

CT Race Worx "Bombproof" Gusset Kit

Installation instructions

Parts list:

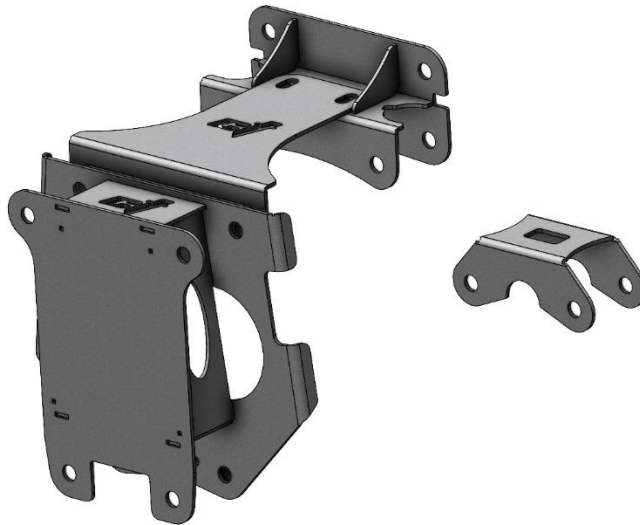
1. Front bulkhead plate
2. Top gusset
3. Upper A-arm gusset
4. Lower A-arm gusset
5. Race plate

Hardware list:

- (2) 12mmx1.75-100mm
- (2) 12mm x 1.75-90
- (6) 12mm flat washers
- (4) 7/16 flat washers
- (2) 3/8x16-1" bolts
- (2) 3/8 flat washers
- (2) 3/8 lock washers
- (2) 1/2 x13 -11/4" bolts
- (2) 1/2 nylock nuts
- (4) 12mm x 1.75 nylock nuts
- (3) zip ties

Tools required:

- T30 torx
- (2) 18 mm sockets and ratchets
- 3/4" wrench
- 15mm socket and or wrench
- Cut off wheel or hack saw



Additional hardware included for 2022 & Newer models –

See image on last page

T20 torx 10mm wrench and/or socket

9/16" wrench

3/4" socket

18mm wrench

9/16" socket

Extensions for sockets

19mm wrench

DISASSEMBLY:

NOTE: Front wheels and main front suspension components must be removed to install this product. The vehicle must be securely supported, and wheels must be securely chocked. While it is possible to install this kit single handedly it is much easier with an extra set of hands. Disassembly: Note: all parts, such as the front hood plastics and radiator grill with light assemblies, must be removed. However, they can be removed as one assembly and makes installation of the gusset kit much easier.

Step 1: To remove the front hood/grill assembly, pop out the small cover in front of the shocks, it's held on by grommets. Next disconnect 2 headlight plugs on each side of the vehicle. Remove the small T20 torx screw holding the headlight adjuster screws. Gently pull the adjusters back so they slide off when hood is removed. Using a T30 torx remove 4 bolts on the lower plastic, 2 at the top of the radiator, 4(2 each side) underneath the sides of the hood located at the firewall. 2 screws at the headlights have a 10mm nut on the back. 2 screws on each side located by the a-pillar one behind gas cover. The top plastic cover has 4 blind plastic clips these easily pop up with gentle force. There are two (one on each side) visible from underneath. These can be carefully slid off their tabs by gently opening them. The hood assembly can be gently removed and set aside.



Step 2: At the radiator cut the three zip ties holding hoses to the radiator and connecting the hoses. Also, remove the front differential vent line from the top of the radiator. Remove the 4 bolts securing the radiator with 10mm socket and wrench. The radiator can now be gently lifted and secured out of the way using straps or bungee cords, we use a screw driver through the shroud into the front shock mount then bungees to secure (see photo on right). Take care not to damage fan or fins on the radiator itself.

Step 3: Remove the four nuts (18mm) securing the front bumper bulkhead and set aside. Remove the 2 bolts (10mm) between the front lower a-arm bolts, these will not be reused. Remove the rear nuts securing the lower a-arms (18mm). Remove bolts and nuts securing the lower ball joints at the spindle (15mm). Hold the brake rotor to make sure ball joint is straight and the ball joints will easily slide out of the spindle. Slide lower a-arms forward off their bolts and set aside.

Step 4: The front shock lower bolts need to be removed (18mm sockets), the shocks can either be completely removed or secured out of the way by using straps around the a-pillars. Take care not to damage the plastics, a rag can be used as padding under straps. These same straps can be used to keep the upper a-arms up with spindles and hubs. They need to be supported to keep minimal pressure on the cv joints. These parts can be removed but is not necessary.

Step 5: Remove the sway bar link bolts from the upper a-arms (18mm wrench 15mm socket). Remove the remaining nuts securing the rear of upper a-arm. The bolts can be slid back (the steering may need to be turned for bolts to clear the steering rack). Pull the a-arms out and they can be rested against the frame.



Step 6: IF YOU HAVE A SMART LOCK-Loosen the four bolts that hold the differential in place. You will need to move the diff in order to remove the top bolts holding the forward A-arms. The diff bolts may not need to be fully removed however by loosening them, you will allow the diff to move slightly giving you extra working space.

INSTALLATION:

Step 1: Cut the studs down like shown right. Remove the (2) 10mm bolts and remove the backing plate that holds the studs in. If you want to remove the diff bolts you can loosen the 10mm bolts and pull the studs out intact. Note: If installing our boxed lower A-arms or you plan on purchasing them, cut the ears off the frame and grind smooth as shown on right where the tube passes through the front plate of the frame. OPTIONAL: Remove the front portion of the skid underneath the main body of the X3. You will now be able to access the bolts that pass through the frame that the rear mounting points of the lower A-arms attach to. Pull the bolts back.

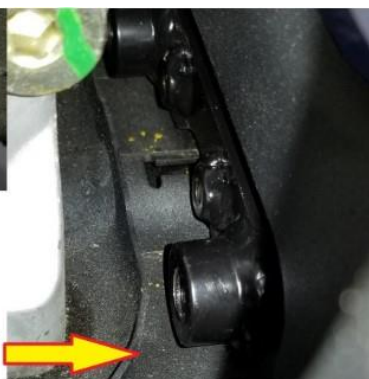


Note: With an extra set of hands, and using the studs or the bolts, you can install everything from step 2-6 much easier.

Step 2: position Race Plate behind frame, in front of differential to line up with holes left after cutting studs out. Once you have installed the Front Bulkhead Plate in Step 4, you can insert the OEM (2) 6mm gold bolts that you removed from the factory gusset at the top. **If NOT using Race Plate, place 2 of the OEM 12mm nuts in front of the differential, behind the frame at the forward lower a-arm mounting location.



View of race plate from front of chassis



View of race plate between differential & chassis

Step 3: Install the lower A-arms. When installing the arm, the Lower A-Arm Gusset that goes to the rear mounting point of the arm goes in with the arm (see photo at right). Set that gusset over the frame and slide the rear of the arm into the gusset.

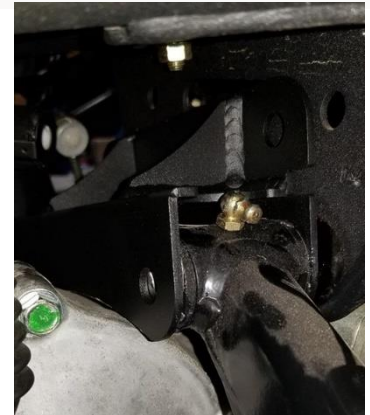
Slide the bolts through A-Arm pivot point locations, repeat on the opposite side. Once both arms are in, place the nuts on the bolts but do not tighten.

Step 4: Install the Front Bulkhead Plate against the frame along with the actual bulkhead or bumper of the car, an extra hand will go a long way here. Use the (2) 12mm gold bolts supplied and put them through the upper A-arm holes to hold the bulkhead assembly on. You can put a nut on the bolt passing through the upper bolts just to make sure that the bumper and Front Bulkhead Plate doesn't fall off. The stock upper A-arm bolts that held the upper A-arms on in the front will move down to the bottom and will replace the studs that you removed in step 1



Step 5: Using the OEM bolts, that were previously removed from front upper A-arms, install through the bumper, plate, lower A-arms and into nuts that were placed in front of the differential.

Step 6: Moving to the upper A-arms; Pull the gold bolts out that were holding on the bulkhead and bumper assembly from step 3. The Upper A-Arm Gusset can now be installed using (2) 1/2 x 13 -1 1/4" bolts (4) 1/2" washers and (2) 1/2" nylock nuts. It is placed on top of the center support (Part 5) and attached to the frame as seen in photo to right and below. Do not tighten bolts at this time. ****SMART LOCK OWNERS -Do NOT install bolts in Upper A-arm Gusset until Top Gusset Plate is placed in position in Step 5. You will need the Upper Gusset to sit on top of the diff for clearance purposes.**



Step 7: Next install the Top Gusset plate with the CT cut out. You will have more clearance on the passenger side of the car to insert this plate above the diff and into position. Secure Top Gusset Plate to Upper A-Arm Gusset using (2) 3/8 x 16 -1" bolts, (2) 3/8" lock washers and (2) 3/8" flat washers. The front edge of the Top Gusset Plate will slide over the bolts holding the forward Upper A-Arms. See pics below.. ****SMART LOCK OWNERS –Remove vent line from top of diff prior to inserting Top Gusset Plate. You will place the Top Gusset Plate from the DRIVER'S SIDE in order to have enough clearance to maneuver the plate into position. Upper A-Arm Forward bolts will need to go from front to back with nuts on Front Bulkhead Plate.**



Step 8: Tighten all A-arm mounting bolts then the remaining gusset kit bolts. Torque 12 mm bolts to 80 ft.lbs; 3/8" bolts to 40 ft.lbs and 1/2" bolts to 65 ft.lbs. We recommend using blue Loctite on bolts.

Step 9: Final assembly is the reverse of disassembly

****NOTE –You will NOT reuse these parts pictured below:**

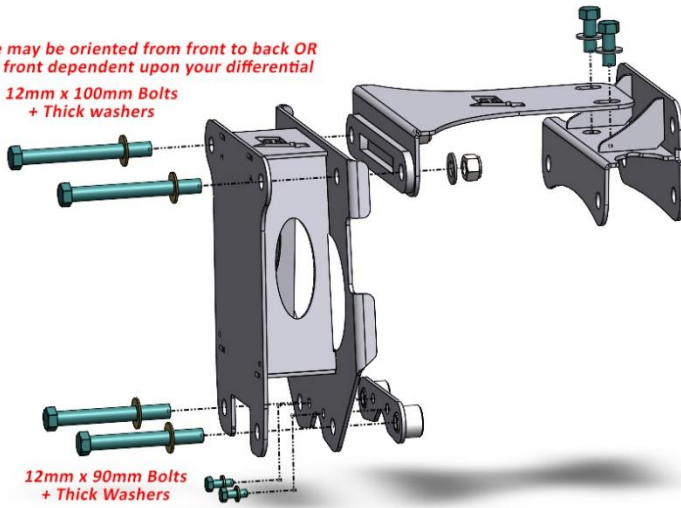


For 2022 and newer models, you will have additional hardware in your kit. This hardware should be used as noted in the image below:

2022 Model Gusset Kit hardware update

****These may be oriented from front to back OR back to front dependent upon your differential**

**12mm x 100mm Bolts
+ Thick washers**



**12mm x 90mm Bolts
+ Thick Washers**



**Nylock Nuts +
Thin washers**

*If you have problems or questions during installation, please call us at 704-684-5618 between the hours of 7:00 am –4:30 pm EST, Monday –Friday