

## Ford 5-Speed Gearbox Conversion with short remote

948cc - 1275cc

### Fitting Instructions

1. Remove the engine & 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. Remove the clutch and flywheel from the engine.
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. Check that the small diameter of the new spigot fits easily inside the crank. If it does not, file or turn it down so it fits easily. Fit it to the back, i.e. the engine side, of the flywheel. When fitted, check that the bronze bush has not moved forward in its housing. Refit the flywheel and tighten to 40ft/lbs. Re-set the lock tabs. Finally tap the spigot bush firmly into place with a drift or similar to make sure it is seated correctly against the crank flange.



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. Use the starter motor Bendix cover from the old gearbox as a template to drill three holes, with a 3.5mm drill, in the new bellhousing. Secure the cover with self tapping screws. Note the bellhousing drain hole position on the old gearbox and, with a 5mm drill, make a similar hole in the new bellhousing.
10. Add a smear of instant gasket around the gasket and the 'blind' hole at the top of the bell housing (**Important note. Make sure you do NOT get any sealant inside the blind hole as this can prevent the selection of some gears**) then fit the bellhousing & gasket to the gearbox with the new bolts supplied using Loctite or similar on the bolt threads.
11. Our clutch release bearing is designed to slide on the Ford centre guide tube as the original Ford bearing would have done. (**Note: For 948cc cars** the end of this tube will need to be shortened by approximately 15-20mm to clear the clutch cover, when finished & assembled there should be a minimum of 4mm & a maximum of 10mm clearance between the end of the tube & the bearing face on the clutch cover. Please contact us if you require assistance.) Fit the clutch release bearing to the original arm as normal but using the new retaining clips supplied. Fit the new clutch pivot to the bellhousing, Now put a small amount of copper grease or similar onto the centre guide tube & slide the bearing over the tube. Locate the clutch fork in the pivot bracket and use the old lever arm pivot bolt to secure the arm.



(*Note:* check the pivot bolt & the bearing in the clutch fork for wear as this may impair the clutch travel and operation.) Tighten to remove side play but do not impair lever action. (**See notes on clutch release bearing**).

12. 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.

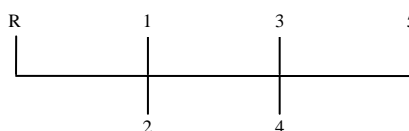


13. Slide the new reinforcing box sections provided into each side of the remaining central crossmembers as strengtheners. The closed ends should face the centre of the car. It is not necessary to weld in these sections though you can if you prefer. Seal the edges to prevent water getting in.
14. If your car is fitted with reversing lights 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.
15. 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).
16. 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.
17. 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.
18. 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.
19. 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.
20. Bolt the new crossmember to the car using the bolts supplied.
21. Re fit the slave cylinder & bleed the hydraulics if required.
22. 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.

23. 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.
24. 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.
25. 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.
26. With the gearbox installed and bolted in, reposition any fuel or brake pipe lines that may have been moved using 'P' clips or similar, so that they will not chafe anywhere.
27. 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 18.
28. Fit your chosen gear knob.
29. Check the operation of the clutch mechanism.
30. 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](http://www.speedycables.com/calibration.html) gives details of what is involved.

### Clutch release bearing (Special notes)

This clutch release bearing will improve the lift and feel quality of either a coil spring or diaphragm clutch. It will make the lift lighter and smoother to operate.

The clutch pivot is slotted to allow the clutch arm to slide in and out and therefore letting the clutch bearing slide back and forth on the centre tube. It is very important to check that this operation is smooth before completing the installation. If you have any resistance it could be due to one of the following:

- The pivot bolt / bracket is binding on the clutch arm. This is usually overcome by slackening the pivot bolt.
- The clutch arm is not exactly central on the bearing. This may be due to a twist or bend on the arm and can usually be overcome by filing the inside faces of the arm to match the bearing.

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

The clutch plate supplied is slightly thicker than standard and can take higher loadings than the original plate so a slightly 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.

### 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.

Please do call us with any questions. We are here to help.



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