

CLUTCH

GENERAL DATA

Type	Single dry disc plate
Construction of disc	With coil spring
Outer dia. of facing	200 mm
Inner dia. of facing	130 mm
Thickness of facing	3.5 mm
Gross friction area	363 cm ²
Thickness of disc assembly	8.6 ~ 9.1 mm when releasing 7.3 ~ 8.1 mm when depressing
Disc run-out	Less than 0.5 mm
Backlash at splines part	0.05 ~ 0.15 mm (0.002 ~ 0.006 in.)
*Operating method	Oil pressure
*Inner dia. of master cylinder	15.85 mm (5/8 in.)
*Inner dia. of operating cylinder	19.05 mm (3/4 in.)
*Operating liquid	Genuine super brake oil
Return spring, withdrawal wire dia.	1.6 mm
Free length	87 mm
Length in used & tension	136 mm/5 kg

PRESSURE SPRING

Free length	49 mm ± 1.5
Compressed length	Less than 25 mm
Turn numbers	7.8
Power of comp. in full	About 300 kg
Wire diameter	3.3 mm
Length in use and load	29.2-37.5 ± 2 kg

RELEASE BEARING

Construction	Ball bearing type
Height of release plate	*From flywheel face to rear end of plate 50.5 ± 0.2 mm
Release plate run-out	Less than 0.03 (0.0012 in.)

*If use master disc (7.8 mm ± 0.5 mm height), height of release lever is 50.5 ± 0.2 mm.

Driver Plate Assembly

This is the flexible type in which the splined hub is indirectly attached to a disc, which transmits the power and the over-run through a number of coil springs held in position by retaining wires.

Two friction linings are riveted to the disc.

Cover Assembly

The cover assembly consists of pressed steel cover, and a cast iron pressure plate located by six pressure springs.

Mounted on the pressure plate are three release levers.

Adjusting nuts are screwed on the bolts of pressure plate. Retainers of pressure spring insert to the clutch cover holes and anti-rattle springs load release levers.

Release Bearing

The release bearing consists of a carbon bearing shrunk into a bearing cup, the cup bearing located by the operating fork and the release bearing retainer spring.

Running Adjustment

Owing to the hydraulic design of the clutch controls no adjustment is necessary to the clutch pedal.

Removing the Clutch

To gain access to the clutch it is first necessary to remove the transmission complete from the engine.

Once the transmission unit is free, a turn at a time by diagonal selection until the spring pressing is relieved.

Then remove the screws completely and lift the clutch assembly away from the flywheel. Finally, remove the driven plate assembly.

The release levers are correctly set on assembly. Interference with this setting, unless new parts have to be fitted, will throw the pressure plate out causing judder.

DATSUN PICK-UP

Dismantling, Assembling & Gauging

By using service tool the clutch can be quickly dismantled, reassembled and adjusted to a high degree of accuracy.

The tool comprises the following parts; base plate centre pillar, spacing washers, distance

pieces, hight finger actuating mechanism, set-screws, speed brace and metal box. As this tool is universal, a chart indicating the particular parts to be sued for paticular types of clutch will be found on the inside of the lid of the box.

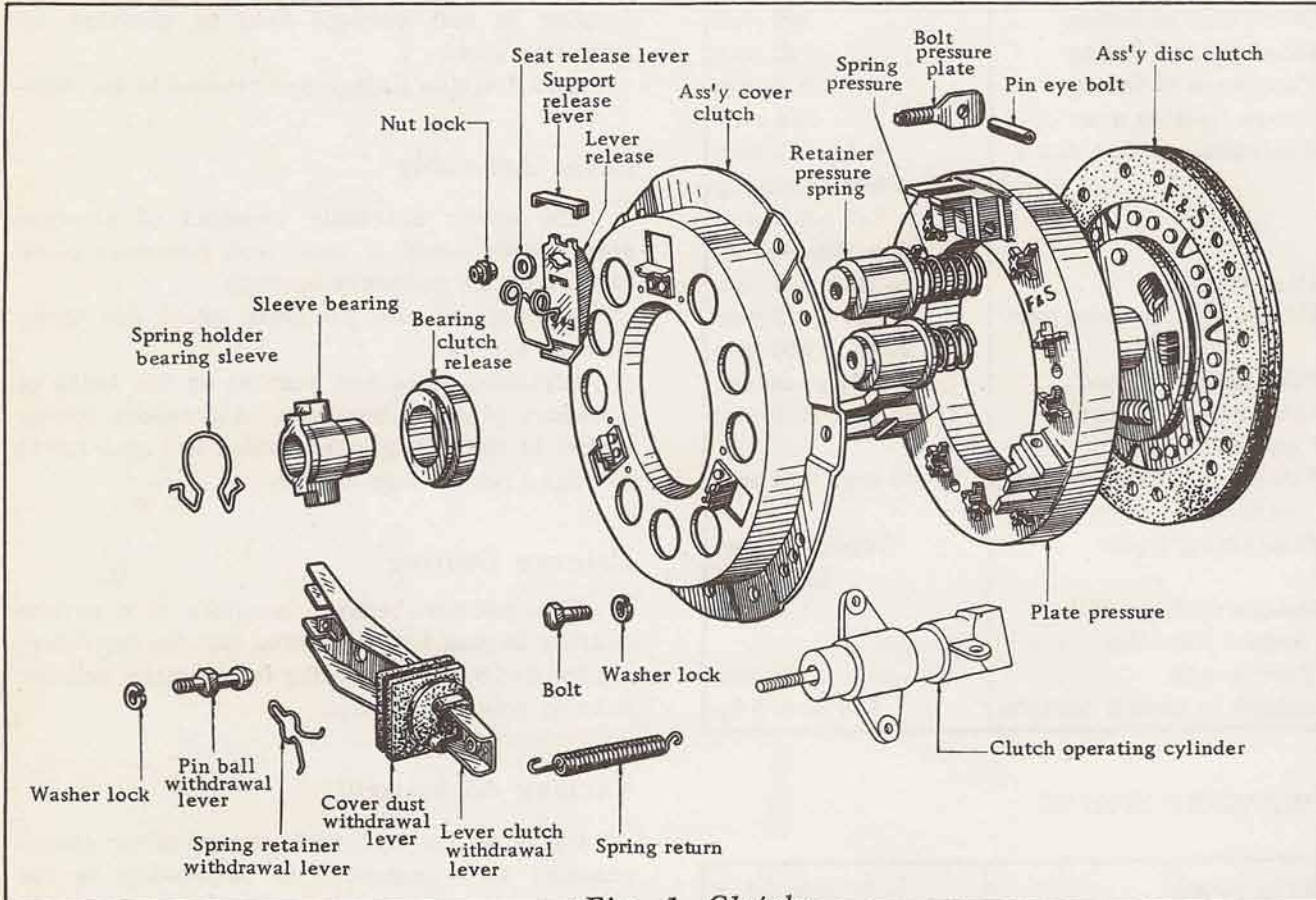


Fig. 1 Clutch

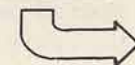
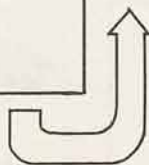
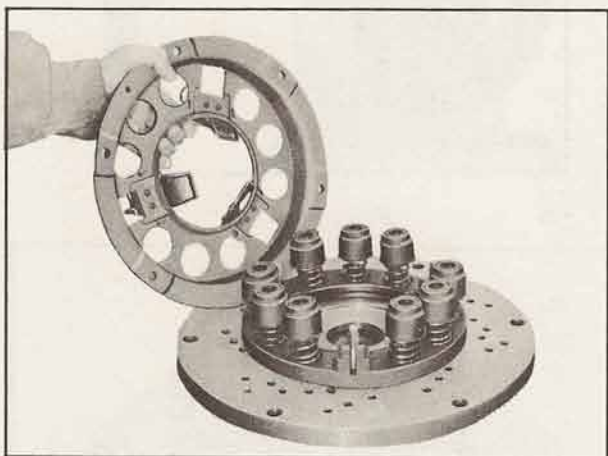
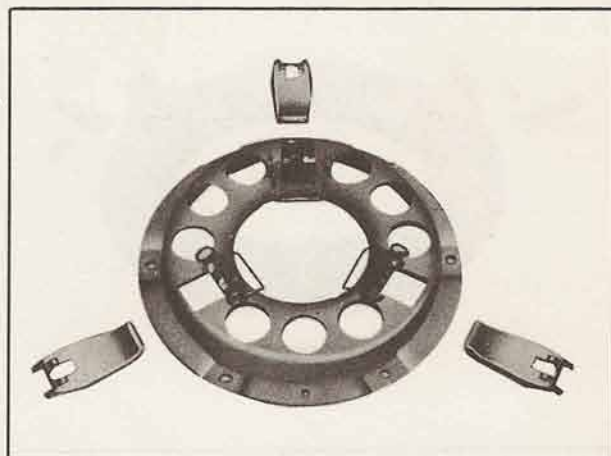
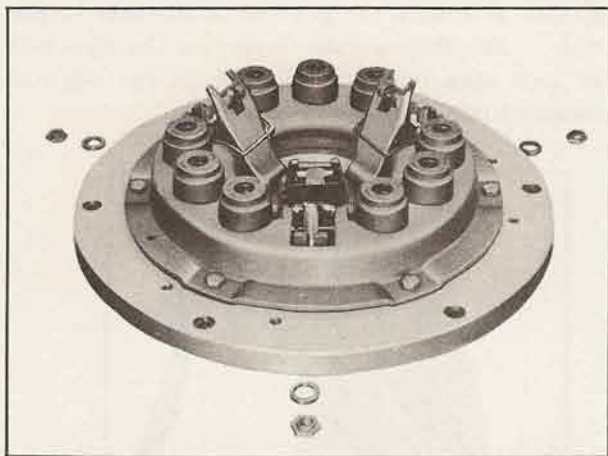
Dismantling

Place the clutch cover assembly on the three spring so that the holes in the cover coincide with the tapped holes in the plate, insert the set-screws provided and tighten them, a little at a time, by diagonal selection until the cover is firmly attached to the base plate at all possible points. This is most important if the best results are to be achieved.

Mark the cover, pressure plate lugs and release levers with a centre punch so that the parts can be reassembled in their relative position in order to maintain the balance of the clutch.

Detach the release lever plate from the eye-bolts and remove the three lock nuts and adjusting nuts.





DATSUN PICK-UP

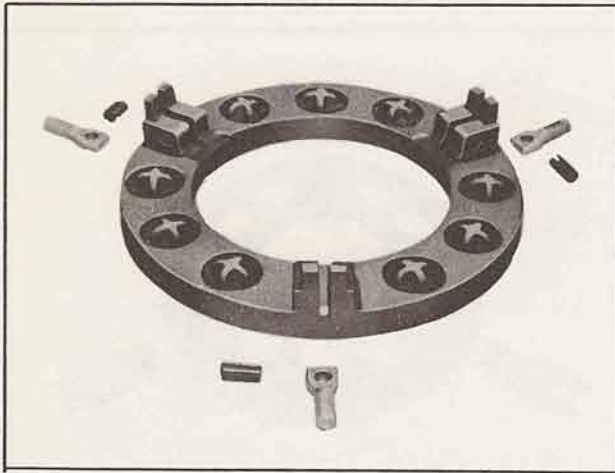


Fig. 2 Disassembling

Slowly release the pressure on the springs, unscrewing by diagonal selection, the set-screws securing the cover to the base plate. The clutch can then be lifted to expose all components for inspection.

The release levers, and springs should be examined for wear and distortion. Renew these parts if necessary, bearing in mind that the pressure springs must only be renewed in sets. Clean all parts and lubricate the bearing surfaces of the levers, sparingly with grease.

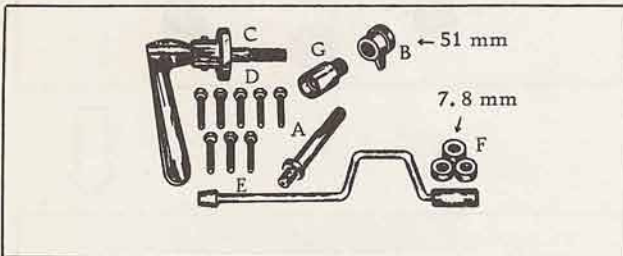


Fig. 3

Assembling

Press the pin into the eye-bolt hole through the lug on the pressure plate as shown.

Place the pressure plate on the base plate with the pressure springs in position on the pressure plate and put the pressure spring retainers on it. Cover and set the clutch cover assembly on the base plate.

Compress the pressure springs by screwing down the cover to the base plate by using the special set-screw placed through each hole in the cover.

Tighten the screws, a little at a time, by diagonal selection to prevent distortion to the cover. Set the release lever on the eye-bolt with lock nuts inserting for lug at the edge of pressure plate.

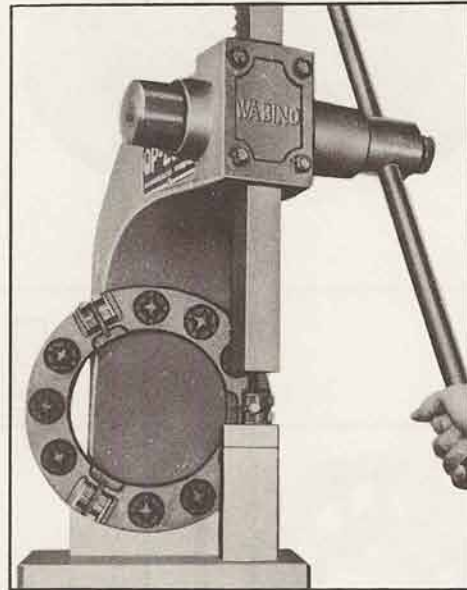
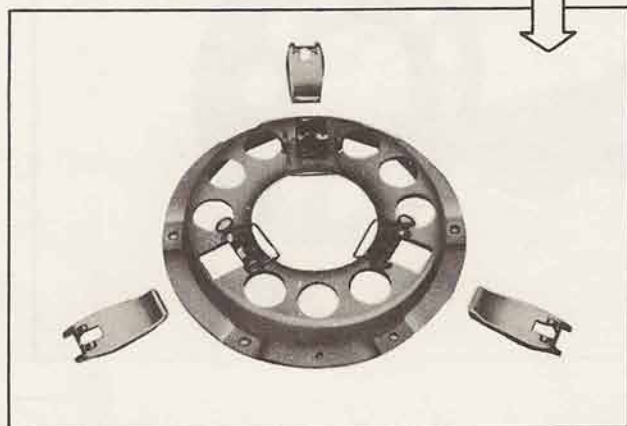
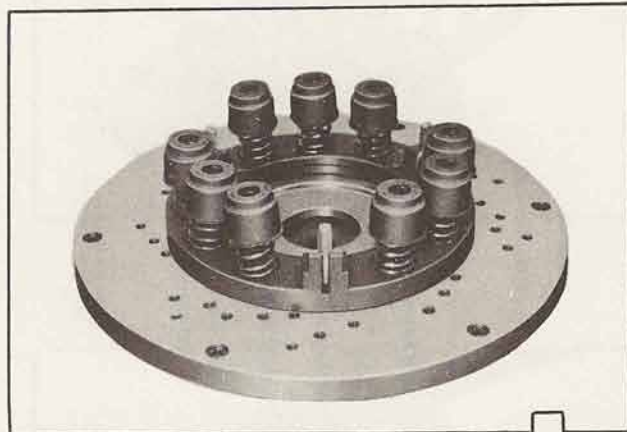


Fig. 4



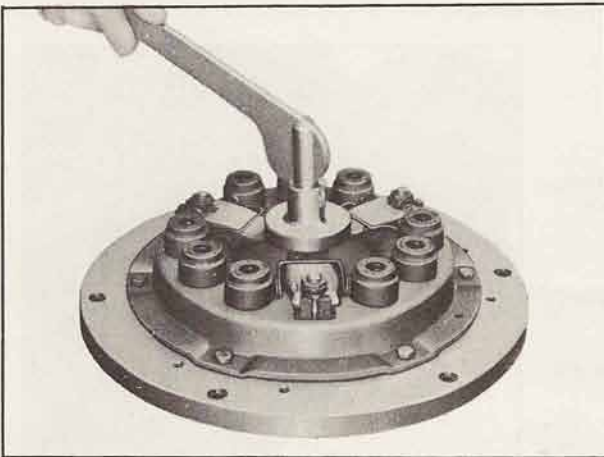
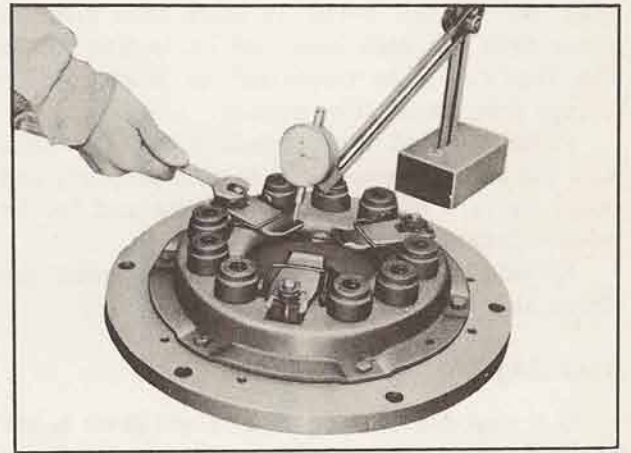
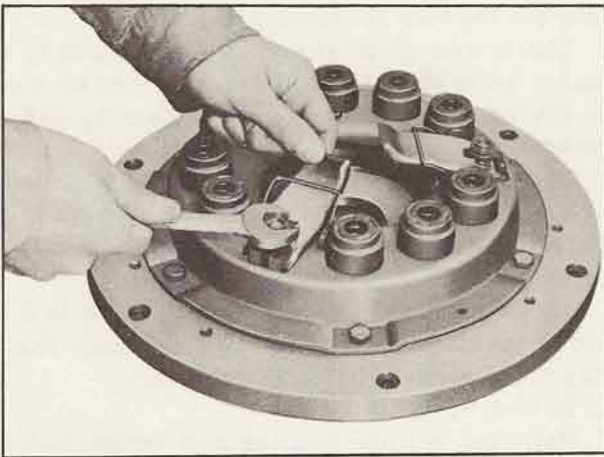
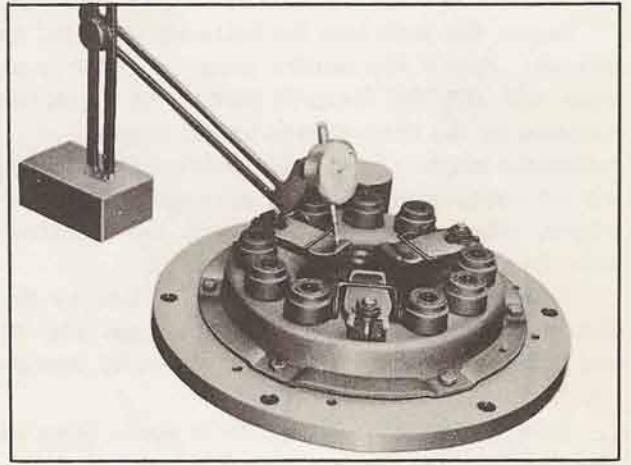
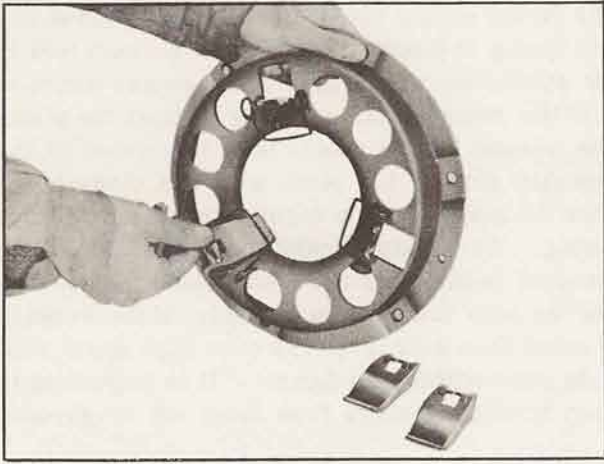


Fig. 5

DATSUN PICK-UP

Gauging

Screw the nuts into the bolts and proceed as follows; Screw the centre pillar into the base plate and slip the distance piece over the pillar followed by the cam-shaped height finger.

Adjust the height of the release levers by screwing or unscrewing the bolt nuts until the height finger, when rotated, just contact the highest point on the tip of the release levers.

Replace the height finger and pillar by the clutch actuating mechanism (see inset Fig. 6) and actuate the clutch several times by operating the handle.

This will enable the parts to settle down on their knife edges.

Replace the height finger and distance piece and readjust the height of the release levers checked for "run out" as near the edge as possible as; if the error is more than 0.02 in. press over the high spots until it is true within this figure. It is important to keep friction facings free from oil or grease.

Finally repeat the procedure to make quite sure the release levers are seating properly and gauge again. Secure the lock nuts and fix the release lever.

Release the set-screws, and remove the clutch assembly from the base plate.

Refacing the Driven Plate

If a new complete clutch driven plate is not available new linings may be fitted to the old driven plate in the following manner;

Each rivet should be removed by using drill. The rivets should not be punched out. Rivet one new facing in position, then if the correct tool is not available, use a blunted center punch to roll the rivet shanks securely against the plate. The second facing should then be riveted on the opposite side of the plate with the clear-holes over the heads already formed in fitting the first facing. The plate should then be mounted on a mandrel between centers and checked for "run out" as near the edge as possible; if the wabbing is more than 0.02 in. press over high spots until it is true within this figure. It is important to keep friction facings free from oil or grease.

Refitting the Clutch

Place the driven plate on the flywheel with the longer chamfered splined end of the driven plate hub towards the transmission.

The driven plate should be centralised by a dummy drive shaft which fits the splined bore of the driven plate hub and the pilot bearing of the flywheel.

The clutch cover assembly can now be secured to the flywheel by means of the holding screws, tightening them a turn at a time by diagonal selection.

There are two dowels in the flywheel to locate in the clutch cover. Remove a dummy shaft after these screws are fully tightened.

(35 lb/ft-4.84 kg-m)

Refit the release bearing and transmission case. The weight avoid strain on the drive shaft and distortion of the driven plate assembly.

Description of Clutch Control

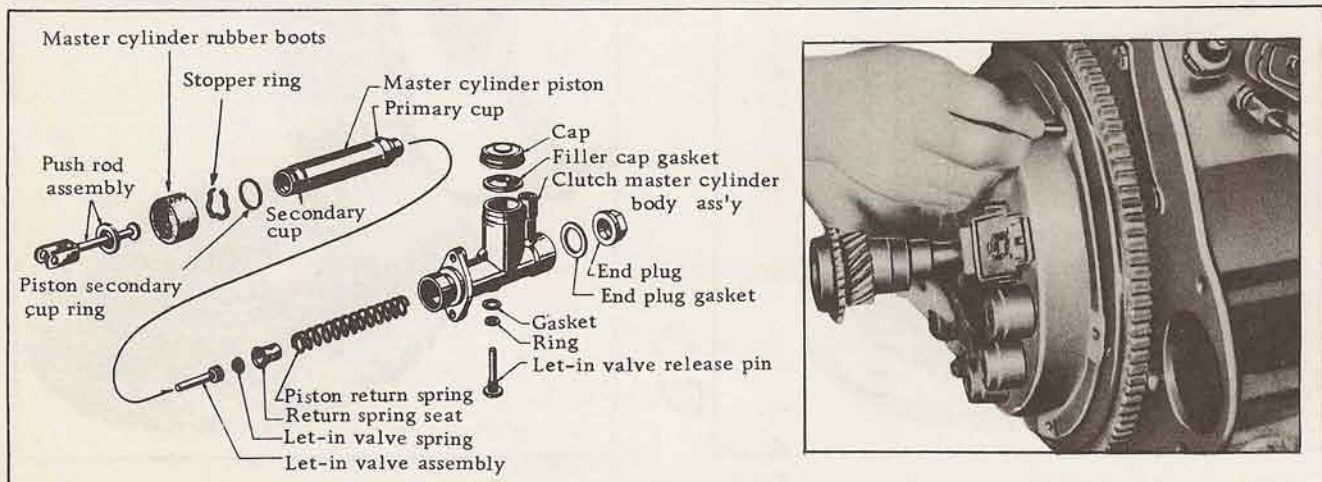


Fig. 6 Components of the Master Cylinder

The clutch is operated from a master cylinder by means of a suspended pedal.

A cylinder mounted on the clutch bell housing is coupled to the clutch operating shaft.

When pressure to the clutch pedal is applied the piston of the master cylinder displaces the fluid in the cylinder and via a pipe line, in turn, moves the piston of the cylinder, pushing against the lever of the clutch shaft.

The Master Cylinder

The master cylinder consists of an alloy body with a polished finish bore, and reservoir with cap. The inner assembly is made up of the push rod, ring, stopper ring, piston, cups, spring seat, spring, valve and valve spring.

The end of cylinder is protected by a rubber boot.

Dismantling the Clutch Master Cylinder

Disconnect the pressure pipe union from the cylinder and remove the securing bolts, then the master cylinder and may be withdrawn complete from the car.

Remove the filler cap and drain out the fluid. Pull back the rubber boot and remove the stopper ring with a pair of long nosed pliers. The push rod and ring can then be removed, and unscrew the release pin.

When the push rod has been removed the piston with cups attached will be exposed; remove the piston assembly complete.

The assembly can be separated by lifting the spring seat edge over the shouldered end of the piston. Depress the piston return spring allowing the valve assembly to slide through the elongated hole of the spring seat thus releasing the tension on the spring.

Examine all parts, especially the gasket, cylinder bore and piston cups, for wear or distortion and replace the new parts where necessary.

Assembling

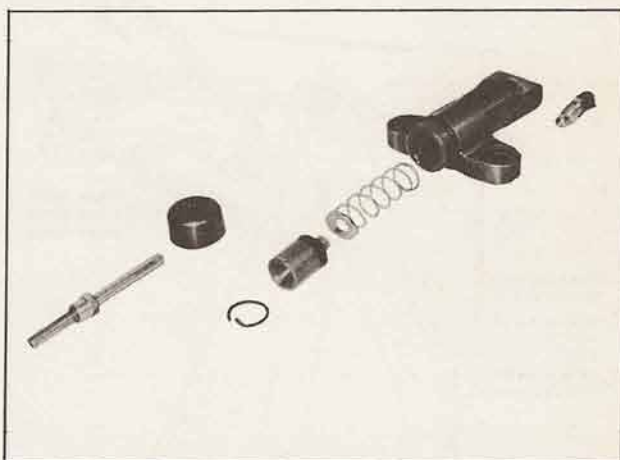
Smear the assembly well with the recommended brake fluid, and insert the assembly into the bore of the cylinder end with piston cups lips in the bore.

Replace the push rod, with the secondary cup ring, into the cylinder followed by the stopper ring which engages into the groove machined in the cylinder body.

Replace the rubber boot and secure the unit by means of the two bolts on the flange and refit the pressure pipe union into the cylinder.

The Operating Cylinder

The cylinder is of simple construction, consisting of the body, piston, piston with cup, spring and bleed screw, the open end of the cylinder being protected by a rubber dust cover. The cylinder is mounted under side of the starting motor.



Dismantling

Remove the rubber dust cap from the bleed screw attached a bleed tube, open the bleed screw three-quarters of a turn and pump the clutch pedal until all the fluid has been drained into a clean container.

Unscrew the flexible pipe union and push rod. The operating cylinder can now be removed. Remove the rubber cover and if compressed air line is available, blow out the piston from the side of union.

Examine all parts, especially the seal, and replace if worn or damaged.

DATSUN PICK-UP

Assembling

Place the seal into the stem of the piston, with the back of the seal against the piston, replace the springs with the small end on the stem, smear well with the recommended fluid and insert into the cylinder. Replace the dust cover and mount the cylinder in position, making sure the push rod enters the hole in the rubber boot. Secure the cylinder with the pinch bolt, and screw in the pipe union.

Bleeding the Clutch System

Remove the bleed screw dust cap at the operating cylinder, open the bleed screw ap-

proximately three-quarters of a turn and attach a tube immersing the open end into a clean receptacle containing a small amount of brake fluid. Fill the master cylinder reservoir with the recommended fluid and by using slow, full strokes, pump the clutch pedal until the fluid entering the container is free from air bubbles. On a down stroke of the pedal, screw up the bleed screw, remove the bleed tube and replace the dust cap.

When the clutch pedal is depressed, the force is transmitted to a carbon bearing, and the surface pushed the release plate.

The carbon bearing has high resistance against wear and does not need lubrication.

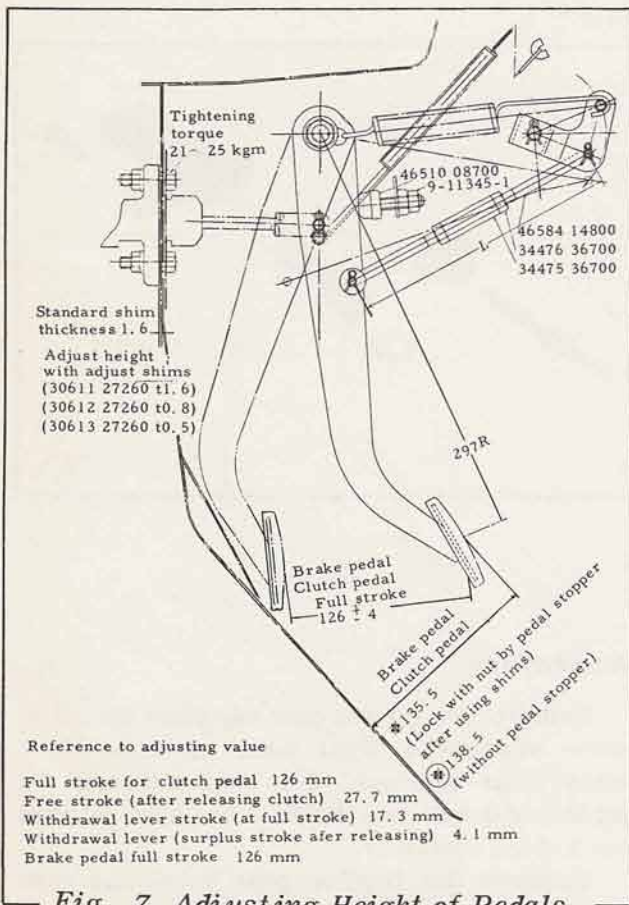


Fig. 7 Adjusting Height of Pedals

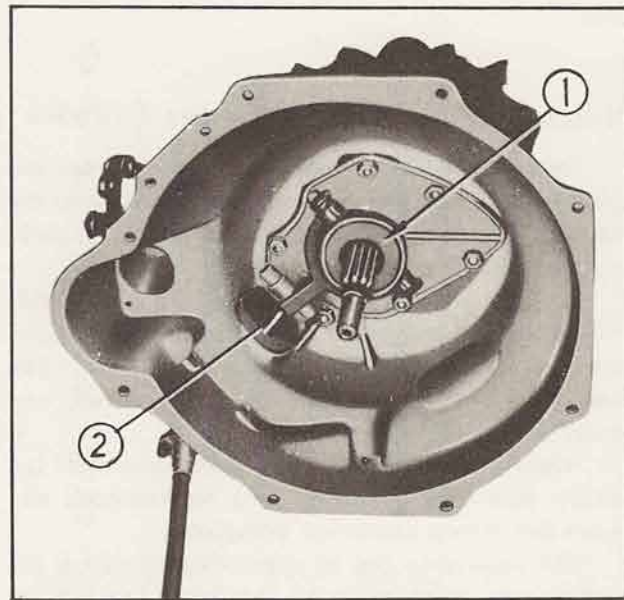


Fig. 8 Clutch Release Lever

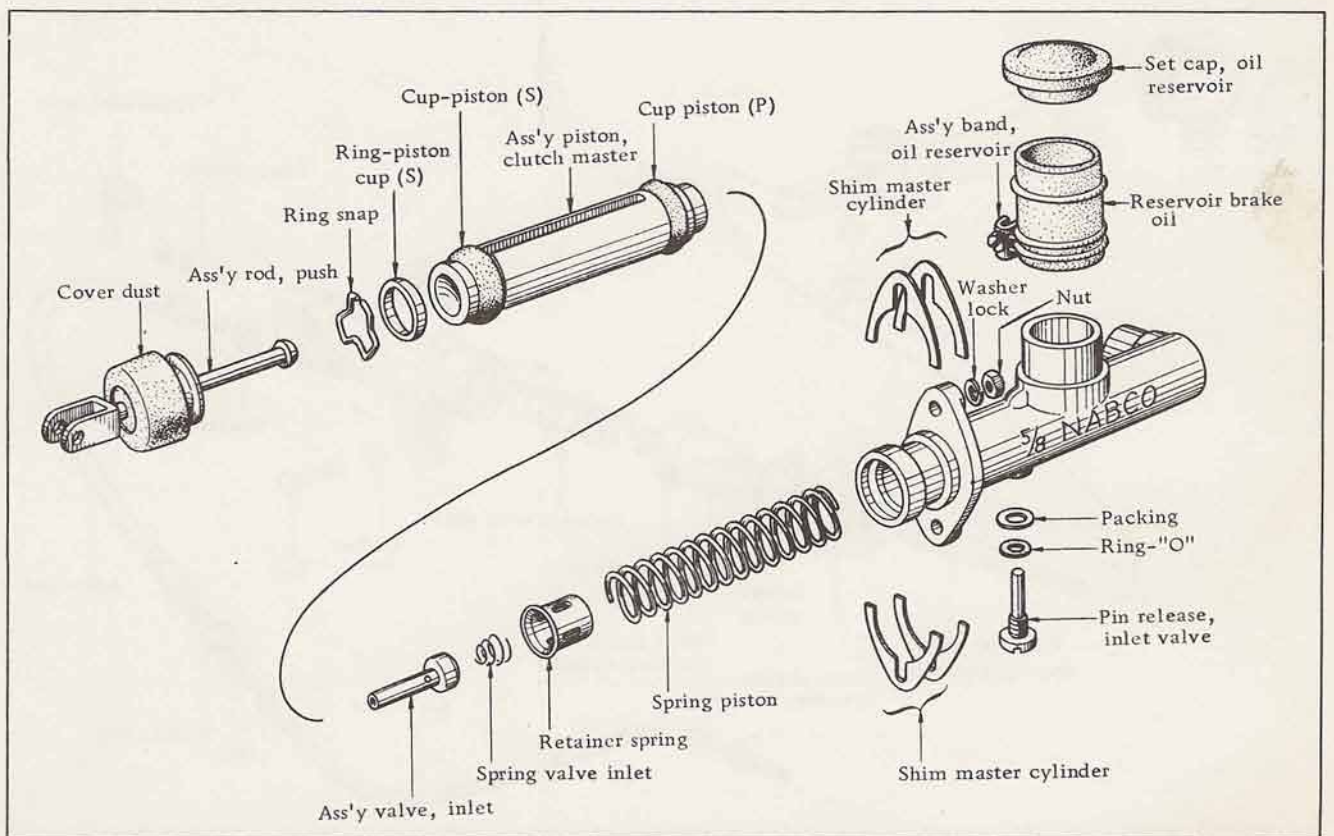
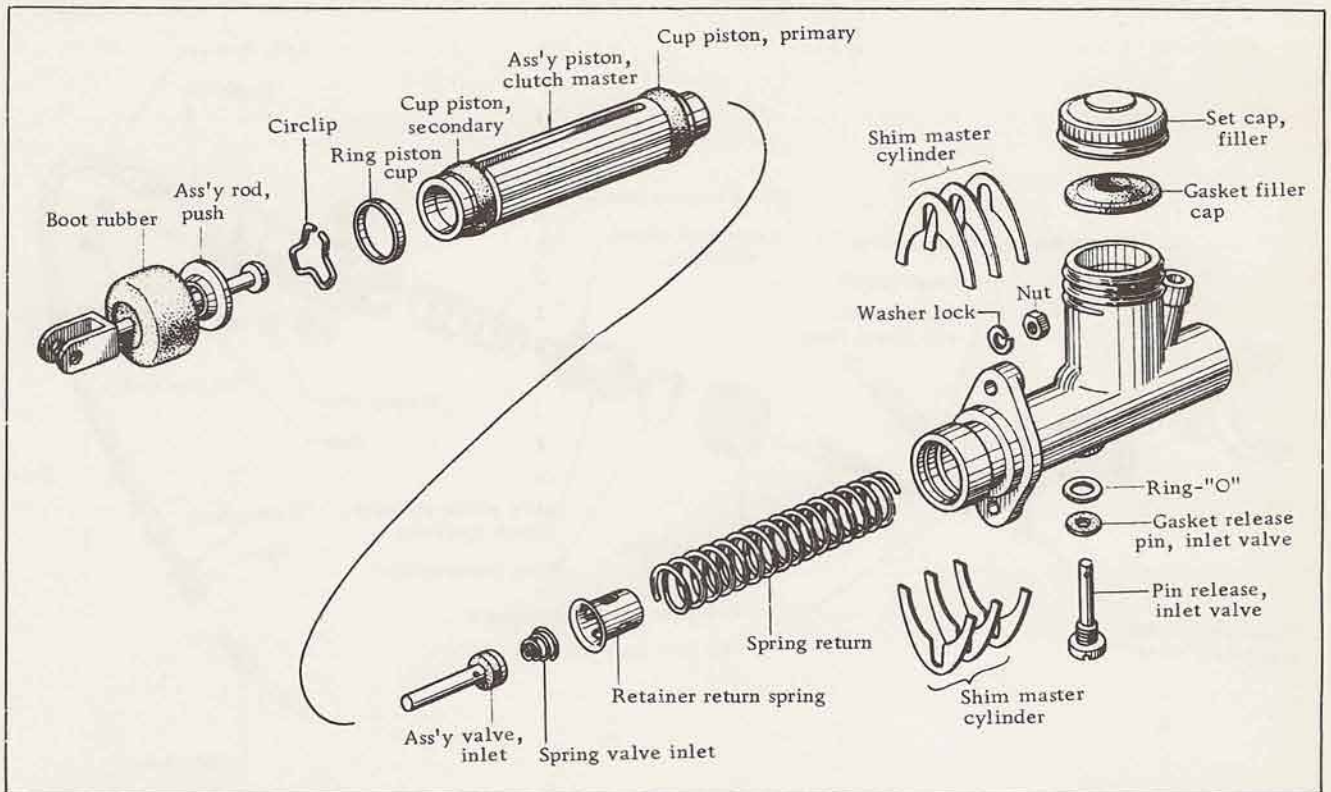


Fig. 9 Clutch Master Cylinder

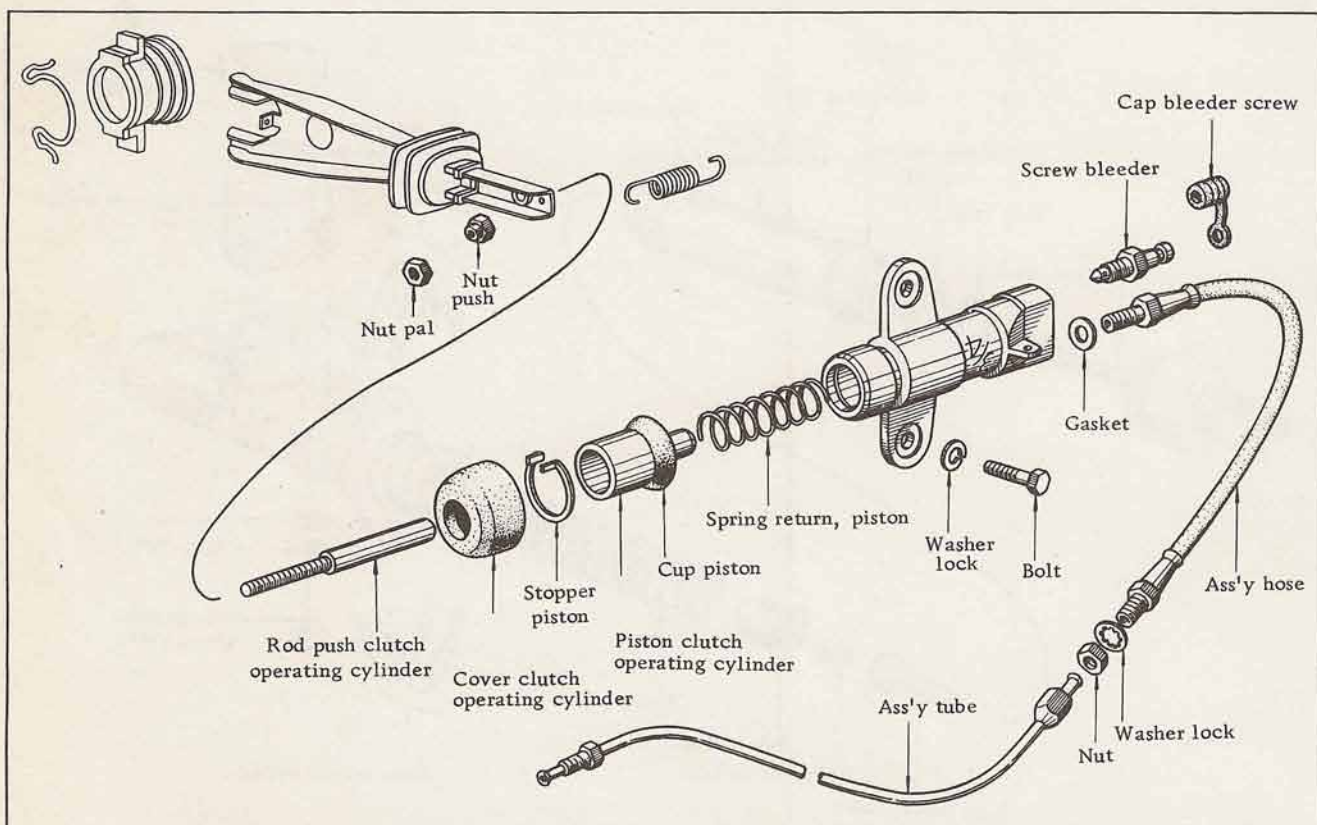
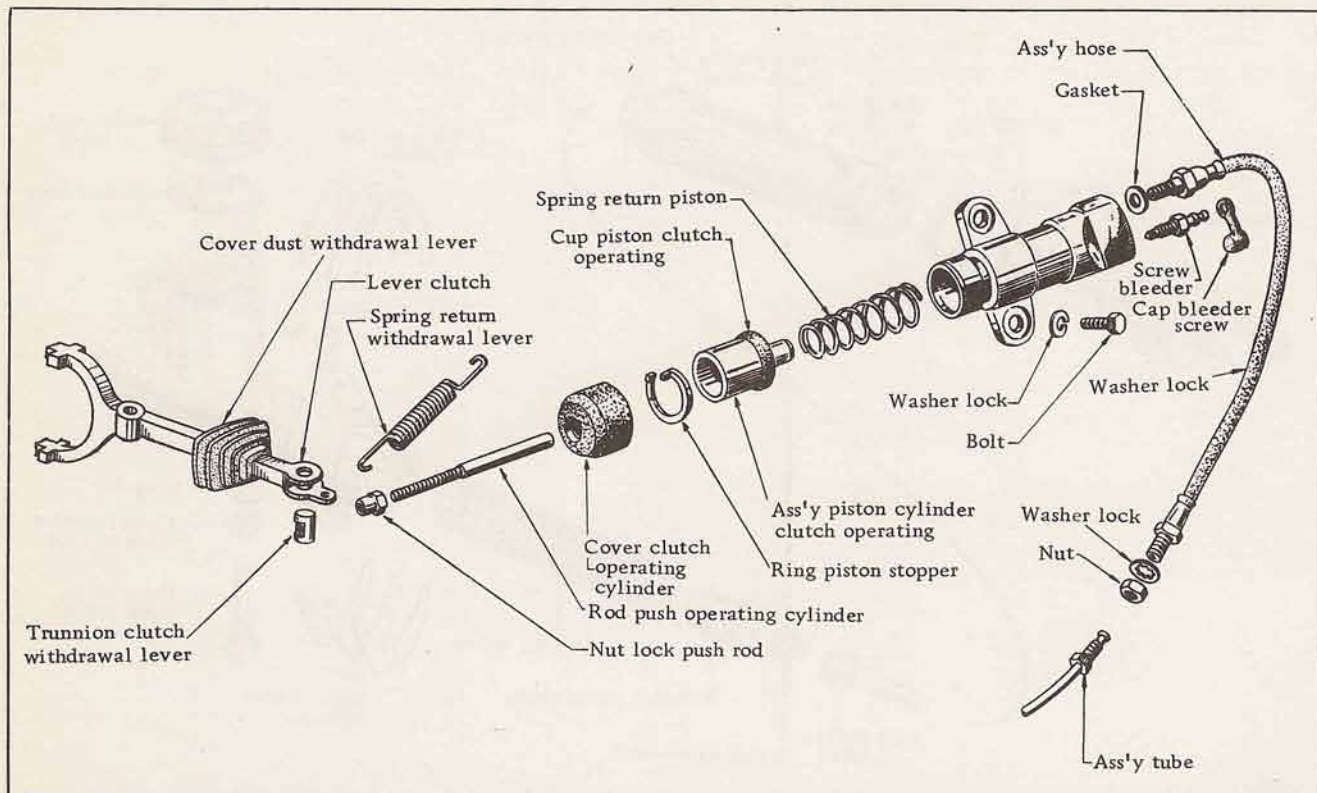


Fig. 10 Clutch Operating Cylinder