

Tightening torques

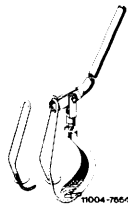
Nm

Bolts for cylinder head cover

3

Special tools

Spring compressor for valve spring



123 589 03 61 00

Magnetic finger for valve cone halves



116 589 06 63 00

Conventional tool

Cylinder leak tester

e.g. Bosch, EFAW 210 A
Sun, CLT 228–1

Note

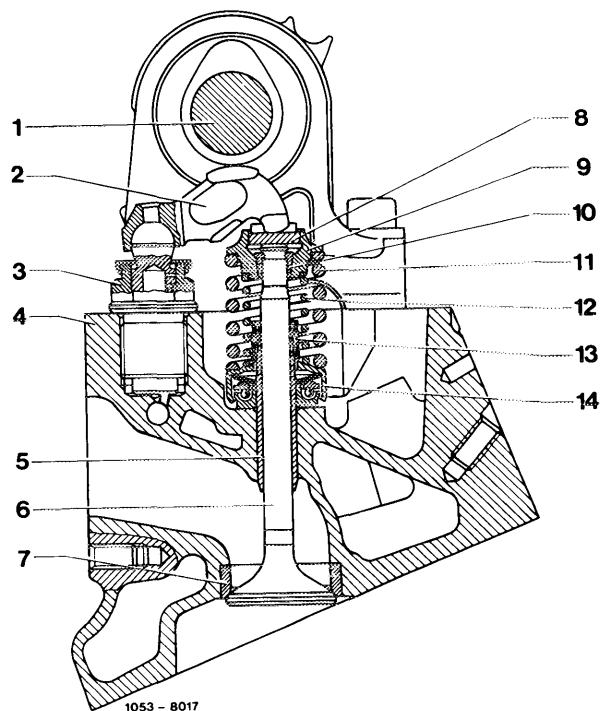
The valve stem seals including assembly sleeves are supplied in repair kit form.

Valve guides which are worn at the retaining groove for valve stem seal must be replaced.

Caution!

Rocker arms, thrust pieces, valve spring retainers, valve springs, valve cone halves and Rotocaps must be reinstalled in the same position in order to ensure that the basic position of the hydraulic compensating element is not changed.

- 1 Camshaft
- 2 Rocker arm
- 3 Hydraulic valve clearance compensating element
- 4 Cylinder head
- 5 Valve guide
- 6 Exhaust valve
- 7 Valve seat ring
- 8 Thrust piece
- 9 Valve spring retainer
- 10 Valve cone half
- 11 Outer valve spring
- 12 Inner valve spring
- 13 Valve stem seal
- 14 Rotocap



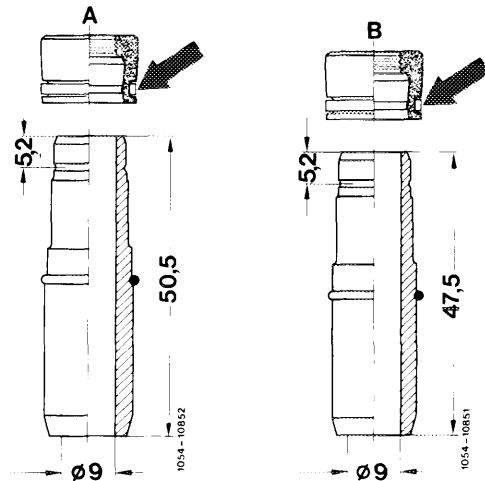
The valve stem seals are supplied as spare part in two versions. They must be allocated to the appropriate valve guide to avoid oil leaks.

1st version

Valve stem seal 116 053 00 58 with **flat, brass-colored retaining spring** (arrow).

Use 1st version only for valve guide **without stop collar**, 5.2 mm retaining groove distance.

A Exhaust
B Intake



1st production breakpoint (1st version):

From start of production to February 1983 and from June 1983 to November 1983

Up to engine No.

116.962 12 015193

116.963 12 028837

117.962 12 001972

117.963 12 023645

2nd production breakpoint (1st version):

June to November 1983

Engine No.

116.962 12 018054–023705

116.963 12 033750–042895

117.962 12 002310–003139

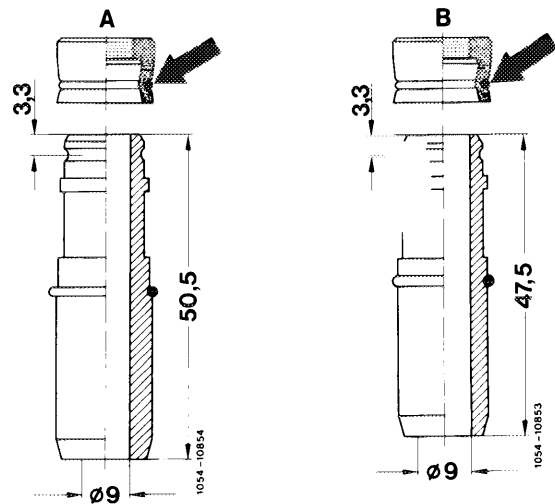
117.963 12 028416–039773

2nd version

Valve stem seal 110 053 02 58 with **round, brass-colored retaining spring** (arrow).

Use 2nd version only for valve guide **with stop collar** and with 3.3 mm retaining groove distance.

A Exhaust
B Intake



1. Production breakpoint (2nd version): February to May 1983

Engine No.

116.962 12 015194-018053

116.963 12 028838-033749

117.962 12 001973-002309

117.963 12 023646-028415

2. Production breakpoint (2nd version): From November 1983

Engine No.

116.962 12 023706

116.963 12 042896

117.962 12 003140

117.963 12 039774

Replacement

- 1 Remove valve springs (05-250).
- 2 Remove valve stem seals with a screwdriver or with a pair of pliers.

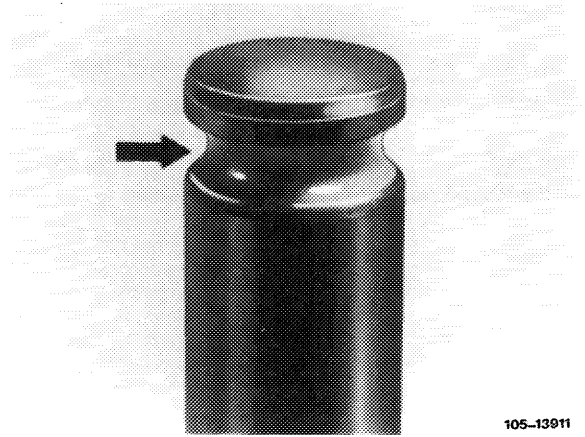
Caution!

Do not damage valve stem and valve guide.

3 Deburr valve stem groove.

Replace worn valve cone halves and spring retainers.

4 Check Rotocap and replace if required.



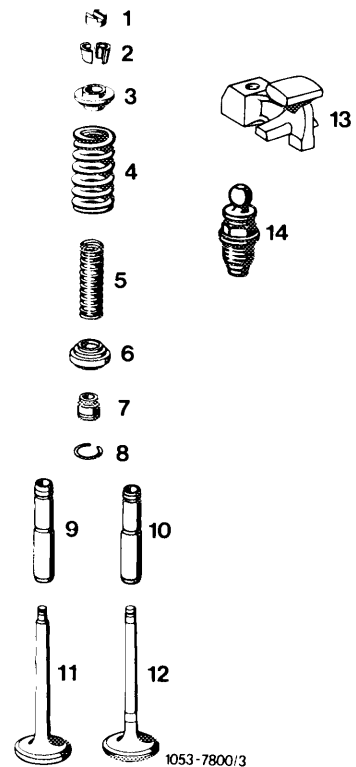
105-13911

5 Lubricate valve stem seals and install.

Use installation mandrel.

6 Install valve springs (05-250).

- 1 Thrust piece
- 2 Valve cone halves
- 3 Valve spring retainer
- 4 Outer valve spring
- 5 Inner valve spring
- 6 Rotocap
- 7 Valve stem seal
- 8 Locking ring
- 9 Valve guide intake
- 10 Valve guide exhaust
- 11 Intake valve
- 12 Exhaust valve
- 13 Rocker arm
- 14 Hydraulic valve clearance compensating element



1053-7800/3