

CLUTCH

CONTENTS

Description and Operation

	Page
Clutch components	2
Operation	3

Adjustments

	Page
Clutch hydraulic system - bleed	1

Repairs

	Page
Clutch driven plate	1
Clutch release bearing	2
Master cylinder	2
Slave cylinder	3
Clutch damper	3

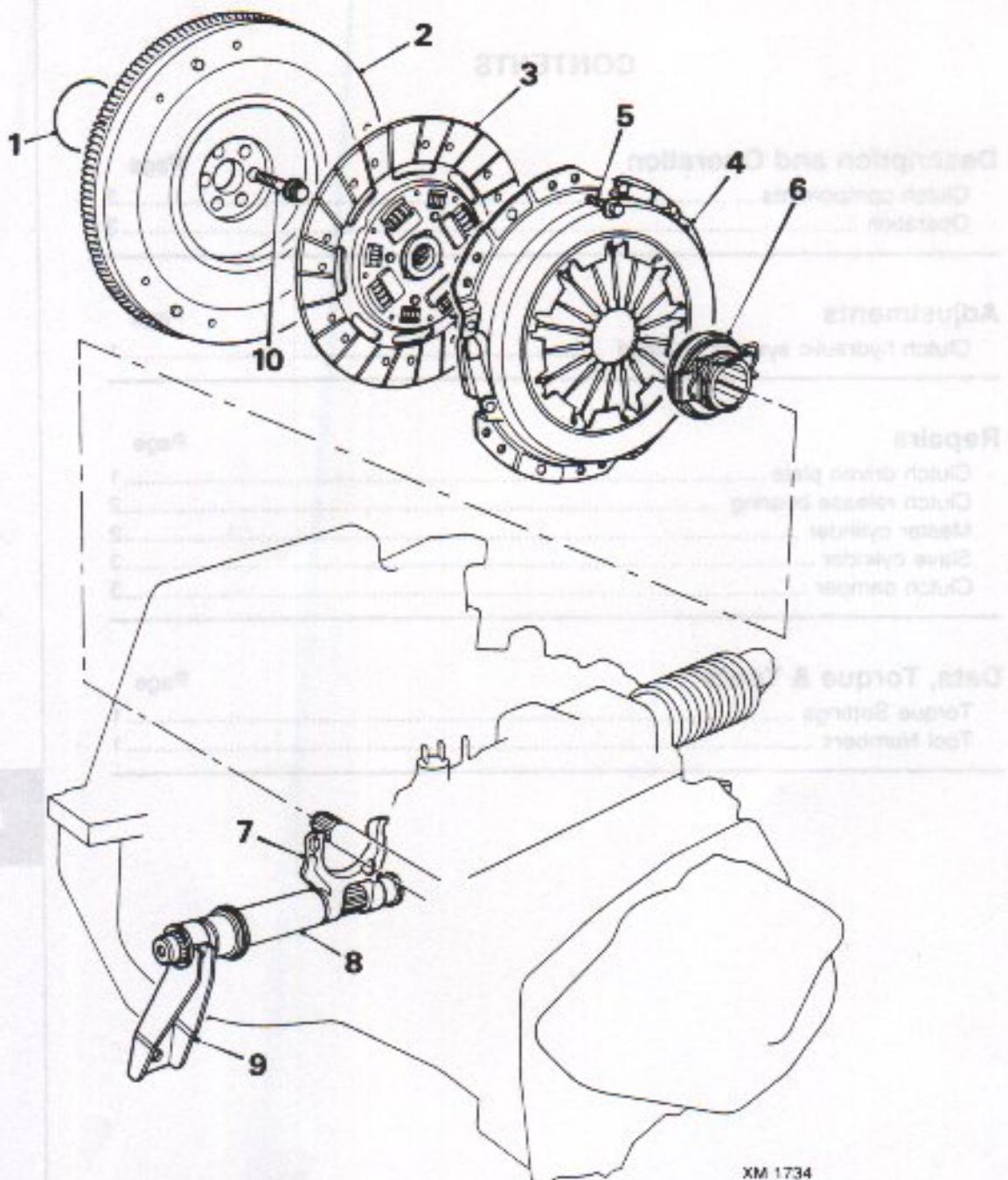
Data, Torque & Tools

	Page
Torque Settings	1
Tool Numbers	1



CLUTCH COMPONENTS

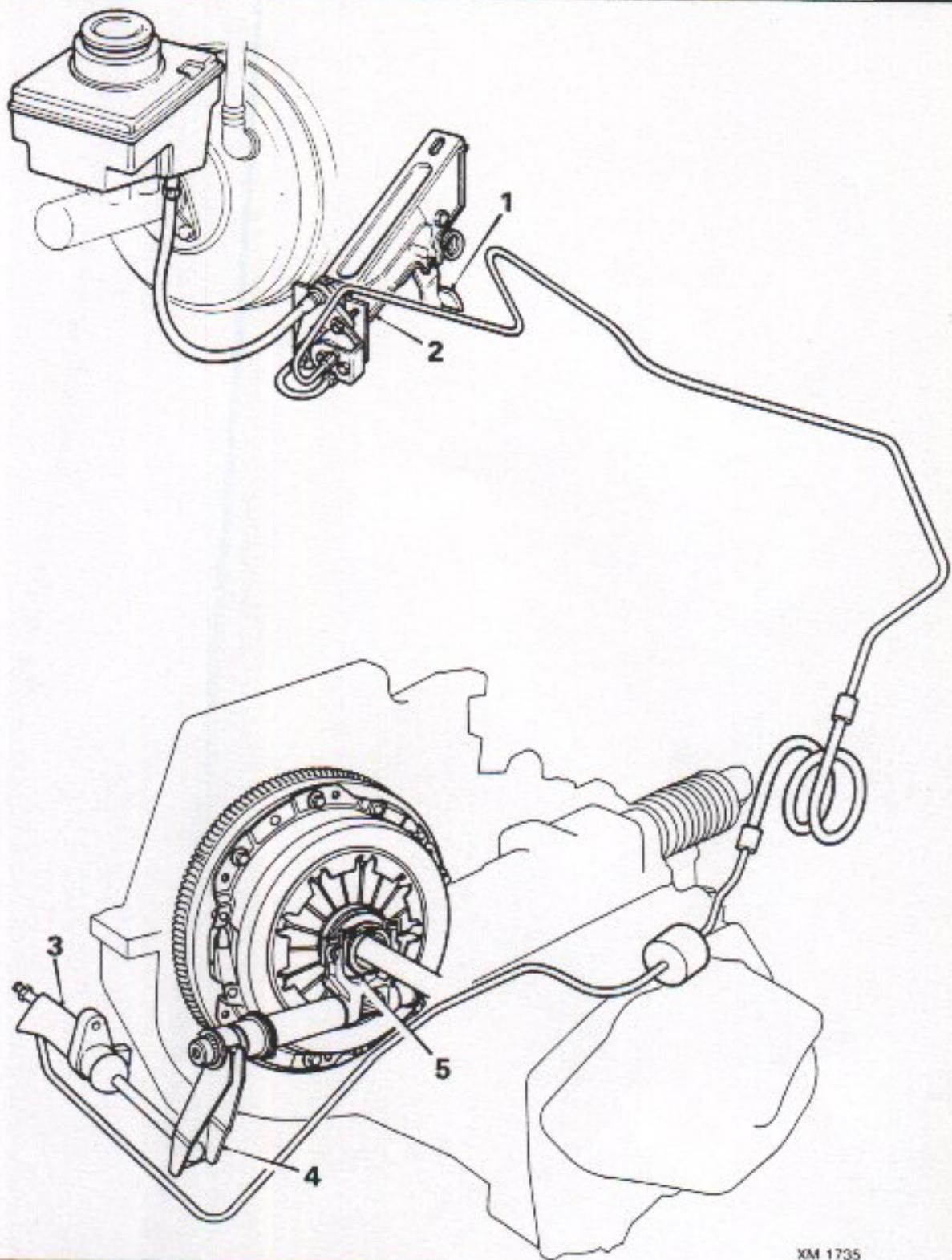
1. O. Ring
2. Bushings
3. Driven plate
4. Clutch disc
5. Disc separation plate
6. Release bearing
7. Release lever
8. Spur gear
9. Flywheel assembly bolt



XM 1734

CLUTCH COMPONENTS

1. 'O' Ring
2. Flywheel
3. Driven plate
4. Clutch cover
5. Cover securing bolt
6. Release bearing
7. Release fork
8. Shaft
9. Release lever
10. Flywheel securing bolt



XM 1735

OPERATION

When pressure is applied to the clutch pedal (1), fluid is pumped from the master cylinder (2) to the slave cylinder (3) causing the slave cylinder piston to apply pressure to the release lever (4) and operate the release bearing (5) which will disengage the clutch. When pressure is released from the clutch pedal the master cylinder piston is returned by a spring which causes a pressure decrease. The drop in pressure allows the release bearing to release the pressure on the diaphragm and re-engage the clutch.



CLUTCH HYDRAULIC SYSTEM - BLEED

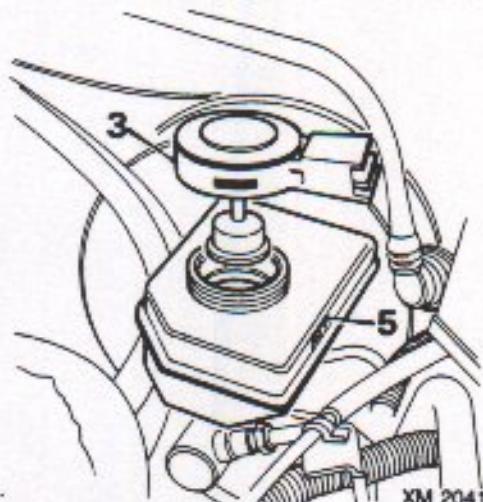
Service Repair No. 33.15.01

1. Raise front of vehicle.

WARNING: Support on safety stands.

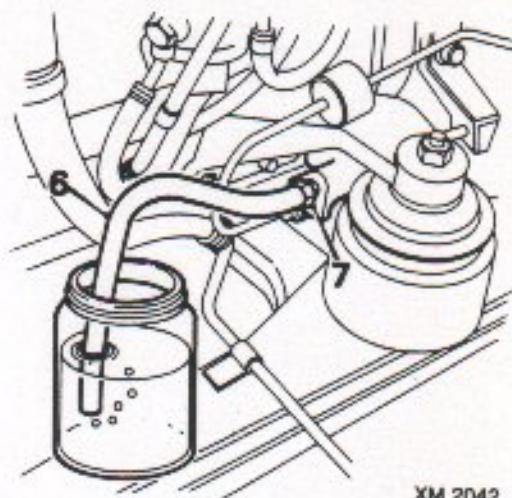
2. Clean areas around master cylinder reservoir filler cap and bleed screw.

CAUTION: Do not allow dirt or foreign matter to contaminate fresh brake fluid. Do not re-use fluid bled from the system. Avoid spilling fluid on paintwork or plastic surfaces. Spilled fluid must be immediately mopped up; contaminated surfaces must be washed thoroughly with clean water.



3. Remove filler cap from master cylinder reservoir.
4. Check that all pipe and hose connections are tight and that bleed screw is closed.
5. Check fluid level in master cylinder reservoir and top-up if necessary using recommended fluid - see REPAIR MANUAL - CAPACITIES, FLUIDS AND LUBRICANTS.

Note: Master cylinder reservoir must be kept full during bleeding operation and topped-up to correct level when system has been bled.



6. Attach bleed tube to slave cylinder bleed nipple immerse other end of tube in brake fluid in transparent container.
7. Slacken bleed screw half to one full turn.
8. Pump clutch pedal firmly allowing it to return unassisted at end of each stroke until fluid issuing from end of tube is free from air bubbles.
9. Tighten bleed screw.
10. Remove bleed tube, discard fluid bled from system.
11. Top-up fluid in master cylinder.
12. Fit reservoir filler cap.
13. Remove stand(s) and lower vehicle.

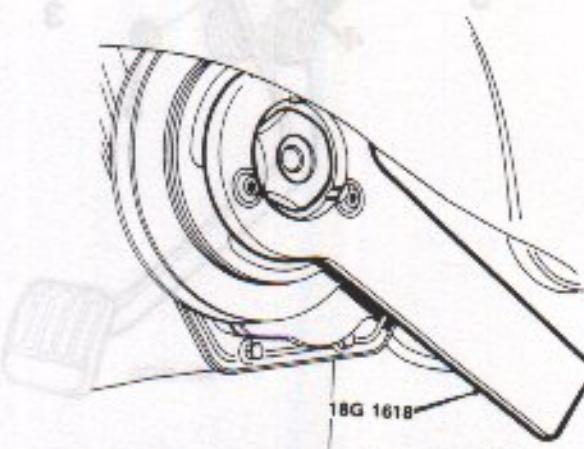


CLUTCH DRIVEN PLATE

Service Repair No. 33.10.02

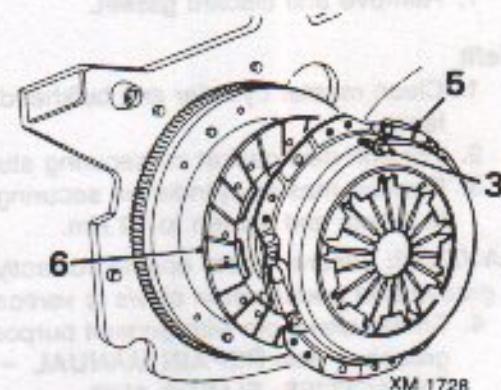
Remove

1. Remove gearbox - see **MANUAL GEARBOX - Repairs.**



2. Position 18G 1618 to crankshaft pulley, fit 3 $\frac{5}{16}$ in U.N.F. bolts to secure tool to tapped holes in pulley.

CAUTION: Do not allow bolts to protrude beyond inner face of pulley.

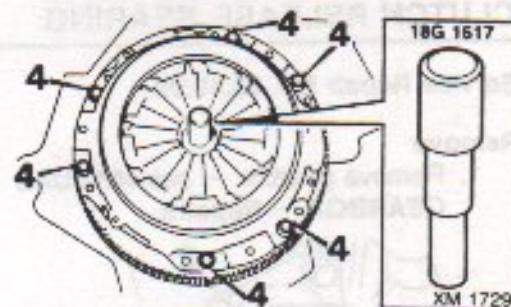


3. Restrain crankshaft using tool 18G 1618 and progressively slacken 6 bolts, clutch cover to flywheel.
4. Remove 6 bolts, clutch cover to flywheel.
5. Release clutch cover from dowels.
6. Remove driven plate.

Refit

1. Clean flywheel and any original components to be refitted.
2. Position driven plate and clutch cover to flywheel, ensure cover is located on dowels.

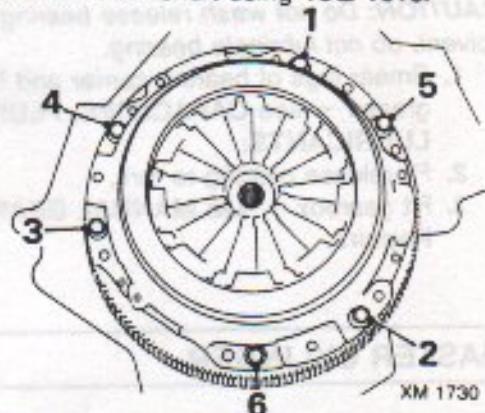
CAUTION: 'FLYWHEEL SIDE' marking on boss of driven plate must face towards flywheel.



3. Fit tool 18G 1617 to centralise driven plate.
4. Fit but do not tighten 6 bolts, clutch cover to flywheel.
5. Tighten 6 bolts finger tight until resistance of diaphragm spring is felt.

CAUTION: Do not use a spanner, ensure that bolt heads are in contact with clutch cover and that any resistance felt is not due to bolt threads binding.

6. Restrain crankshaft using 18G 1618.



7. Tighten 6 bolts progressively in order shown to 22 Nm.

CAUTION: Ensure during tightening sequence that all bolt heads remain in contact with clutch cover. Over tightening of individual bolts will distort cover.

8. Remove tool 18G 1617 and tool 18G 1618
9. Fit gearbox - see **MANUAL GEARBOX - Repairs.**

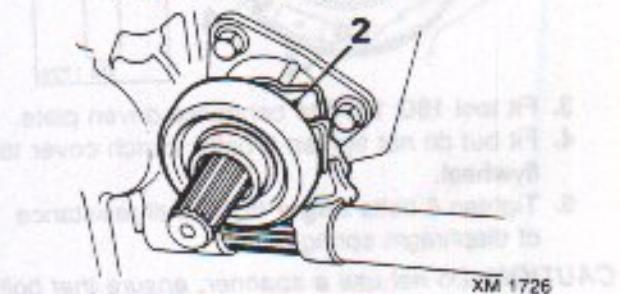
CLUTCH

CLUTCH RELEASE BEARING

Service Repair No. 33.10.09

Remove

1. Remove gearbox - see **MANUAL GEARBOX - Repairs.**

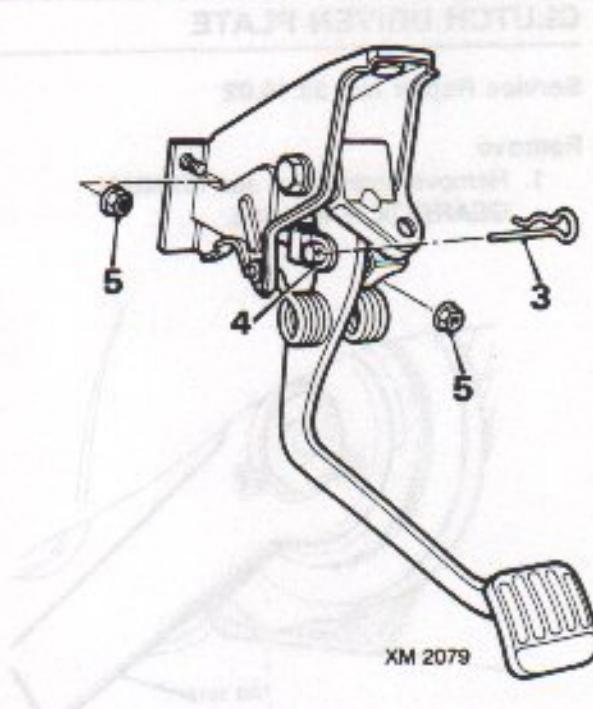


2. Remove release bearing from fork.

Refit

CAUTION: Do not wash release bearing in solvent, do not lubricate bearing.

1. Smear lugs of bearing carrier and fork with grease - see **CAPACITIES, FLUIDS AND LUBRICANTS.**
2. Fit release bearing to fork.
3. Fit gearbox - see **MANUAL GEARBOX - Repairs.**



3. Remove 'R' clip retaining push rod clevis pin to clutch pedal.
4. Remove clevis pin.
5. Remove 2 nuts, master cylinder to bulkhead.
6. Remove master cylinder.
7. Remove and discard gasket.

Refit

1. Clean master cylinder and bulkhead mating faces.
2. Position new gasket on securing studs.
3. Position master cylinder on securing studs; fit 2 nuts and tighten to 12 Nm.

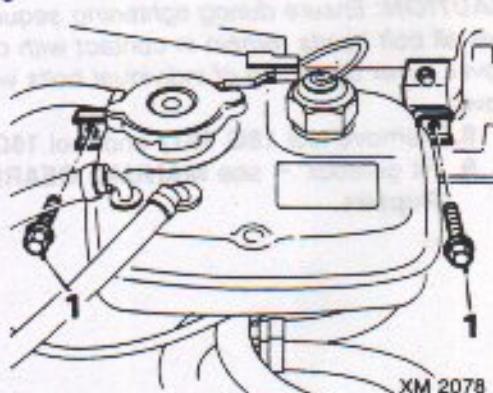
CAUTION: Ensure rubber boot is correctly located in groove and pedal slot in clevis is vertical.

4. Smear clevis pin with general purpose grease - see **REPAIR MANUAL - CAPACITIES, FLUIDS AND LUBRICANTS.**
5. Align clevis with clutch pedal, fit clevis pin.
6. Secure clevis pin with 'R' clip.
7. Fit clutch damper.
8. Position coolant expansion tank; fit 2 bolts and tighten to 8 Nm.

MASTER CYLINDER

Service Repair No. 33.20.01

Remove



1. Remove 2 bolts securing coolant expansion tank; move tank aside.
2. Remove clutch damper.



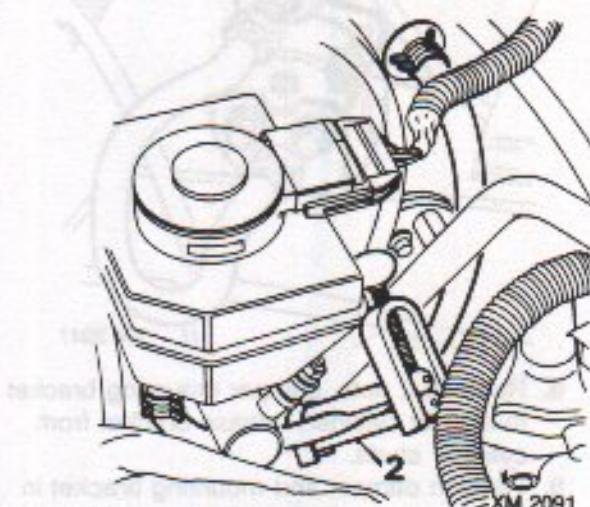
SLAVE CYLINDER

Service Repair No. 33.35.01

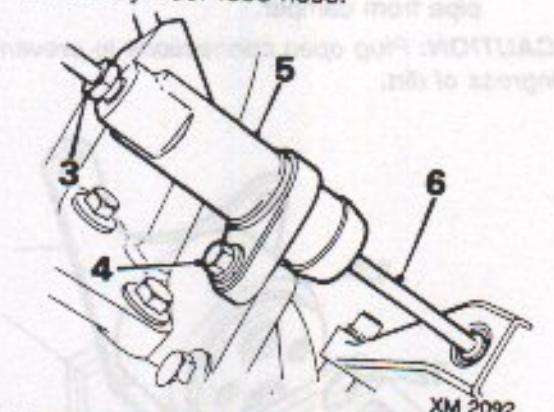
Remove

1. Raise front of vehicle.

WARNING: Support on safety stands.



2. Using a suitable hose clamp, compress master cylinder feed hose.



3. Disconnect feed pipe from slave cylinder.

CAUTION: Plug open connections to prevent ingress of dirt.

4. Remove bolt, slave cylinder to engine backplate.
5. Remove slave cylinder.
6. Remove push rod.

Refit

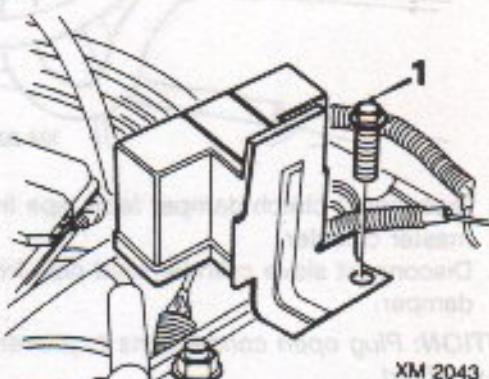
1. Clean push rod and clutch release lever.
2. Apply general purpose grease to clutch release lever end of push rod - see **REPAIR MANUAL - CAPACITIES, FLUIDS AND LUBRICANTS.**
3. Position push rod to clutch release lever and slave cylinder, depress slave cylinder piston with push rod until bolt holes in slave cylinder and engine backplate are aligned.
4. Fit securing bolt and tighten to 22 Nm.
5. Remove plugs, connect feed pipe to slave cylinder; tighten union.
6. Release clamp from hose.

7. Bleed clutch hydraulic system - see **Adjustments.**
8. Remove stand(s) and lower vehicle.

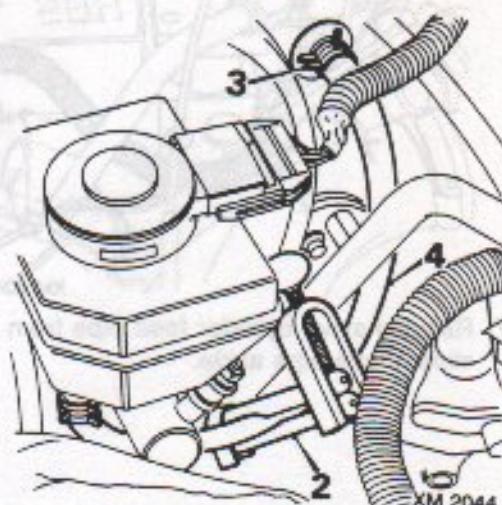
CLUTCH DAMPER

Service Repair No. 33.15.05

Remove



1. Remove bolt securing glow plug control unit; move unit aside.

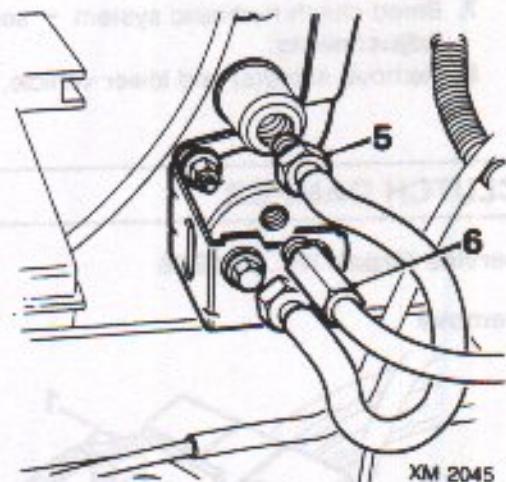


2. Using a suitable hose clamp, compress master cylinder feed hose.
3. Release hose clip; disconnect hose from master cylinder.

CAUTION: Plug open connections to prevent ingress of dirt.

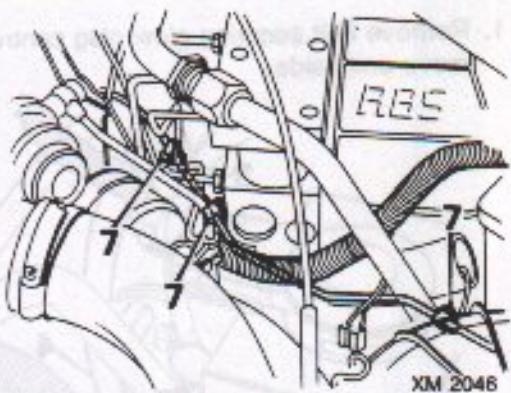
4. Move hose aside.

CLUTCH

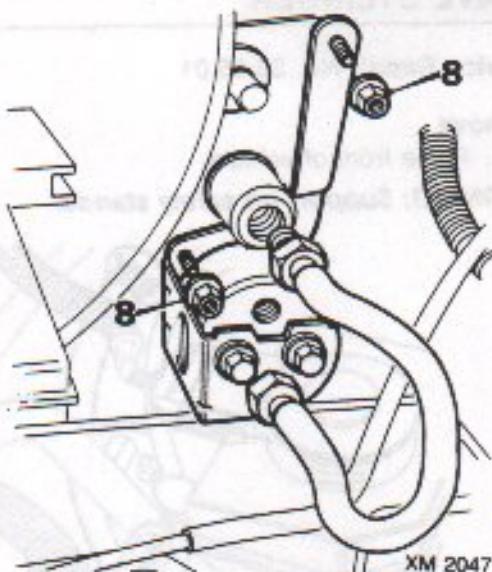


5. Disconnect clutch damper feed pipe from master cylinder.
6. Disconnect slave cylinder feed pipe from damper.

CAUTION: Plug open connections to prevent ingress of dirt.

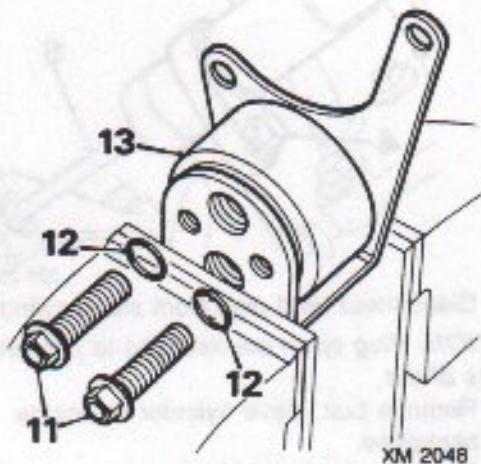


7. Release slave cylinder feed pipe from 3 clips; move pipe aside.



8. Remove 2 nuts, damper mounting bracket to master cylinder; release bracket from cylinder studs.
9. Position damper and mounting bracket in soft jawed vice.
10. Note fitted position of feed pipe; disconnect pipe from damper.

CAUTION: Plug open connections to prevent ingress of dirt.



11. Remove 2 bolts, damper to mounting bracket.
12. Discard 2 sealing rings.
13. Release damper from bracket.
14. Remove rubber cover from damper.

Refit

1. Fit rubber cover to damper.
2. Fit new sealing ring to 2 damper securing bolts.
3. Position damper to mounting bracket; fit 2 bolts and tighten to 12 Nm.
4. Remove plugs, connect feed pipe to damper and tighten union.

CAUTION: Ensure feed pipe is positioned correctly.



5. Position damper and mounting bracket to master cylinder.
6. Fit 2 mounting bracket nuts and tighten to 12 Nm.
7. Remove plugs, connect slave cylinder feed pipe to damper; tighten union.
8. Locate slave cylinder feed pipe in 3 clips.
9. Remove plugs, connect damper feed pipe to master cylinder; tighten union.
10. Remove plugs, connect hose to master cylinder; tighten hose clip.
11. Release clamp from hose.
12. Position glow plug control unit; fit bolt and tighten to 12 Nm.
13. Bleed clutch hydraulic system - see **Adjustments**.

**TORQUE SETTINGS**

Clutch cover to flywheel bolts	22 Nm
Master cylinder nuts	12 Nm
Coolant expansion tank bolts	8 Nm
Slave cylinder bolts	22 Nm
Clutch damper mounting bracket nuts	12 Nm
Glow plug control unit bolt	12 Nm

TOOL NUMBERS

18G 1618	Crankshaft securing tool
18G 1617	Clutch centralising tool