

## SECTION J

## THE FRONT SUSPENSION

**Checking and Adjusting Front Wheel Alignment.**

When checking the track width at the front and rear of the front wheels, use a trammel, or any special proprietary alignment equipment available.

The wheels should run parallel and have no toe-in. The correct setting is obtained with equal measurements back and front.

See that the tyres are inflated to the correct pressures.

Set the wheels in the straight-ahead position.

Set the arms of a trammel to the height of the hub centre.

Place the trammel to the rear of the wheels and adjust to the centre of the tyre treads. Chalk the tread of the tyres and mark chalked patch with the trammel vertically. Push the car forward one half-turn of the wheels and take the front reading from the same marks on the tyres.

If adjustment is necessary, proceed as follows:—

Slacken off the locknuts at the end of the short tie-rods.

By means of the spanner flats on the rods, rotate each of the tie-rods equally in the desired direction. These both have right-hand threads.

**NOTE:** To ensure that the steering gearbox rack is in the central position and that the steering geometry is correct, it is important that the tie-rods are adjusted to exactly equal lengths. This can be ascertained by measuring from the end of the flats to the locknuts.

**To Measure Camber.**

In the static position the wheel has  $1^\circ$  positive camber, but from this static position to full bump or rebound the camber changes to minus  $\frac{1}{2}^\circ$ .

Ensure that the tyre inflation pressures are correct and that the load on the axle is 9 cwt. 3 qrs.

Make sure also that the wheels are in the straight-ahead position when the check is made.

**To Measure Castor Angle.**

In the static position this angle is  $2^\circ \pm \frac{1}{2}^\circ$ .

Check that the vehicle is on a level surface, that the front wheels are in the straight-ahead position, that the tyres are correctly inflated, and that the load on the axle is 9 cwt. 3 qrs.

**To Measure King Pin Inclination.**

In the static position this angle is  $9^\circ$ , but from full bump to rebound this varies by  $1\frac{1}{2}^\circ$ , making it important to take the measurements with the correct load on the axle.

**NOTE:** To ensure correct checking of the steering angles we recommend the use of location jigs and jacks. This ensures that the chassis frame is square and in the correct static position.

Place the car on a flat surface, remove the rear wheel and drop the frame down onto the screw-type jack.

Place the front support under the centre of the front suspension wishbone pivots. Weight down or pull down the front end of the car firmly onto the front support. Use manually operated jacks to relieve the tyre grip when swinging the wheels to check the angles and to bring the frame members parallel to the ground surface.

**Removing the Front Suspension.**

Jack up the front of the car by a suitable jack placed under the centre of the front cross-member, until the front tyres are just clear of the ground.

Place two additional jacks under the spring pans.

Remove the front wheels. Block up under chassis.

Jack these up, taking some of the weight, until the hydraulic damper levers are just clear of the rebound rubbers.

Disconnect the hydraulic brake hoses.

Slacken the steering tie-rod nuts and screw the tie-rods out of the steering ball joints by means of the flats on the rods.

Remove the cotters and nuts from the two outer fulcrum bolts. Draw out the bolts and take away the front hub and swivel pin units complete. (Take care of the thrust washers, rubber seals, retainers and fulcrum pins.)

Release the jacks from under the spring pans.

Press down the lower wishbone assemblies and remove the coil springs.

Remove the four bolts holding the spring pan to the levers.

Remove the cotters, nuts and washers from the ends of the inner lower fulcrum pin and slide off the levers and the rubber bushes.

Remove the bolts holding the lower fulcrum pins to the chassis cross-member.

Remove the bolts holding the hydraulic dampers to the top of the chassis cross-member.

Inside the outer ends of the front cross-member will be found the coil spring locating plates. These are each attached by one small bolt.

**To Dismantle the Swivel Pins.**

Unscrew the upper and lower links from the ends of the swivel pins. The left-hand swivel pin has a left-hand thread at each end.

The stub axle is located by a collar on the swivel pin and the stem of the steering lever engaging a groove in the pin. To separate the two the steering lever must be withdrawn from the stub axle, but this procedure is not advised unless absolutely necessary.

