

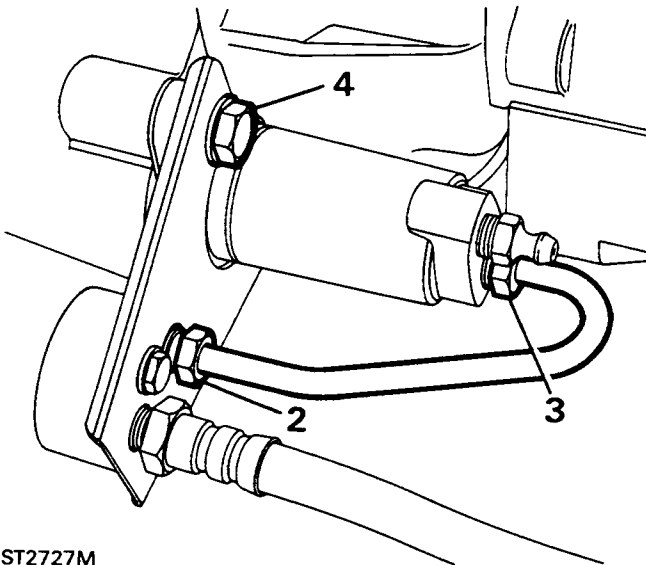
TORQUE SETTING CLUTCH PIPES

Nm

Master cylinder union	15
Pipe joint	15
Pipe to and out of damper	15
Pipe to jump hose	15
Jump hose to pipe	15
Pipe to slave cylinder	15

REMOVE CLUTCH SLAVE CYLINDER - Diesel engine.

1. Disconnect the battery.
2. Slacken the fluid feed pipe union nut at the fluid damper valve.
3. Disconnect the fluid feed pipe from the slave cylinder and cover the end.
4. Remove the two bolts securing the slave cylinder to the bell housing and withdraw the cylinder and steel joint washer.

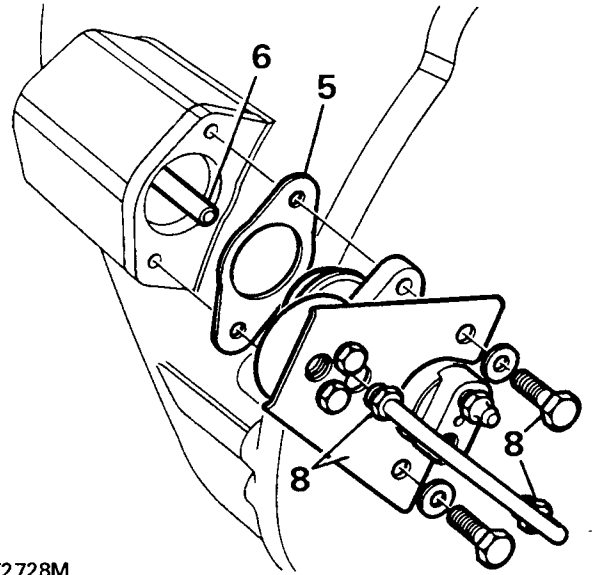


ST2727M

Fitting slave cylinder.

5. Smear Hylomar P232M sealant on both sides of the steel joint washer and place in position on the bell housing.
6. Insert the push rod through the rubber dust cover hole and fit the slave cylinder to the bell housing with the bleed nipple uppermost.
7. Fit the bracket with the clutch actuation damper and secure with the two bolts and tighten evenly to the correct torque.

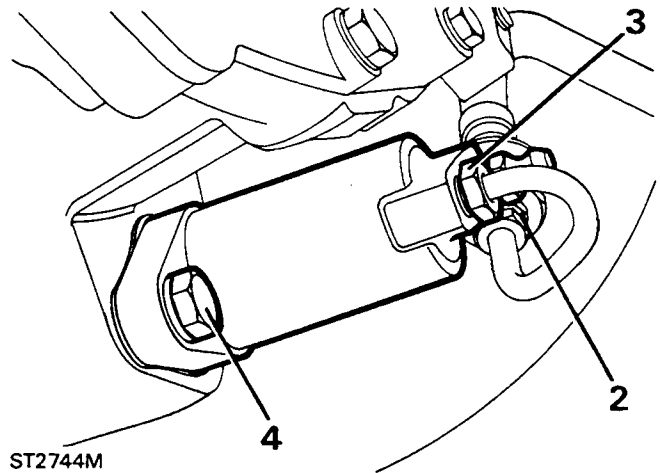
8. Connect the fluid feed pipe to the cylinder and tighten both the union nuts.
9. Bleed the hydraulic system.
10. Connect the battery and check the clutch operation and examine for fluid leaks.



ST2728M

REMOVE CLUTCH SLAVE CYLINDER - petrol engine.

1. Disconnect the battery.
2. Working beneath the vehicle, slacken the fluid pipe union at the support bracket.
3. Disconnect the fluid pipe at the slave cylinder.
4. Remove the two bolts securing the slave cylinder to the bell housing and withdraw the cylinder with the steel packing washer.



ST2744M

Fitting slave cylinder.

5. Clean the bell housing mating face and smear Hylomar P232M sealant on both sides of the steel packing washer.
6. Fit the washer and insert the push rod through the rubber dust cover to locate into the piston. Secure the cylinder with the two bolts to the bell housing.
7. Connect the fluid pipe to the cylinder and tighten the two unions.
8. Bleed the hydraulic system.
9. Connect the battery, road test the vehicle and check for fluid leaks.

9. Insert the spring into the cylinder. Lubricate the piston and seal with brake fluid and fit to the cylinder small diameter towards the spring.
10. Fill the dust cover with Lockheed rubber grease and fit to the cylinder ensuring that lip inside the cover locates in the external groove in the cylinder.

OVERHAUL THE SLAVE CYLINDER

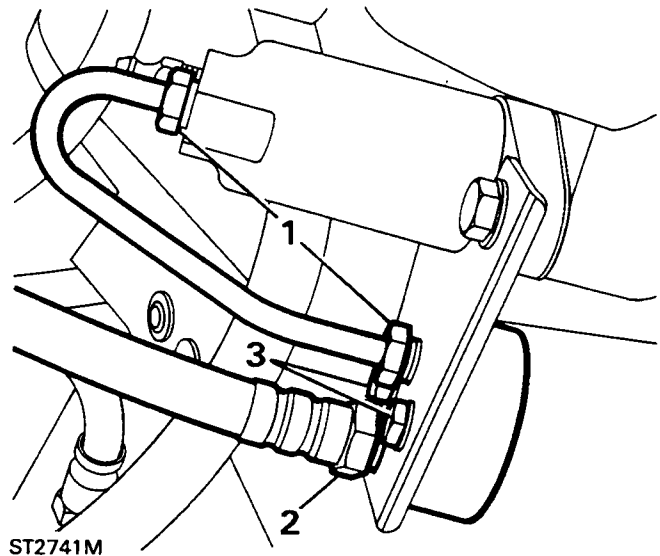
1. Disconnect the battery and remove the slave cylinder from the vehicle.
2. Remove the dust cover.
3. Apply a low pressure air line to the fluid inlet port to expel the piston assembly.
4. Remove the spring.
5. Prise-off the seal from the piston.

Examine and assemble.

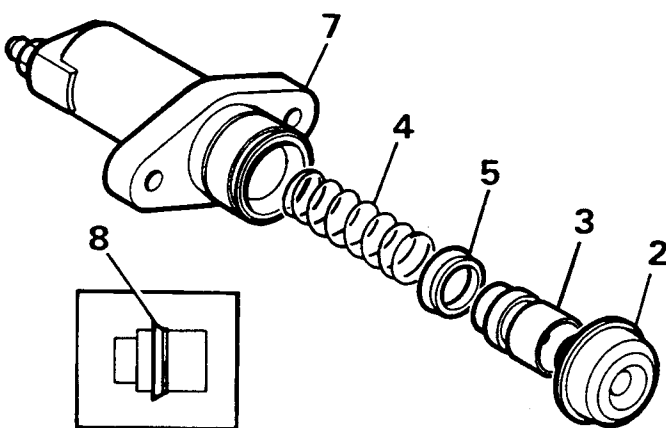
6. Wash all components with Lockheed cleaning fluid.
7. Examine the cylinder bore and piston and if these parts are worn, scored, pitted and ridged a complete new slave cylinder should be fitted.
8. If the cylinder and piston are satisfactory, fit a new seal to the piston with the larger diameter towards the rear of the piston, as illustrated.

RENEWING HYDRAULIC DAMPER

1. Remove the pipe between the slave cylinder and damper.
2. Disconnect the hydraulic hose from the damper.
3. Remove the two bolts securing the damper to the bracket and remove the damper.

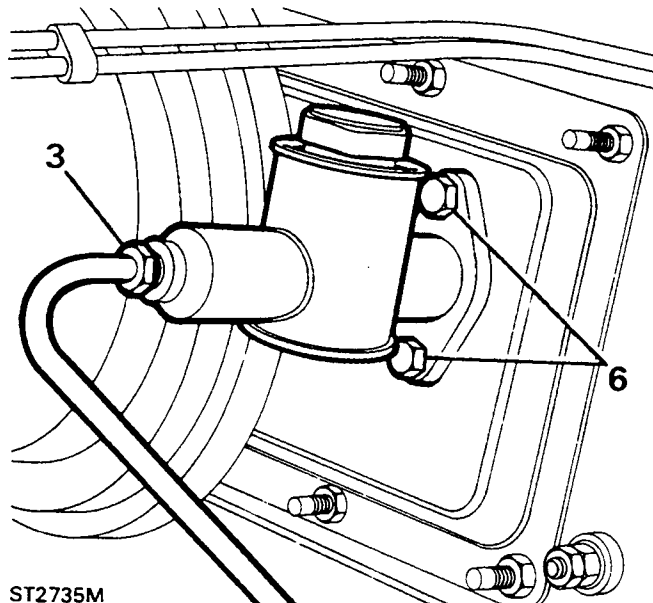


4. Fit the damper to the bracket and tighten the two bolts.
5. Connect the flexible hose to the damper.
6. Fit the pipe to the slave cylinder and to the damper and tighten the unions.
7. Bleed the hydraulic system.



REMOVING MASTER CYLINDER

1. Disconnect the battery.
2. Dispel the hydraulic fluid from the system by releasing the bleed nipple at the slave cylinder. Attach a bleed hose to the nipple, with the free end in a suitable container, and pump the clutch pedal until the system is clear. Dispose of the fluid safely in accordance with the instructions in section 01. Do not use the fluid again.
3. Disconnect the fluid pipe from the master cylinder and cover the end to prevent entry of dirt.
4. Remove the lower closing panel below the fascia.
5. Remove the nut and spring washer securing the push rod pivot bolt and withdraw the bolt and two bushes.
6. Remove the two bolts retaining the master cylinder to the bulk head and withdraw the master cylinder from the vehicle.

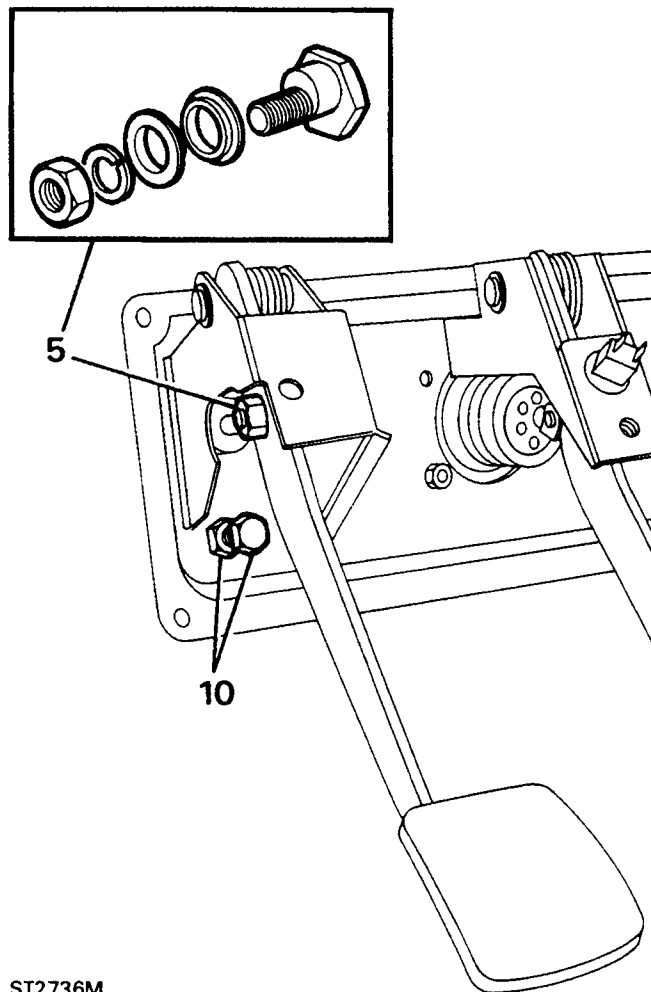


ST2735M

Fitting master cylinder.

7. Fit the master cylinder to the bulk head and secure with the two bolts.
8. Assemble the push rod to the pedal with the special pivot bolt and two bushes. secure the assembly with the nut and spring washer. Do not tighten the nut at this stage.

9. If necessary, adjust the clutch pedal height to that of the brake pedal by turning the pivot bolt so that the eccentric shank aligns the pedal. Tighten the pivot bolt nut.
10. Unlock and back-off the clutch pedal stop bolt and fully depress the pedal. Adjust the bolt to just touch the the pedal then turn the bolt a further revolution and tighten the locknut.



ST2736M

11. Connect the fluid pipe to the master cylinder.
12. Fill the master cylinder reservoir with new fluid of the correct specification from a sealed container. Bleed the system whilst keeping the reservoir topped-up.
13. Connect the battery, road test the vehicle and check for fluid leaks.
14. Refit the lower closing panel.

OVERHAUL THE MASTER CYLINDER.

1. Remove the master cylinder from the vehicle.
2. Pull back the rubber dust cover from the master cylinder body.
3. Depress the push rod whilst removing the circlip.
4. Withdraw the push rod complete with dust cover, circlip and washer.
5. Withdraw the piston assembly and spring.
6. Prise the the spring retainer from the piston.
7. Remove the rear seal and steel shim washer.
8. Prise the front seal from the piston.

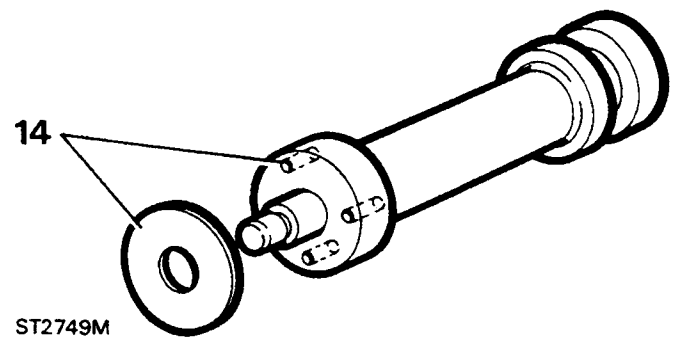
Inspection

9. Discard the seals and other items included in the overhaul kit.
10. Clean all remaining components in new hydraulic fluid using lint free cloth.
11. Examine the cylinder bore and if it is not smooth and free of corrosion, scores, pits and ridges the complete master cylinder assembly should be renewed.

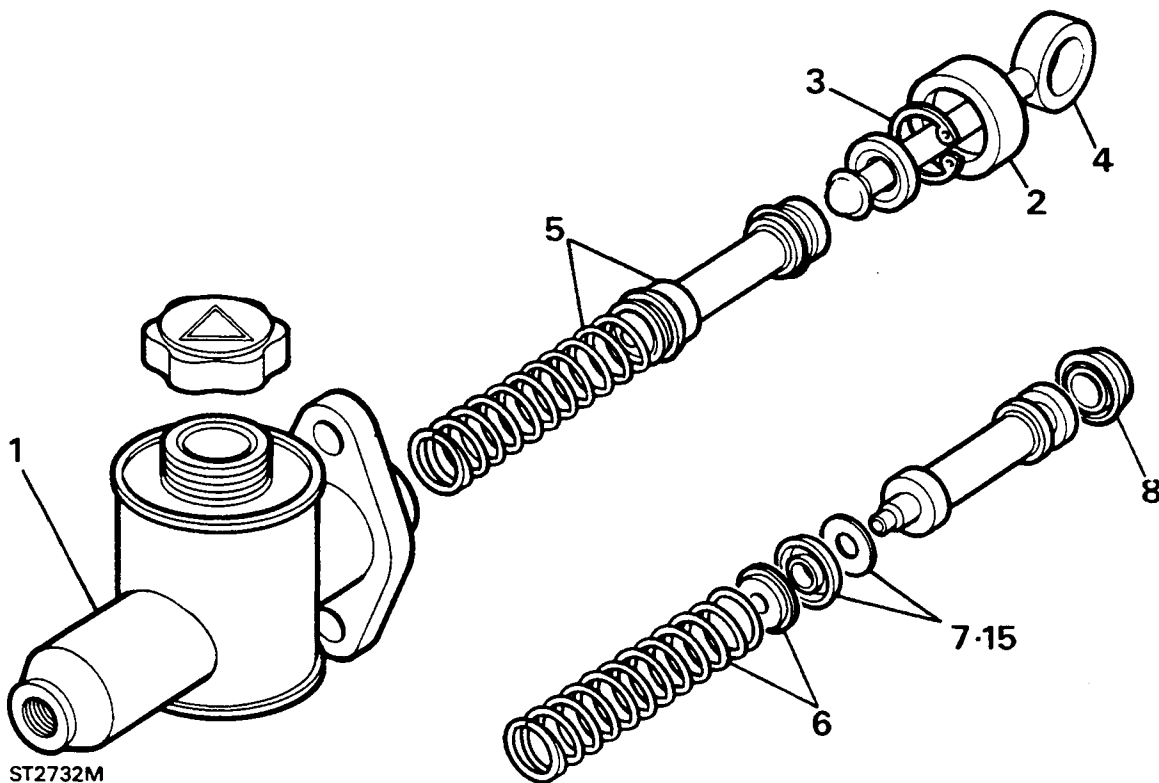
12. If the cylinder bore is serviceable, check that the inlet and by-pass ports are clear and clean.
13. Clean the reservoir cap and check that the small vent hole inside the cap is clear.

Assemble master cylinder

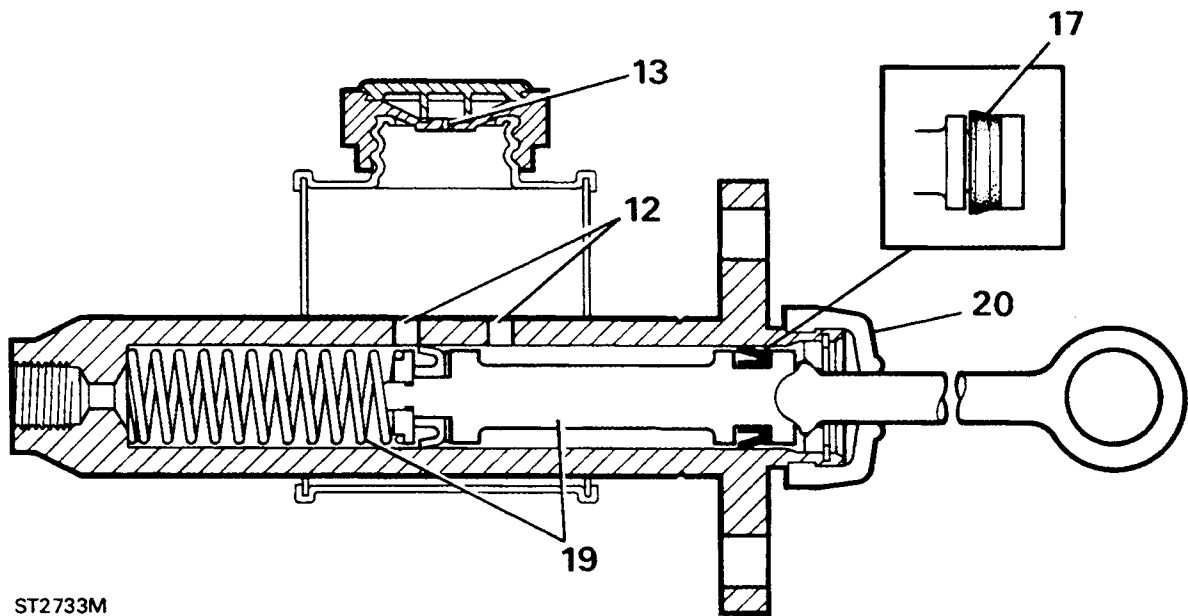
14. Fit the steel shim washer to the rear end of the piston and check that the three holes are clear.



15. Fit the thinner of the two seals, flat side towards the shim washer, to the piston.



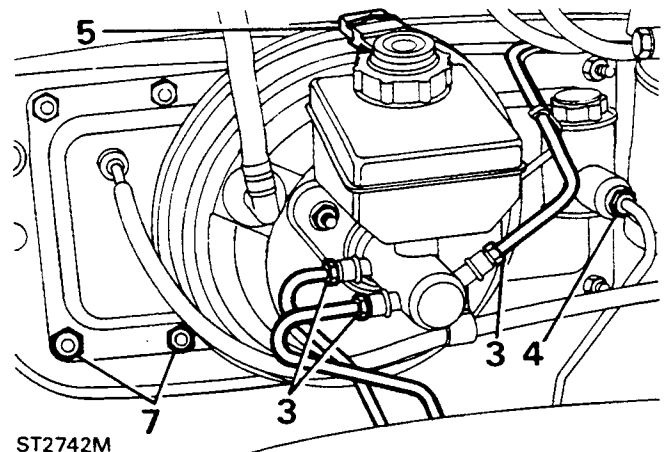
16. Fit the spring retainer, shoulder towards the seal, ensuring that it locates in the piston groove.
17. Now fit the wider seal, lip side towards the spring end of the piston, to the groove at the front of the piston taking care not to damage the seal lip.
18. Fit the smaller diameter of the spring to the spring retainer.
19. Lubricate the cylinder bore and piston seals with clean hydraulic fluid and insert the assembly into the cylinder taking care not to allow the seal lips to bend back.
20. Fit the new dust cover to the push rod and fit the rod to the cylinder and secure with the circlip. Push the dust cover over the cylinder so that the lip inside the cover locates in the cylinder groove. Operate the push rod several times to check for free movement of the piston.



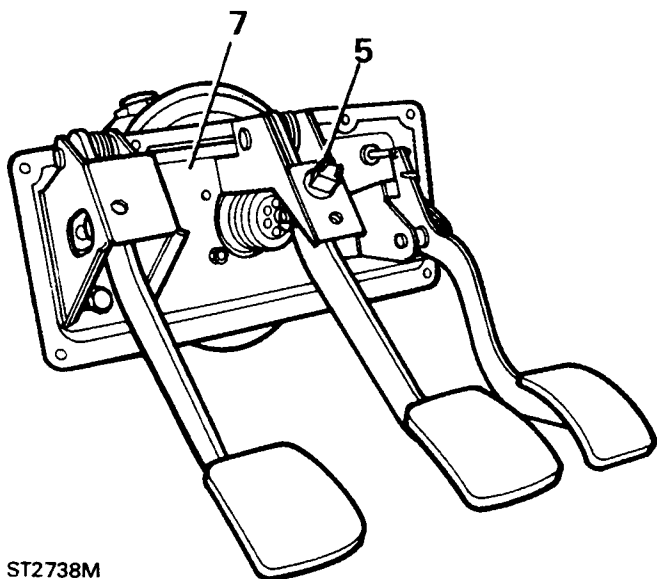
ST2733M

REMOVE CLUTCH PEDAL.

1. Disconnect the battery.
2. Remove the lower closing panel below the fascia to gain access to the pedal assembly.
3. Disconnect the brake fluid pipes from the master cylinder and cover the ends of the pipes to prevent the ingress of dirt. Also remove the electrical leads from the master cylinder cap.
4. Disconnect the hydraulic fluid pipe from the clutch master cylinder.
5. Disconnect the electrical leads from the brake light switch.
6. Release the throttle cable from the accelerator pedal.
7. Remove the eight bolts securing the pedal mounting plate to the bulkhead and withdraw the complete assembly into the engine compartment and then remove from the vehicle.

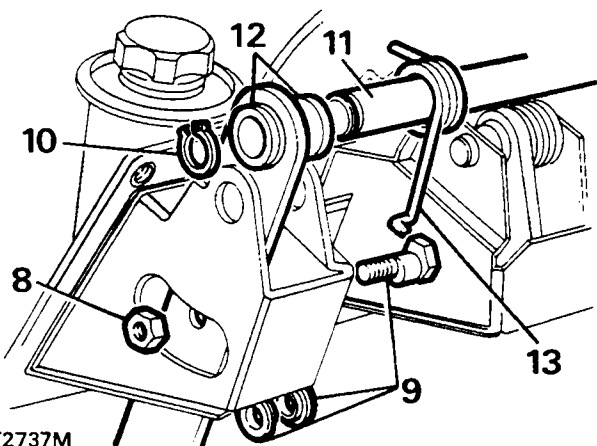


ST2742M



ST2738M

8. Remove the pivot bolt nut.
9. Withdraw the clutch master cylinder special pivot bolt and bushes which secure the push rod to the clutch pedal.
10. Remove the pedal cross shaft retaining circlip.
11. Withdraw the cross shaft and pedal return spring and remove the pedal.
12. If necessary, press out the cross shaft bushes and fit replacements.

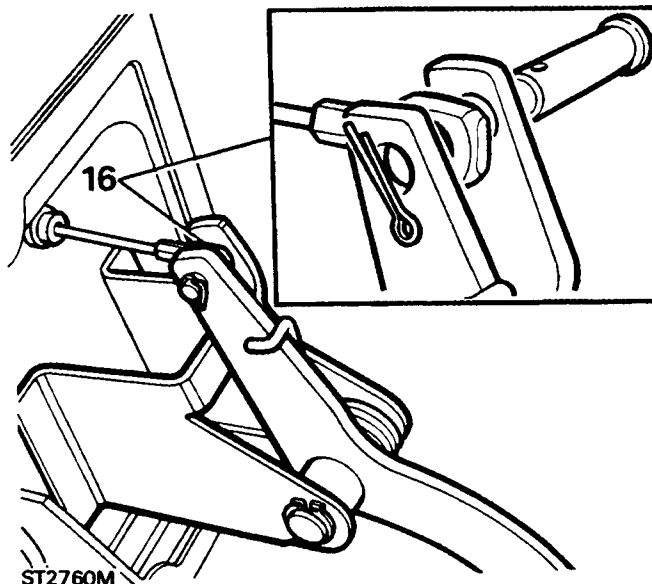


ST2737M

Fitting clutch pedal.

13. Fit the return spring to the cross shaft. Lubricate with grease and insert the shaft through the pedal bushes and secure with the circlip.
14. Lubricate and fit the the special pivot bolt and bushes and secure with the nut and spring washer but do not tighten at this stage.

15. To adjust the clutch pedal to the same level as the brake pedal, turn the pivot bolt so that the eccentric shank moves the the pedal into alignment and tighten the nut.
16. Connect the throttle cable to the accelerator pedal and offer-up the pedal mounting plate assembly and secure with the eight bolts.



ST2760M

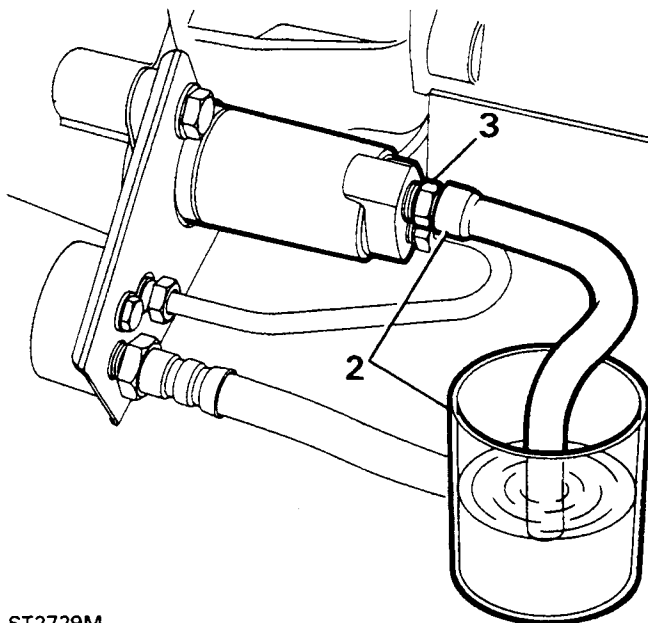
17. Connect the leads to the brake light switch.
18. Fit the lower closing panel.
19. Connect the hydraulic fluid pipes to the clutch and brake master cylinders and the electrical leads to the latter.
20. Bleed the clutch and brake hydraulic systems.
21. Connect the battery and road test the vehicle and check for fluid leaks.

BLEEDING THE HYDRAULIC SYSTEM

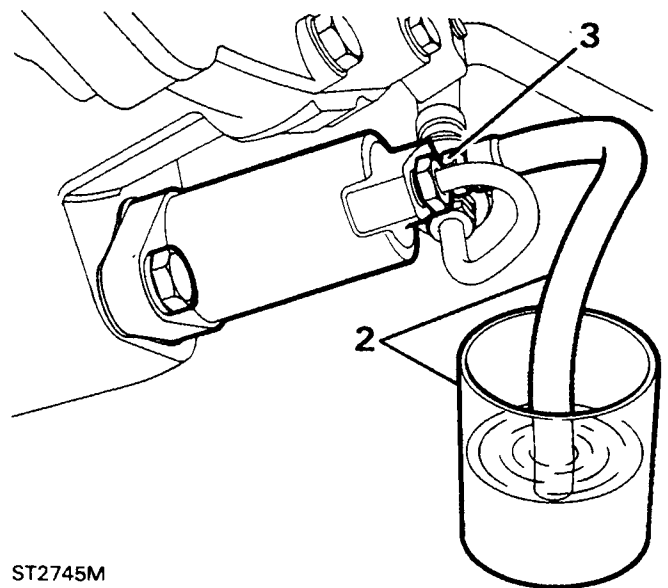
On Diesel models a damper is fitted in the hydraulic line between the master cylinder and slave cylinder. This is to prevent the transmission of vibrations from the slave cylinder through to the clutch pedal. The inclusion of this damper does not affect the foregoing bleeding instructions which is the same for both Petrol and Diesel vehicles.

During the following procedure it is important to keep the hydraulic fluid reservoir topped-up to avoid air being drawn into the system. Use only new fluid recommended in section 09 and from a sealed container.

1. Remove the reservoir cap and if necessary top-up with fluid to just below the filler neck.
2. Attach a suitable length of hose to the slave cylinder bleed nipple and immerse the other end in a suitable clear container half-full of hydraulic fluid.
3. Slacken the bleed nipple and operate the clutch pedal to the fullest extent of its travel pausing at the bottom of each stroke. Continue this action, whilst keeping the reservoir topped-up, until air bubbles cease to appear from the hose. Keep the hose below the fluid and hold the the pedal depressed and tighten the bleed screw.



ST2729M



ST2745M

4. Remove the bleed hose, top-up the reservoir and fit the cap. Do not use the fluid expelled during the bleeding operation to top-up the reservoir.