic Alpine 633s box mounted with 4 M6 x 1.0 x 30mm long stainless socket head cap screws. The Thule Xadapt 10 kit replaces the standard AcuTight clamps allowing the bolted connection.



The vehicle below uses two Thule 594XT bike racks mounted directly to the slats to keep the profile low. The front uses a spacer (or washer) for bolt head clearance and the rear uses Thule Xadapt2 with a M6 x 1.0 x10mm long bolt and washer.



To determine the length of the M6 x 1.0 pitch screw you need to mount an accessory, measure the thickness of the mounting foot and add 7.5 mm for thread engagement in the t-nut. Round up the nearest available screw size and use washers under the screw head if too long to keep the screw from bottoming out in the t-slot.



Internal view of the Thule Xadapt10 being installed in the sonic box with a M6 x 1.0 x 30mm long screw.



This photo shows the front of the Thule 594XT bike rack mounted with a 1/4" spacer and 4 M6 x 1.0 x 15mm long stainless cap screws



This photo shows the Thule 594XT bike rack mounted in the rear with the Thule Xadapt2 mounted between two stats for correct spacing. Two M16 x 1.0 x 12mm long stainless screws with a M6 washer are used to fasten it to the slat.

If the bolt spacing for an accessory mount does not match the spacing in the slat, the gap between two slats can be adjusted for the correct spacing. Below is a Rotopax accessory mounted between 2 slats.



Below is a Quick Fist mount installed with a M6 x1.0 x 22mm long bolt with a washer under the head to avoid bottoming out.



This Tepui Roof top tent is set up with tent support bars running across the vehicle. The tent is laid directly on the roof rack rails and bolted with the Tepui hardware, except for using M8 x1.25 x 70mm long hex bolts for the taller rails.



The molded in hook holes are meant to secure light loads. Do not use a ratchet strap as over tightening will cause damage.



Many aftermarket crossbars/ load bars will fit around the main rail, allowing various carriers to be mounted Shown is a Thule AreroBlade with the 450R Rapid Crossroad Foot Pack. Thule SquareBars can be mounted with the 450 Crossroad Foot.





### PRODUCT INFORMATION

#### **MAINTENANCE INFORMATION:**

It is the buyer's responsibility to have all suspension, drivetrain, steering, and other components checked for proper tightness and torque after the first 100 miles and every 3000 miles after that.

#### NOTICE TO INSTALLER:

The enclosed "Warning to Driver" sticker must be installed in the vehicle in driver's view. This sticker is to act as a constant safety reminder when operating the vehicle. It is your responsibility as the equipment installer to install the provided sticker and to forward the product instructions to the vehicle's owner for review. If a "Warning to Driver" sticker or product installation guide were not included in the kit, FREE replacement stickers and instructions are available by request. It is the installer's duty to ensure a safe and controllable vehicle after the modifications have been performed.

#### WARNING:

Neither the seller nor the manufacturer will be liable for any loss, damage, or injury directly or indirectly arising from the use of or inability to determine the use of these products. Before using, the user shall determine the suitability of the products for its intended use, and the user shall assume all responsibility and risk in connection therewith.

#### WARNING TO DRIVER:

This vehicle has been modified to enhance off road performance and has unique handling characteristics. Use in harsh environments can cause extreme stress on the components. Vehicle should be inspected after being off road to make sure that all the components are in working order and safe to travel on the highway. All fasteners should be checked so that they are at the correct torque specifications as the vibration and stresses from off roading may cause critical fasteners to work loose. Extra care should be taken to inspect the critical components, steering, and brake systems. During each oil change components such as arms, tie rod ends, etc should be greased and checked for excessive wear. Any worn components should be replaced. When returning to the pavement always set or restore tire air pressure to the factory recommendation and connect or engage any disabled sway bar mechanisms. Because of the higher center of gravity and larger tires, this vehicle handles and reacts differently than many passenger cars, both on and off road. You must drive it safely! Extreme care should be taken to prevent vehicle rollover or loss of control, which can result in serious injury or death. Avoid sudden sharp turns or abrupt maneuvers. Generally, braking performance and capabilities are decreased when significantly larger/heavier tires are used, especially when used in combination with transfer case low-range reduction kits. Take this into consideration while driving. Do not add, alter or fabricate any factory or aftermarket parts to increase vehicle height over the intended height of the Tera-Flex product purchased. Mixing component brand is not recommended. Tera-Flex lnc. will not be responsible for any altered product or any improper installation or use of our products. We will be happy to answer any questions concerning the design, function, and correct use of our products. It is ultimately the buyer's responsibility to have all bolts/nuts checked for tightness after the first 100 miles and then every 3000 miles. Wheel a