



WATSON RACING 4- & 6-POINT ROLL BAR

2015+ Mustang Coupe

p/n WR-15-BOLTINCAGE

p/n WR-15-BOLTINCAGE6PT

The Watson Racing 4-Point & 6-Point Roll Bars were designed for superior strength while allowing for installation flexibility. Professional installation is recommended, and this part is intended for off-road (race) use only.

The intent behind the design of the Watson Racing Roll Bar was that it could be installed with minimal modification to the car, be quickly bolted in place for a track day, and quickly removed to resume back-seat use.

Installation options discussed:

- 1) Permanent (weld-in)
- 2) Semi-permanent (bolt-in)
- 3) Easy in/out (bolt-in)

PLEASE READ INSTRUCTIONS ENTIRELY, PRIOR TO BEGINNING INSTALLATION.

Tools Needed:

- Metric Sockets
- Ratchet
- Panel/Fork Tool
- Drill Motor
- Drill Bits
- Air Body Saw, Dremel, or similar
- Allen Wrenches or Sockets
- Tape Measure and Marking Utensils- marker or center punch
- Small Carpenter's Square

Kit Includes:

- Watson Racing Roll Bar Main Hoop
- Watson Racing Left/Right Diagonal bars
- Watson Racing Left/Right Door Bars (if 6-Point)
- (4) long/narrow sub-floor nut plates (for Rear Diagonal Bars)
- (8) M10x1.5x25mm Zinc Flange Bolts (16 if 6-Point)
- (6) M8x30mm Zinc Flange Bolts
- (4) M6x1.0x20mm Zinc Socket-Head Bolts (8 if 6-Point)
- (4) M6 Zinc Washers (8 if 6-Point)

- 1) **DISCONNECT BATTERY!** For safety, disconnect negative battery terminal.
- 2) Remove rear seat bottom cushion by lifting upward while depressing two retainer tabs, located directly below seat cushion; one per side.



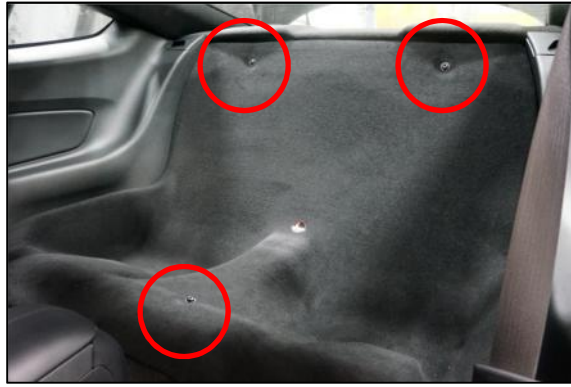
- 3) Remove rear seat back cushion by removing three 15mm nuts/bolts total- one left, right, and center, bolting hinge brackets to floor, then pulling the release straps at the top.



- 4) Remove interior door sill/scuff plates by pulling inward and lifting up.



- 5) **GT350R:** Remove rear OEM seat delete panel by removing the 3 Torx bolts.



- 6) **GT350R:** "Un-stick" OEM Velcro from plastic trim panels, used to hold edges of Seat Delete Panel in place. Leave Velcro stuck to the carpet for later re-use.



- 7) Remove lower quarter trim panels by pulling to the center of the car, dislodging retainer push-pins.



- 8) Interior/Rear of the car should now be empty.



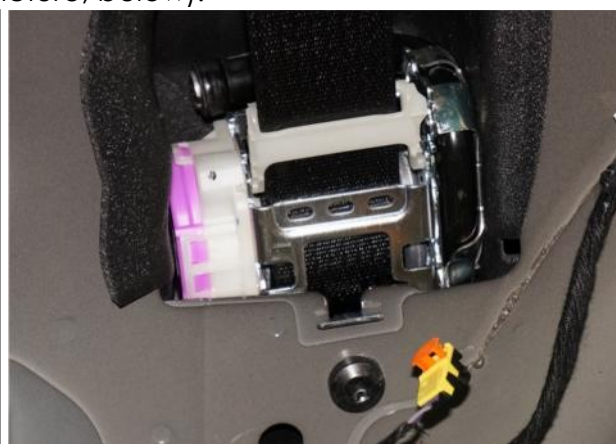
- 9) Dislodge wire harness retainers from the floor (both sides) using fork/trim panel tool. Dislodge harness clips fore & aft of the location pictured; harnesses need to be loose to allow installation of 4-point bar. Remove ground wire bolts as well (circled).



- 10) Remove the impact sensors by removing the 8mm bolts. Retain for re-installation.



- 11) It may assist in freeing the harnesses to disconnect the seat belt crash tensioners on both sides. Use a small pick tool to carefully lift up on the orange connector lock, then lift up on the connector body. **NOTE:** It may be helpful to remove the same connectors from the seat belt retractors as well (right picture, below).



- 12) Remove the (3) 13mm bolts on either side of the car. Remove any seam sealer around the corner brace-to-floor area that may interfere with a roll bar.



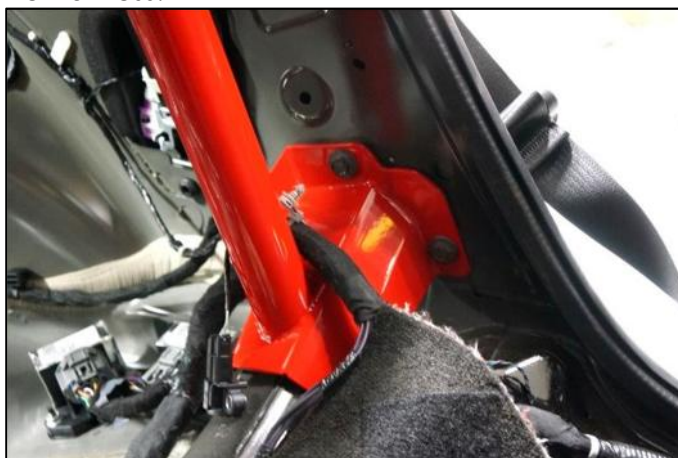
- 13) **NOTE: Build Variances in S550 Mustangs.** Please note in the picture below, the floor brace as it meets the car's B-pillar with the above bolts removed (per above). The threaded holes are located in the B-pillar sheet metal, while the floor brace simply has large clearance holes for the bolts. After reviewing dozens of cars, the exact location of the floor brace varies from car to car, and is not precisely mounted. This CAN and WILL affect the roll bar installation, and you may have to slightly enlarge some of the holes in the roll bar to account for this variance.



- 14) With the help of an assistant, place the Roll Bar's main hoop into the car. You will need to lean/slide the front seats all the way forward if you have not done so already. Slide the roll bar into the car with it leaned forward as well. On the opposite side of the car, slide the foot of the main hoop under the wire harness, then let the foot exit the side of the car slightly (pictured below). This will allow you to drop the first side into the car and under the harness. Once both feet are under the harness, center the bar on the floor brace and roll it backward into place. It will fall downward over the floor brace.



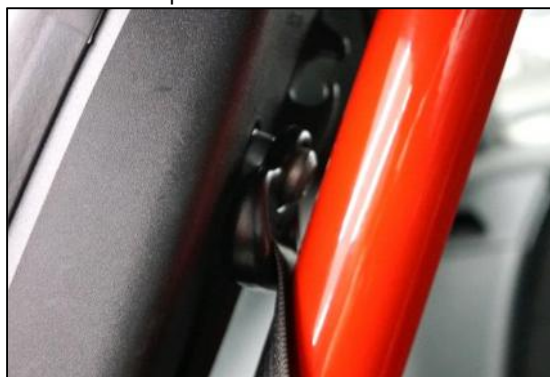
15) Bar in place, note wire harness.



16) With the bar in place, start the (6) M8 x 30mm bolts provided, but do not tighten. As noted in step #13, you may need to clearance the roll bar to allow the bolts to seat properly. NOTE that the ground wire bolt locations may interfere with the roll bar as well, and may need clearancing (below). These issues have been addressed in later versions of the roll bar.



17) Due to variances noted in Step #13 above, check the function/operation of the factory seat belt. The bar could be "high" in the car. If you notice tension in the belts' operation and/or the roll bar making firm contact with the upper belt mount, it is recommended that you remove the plastic upper belt cover for added clearance. Simply pop this cover off with your hands or a small pick tool. This will free the belt up.

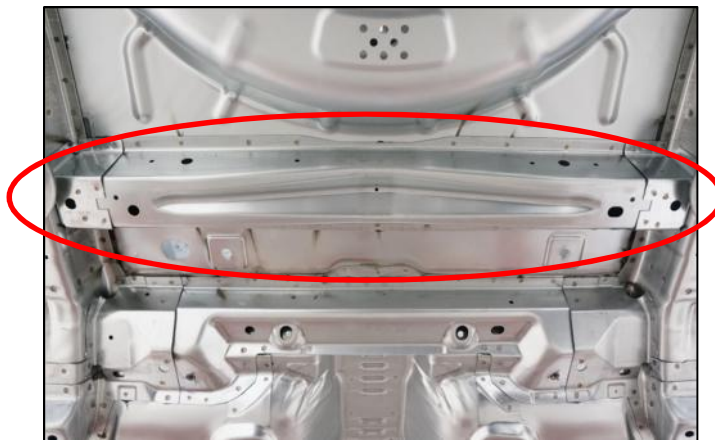


18) Install rear legs to the main hoop, snugging the bolts into the machined joints.

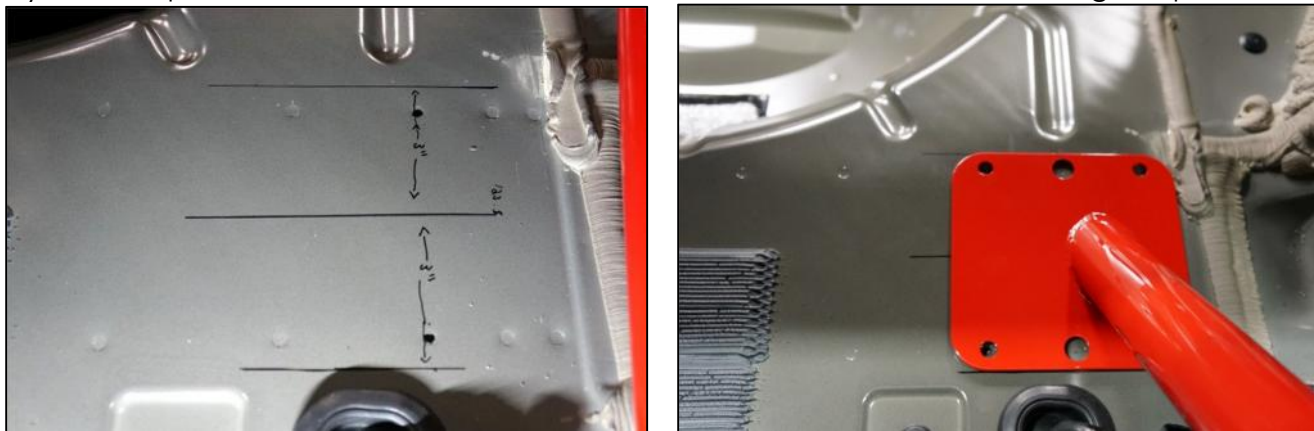
19) **6-POINT ROLL BAR:** At this point, test fit the door bars to the main hoop as well to ensure placement. The feet of the door bars can be place above the carpet or below the carpet.

NOTE: At this point, the car and bar could be prepped for welding the bar in place. The forward corner gussets, rear floor landing area for the diagonal tubes, and the 4-point bar's mounting 'feet' would need to be ground in preparation for welding. Be sure to take all necessary fire precautions before welding.

20) To continue bolt-in process: Note the rear legs' pads position on the floor, as it relates to the spot welds present in the floor. Under the car is a beam that runs from left to right, and the feet of the roll bar legs **MUST** be centered over this beam. You accomplish this by centering the pads of the rear legs over the two rows of spot welds visible inside the car (see step #21).

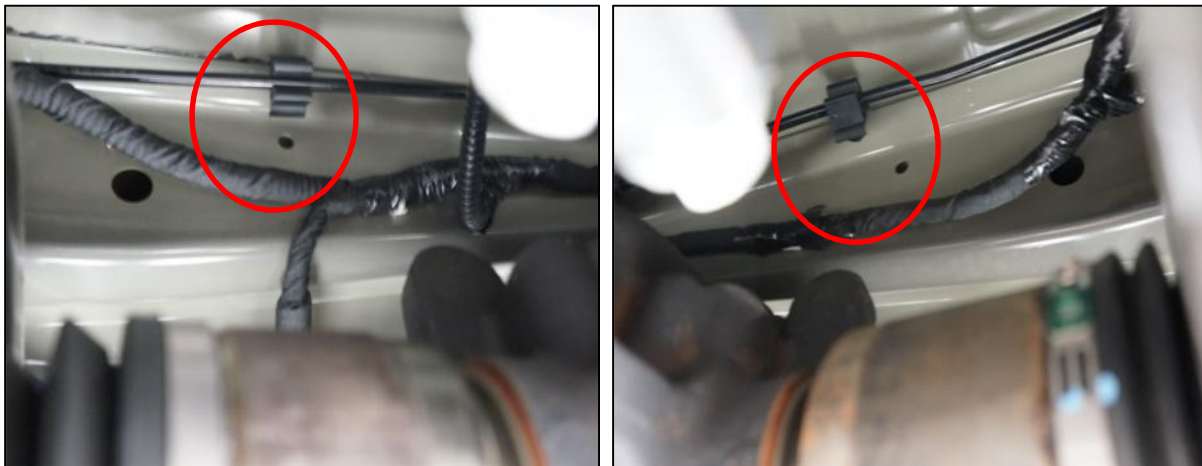


21) Use the spot welds for the beam under the car as a reference for centering the pads.



22) With the rear legs in place, fully tighten the 6 main hoop-to-body bolts, and the bolts at the machined joints. Confirm that rear legs/bar are still in proper location. Mark the holes to be drilled with a centering-punch, and remove the rear roll bar legs.

23) **BEFORE DRILLING:** Elevate rear of vehicle and secure with jackstands. From under the car, look above the differential housing. On the forward side of the beam, you will notice the black brake line clipped into the beam. Dislodge these clips (circled) and pull the line forward away from the beam. Pictures on following page.



- 24) With the brake lines dislodged, drill the 6 holes per side from inside the car. Start with a 1/8" pilot for all holes. The two center holes should then be drilled with a 1/4" bit, and the four outer holes with a 1/2" bit. Vacuum shavings from the car.



- 25) With one person in the car and one under, install the nut plates under the car using the provided M6 socket-head bolts (washers if necessary) from inside, into the center rivet-nut of each bracket. Tighten the M6 bolt only finger-tight at this time. This CAN be tricky as there is a lot of rear suspension in the way, but take your time, and you WILL be able to get the plates in place. The goal is for the plates to be immediately next to the beam, overlapped on top of the flange created by the beam.





- 26) The brake lines can now be re-installed into their original locations. Please **pay attention** to **ANY** contact between the brake lines and the roll bar nut plates/bolts- the brake lines **SHOULD** be directed/bent away from rubbing any of these items. The lines can be easily formed by hand to bend away slightly, yet still be clipped into the floor beam.
- 27) From inside the car, test fit the rear two legs. Start (not fully tighten) the socket-head bolts in the machined joints and start all eight M10 x 25mm bolts through the floor, into the nut plates. Once satisfactory, **fully tighten the six main hoop bolts (25 ft.lbs)**. Then remove the rear legs and begin prep work on the trim panels.
- 28) Reinstall the crash sensors, air bag connectors, and ground wires removed in Steps #9,10,11. The ground wire has a bent tab to prevent rotation; this will likely need to be flattened to aid in reinstallation.

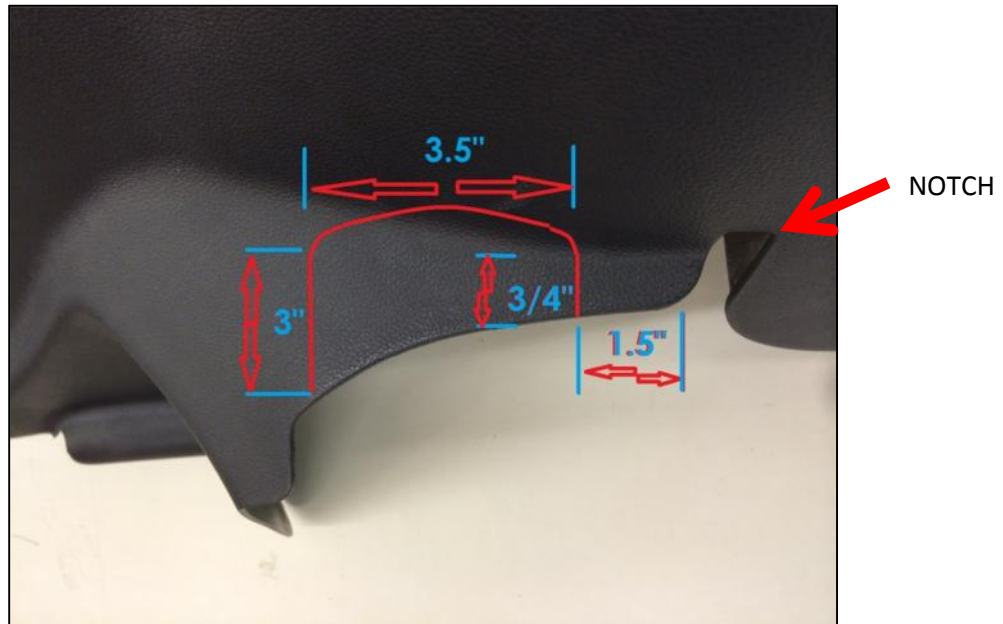
TRIM PANELS

PLEASE READ BEFORE PROCEEDING.

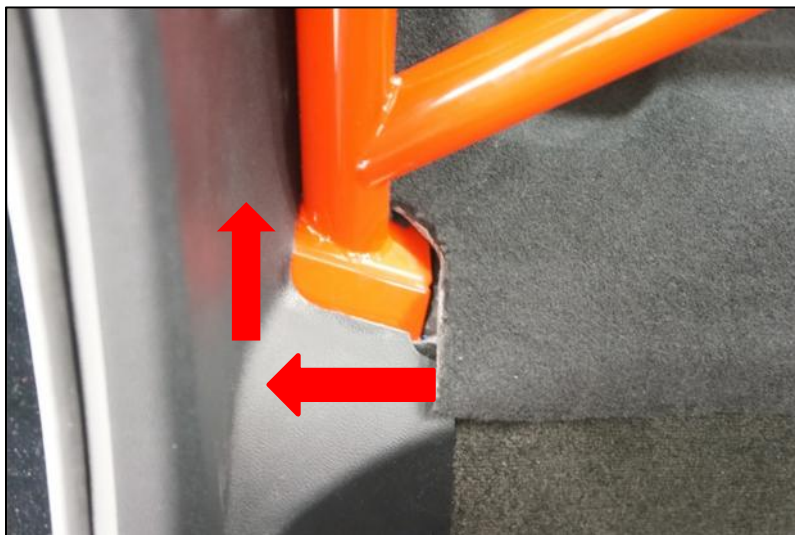
The intent behind the design of the Watson Racing Roll Bar was that it could be quickly bolted in place for a track day, and quickly removed to resume back-seat use. The nut plates installed above will remain attached to the car should you decide to remove the bar. **IF** you choose to leave the bar bolted or welded in place, you may want to trim the panels tight to the bar as outlined below. **IF** you wish to be able to quickly install and remove the bar for a track day, you may wish to not re-install the trim panels at all and leave them unmodified.

The following instructions are intended as a guide for modifying the interior side trim panels to fit around the Watson Roll Bar. Feel free to further modify your panels as you see fit.

- 29) Use picture below of the RH (passenger) panel as a reference. From the "notch" of the trim panel, measure forward 1.5" and draw a line approx. $\frac{3}{4}$ " long. Measure 3.5" from that mark toward the front of the panel/car, and draw a 3" line. Connect these two parallel lines with a sweeping arc that extends up the side of the panel as well. Cut along these lines, and repeat on the LH panel. You can use a Dremmel type tool, air body saw, or even a sharp X-acto blade.



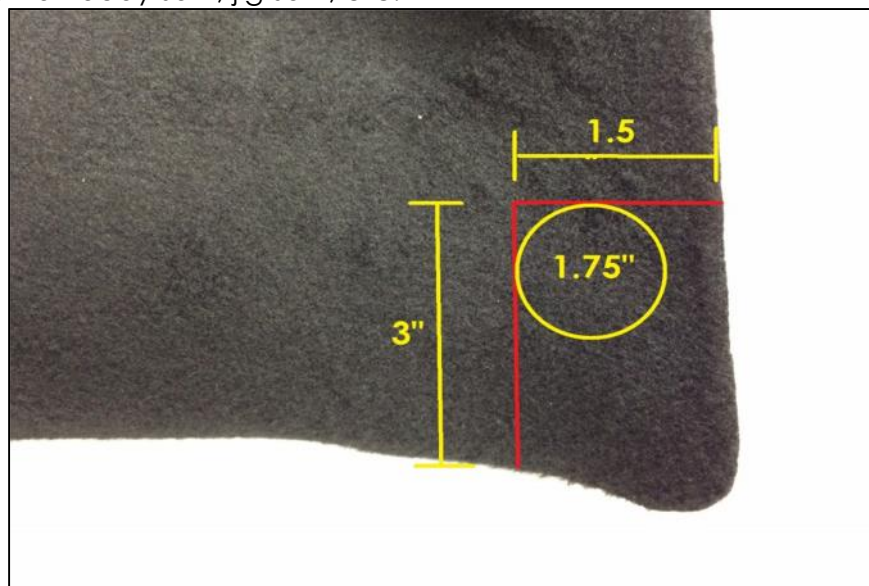
30) Pictures of completed cut. Note in the second picture that not only does the cut extend outward, but it also extends up the trim panel (via the arc drawn in Step #27) as well (red arrows).



31) Clean up all cut lines and begin installing trim panels into car. Feed one panel at a time under the Roll Bar's horizontal harness bar in the center, then work them forward

between the Roll Bar and B-pillar. Pay attention so that you do not scratch other panels in the car, or the main trim panel with the roll bar. You will have to bend the lower portion of the trim panel to squeeze it between Bar and B-pillar, **BUT IT WILL FIT**. The panel is very flexible. Use masking tape if desired to protect Roll Bar and trim panels from scratches. Panel should fit as it did originally; if not, check for clearance issues and trim further if needed. You are placing the trim panels in place now as they are much more difficult to install after the rear diagonal bars are in place.

- 32) **GT350R SEAT DELETE:** Do not install rear diagonal bars yet. Skip down to step #35 if you are installing the OEM Ford GT350R rear seat delete panel.
- 33) Fit Roll Bar's two rear diagonal tubes to the main hoop. Install two provided socket-head bolts into the machined joints and snug into place. Start all 4 bolts in each rear foot next. After **all** bolts are started, tighten **all** Roll Bar bolts, including the two M6 nut plate retainer bolts. Threadlocker recommended.
- 34) **TORQUE SPECS:** Torque specs for the factory floor brace are not available in the factory service manuals. The factory 8.8 bolts (marking on head) are only capable of being torqued to 18.8 ft.lbs. The provided 10.9 grade bolts being used are safe to torque to 50ft.lbs. (M10 bolts), or 25 ft. lbs. (M8).
- 35) Complete installation of plastic side trim panels, door sill panels, etc. Trunk carpet can be left un-modified and folded back into trunk, or it can be trimmed and placed around tubes. Seat lower cushion may be reinstalled if desired, but the Watson 4-Point Carpet Kit is highly recommended. Install shoulder harnesses through Roll Bar's belt retainer loops, and fasten/secure/buckle as per harness manufacturer's instructions.
- 36) **GT350R SEAT DELETE:** The Watson 4- and 6-point Roll Bars can be used with the GT350R Seat Delete panels, but some trimming must be done to the seat delete panel. Two holes must be drilled through the rear of the panel, and two small notches must be made, next to the roll bar's main hoop at the front of the panel. Use the image below as a guide for notching the front corners of the seat delete panel. The fibrous panel can be cut with an air body saw, jig saw, etc.



- 37) After the front corners are notched, the panel can be installed in the car, sliding it under the roll bar's horizontal harness bar. Ensure that the original retainer bolts line up, and install bolts. Refer to the image in Step #29 for forward corner notches.
- 38) There are a number of different ways to find the location of the holes in the rear of the panel for the roll bar's diagonal bars. Unfortunately, because of variability in the main hoop's location from car-to-car and because of the lack of any usable reference points on the rear panel, we cannot provide a template. With the rear diagonal bars removed from the main hoop, you need to "project" where the diagonal bars will penetrate the seat delete panel. This can be accomplished in several ways.
- 39) **Suggestion A:** PVC Plastic Tube. The outer diameter of the roll bar's tubes is 1.75." You can find PVC tube at any local home improvement store that has an inner diameter of 1.75". Cut a small length of tube, and slide it over the leg "stub" on the back of the main hoop. Ensure there is enough overlap of the PVC onto the roll bar, to ensure accuracy on the seat delete panel. Mark the contact location of the PVC on the rear seat delete panel, and drill with a hole saw **AT THE SAME ANGLE** as the PVC. Your hole saw can be 1.75" diameter, which is the exact same diameter as the roll bar tube, or it can be slightly larger, up to 2". Obviously a 1.75" hole saw requires precise fitment, whereas the 2" hole saw would allow some wiggle room.



- 40) **Suggestion B:** Aluminum L-channel can also be used, also sourced from a home improvement store. The beauty of aluminum L-channel is that it is self-centering on the roll bar's tube, and will allow fairly accurate placement on the seat delete panel. Similar to above, cut a length of L-channel that will overlap the leg "stub" on the back of the main hoop, and still reach the surface of the seat delete panel. If you place the L-channel on the bottom of the stub, you would cut your hole in the trim panel at the top of the "v" created by the L-channel. Pictures on following page. Choose hole saw size as suggested above.



41) Once your holes are cut, insert the rear two diagonal bars through the trunk, through the seat delete panel, and install to the roll bar's main hoop.

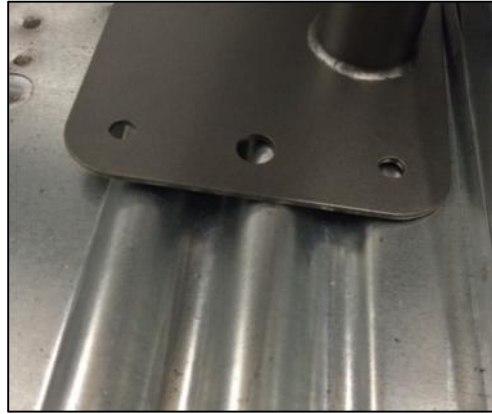


42) Start the (8) M10 flange bolts in the feet of the diagonal bars. Fully tighten these as well as the machined joint bolts once all have been started.

43) **6-POINT ONLY:** DOOR BARS- the mounting feet of the doors bars can be installed on top of the carpet, or below the carpet- now is the time to decide. If you plan on removing the door bars frequently, it is recommended that the door bars are installed on top of the carpet. Mounting below the carpet requires you to cut/trim the carpet around the bar. Please consider your desired method when reading the instructions below, as not all will apply to both methods of installation.

44) With door sill plastics and kick panel plastics removed, place door bars in the car and bolt to the main hoop at the machined joints using provided socket-head allen bolts. Due to powder coating, the fitment in the machined joint may be very snug. Snug the bolts at this time, ensure you have full fitment/alignment of machined joints- important for proper location of door bar mounting feet. If installing below carpet, be sure to have carpet peeled back.

45) Floor modifications: to ensure a solid, strong fit, we recommend flattening the floor "darts" below the foot. The floor is stamped with a few ridges ("darts") that are easy to flatten using a hammer and dolly. The work is minimal and will not compromise strength.



- 46) Floor mounts: Mark all 6 holes through each mounting foot (12 total). You will need to mark the carpet (if installing above carpet), as well as the sheet metal below the carpet, for drilling. The forward 2 and rear 2 holes are drilled with 1/2" drill bit. The center 2 holes are drilled with a 1/4" drill bit. You may drill through carpet, or use a small razor blade and cut an "X" in the carpet where the bolts will penetrate.
- 47) **NOTE: BEFORE DRILLING-** familiarize yourself with objects UNDER the car!!! **DO NOT DRILL THROUGH FUEL LINES or BRAKE LINES.** As a precaution, disconnect the lines from some of their mounting points under the car and pull them away from under the body slightly. Use a piece of sheet metal or some other protective layer between the holes you need to drill, and the fuel/brake lines.
- 48) Drill holes. Paint raw sheet metal inside the holes to prevent rust.
- 49) Similar to the rear Diagonal Tube mounting feet, two large nut-plates are provided. On either side, hold the large nut plates under the vehicle (weld nuts facing downward) and align with drilled holes. From inside the vehicle, insert two provided M6 bolts (washers if necessary) through the center two holes into the nut plates. Leave M6 bolts loose to aid in aligning Door Bar feet. Use of threadlock recommended.
- 50) Reinstall the door bars with feet resting on the carpet (or under, if desired). Fit the machined joints first, and start the socket-head allen bolts (leave loose). Install the M10 bolts (4 per bar) through the Door Bar feet, into the under-car mounting plates. Once all 8 are started, proceed to tighten all bolts including the M6 nut plate retaining bolts. Tighten machine joint bolts as well.
- 51) Reinstall kick panels and door sills.
- 52) Since the nut plates will remain installed under the car, you can easily uninstall the door bars from inside the car. It is recommended that the M10 door bar bolts be re-installed into the floor mounts if the door bars are removed- this helps retain the holes in the carpet as well as plugging the holes to prevent rain entry.
- 53) Enjoy your new Watson Racing 4- or 6-point Roll Bar!!!

Thank you for choosing Watson Racing products! If you have any technical questions or comments, please call us at: 855-WATRACE (928-7223).