

# FITTING INSTRUCTIONS

## Sierra 5 speed gearbox kit, Morris Minor

**Partnumber: 020.250**

Please make sure you have read and understood the following instructions before proceeding.

**ALWAYS MAKE SURE THE CAR IS SAFELY SUPPORTED ON AXLE STANDS AND FOLLOW GOOD WORKSHOP PRACTICES AT ALL TIMES. WORKING ALONE CAN BE DANGEROUS.**

### Instructions

These instructions relate to the fitting of the TYPE 9 Sierra Gearbox to .1098, 1300 Marina/Ital and 1275 Midget engine.

- 1) Remove heater tap from back of block and top hose to allow engine to drop down at rear.
- 2) Remove propshaft, gearbox and gearbox cover panel and handbrake lever. Keep all clutch operating linkages, as they will be reused if you are staying with a manual clutch set-up. IT IS IMPORTANT TO REPLACE ANY WORN PARTS BEFORE REFITTING TO ALLOW FOR CORRECT CLUTCH OPERATION. Remove clutch assembly and flywheel from engine.
- 3) Remove the starter motor drive cover from your old gearbox and use this as a template to drill three holes with a 3.5mm bit in the new bell housing and secure cover with the three self-tapping screws and washers supplied. Note on your old gearbox the location of the bellhousing drain hole, and with a 5mm drill make a similar hole in the new one. If you are fitting the gearbox to a Marina /Ital engine you will need to open out the dowel hole at the top of the bellhousing.
- 4) Fit the new clutch lever bracket to the bellhousing using the two screws supplied. Try the pivot bolt in your original release fork and if there is excessive play then replace the bush (Part N° 023.541). Fit the release fork and pivot bolt to the new bracket and secure with the self-locknut supplied. Tighten this to remove any side play but not so that it impairs the levers movement.
- 5) If you have sourced your own gearbox, you will have to modify the front cover. Carefully undo the four bolts, which retain the front cover and remove it. Cut off the tube section, which partly covers the first motion shaft and discard. Refit cover to the gearbox. A gearbox from us will have been modified.
- 6) Fit bell housing to gearbox with the gasket, first making a small circle of 'instant gasket' or similar around the 'blind' hole at the top of the rear face of the bellhousing. If you are operating a mechanical clutch feed the small cranked end of the relay shaft support bracket through the lever hole in the bellhousing and secure under one of the four 10mm Allen bolts. USE THE SPRING WASHERS AND TREAT THE THREADS WITH 'LOCTITE' OR SIMILAR FOR SECURITY. As you tighten the bolts and the bell housing and gearbox are drawn together fit the other end of the relay bracket to the gearbox using the existing bolt (see Diagram1).
- 7) Now fit your clutch release bearing assembly to the release fork and check by sighting down the first motion shaft that the release bearing is aligned centrally around it, when it moves forwards. If it is not centred then you need to check that the fork is not bent or damaged.
- 8) Using the new gearbox cover panel as a template, scribe the propshaft tunnel and then make a new mark approx 15mm short of this and cut out the section. This is to allow for the extra length of the Sierra gearbox. Keep this piece if you think you may return the car to standard in the future. Drill out the holes in the new cover panel for the fixing screws and cut a square hole, approx 65mm square in the top of the gearlever turret. This may need enlarging. DO NOT FIT COVER YET.



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- 9) Remove, (break up if necessary) the old spigot bush from the deeper recess of the crankshaft and press into the back of your flywheel (i.e. the engine side) the NEW special spigot bush supplied. Fit with small diameter end towards engine (see Diagram 2). Refit flywheel to engine and tap the steel part of the spigot bush in, to make sure it is hard against the crankshaft. Lubricate the oilite bush LIGHTLY with HMP grease. The spigot bush must be flush with the flywheel face on 1275 engines but it will be slightly proud on 1098 engines.
- 10) It is now a good idea before fitting the clutch to offer the gearbox assembly to the engine to make sure the splines of the first motion shaft do not foul the spigot bush. Lubricate the end of the first motion shaft LIGHTLY with HMP grease and offer up the gearbox. Make sure the gearbox is adequately supported during this operation. We recommend that an assistant sit inside the car with a loop of rope around the gearbox tail as it is offered into position. Two bolts either side of the bell housing will be enough to locate the box to the engine. Put the gearbox into gear and then turn the output shaft. This should turn freely without attempting to turn the flywheel. Remove Gearbox.
- 11) Fit clutch assembly with new friction plate to flywheel.
- 12) Fit gearbox mounting to the box using bolt supplied and fit assembly to the engine. **Tap chassis drain holes flat and offer the new cross member into position. Fit new propshaft and centralise the gearbox in relation to the props haft tunnel and main cross member hole. Mark the location for the two mounting holes with tipex or paint. Remove cross member and drill two holes to suit and then refit and secure. Remake (drill) new drain holes behind cross member in chassis leg.**  
ANY WEAKNESS IN THIS CHASSIS AREA MUST BE DEALT WITH THOROUGHLY BEFORE FITMENT.
- 13) Fit new speedo cable and circlip, taking the simplest route to avoid bending the cable more than necessary.
- 14) The speedo may need recalibrating. If you purchased the gearbox from us it will be fitted with gears that will mean the reading will be accurate if your car has 13 inch wheels and a 3.9 diff.. Any variation from this will affect the reading of the speedo. A 4.2 diff. will over-read by 7%.
- 15) Fit the clutch operating mechanism, trapping the inner bush for the relay shaft between the old housing plate and the new one supplied. Fit these to the relay shaft support bracket using the screws supplied (see Diagram 3).
- 16) Fill gearbox with a recommended high quality synthetic gearbox oil. WAIT FIVE MINUTES AND RECHECK. THE LEVEL WILL SETTLE.
- 17) You will need to modify the handbrake lever before re-fitting. Remove the button (pulls off if plastic, unscrews if metal), the fibre washer, spring and stop washer and cut through the OUTER CASING ONLY. Cut just behind the two small slots (see Diagram 4) to shorten the casing by 45mm. Cut two new slots in the casing 40mm from the end and tap in at rear of slots to form the peen. Refit stop washer to rod and then with the rod engaged on the teeth of the ratchet cut the rod so it is 3-4mm longer than the casing. Refit spring, fibre washer and button. Replace button with new one if it won't stay on (Part No.054.539) Refit assembly to car.
- 18) Fit gearlever assembly to gearbox using the three domed screws.

Fit new gearbox cover panel, first running a thin line of seam sealer around the edge to eliminate fumes etc. Check that the lever does not hit the cover in any gear. Enlarge hole to suit.

Fit gearlever gaiter and cut off surplus of bottom of gaiter and tuck into panel as neatly as possible to seal. Fit gear knob.

Adjust clutch to approx 3/4 inch pedal free play and check operation.

**START UP ENGINE AND WITH CARE TRY TO ENGAGE A GEAR. IF GEARS DO NOT CLEAR MAKE FINE ADJUSTMENTS TO THE CLUTCH SETTING. OVER-ADJUSTMENT IN EITHER DIRECTION MAY CAUSE GEARS TO FOUL. CHECK ALL GEARS AND THEN ROAD TEST.**