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CLUTCH

TORQUE WRENCH SETTINGS

ITEM	DESCRIPTION	TIGHTENING TORQUE		
		Nm	kgf m	lbf ft
Clutch lever pivot bolt	—	40,7	4,15	30
Bottom cover to bell housing	6 mm setscrew	9,5	0,96	7
Tie plate to bell housing	10 mm setscrew	50,2	5,12	37
Bell housing to gear case	12 mm bolt and setscrew	80	8,16	59
Bell housing to cylinder block	8 mm bolt and dowel bolt	28,5	2,90	21
Cover plate to bell housing	8 mm bolt	20,3	2,07	15
Slave cylinder to bell housing	$\frac{3}{8}$ in nut	14,9 to 17,6	1,53 to 1,79	11 to 13
Master cylinder to pedal box	$\frac{5}{16}$ U.N.F. nut	14,9 to 17,6	1,53 to 1,79	11 to 13
Pedal box to body	$\frac{5}{16}$ U.N.F. nut	14,9 to 17,6	1,53 to 1,79	11 to 13
Hydraulic connections	—	8,2 to 9,5	0,87 to 0,96	6.3 to 7

HYDRAULIC SYSTEM

Bleed 33.15.01

WARNING: Only Castrol/Girling Universal Brake Fluid may be used in the clutch hydraulic system. This fluid exceeds S.A.E. J1703/D

Bleeding

Attach one end of a tube (1, Fig. 1) to the slave cylinder bleed nipple. Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

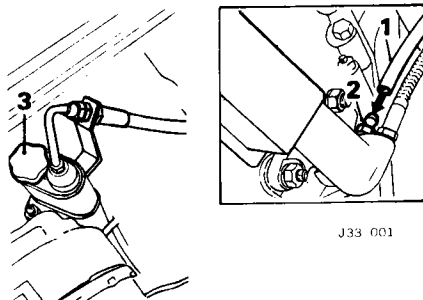


Fig. 1

Slacken the bleed nipple (2, Fig. 1) and pump the clutch pedal firmly up and down, pausing between each stroke.

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten the bleed nipple.

Top up the reservoir (3, Fig. 1) and apply working pressure to the clutch pedal for two or three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from system may be used after allowing it to stand for a few hours to allow air bubbles to disperse.

FLUID HOSE

Remove and refit—R.H.D. only 33.15.13

Removing

Remove the nut securing the hose clip to the bell housing bolt. Release the union nut (1, Fig. 2) securing the hose to the master cylinder pipe.

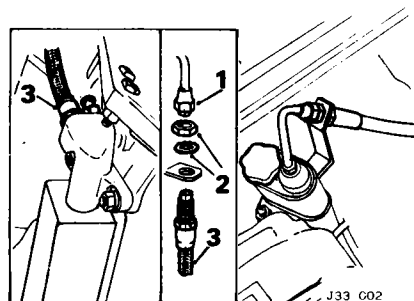


Fig. 2

Restrain the hose union at the bracket and remove the locknut and shakeproof washer (2, Fig. 2).

Unscrew the hose (3, Fig. 2) from the slave cylinder; plug or tape broken connections to prevent the ingress of dirt.

Refitting

CAUTION: Take great care to ensure that unions are not overtightened when refitting a flexible hose.

Connect the hose to the slave cylinder and ensuring that hose is not kinked or twisted, locate the other end in the bracket (1, Fig. 3). Fit the shakeproof washer and locknut (2, Fig. 3); connect the master cylinder pipe (3, Fig. 3). Remove the filler cap from the fluid reservoir and top up fluid to the correct level.

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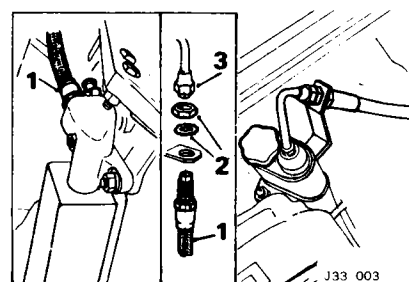


Fig. 3

Attach one end of a bleed tube (1, Fig. 4) to the slave cylinder bleed nipple. Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

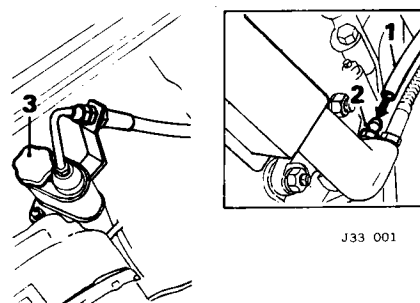


Fig. 4

Slacken the bleed nipple (2, Fig. 4) and pump the clutch pedal firmly up and down, pausing between each stroke.

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten bleed nipple.

Top up the reservoir (3, Fig. 4) and apply working pressure to the clutch pedal for two to three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from system may be used after allowing it to stand for a few hours to allow air bubbles to disperse.

FLUID HOSE

Remove and refit—L.H.D. only

33.15.13

Removing

Remove the banjo bolt and washer (1, Fig. 5) securing the flexible hose (2, Fig. 5) to the master cylinder.

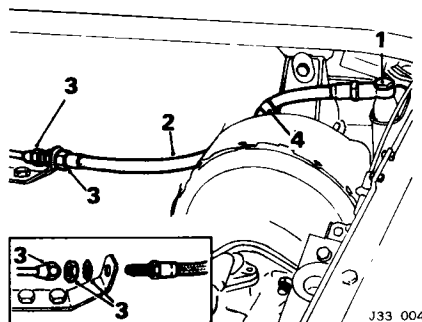


Fig. 5

Disconnect the bundy pipe and hose (3, Fig. 5) at the bracket.

Restrain the hose union and remove the locknut and shakeproof washer also the clip (4, Fig. 5) securing hose to brake servo stud.

Withdraw the hose and plug or tape all broken connections to prevent the ingress of dirt.

Refitting

CAUTION: Take great care to ensure that unions are not overtightened when refitting a flexible hose.

Locate threaded end of hose connector in the bracket and fit the shakeproof washer and locknut (1, Fig. 6).

Connect the bundy pipe (2, Fig. 6) and ensuring that the hose is not kinked or twisted, refit the banjo bolt and washer (3, Fig. 6); fit the clip (4, Fig. 6) to the brake servo mounting stud.

Remove the filler cap from the fluid reservoir and top up fluid to the correct level.

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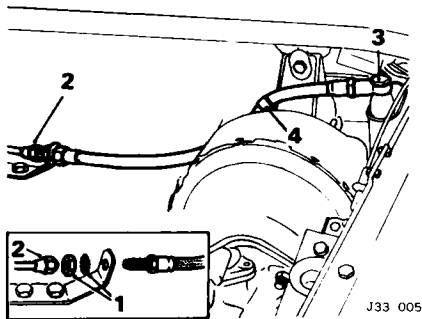


Fig. 6

Attach one end of a bleed tube (1, Fig. 7) to the slave cylinder bleed nipple.

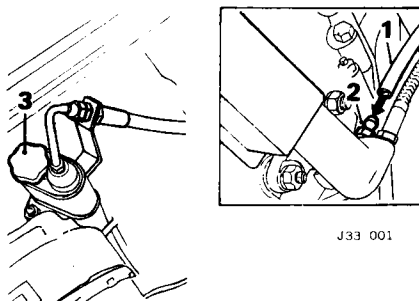


Fig. 7

Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

Slacken the bleed nipple (2, Fig. 7) and pump the clutch pedal slowly up and down, pausing between each stroke.

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten the bleed nipple.

Top up the reservoir (3, Fig. 7) and apply working pressure to the clutch pedal for two to three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from system may be used after allowing it to stand for a few hours to allow air bubbles to disperse.

MASTER CYLINDER

Remove and refit

33.20.01

Removing

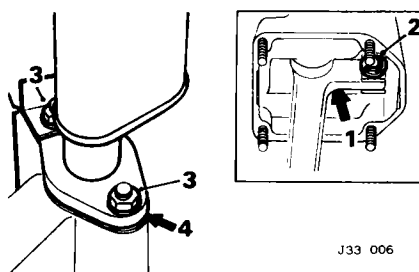


Fig. 8

Remove clevis pin clip (2, Fig. 8); withdraw clevis pin.

Remove the nuts and spring washers (3, Fig. 8) securing the master cylinder to the pedal box. Lift off the master cylinder and retrieve any shims (4, Fig. 8) that may be fitted.

Refitting

Locate the master cylinder (1, Fig. 9), together with any shims (2, Fig. 9) that were removed, on the mounting studs.

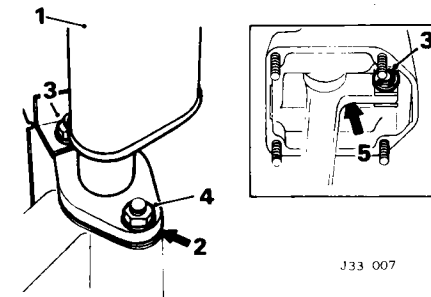


Fig. 9

Connect the master cylinder push-rod to the clutch pedal by means of the clevis pin (3, Fig. 9); refit the clevis clip.

NOTE: Should hole in the clevis not align with hole in pedal, add or subtract shims as necessary until the correct relationship is obtained. (4, Fig. 9). Secure master cylinder with spring washers and nuts.

SLAVE CYLINDER

Remove and refit—R.H.D. only

33.35.01

Removing

Remove the setscrews securing slave cylinder cover (1, Fig. 10) to the bell housing.

Slacken the union (3, Fig. 10) but DO NOT attempt to remove the flexible hose. Slide the rubber boot (4, Fig. 10) off the slave cylinder and along the push rod.

Remove the nuts and spring washers (5, Fig. 10) securing the slave cylinder to the bell housing; withdraw the slave cylinder until it can be drawn off the push rod.

Restrain the hose (6, Fig. 10) and screw the cylinder off the union; plug or tape all broken connections to prevent the ingress of dirt.

Release the push-rod from the withdrawal lever.

continued

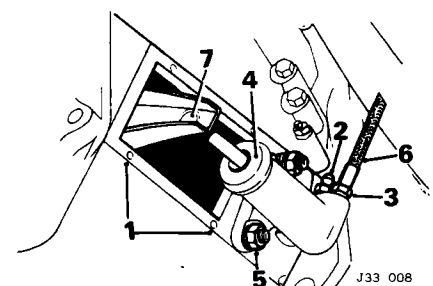


Fig. 10

CLUTCH

Refitting

Restrain the hose (1, Fig. 11) and screw slave cylinder on to union.

Fit push-rod on to the withdrawal lever (2, Fig. 11) and slide the rubber boot (3, Fig. 11) along the rod.

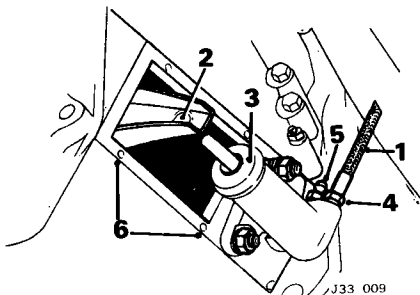


Fig. 11

Position push-rod inside the slave cylinder. Refit the cylinder and tighten the hose union (4, Fig. 11).

Position the rubber boot on the cylinder.

Ensure that the cover is located correctly and secure it with the four setscrews (6, Fig. 11).

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Attach one end of a bleed tube (1, Fig. 12) to the slave cylinder bleed nipple.

Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

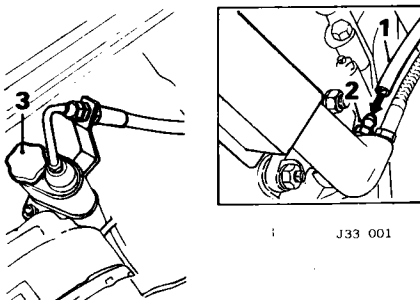


Fig. 12

Slacken the bleed nipple (2, Fig. 12) and pump the clutch pedal firmly up and down, pausing between each stroke.

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten the bleed nipple.

Top up the reservoir (3, Fig. 12) and apply working pressure to the clutch pedal for two to three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from the system may be used after allowing it to stand for a few hours to allow air bubbles to disperse.

SLAVE CYLINDER

Remove and refit—L.H.D. only 33.35.01

Removing

Remove the setscrews securing slave cylinder cover to the bell housing (1, Fig. 13).

Slide the rubber boot (2, Fig. 13) off the slave cylinder and along the push-rod.

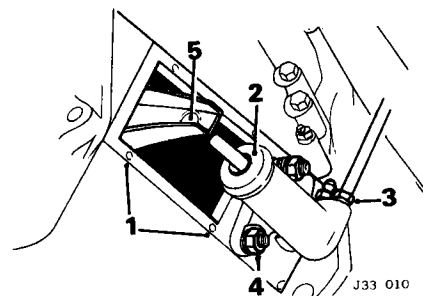


Fig. 13

Disconnect the hydraulic pipe (3, Fig. 13) and plug or tape all broken connections to prevent the ingress of dirt.

Remove the nuts and washers (4, Fig. 13) securing slave cylinder to the bell housing; withdraw cylinder slightly until it can be drawn off the push-rod.

Release the push-rod from the withdrawal lever (5, Fig. 13).

Refitting

Fit the push-rod on to the withdrawal lever (1, Fig. 14), slide rubber boot onto rod.

Position the push-rod inside the cylinder, refit cylinder.

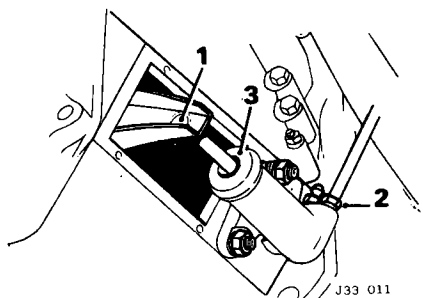


Fig. 14

Reconnect the hydraulic pipe (2, Fig. 14) and position the rubber boot (3, Fig. 14) on the cylinder.

Ensure that the cover is located correctly and secure it with the four setscrews.

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Attach one end of a bleed tube (1, Fig. 15) to the slave cylinder bleed nipple (2, Fig. 15).

Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

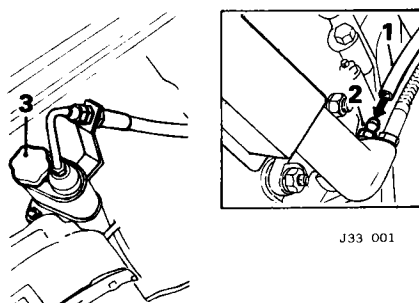


Fig. 15

Slacken the bleed nipple and pump the clutch pedal slowly up and down, pausing between each stroke.

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten the bleed nipple.

Top up the reservoir (3, Fig. 15) and apply working pressure to the clutch pedal for two to three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from system may be used after allowing it to stand for a few hours to allow air bubbles to disperse.

CLUTCH ASSEMBLY

Remove and refit 33.10.01

Service tools: Engine support tool MS 53A; Tangye Epco V.1000 transmission hoist; ST 1136 Offset spanner.

Removing

Drive the vehicle onto a ramp and disconnect the battery.

Unscrew the gear knob and withdraw the cigar lighter.

Remove the screws (1, Fig. 16) securing the centre console and raise console (2, Fig. 16) slightly to gain access to the electric window switches.

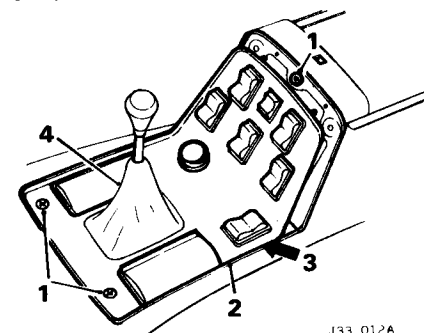


Fig. 16

Disconnect the harnesses at the multi-plug connectors and withdraw the console followed by the gear lever gaiter (4, Fig. 16) and rubber finisher.

Place gear lever in third gear position.

Position engine support tool MS 53A across engine compartment and attach hook to rear engine lifting eye. Take the engine weight.

Disconnect the exhaust intermediate pipe at the front flange and secure pipe to one side. Remove screws securing the intermediate heat shield to the body; withdraw heat shield.

Remove bolts securing tie plate to bell housing and sump.

Position a suitable ramp jack and wooden block (1, Fig. 17) beneath the rear engine mountings and remove the body cross-member and rear engine mounting securing bolts (2, Fig. 17).

Lower ramp jack and remove the rear engine mounting and body cross-member.

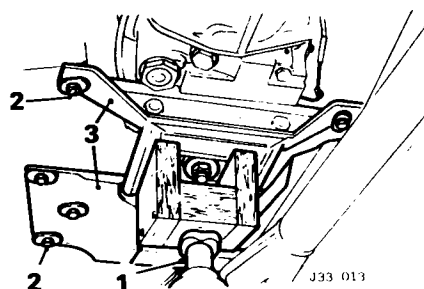


Fig. 17

Disconnect the speedometer cable from the gearbox.

Disconnect the slave cylinder from the gearbox; secure to one side.

Remove nuts, bolts and washers securing the propeller shaft to the gearbox output flange; move shaft away from flange.

Lower rear of engine using MS 53A.

CAUTION: Ensure that engine does not damage the water valve during this operation.

Remove bolts securing the starter motor to the bell housing (2, Fig. 18); withdraw motor and secure to one side.

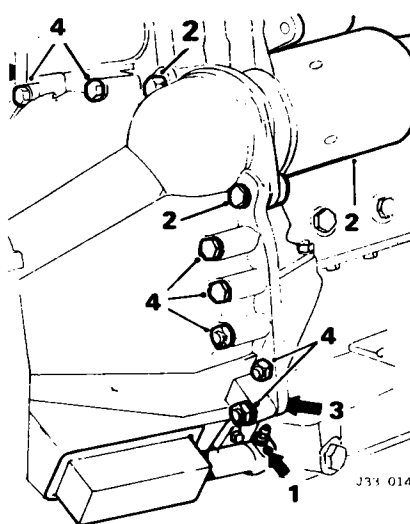


Fig. 18

Remove bolts securing the flywheel cover plate (3, Fig. 18); withdraw plate.

Disconnect reverse light wires from top of gearbox.

Position transmission hoist beneath gearbox and ensure that angle of platform matches that of the gearbox. Secure gearbox to platform.

Remove nuts, bolts and washers securing the bell housing (4, Fig. 18), noting fitted position of earth lead.

Withdraw gearbox and bell housing.

CAUTION: When a suitable hoist is not available, the gearbox may still be removed but care must be taken to ensure that the input shaft is not allowed to take the weight of the gearbox.

Recover foam pad from top of gearbox.

Mark relative positions of clutch cover to flywheel and balance weights to clutch cover (1, Fig. 19).

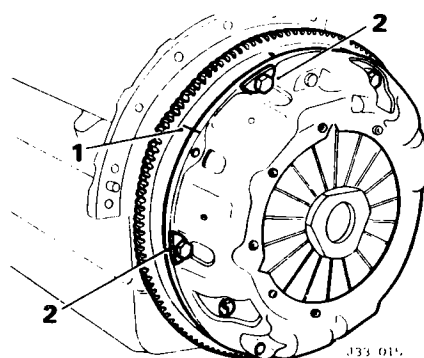


Fig. 19

Remove bolts and spring washers securing clutch cover to flywheel; (2, Fig. 19) withdraw cover together with clutch plate.

Examine flywheel face for scoring. If scoring is found to be excessive, the flywheel must be renewed.

Examine the clutch plates for oil contamination or evidence of slipping.

If oil contamination is evident, crankshaft or gearbox oil seals are suspect and should be examined and if necessary, renewed.

WARNING: Do not use compressed air to remove dust from the clutch assembly. If dust contamination is evident, wash assembly in Gamlen 265 or Rochem Electrosol quick dry solvent.

CAUTION: It is always advisable when renewing the clutch to fit a new release bearing. To do this, proceed as follows:

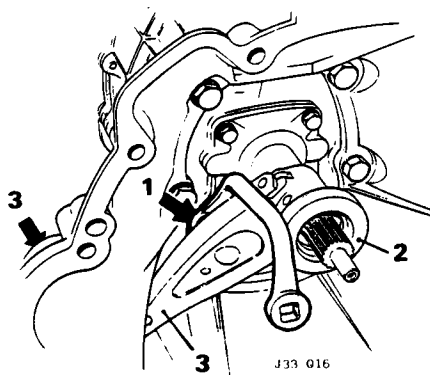


Fig. 20

Using tool ST 1136, remove the pivot bolt (1, Fig. 20) and carefully release withdrawal lever taking care not to bend the spring clip. DO NOT pull lever off the bolt. Slide release bearing (2, Fig. 20) off the input shaft. Remove the shield from over the slave cylinder and disconnect the withdrawal lever (3, Fig. 20) from the push-rod.

Refitting

Smear the input shaft with lithium based grease and fit the release bearing (1, Fig. 21). Refit the pivot bolt (2, Fig. 21).

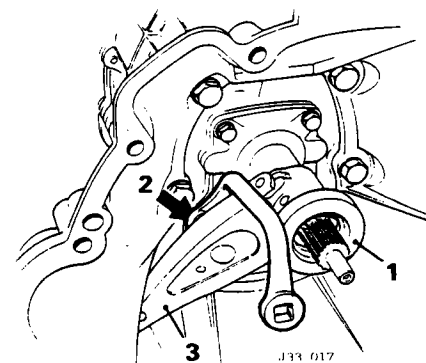


Fig. 21

Engage the lugs of the withdrawal lever in the groove of the release bearing and press withdrawal lever on to the pivot bolt.

Connect the withdrawal lever (3, Fig. 21) to the push-rod but do not fit the cover at this stage.

Position the clutch plate and cover (1, Fig. 22) on the flywheel ensuring that the reference marks made during dismantling are in alignment.

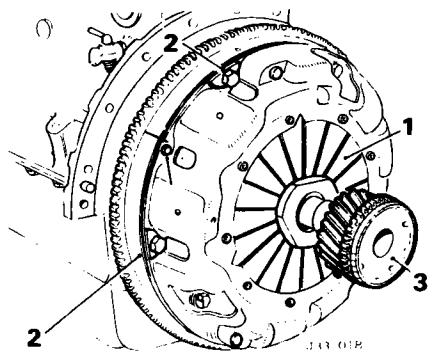


Fig. 22

Fit the balance weights, bolts and washers but do not tighten the bolts (2, Fig. 22) at this stage.

Using a dummy input shaft (3, Fig. 22), align the clutch plate ensuring that the clutch cover is correctly located.

Tighten the securing bolts by diagonal selection to the specified torque figure.

Position the foam pad on top of gearbox casing.

Refit the gearbox and bell housing, reconnect the reverse light switch and tighten the bell housing securing bolts to the specified torque figure.

Refit the starter motor.

continued

CLUTCH

Refit the flywheel cover plate and remove the transmission hoist.

Raise engine using MS 53A or a ramp jack and wooden block (1, Fig. 23) positioned under the gearbox and re-connect the propeller shaft.

Refit slave cylinder.

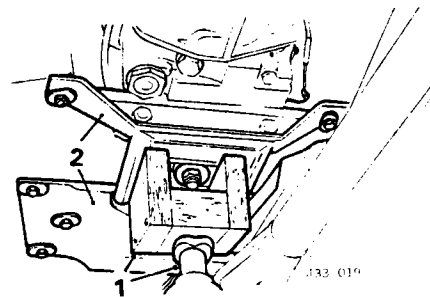


Fig. 23

CAUTION: Always use new self-locking nuts to secure the propeller shaft.

Connect the speedometer drive cable; refit the rear engine mounting and body cross-member (2, Fig. 23).

Refit the heat shield and exhaust intermediate pipe.

CAUTION: Always use a new olive, coated with 'Firegum' when refitting the exhaust pipe.

Refit the tie-plate between the oil sump and the bell housing.

Refit the flexible pipe to the slave cylinder.

Remove the engine support tool MS 53A.

Refit the gear lever garter (1, Fig. 24) and centre console (2, Fig. 24), followed by the gear knob (3, Fig. 24).

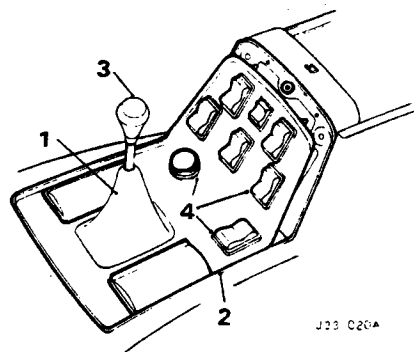


Fig. 24

Reconnect the battery and check operation of electric windows, cigar lighter and electric door locks where fitted (4, Fig. 24).

If the clutch fluid pipes were disconnected:

Remove the filler cap from the fluid reservoir and top up fluid to the correct level.

WARNING: Only Castrol/Girling Universal Brake Fluid may be used in the clutch hydraulic system. This fluid exceeds S.A.E. J1703/D.

Attach one end of a bleed tube (1, Fig. 25) to the slave cylinder bleed nipple.

Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

Slacken the bleed nipple (2, Fig. 25) and pump the clutch pedal slowly up and down, pausing between each stroke.

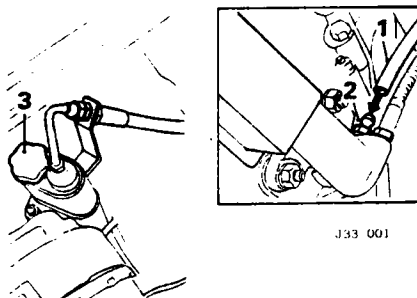


Fig. 25

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten the bleed nipple.

Top up the reservoir (3, Fig. 25) and apply working pressure to the clutch pedal for two to three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from system may be used after allowing it to stand for a few hours to allow air bubble to disperse.

MASTER CYLINDER

Overhaul

33.20.07

WARNING: Use only clean brake fluid or Girling cleaning fluid for cleaning. All traces of cleaning fluid must be removed before reassembly. All components should be lubricated with clean brake fluid and assembled using the fingers only.

Dismantling

Remove master cylinder as detailed in operation 33.20.01

Detach rubber boot (1, Fig. 26) from end of barrel and move boot along push-rod.

Depress push-rod and remove circlip (2, Fig. 26).

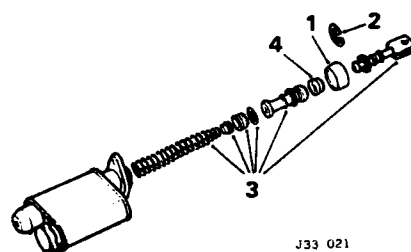


Fig. 26

Withdraw push-rod, piston, piston washer, main cup, spring retainer and spring (3, Fig. 26). Remove secondary cup (4, Fig. 26) from piston.

Inspection

Examine cylinder bore for scores.

Thoroughly wash out reservoir and ensure bypass hole in cylinder bore is clear. Dry using compressed air or lint-free cloth.

Lubricate replacement seals with clean brake fluid.

Reassembling

If necessary, fit end plug on new gasket.

Fit spring retainer (1, Fig. 27) to small end of spring. If necessary, bend over retainer ears to secure.

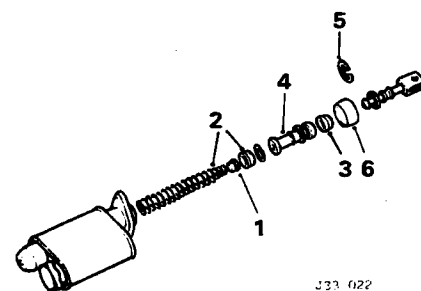


Fig. 27

Insert spring, large end leading, into cylinder bore; follow with main cup (2, Fig. 27), lip foremost. Ensure lip is not damaged on the circlip groove.

Using fingers only, stretch secondary cup (3, Fig. 27) onto piston with small end towards drilled end and groove engaging ridge.

Gently work round cup with fingers to ensure correct bedding.

Insert piston washer into bore, curved edge towards main cup.

Insert piston in bore (4, Fig. 27), drilled end foremost.

Fit rubber boot (5, Fig. 27) to push-rod.

Offer push-rod to piston and press into bore until circlip can be fitted behind push-rod stop ring.

CAUTION: It is important to ensure that circlip is correctly fitted in groove.

Locate rubber boot in groove (6, Fig. 27).

RELEASE BEARING

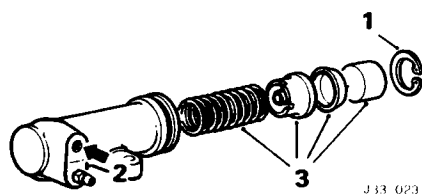
Remove and refit

33.25.12

To carry out this operation proceed as described in Operation 33.10.01.

SLAVE CYLINDER**Overhaul****33.35.07****Dismantling**

Prior to overhaul, the slave cylinder must be removed as detailed in Operation 33.35.01.

**Fig. 28**

Remove the circlip (1, Fig. 28) and applying low air pressure (2, Fig. 28) to the inlet port expel the piston, cup, cup filler and spring (3, Fig. 28); discard the cup.

Inspecting Components

WARNING: Use only clean brake fluid or Girling cleaning fluid for cleaning. All traces of cleaning fluid must be removed before reassembly. All components should be lubricated with clean brake fluid and assembled using the fingers only.

Examine the piston and slave cylinder bore for signs of scoring. Should scoring be evident, components must be renewed.

Examine the spring for signs of distortion and renew it if necessary.

Check that the rubber boot is not distorted or perished.

Reassembling

Press spring, cup filler, a new cup and the piston (3, Fig. 28) into the cylinder; refit the circlip (1, Fig. 28).

Check that piston moves freely and refit the cylinder as detailed in Operation 33.35.01.

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MANUAL GEARBOX

DESCRIPTION

The five-speed gearbox was introduced on the Jaguar 3.4 and 4.2 and Daimler Sovereign Series III saloons as an option to automatic transmission. The fifth gear, in effect, replaces the overdrive as fitted to the four-speed gearbox on Series II cars. Fifth gear is engaged as a normal gear. Reverse is engaged by lifting the lever and moving it as far as possible to the left then forward.

The gearbox oil capacity (from dry) is 2 litres (3½ pints, 4½ U.S. pints). To check the level, raise the car on a ramp or place it over a pit and remove the filler/level plug on the left-hand side of the box. Oil should reach the bottom of the threaded hole. If additional oil is required, S.A.E. 75W hypoid oil should be used. If this is unobtainable S.A.E. 80W hypoid oil may be used for topping-up.

No routine oil change is required but if a refill is necessary the recommended lubricant is Shell E3766 gearbox oil which is used for the initial factory fill. This oil is available under part number RTC1896. If this oil cannot be obtained it is permissible to use an S.A.E. 75W hypoid oil, but S.A.E. 80W oil should NOT be used as it will impair gear change quality.

The internal gear ratios are given in GENERAL DATA. The gearbox is recognised as the '77 mm' gearbox and is derived from the dimension between the mainshaft and the layshaft.

GENERAL DATA

5 Speed Manual Gearbox

Gearbox type	5 speed with baulk-ring synchromesh on all forward gears.
Ratios	First gear 3.321 :1 Second gear 2.087 :1 Third gear 1.396 :1 Fourth gear 1.00 :1 Fifth gear 0.883 :1 Reverse 3.428 :1
Capacity	2 litres (3½ pints, 4½ U.S. pints)

TORQUE WRENCH SETTINGS

ITEM	DESCRIPTION	TIGHTENING TORQUE		
		Nm	kgf m	lbf ft
Clutch lever pivot bolt	12 mm threaded pin	40,6	4,15	30
Bell housing to gearcase	12 mm bolt and setscrew	80	8,16	59
Cover plate to bell housing	8 mm bolt	20,3	2,07	15
5th gear interlock spool retainer to gearbox extension	5 mm setscrew	6,1	0,62	4,5
Output flange to mainshaft	18 mm Nyloc nut	203,4	20,74	150
Dust cap assembly to extension housing	6 mm setscrew	9,5	0,96	7
Extension and centre plate to main case	8 mm bolt	28,5	2,90	21
5th gear selector fork pivot bracket to centre plate	8 mm setscrew	28,5	2,90	21
Front cover to main case	8 mm setscrew	28,5	2,90	21
Interlock spool retainer to main case	6 mm setscrew	9,5	0,96	7
'J' coupling pin to main selector shaft	8 mm threaded pin	20,3	2,07	15
Mounting bracket	8 mm bolt and setscrew	28,5	2,90	21
Drain plug	16 mm	35	3,59	26
Oil pump body to extension	6 mm screw	9,5	0,96	7
Oil inlet access hole blanking	8 mm setscrew	20,3	2,07	15
Propeller shaft to output flange	10 mm bolt	51	5,12	37
Reverse lever mounting pin to centre plate	10 mm threaded pin	28,5	2,90	21
Reverse baulk plate to gearbox extension	6 mm bolt	9,5	0,96	7
Remote control housing to main case rear extension	8 mm setscrew	20,3	2,07	15
Speedometer cable clip to gearbox	6 mm setscrew	9,5	0,96	7
Torsion spring brackets to gearbox extension	6 mm screws	9,5	0,96	7
Torsion spring adjuster locking screw	8 mm setscrew	20,3	2,07	15

GEAR LEVER BIAS SPRING

Adjust

37.16.01

Service tool: Engine support tool MS 53A

Adjustment

Disconnect the battery, withdraw the cigar lighter and remove the gear lever knob. Remove the screws securing the centre console, raise the console slightly and disconnect the window and cigar lighter harnesses. Remove the gear lever gaiter.

Position engine support tool MS 53A so that lifting hook of tool engages with the rear engine lifting eye.

Disconnect the intermediate exhaust pipe at the front.

Remove the nuts and bolts securing the gearbox crash bracket. Lower the bracket and position a jack and suitably shaped piece of wood beneath the gearbox mounting.

With the mounting supported by the jack, remove the mounting bolts.

Lower the jack and remove mounting. Using tool MS 53A, lower the rear of the engine.

CAUTION: Ensure that heater valve and clutch flexible pipe are not damaged during this operation.

Slacken abutment plate bolts.

Select 1st gear and move the gear lever as far as possible to the left.

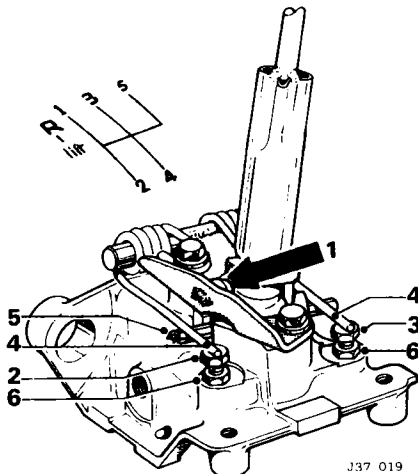


Fig. 1

Check the gap (1, Fig. 1) between the abutment and gear lever pads, the measurement should be 0,35 to 0,75 mm (0.014 to 0.030 in). If this dimension is not obtained, slacken the location bracket securing bolt and adjust position of bracket until clearance is correct. Slacken the locknuts (6, Fig. 1).

Select third gear, i.e., the gear lever will be eight degrees to the right of the vertical.

Adjust screws (2 and 3, Fig. 1) until each spring leg (4, Fig. 1) is approximately 0,5 mm (0.020 in) clear of the cross pin (5, Fig. 1). This will allow radial movement of the lever to take place before contact is made between cross-pin and springs.

Applying a light load, move the lever to the left and position it at the extremity of radial movement.

Adjust bolt (3, Fig. 1) until the right-hand spring just touches the cross-pin.

Now move the lever to the right and position it at the extremity of radial movement.

Adjust bolt (2, Fig. 1) until the left-hand spring just touches the cross-pin.

Screw both bolts in an equal amount until all radial movement is eliminated.

Return the lever to the neutral position then move it through the gate several times. When released, the lever should return to the 3rd/4th plane.

When adjustment is correct, tighten the locknuts (6, Fig. 1). Using tool MS 53A, raise the rear of the engine.

Position a jack and suitably shaped block of wood beneath the gearbox mounting and refit the rear engine mounting and crash bracket.

Remove the jack and tool MS 53A.

Connect the intermediate exhaust pipe; coat the olive with 'Firegum' prior to fitting.

Refit the gear lever gaiter, centre console and gear knob. Ensure full movement of gear lever.

Reconnect the battery and test electric windows and cigar lighter for correct operation.

GEAR LEVER BIAS SPRING

Remove and refit

37.16.02

Service tool: Engine support tool MS 53A

Removing

Disconnect the battery, withdraw the cigar lighter and remove the gear lever knob.

Remove the screws securing the centre console, raise the console slightly and disconnect the electric window, and cigar lighter harnesses.

Remove the gear lever gaiter.

Position engine support tool MS 53A so that lifting eye of tool engages with the rear engine lifting eye.

Disconnect the intermediate exhaust pipe at the front.

Remove the nuts and bolts securing the gearbox crash bracket. Lower the bracket and position a jack and suitably shaped piece of wood beneath the gearbox casing.

With the gearbox supported by the jack, remove the rear engine mounting.

Remove the jack and using tool MS 53A lower the rear of the engine.

CAUTION: Ensure that heater water valve and clutch flexible pipe are not damaged during this operation.

Select 4th gear, remove bias spring securing bolt followed by the spring.

Refitting

Grease the spring and mounting, refit the spring.

Fit and tighten the spring securing bolt.

Select 1st gear and move the gear lever as far as possible to the right.

Check the gap (1, Fig. 1) between the abutment and gear lever pads; the measurement should be 0,35 to 0,75 mm (0.014 to 0.030 in).

If this dimension is not obtained, slacken the location bracket securing bolt and adjust position of bracket until clearance is correct. Slacken the locknuts (6, Fig. 1).

Select third gear i.e. the gear lever will be eight degrees to the right of the vertical.

Adjust screws (2 and 3, Fig. 1) until each spring leg (4, Fig. 1) is approximately 0,5 mm (0.020 in) clear of the cross-pin (5, Fig. 1). This will allow radial movement of the lever to take place before contact is made between cross-pin and springs.

Applying a light load, move the lever to the left and position it at the extremity of radial movement.

Adjust bolt (3, Fig. 1) until the right-hand spring just touches the cross-pin.

Now move the lever to the right and position it at the extremity of radial movement.

Adjust bolt (2, Fig. 1) until the left-hand spring just touches the cross-pin.

Screw both bolts in an equal amount until all radial movement is eliminated.

Return the lever to the neutral position then move it through the gate several times. When released, the lever should return to the 3rd/4th plane.

When adjustment is correct, tighten the locknuts (6, Fig. 1).

Using tool MS 53A, raise the rear of the engine.

Position a jack and suitably shaped block of wood beneath the gearbox casing and refit the rear engine mounting and crash bracket.

Remove the jack and tool MS 53A.

Refit the intermediate exhaust pipe; coat the olive with 'Firegum' prior to fitting.

Refit the gear lever gaiter, centre console and gear knob. Ensure full movement of gear lever.

Reconnect the battery and test electric windows and cigar lighter for correct operation.

REAR OIL SEAL

Remove and refit

37.23.01

Service tool: Engine support tool MS 53A

Removing

Position engine support tool MS 53A so that lifting hook of tool engages with the rear engine lifting eye.

Disconnect the intermediate exhaust pipe and olive.

Remove the nuts and bolts securing the gearbox crash bracket. Lower the bracket and position a jack and suitably shaped piece of wood beneath the gearbox mounting.

continued

MANUAL GEARBOX

Lower the rear engine mounting.
Remove the intermediate heat shield.
Remove the jack followed by the propeller shaft securing bolts; swing shaft to one side.
Remove the output flange securing nut and slide flange off output shaft.
Prise the oil seal out of the gearbox casing.

Refitting

Smear the new oil seal with clean gearbox oil.
Fit the seal ensuring that it is correctly seated.
Refit the output flange; reconnect the propeller shaft.

CAUTION: Always use new self-locking nuts when refitting the propeller shaft.

Support the mounting with a jack and suitably shaped piece of wood; refit the rear engine mounting.

Remove the jack and refit the intermediate heat shield.

Reconnect the intermediate exhaust pipe; coat the olive with 'Firegum' prior to fitting.

Remove tool MS 53A.

Remove the filler/level plug and top up gearbox oil level to the bottom of the filler plug hole; refit the filler plug.

FIRST MOTION SHAFT OIL SEAL

Remove and refit 37.23.06

Service tools: Offset spanner ST 1136

Removing

Prior to renewing the first motion shaft oil seal, it will be necessary to remove the gearbox as detailed in Operation 37.20.01.

Using tool ST 1136, unscrew and remove the clutch pivot bolt, withdrawal lever and release bearing.

CAUTION: Do not pull the withdrawal lever off the pivot bolt prior to removal

Remove the bolts and washers securing the front cover plate to the gearbox, withdraw the plate; discard the gasket.

Remove the oil seal from the front cover.

CAUTION: Ensure that the spacers for the first motion shaft and the layshaft bearings are not intermixed.

Refitting

Smear the replacement oil seal with clean gearbox oil and position the oil seal on the front cover plate with the lip of the seal facing towards the gearbox.

Fit the front cover plate, together with a new gasket, to the gearbox.

Refit the clutch pivot bolt and the release bearing; press the withdrawal lever on to the pivot bolt.

Refit the gearbox to the car, see Operation 37.20.01.

Remove the filler/level plug and top up gearbox oil level to the bottom of the filler plug hole; refit the filler plug.

SPEEDOMETER DRIVE PINION

Remove and refit 37.25.05

Removing

Remove the bolt and washer (1, Fig. 2) securing the clamp plate (2, Fig. 2) to the gearcase.

On later models with electronic speedometer, disconnect 2 pin connector.

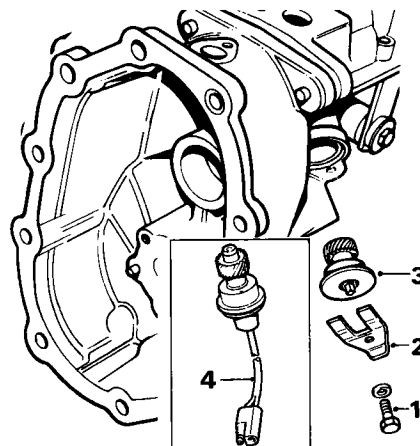


Fig. 2

Withdraw the pinion drive, transducer and cable (4, Fig. 2).

Withdraw the speedometer cable followed by the pinion housing (3, Fig. 2) (early models).

Remove the pinion from the housing; discard the 'O' ring and oil seal.

Refitting

Fit the replacement 'O' ring and oil seal, smear both components with clean gearbox oil.

Refit the pinion into the housing.

Refit the pinion housing, speedometer drive cable, drive cable, transducer and (clamp plate early models).

Connect the cable connectors (later models).

REVERSE LIGHT SWITCH

Check and adjust 37.27.02

Disconnect the battery and remove the gear lever knob

Remove the screws securing the centre console slightly and disconnect the electric window and cigar lighter.

Remove the gear lever gaiter.

Connect a test lamp and battery to the switch and select reverse gear (Fig. 3).

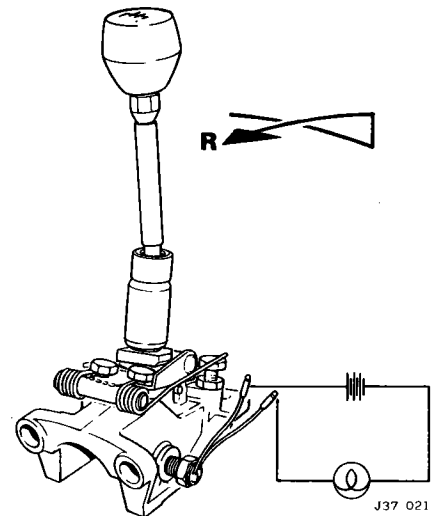


Fig. 3

Slacken the locknut and screw the switch in until the lamp lights.

Screw the switch in a further 180° and tighten the locknut.

Reconnect the battery, switch on the ignition and check that reverse lights are only illuminated when reverse gear is selected. Remove the test lamp and battery.

Switch off the ignition and disconnect the battery.

Refit the gear lever gaiter and centre console. Reconnect the battery and test the electric windows and cigar lighter for correct operation.

GEARBOX ASSEMBLY

Remove and refit 37.20.01

Service Tools: Engine support tool MS 53A; Tangye Epco V1000 Transmission Hoist; ST 1136 Offset spanner.

Removing

Drive the vehicle onto a ramp and disconnect the battery.

Unscrew the gear knob and withdraw the cigar lighter

Remove the screws securing the centre console and raise console slightly to gain access to the electric window.

Disconnect the harnesses at the multi-plug connectors and withdraw the console followed by the gear lever gaiter.

Place gear lever in third gear position.

Position engine support tool MS 53A across engine compartment and attach hook to rear engine lifting eye. Take the engine weight.

Disconnect the exhaust intermediate pipe at the front flange and secure pipe to one side.

Remove screws securing the heat shield to the body; withdraw the shield.

Remove bolts securing tie plate to bell housing and sump.

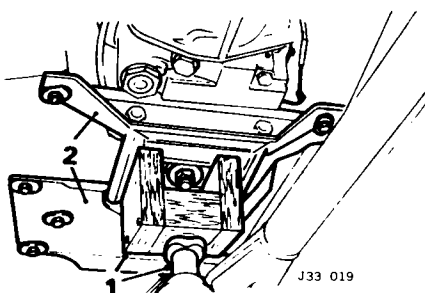


Fig. 4

Position a suitable ramp jack and wooden block (1, Fig. 4) beneath the rear engine mounting and remove the body cross member and rear engine mounting securing bolts. Lower ramp jack and remove the rear engine mounting and body cross member (2, Fig. 4). Disconnect the speedometer cable from the gearbox.

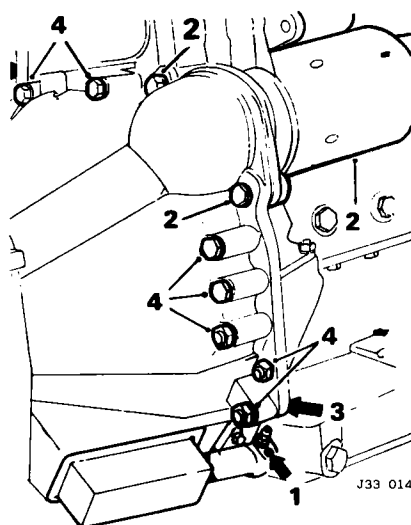


Fig. 5

Disconnect the slave cylinder from the gearbox, secure to one side. Remove nuts, bolts and washers securing the propeller shaft to the gearbox output flange; move shaft away from flange. Lower rear of engine using MS 53A.

CAUTION: Ensure that engine does not damage the water valve during this operation.

Remove bolts securing the starter motor to the bell housing (2, Fig. 5); withdraw motor and secure to one side.

Remove bolts securing the flywheel cover plate (3, Fig. 5); withdraw plate.

Disconnect reverse light wires from top of gearbox.

Position transmission hoist beneath gearbox and ensure that angle of platform matches that of the gearbox. Secure gearbox to platform.

Remove nuts, bolts and washers securing the bell housing (4, Fig. 5), noting fitted position of earth lead.

Withdraw gearbox and bell housing.

CAUTION: When a suitable hoist is not available the gearbox may still be removed but care must be taken to ensure that the input shaft is not allowed to take the weight of the gearbox.

Recover foam pad from top of gearbox.

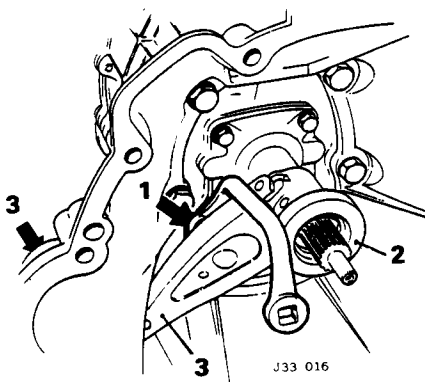


Fig. 6

Using tool ST 1136, remove the pivot bolt (1, Fig. 6) and carefully release withdrawal lever taking care not to bend the spring clip. DO NOT pull the lever off the bolt. Slide release bearing (2, Fig. 6) off the input shaft. Remove the shield from over the slave cylinder and disconnect the withdrawal lever (3, Fig. 6) from the push-rod.

Refitting

Position the bell housing on the gearcase and secure it with six bolts, plain and spring washers.

Smear the input shaft with lithium based grease and fit the release bearing. Refit the pivot bolt.

Engage the lugs of the withdrawal lever in the groove of the release bearing and press withdrawal lever onto pivot bolt.

Position the foam pad on top of gearbox casing.

Refit the gearbox and bell housing, reconnect the reverse light switch and tighten the bell housing securing bolts to the specified torque figure.

Refit the flywheel cover plate and remove the transmission hoist.

Raise engine using MS 53A or a ramp jack and wooden block positioned under the gearbox and reconnect the propeller shaft.

Refit the slave cylinder.

CAUTION: Always use new self-locking nuts to secure the propeller shaft.

Connect the speedometer drive cable; refit the rear engine mounting and body cross member. Refit the heat shield and exhaust intermediate pipe.

CAUTION: Always use a new olive, coated with 'Firegum' when refitting the exhaust pipe.

Refit the tie-plate between the oil sump and the bell housing.

Refit the slave cylinder.

Remove the engine support tool MS 53A.

Refit the gear lever gaiter and centre console followed by the gear knob. Ensure full movement of the gear lever.

Reconnect the battery and check operation of electric windows, cigar lighter and electric door locks (where fitted).

If the slave cylinder pipes were disconnected remove the filler cap from the clutch fluid reservoir and top up fluid to the correct level.

WARNING: Only Castrol/Girling Universal Brake Fluid may be used in the clutch hydraulic system. This fluid exceeds SAE J1703/D.

Attach one end of a bleed tube to the slave cylinder bleed nipple.

Partially fill a clean container with hydraulic fluid and immerse the other end of the bleed tube in the fluid.

Slacken the bleed nipple and pump the clutch pedal slowly up and down, pausing between each stroke.

CAUTION: The fluid should be topped up after every three pedal strokes.

Pump the clutch pedal until the fluid issuing from the bleed tube is free from air bubbles; tighten the bleed nipple.

Top up the reservoir and apply working pressure to the clutch pedal for two to three minutes then examine the system for leaks.

WARNING: Do not use fluid bled from system for topping up purposes as this will contain air. If fluid has been in use for some time it should be discarded. Fresh fluid bled from system may be used after allowing it to stand for a few hours to allow air bubbles to disperse.

GEARBOX

Overhaul

37.20.04

Service tools: 47, 18G 47-1, 18G 47-5, 18G 284, 18G 284 AAH, 18G 705, 18G 705-1, 18G 1205, ST 1136

Dismantling

Place the gearbox on a bench or gearbox stand, ensuring that the oil is first drained.

Using tool ST 1136, unscrew the clutch withdrawal lever pivot bolt and remove the clutch withdrawal lever complete with the pivot bolt and release bearing slippers.

Remove the bell housing.

Remove the nut and connecting pin linking the selector shaft to the remote control shaft.

Remove the four bolts, spring and plain washers—two top, one either side—securing the remote control housing to the gear-case rear cover.

Remove the nut and plain washer securing the output flange to the mainshaft. Use tool RG 421 or 18G 1205 to prevent shaft rotation.

Withdraw the output flange.

continued

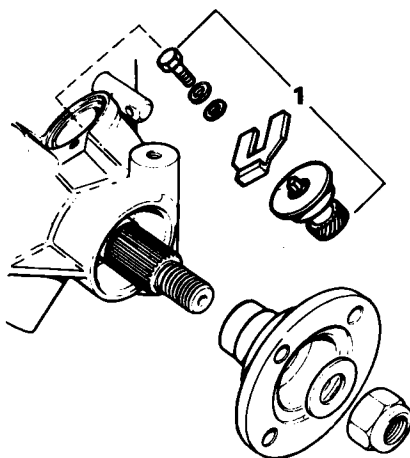


Fig. 7

J37 002

Remove the speedometer driven gear and housing. (1, Fig. 7)

Remove the two bolts and spring washers securing the locating boss for the selector rear spool and withdraw the locating boss.

Remove the 10 bolts, spring and plain washers securing the rear cover to the gearcase; withdraw the rear cover.

Remove and discard the gasket.

Withdraw the oil pump drive (1, Fig. 8).

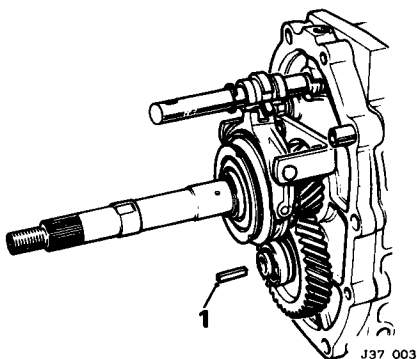


Fig. 8

J37 003

Remove the 2 bolts and spring washers (1, Fig. 9) securing the fifth gear selector fork and bracket (2, Fig. 9).

Remove the circlip (3, Fig. 9) from the selector shaft.

Withdraw the fifth gear selector spool (4, Fig. 9). Note that the longer cam of the spool is fitted towards the bottom of the gearbox.

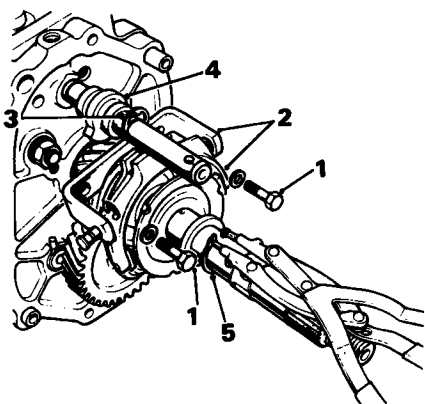


Fig. 9

J37 006

Remove the circlip (5, Fig. 9) retaining the fifth gear synchromesh assembly to the mainshaft (Fig. 10).

Withdraw the synchromesh assembly, fifth gear-driven, and spacer from the mainshaft.

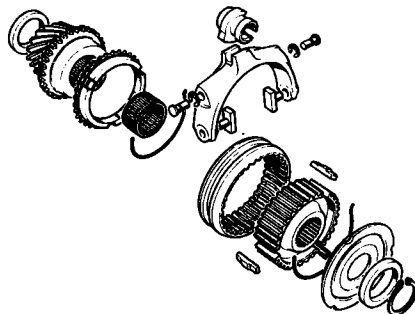


Fig. 10

J37 007

Remove the circlip (1, Fig. 11) retaining the fifth gear-driving, from the layshaft.

Using tool 18G 705 and adaptors 18G 705-1 remove the fifth gear and spacer from the layshaft.

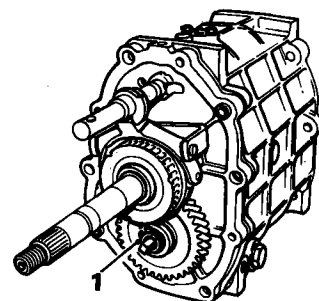


Fig. 11

J37 008

Remove the front cover (1, Fig. 12).

Remove and discard the gasket.

Remove the input shaft selective washer, bearing track, (2, Fig. 12) layshaft selective washer and bearing track (3, Fig. 12) from the gearcase.

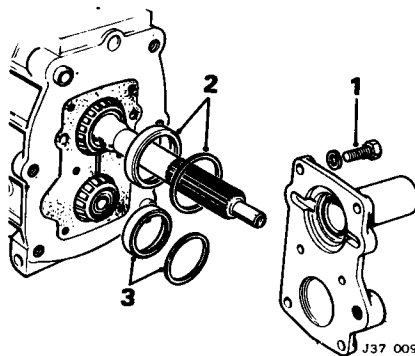


Fig. 12

J37 009

Remove the two bolts and spring washers securing the locating boss for the selector shaft front spool; withdraw the locating boss. Remove the plug, spring and ball from the centre plate.

Supporting the gearbox on the centre plate withdraw the gear-case.

Remove the input shaft and synchromesh cone.

Withdraw the layshaft cluster.

Support the centre plate complete with gears in protected vice jaws.

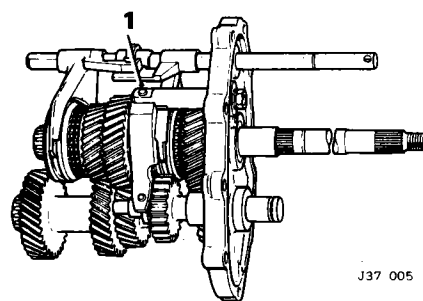


Fig. 13

J37 005

Remove the reverse lever, circlip and pivot pin (1, Fig. 13).

Remove the reverse gear lever and slipper pad. Slide the reverse shaft rearwards and withdraw the reverse gear spacer, mainshaft, selector shaft, selector shaft fork and spool in a forward direction clear of the centre plate. Withdraw the selector fork and spool.

NOTE: The shorter cam of the spool is fitted towards the bottom of the gearbox.

If renewal of the pivot shaft and/or the centre plate is intended, remove the nut and spring washers securing the reverse gear pivot shaft and remove the pivot shaft.

If renewal of the dowels and/or centre plate is intended, remove the centre plate from the vice and extract the two dowels.

Input shaft and front cover

Using tools 47 and adaptors 18G 47-5, remove the external bearing.

Using tools 18G 284 AAH and 18G 284, withdraw the internal bearing track.

Remove and discard the oil seal from the front cover.

Layshaft

Using tools 47 and adaptors 18G 47-1, remove the layshaft bearings.

Mainshaft

Remove the pilot bearing and spacer.

Remove the 3rd and 4th speed synchronizer hub and sleeve (1, Fig. 14).

Remove the 3rd speed gear (2, Fig. 14).

Remove the circlip securing the mainshaft bearing (3, Fig. 14).

Remove the bearing, 1st gear and bush, 1st and 2nd speed hub, sleeve and synchromesh cones, and 2nd gear (4, Fig. 14).

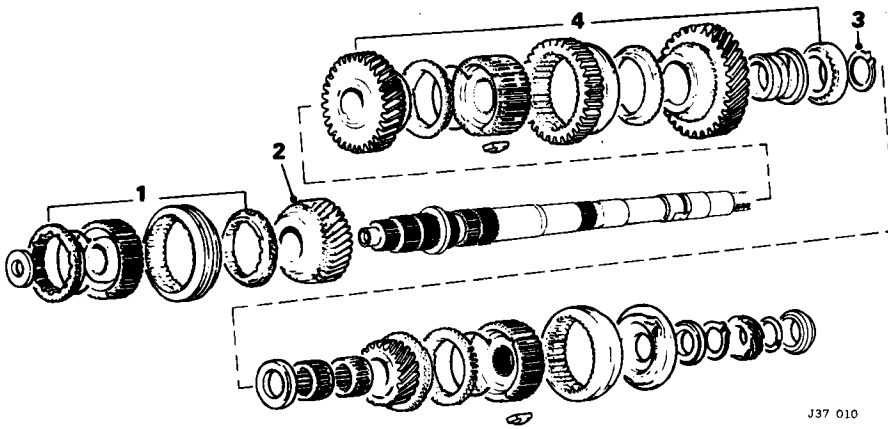


Fig. 14

Rear cover

Remove the oil seal (1, Fig. 15), bearing (2, Fig. 15), oil seal (3, Fig. 15), spacer, and speedometer gear (4, Fig. 15). Remove the oil pump drive, pump cover (5, Fig. 15) and gears (6, Fig. 15).

Thoroughly clean and examine all components; obtain new parts as necessary.

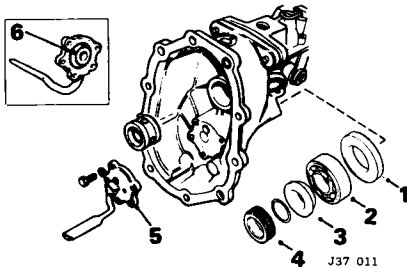


Fig. 15

Layshaft

Fit the bearings to the layshaft.

Mainshaft

Synchromesh assemblies. With the outer sleeve held, a push-through load applied to the outer face of the synchromesh hub should register 8.2–10 kgf m (18–22 lbf ft) to overcome spring detent in either direction.

Checking 1st speed bush end-float. Fit 2nd gear, 1st/2nd speed synchromesh hub and 1st gear bush to the mainshaft.

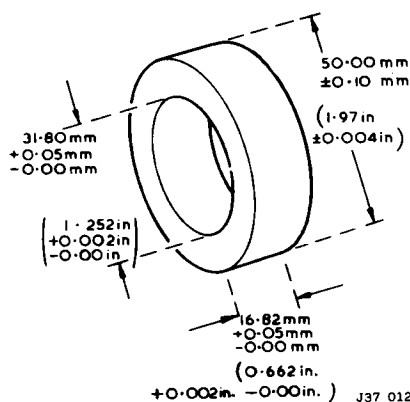


Fig. 16

Manufacture a spacer to the dimensions shown in Fig. 16 and slide the spacer on the mainshaft. This represents a slave bearing.

Using an old circlip and feeler gauges check the clearance existing between the spacer and the circlip, which should be within 0.005 to 0.055 mm (0.0002 to 0.002 in). The first speed bush is available with collars of different thickness. Select a 1st speed bush with a collar which will give the required end-float.

Remove the circlip, spacer, bush, synchromesh hub and 2nd gear from the mainshaft.

Checking 5th gear end-float. Fit the 5th gear assembly to the mainshaft, i.e. front spacer, 5th gear, synchromesh hub, rear plate and spacer. Fit an old circlip and using feeler gauges check the end-float which should be within 0.005 to 0.055 mm (0.0002 to 0.002 in). The rear spacer is available in a range of sizes. Select a rear spacer which will ensure the required clearance.

Remove the circlip spacer and 5th gear assembly.

Assembly

It is important that 1st/2nd synchromesh is assembled correctly with the short splines of inner member towards 2nd gear. Fit 2nd gear baulk ring, which is different to the other three, synchromesh hub and sleeve with the selector fork annulus to the rear of the gearbox, baulk ring 1st gear, selective bush, bearing and a new circlip (Fig. 17). When fitting the circlip care must be taken to ensure that it is not stretched beyond the minimum necessary to pass over the shaft. The internal diameter of an expanded circlip must not exceed 32.30 mm (1.272 in). Fit 3rd gear, baulk ring, synchromesh hub and sleeve, with the longer boss of synchromesh hub to front of gearbox, to the mainshaft. Fit the spacer and bearing to front of the mainshaft. Fit the layshaft bearing track to the centre plate.

Fit the layshaft to the centre plate and fit the fifth gear, spacer and a new circlip. When fitting the circlip care must be taken to ensure that it is not stretched beyond the minimum necessary to obtain entry. The internal diameter of an expanded circlip must not exceed 22.5 mm (0.886 in).

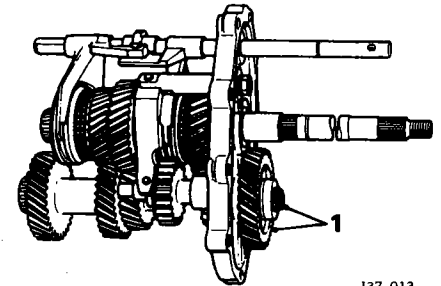


Fig. 17

Fit the mainshaft bearing track to the centre-plate.

Locate the centre plate in protected vice jaws. Take the selector shaft complete with 1st and 2nd selector fork, front spool and 3rd and 4th selector fork and engage both forks in their respective synchromesh sleeves on the mainshaft. Simultaneously engage the selector shaft and mainshaft assemblies in the centre-plate.

Fit the spacer, 5th gear, baulk ring, synchromesh hub and sleeve end-plate, selective spacer, and a new circlip.

CAUTION: WHEN FITTING THE CIRCLIP CARE MUST BE TAKEN TO ENSURE THAT IT IS NOT STRETCHED BEYOND THE MINIMUM NECESSARY TO OBTAIN ENTRY. THE INTERNAL DIAMETER OF AN EXPANDED CIRCLIP MUST NOT EXCEED 27.63 mm (1.088 in). ENSURE THAT THE CIRCLIP IS FULLY SEATED IN THE GROOVE.

Fit the reverse gear with lip for slipper pad to front of box, front and rear spacers and the reverse shaft.

Fit the reverse lever, slipper pad, pivot pin and circlip. If a new reverse gear pivot shaft is to be fitted it is necessary to ensure that its radial location is consistent with reverse pad slipper engagement/clearance.

Radial location is determined on assembly. Secure with spring washer and nuts, subsequently checking movement of reverse lever and ensuring slipper pad is properly engaged. Remove the centre-plate and gear assembly from the vice and locate on a suitable stand with the front of the mainshaft uppermost. Ensure that the reverse shaft does not slide out of position.

Fit the centre plate front gasket.

Fit the external bearing and internal bearing track to the input shaft.

Fit the input shaft to the gearcase. Carefully slide the gearcase and input shaft into position over the gear assemblies. DO NOT USE FORCE. Ensure that the centre plate dowels and selector shaft are engaged in their respective locations.

Fit the layshaft and input shaft front bearing outer tracks.

Using slave bolts and plain washers to prevent damaging the rear face of the centre-plate, evenly draw the gearcase into position on the plate.

continued

MANUAL GEARBOX

Place a layshaft spacer of nominal thickness 1.02 mm (0.040 in) on the layshaft bearing track, fit the front cover and a new gasket, securing with six bolts.

Using a dial gauge, check layshaft end-float.

Remove the front cover and provisional spacer.

The required layshaft end-float is 0.005 to 0.055 mm (0.0002 to 0.002 in). Check the thickness of the provisional spacer. Spacer thickness required is: provisional spacer thickness, plus end-float obtained, minus 0.055 mm (0.002 in).

Again fit the front cover and gasket, this time with the correct spacer arrived at in previous operation.

Check layshaft end-float to ensure it is within the limits specified previously.

Place a ball bearing in the centre of the input shaft. This facilitates checking mainshaft end-float.

Mount a dial gauge on the gearcase with the stylus resting on the ball; zero the gauge.

Check the mainshaft and input shaft combined end-float. Care must be taken when checking dial gauge readings to ensure that end-float only—as distinct from side movement of the input shaft—is recorded. If difficulty is encountered in differentiating between end-float and side movement, remove the front cover and wrap the plain portion of the input shaft below the splines with six turns of masking tape. Refit the front cover and again check end-float ensuring that rise and fall of the input shaft is not restricted by the tape.

Having ascertained end-float, select the spacer required as follows:

End-float minus 0.055 mm (0.002 in) = spacer thickness required.

Fit the spacer thus determined and again check end-float which must be within 0.005 to 0.055 mm (0.0002 to 0.002 in).

Remove the front cover and tape, if used.

Fit the oil seal to the front cover and lubricate the seal lips.

Mask the splines and fit the front cover; remove the spline masking.

Place the gearbox on a bench or stand and remove the slave bolts and washers from the centre-plate.

Fit the 5th gear spool and circlip to the selector shaft.

NOTE: The longer cam of the spool is fitted towards the bottom of the gearbox.

Fit the 5th gear selector fork and bracket.

Renew the selector shaft 'O' ring in the rear cover and fit the oil ring bush.

Fit a new rear gasket to the centre-plate and engage the oil pump shaft in the layshaft.

Fit the oil pump gears and cover to the gearbox rear cover.

Fit the rear cover ensuring that the oil pump drive engages the oil pump.

Fit the selector shaft ball, spring and plug to the centre-plate.

Fit the two spool locating bosses to both the 1st/2nd spool and 5th gear spool.

Fit the speedometer driving gear to the mainshaft ensuring that it engages the flats on the mainshaft.

Fit the spacer and ball race to the mainshaft.

Fit a new rear oil seal, lubricate the seal lip with gearbox oil.

Fit the output flange, washer and nut.

Fit the speedometer driven gear and housing.*

Refit the bell housing.

Refit the clutch pivot bolt.

Assemble the release bearing to the withdrawal lever and press the retaining clip over the head of the pivot bolt.

Fit the remote control housing.

*Later models

Speedo drive pinion for electronic speedometer vehicles.