

TECHNICAL BULLETIN

Subject

VALVE CLEARANCE ADJUSTMENT TOOL 303 - 693
METHOD FOR USE - 3.0 LITER V6 ENGINE

Model S-TYPE

Year 1999.25 ON

VIN L00600 ON

ISSUE: S303-03 - VALVE CLEARANCE ADJUSTMENT TOOL 303 - 693, METHOD FOR USE

Special Tool 303 - 693 provides a means of depressing the tappet buckets on the 3.0 Liter V6 engine, allowing the valve clearance adjustment shims to be removed and refitted with the camshafts in situ.

ACTION:

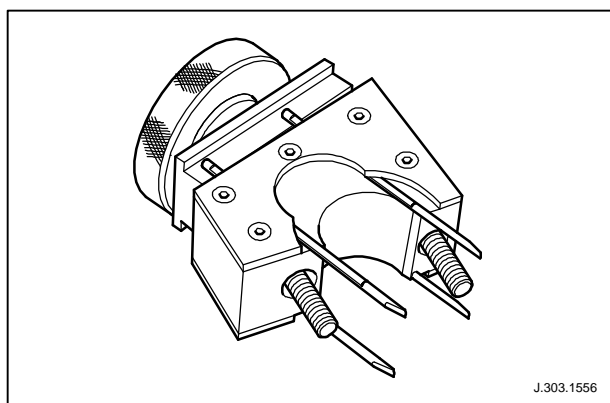


Illustration 1 Special Tool 303 - 693

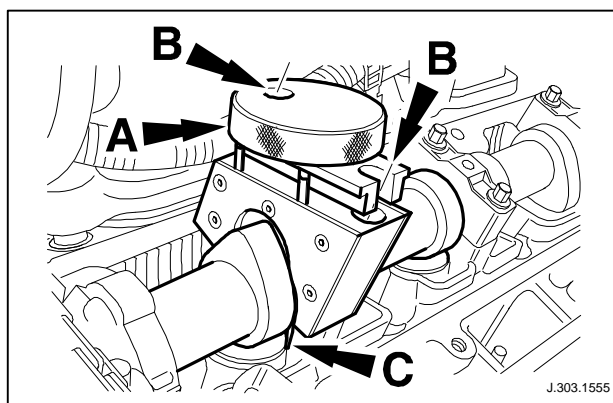


Illustration 2 Special Tool installed on engine

TO REMOVE SHIMS

1. Use paper wipers or lint-free cloths to mop up residual oil surrounding the tappet buckets.
2. Rotate the engine until a pair of camshaft lobes are 180° away from the tappet buckets.
3. Remove the adjacent camshaft bearing cap.
4. Fully unscrew the thumbwheel ('A', Illustration 2) of the special tool, so that the projecting fingers are at their highest position.
5. Offer up the special tool in place of the bearing cap; start but do not fully tighten the two retaining screws (access at 'B', Illustration 2), using a hexagon drive key. Rotate the thumbwheel as necessary for access to the upper retaining screw.
6. Ensure that the projecting fingers at 'C', Illustration 2, are correctly aligned to the buckets, so that the cut-outs on each finger fit over the edges of the buckets. If necessary, use a mirror to assist viewing.
7. Tighten the securing screws until the tool body is in light contact with the cylinder head.
8. Partly screw down the thumbwheel to depress the fingers against two adjacent tappet buckets. Again check for correct alignment of the fingers to the tappet buckets. Then fully tighten the thumbwheel.



THE FOLLOWING OPERATIONS INVOLVE THE USE OF COMPRESSED AIR. ALWAYS WEAR SUITABLE EYE PROTECTION.

9. Surround the working area with clean cloths, to retain any tappet shim which may be blown clear.
10. Use Special Tool 303 - 590 (Air gun with fan-shaped nozzle) directed towards the edges of the exposed tappet shims, to displace the shims from the tappet buckets.

11. Recover the displaced shims, ensuring that each shim can be identified to the tappet from which it was removed.
12. Wipe the shims clean of oil. Check the shim thickness and select alternative shims which will provide the required valve clearances.

To INSTALL SHIMS

13. Ensure that each replacement shim is fully seated in the recess in the appropriate tappet. Unscrew the thumbwheel to release the tappet buckets.
14. Release the retaining screws, remove the special tool, and refit the camshaft bearing cap.
Torque wrench setting: 10Nm.
15. Check that the valve clearances are now correct.
16. Lubricate the cam lobes, where the shims have been replaced, with engine oil before turning the engine to adjust the next valve clearances by the same process.

NOTE: Ensure that only ONE camshaft bearing cap is removed from the cylinder head at any time. Refit and tighten the bearing cap before removing the next one.

WARRANTY INFORMATION:

This technical bulletin is issued for information only.