

Checking of Front Axle Support

Job-No.

33 — 8

a) The Check Gage

Checking of the front axle support is done with a check gage which can be used for all passanger cars fitted with sub-frames. The check gage consists of the two-piece Check Gage 120 589 09 23 proper and a Supplementary Gage 120 589 10 28 which is required for front axle supports where the engine suspension consists of 4 rubber mountings (4-point suspension).

For straightening the front axle support, Pressure Spindle 120 589 00 27 has been developed.

b) Checking the Suspension Points of the Front Axle Support

The lower part of the two-part check gage is made to support the front axle support (Fig. 33 — 8/1).

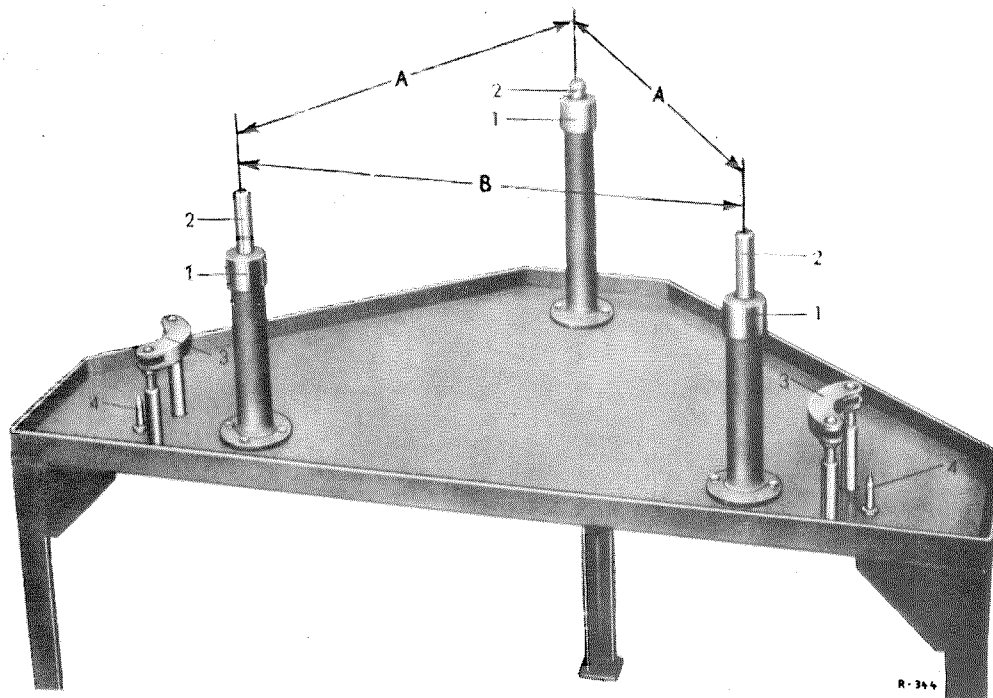


Fig. 33 — 8/1

- 1 Support bolts for front axle support
- 2 Check bolts
- 3 Checks rests for the upper control arm mountings

- 4 Check bolts for the shock-absorber fixing holes
- A = 527 ± 0.75 mm
- B = 614 ± 0.75 mm

The front axle support should be placed with its upper side downward over the check bolts (2). The front axle support must slide down until it touches the support bolts (1) without forcing. The rests (3) are used to check the surfaces (1) (see Fig. 33 — 8/2) of the upper control arm mountings and the check bolts (4) are for checking the fixing holes for the shock-absorbers.

If the front axle support cannot be placed on the lower section of the check gage without forcing, it must be carefully examined to see whether it has not been compressed or extended as a result of an accident. If it has, the front axle support should be straightened with the aid of Pressure Spindle 120 589 00 27 (see Fig. 33 — 8/2).

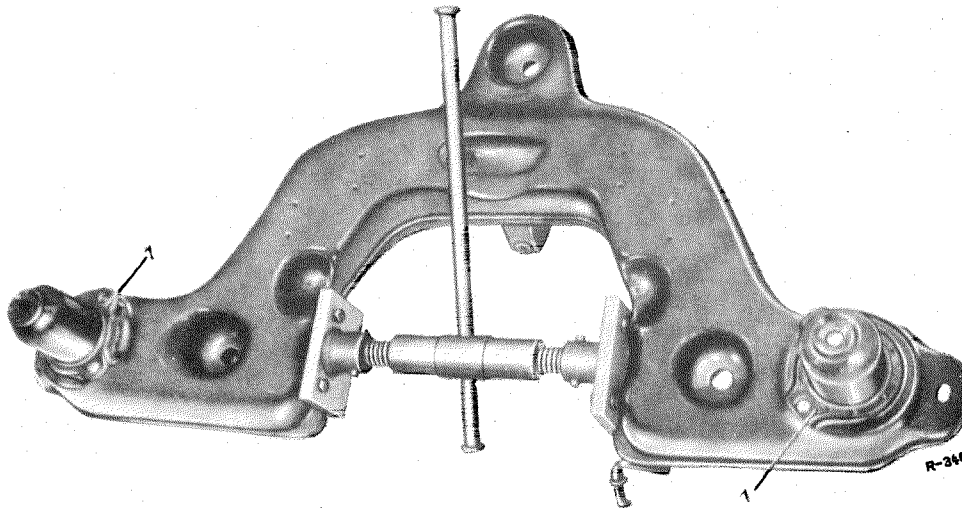


Fig. 33 — 8/2

1 Contact surface of upper control arm mounting

The pressure spindle can also be used for pulling the arms of the front axle support together. To facilitate this, the pressure cheeks of the pressure spindle have 3 bores drilled in them and these bores correspond to the drilling pattern for the steering mounting and to that of the steering relay arm mounting. The cheeks must be screwed to the front axle support with three M 10×28 hexagon screws at each cheek (see Fig. 33 — 8/2).

If the front axle support is also distorted in the vertical plane, that is to say, twisted, it cannot be straightened again but must be replaced.

Note: The front axle support must not be straightened on the gage as this would result in the check bolts being bent. After being straightened, the front axle support must be capable of being placed on the lower section without forcing and must lie evenly on the 3 support bolts (1).

Now check the parallelity of the two contact surfaces (1) for the upper control arm mounting. The parallelity can be checked by inserting a feeler gage between the surface (1) of the front axle support and the check rest (3). A deviation from parallelity of 1—2 mm is permissible. The left and right bores for the shock-absorber mountings at the right and left should be checked with the aid of the check bolts (4) (sight-checking). The check bolt must lie in the middle of the bore. Deviations up to 3 mm maximum are permissible. Domes which are slightly damaged, can be straightened warm.

c) Checking the Bores for the Control Arm Mounting

The upper section of the two-part check gage is made for checking the bores of the control arm mounting (Fig. 33 — 8/3).

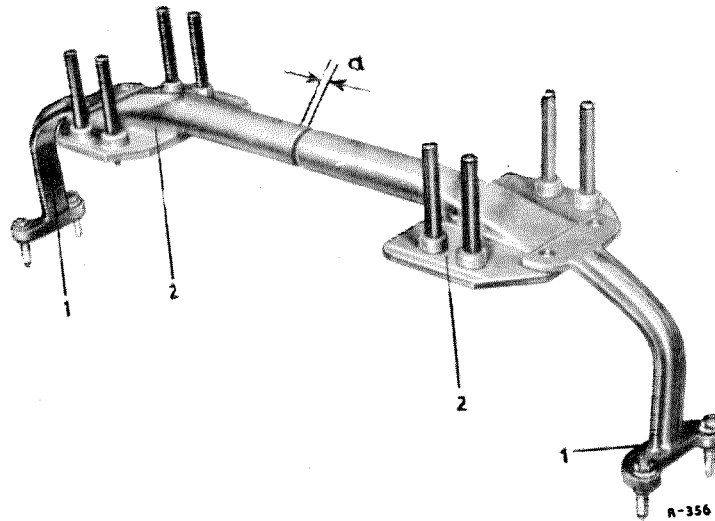


Fig. 33 — 8/3

- 1 Contact plate with check bolts for upper control arm mounting
- 2 Contact plate with check bolts for lower control arm mounting

After checking the suspension points of the front axle support and straightening where necessary, place the upper section on the front axle support. Position the upper section in such a way that in the first place the 8 check bolts of the contact plates (2) (Fig. 33 — 8/3) are guided into the bores for the lower control arm mounting.

It must be possible to insert the check bolts in the threaded bores without forcing (Fig. 33 — 8/4 and Fig. 33 — 8/5).

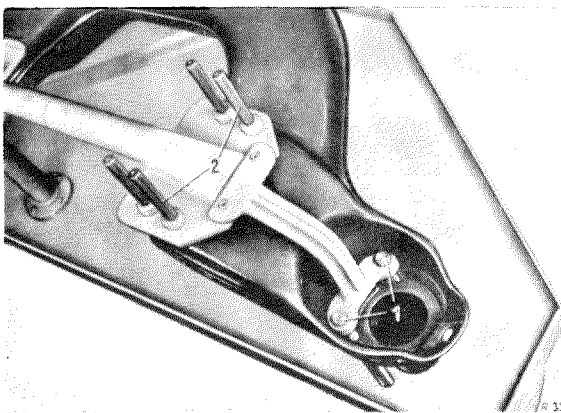


Fig. 33 — 8/4

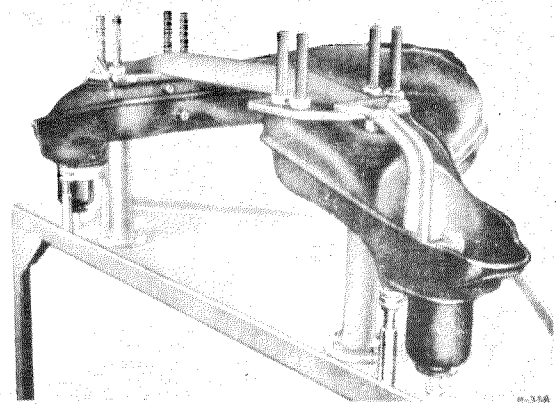


Fig. 33 — 8/5

In order to compensate for any variation in the distance between the left and right bores, the upper section is divided in the middle on the telescope system so that it can be adjusted (see "a" in Fig. 33—8/3).

Note: In order to indicate the normal dimension, a setting mark has been made on the center section.

The bores for the upper control arm mounting should now be checked by means of the 4 check bolts of the contact plates (1), two at the left and two at the right (sight-checking). The check bolts must be exactly in the middle of the bores. This check enables the distance between the outer bores (2) of the lower control arm mounting and the two bores (1) of the upper control arm mounting to be measured (see Fig. 33—8/4). The specified distance of 159 ± 3 mm must be strictly maintained (see also Fig. 33—8/9) since the front wheel camber depends on this dimension. If there is any appreciable deviation, it is possible that the scope of adjustment offered by the eccentric bolt of the front axle will not be sufficient to enable the same camber to be obtained at the left and the right.

d) Checking the Rear Engine Suspension

By means of Supplementary Gage 120 589 10 23, the distances between the bores and the height of the rear engine suspension can be checked (Fig. 33—8/6).

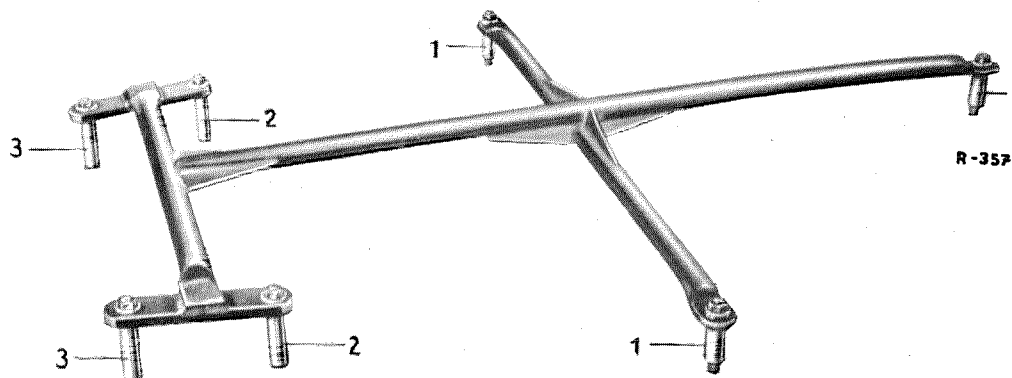


Fig. 33—8/6

- 1 Slip-on bolts for the lower section of the check gage
- 2 Check bolts for the rear engine suspension for Models 190 and 190 SL
- 3 Check bolts for the rear engine suspension for Model 220 S

The supplementary gage should be placed with its 3 bolts (1) (Fig. 33—8/6) on the check bolts (2) (Fig. 33—8/7) of the lower section of the two-part check gage.

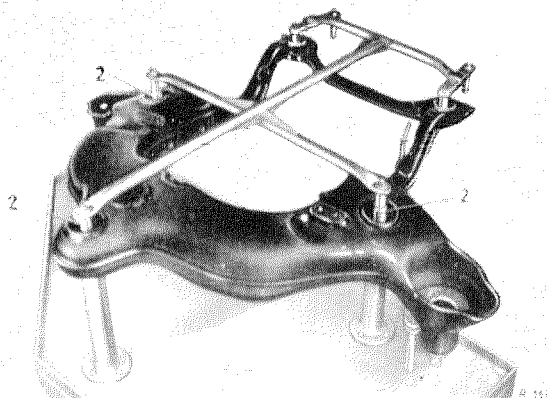


Fig. 33—8/7

The two check bolts (2) (see Fig. 33 — 8/6) must be inserted in the bores at the support arms for the rear engine suspension. The check bolts (2) must then be in the middle of the bores and their ends must be flush with the lower side of the cross tube. Deviations of up to 2 mm in the vertical and in the horizontal planes are permissible.

Note: The check bolts (2) are for checking on Models 190 and 190 SL, the check bolts (3) for Model 220 S. Care must be taken to ensure that the shorter check bolts (2) for Models 190 and 190 SL and the longer check bolts (3) for Model 220 S are not inadvertently interchanged (see Fig. 33 — 8/6). The bolts are therefore marked "Typ 190" (Model 190) or "220 S".

e) Checking the Front Axle Support on a Surface Plate

If a check gage is not available for checking the front axle support, the front axle can also be checked for possible distortion on a surface plate. Three bolts — the lengths of which are shown in Fig. 33 — 8/8 and the check diagram Fig. 33 — 8/9 — are placed on the surface plate and the front axle support then laid upon them so that the three points of suspension are exactly on the bolts. A gage stand can now be used to check at the various checking points (in the vertical plane) according to Fig. 33 — 8/9.

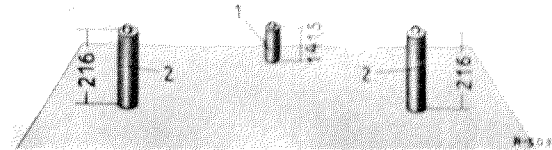
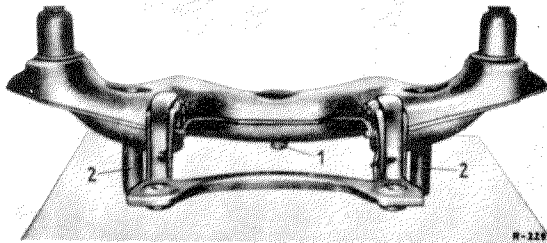


Fig. 33 — 8/8

1 Support bolt 141.5 mm long
2 Support bolt 216 mm long

f) Check Diagram for the Front Axle Support

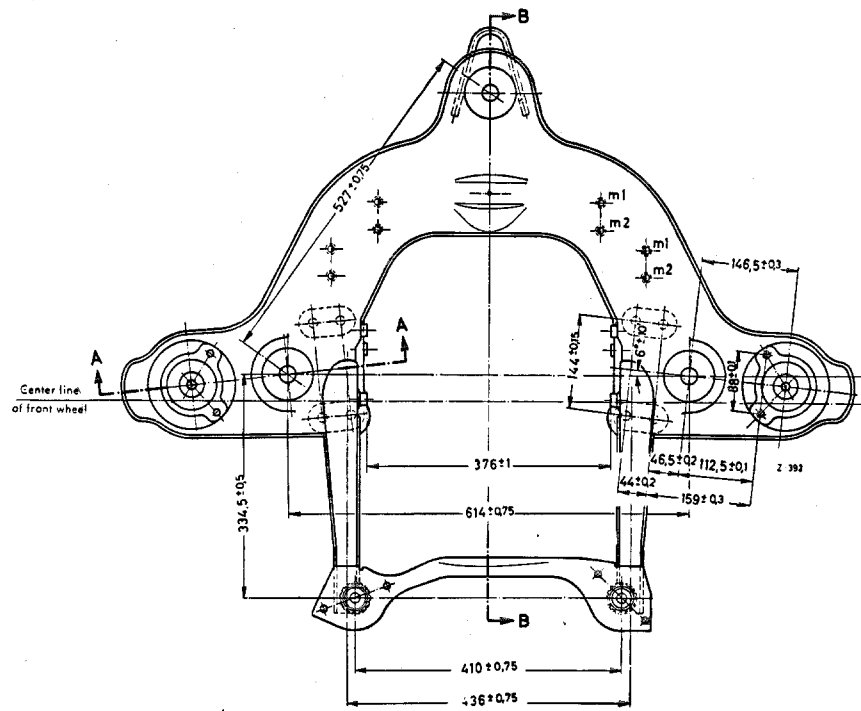
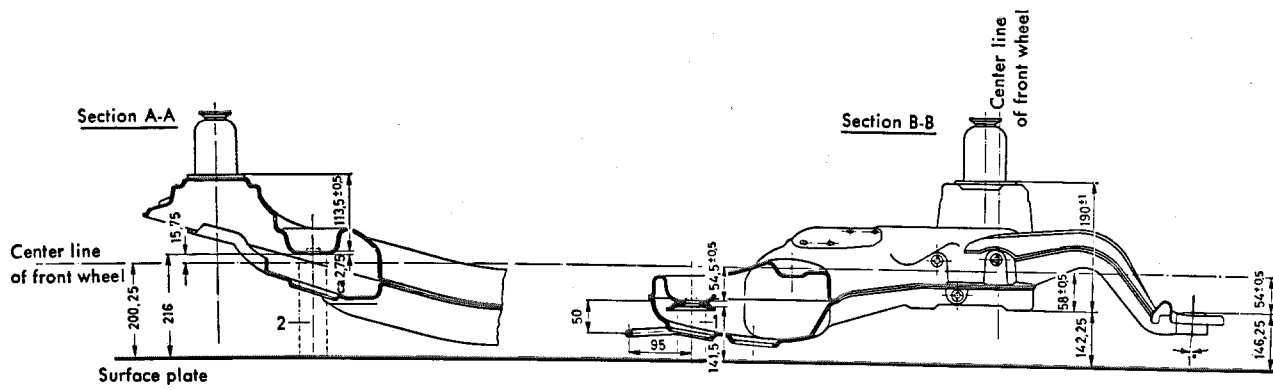


Fig. 33 — 8/9

- 1 Support bolt 141.5 mm long
- 2 Support bolt 216 mm long

Arrangement of brackets for the steering shock-absorber

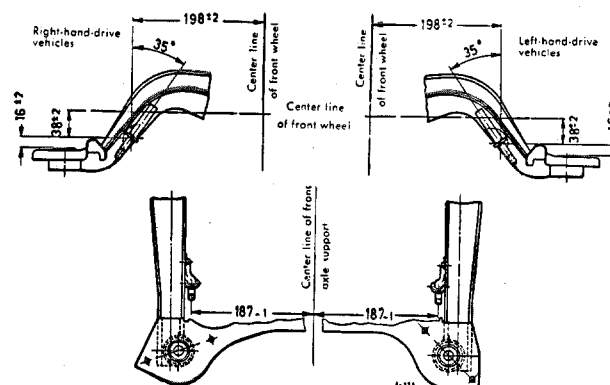


Fig. 33 — 8/10