



Factory Five Racing, Inc.

Part Number: 80868

Revision: A

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STI Six Speed Conversion:







-  **Parts Needed**
 - 2004-2007 US Model Subaru WRX STI Transmission
 - Complete clutch and flywheel from same years STI
 - WRX CV joints with male inner joints (transmission attachment point)
 - Clutch Slave cylinder from Same model years STI
 - Pilot bearing, throw-out bearing, and clutch fork from same model years STI
-  **Supplies Needed**
 - Permatex #51813 Gasket maker
 - Permatex #20539 Indian head shellac
-  **Adapter Kit Contents**
 - 2WD adapter Flange
 - Shift Linkage bracket
 - Rear drive block-off plate
 - Oil Passage plug
 - Tamper-proof T45 Torx bit
-  Rubber/plastic hammer, hammer, punch, ratchet, metric sockets, large flat head screwdriver, band saw or reciprocating saw, tape measure, marker, T-40 Torx bit, 1/2" wrench, 1/2" socket, file
-  Earlier Models (2004-mid 2006) of the 6 speed transmission had oil pumps built in and this feature is retained during the conversion. If you have an early model (2004-mid 2006) then the pump need to be left operational. If you have the later model then the oil routing plastic need to be retained in order to get the fluid to the right places.
-  Gearing on the different models varied slightly which does not affect the conversion but does have an effect on how the car drives. The later model (2007) transmissions have less rpm drop-off between the higher gears and are slightly better for track days or higher speed events.

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Disassembly

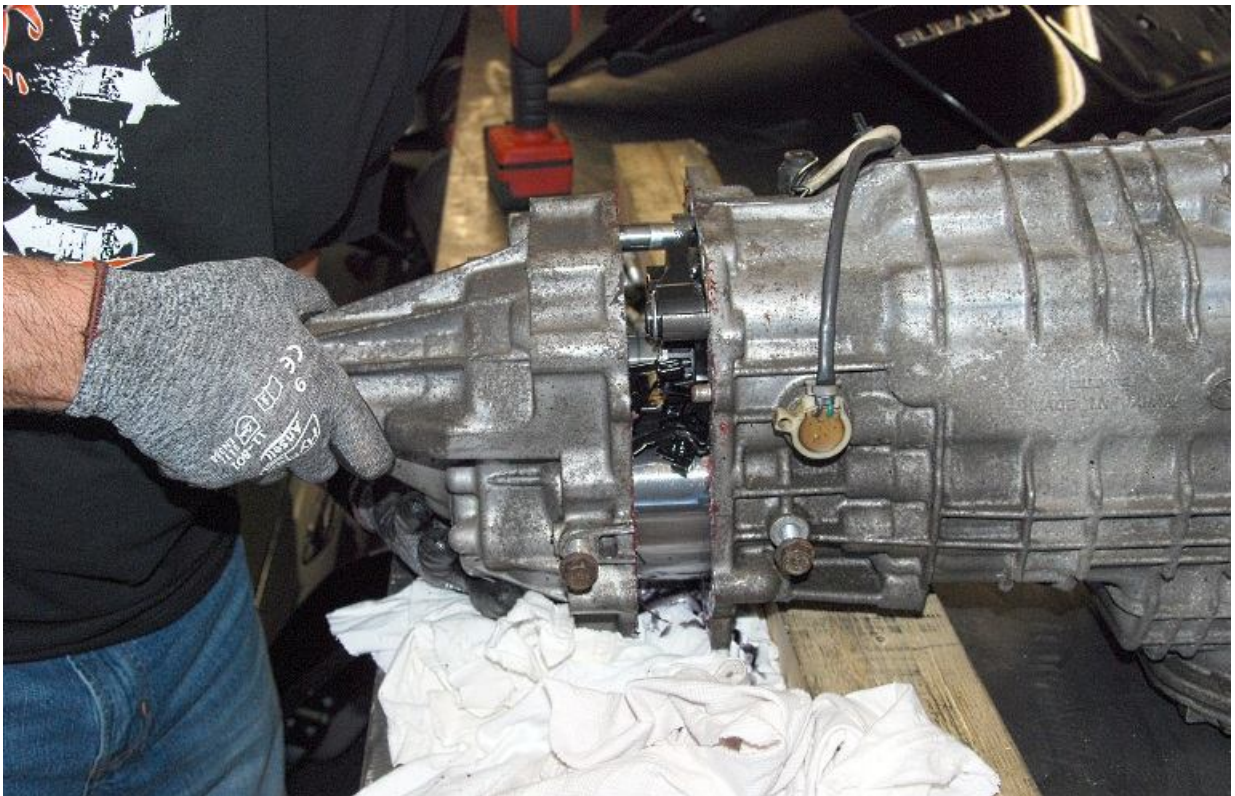
Tail housing



Using a hammer and punch remove the spring-pin from the shift linkage and pull the linkage off the transmission.

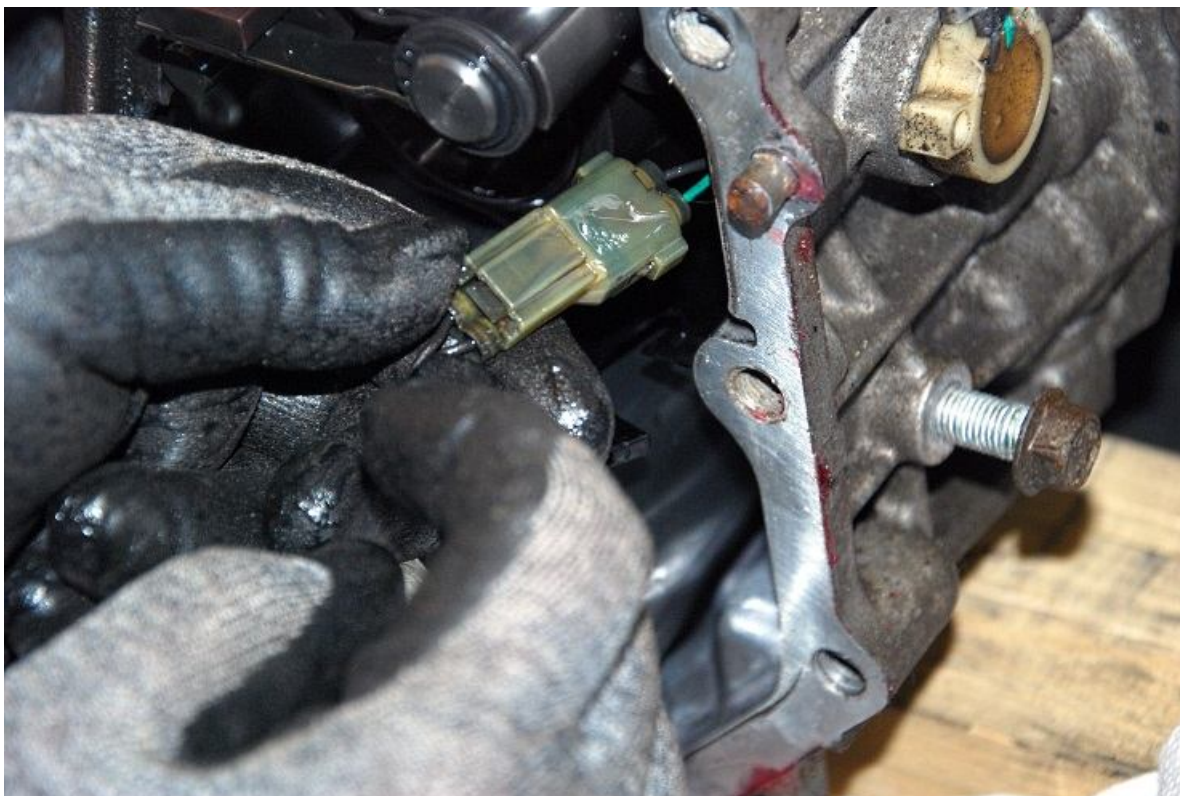


Remove the bolts that hold the tail housing to the transmission, save the bolts as they will be re-used.



Slide the tail housing off the back of the transmission, it may take a few whacks with a soft mallet to get it free of the locating dowels.

Center Differential



If the center differential is the electronic type, unplug it before removal.



Slide the center differential out the back of the transmission. Be careful as it will be slippery and is heavy.



Remove the c-clip that holds the differential together.



Separate the differential and all the clutches until just the center section is free.

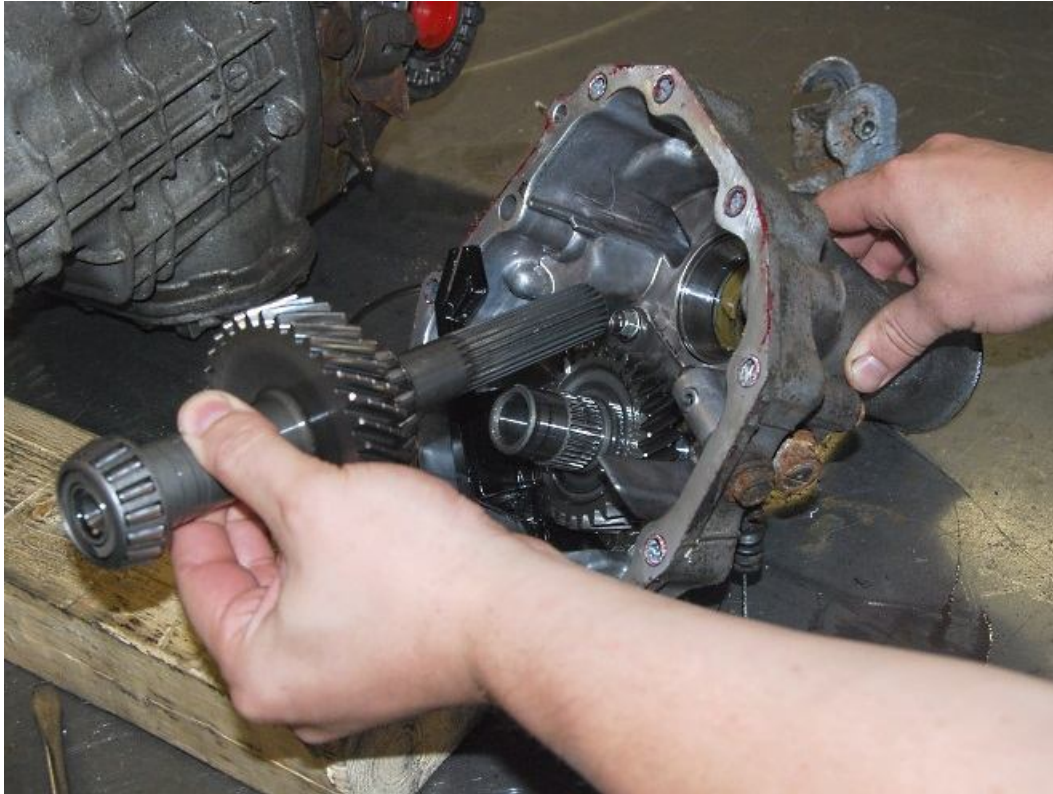


Pry the oil pump drive gear off the remaining differential center piece. You will need to re-install this gear unless your transmission doesn't have a pump.



Using the Tamper proof Torx bit and a T40 regular bit remove the drive flange from the differential.

Tail shaft



Remove the tail shaft from the tail housing, it will not be re-used.

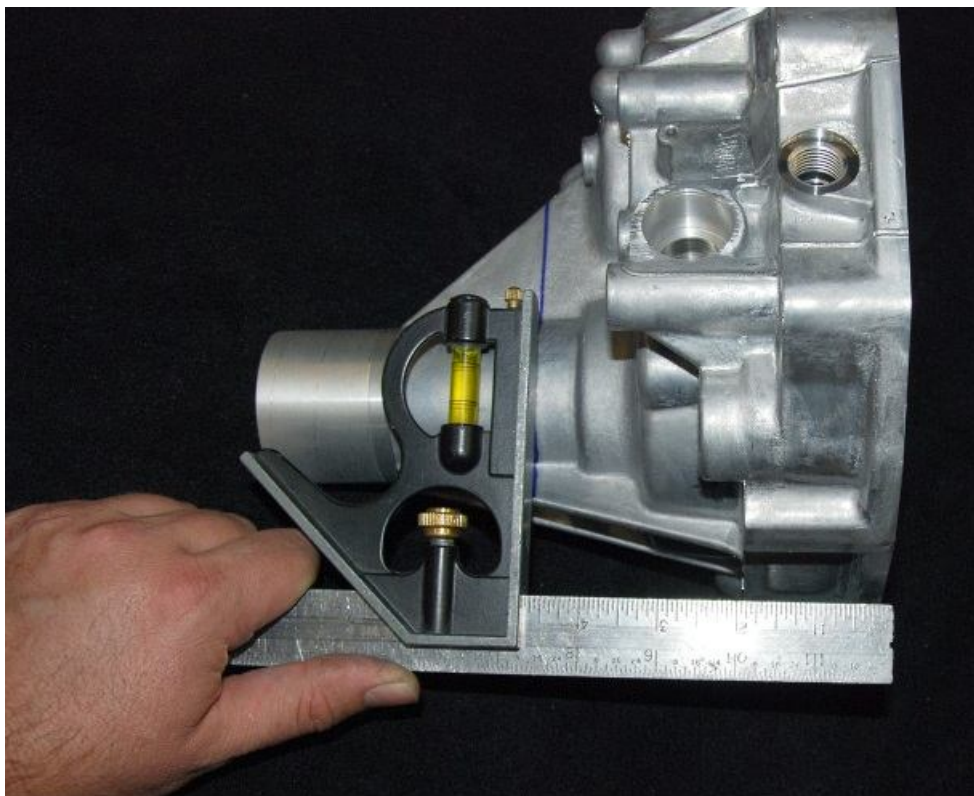
Parts modification

2WD Adapter



Using the provided hardware, bolt the drive flange to the provided adapter flange. Test fit the complete assembly with the bolts just snug to ensure proper alignment and then tighten. If your transmission has the oil pump then fit the ring back into position with a hammer and punch.

Tail housing



Mark the transmission $4\frac{3}{4}$ inches from the mating surface for trimming off the excess tail housing.



Make sure the mark made will not have you cutting through the cast in bump under the tailshaft and only goes through the two ribs.



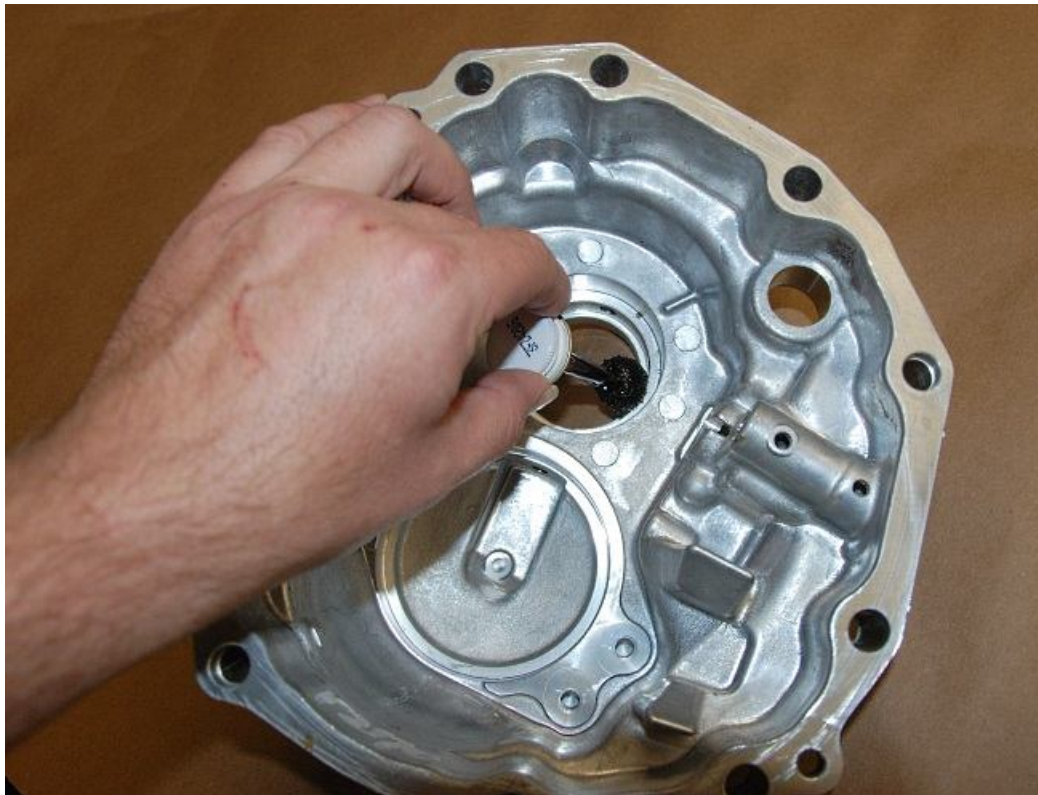
Using a band saw, reciprocating saw or a hack saw, cut the tail housing being careful to maintain a straight cut.



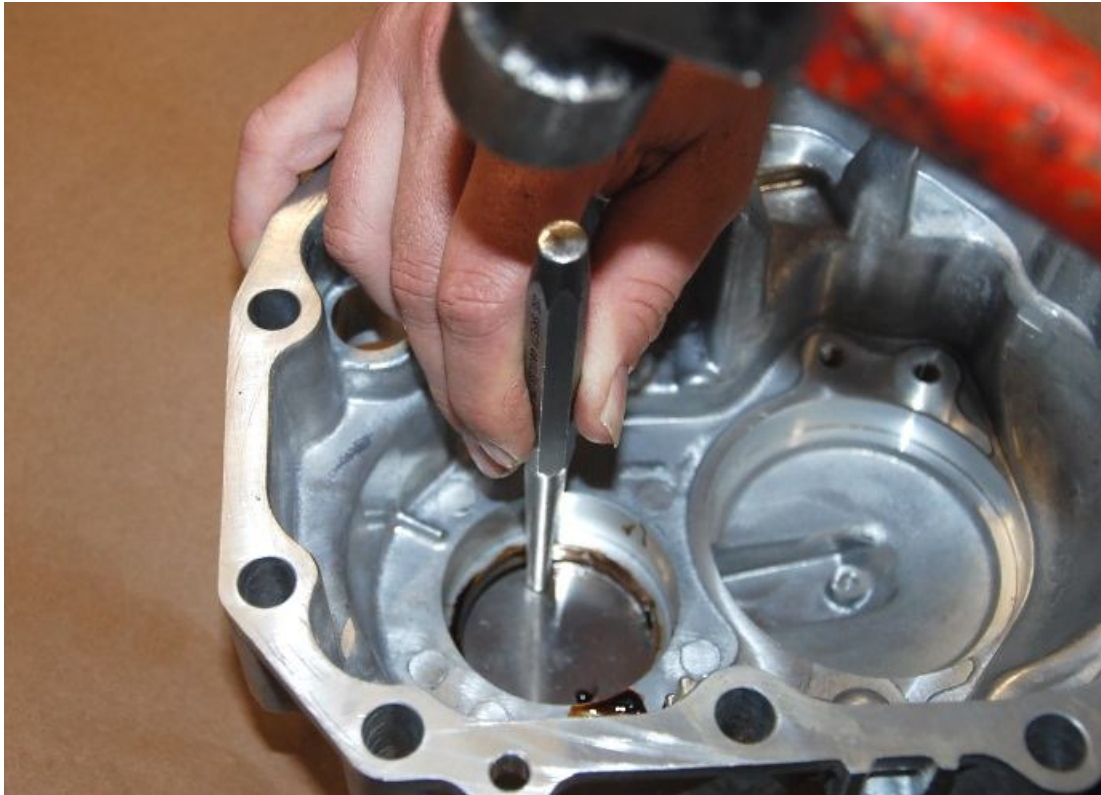
Locate the laser cut aluminum plates that block off the rear openings. If there is any bur left on it, remove it gently with a file.



To be sure that you get a good seal we recommend using a gasket shellac compound like the one above from Permatex. This is their #20539



Using the applicator, coat the inside edge of the tail housing where the round plug will sit.



Using a flat punch, tap the plug into place until it sits on the step. Make sure it goes all the way into place or it will leave the passage from the lower part of the housing open.



Apply the gasket maker to the small rectangular shaped passage, if it makes a mess it will wipe off but make sure you don't wait for it to set.



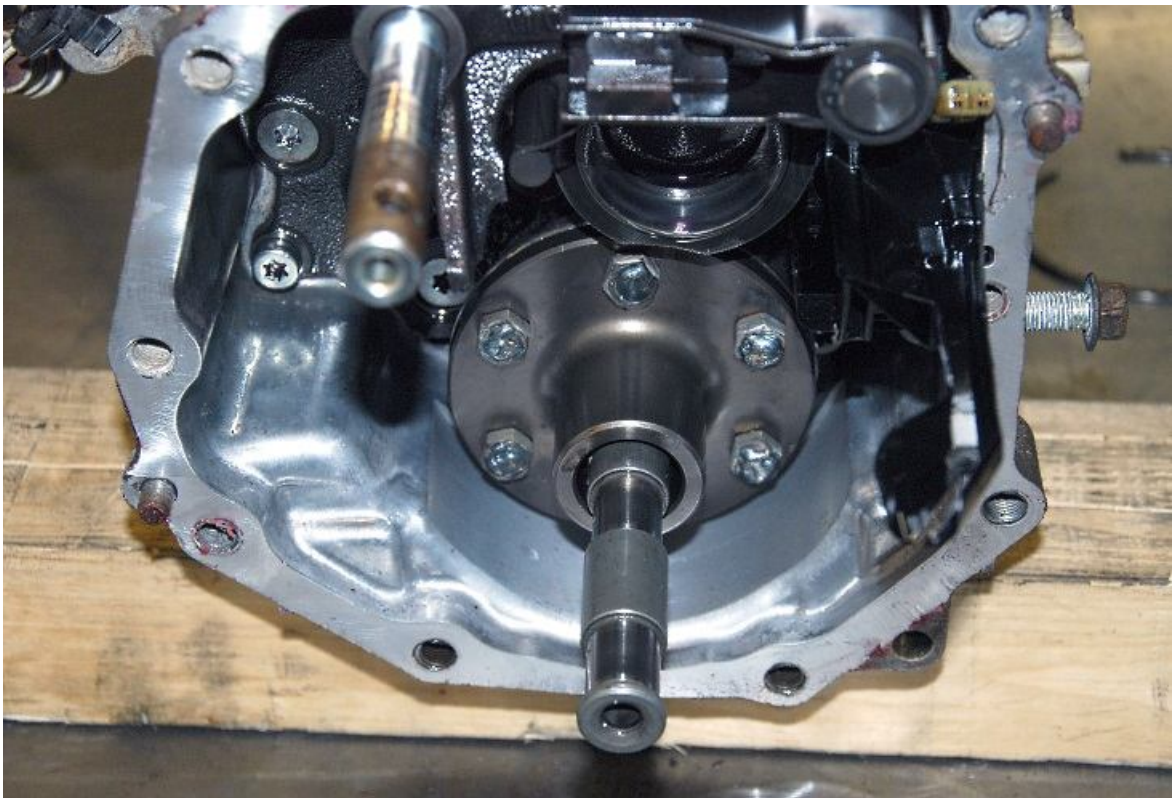
Use a Punch to tap the smaller plug into position, the passage is tapered so it will only go down in a little way.



Apply more gasket shellac to the backside of the plugs to help seal and prevent them from popping inward.

Assembly

2WD Adapter



Slide the finished 2WD Adapter into place with the factory drive flange forward and the adapter flange toward the rear of the transmission. It may take some light tapping with a mallet to make sure it is all the way in position.

Tail housing

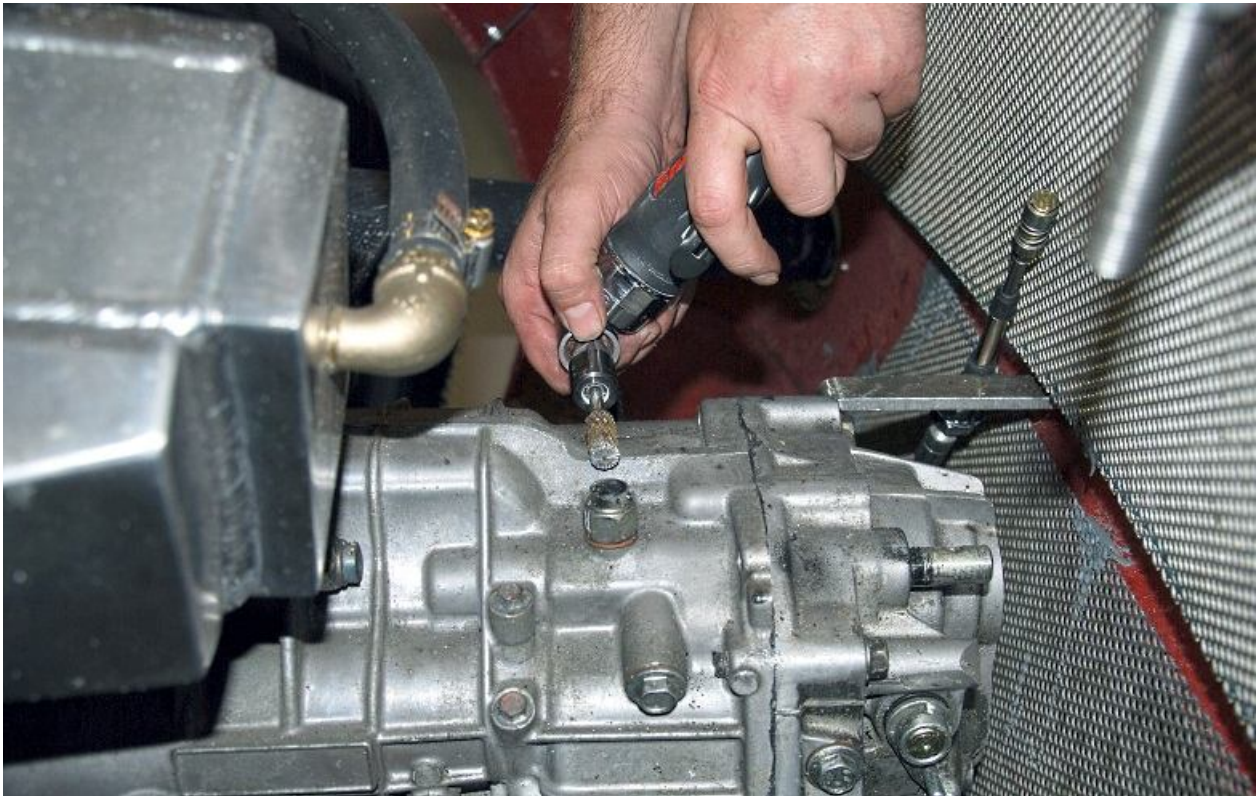


Use an Anaerobic gasket maker such as Permatex #51813 (used above) to seal the tail housing back to the transmission.



Bolt the tail housing back onto the transmission using the original hardware. If you have the model with the plastic oil splash tray make sure it is in place before the halves go together. Torque the bolts to 35 lb-ft (48Nm).

Shift linkage bracket



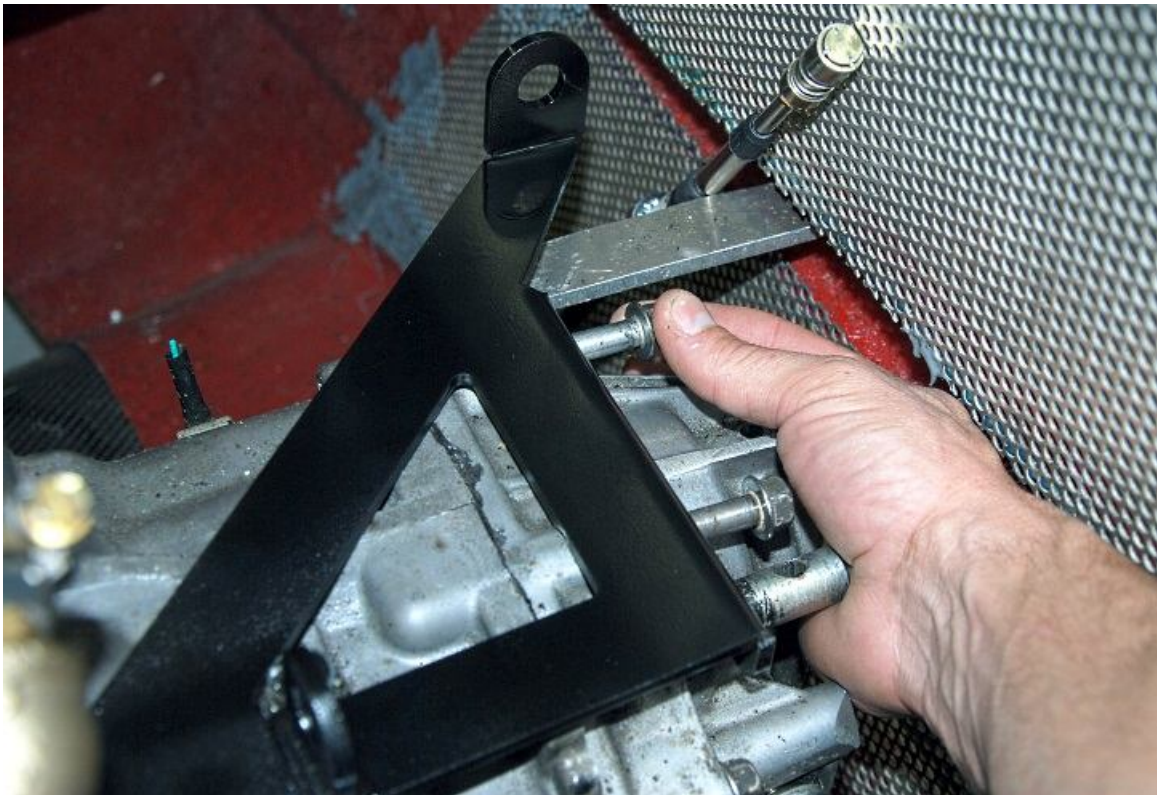
The top rib on the rear of the transmission will need to be ground for linkage bracket clearance.



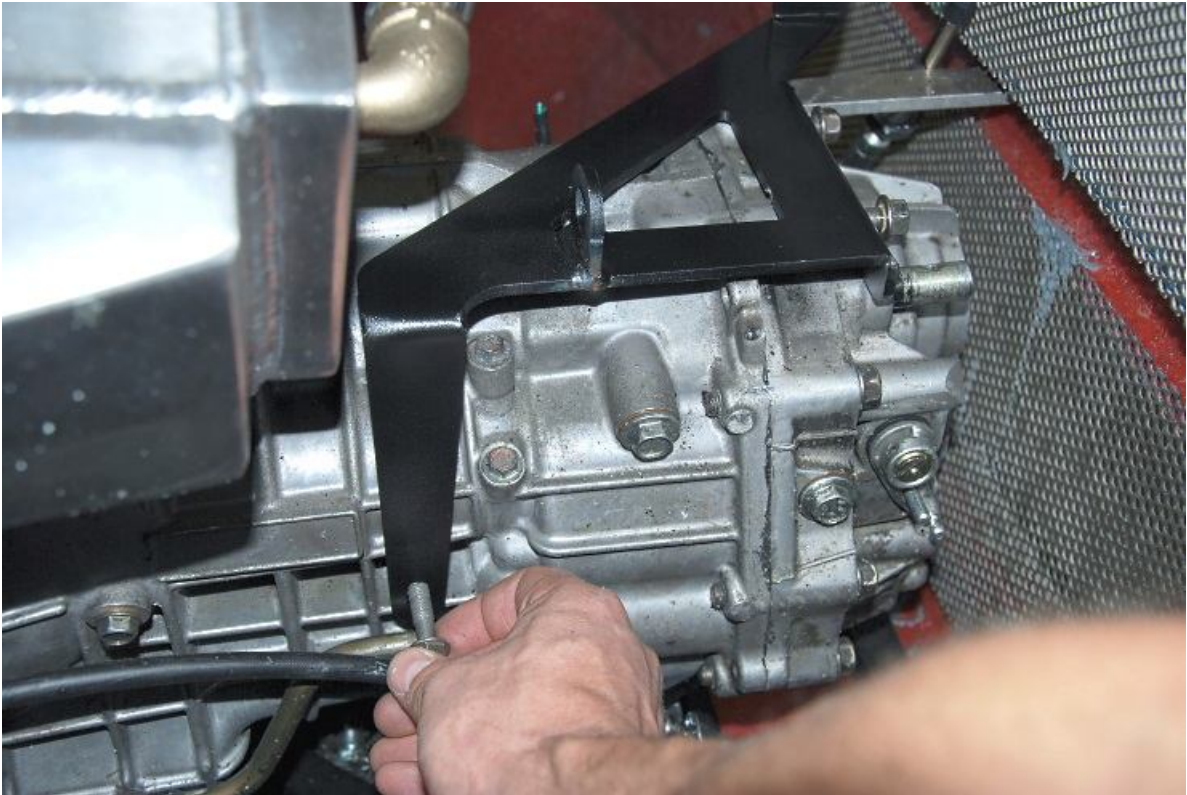
Use the bracket as a guide for how much material to remove. it is ok if the bracket just touches the transmission housing when it is tightened down.



Fit the bracket in from the top side. You will have to remove the two upper tailhousing bolts and slide them through the bracket to hold it in place.



Loosely mount the bracket using the factory bolts; just turn them in a few threads to allow for alignment.



With the upper bolts loose move the bracket until the lower threaded boss in the transmission lines up with the slot. There was a factory bracket in this location that needs to be removed if it is still in place and one of the original bolts will be re-used for the linkage bracket.



Mount the shift cables to the linkage bracket leaving the jam nuts loose enough to adjust by hand. The bracket is shown unmounted in this picture but it should be in place on the transmission.



Use the small hole on the bottom corner of the bracket for a zip tie to hold the reverse lockout mechanism in place.



The mechanical lockout for reverse is now bypassed. Extra care should be taken putting the car into 5th gear to ensure that you don't grind the reverse gear during the shift.



Pull the zip tie until the lockout arm is at the 1 o'clock position. Test the transmission linkage to make sure it will pop into reverse.



The linkage attaches to the transmission the same as for the 5 speed except the arm points upward instead of down.