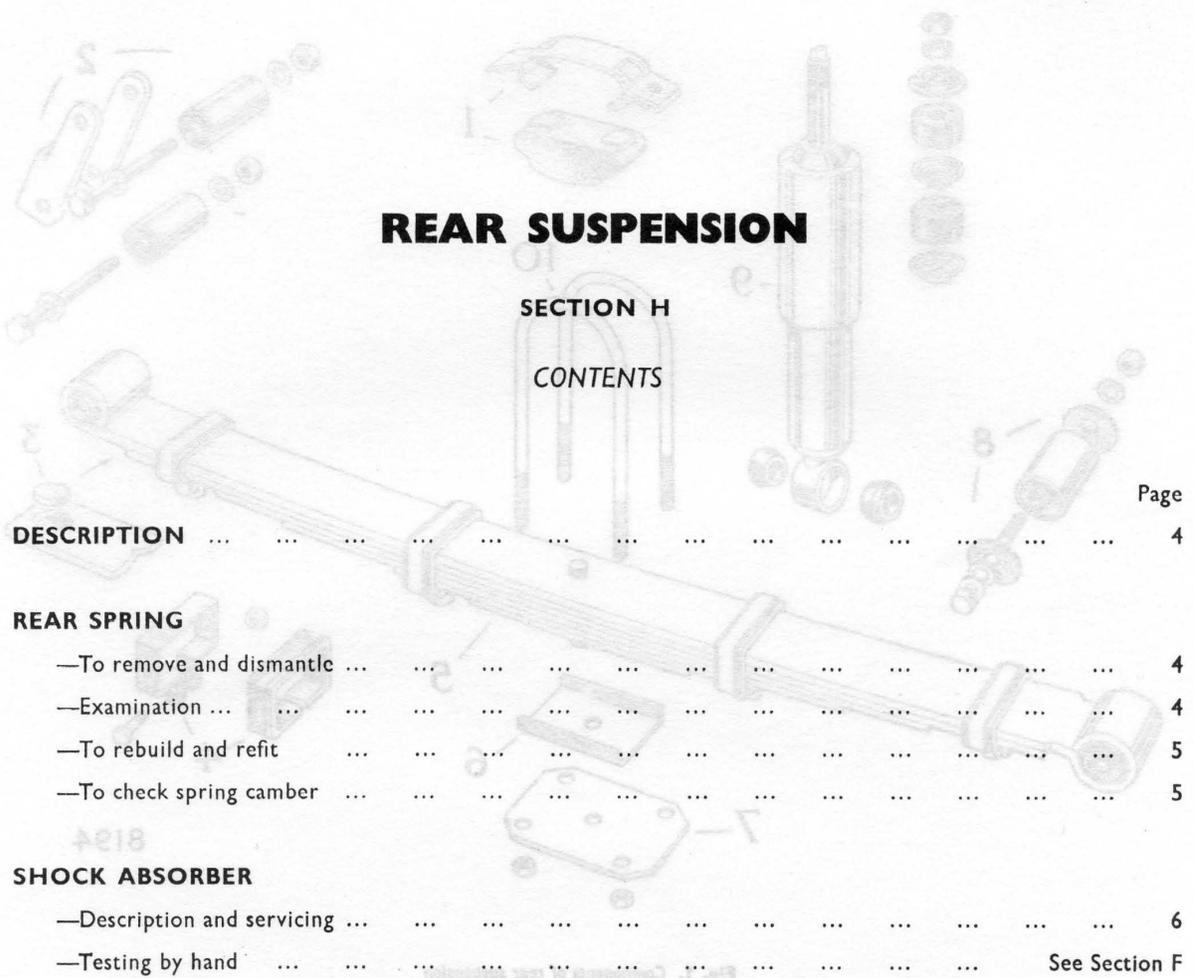


REAR SUSPENSION

SECTION H

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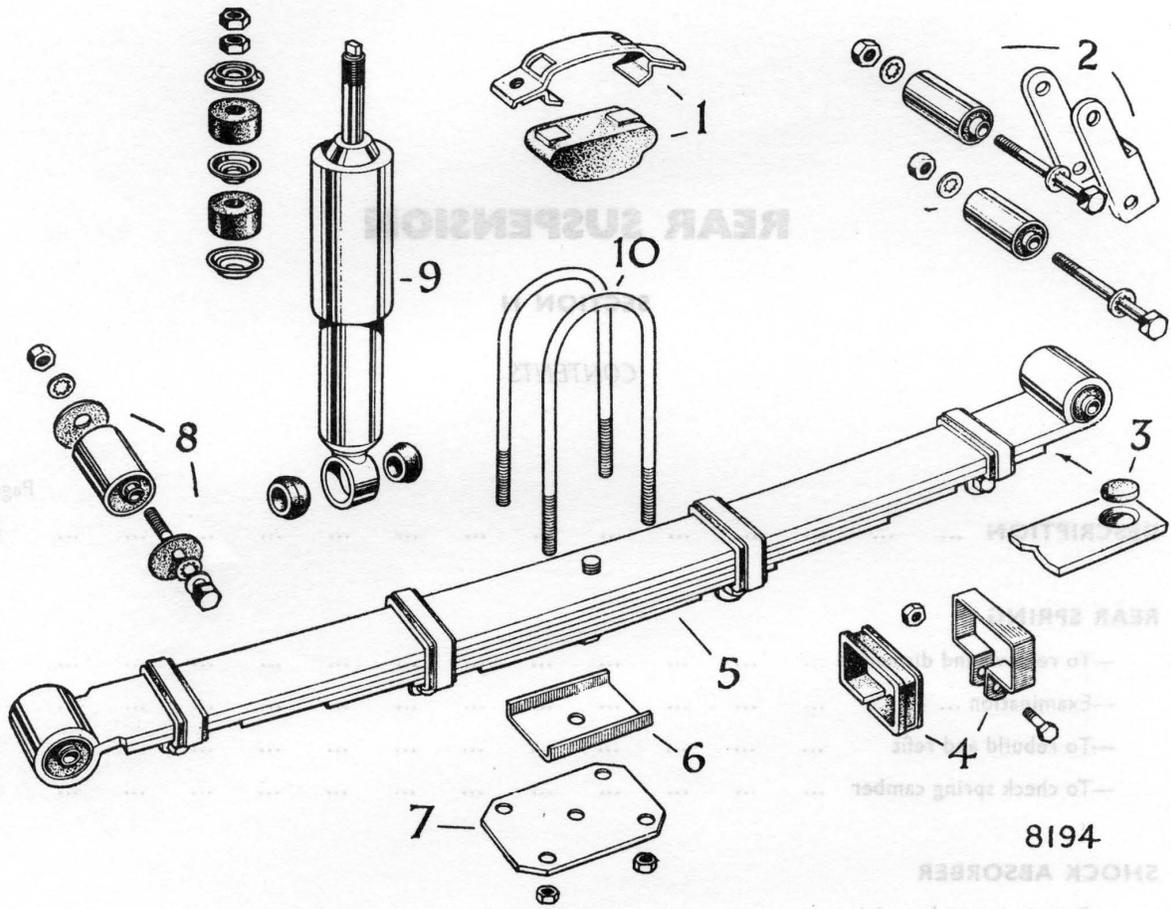


Fig. 1. Components of rear suspension

Alpine

- | | |
|-------------------------------|----------------------------|
| 1. BUFFER TO FRAME | 6. LOCATION PLATE |
| 2. REAR SHACKLE ASSEMBLY | 7. CLAMP PLATE |
| 3. SPRING LEAF THRUST BUTTON | 8. FRONT EYE BUSH ASSEMBLY |
| 4. LEAF CLIP AND RUBBER LINER | 9. SHOCK ABSORBER |
| 5. REAR SPRING | 10. SPRING "U" BOLTS |

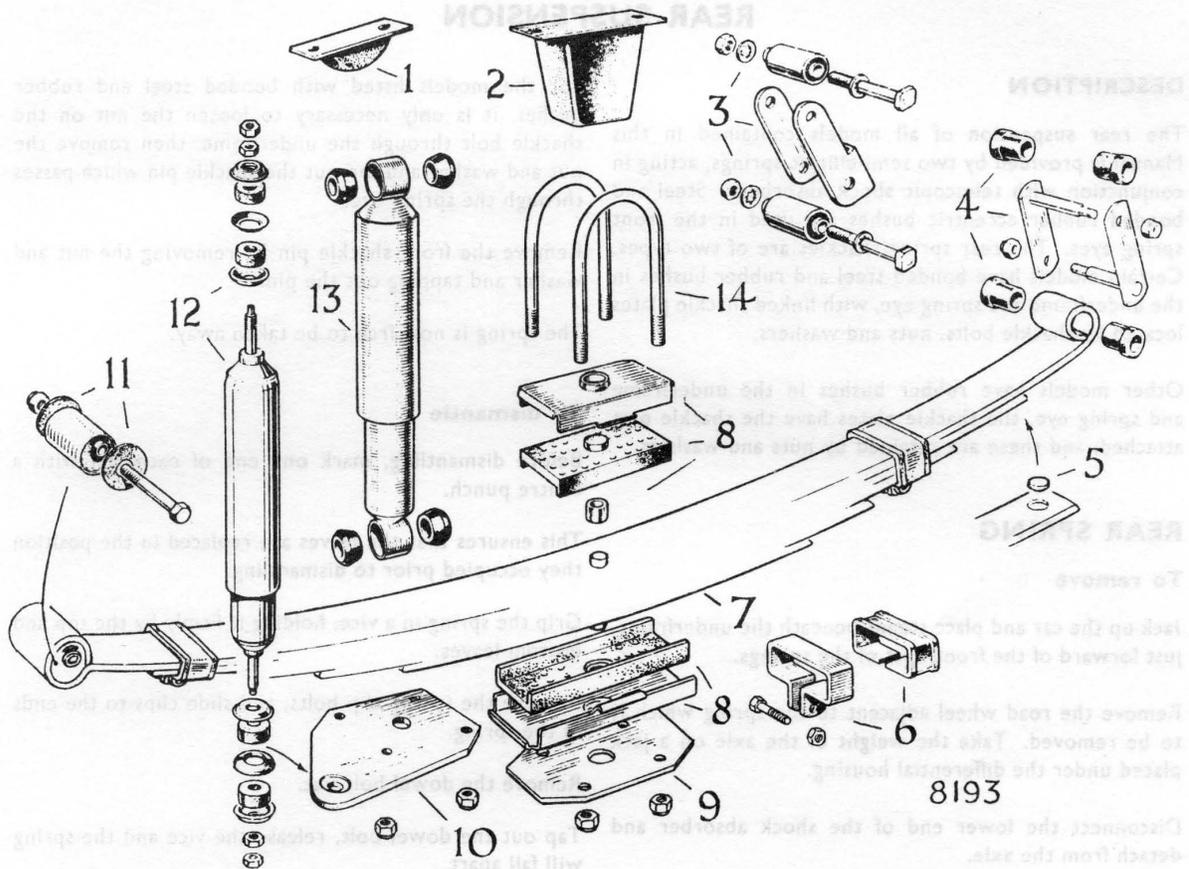


Fig. 2. Components of rear suspension

All models excluding Alpine

Where there is a variation, the models to which it is applicable are noted in brackets

- | | |
|--|--|
| <p>1. BUFFER TO FRAME (MINX, GAZELLE, RAPIER)</p> <p>2. BUFFER TO FRAME (SUPER MINX, VOGUE, SCEPTRE)</p> <p>3. REAR SHACKLE ASSEMBLY (MINX, GAZELLE, RAPIER)</p> <p>4. REAR SHACKLE ASSEMBLY (SUPER MINX, VOGUE, SCEPTRE)</p> <p>5. SPRING LEAF THRUST BUTTON</p> <p>6. LEAF CLIP AND RUBBER LINER</p> <p>7. REAR SPRING</p> | <p>8. SPRING CLAMP RUBBERS (2), RETAINERS (2) AND SLEEVE (1)</p> <p>9. SPRING CLAMP PLATE (SUPER MINX, VOGUE, SCEPTRE)</p> <p>10. SPRING CLAMP PLATE (MINX, GAZELLE, RAPIER)</p> <p>11. FRONT EYE BUSH ASSEMBLY</p> <p>12. SHOCK ABSORBER (MINX, GAZELLE, RAPIER)</p> <p>13. SHOCK ABSORBER (SUPER MINX, VOGUE, SCEPTRE)</p> <p>14. SPRING "U" BOLTS</p> |
|--|--|

REAR SUSPENSION

DESCRIPTION

The rear suspension of all models contained in this Manual is provided by two semi-elliptic springs, acting in conjunction with telescopic shock absorbers. Steel and bonded rubber eccentric bushes are used in the front spring eyes. The rear spring shackles are of two types. Certain models have bonded steel and rubber bushes in the underframe and spring eye, with linked shackle plates located by shackle bolts, nuts and washers.

Other models have rubber bushes in the underframe and spring eye, the shackle plates have the shackle pins attached, and these are retained by nuts and washers.

REAR SPRING

To remove

Jack up the car and place stands beneath the underframe, just forward of the front eyes of the springs.

Remove the road wheel adjacent to the spring which is to be removed. Take the weight of the axle on a jack placed under the differential housing.

Disconnect the lower end of the shock absorber and detach from the axle.

Clean the projecting threads of the "U" bolts with a wire brush and paraffin or penetrating oil, and remove the nuts and washers from the "U" bolts.

Jack up the rear axle, tapping the "U" bolts as necessary until the axle is parted from the spring.

Remove the "U" bolts, clamp plate, top and bottom rubbers and retainer plates and sleeve (where fitted), or axle location plate.

If wedges are fitted, note which way they are facing before removal, in order that they may be replaced the same way round.

Disconnect the rear shackle assembly by removing the nuts and washers from the shackle pins. For the type with rubber bushes and combined shackle plates and pins, it is necessary to remove all the nuts and washers, and tap out both top and bottom pins in order to remove the spring.

For the models fitted with bonded steel and rubber bushes, it is only necessary to loosen the nut on the shackle bolt through the underframe, then remove the nut and washer and tap out the shackle pin which passes through the spring eye.

Remove the front shackle pin by removing the nut and washer and tapping out the pin.

The spring is now free to be taken away.

To dismantle

Before dismantling, mark one end of each leaf with a centre punch.

This ensures that the leaves are replaced in the position they occupied prior to dismantling.

Grip the spring in a vice, holding it firmly by the top and bottom leaves.

Remove the spring clip bolts, and slide clips to the ends of the spring.

Remove the dowel bolt nut.

Tap out the dowel bolt, release the vice and the spring will fall apart.

Remove the thrust buttons and clip rubbers (if fitted).

Examination

Clean the spring leaves with paraffin.

Check thrust buttons (if fitted) for excessive wear, and replace, if necessary, before reassembling the spring.

In the event of fracture of a spring leaf, the other leaves, particularly the ones above and below the broken leaf, should be examined for cracks and damage.

Cracks will often show up on the dry surface, by the exudation of paraffin along the line of the crack.

Any suspect leaves should be replaced.

The "setting up" of spring leaves is not recommended, and in the case of a weak spring, a new or service replacement should be fitted.

To rebuild

Before rebuilding the spring, the leaves should be thinly coated with graphite grease.

Rebuilding is a reversal of the dismantling instructions, but alignment of the leaves will be greatly facilitated if a suitable length of steel rod is inserted through the dowel bolt hole.

An attempt to insert the dowel bolt at this stage may cause damage to the threads.

With the spring correctly assembled, compress the leaves at the centre with a suitable clamp or press, remove the guide rod, insert the dowel bolt, head to the top leaf, fit the nut and tighten.

Certain models have a sleeve fitted over the head of the dowel bolt. Do not forget to replace this.

Position the clips, check the clip rubbers (if fitted), and replace if necessary.

Tighten the bolts, taking care not to distort the clips.

Check that the leaves are lying flush upon each other and the lower leaves are not protruding.

Where the bonded steel and rubber bushes are fitted to the rear shackle assembly, they should be pressed out of the spring eye and underframe for renewal purposes.

The use of a suitable withdrawal tool is recommended to remove the bush in the underframe.

If a new front eye bush is fitted, it is imperative that it is pressed in with the shackle pin hole at the top of the spring eye. (See Fig. 3).

A tolerance of $\pm \frac{1}{32}$ in. (.8 mm.) must not be exceeded. To ensure this is maintained, it is recommended that the spring is scribed in the manner illustrated at (A, Fig. 3) before fitting.

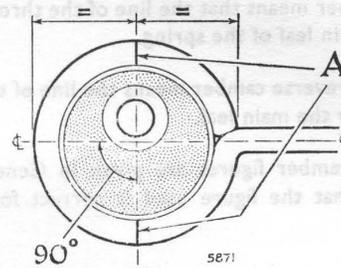


Fig. 3. Method of marking spring eye

To refit

Refitting is the reverse of "To remove", but the final tightening of the spring "U" bolts and shackle pins should be carried out with the car standing unladen on the road wheels. This ensures that the spring eyes and shackle bushes are not subject to excessive twist when in the bump or rebound position.

Torque the "U" bolt nuts to the figure given in General Data. Make sure that the figure used is the correct one for any given model.

To check spring camber

Spring camber is the difference in height between the top of the main leaf and a line drawn through the centres of the spring eyes.

As will be appreciated, this varies according to the weight carried in the vehicle.

In order to check the rear spring laden camber, load the vehicle with weights to the value shown in General Data under "Rear Suspension". Make sure the figure used is the correct one for any given model. Stretch a length of thread between the spring eye centres, and measure the distance between the top centre of the main spring leaf and the thread ("A", Fig. 4).

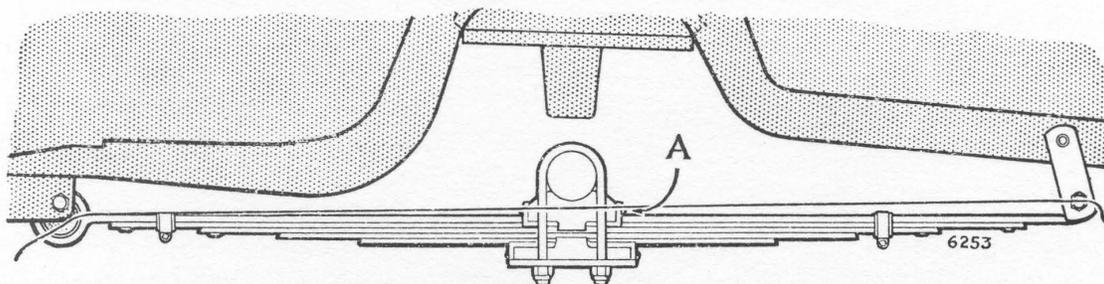


Fig. 4. Checking spring camber

Positive camber means that the line of the thread will be above the main leaf of the spring.

Negative or reverse camber means the line of the thread will be below the main leaf.

The spring camber figures are given in General Data. Make sure that the figure used is correct for a given model.

SHOCK ABSORBER

DESCRIPTION

The body of the shock absorber is mounted almost vertically from the rear axle to the underframe. It is direct acting, no links or levers being required.

Servicing

These units are completely sealed, no topping up, no adjustment or other servicing is required, except for periodical checking of mountings and rubber bushes, which can be carried out without the aid of special tools. In the event of any shock absorber requiring attention, remove the faulty unit and fit a replacement shock absorber.

Testing by hand

See Section F, "Shock absorber, testing by hand".

GIRLING MONITUBE DAMPER

Certain models are fitted with the Girling Monitube damper, which is much more slender in design than the conventional type of damper. Both types perform the same function, but are not interchangeable, except in pairs.

When replacing one, always obtain a replacement of the same type.

The Girling Monitube damper differs from the conventional unit in two respects—firstly, as its name implies, in being of single tube construction, and secondly, by being pressurised.

In this type of construction, the gas reservoir is situated at one end of the working cylinder, instead of in the annular space surrounding the cylinder.

Pressurisation dispenses with the low pressure valves required in conventional dampers, and reduces the complexity, valve inertia and noise.

Since the working fluid is always under pressure, cavitation is eliminated, which also reduces noise.

Pressurisation also results in a self-extending action being imparted to the dampers, which consequently act as low-rate springs.

The effect of this on vehicle suspension is negligible, and can be ignored. It does, however, affect the normal hand testing procedure as given for conventional dampers; therefore this form of testing cannot be applied to Girling Monitube dampers.

