

Inspection & Adjustment of Hydraulic Lifters:

(1) Remove and Test lifters

Use a 15mm deep-socket, to unscrew and remove each rocker nut, then (one at a time) remove the rocker arm and bearing, then remove and inspect each hydraulic lifter for “cupping” on the bottom surface. Re-surface or replace cupped lifters and inspect camshaft lobes on badly cupped lifter areas.

Note: If you are installing a new camshaft, Always install new or re-surfaced hydraulic lifters. If camshaft is not being replaced, always re-install the old lifters in the same lifter galley that they originated.

(2) Lubricate Lifter and Install

If lifter is new, coat with engine assembly lubricant.

If re-installing a used lifter, verify it still has a light oil coating, and install only in the same lifter bore it was removed from

(3) Install Rocker Arms, Rocker Arm Bearings, and Rocker Nuts

Reinstall this hardware on the same individual rocker studs they originally were removed from. Lightly oil rocker arm bearing.

(4) Rotate Engine to TDC for the #1 Cylinder

See below diagram, to determine correct distributor setting for #1 TDC.

Another way to tell TDC, is the 2 valves are at the “top” of their travel length.

(5) Pre-Adjust the 2 Lifters for That Cylinder at TDC

Use 15mm deep-socket, to slowly tighten each of the 2 rocker nuts down, until the tip of the rocker arm just touches the top of the valve stem. At this point, there is no up or down movement, and no pressure is being exerted on the valve or lifter — this is called (“0” Lash @ TDC). If the lifters are new, and have no oil inside them, you can adjust them 3/4 turn with out the engine running. *Note: With new lifters that you have pre-adjusted, you will need to break them in for 2 minutes on first start up of the engine, running the engine steadily at 2000 rpm.* If you are re-using the old lifters and they have oil in them, you will need to finish setting all the valves to “0” lash @ TDC and adjust them 3/4 turn in 1/4 turn increments with the engine running. *NOTE: Factory recommendation of one full turn from zero lash, is too tight.*

(6) Rotate Engine to TDC for the #3 Cylinder. Pre-adjust its 2 Lifters

(7) Repeat Procedure, on #4 and #2 Cylinder Lifters

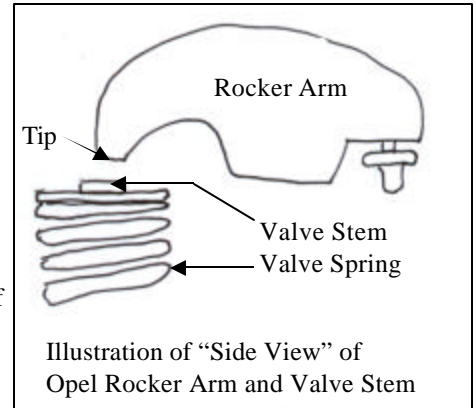
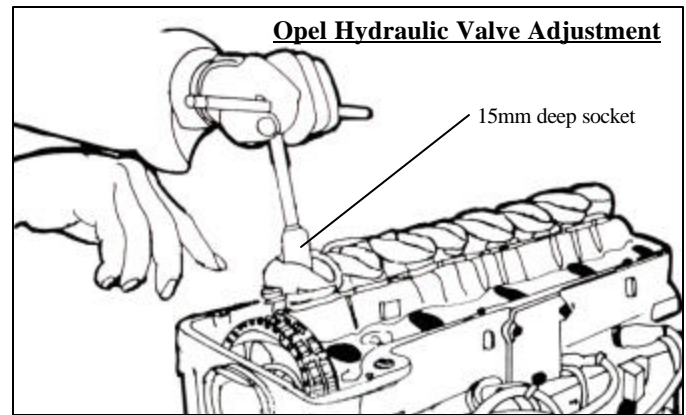
(8) How to Adjust Hydraulic Lifters on Running Engine

First you will need to fabricate an “oil deflector shield” that sits above the timing chain, to keep the hot oil from splashing all over the engine compartment & on you.

(8a) Run engine until warm, then loosen one rocker nut one full turn (360 degrees) or until that valve starts to make a clattering sound. Do this for each of the remaining 7 rocker nuts. Turn off engine. Refer to step 5-7 above, (for used lifters), to set the “0” Lash @ TDC.

(8b) Start engine and let it idle, tighten each of the 8 rocker nuts 1/4 turn (90 degrees). Repeat this 2 more times for a total of 3/4 turns on all 8 rocker nuts. It is normal for engine to slow down during this procedure.

Note: An “old school” trick for determining optimum valve settings, is to connect a vacuum gauge to the brake booster hose outlet fitting on the intake manifold, then adjust the 15mm rocker nut to where it obtains the maximum vacuum psi reading on the gauge.



“Zero Lash” setting. is when the tip of the rocker arm, just touches the top of the valve stem (no gap is present).

