

Fig. 40-5. Requisite sealing between engine and gearbox

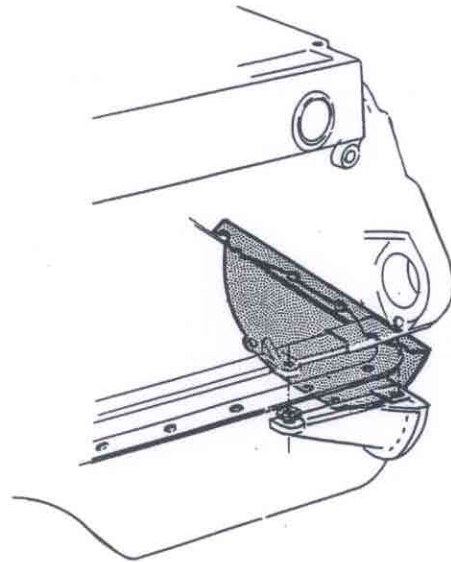


Fig. 40-6. Location of seals

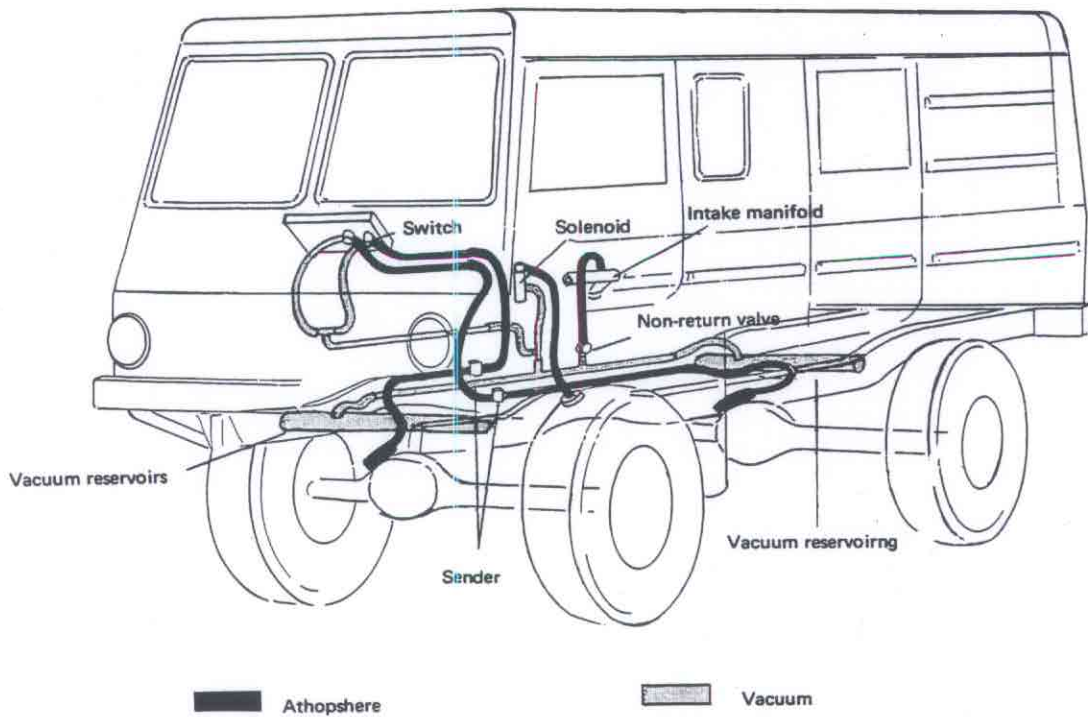


Fig. 40-7. Vacuum system

## GROUP 41 CLUTCH

### Description

The clutch is of the disc-spring type, see Fig. 41-1. It consists of a thrust plate, disc spring and metal casing. The disc spring has a double function — partly that of a lever when disengaging the clutch and partly that of a thrust spring when engaging the clutch.

Clutching and declutching is by means of the clutch pedal, the movements of which are transmitted to the clutch via a wire, a lever and a release bearing. See illustration 41-A.

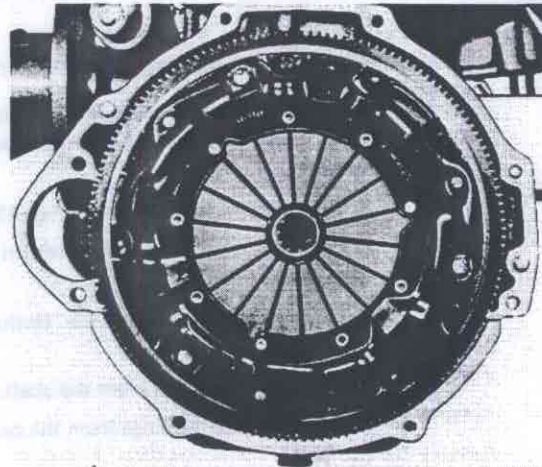
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Fig. 41-1. Clutch

### Service procedures

#### CLUTCH WORK IN VEHICLE

##### Adjusting clutch pedal play

Correct clutch pedal play is obtained by adjusting the release lever, see Fig. 41-2, so that a play of about 5 mm (0.20"), A, is obtained. Play is adjusted by moving the clutch wire sleeve by means of the nuts (1) at the clutch casing attachment.

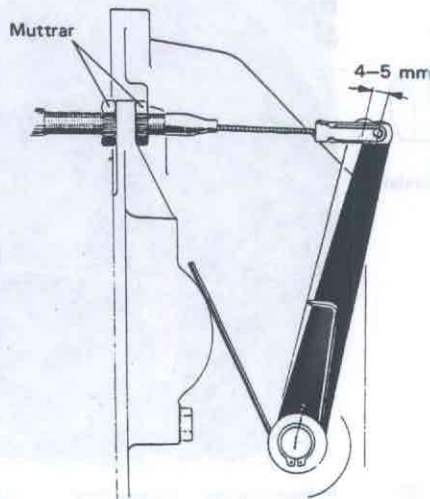
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Fig. 41-2. Clutch lever play

##### Replacing clutch wire

1. Unhook the return spring for the release lever, see Fig. 41-3. Disconnect the wire from the lever.
2. Unscrew the rear nut and remove the wire sleeve from the clutch casing.
3. Disconnect the wire from the clutch pedal. Unscrew the nut for the wire sleeve. Remove the wire.

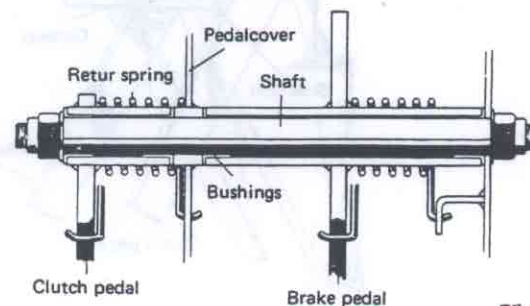


Fig. 41-3. Pedal carrier

## Clutch

4. Fix the wire to the clutch pedal. Secure the wire sleeve and tighten up the nut.
5. Fit the wire sleeve on the clutch casing and tighten up the nuts.
6. Fit the fork to the clutch lever. Adjust the play, see under "Adjusting clutch pedal play".

### Replacing clutch pedal or bushings

The following description is applicable if it concerns either the replacement of the pedal or of the bushings.

1. Remove the stop bolt, see Fig. 41-4.
2. Remove the wire and the return spring from the pedal.
3. Remove the nut and the washer on the pedal shaft.
4. Remove the pedal from the shaft.
5. Remove the bushings from the pedal and clean all parts.
6. Fit new bushings on the pedal and lubricate with universal grease.
7. Fit the spring on the pedal. Place the pedal in position and tighten up.
8. Hook on the return spring and the clutch wire.
9. Fit the stop bolt.

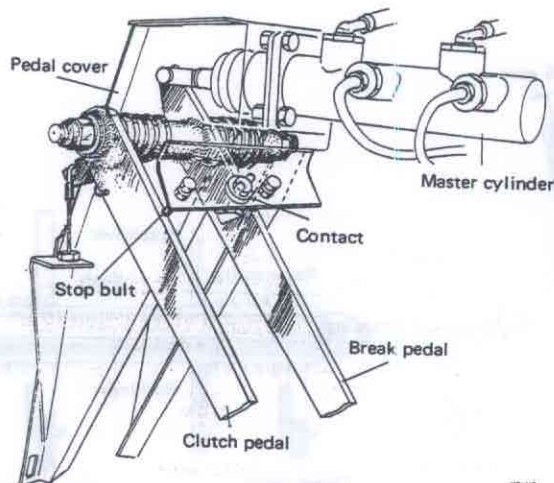


Fig. 41-4. Checking the curvature of thrust plate

41:2

## RECONDITIONING THE CLUTCH

### Removing

**NOTE!** Before removing the clutch, any external faults, wrongly adjusted clutch linkage, should first be checked and put right.

1. Remove the gearbox in accordance with the instructions given in Group 43, Gearbox.
2. Slacken the bolts holding the clutch to the flywheel by loosening them crosswise a couple of turns at a time to prevent warping. Remove the clutch and clutch plate.

### Replacing the release components

1. Remove the bolt in the release fork. Take out the release bearing. Pull out the release shaft.
2. If the clutch casing bushings have to be replaced, drive out the old bushings with a suitable drift, for example 1801.
3. Apply a light layer of grease to the release bearing sleeve and fit the bearing in position.
4. Fit a new seal on the release shaft and grease it. Hold the release fork in position and insert the release shaft. When the seal is compressed and the distance between the lever and casing is as shown in Fig. 41-5 then tighten up the bolt.



Fig. 41-5. Installing the clutch

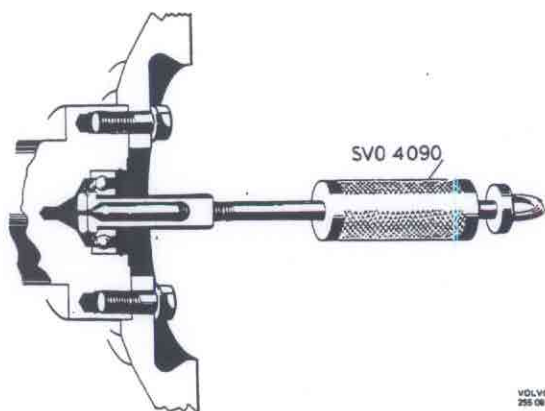


Fig. 41-6. Removing the bearing

#### Replacing the input shaft pilot bearing

1. Remove the circlip from the bearing. Pull out the bearing with puller 4090, see Fig. 41-6.
2. Pack the bearing with heat-resistant grease. Drive it in with drift 1426. Fit the circlip.

#### Replacing the clutch plate linings

1. Drill out the old rivets with a 3.4 mm (1/8") drill. Remove the old linings.
2. Check that the tabs on the linings are even. The linings must not be warped. The lining springs and rivets on the hub should be firmly fitted and should not be loose. Check for cracks. If any of these faults are to be found, replace the linings.
3. Rivet on the new linings (preferably in a rivet press). NOTE! The rivets should be fitted from the side where the lining is and should be riveted from the opposite side towards the disc. Use every alternative hole in the lining. After the riveting, the linings should have a distance from each other which is determined by the layout of the clutch disc. This is very important in order to obtain smooth clutching during driving and starting off.

The clutch linings must be absolutely free from oil. Oil on the linings can result in clutch judder.

#### Checking and replacing parts

Check the clutch thoroughly. Check the thrust plate for heat damage, cracks, scoring or other damage on the friction surface. If the clutch is only blued, it is not necessary to replace it. Circular scoring can be tolerated if the thrust plate friction surface has not been reduced by more than 10% and the depth of the scoring does not exceed 1 mm (0.039"). This also applies to the flywheel. The dish design of the thrust

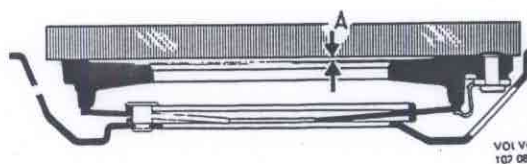


Fig. 41-7. Checking thrust plate dished design

A = max. 0.03 mm

plate can be checked by means of a 240 mm (9.5") long steel ruler, which is placed across the thrust plate friction area. Then measure the distance between the ruler and the thrust plate inner diameter. This measurement should be max. 0.03 mm (0.0012"), (A, Fig. 41-7). Curvature, that is, clearance between the ruler and the outer diameter of the friction surface is not permitted. Check at several points.

#### Installing the clutch

Before installing the clutch plate linings, check to make sure the flywheel and thrust plate are absolutely free from oil. Then clean with petrol and dry with a clean cloth.

1. Place the linings (the highest side of the hub facing towards the rear) together with the clutch against the flywheel and fit centering drift 6145 so that the guide pin on the drift reaches into the pilot bearing in the flywheel, see Fig. 41-8.
2. Fit the six bolts securing the clutch and tighten them crosswise and a couple of turns at a time. Remove the centering drift.
3. Install the gearbox according to the instructions given in Group 43, Gearbox. Adjust the clutch pedal play, see the separate instructions for this.

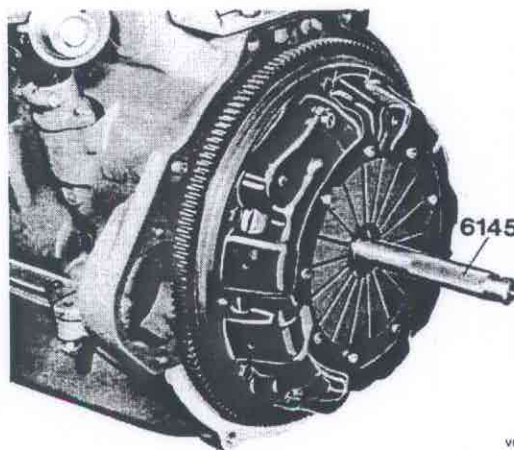
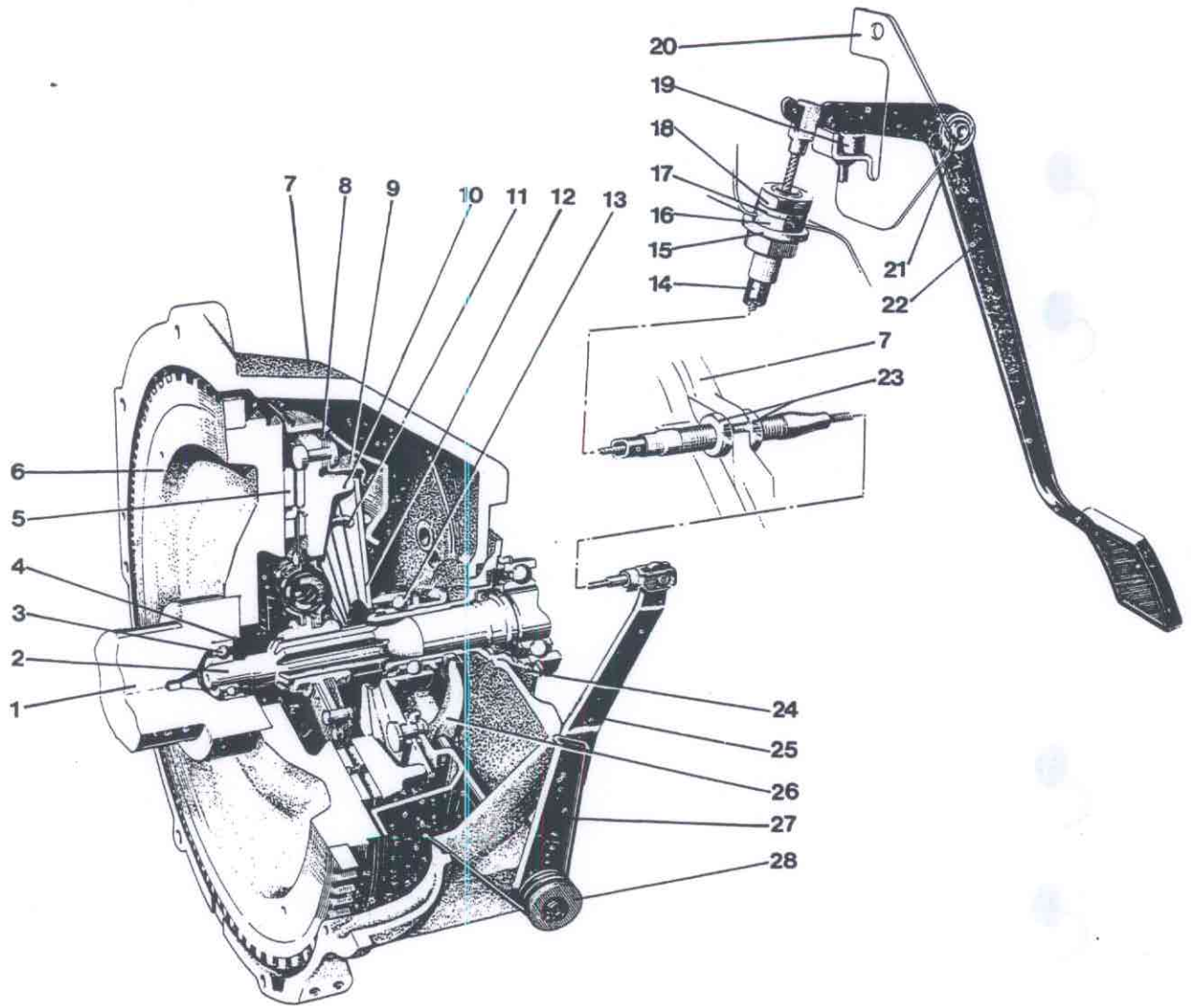


Fig. 41-8. Centring the clutch

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**Illustration 41-A. Clutch**



**Clutch**

1. Crankshaft
2. Disc shaft (gearbox input shaft)
3. Support bearing in crankshaft
4. Circlip
5. Disc
6. Flywheel
7. Clutch casing
8. Cover
9. Retainer
10. Thrust plate
11. Support rings
12. Thrust spring
13. Throw-out bearing
14. Clutch wire
15. Washer
16. Rubber bushing
17. Washer
18. Nut
19. Rubber stop
20. Stop bracket
21. Pedal shaft
22. Clutch pedal
23. Adjusting nuts
24. Gearbox casing
25. Lever and throw-out shaft
26. Throw-out fork
27. Return spring
28. Washer