



Hydraulic Valve Lifters

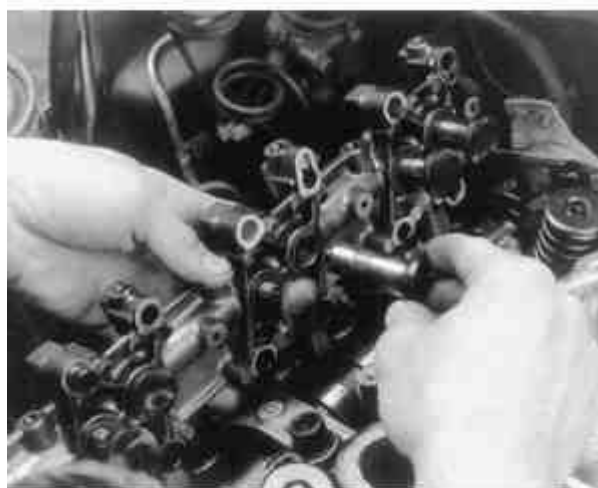
REMOVAL & INSTALLATION

Although cylinder head removal is not usually necessary in order to remove only the lifters from these engines, other problems may necessitate the heads removal. If a lifter becomes stuck in the bore, or if the camshaft must be replaced, it may then become necessary to remove the cylinder head. For more details, please refer to the cylinder and camshaft procedures found in this section.

The KA24E engine is unique in that the hydraulic lifters are installed inside the rocker arm assemblies and retained by a snapping. Lifter and camshaft service on this engine should NOT require cylinder head removal.

1. Disconnect the negative battery cable.
2. Remove the cylinder head cover.

Fig. 1: Removing the hydraulic lifter from the valve lifter guide assembly — 6-cylinder engines



3. Remove the rocker arms and shafts.
4. Withdraw each lifter from its cylinder head bore (VG30i and VG30E engines) or from the bore in the rocker arm assembly (KA24E engines). In order to remove a lifter which is installed in the rocker arm, be sure to remove the snapping first, but be careful not to bend or break the snapping during removal.

NOTE: If lifters are to be reused, they must be tagged to ensure installation in the original locations.

WARNING

Do not lay the lifters on their sides because air will be allowed to enter the lifter. When storing lifters (or rocker arm assemblies with lifters in them such as on the KA24E engines), set them straight upward. To store lifters on their sides, they must be soaked in a bath of clean engine oil.

To install:

5. Install the lifters in their original locations. Use new lifter snappings as needed. New lifters should be soaked in a bath of clean engine oil prior to installation to remove the air.
6. Install the rocker arms and shafts.

7. If removed, install the cylinder head and leave the valve cover off.
8. Check the lifters for proper operation by pushing hard on each lifter with fingertip pressure. If the valve lifter moves more than 0.04 in. (1mm), air may be inside it. Make sure the rocker arm is not on the cam lobe when making this check.
9. Install the cylinder head cover and connect the negative battery cable. If air was found in the lifters during the previous step, bleed the air by running the engine at 1000 rpm (with no-load) for 10 minutes.

