

Replacing Triumph TR3 Floors, a technical note by Bill Brewer

Notes about the lessons:

I had been driving for 8 years with plywood thrown down for floors and was tired of the cold winter drafts and dust blowing in. I regret waiting so long now. When I got the floors out, I discovered that the only thing really holding the body on the car was the four bolts at the corners. The floor mounting bolts weren't even connected to sheet metal anymore and the four bolts on the 45's in the sides of the engine compartment were loose and missing the aluminum spacers. Think about that next time you slide around a corner.

There was even less sheet metal in floor than I originally thought. Scary.

The floors really should be replaced with the body off the car, but that is another story. I did mine on the car as part of an ongoing rolling restoration.

Do one side at a time so you can use the other as the pattern if you forget how something goes. I had to check several things on the original side.

I found the floor job much more enjoyable than I originally anticipated and recommend that others don't put it off. It is a good winter project. Don't do it during the driving season or you'll miss out too much.

It is easier to do the job right than half-assed. Forget about pop riveting it in, using JB Weld, sheet metal screws, gas welding or leaving any of the old floor in. Do it right. I've seen some strange ways to put floors in that pretty much ruin the car.

I am amazed at the difference that it made in the car.

This was on a TR3 but is probably very similar to a TR4 or 6.

The passenger floor panel fit perfect. The driver's side was a little short and the inboard holes didn't quite match up.

This is just how I did it. In hindsight, there is another and possibly better way that I am putting into my PS at the end.

Times:

Plan on about 50 man/hours per side on the floors. Maybe 40 per side if you use my lessons learned. Maybe more. This is just to get the floors in and doesn't reflect painting or putting the interior back in.

Keep band-aids around while working around the jagged sheet metal. I tore myself up pretty bad on the first side. Not a scratch on the second.

Some tools needed:

Air driven nibbing tool (Harbor Freight)

Air driven cut off tool (HF)

Power wire brushes

Dremel tool (Sears) with cut off wheel, various grinding bits and little wire wheels

Air impact chisel (\$10 HF)

4 inch disk grinder (optional with above tools)

MIG welder (don't try gas welding)

Big can of PB Blaster

Strong putty knife.

Electric drill and bits.

Nut breaker

Body work dollies and hammers

A friend with a car lift is a Godsend (Thanks, Jon Paschke)

Removing old floors

Take the seats, carpets and trans tunnel out. Take the car door off on the side that you are going to be working on. Get the car up on jack stands.

Unbolt the 6 bolts holding the floors in. Make sure to keep the inner aft bolt with its metal grommet, they are not available from the big three. The others just keep as patterns for replacing with stainless. The two sets of bolts that are mounted to the outriggers will be rusted beyond belief. Mine didn't even have a flat for a wrench. I ended up using the Dremel cut off wheel to cut

the threaded part off underneath, using the air driven cut off wheel to cut a square head on the top of the bolt, soaking it all with PB Blaster and working it back and forth until I got them out.

Use the nibbing tool to cut the floor out around the perimeter. You have to work the nibbing tool over the frame by lifting up on the old floor panel for clearance. Don't cut the flanges that the new floor will get welded to.

Save all of the hardware holding the seat rails in. If it is all frozen (and it will be), cut the floor from around the rail bolt caged nuts for clearance, break the nuts with a nut breaker, soak it all in PB Blaster and unscrew the bolts holding the rails on. The last I checked, the bolts were unavailable. A moot point if you are going to replace them with stainless bolts like I ended up doing.

Use the impact air chisel to get the sides off. It took only a few minutes working carefully. Don't try the impact chisel on the drive shaft hump, the back or the front flanges or you'll be sorry.

To break the spot welds front & back and on the drive shaft hump, try to drill out the spot welds. If you are good, you can drill about halfway through. Try not to go all of the way through. A Dremel tool is handy in the tight spots. You can find the spot welds from the top or underneath. In the front, you can find the inboard ones from looking down the top of the engine compartment. About 3 welds will be "blind" from anywhere else. If you absolutely can't see the spot weld, try gently pounding a thin strong putty knife between the seam until it stops. By poking around it on three sides you can find exactly where it is to drill it out.

I have seen spot weld removal drill bits from Eastwood. They might be good, but I had no problems just using a drill bit.

I used pliers to twist and pull the old metal off. Sometimes I pounded the putty knife gently to separate the panels after drilling out one half of the metal.

You'll probably find some weird welds in some of the corners that you just have to gently grind out until it is clear.

When the floors come out, look to see where the factory put the rubber strips.

Hardware:

The big three were out of body mounting hardware kits, so I ordered the rubber individually.

I replaced all the bolts with stainless from the local True Value hardware. For the long bolt in the front I used a cadmium plated grade 8.

Derusting:

I used power wire brushes and the little wire brush on the Dremel. I tried muriatic acid (pool acid) for some of it, but don't recommend it. You'll probably end up making patch panels for severely rusted areas.

Patch panels:

If the driveshaft hump is seriously rusted, consider just making a new hump from scratch and welding it in. I wish that I had. I ended up making a big patch. You could also get another hump from a parts car, but it is probably already welded in and rusted through too.

Also, if the front or rear panels are severely rusted, pitted or deformed, consider making a complete new patch panel to weld in about 1 inches up from the floor. If you make a flange, use a flanging tool (Eastwood), lap weld and then grind it down carefully, it will look like original and you'll have good metal to weld to. It is easier than making multiple patch panels.

I lap welded my patch panels instead of butt welding them. When we tried butt welding, the mig welder would just melt and blow away the old floor metal. Lap welding was easier. I also pop riveted the patch panel to hold it in place. I used stainless pop rivets. If you are really into it, use aluminum rivets, drill them out when done welding and weld in the holes.

Fitting new floor:

Straighten out all of the bent up old metal. I made a neat little dolly out of a piece of 1/4 steel plate about 3 by 6 inches and it came in handy.

The real trick is where the floor has to fit in over the "Y" in the frame where it meets the forward bulkhead. There is a slot where the fore and aft member behind the bulkhead fits against it and rests on the frame. You can't slide the new floor panel into it and still get it past the lip at

the back panel. You can cut off this lip from underneath without hurting the car's structural integrity, but there is another way.

Take the forward outboard corner of the floor and gently pound it over flat against the floor for about the first 3 inches. This will allow you to slide the side rail under the forward bulkhead while fitting the floor. I probably slid the floor in and out of the car 10 times for each side minimum.

Measure and mark where the floor slides into the slot. Cut a rectangle out of the new floor approximately 4 across by 3 deep. This will allow you to slide the floor past this slot and then slip the floor under the rear lip. When the floor is in, it is a simple matter of sliding in the piece that you cut out and mig welding it in from the top. Afterward, you can easily grind the mig weld flat and paint it.

The side where I cut off the lip looks better, in hindsight.

Before bolting and welding the new floor in, paint the bottom of the floors with the same color as the car. It is a pain to try to do it later. I also painted the frame of the car under the floor at this time.

Welding in new floors:

Replace the rubber strips between the floor and the frame. I used weatherstrip adhesive to hold them in.

I measured the placement of the original spot welds. They were approximately every inch in the front and back, every inch and half against the drive shaft tunnel and every two and a half inches on the side rails. I drilled the new floor panel with a 1/4 drill at the proper places and then mig welded in these holes. Afterwards, the excess weld can be ground off and it looks like the factory spot welds.

Under the forward bulkhead, close to the transmission, I couldn't weld in the holes like I liked. I ended up mig welding the leading edges of the metal.

Before painting around where the floor will go in, I marked through the drilled holes with a "Sharpie" marker. I covered these marks with little round paper stickers that I bought at a stationary store. After painting around the floor with rust resistant paint, I peeled these little stickers off so it would be exposed for mig welding. It worked well for me.

PS. In hindsight, my front and rear flanges are about as good as they could have been, but still don't look all that great. I think that it would be faster, easier, better looking but scarier to do to make a new flange front and rear that goes up about 1 inch up the bulkheads. You could take the flange and floor to a sheet metal shop and have them spot welded together. Use a Eastwood flanging tool, flange the original bulkheads to accept the new flange, pop rivet it together to hold it tight and take it to a professional welder for tig or mig welding. Grind off the excess metal so it looks like the original steel. Someone else try this and do a write up on the list. I've already welded in my floors.

Good luck.

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