SECTION L

THE HYDRAULIC DAMPERS

(PISTON TYPE)

GENERAL DESCRIPTION

The hydraulic dampers are Armstrong double-acting, resistance being offered to the compression and to the recoil of the road springs.

All the working parts of the dampers are submerged in oil and no adjustment is required or provided for. The dampers are carefully set before dispatch, using special equipment, and any attempt to dismantle the piston assembly will seriously affect the performance of the damper.

A faulty damper should be returned to the makers for attention.

MAINTENANCE

The maintenance of the hydraulic dampers should include a periodical examination of their anchorage to the chassis and axle and tightening the fixing bolts as required. When examining and replenishing the fluid level every 6,000 miles (9600 km.) **the filler plugs and surrounding surfaces must be thoroughly cleaned to ensure that no dust or dirt enters the damper interior.**

Ensure that only Armstrong recommended fluid is used for topping up.

While adding fluid the lever arm must be worked through its full stroke to expel any air that may be trapped in the working chamber.

Fluid should be added to the bottom of the filler plug hole.

The cheese-headed screws securing the cover-plate must be kept fully tightened to prevent leakage of the fluid.

Section L.1

TESTING HYDRAULIC DAMPERS

If there is any doubt that the road springs are adequately damped the condition of the springs and the tyre pressures should also be considered, as these have an appreciable bearing on the results obtained.

If the hydraulic dampers do not appear to function satisfactorily an indication of their resistance can be obtained by carrying out the following check.

Remove the dampers from the car.

Hold them in a vice and move the lever arm up and down through its complete stroke. A moderate resistance throughout the full stroke should be felt; if, however, the resistance is erratic, or free movement in the lever is noted, lack of fluid is indicated, or there may be air in front of the piston. The free movement should not exceed $\frac{1}{8}$ in. (3 mm.) at the outer end of the arm.

If the addition of fluid (added to the level given in **'MAINTENANCE'**) and working the arm over its full range of travel a number of times give no improvement a new damper should be fitted.

Too much resistance, i.e. when it is not possible to move the lever arm slowly by hand, indicates a broken internal part or a seized piston; in such cases the damper should be changed for a new or reconditioned one.

Section L.2

TOPPING UP WITH FLUID

The front dampers may be replenished in position, providing the tops have been thoroughly cleaned to ensure that when the filler plug is extracted no dirt falls into the filler orifice.

This is most important, as it is absolutely vital that no dirt or foreign matter should enter the operating chamber.

The rear dampers must be removed from the vehicle as described in Section L.4.

The use of Armstrong Super (Thin) Shock Absorber Fluid in the Armstrong dampers is recommended. (If this fluid is not available any good-quality mineral oil to Specification S.A.E. 20/20W should be used, but this alternative is **not** suitable for low-temperature operation.)

Fluid should be added to the level of the bottom of the filler plug hole.

When fluid has been added the damper arm should be worked throughout its full stroke before the filler plug is replaced to expel any air that might be present in the operating chamber.

Section L.3

REMOVING AND REPLACING A FRONT DAMPER

Raise the front of the car and remove the hub cap and road wheel. Place a suitable trestle beneath the front door sill as a safety measure to support the car in the unlikely event of the jack slipping. Place a jack beneath the outer end of the lower suspension arm and raise it until the damper arm is clear of the rebound rubber.

Knock back the locking washer and slacken the nut securing the swivel pin rubbers.

Extract the split pin and slacken the slotted nut securing the swivel pin bolt to the damper arm. Tap the circumference of the damper arm eye and, placing a support behind the arm, use a copper hammer to drive the bolt from its tapered seat. It is advisable to unscrew the nut only until it is flush with the end of the bolt and thus protect the bolt threads whilst driving it from its seat. Remove the nut when the bolt is free.

The damper may be withdrawn after removal of the nuts and bolts securing it to the bulkhead cross-member. Access to the nuts is gained from inside the car after removal of the carpet-covered trim panel. Take note of the two locking plates under the heads of the bolts on each damper.

When handling dampers that have been removed from the car for any purpose it is important to keep the assemblies upright as far as possible, otherwise air may enter the operating chamber, resulting in free movement.

Replacement of the dampers is carried out in the reverse order to the dismantling procedure. Ensure that the top links are in the correct position by screwing them fully down and then back approximately one complete turn so that the lug is towards the centre of the car.

Tighten the nut securing the top swivel pin rubbers when the car is standing on its wheels and so prevent excessive pre-loading of the rubber bushes. When tight, lock the nut by bending over the locking washer.

NOTE.—Before fitting the link bolt to the damper arm it is advisable to work the arm a few times through its full range of movement to expel any air which may have found its way into the operating chamber.

Section L.4

REMOVING AND REPLACING A REAR DAMPER

To remove a rear damper unscrew and remove the nut securing the damper arm link to the spring bracket.

Remove the two bolts, nuts, and spring washers securing the damper to the bracket on the body frame.

When handling dampers that have been removed from the car for any purpose it is important to keep the assemblies upright as far as possible, otherwise air may enter the operating chamber, resulting in free movement.

Replacement of the dampers is carried out in the reverse order to the dismantling procedure. Before fitting the damper arm link to the chassis frame it is advisable to work the damper arm a few times through its full range of movement to expel any air which may have found its way into the operating chamber.