

A. Grinding Valves

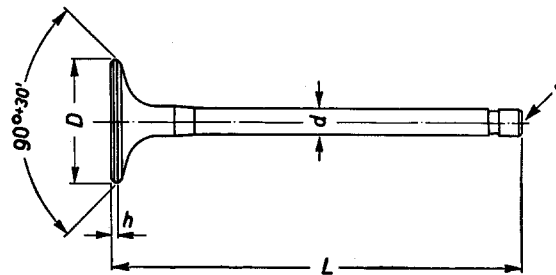


Fig. 05 — 5/1

Dimensions of Valves

in mm

	Valve-head diameter D	Stem diameter d	Length L	Height of head h	Valve seat angle
Inlet	$\frac{44.2}{44.1}$	$\frac{8.97}{8.95}$	128	1.5	$90^\circ + 30'$
Exhaust	$\frac{37.2}{37.1}$	$\frac{9.95}{9.93}$	112.75	2.25	$90^\circ + 30'$

1. Check the valves for run-out at the valve-head and the valve stem. For this purpose, a valve tester must be used (Fig. 05 — 5/2).

When taking readings, the valve must be pressed firmly against the end-stop. The valve-cone must turn concentrically with the valve stem. The maximum permissible run-out is 0.03 mm.

Check the valves for wear.

If the stem of a valve is worn (inlet valve less than 8.95 mm, exhaust valve less than 9.93 mm) or if the valve head is distorted, the valve must be replaced.

2. Grind the valve cone, at an angle of $90^\circ + 30'$, on a valve cone grinder (wet-grinder), avoiding turning marks (Fig. 05 — 5/3).

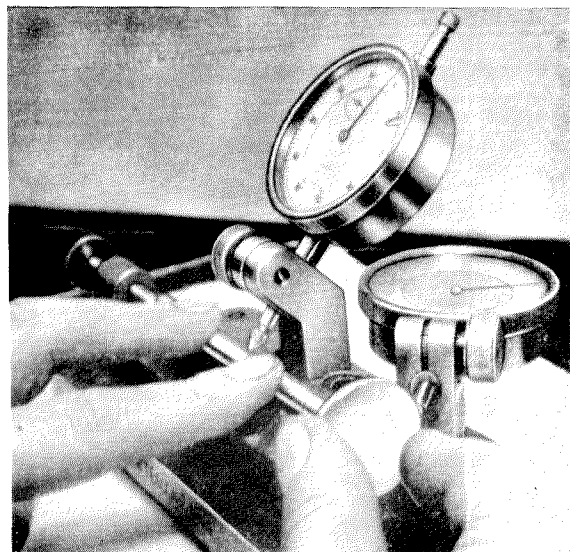


Fig. 05 — 5/2

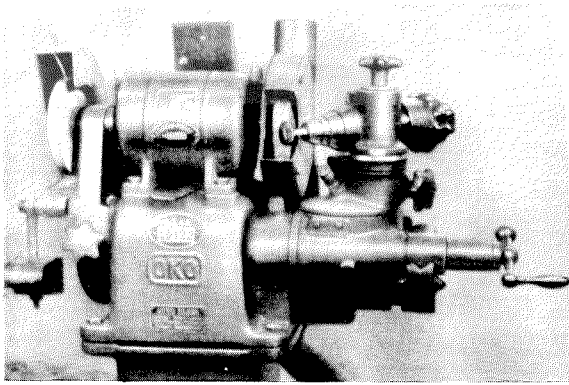


Fig. 05 — 5/3

Valves on which the dimension h of the valve-head is less than 0.8 mm in the case of the inlet valve and 1.5 mm in the case of the exhaust valve, must be replaced.

3. If the valve stem is mushroomed at the foot "a", it can be re-ground on a valve cone grinder.

The minimum permissible hardness of the surface "a" is 55 HRC.

4. The type and part number of the valves is stamped on the end of the stem.

B. Testing Valve Springs

The valve springs should be tested either with Spring Test Gage 000 589 00 65 or with some other suitable spring tester. After measuring the free length L , the loads P_1 and P_2 for the lengths L_1 and L_2 must be measured in the case of each spring. If the permissible load tolerances are exceeded, the faulty spring must be replaced.

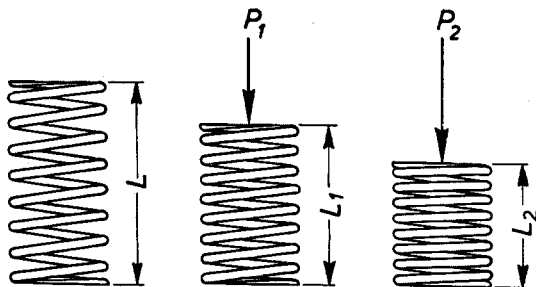


Fig. 05 — 5/4

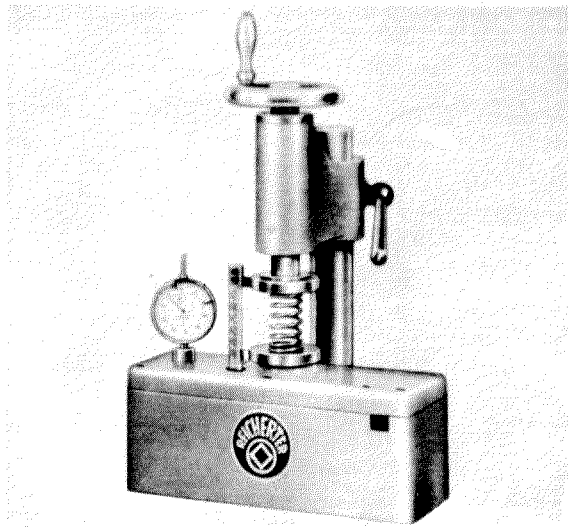


Fig. 05 — 5/5

Testing Table for Valve Springs

	External diameter	Spring wire section	Length L free	Length L_1 Load P_1 depressed		Length L_2 Load P_2 under final load	
	mm	mm	mm	mm	kg	mm	kg
Inner spring	20.7	2.6	42	34.2	8.9	25.7	18.6^{+2}_{-1}
Outer spring	30.6	4	42	38.4	23.1	29.9	$45.9^{+4.5}_{-2.2}$