



Custom Toyota Truck Tube Works

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89-95 Extended Cab Pickup Internal Roll Cage

Congratulations on purchasing your new 4x Innovations Internal Roll Cage. Included in this manual are package contents, surface coating recommendations, and installation procedures. This document consists of a guide and is not an absolute instruction manual. Professional installation and attention to details is required.

Caution:

1. Installation must be performed by qualified professional metal worker, and welder.
2. Always wear proper Personal Protective Equipment, including but not limited to Closed Toed or Safety Shoes, Safety Glasses, Hearing Protection, Face Shield, Gloves, Weld Coverings, and a Welding Hood.
3. Always have a fire extinguisher in reach while working in and around your vehicle. Interior panels are made from vinyl and other plastics which burn VERY easily; under carriages can be covered in oil and road grime which also burns easily.
4. Working around vehicles is inherently dangerous. You and the installer are responsible for your actions. Take general care while working on a vehicle.

Coatings: Note: For optimum coating performance follow coating manufacturer's instructions.

- A. On the quick and easy: Simple spray paint.
This method is an economical method to coat your new cage. Any top quality spray paint rated for metals can be used. In our shop we use Rustoleum Professional Metal paint.
- B. POR-15 or similar moisture cured polymers:
These professional coatings are highly durable and can be touched up if scratched. Most are formed as multi part primer, color, and top coats that are abrasion, and heat resistant. They are available online, usually directly from the manufacture.

Preparing Pickup:

1. Removing the seats from the truck is not required but makes working around the cab much easier. It also ensures the seats will not get burned.
2. Pull back carpet from cab walls to allow mounting plates to sit directly on the floor metal.
3. Protect the glass and interior parts/panels by covering with non flammable material. Be sure to seal the edges with tape to keep sparks out. Hot sparks can crack glass panels.

Installing the Cage:

Install Notes:

- Cover all flammable materials and glass surfaces with non flammable material.
- A right angle drill or air drill will assist in the install process, however not required.



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1. Begin by matching up the A pillar upper and lower mounting plates. The 4 x 9 top plate sits inside the cab with the hole that is at one end of the plate centered across the short dimension right over top of the body mount bolt. See Fig 1. A new body mount bolt and shims are supplied if you wish to replace the bolt and be able to remove the cab at a later date. To replace the body mount bolt remove the stock body mount bolt, place a washer over the bolt hole, place the 7/8" tall 3/4" diameter spacer sleeve on top of this washer. Place the mounting plate over top of this sleeve and make sure the new 3/8 x 4.5" body mount bolt passes through the sleeve and washer.
2. The 4x4 lower plate lines up with the 4 mounting holes toward the back of the cab as shown in Figure 2. Mount the A pillar plates using 3/8x1.5 through 6 holes.
3. The B pillar uses a 4x6 plate located as shown in Figure 3 and 5.
4. Mount the B pillar plates using 4x 1.5x3/8 bolts each.
5. The C pillar plates are 4x9 plates for inside the cab and 4x4 plates under the cab as shown in Fig 4 and Fig 5.
6. Like the A pillar the C pillar will mount over the rear body mount bolt. A new body mount bolt and shims are provided and installed in the same way as the front body mount bolt.
7. Mount the C pillar plates using 6x 1.5x3/8 bolts.
8. You will need to material from the rear seat area as shown in Fig 6



Fig 1 – Upper A pillar mounting plate orientation



Fig 2 – Lower A pillar mounting plate orientation



Fig 4 – Upper C pillar mounting plate orientation



Fig 3 – B pillar mounting plate location



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9. Begin assembling the B and C pillar halves together by drilling two 3/8 inch through holes, at a 90 degree offset, in each half of the B and C pillar, and lightly bevel the edges of the joint.
10. Insert one end (half) of the supplied 1.5" DOM inner sleeve in the B pillar. Weld the sleeve via the plug welds. Do NOT weld the sleeve to the end of the tube.
11. Slide the two halves together. Lay the assembly on a flat surface and tac weld the B and C pillar assembly together. Do not fully weld the halves together.
12. Set the C pillar in place in the cab, at the back of the cab to ensure the pillar is spread correctly. Adjust the pillar so there is clearance between the wall and the closest part of the pillar.
13. Set the B pillar in place in the cab, behind the front seat area, to ensure the pillar is spread correctly. Adjust the pillar so there is clearance between the wall and the closest part of the pillar.
14. Remove the B & C pillars and fully weld the split joint.
15. You will need to trim the bottom of the B & C pillar to sit flat on the top of the mounting plates.
16. Place the C pillar back into the back of the cab.
17. Place the B pillar back into position.
18. The B and C pillar located and spaced apart by the 6x 16" front to back connection tubes. It is recommended to locate the lower tube at the bottom of the window. The corner tube should be located in line with the A pillar tube once it is in place. The two upper center tubes can locate at the shallow bends in the B and C pillar or narrower.
19. Place the A pillars in the cab with the A-B pillar joint lined up approximately in the middle of the top corner bend. Locating the joint for the best fit is usually acceptable. Some minor fitting may be necessary. Duct tape or tac welds can be used to hold the A pillar in place.
20. Place the front cross bar in place. The cross bar notches are directional, if the fit is poor then swap the tube end for end. A ratchet strap wrapped around the A pillars will help hold the front cross bar in place. The front to back location will be set by the front center bar later.



Fig 5 – Lower B & C pillar mounting plate orientation



Fig 6 – C pillar plate seat ledge piece to be removed



Fig 7 – B to C pillar connection tubes



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21. Plumb and align the A and B pillars
22. Lightly tac the A pillars to the B pillar.
23. Insert the front center bar.
24. Locate the front cross bar against the front center bar. The front center bar should be centered. The end of the cross bar that meets the A pillar should be the same distance to the B pillar.
25. Tac the cross bar, and center bar in place.
26. The gusset tubes go between the A pillar and front cross tube along the roof
27. Locate the handles as desired.
28. Once all pieces are taced in place the cage can be fully welded.



Fig 8 – A pillar, front cross and front center location



Fig 9 – A pillar location