

**STEERING AND**

**FRONT SUSPENSION,**

**SHOCKS AND**

**SPRINGS**

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## RACK AND PINION MOUNTS - STOCK AND SOLID(with a consumer bulletin on the latter)

The rubber rack and pinion mounts on the TR-6 have generally been denounced as causing undo play in the steering, etc. Actually, if they are replaced periodically they serve a good purpose providing - and this is where the complaints really should be aimed - the complete steering and suspension system is in good condition. Think back to when your car was new. Did you really have any complaint about play in the steering? Their purpose was to dampen shock transmitted through the steering assembly and they do a reasonable job of this. Remember, any shock absorber anywhere in the suspension makes the suspension last longer.

The problems come from worn suspension, worn tie rod ends, out of balance wheels, etc. The rubber mounts actually magnify these by letting the rack move with the offending force. Also, the unknowing try to tighten the clamp down on the rubber rather than replace it. We have one TR-6 on which the former owners Chevy expert friend snapped one of the bolts off and put a wing nut on the few remaining threads. Luckily we discovered it before driving the car. Even the knowledgeable can overtighten these bolts.

New rubber mounts should be installed every 10,000 miles. The clamps should be torqued to 25 ft. lbs. and always have new nylock nuts. The clamps should be held as far to the outside of the car as possible to insure the rubber is held tightly. Tighten the rear nuts first using a deep socket and trying to use the socket and ratchet extension as a lever against the hole through the crossmember to put some force on them toward the outside.

The modified mount kits sold by Moss Motors under part # 667 298, and perhaps by others, are a good alternative for certain purposes. There is no doubt that they will add some

precision to the steering. The degree of this is not so great, however, that you will notice much - if at all. Obviously they also eliminate the periodic replacement of the rubber mounts if that bothers you. They do not have the shock dampening effect mentioned above but then I doubt any of you are looking for Rolls-Royce smoothness in your TR. I have found them to be helpful on one TR with a slight but persistent front end shake at speed. The car has very wide high speed tires which tend to be hard to balance (aren't all TR wheels impossible to balance?). These mounts help arrest a fair amount of this shake. All things considered I'd recommend them unless you drive on a lot of roads with potholes and other steering banging surfaces.

There is one word of caution to those of you who already have the solid mount kits. Some of these ( I have no idea how many) had a lower block which was the same width as the upper aluminum piece. This does not go against the shoulders on the rack which were just to the outside of the rubber mount clamps. Therefore, it is possible for the steering rack to move about 1" if the U-bolts come loose or one should break. Also, you can bolt up the steering in any old location. True, it is not too likely to happen but that much movement could cause lose of control. If you have one of these sets I'd advise contacting the supplier for the wider replacement blocks.

## PREVENTIVE MEDICINE FOR FRONT SUSPENSION MOUNT WOES

Skill level C

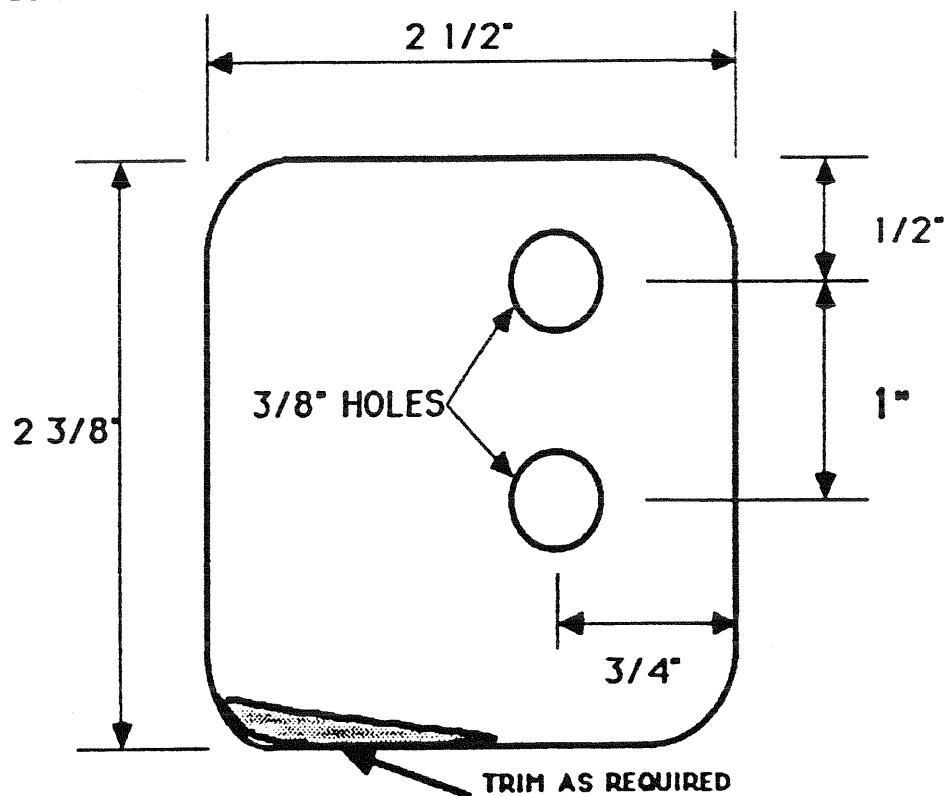
Front suspension mounts, especially the rear ones, on TR frames are known for tearing away from the frame. Once this has happened it can be fixed but is sometimes difficult if the mount has also cracked or broken up around the two mounting holes for the lower suspension arms. The purpose of this article and the following one is to help you prevent this with relatively little effort, and to assure you that if it does happen it can be fixed. Refer to the photos with the following article to see the area we are talking about.

Obtain a piece of 1/8" steel plate 3" wide by 1' 0" long or a plate 8" square. The latter is a common size used for base plates in building construction and is easily obtained from a building supply store. Structural steel fabricators and steel distributors listed in the yellow pages are other sources. Don't be too concerned if you have to buy a 10' length of 3" bar as you can use it for rear cross-member reinforcement described in a later article. You will need to make 4 reinforcement plates as shown in the sketch. These are relatively easy to make if you have an air compressor and air driven high-speed cut-off grinder and a 3/8" drill. It can be done with a hacksaw and a grinding stone in your 1/4" drill but that will take awhile. Please note that some trimming of edges will probably be required where shown in the sketch. It is also advisable to have one of the holes about 1/32" oversize to allow for misalignments.

Installation is easy and should take about 1/2 day. Preferably the front end should be raised as high as possible and the car securely blocked from tipping or rolling. Work on one suspension mount at a time. Remove the wheel. Place a jack under the spring. Jack up until the spring is compressed and until most of the load is removed (just before the frame is lifted off the support). Remove the nuts and washers from the suspension mounting bracket (a little WD-40 on the threads is advisable). Clean the mount "box" and trial fit the reinforcing plate. Trim as required with a grinder. Once the plate will seat

firmly against the mount, install the washers and new nuts. If the mounting bracket bolts do not extend fully through the nylon portion of the nuts delete the washers. Repeat the operation at the other three mounts. Incidentally, you do not need to be overly concerned if there is a crack between the holes in the mount box. This is common and the beginning stage of the total break-up of the mount. The reinforcing plate will remove all load from this area. If the damage is more extensive you may need a house call from a welder.

As soon as possible go to a competent welder with a lift that will get the car high enough for him to comfortably work under it. Have him weld at least the vertical edges of the reinforcing plate to the box. Total welding of the edges is not required, but basically more is better. Above all, keep the mount cool enough to not burn the rubber bushings. An additional and highly desirable effort is a reinforcement about 1" wide welded between the rear mount box and the frame just below the motor mount. Size and shape are not too important but the additional stiffness of the mount is.



**FRONT SUSPENSION REINFORCEMENT PLATE  
4 REQUIRED**

## BUT WHEN IT DOES BREAK - FRONT SUSPENSION MOUNT REPAIR

Skill level B/C

The photos show a rear right mount which had torn loose at the frame rail and had been previously repaired. It had since cracked between the holes and then, through constant flexing, has fatigued and torn away at the periphery of the mount "box".

The hard part of any repairs to the suspension mounts is getting at the break. The obvious best method is to remove the whole suspension from the affected side. In the example shown here, the first photo shows a crowbar resting on the frame and a floor jack being used to raise the inner end of the lower control arm to first take the pressure off the bolt so that the bolt can be removed and then hold it out of the way. The bolt has been placed back in the bushing for reference only. Photo 2 shows the broken piece next to the mount "box" and a reinforcing plate such as mentioned in the previous article. Note the proximity of the motor mount just above and to the right of the box. A brace should be added here as mentioned in the previous article. Each case will obviously be different, but the following approach is basically the order of work. Place the reinforcement plate inside the box and carefully position it at the back face of the broken area. Now have your friendly neighborhood traveling welder weld the plate in place on the inner side of the "box" only. Grind away about 1/8" on the edges of the broken piece. Use 2 short bolts to bolt it in place over the reinforcing plate. Have the welder weld this in place. Remove the bolts. Grind the face as flat as possible with stones like those in photo 3 and a 1/4" drill. Photo 4 shows the tools to do the job easily - high speed grinder with cut-off wheel, 3" steel bar, vise, drills and vise-grips - however you can get by with less. The Augsburg beer is optional.

