

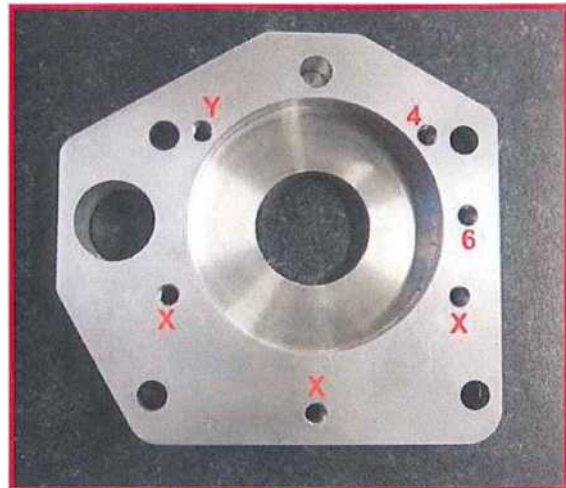
5-Speed Gearbox Conversion with short remote - Midget 1500cc

Fitting Instructions

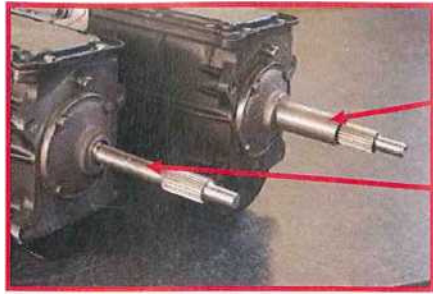
1. Remove the engine and gearbox in accordance with the workshop manual instructions. It is advisable to remove the slave cylinder from the original gearbox and leave on the car so avoiding the need to bleed the slave cylinder when reassembling.
2. Remove the speedo cable.
3. Remove the seats and carpets from the floor.
4. Remove the sound insulating material from the transmission tunnel.
5. Separate the engine from the gearbox and remove the clutch.
6. Remove the old spigot bush from the deeper recess of the crankshaft and discard. If this is tight in the crank you can either use the hydraulic method (Pack the spigot bush with grease then insert a tight fitting shaft & hit the shaft. This should force the bush out under the hydraulic pressure.) or cut a slot in the old spigot bush using a thin hacksaw blade or a small drill bit by drilling along the bush and when the slot is complete you will be able to remove the bush with a screwdriver and pointed pliers.
7. Fit the new spigot (oilene) bush into the flywheel. Lubricate the bush very lightly with grease.
8. Fit the clutch assembly using a clutch aligning tool and tighten down in accordance with workshop manual instructions. *Note:* Make sure that the clutch plate is fitted the correct way round with the raised centre boss of the clutch plate facing towards the gearbox.
9. Remove the bellhousing from the gearbox. Remove the clutch release arm and bearing from the bellhousing.
10. Offer the adaptor plate up to the back of the bellhousing. It will foul a small amount of the casting next to the original clutch slave cylinder mounting. This should be removed with a saw or similar tool to sufficiently allow the plate to sit completely flush with the bellhousing.

Adaptor Plate:

Hole 4 is for use on 4 cylinder engines Hole 6 is for use on 6 cylinder engines Hole Y is used on both 4 and 6 cylinder engines



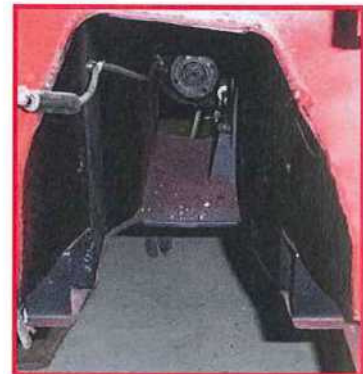
11. Bolt the new adaptor plate to the bellhousing using the three bolt holes, marked X, which line up with three of the existing holes in the bellhousing. From the back face of the new adaptor plate you will have three 3/8 threaded holes that do not line up with any holes in the bellhousing: For the 1500cc conversion use hole Y and hole 4 and drill 2 holes in the bellhousing as follows:
12. Take a drill that is a good fit in these holes and make a spot mark through them onto the bellhousing. Remove the adaptor plate. Now drill through the bellhousing, where you have marked with the drill, making the hole large enough for the bolts supplied to pass through freely. (Accuracy is not critical here as the alignment is taken care of by the adaptor plate.) Once the holes are drilled you may have to file or grind the area around the newly drilled holes inside the bellhousing to give a level surface for the bolt head to pull up against. You should now have five holes that line up between the adaptor plate and the bellhousing.
13. In the centre of your bellhousing there is a small guide tube on which the bearing is designed to run. The internal bore of this tube will probably need enlarging to 27mm or larger to allow clearance when assembling the bellhousing onto the gearbox and passing over the first motion shaft.



**POINT 14 Before
modification**

After modification

14. Remove the centre guide tube for the clutch bearing from the Ford gearbox. It is bolted to the front of the gearbox with 4 small bolts. Clamp the base securely in a vice and, using a handsaw, completely cut off the machined part of the tube. Clean thoroughly, lubricate the oil seal and refit. With this correctly done you should now have the base of this tube, with the oil seal still intact, and free of any metal filings. Bolt back onto the gearbox.
15. Now bolt the adaptor plate to the gearbox. Add a smear of instant gasket around both the gasket and the adaptor plate then fit to the gearbox using Loctite or similar on the bolts supplied. If section 12 has been carried out correctly, the new adaptor plate will easily sit flush against the gearbox.
16. Refit the bellhousing to the adaptor plate, which is now bolted to the gearbox.
17. Refit the clutch release arm and bearing.
18. Using your available tools, cut back the front floor of the transmission tunnel, following the profile of the tunnel for a distance of 250mm then remove that section. (This will include removing the central box member which the original gearbox sat on.) The cut is shown by the red line on the left hand picture below.

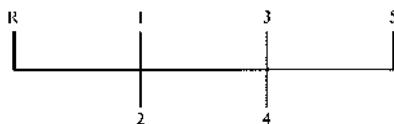


19. Slide the new reinforcing box sections provided into each side of the remaining central crossmembers as strengtheners. The closed ends should face the centre of the car. It is not necessary to weld in these sections though you can if you prefer. Seal the edges to prevent water getting in.
20. Use the connectors supplied to make up a small sub loom to connect to the existing reverse light wires. Connect to the reverse light switch on the gearbox when installing it in the car.
21. Now refit the gearbox to the engine. This should be done without using excessive force. When the bellhousing is fitted to the gearbox check the release bearing to ensure a good position just off the pressure face of the clutch cover (there should be a gap of about 4 to 5mm).
22. With the engine & gearbox supported on the crane offer them into the car. With one person inside the car, pass a rope through the transmission tunnel & around the end of the gearbox. This is used to lift the tail of the gearbox as the assembly is offered into position. When the gearbox is located in the tunnel you can re-fit the engine mounts. Don't bolt them tight until you have got the gearbox into place.
23. Centre the gearbox in the transmission tunnel from below, checking that it does not touch the tunnel or the chassis at any point. Bolt the gearbox rubber mount and the new crossmember onto the gearbox then jack it firmly up to the underside of the car.
24. Now check the clearance around the rear extension of the gearbox. The short remote brings the gear lever position close to that of the original gear lever but it is not always exact so it may be necessary to modify the aperture to give at least 15mm of clearance all the way around the gear lever extension. If this is necessary on your car you will also need to drill new holes for the gear lever gaiter locating ring.
25. When you are certain that the gearbox is located centrally and not touching the body or the chassis anywhere use a 3/8" or 10mm drill bit to drill holes through the floor pan & transmission tunnel using the new gearbox mounting plate as a template.

26. Bolt the new crossmember to the car using the bolts supplied.
27. Re fit the slave cylinder:- slide the clutch slave cylinder through the hole provided in the adaptor plate while entering the push rod through the piston cover. When the push rod contacts the piston, continue to slide the cylinder in for a further 15mm approximately, then lock it in position by the grub screw in the adaptor plate. This can be adjusted later to gain the correct clutch operating position if required. Bleed the hydraulics if required.
28. Now fit the propshaft from the rear axle end of the tunnel taking care not to get any dirt on the propshaft end as this may damage the oil seal in the rear of the gearbox.
29. The new speedometer cable is fitted through the side of the transmission tunnel. A sufficiently large hole will need to be drilled adjacent to the speedo drive on the gearbox to allow the speedometer head end of the cable to pass through it. You should allow a good amount of clearance for the cable to avoid chafing and then seal the hole with silicone or similar after fitting.
30. Once you have passed the cable through the new hole in the side of the transmission tunnel, connect it firstly into the speedometer head and then route it to the gearbox taking care not to install it with any tight bends as this will cause the cable to break when used. When you insert the cable inner into the drive gear in the gearbox make sure it is engaging with the drive gear before fitting the circlip retainer.
31. Fill the gearbox with approximately 1.5 litres of semi synthetic 75/90 gear oil. Allow the oil to settle for 5 minutes then re-check.
32. With the gearbox installed and bolted in, reposition any fuel or brake pipe lines that may have been moved using T' clips or similar, so that they will not chafe anywhere.
33. Fit the gearlever and original gaiter cover. This may require new holes for the fixing screws to accommodate a slight change in position from original. (Make sure that the rubber does not restrict the gearlever movement.) See point 24
34. Fit your chosen gear knob.
35. Check the operation of the clutch mechanism and make any adjustments necessary to the clutch operating system by sliding the slave cylinder in or out of the adaptor plate.
36. Now you should be ready to test the conversion. Make sure you are happy that everything is where it should be and all fixings are tightened securely.

Now all that remains is to try it!!!

Have Fun



Speedometer recalibration

Once the kit is installed your speedometer may require recalibration. This can be done by any reputable instrument refurbisher, such as Speedy Cables Ltd in the UK. Their web site at www.speedycables.com/calibration.html gives details of what is involved.

Clutch plate (Special note)

- The clutch plate supplied is slightly thicker than standard and can take higher loadings than the original plate so a greater travel of the clutch mechanism will be required to disengage the clutch. Any play in the mechanisms may result in clutch drag so please check all pivots in the clutch system.
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Trouble shooting

- If you get excessive noise or vibration, the probable cause is the gearbox or engine touching the body somewhere.
- If the clutch is not operating correctly, check that the clevis pins used on the clutch slave & master cylinders are not worn. Also check that the clutch system is correctly bled and is not leaking fluid. Both of these things would give less travel on the clutch arm & cause clutch drag which also makes gear engagement difficult.

If you are in doubt please call us. It is better to take a little more time now than to have problems later. We are here to help.

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