Valve Lash

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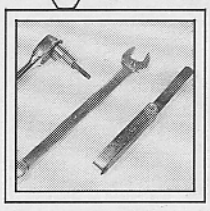
Valve Lash: Setting it right, once and for all

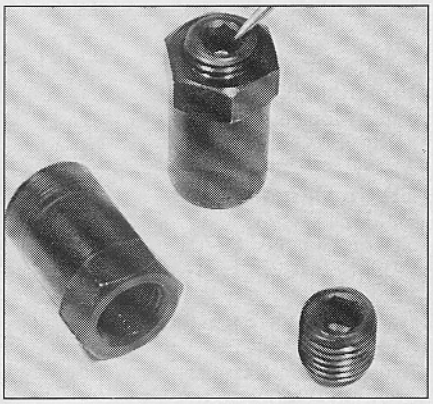


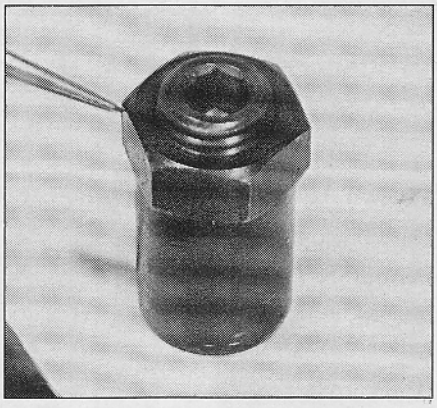
Valve lash is one of the most important aspects of engine tuning, and yet it is taken for granted more often than not. Valve lash can "direct" a sharp engine builder as to the "next" version he or she may want to try in an experimental cam design, simply by varying the lash around a little, and staggering the lash in various ways between the intake and exhaust. But first, valve lash needs to be set *properly*, and it needs to *stay* set. Like anything else, there is a technique to setting valve lash. The following, although simple in principle, is an outline of that principle. Done right, your lash will stay set for a long time, with minimal change (if it does change much, you have other problems).

Most high-performance cams and valvetrains are going to have an adjuster which is going to have a lock nut—whether we are talking about "Poly-Locks" on stud-mounted rocker arm systems, or whether we are talking about adjusting screws and lock nuts on a shaft-mounted rocker system. The following is related to the two-piece locking adjustment; standard self-locking (interference fit) adjusting nuts are not applicable to this instruction, nor recommended for performance usage.

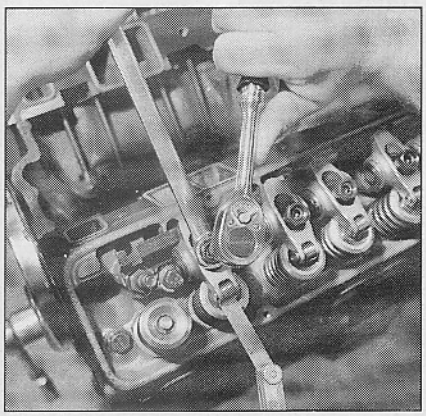
Whether we are talking about the poly-lock adjusting nut or the adjusting screw with accompanying lock nut, the outside nut is what must be used for tightening (torquing) down to final specs. The center Allen screw for the poly-lock is suppose to be the locking device, but it is not. Let's take the poly-lock first.

On the poly-lock the outside nut is used for adjustment, while the inside Allen set-screw is used to "bottom-out" on the top of the rocker arms mounting stud. You normally set the outer nut with one hand while you hold a feeler gauge in the other, thus setting the lash. Once set, you would normally turn the Allen set-screw until it was "tightened." *Do not set the lash this way. Rather:*

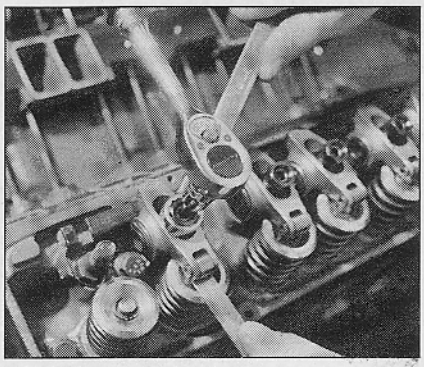




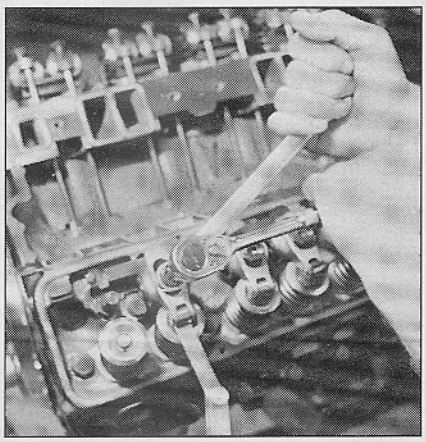
This shows the lock screw (left) that takes the Allen wrench/socket and the adjusting hex nut (shown at right) that is used for both the lash adjustment and tightening of final torque during lash setting. On rocker arms with adjusting screws (first photo), the outer nut is still used for torquing to final tightness. However, the Allen wrench needs to be used for the initial lash setting.



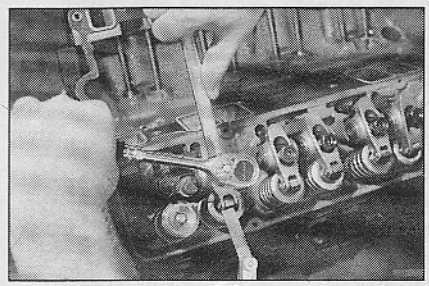
Here is the initial setting of the valve lash before any serious tightening has been done. Note the two o'clock/12 o'clock position of the Allen socket (ratchet) and open-end wrench.



The wrenches are now backed off from the lash "clock" position, approximately "two hours" of rotation. Your particular feel may require adjusting a little more or less than this after some trial and error.



The Allen wrench is now tightened back up to take up slack. Be sure not to allow the boxed-end wrench to move while tightening the Allen screw, since this is the lash adjustment that will be tightened back next.



The critical "two-handed" torque is used to lock the little Allen set-screw. Without moving the outer adjusting nut, turn both to the original "two-o'clock" position. PHR