

# PONTIAC

## STREET PERFORMANCE

### Pontiac Rocker Arm Adjustment

Whether you have decided to stay with the stock type stamped rocker arms or Competition Cams Magnum Rollers Rockers as pictured here, or something far more exotic, you will need to adjust valve lash. Torquing the adjusting nut per the old Chilton's to 20-25 ft pounds won't work on any heads that have been milled. This is especially true with the high lift cams of today. The valve train needs to be adjustable. Some form of lock nut must be used. I prefer Mr. Gasket's poly lock nuts.



In the past, I've adjusted hydraulic lifters with the engine running, backing off the nut until the rocker clattered, and then turning the nut slowly until the noise dissipated. That process sure works but is just too messy for me. No matter how hard I tried, oil got past the restrictor clips, and my fabricated valve cover oil catchers--oil went everywhere. Nobody should endure that nonsense. I've found that adjusting valve lash can really be performed while the engine is cold. The adjustment, when done accurately will preclude further adjustment with the engine running.

An important point to remember in adjusting valve lash is that the adjustment must be performed while the lifter is sitting on the base circle of the cam lobe you will adjust. Below is the technique I use. The sequence works on all V8's with the Pontiac firing order--

#### **Firing Order**

The firing order on all Pontiac motors is **1-8-4-3-6-5-7-2**. The best place to start the adjustment process is to begin with the #1 cylinder. Whether you are building a new motor, swapping in a cam, or adding other upper valve train components, start with the #1 cylinder. Silly as this may seem to some, the #1 cylinder is on the driver's side cylinder bank. The driver's side has the odd number cylinders: 1-3-5-7. The passenger side has the even numbered cylinders: 2-4-6-8. [Number's 7 and 8 are closest to the firewall. (There will be a test on this later.)]

## Identify Intake and Exhaust Valves/ Springs

You can't adjust anything until you know where everything is located. This sounds really basic, but you must accurately identify each valve. If you must, use a small piece of masking tape and stick it on the head with each corresponding valve identified. For example, 1X and 1I. Believe me, doing this will save some time. Preparation makes things go smoothly. Besides, who like to do things over. You won't do the wrong valve doing it this way.

## Locate TDC on #1 Cylinder

Numerous valves will be adjusted at one time in this process. **You must locate top dead center (TDC) of #1 cylinder.** I prefer turning the crank by hand because I know exactly where TDC is on my motor. Remove all the plugs if you haven't already done so; it makes life easier on you or your starter. Locate TDC on #1 by locating the '0' on the timing tab with the harmonic balancer line. You can determine whether it's really the #1 cylinder a couple of ways. One way is to look at the hydraulic lifters. If the hydraulic lifters are down and level you're on #1 TDC. Another way is the old "thumb in the dike" method. Place your thumb in the number one spark plug hole while the engine is being turned by the starter. When TDC is near, your finger will be pushed out by the compression. ( I know this is basic stuff.) When that happens, align the harmonic balancer that fraction or so to get TDC. Remember, the lifters must be on the base circle of the cam lobe for the adjustment to work.

## Adjustment Begins

With the engine at TDC on #1 cylinder you can properly adjust the following valves after lubricating the rocker ball, valve stem, and pushrod contact point:

INTAKE	1	2	5	7
EXHAUST	1	3	4	8

## The Adjustment Procedure

Remove all of the slack out of the pushrod and rocker arm by slowly tightening the adjusting nut. **You must use your sense of touch here.** Lightly turn the rod with your fingers while tightening the nut. As you do so, you will begin to feel resistance. **When the resistance reaches a point where it requires more grip (torque) to turn the rod, stop!** At this point you have removed all of the play out of the pushrod and are at "zero lash." Now you may make the final adjustment. With wrench or socket in hand, tighten the nut

180 degrees (a 1/2 turn). If you are using poly lock nuts, tighten the set screw against the rocker arm stud after the 1/2 turn. Be sure the adjusting nut does not move. (Hold it stationary with a wrench while you use the allen wrench to tighten the set screw.) Thereafter, for added insurance, add a tad more turn to the poly lock nut...just a tad. This will set the screw tightly against the stud so it won't back off.

Do all intakes valves (1-2-5-7) first and then proceed with the exhaust valves (1-3-4-8). Since you are using "feel" take your time. Run through each valve twice, if you must, before proceeding to the next group of valves.

### Locate TDC on #6 Cylinder

The next step is to rotate the engine 360 crank degrees to get the #6 piston at TDC. Use the same technique for locating TDC on #1.

### Adjustment Resumes

With the engine at TDC on #6 cylinder you can adjust the following valves after lubricating the rocker ball, valve stem, and pushrod contact point:

INTAKE	3	4	6	8
EXHAUST	2	5	6	7

### Adjustment Procedure Reiterated

Remove all of the slack out of the pushrod and rocker arms by slowly tightening the adjusting nut. You must use your sense of touch here. Lightly turn the rod with your fingers while tightening the nut. As you do so, you will begin to feel resistance. When the resistance makes it difficult for you to turn the rod without more grip (torque), stop! At this point you have removed all of the play out of the pushrod. You're now at "zero lash." Now make the final adjustment. With wrench or socket in hand, tighten the nut 180 degrees (a 1/2 turn). If you are using poly lock nuts, tighten the set screw against the rocker arm stud. Be sure the adjusting nut does not move. Hold it stationary with a wrench while you use the allen wrench to tighten the set screw.

Do intake valves (3-4-6-8) first then proceed with the exhaust valves (2-5-6-7). Since you are using "feel" take your time. Run through each valve twice to be certain everything looks and "feels" right to you.

### Final Step

Re-lubricate the rocker assembly before installing the valve covers.  
If you've taken your time to be accurate no further adjustment is necessary.

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