Adding Safety Chains For a Fail-Safe Support to Our Georgetown Propane Tank

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Revised: February 3, 2024 – Added wording about the possible effects of a complete rear bracket failure.

Due to the cracks and outright failures a few people have reported on their later model year Georgetowns, and because we had two cracks on our 2020 GT5, we wanted to add some type of "last resort" protection to keep the propane tank from falling and possibly hitting the pavement while driving.

Pictures of actual cracks and repairs are at the end of this document so owners know what to look for and one way a proper repair could be accomplished. You **must** clean the areas before inspecting them.

The reported cracks and weld failures have occurred in the front and rear 90-degree angle brackets and in the tank mounting flange itself. Those brackets are welded to the support structure and the ASME propane tank is bolted to the bracket.

The *front* bracket has experienced all of the welds failing, allowing the front to the propane tank to fall within inches of the ground while driving. One owner reported gouges on the tank so his hit the road.

The *rear* bracket and tank rear mount have experienced full-depth cracks but as of this writing no total failures allowing the propane tank to fall have been reported publicly, unlike the front bracket.

A friend who is the proverbial "mechanical genius" came up with a simple, easy-to-install method that we implemented in just a few hours, including the trip to the hardware store. The cost was less than $40.

My friend suggested taking a length of chain and putting one link over the existing 7/16” tank mounting bolt, wrapping the chain around the tank support arms, and putting the other end’s link over the same bolt, securing it with a washer and a nylon locking nut. **If your existing mounting bolts are not at least 2 1/2" long you will need to replace them.**

We bought the parts needed from the local Ace Hardware store:

- 4 ea. lengths of chain 16” long. Ace Hardware employees cut the chain to the desired length for free.
- 4 ea. 7/16” flat washers
- 4 ea. 7/16” nylon locking nuts, 14 threads per inch (7/16-14)
- One large bicycle inner tube. We used an inner tube for a 29” bicycle tire (tire widths of 2.1” to 2.3”). The 16” lengths of chain will be put inside 15” sections of the inner tube to reduce the noise of the chain links rattling while driving.

Our tank had two bolts on the front bracket and two bolts on the rear bracket. But there are three holes in each bracket and the center hole was empty. I also added a third bolt to each bracket for good measure. If you already have three bolts in each bracket you do not need these parts:

- 2 ea. 7/16” bolts (2” long), 4 ea. 7/16” washers, and 2 ea. 7/16” nylon locking nuts

Step 1

Check to assure that all existing bolts, four on ours, are tight.

We were surprised to find that the two bolts nearest the compartment door, one on each bracket, needed about 1/4 of a turn to tighten them up. The two inside bolts were very tight. This is the “edge” where the cracks have been found so perhaps whatever is causing those cracks is also slowly loosening those bolts. This is another good reason to add that center bolt in each bracket.

Step 2

Cut the bicycle inner tube into four lengths, about 15” each. Place the chain lengths inside the inner tube.

Step 3

Put one chain link over the bottom of each existing mounting bolt, wrap the chain around the tank horizontal support arm, and place the other end’s link over the same bolt. Add the washer and tighten the nylon locking nut.

That’s it!

See the pictures on the next few pages for more details.

How the chain is wrapped around the tank support arm

Front chains installed and wrapped around the tank support arm

Front chains, viewed from underneath

Front chain, end view

Rear chains, viewed from underneath

Yes, I just wrapped the safety chains around the wire bundles but **not** over the flexible propane line. It's not a tight fit, as long as the tank does not drop. 😊

The chain size I used

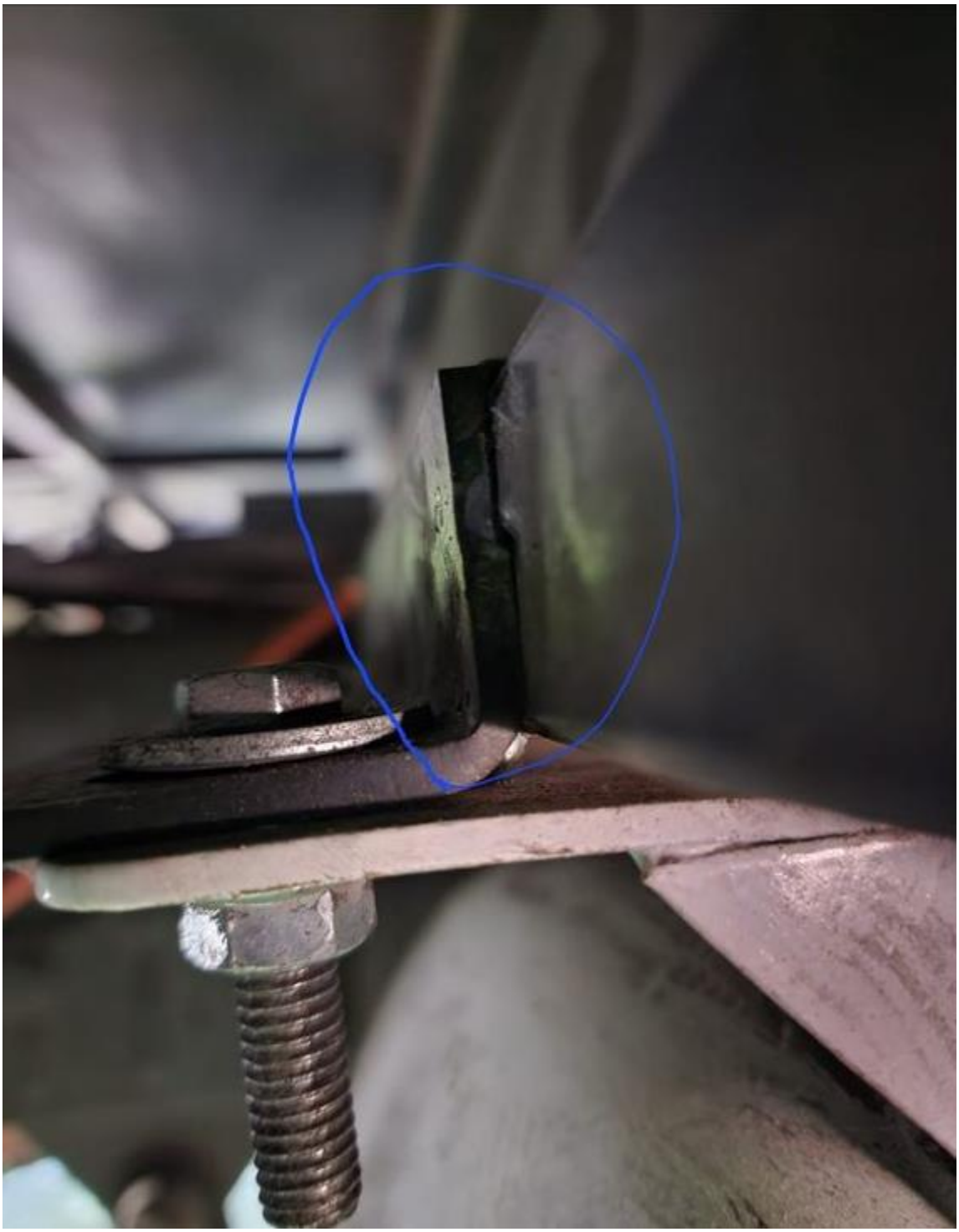
The only criteria were that the chain links would fit over the 7/16" tank mounting bolts and that it fit inside a bicycle inner tube.

The bicycle inner tube I bought at the hardware store

Picture of actual propane tank mounting failures we had and that people posted online are on the following pages.

Total weld failure of the front bracket. Note that the 90-degree angle bracket is still bolted to the front of the tank. At least three people posted similar pictures. Two were flagged by passing motorists as they were driving down the road because the motorists saw something white bouncing up and down. One owner reported they had gouges on the bottom of the tank.

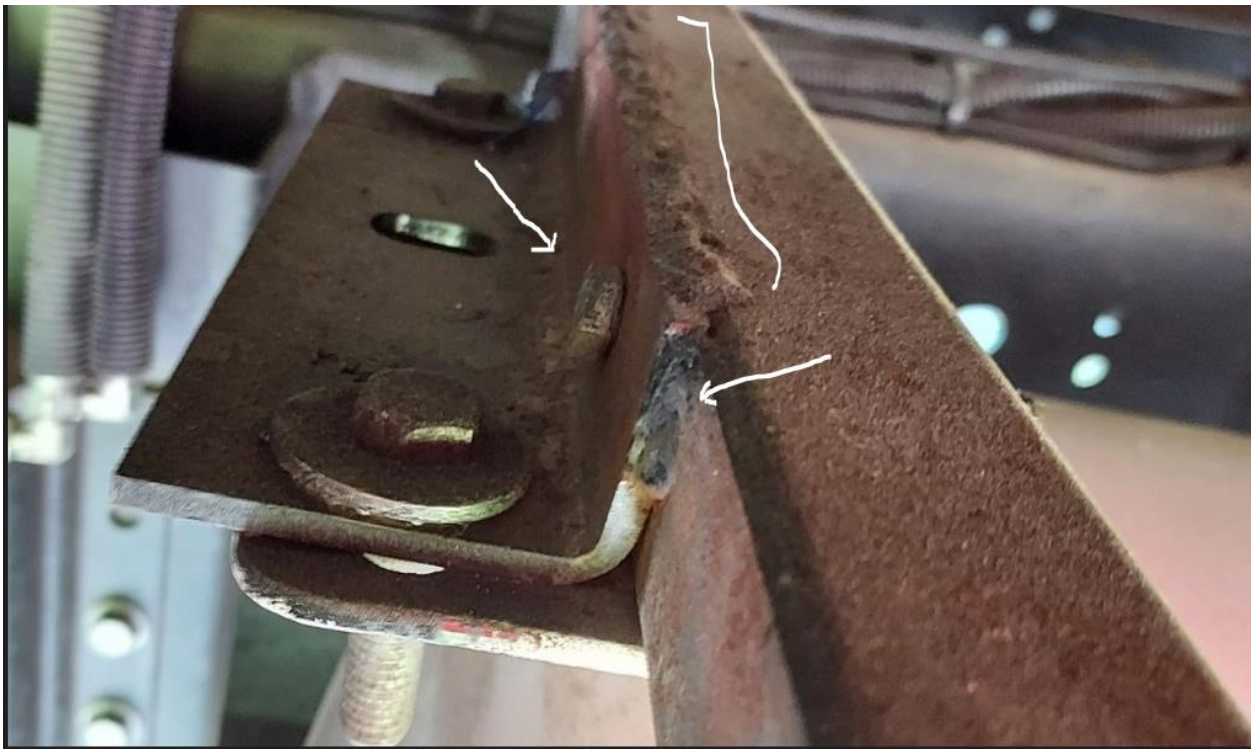
Weld failure on a 2020 Georgetown's front propane bracket



Weld repair on the front bracket of a 2022 Georgetown that was done quite a while before the picture was taken. The welders ran the bead completely across the top of the bracket when normally there are just a few welded areas across the top. This was another failure where the front of the propane tank dropped almost to the road.

At least two owners reported that the welding shop drilled two holes through the front and rear backets and the tank horizontal support arm to install supplemental bolts in case the welds failed in the future.

Me, I would be very leery of drilling that structure. Drilling holes does weaken the structure and you do not want your repair to cause the problem you're trying to avoid. If you decide to install bolts, smaller is better to minimize the amount of removed metal and the possibility of future cracking. Bolts are very strong and a full tank only weighs about 200 lbs total.



Rear propane mounting bracket crack at the bend on our 2020 GT5 Georgetown. The flexible propane line was tie-wrapped to the support arm and covered the crack. I did not find the crack until someone else reported theirs had cracked. I cut the tie wrap and there it was.

After cleaning and paint removal the crack was found to have extended almost 1/3rd of the width of the bracket and was cracked all the way through. Bullet dodged…

Note the length of the rear propane mounting bracket crack and its relation to the empty hole in the center of the flange that shows how far the crack had progressed

Full-depth crack in the actual propane tank mounting flange just forward of the cracked area in the rear mounting bracket on our 2020 Georgetown. My guess is the tank was bending at the gusset-reinforced area due to up-down movement of the tank. Another owner also reported a crack at that area. The rust in the crack indicates the crack existed for a while.

Note the tie-wrapped flexible propane line behind the bolt head. That is where the crack in the bracket bend was found, hidden by the hose.

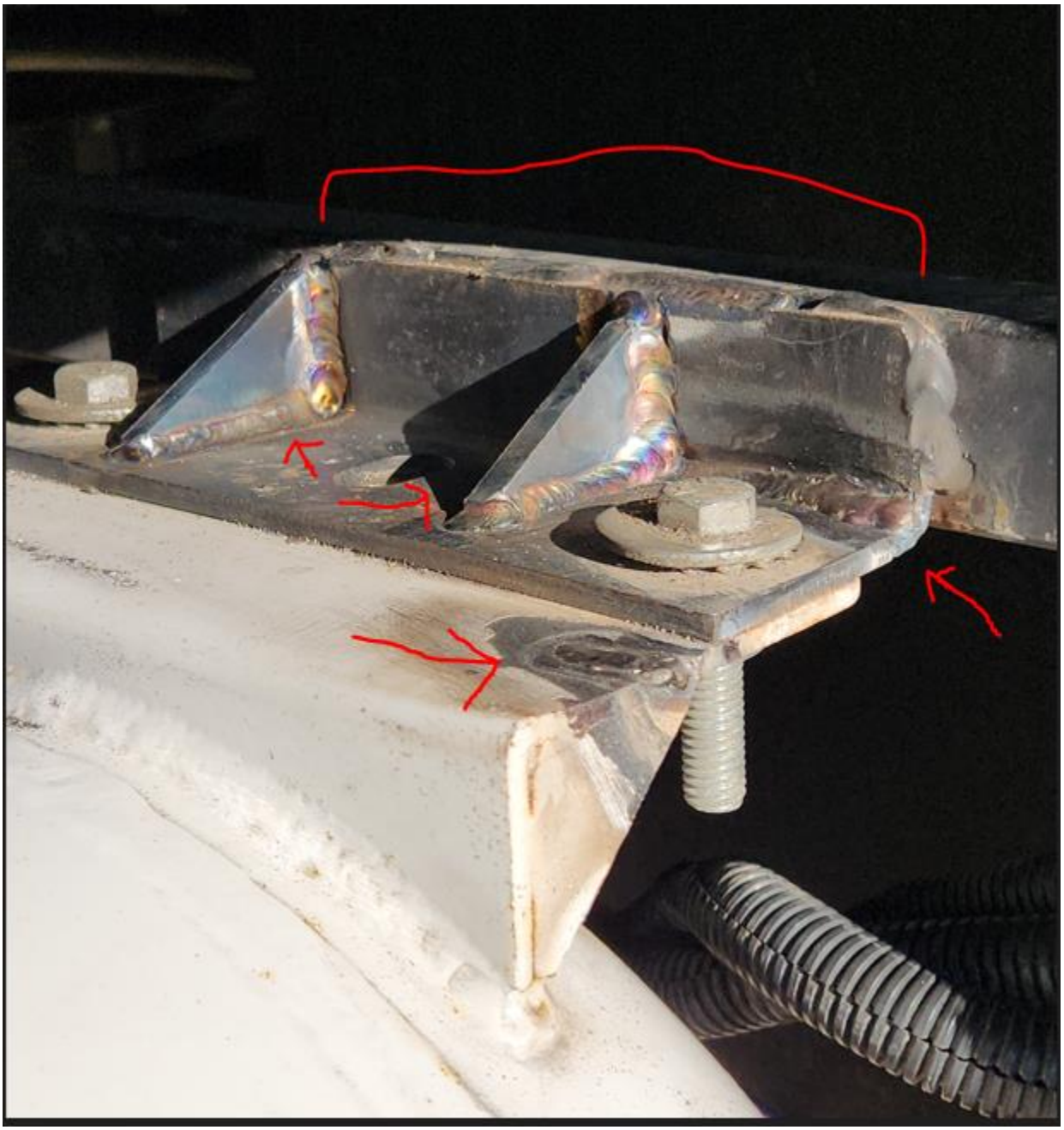
If the rear propane tank bracket cracks all the way through and the rear of the tank falls, the flexible propane line in the picture, being secured with a tie wrap, could tear away at the regulator and propane could spew underneath the motorhome and impinge the catalytic converter and other hot equipment.

Top of the propane tank mounting flange

Bottom view showing the crack had progressed all the way through the tank mounting flange

View of how the welder repaired the cracks in the rear propane mounting bracket and in the tank mounting flange.

He fabricated triangular gusset plates to add strength to the rear 90-degree bracket and added welds at the top. He ground out the cracked areas, top and bottom, and then added weld to those ground-out areas. Simply welding over a crack without grinding the metal out, top and bottom, is not the proper way to repair a crack.



Extra welds added to the top of the front propane tank mounting bracket. This is a difficult area to access and he could not add the triangular gusset plates he wanted to add.