DESCRIPTION AND MODIFICATIONS

DESCRIPTION

Clutch

A single type diaphragm clutch is mounted by means of setbolts, through the cover to the flywheel, the assembly being enclosed by the bell housing. Two sizes of clutches are used according to engine type, see Data Section E010.

The assembly consists of driven plate, pressure plate, diaphragm spring plate and cover.

The driven plate, to which the friction linings are riveted, is carried on the gearbox primary shaft, the forward end of which is supported by either a ball bearing or bush (according to engine type) installed in the flywheel boss. Splines on the primary shaft and in the driven plate hub permit independent longitudinal movement of the driven plate, thereby minimising the possibility of clutch "drag" or "spin" on disengagement.

The diaphragm spring is pinched between two fulcrum rings secured to the cover by special rivets.

A pressure plate, pressing on the diaphragm spring plate, is bolted/riveted (according to clutch size) to the cover.

Operation

When the cover assembly and driven plate are bolted to the flywheel, the diaphragm spring comes under installation load and is deflected from its free shallow coned profile to an approximately flattened condition. This deflection via the outer fulcrum ring provides the load on the pressure plate to produce the clutch engaged position. In the clutch engaged position the diaphragm spring forces the pressure plate towards the flywheel, clamping the driven plate between them. Thus the flywheel, driven plate, pressure plate and clutch cover all rotate together to transmit the drive to the gearbox.

To disengage the clutch, the release bearing is brought into contact with the diaphram spring fingers. The movement of the fingers is transmitted via the fulcrum rings to the pressure plate moving this away from the driven plate. The flywheel and cover assembly thus revolve alone, not turning the driven plate, and the transmission is therefore disconnected.

RELEASE BEARING

The clutch is fitted with a ball bearing release which acts directly onto the diaphragm spring fingers. The bearing is sealed and requires no further lubrication.

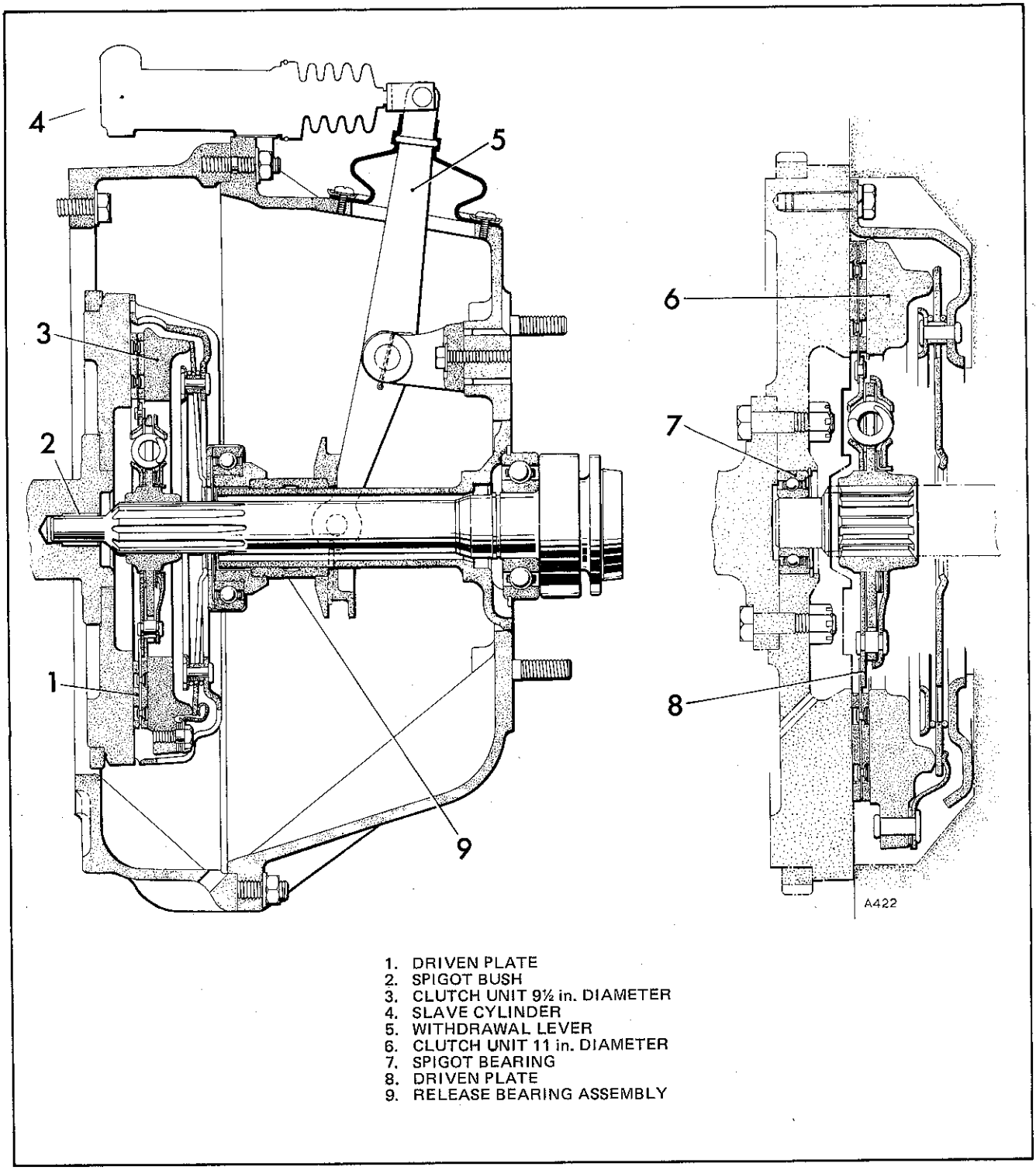
CLUTCH CONTROLS

The clutch withdrawal mechanism is controlled hydraulically by a combined master cylinder and reservoir mounted on the front of the engine bulkhead, and operated by a pendant pedal. A pressure pipe line from the master cylinder takes the fluid to the slave cylinder mounted on the bell housing. The slave cylinder push rod operates the clutch withdrawal lever via a clevis pin and fork. A bleed screw is provided on the slave cylinder for bleeding the clutch hydraulic system.

Operation

As the clutch pedal is depressed, the fluid in the master cylinder is forced along the pressure pipe into the slave cylinder. This fluid, acting on the slave cylinder piston, forces the piston to move along the cylinder, thereby operating the clutch via the push rod, withdrawal lever and release mechanism.

When the pedal is released, the slave cylinder piston is retracted under the action of the clutch diaphragm springs, and the excess fluid is returned to the master cylinder.



1. DRIVEN PLATE
2. SPIGOT BUSH
3. CLUTCH UNIT 9½ in. DIAMETER
4. SLAVE CYLINDER
5. WITHDRAWAL LEVER
6. CLUTCH UNIT 11 in. DIAMETER
7. SPIGOT BEARING
8. DRIVEN PLATE
9. RELEASE BEARING ASSEMBLY

Fig. 1 *Sectional view of diaphragm clutches*