

## CONTENTS

OPERATION	OPERATION NO.
Clutch assembly	
Remove and refit . . . . .	33.10.01
Clutch fluid reservoir	
Remove and refit . . . . .	33.20.08
Clutch hydraulic system	
Bleed . . . . .	33.15.01
Clutch master cylinder	
Overhaul . . . . .	33.20.07
Remove and refit . . . . .	33.20.01
Clutch slave cylinder	
Overhaul . . . . .	33.35.07
Remove and refit . . . . .	33.35.01
Clutch slave cylinder push rod	
Check and adjust . . . . .	33.10.03
Withdrawal assembly	
Remove and refit . . . . .	33.25.12

**CAUTION:** The hydraulic fluid used in the clutch hydraulic system is injurious to car paintwork. Utmost precautions **MUST** at all times be taken to prevent spillage of fluid. Should fluid be accidentally spilled on paintwork, wipe fluid off immediately with a cloth moistened with denatured alcohol (methylated spirits).

## CLUTCH ASSEMBLY

### Remove and refit

33.10.01

#### Removing

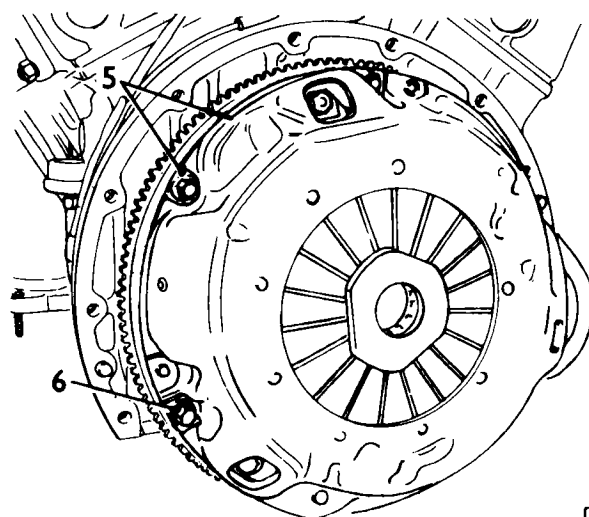
1. Remove engine and gearbox assembly from car – 12.37.01.
2. Remove bolts and spring washers securing flywheel cover to bell housing.
3. Remove bolts and spring washers securing starter motor, withdraw motor from bell housing.
4. Remove remaining bolts securing bell housing to cylinder block, noting positions of long bolts; withdraw bell housing and gearbox.
5. Mark relative positions of clutch cover to flywheel and balance weights to clutch cover.
6. Remove bolts and spring washers securing clutch cover to flywheel; withdraw cover together with clutch plates.
7. Examine flywheel face for scoring. If scoring is excessive, flywheel must be renewed.
8. Examine clutch plates for oil contamination or evidence of slipping. If oil contamination is evident, crankshaft rear oil seal should be examined and, if necessary, replaced.

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

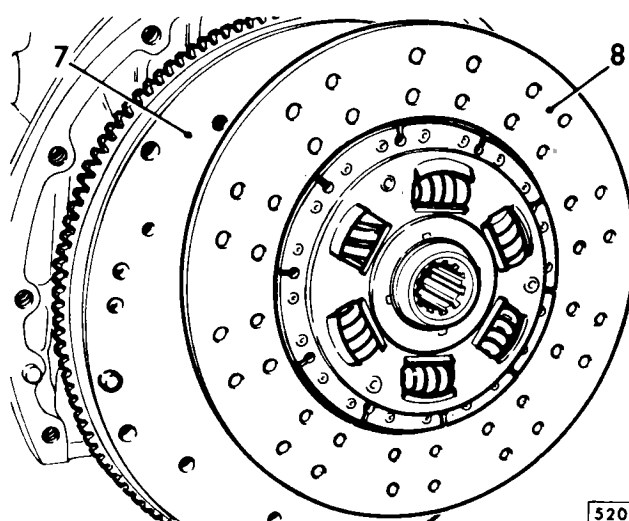
9. Release spring clips securing release bearing to withdrawal lever.
10. Disengage lugs from withdrawal lever.

#### Refitting

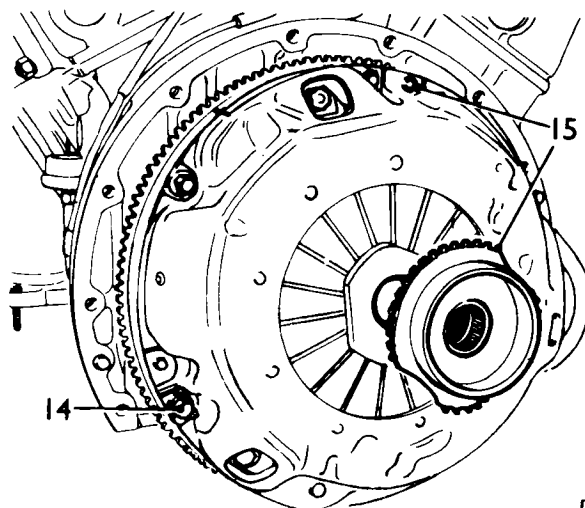
11. Position lugs of release bearing in withdrawal lever.
12. Fit spring clips; ensure that lips are correctly seated in recesses.
13. Position clutch plates and cover on flywheel, ensure reference marks made during dismantling are in alignment.
14. Fit balance weights, bolts and washers; do not tighten bolts at this stage.
15. Using dummy shaft, align clutch plates, ensure clutch cover is correctly located on dowels.
16. Tighten bolts by diagonal selection.
17. Reverse operations 1 to 4.
18. Check slave cylinder push rod adjustment – 33.10.03.



5196



5203



5196A



## CLUTCH

### CLUTCH SLAVE CYLINDER PUSH ROD

#### Check and adjust

33.10.03

##### Checking

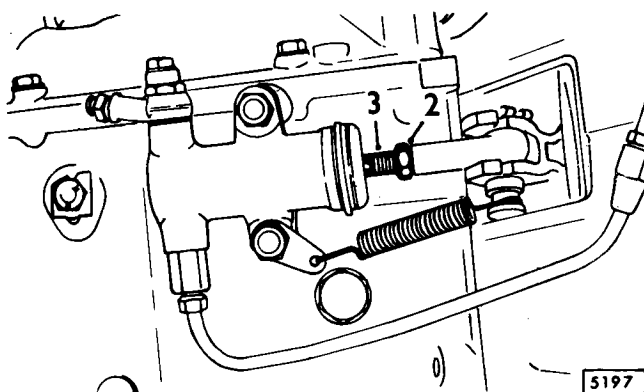
1. Move push rod backwards and forwards, measure total free movement of rod which, when correctly adjusted, is 3,2 mm (.125 in.).

##### Adjusting

2. Slacken locknut.
3. Screw push rod in or out of trunnion until correct free amount of movement is obtained.

**NOTE:** Flats are machined on shank of push rod to enable spanner to be used.

4. Tighten locknut.
5. Operate clutch pedal several times and recheck amount of free travel.



### CLUTCH HYDRAULIC SYSTEM

#### Bleed

33.15.01

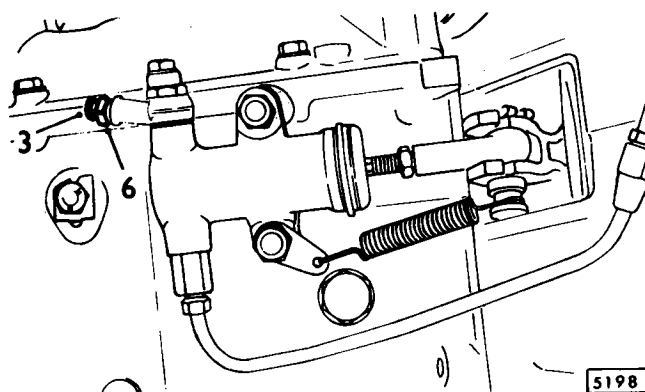
**CAUTION:** Only Castrol-Girling brake fluid (GREEN) may be used in the hydraulic system.

##### Bleeding

1. Remove reservoir filler cap.
2. Top up reservoir to correct level with hydraulic fluid.
3. Attach one end of a bleed tube to slave cylinder bleed nipple.
4. Partially fill a clean container with hydraulic fluid.
5. Immerse other end of bleed tube in fluid.
6. Slacken slave cylinder bleed nipple.
7. Pump clutch pedal slowly up and down, pausing between each stroke.
8. Top up reservoir with fresh hydraulic fluid after every three pedal strokes.

**CAUTION:** 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.

9. Pump clutch pedal until pedal becomes firm, tighten bleed nipple.
10. Top up reservoir.
11. Refit filler cap.
12. Apply working pressure to clutch pedal for two to three minutes and examine system for leaks.



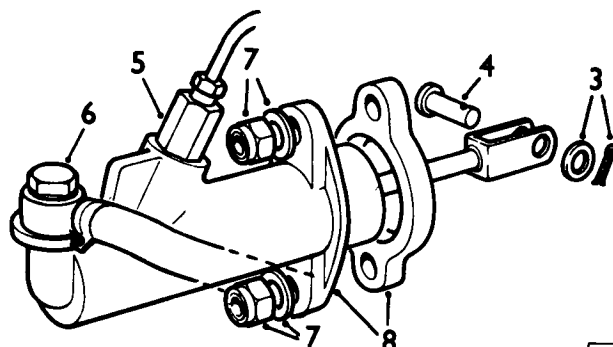
## CLUTCH MASTER CYLINDER

## Remove and refit

33.20.01

## Removing

1. Remove air cleaner – Right hand 19.10.01/1 – Left hand 19.10.01.
2. Remove battery – 86.15.01 – Right hand drive cars only.
3. Remove split pin retaining clevis pin in clutch pedal.
4. Withdraw clevis pin.
5. Disconnect outlet pipe from master cylinder; plug or tape end of pipe to prevent ingress of dirt.
6. Disconnect inlet pipe from banjo; plug end of pipe to prevent fluid loss and ingress of dirt.
7. Remove self-locking nuts and washers securing master cylinder to pedal box.
8. Withdraw master cylinder through sub-frame; remove spacer from mounting studs.



5062A

## Refitting

9. Reverse operations 1 to 8; use new split pin to secure clevis pin.
10. Bleed clutch 33.15.01.

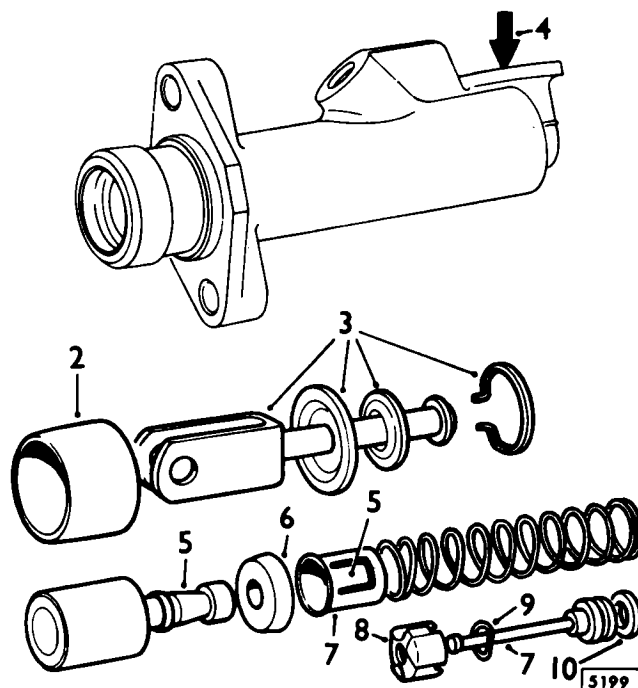
## CLUTCH MASTER CYLINDER

## Overhaul

33.20.07

## Dismantling

1. Remove master cylinder – 33.20.01.
2. Carefully prise metal boot off body.
3. Remove circlip, withdraw push rod together with rubber dust cover and washer.
4. Apply low air pressure to inlet port and expel piston assembly.
5. Lift tab on spring support and withdraw piston.
6. Remove cup seal from piston; discard seal.
7. Move valve stem sideways in spring support; withdraw valve and spring.
8. Slide nylon spring support off valve stem.
9. Remove wave washer.
10. Remove valve seal; discard seal.



## Inspecting components

11. Wash all components in denatured alcohol (methylated spirits) and dry using clean, lint free cloth.
12. Examine piston and master cylinder bore for signs of scoring. Should scoring be evident, components must be renewed.
13. Examine spring for signs of distortion, renew if necessary.

## Reassembling

**CAUTION:** All components must be liberally coated with Girling rubber grease. Always assemble neoprene components using fingers only.

14. Reverse operations 1 to 10, use new cup seal and valve seal.
15. Check slave cylinder push rod adjustment – 33.10.03.



## CLUTCH FLUID RESERVOIR

### Remove and refit

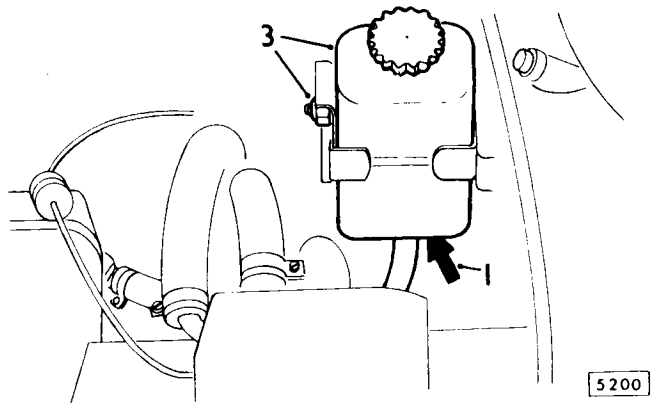
33.20.08

#### Removing

1. Slacken clip securing delivery hose to underside of reservoir.
2. Disconnect pipe and drain fluid into suitable clean container; plug pipe to prevent ingress of dirt.
3. Slacken clamp bolt, lift reservoir out of mounting bracket.

#### Refitting

4. Reverse operations 1 to 3
5. Bleed clutch – 33.15.01.



## WITHDRAWAL ASSEMBLY

### Remove and refit

33.25.12

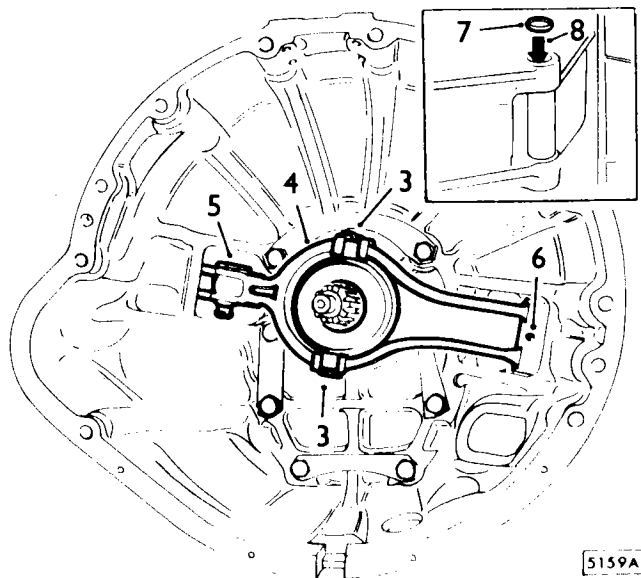
#### Removing

1. Remove engine and gearbox assembly from car – 12.37.01.
2. Remove clutch assembly – 33.10.01.
3. Release spring clips securing release bearing to withdrawal fork.
4. Disengage lugs from withdrawal fork.
5. Remove clip and pivot pin at clutch slave cylinder push rod.
6. Drift roll pin from withdrawal fork fulcrum shaft.
7. Drill out upper seal plug from fulcrum boss.
8. Drift shaft downwards through withdrawal fork.
9. Remove withdrawal fork from bell housing.

**NOTE:** Examine withdrawal fork shaft bushes for wear and renew if necessary. Lightly ream new bushes to size using shaft as guide.

#### Refitting

10. Position withdrawal fork between bosses on bell housing.
11. Tap pivot shaft into position, locate roll pin holes and fit new roll pin.
12. Fit new seal plugs top and bottom of shaft.
13. Refit slave cylinder push rod pivot pin and retain with spring clip.
14. Position lugs of release bearing in withdrawal fork.
15. Fit spring clips; ensure that lips are correctly seated in recesses.
16. Refit clutch assembly.
17. Refit engine and gearbox to car.

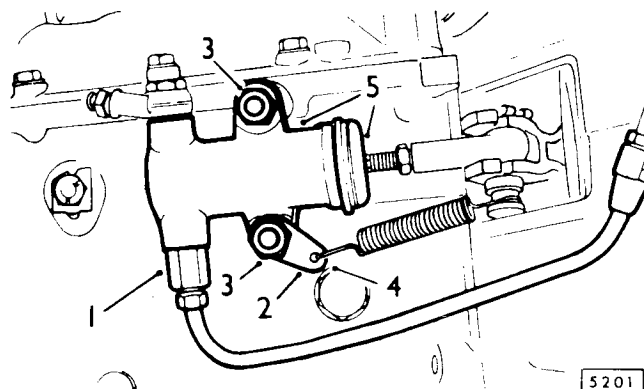


**CLUTCH SLAVE CYLINDER****Remove and refit****33.35.01****Removing**

1. Disconnect pipe from slave cylinder; plug or tape pipe to prevent ingress of dirt.
2. Note relative position of spring anchor plate to gearbox.
3. Remove nuts and spring washers securing slave cylinder to gearbox.
4. Slide spring anchor plate off mounting stud.
5. Slide slave cylinder off mounting studs; slide rubber boot along push rod, withdraw cylinder from push rod.

**Refitting**

6. Reverse operations 1 to 5.
7. Bleed clutch – 33.15.01.
8. Check slave cylinder push rod adjustment – 33.10.03.



5201

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

1. Remove slave cylinder – 33.35.01.
2. Remove circlip.
3. Apply low air pressure to inlet port and expel piston, cup, cup filler and spring.
4. Discard cup.

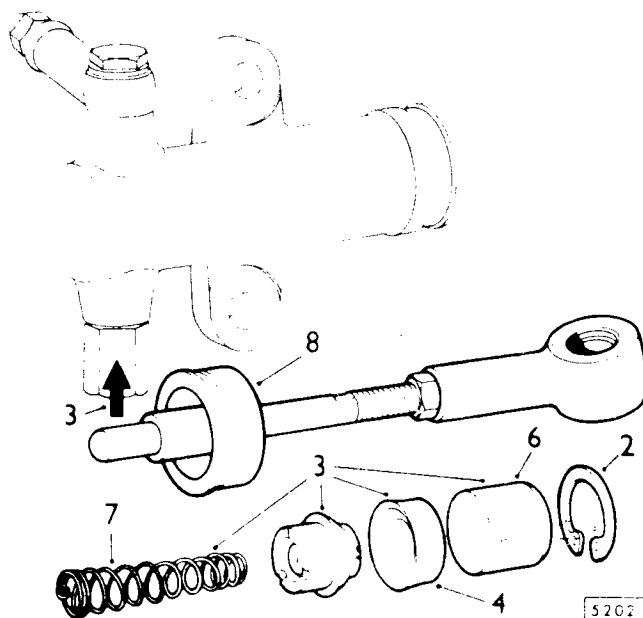
**Inspecting components**

5. Wash all components in denatured alcohol (methylated spirits) and dry using clean, lint free cloth.
6. Examine piston and slave cylinder bore for signs of scoring. Should scoring be evident, components must be renewed.
7. Examine spring for signs of distortion, renew if necessary.
8. Check condition of rubber boot on push rod. If distorted or perished in any way, boot must be renewed.

**Reassembling**

**CAUTION:** All components must be liberally coated with Girling rubber grease. Always assemble cup and cup filler using fingers only.

9. Reverse operations 1 to 4, use new cup.



5202

