Inspecting Valve Springs

A 5% deviation from the listed pressures is permissible in the case of used springs.
It is desirable that the valve springs of the 1600 S-90 engine have a pressure of at least 94 kg (208 lb.) at a compressed length of 30.15 mm.
These valve springs have been installed in all 356 B engines for some time and replace those mentioned in the basic manual having a free length of 47 mm. Only valve springs of the same type and free length should be installed in one engine due to their different spring characteristics.

Testing Installed Length

Note

The intake and exhaust valve springs are of equal length. The difference in the installed length is obtained by the use of spacer washers. All the valve springs of the 1600 S-90 engine have an additional 1.5 mm steel washer to increase the spring pressure.

Important

The valve springs must not bear on the shims but must always seat on the steel washer. The springs will damage the shims if they are not protected by the steel washer.

Free length		49 mm	1.929 in.	
Cross-section dia.		4,5 mm	.177 in.	
Pressure at 41 mm, 1.614 in. Compressed length	35 kg	+ 2,5 kg - 1.0 kg	77.3 lb.	+ 5.5 lb. - 2.2 lb.
Pressure at 30.15 mm 1.187 in. Compressed length	93 kg	+ 7 kg - 3 kg	205.5 lb.	+ 20 lb. - 6.6 lb.

1. Install special tool P 10 in the cylinder head together with the corresponding valve, spring retainer, and keepers.

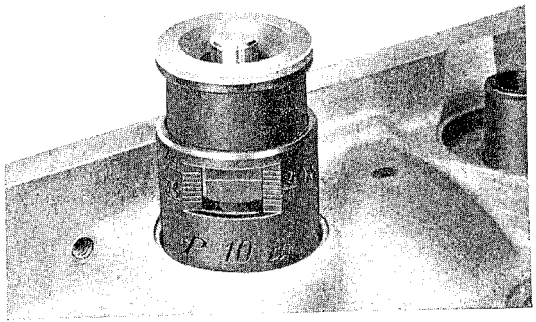

Fig. 6

2. Adjust with shims until the correct length is obtained.

3. Install valve springs so that the closely wound coils are nearest the cylinder head and rest on the steel washer (Fig. 7).

Installed length for	**41.0 mm**
intake valve springs	**1.614 in.**
Installed length for	**40.0 mm**
exhaust valve springs	**1.575 in.**

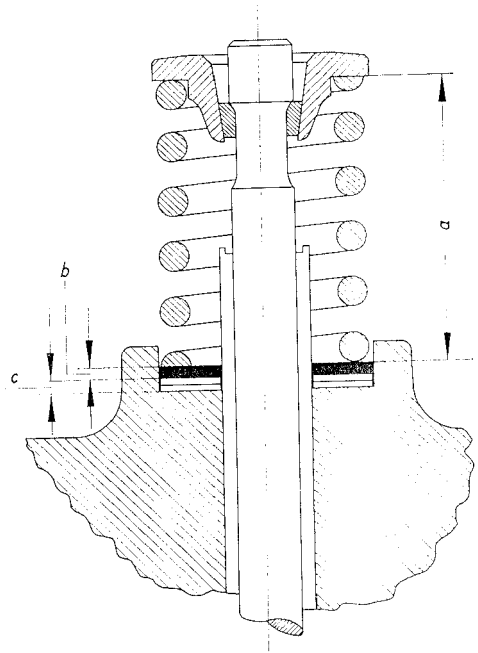

Fig. 7

a = Installed length
b = Steel washer
c = Shims