

Springs

Job No.

32-0

A. General

Tolerances are unavoidable in the manufacture of springs. However, in order to obtain properly balanced springing, the manufacturer can allow for the tolerances by varying the spring length (trim dimension). To indicate the various lengths, springs are supplied with a color code marking on the bottom coil. Color marks in the middle of the spring are check marks and do not refer to their length.

The part numbers of the springs are stamped on the bottom coil.

B. Front Springs

The different lengths of the front springs (trim dimensions) are indicated by the following colors:

white = short springs
red = medium springs
blue = long springs

Since differences in the trim dimensions of the two springs on the front axle are not compensated, only springs with the same color coding should be installed on both sides.

C. Rear Springs

In contrast to the color coding system used on the front springs the color coding of the rear springs is further subdivided by lines which provides the following system:

white 1 line	red 1 line	blue 1 line
white 2 lines	red 2 lines	blue 2 lines
white 3 lines		blue 3 lines

In this coding system white 1 line represents the shortest spring and blue 3 lines represents the longest spring. The maximum difference between the shortest and the longest springs is 16 mm, the difference between the individual grades is 2 mm. The left and right rear springs differ in the case of cars with single-jointed rear axle. Left and right springs are identified by the Part No. which is stamped on the bottom coil as follows:

L = left spring
R = right spring

Adjustment of Rear Springs

To maintain the prescribed rear-wheel camber (see Job No. 40-3) allowance must be made for the variation in trim dimension of the rear springs by changing the notch position of the spring plate and installing or removing the compensating rubber ring.

The adjustment of the rear springs varies on the individual models according to the type of rear springs and associated shock absorbers installed (see also Job No. 32-7).

The survey table on the following page shows which individual table applies for the adjustment of the rear springs.

Note: When **reinforced rear springs** are installed on Models 180 to 220 SE, it may happen that when the springs are adjusted in accordance with table 1 the rear-wheel camber does **not** correspond to the prescribed values. If this should be the case, the rear-wheel camber must be adjusted to the prescribed values by changing the notch position of the spring plates and if necessary also by removing or installing a rubber compensating ring (see Job No. 40-3).

Spring and Shock Absorber Survey

Date: Dec. 12, 1959

Bold numbers = present version **x = On the particular model, this combination of springs and shock absorber is not possible**
 Explanation of numbers and signs: 1 = Table 1; 2 = Table 2; (* = Table 3)

Model	Shock absorber make	Part No. of Rear Springs																
		120 324 11 04 (only with twin-jointed rear axle)	120 324 15 04 (only with twin-jointed rear axle)	121 324 20 04/21 04 (on Models 180 and 180 D only with single-jointed rear axle)	121 324 18 04/19 04	105 324 00 04/01 04 (on Models 180 and 180 D only with single-jointed rear axle)	180 324 15 04/16 04	180 324 28 04/29 04	120 324 17 04 (only with twin-jointed rear axle)	120 324 23 04 (only with twin-jointed rear axle)	121 324 22 04/23 04 (on Models 180 and 180 D only with single-jointed rear axle)	180 324 26 04/27 04 (on Models 180 and 180 D only with single-jointed rear axle)	180 324 23 04/24 04	120 324 21 04 (only with twin-jointed rear axle)	121 324 12 04/13 04 (on Models 180 and 180 D only with single-jointed rear axle)	120 324 22 04 (only with twin-jointed rear axle)	120 324 20 04 (only with twin-jointed rear axle)	121 324 24 04 (on Models 180 and 180 D only with single-jointed rear axle)
180, 180 D	Fichtel & Sachs	1	1	1	x	1	x	1	1	1	1	1	x	1	1	1	1	1
	Stabilus	x	x	1	x	1	x	1	1	1	1	1	x	1	1	1	1	x
190	Fichtel & Sachs	x	x	1	x	1	x	x	x	1	1	1	x	x	x	x	x	1
	Stabilus	x	x	1	x	1	x	x	x	1	1	1	x	x	x	x	x	x
180 a, 180 b, 180 Db 190 b, 190 D, 190 Db	Fichtel & Sachs	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1
	Stabilus	x	x	x	x	1	x	x	x	1	1	1	x	x	x	x	x	x
190 SL	Fichtel & Sachs	x	x	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Stabilus	x	x	x	x	1	x	x	x	1	1	1	x	x	x	x	x	x
219	Fichtel & Sachs	x	x	x	x	2	x	x	x	x	x	x	x	x	x	x	x	x
	Bilstein	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
220 a, 220 S 220 SE, 220 S Cabriolet and Coupé 220 SE	Fichtel & Sachs	x	x	x	x	x	1	1	x	x	1	1	x	x	x	x	x	x
	Stabilus	x	x	x	x	x	1	1	x	x	1	1	x	x	x	x	x	x
Cabriolet and Coupé	Fichtel & Sachs	x	x	x	x	1	2	2	x	x	1	1	x	x	x	x	x	x
	Bilstein	x	x	x	x	1	2	2	x	x	1	1	x	x	x	x	x	x

* For Models 190 Db taxi cabs **TABLE 3** applies.

Rear Spring Adjustment Tables

Table 1

Color code of rear springs		Notch position of the spring plate	Compensating rubber ring
white	1 line	4	yes
	2 lines	3	
	3 lines	2	
red	1 line	1	yes
	2 lines	4	no
blue	1 line	3	no
	2 lines	2	
	3 lines	1	

Table 2

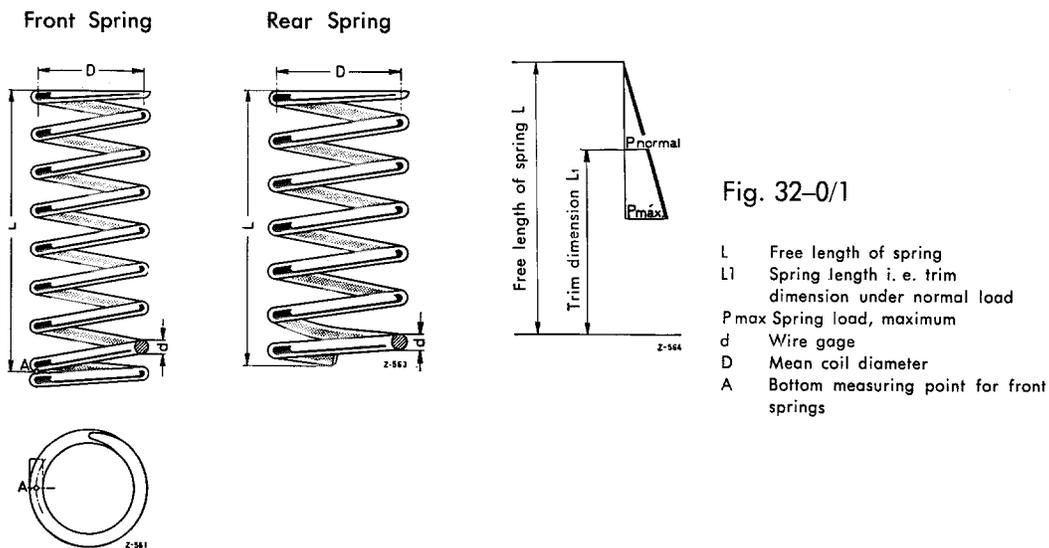
Color code of rear springs		Notch position of the spring plate	Compensating rubber ring
white	1 line	2	yes
	2 lines	1	
	3 lines	4	no
red	1 line	3	no
	2 lines	2	
blue	1 line	1	no
	2 lines	Springs cannot be used	
	3 lines		

Table 3

Color code of rear springs		Notch position of the spring plate	Compensating rubber ring
white	1 line	4	no
	2 lines	3	
	3 lines	2	
red	1 line	1	no
	2 lines	Springs cannot be used	
1 line			
2 lines			
blue	1 line	Springs cannot be used	
	2 lines		
	3 lines		

D. Checking of Springs

On Models 180 to 220 SE the springs are checked in the same way as described for Model 190 (for test values see Job No. 32-7).



E. Additional Rubber Buffers for Rear Axle

On Models 180 to 220 SE various versions have recently been installed of the additional rubber buffers screwed to the chassis base panel (see Table).

Rubber Buffers for Rear Spring

Rubber buffers Part No.	Application
180 320 01 44	For standard rear springs
180 320 00 44	For harder rear springs for normal roads, bad roads, and export rear springs as well as for police radio cars
120 320 04 44	For harder rear springs for special-purpose vehicles such as ambulances and light trucks, etc.

Note: Since harder rear springs cannot be installed on Model 190 SL, only the first two columns in the above table apply.

When harder rear springs are installed subsequently, make sure that they are matched by the appropriate rubber buffers.

When repairs are carried out on cars with standard rear springs, only soft rubber buffers Part No. 180 320 01 44 should be installed. The rubber buffers carry the Part No. on the side.

If the rubber buffers are to be replaced with the rear springs installed in the vehicle, use an 11 mm socket with ratchet of the $\frac{3}{8}$ " "Hazel"-Set 000 589 53 09.