Special Tools

Beam compass	Measuring length 1,500 mm	000 589 35 19 00
	Measuring length 2,500 mm	000 589 36 19 00
Measuring kit for beam compass		116 589 11 63 00
Measuring kit for beam compass (accessories)		115 589 38 63 00
Spirit level measuring range 0^{o} to 5^{o}		001 589 33 21 01[1])
Measuring instrument for semi-trailing arm position of rear axle	Diagonal swing axle	107 589 02 23 00
	Diagonal swing axle with starting torque compensation	116 589 16 21 00

1) Individual component of caster measuring instrument 001 589 33 21 00 for Models 107, 114, 115.

Note

Additional mechanical chassis measurements are meant for vehicles following an accident or suspected of an accident subsequent to normal chassis measurements.

This includes axle base measurements. The difference between left and right or the effective distance are used for evaluation (Fig. 1).

The two beam compasses having a measuring length of 1,500 and 2,500 mm are provided with two measuring slides, with one of the measuring slides being provided with a 1/10 mm vernier scale for precision adjustment. The beam compasses are provided with normal measuring points (Fig. 2).

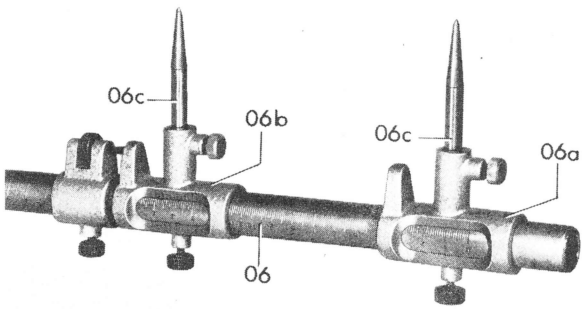

Fig. 2

06 Beam compass
06a Measuring slide without vernier scale
06b Measuring slide with vernier scale
06c Measuring points (normal version)

The individual measurements on chassis require additional inserts, combined in a measuring kit (Fig. 3).

The kit also contains the testing device for frame alignment at front end of Model 116.

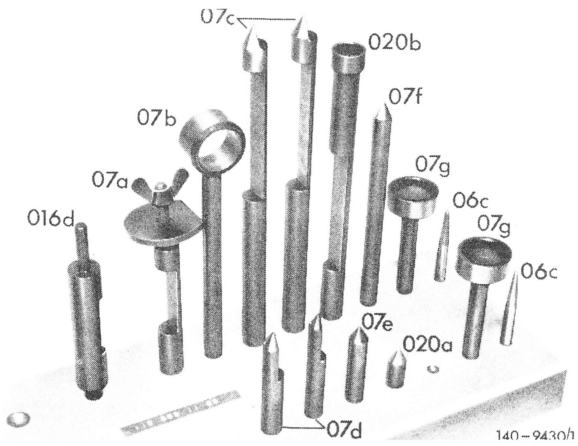

Fig. 3

06c Measuring points (normal version), length 100 mm
07 Measuring kit for beam compass
07a Holding pin with washer and wing nut
07b Measuring bolt with ring, length 167 mm
07c Measuring bolt with tip, length 237 mm
07d Measuring bolt with tip, length 82 mm
07e Measuring bolt with tip, length 60 mm
07f Measuring bolt with tip, length 163 mm
07g Measuring bolt with cup, length 77 mm
016d Rear mount of testing device for bearing of front axle on frame floor (for Model 116 only)
020 Measuring set (accessories for Models 107, 114, 115)
020a Measuring bolt with tip, length 25 mm
020b Measuring bolt with cup, length 217 mm

During diagonal measurements, always note value of distance measured at the left and right and then determine difference. The slide without vernier should then not be in O-position, but may be held in any given position.

During effective distance measurements, clamp slide without vernier accurately into O-position.

Checking

1 On Model 107, insert holding pin (07a) for beam compass into check bore "K" in frame floor and attach with washer and wing nut (Fig. 4 and 5).

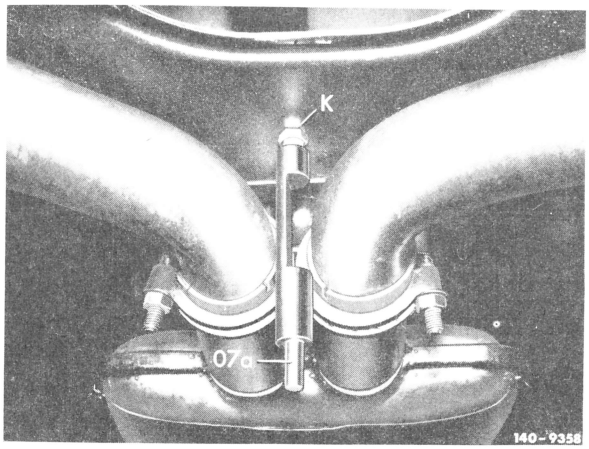

Fig. 4
Model 107.02
07a Holding pin with washer and wing nut
K Check bore in frame floor

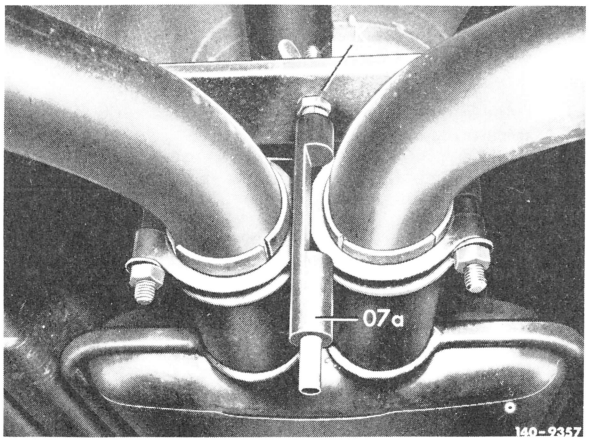

Fig. 5
Model 107.04
07a Holding pin with washer and wing nut
K Check bore in frame floor

2 On Models 114, 115, position bridge 021 against frame floor (Fig. 6) and align to vertical position by means of spirit level (013) (Fig. 7).

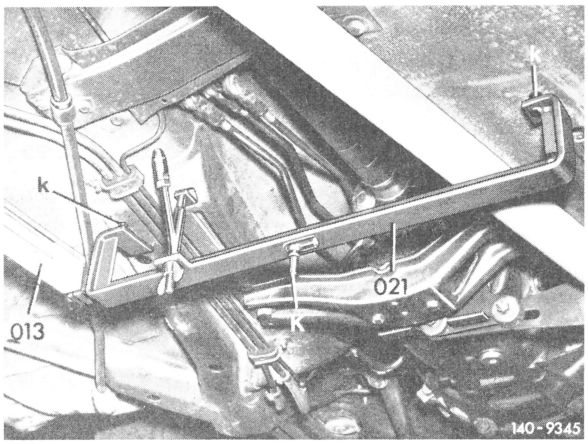

Fig. 6
Model 114, 115
013 Spirit level
021 Bridge (accessory to measuring kit)
K Check bore in bridge
k Check bores in frame side member

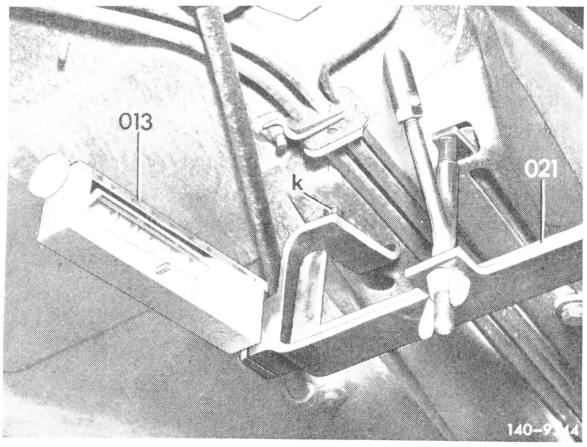

Fig. 7
013 Spirit level
021 Bridge

Front Axle

3 Measure distance "V1" from check bore "K" to outside bore in lower control arm with beam compass, measuring length 2,500 mm (06) and measuring bolt with tip, length 25 mm (020a) (Fig. 8 and 9).

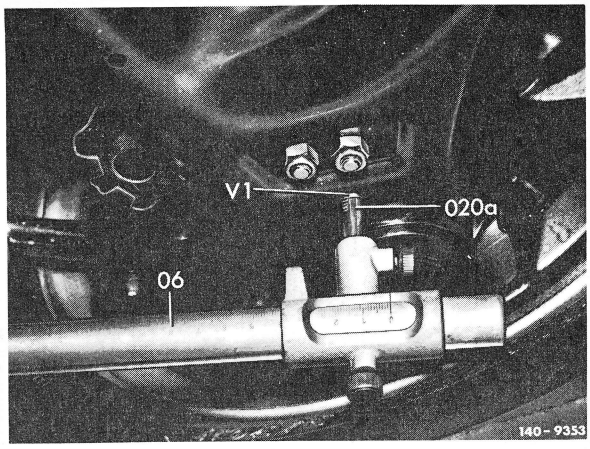

Fig. 8

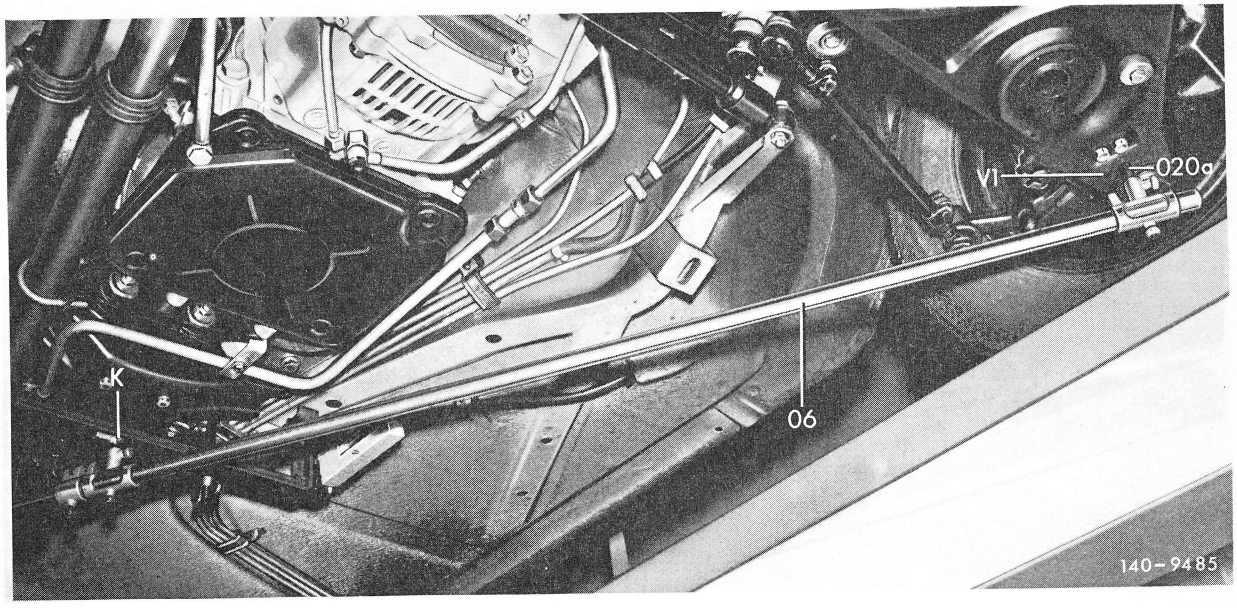

Fig. 9

4 Measure distance "V2" from check bore "K" to hex. screw of front bearing in frame side member left and right with beam compass measuring length 1,500 mm (06) and measuring bolt with tip, length 237 mm (07c) (Fig. 10).

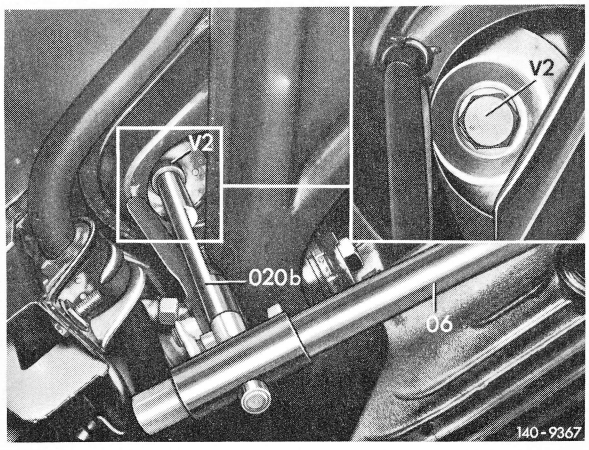

Fig. 10

Rear Axle

5 Measure distance "H1" from check bore "K" to outer hex. screw of lower shock absorber suspension on semi-trailing arm left and right with beam compass, measuring length 2,500 mm (06) and measuring tips (standard equipment, 06c) (Fig. 11 and 12).

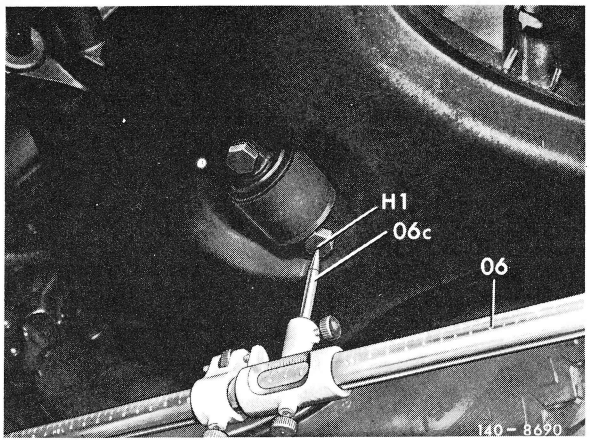

Fig. 11

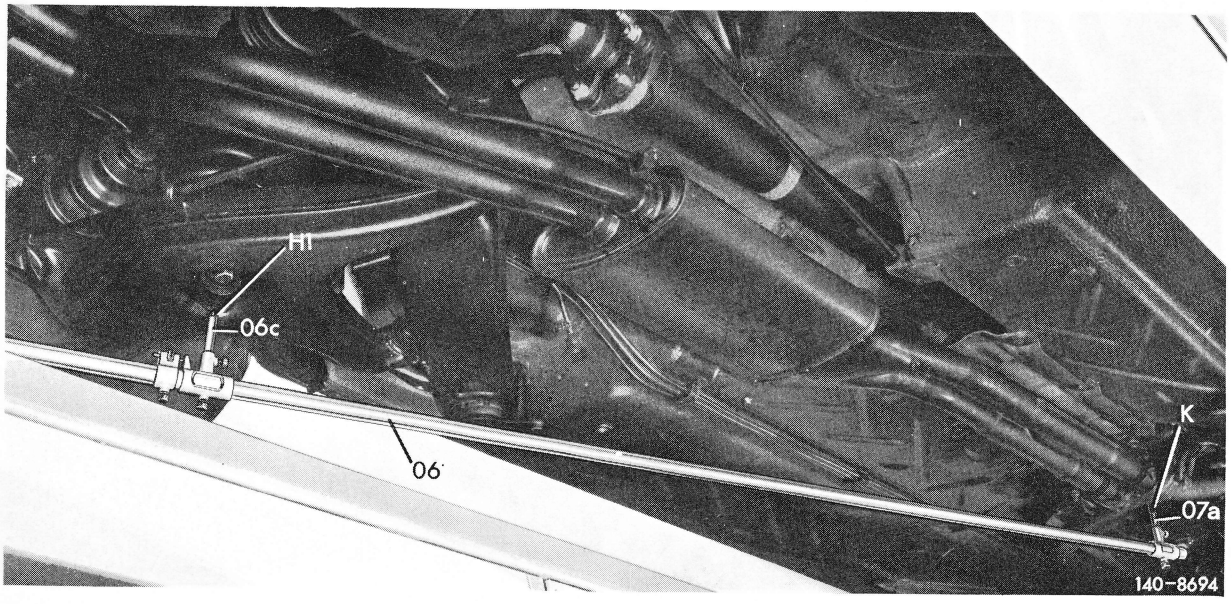

Fig. 12

6 Measure distance "H2" from check bore "K" to hex. screw of front bearing on frame floor left and right with beam compass, measuring length 1,500 mm (06) and measuring bolt with cup, length 77 mm (07g) (Fig. 13 and 14).

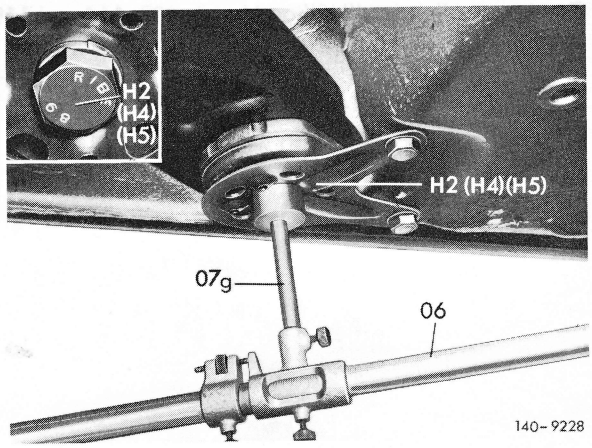

Fig. 13

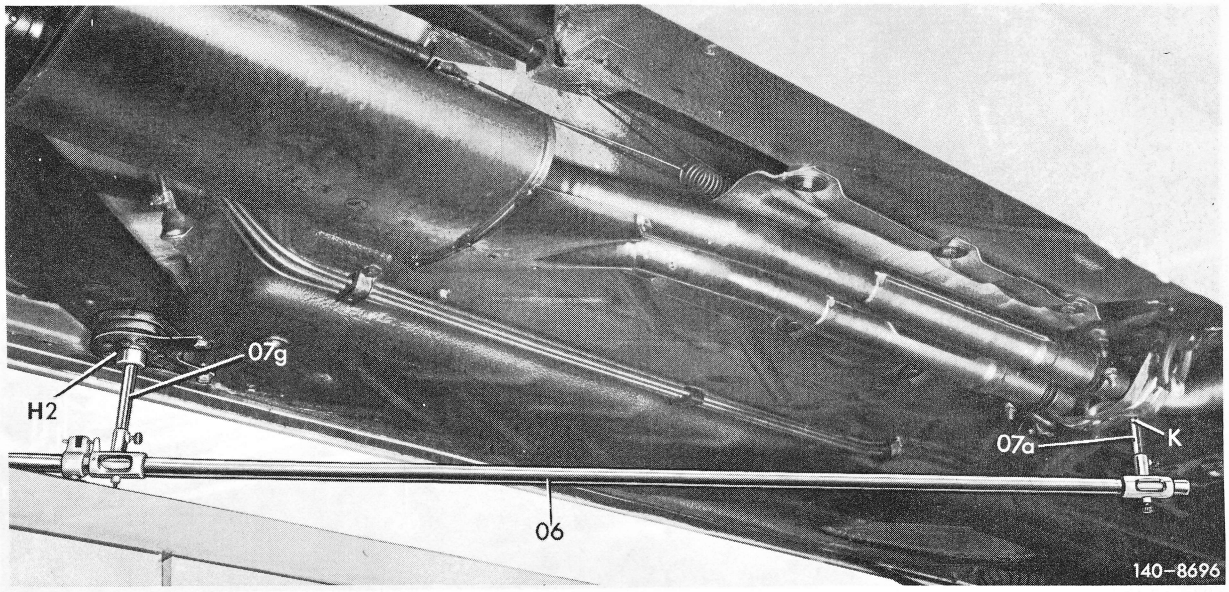

Fig. 14

7 Measure distance "H3" on Models 107, 114 and 115 with rear bearing second version from check bore "K" to locating bore "FH" in rubber mounting of rear bearing with beam compass, measuring length 2,500 mm (06) and measuring bolt with tip, length 163 mm (07f) (Fig. 15 and 16).

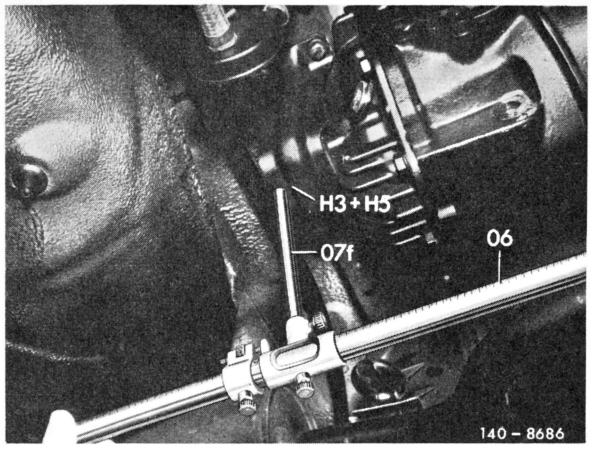

Fig. 15

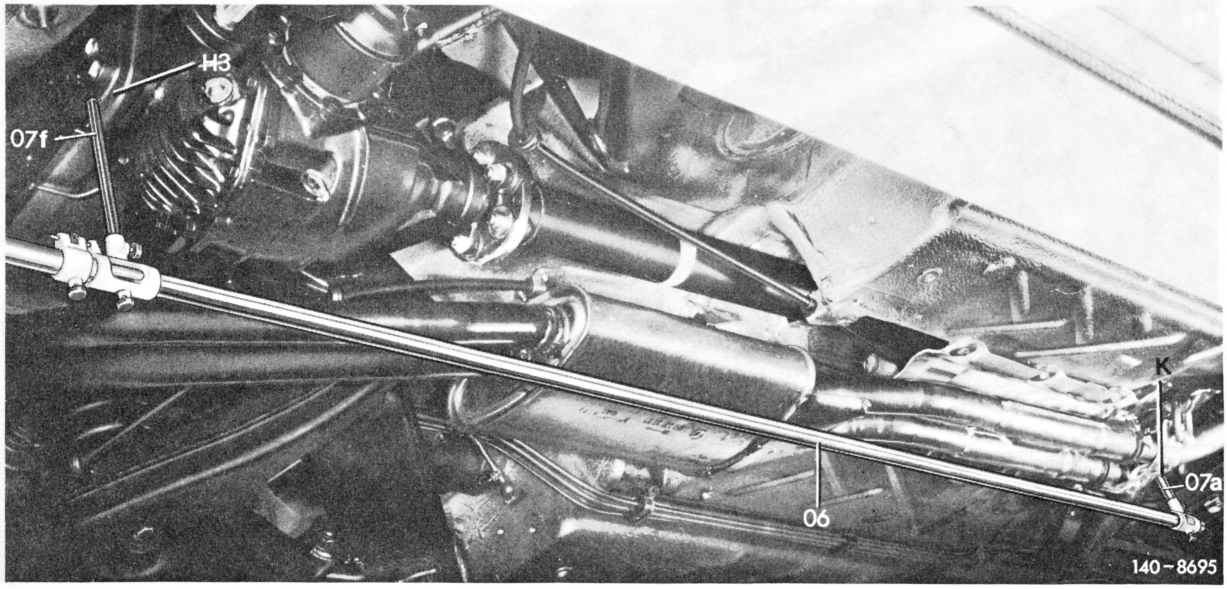

Fig. 16

8 Measure distance "H3" on Models 114, 115 with rear bearing first version from check bore "K" to locating bore "FH" in hex. socket screw of rear bearing with beam compass, measuring length 2,500 mm (06) and measuring bolt with tip, length 163 mm (07f) (Fig. 17).

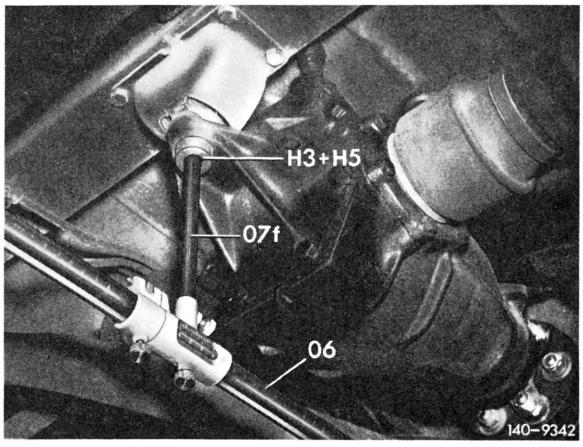

Fig. 17

9 Measure distance "H4" of hex. screws for front bearing on frame floor left and right with beam compass, measuring length 1,500 mm (06) and measuring bolt with cup, length 77 mm (07g) (Fig. 18 and 19).

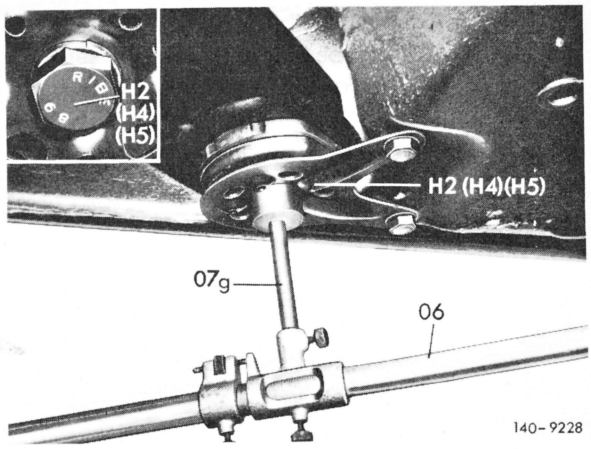

Fig. 18

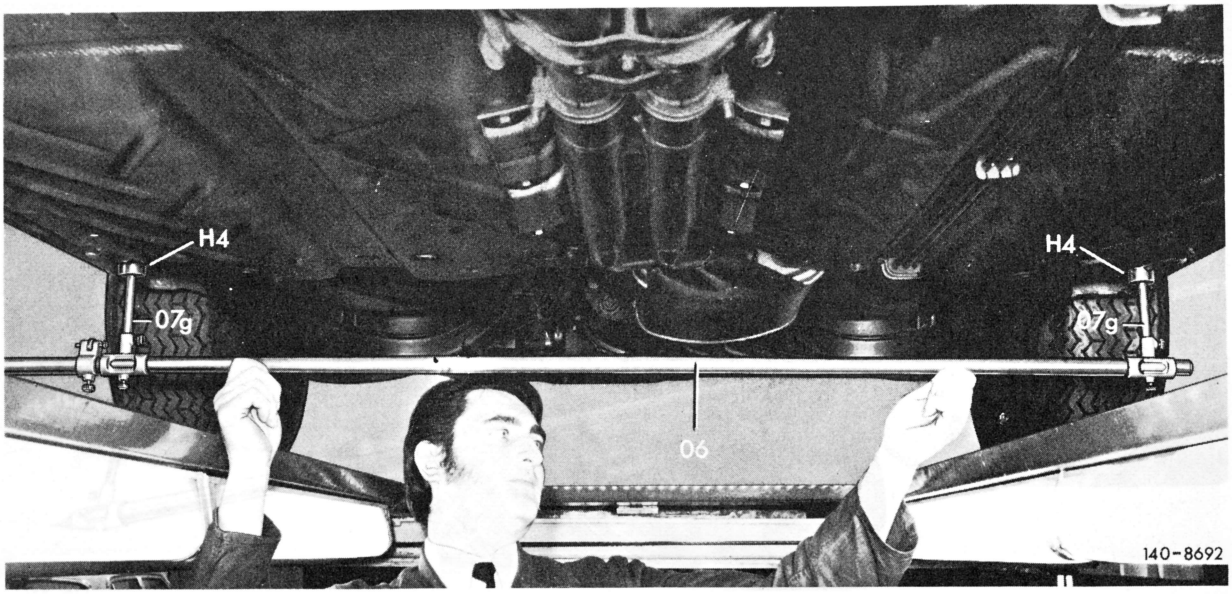

Fig. 19

10 Measure distance "H5" from locating bore "FH" to hex. screw of front bearing on frame floor left and right with beam compass, measuring length 1,500 mm (06) and measuring bolt with cup, length 77 mm (07g), as well as measuring bolt with tip, length 163 mm (07f) (Fig. 20 to 23).

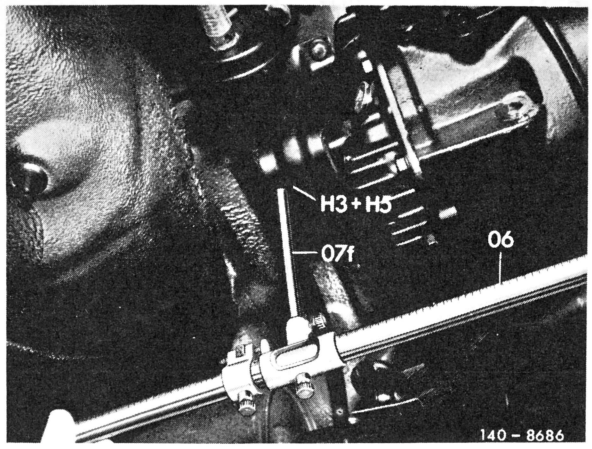

Fig. 20

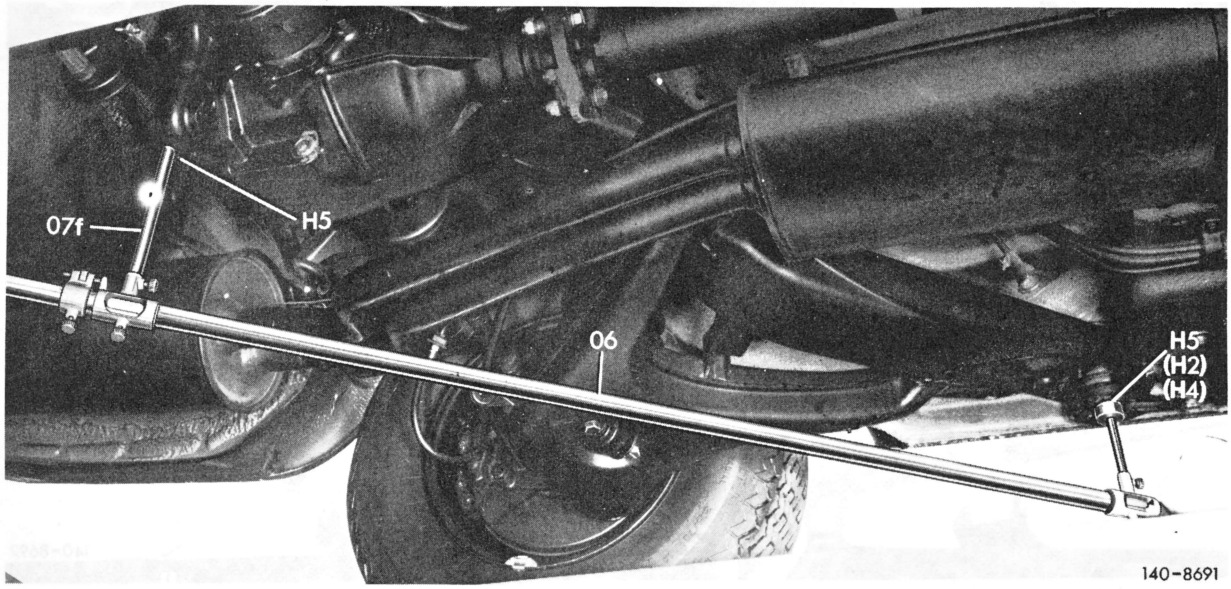

Fig. 21

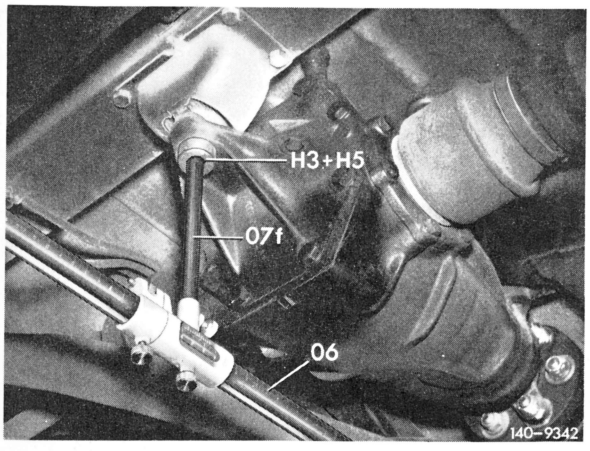

Fig. 22

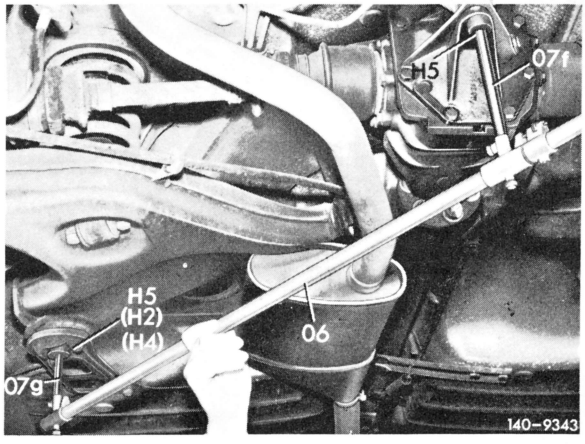

Fig. 23