1¼ Litre (SERIES Y)

Maintenance and checking of the hydraulic dampers

by Eric Blower

THE dampers fitted are of Girling manufacture, being double-acting, resistance being offered to the compression and to the recoil of the road springs.

The front dampers are Luvax Girling numbered PR5X/20 No. S87/30, the rear left-hand damper being PPR5/7, No. S87/31Y and the rear right-hand damper PPR5/8 No. S87/31X.

When in position on the vehicle maintenance is confined to periodical examination of the anchorage to the chassis and the fixing bolts being tightened as required. Lubrication can be carried out either with the dampers in position or removed; bearing renewal, however, necessitates the removal of the dampers from the chassis.

As the dampers are accurately set to give the correct amount of damping before they leave the works no adjustment is required or provided for.

Any attempt to dismantle the piston assembly by removing the caps will seriously affect the operation and performance.

Every 12,000 miles the hydraulic dampers should be topped up by removing the filler plug and filling up to the bottom of the plug hole with Luvax Girling Official Piston-type Hydraulic Damper Thin Fluid.

As it is of the utmost importance that no dirt or foreign matter should enter through the filler hole, the exterior of the damper should be carefully wiped before removing the filler plug which is situated at the top of the cover-plate.

The operation of topping up must in no way be neglected, for if the low-pressure chamber of the damper is allowed to become empty air will enter the pressure cylinders and impair the action of the damper.

The Luvax Girling Official Piston-type Hydraulic Damper Thin Fluid only must be used as it is a fluid possessing carefully selected properties essential for the dampers' efficient working.

To remove the rear dampers first jack up the rear of the car and take off the road wheel. Then remove the nut and spring washer securing the damper arm to the bracket on the rear axle. Take off the two nuts and spring washers from the bolts securing the damper to the chassis frame, slide back the two bolts and withdraw the damper.

Replacement is carried out in the reverse manner to that detailed for removal but it is advisable to work the lever arm a few times up and down through its full stroke before fitting the link to the bracket on the axle.

When fitting replacement dampers it is essential to check the angle of the lever travel as the dampers are used through nearly the complete available angle of movement. The replacing of the levers in an incorrect position on their splines may cause the damper mechanism to foul when the car is driven.

Great Care Necessary

Hydraulic dampers which have been removed from the chassis should be handled with great care, and it is important that the assemblies be kept upright as far as possible, otherwise air may enter the operating chamber, resulting in free movement.

If the hydraulic dampers do not appear to function satisfactorily, the resistance of the dampers may be checked by bouncing each corner of the car up and down. A uniform movement indicates that no attention is required, but if the resistance is erratic and free movement of the car is felt, the damper should be removed from the car for checking and topping up.

To test a damper correctly it must be removed from the chassis. Indication of its resistance can be obtained by bolting the damper to a plate held in a vice, for this will avoid distortion of the cylinder body. The damper must be held in an upright position.

Move the lever arm up and down through its complete stroke. A moderate resistance throughout the full stroke should be felt. If the resistance is erratic and free movement in the lever arm is noted, it may indicate a lack of fluid.

When adding fluid the lever arm must be worked throughout its full stroke to expel any air that may be present in the operating chambers. If the addition of fluid gives no improvement a replacement damper should be fitted.

Too much resistance, that is when it is not possible to move the

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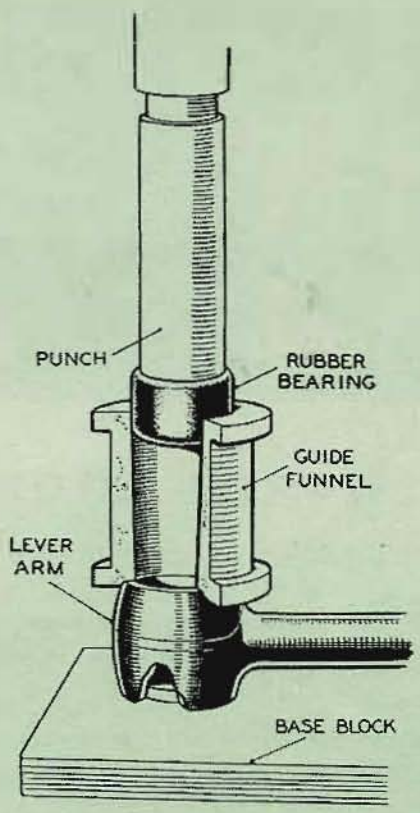


The method of fitting the rubber bearing into the lever arm

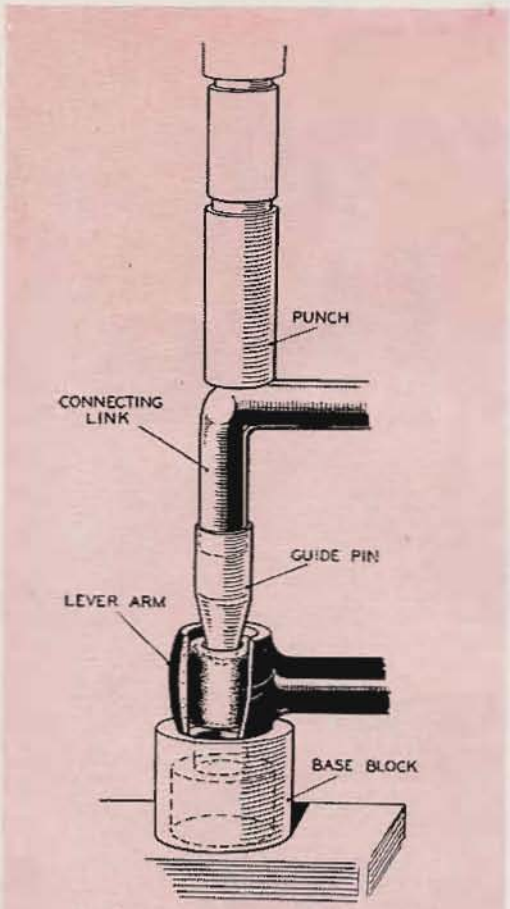
1¼ LITRE HYDRAULIC DAMPERS *(CONTINUED)*

lever arm by hand, indicates a broken internal part or a seized piston; in such cases the hydraulic damper should be changed.

Replacement of Hydraulic Damper Link Bearings

Special tools are necessary for fitting bearings, and a hand press or equivalent apparatus such as a drilling machine should be available.

Light rubber bearings are used between the link and the lever arm and connect the link to the axle. Before dismantling the link from the lever arm the position in which it is attached should be noted. The cranked end of the 'L'-shaped link is fitted from the outside



Fitting the lever arm when the bearing is in position

of the lever arm, with the assembled pin at the other end of the link, also facing outwards from the hydraulic damper movement.

Care must be taken to reassemble the links the correct way round, otherwise it will be impossible to connect them to the axle when refitting to the chassis.

Disconnect the link from the lever arm by pressing out the end of the link from the rubber bearing of the lever arm, and press out the rubber bearing from the lever arm. As the lever arm is a permanent fixture, it must not be removed. Press out the pin and rubber bearing in the end of the link.

To fit new bearings, wash out the boss end of the lever arm to remove any dirt or grease. Rest the end of the lever arm on a base block, as illustrated, and place the guide funnel in position on the lever arm. Damp the outside of the rubber bearing in benzine (petrol or paraffin can be used as a substitute if benzine is not available) and insert in the open end of the guide funnel.

Using a quick action, force the bearing through the tapered bore of the guide into position in the lever arm boss end, using the punch or pressure tool as illustrated; fit the rubber bearings in the lever arm connecting link in a similar manner.

Assembling Connecting Link to Lever Arm

The boss end of the lever arm with the assembled rubber bearing should be placed in position on the base block, noting that the block is different from that used for assembly of the rubber bearing.

Smear the rubber bearing bore with petroleum jelly and fit the connecting link into the guide pin as illustrated, and, guide first, insert the assembly into the rubber. With a quick action, force the guide tool, with the connecting link, into the assembled rubber bearing. The guide pin can be removed through the base block tool.

Fit the pin to the connecting link in a similar manner.

Front Hydraulic Dampers

To remove the dampers, place the car over a pit and place a jack under the lower spring pan.

Jack up until the road wheel is clear of the ground and then remove the road wheel.

Remove the cotter and nut from the top fulcrum bolt and withdraw the bolt, taking care of the thrust washer, rubber seals, retainers and distance piece. Then swing out the hub unit from the levers of the damper and rest on a suitable block, which will give easier access to the inner damper fixing bolts.

In order to extract the two inner bolts, which are threaded into the front cross-member, it will be necessary to spring back the wing valance. From the outer bolts remove the nuts and spring washers, the bolt heads being located inside the cross-member. Press the bolts through the base of the damper and lift the damper from the cross-member.

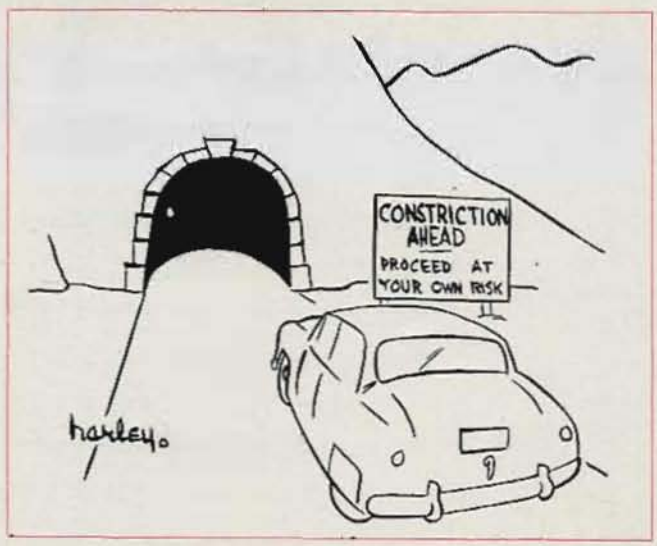
Replacement is carried out in the reverse manner to that detailed for removal.

It is as well to note, before fitting the damper levers to the top outer fulcrum pin, that the lever arms should be worked a few times up and down through their full stroke. The thrust washer, rubber seals, retainers and distance piece must be assembled in their correct order.

The two long nut securing bolts have a long flat on one side of the head, the flat locating against the flange of the spring retaining plate inside the front cross-member to prevent the bolts from turning. They are best inserted upwards through the spring pan hole and spring coils by the use of a socket wrench with a 12-in. extension, the socket wrench being ground away on one side level with the locating flat on the bolt head.

Testing the Front Dampers

This operation is carried out in exactly the same manner as that detailed for the rear dampers, bearing in mind that the damper arm travels through a minimum of 35° each side of the centre.



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