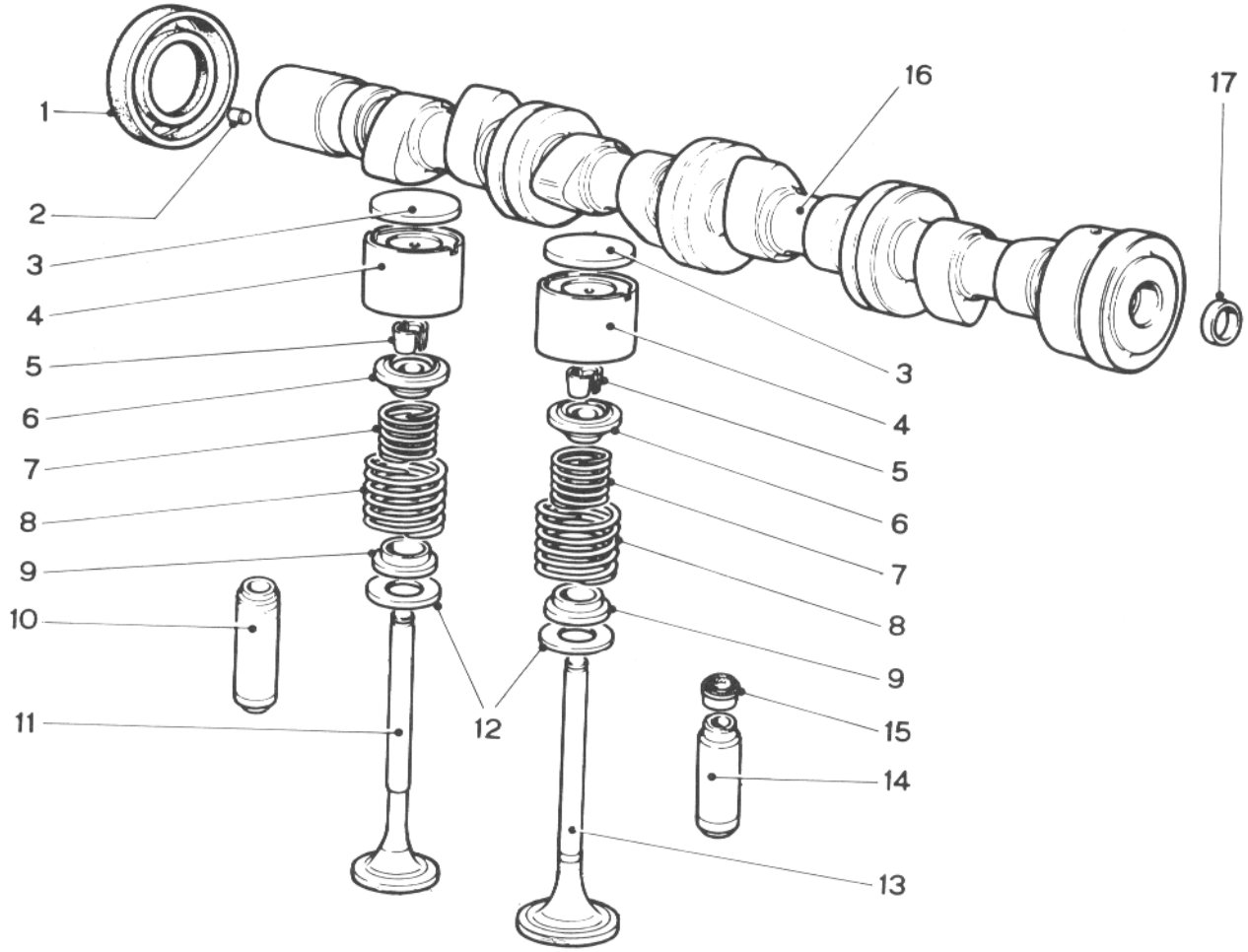


1. Seal
2. Dowel
3. Plates for adjusting valve clearance
4. Tappets
5. Locks
6. Upper cups
7. Inner springs
8. Outer springs
9. Lower cups
10. Exhaust valve guide
11. Exhaust valve
12. Flat washers
13. Intake valve
14. Intake valve guide
15. Oil seal
16. Camshaft
17. Welch plug

VALVE MECHANISM COMPONENTS

CAMSHAFT HOUSING

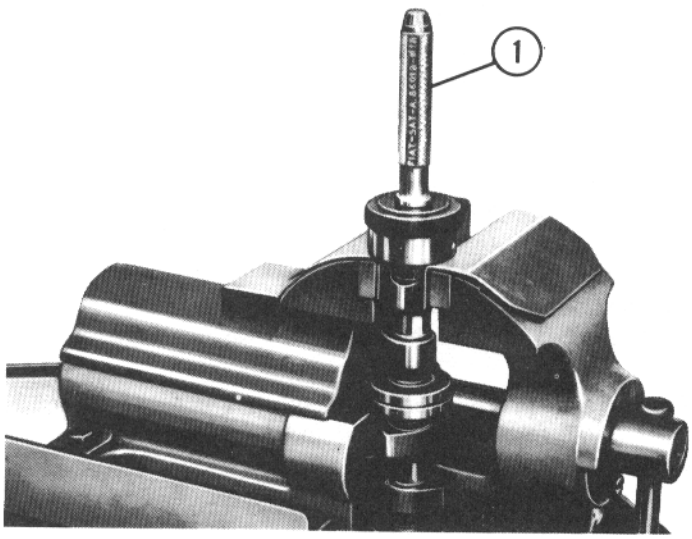
Check that camshaft bores in housing are not out-of-round. Inner surfaces should be smooth and show no signs of seizure; if they do, replace housing.

NOTE: When servicing camshaft it is advisable to replace drive-end seal.

CAMSHAFT

Camshaft journal and lobe surfaces should be absolutely smooth and in perfect condition. Should traces of seizure or scoring be found which cannot be dressed off with an extra-fine abrasive stone, camshaft is not fit for further service and should be replaced.

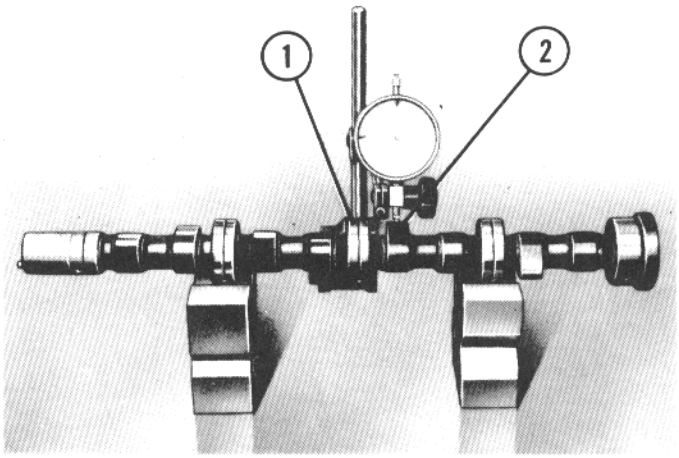
Make sure journal oil holes are not stopped up. To remove camshaft welch plug, use a standard punch; for reassembly use installer A.86018 (1).

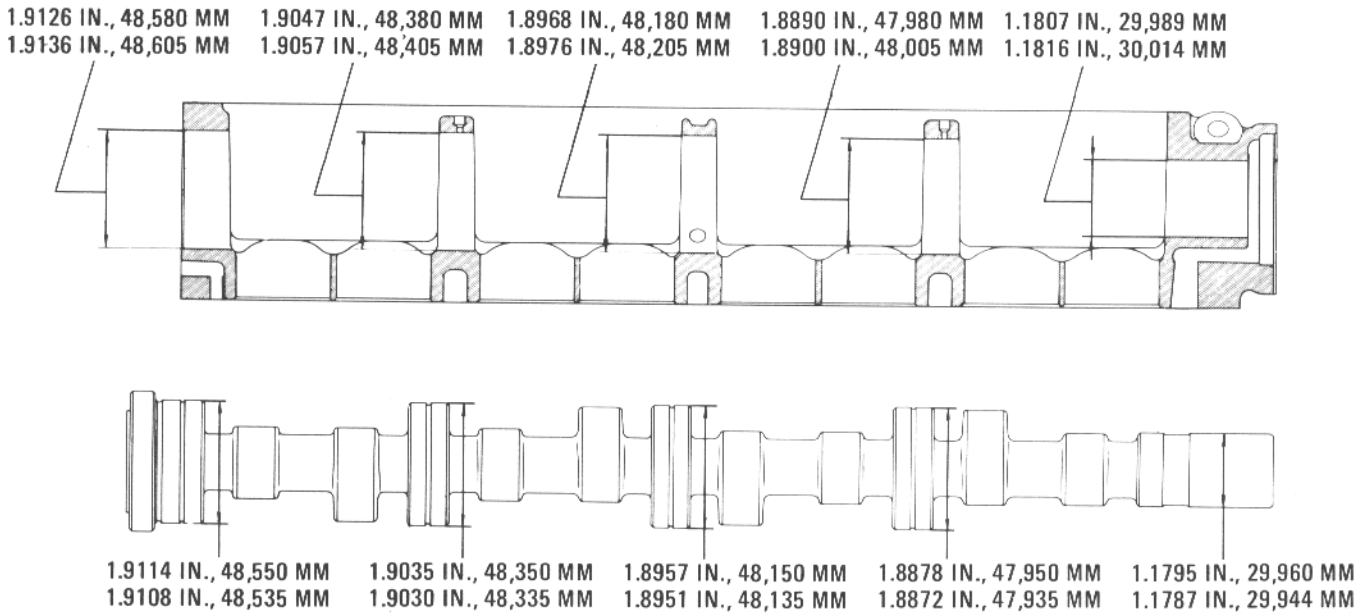


1. Installer A.86018

Rest camshaft on two parallel blocks placed on a surface plate, and check with a dial gage that center journal (1) runout does not exceed .008 in. (0.2 mm). Also check that lobe height (2) is 0.362 in. (9.2 mm) for intake and 0.364 in. (9.25 mm) for exhaust lobes.

1. Center journal 2. Cam lobe





SPECIFICATIONS OF CAMSHAFT AND BORES IN HOUSING

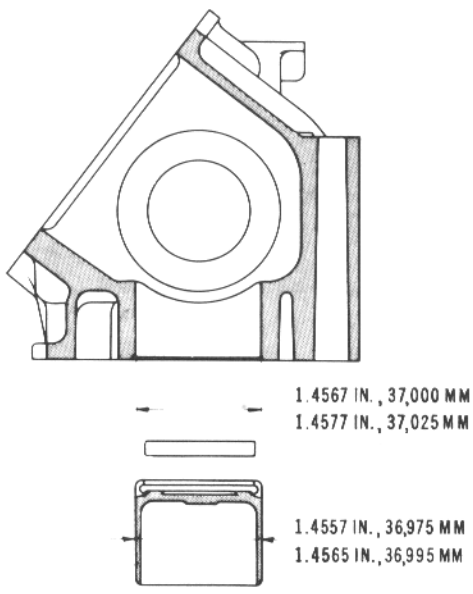
TAPPETS AND PLATES

Make sure tappet plate surface in contact with camshaft lobes is glass-like and shows no signs of dishing or pitting. Minor imperfections can be removed using an extra fine abrasive stone.

Tappet outside surfaces, as well as tappet bores in camshaft housing, should not show evidence of undue wear, taper of scoring.

Check tappet diameter and tappet bore diameter in camshaft housing using micrometers. Values read on micrometers should meet specifications as shown. If they do not, replace worn parts.

Tappet plates are available for service in a range of thickness from .1457 to .1850 in. (3.70 to 4.70 mm) with .002 in. (0.05 mm) increments.



CHECKING AND ADJUSTING VALVE CLEARANCE

Adjustment of clearance between camshaft lobes and tappets does not require camshaft removal.

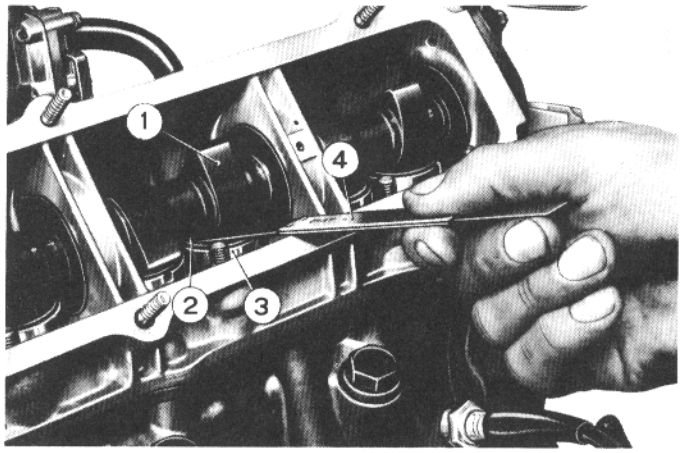
Correct clearance with engine cold is; intake valves - .011 to .014 in. (.24 to .32 mm) and exhaust valves - .015 to .018 in. (.34 to .42 mm).

Remove camshaft cover.

Turn crankshaft until lobe (1) controlling tappet (3) being checked is pointing upwards and is at right angles to tappet plate (2).

Using a feeler gage (4), measure clearance between tappet plate and camshaft lobe to determine if plate has become worn.

1. Lobe 2. Plate 3. Tappet 4. Feeler gage

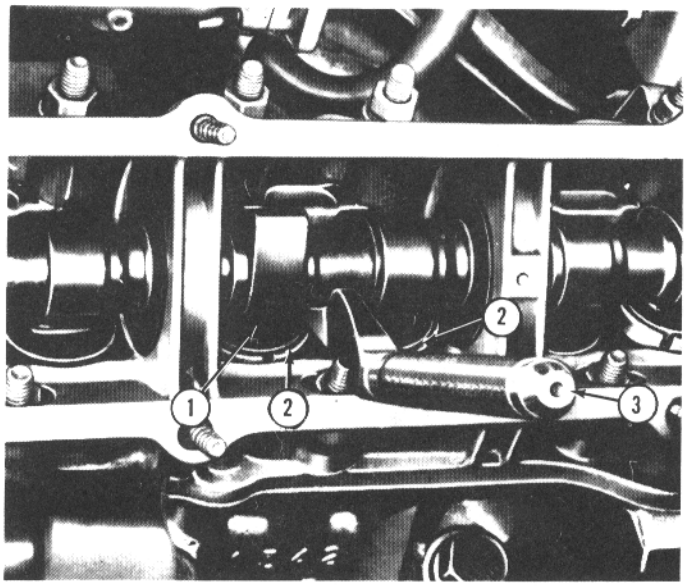


NOTE: Remove oil from around tappets with syringe to simplify plate removal. Empty syringe into oil drain passages.

If clearance is not as specified, insert tool A.60421 (3) on both intake and exhaust valve tappets (2). Remove plate (1) from its seat on tappet using pincer A.87001.

After determining needed thickness, install new plate.

Tappet clearance plates are available for service in a range of thicknesses from .1457 to .1850 in. (3.70 to 4.70 mm) with a difference between each of .002 in. (0.05 mm). The thickness of plate is shown on one of the plates flat surfaces and this should be assembled towards tappet.



Valve Timing Diagram for a Theoretical Tappet Clearance of:

– 0.60 mm, inlet valves
– 0.65 mm, exhaust valves