Valve Lash Adjustment

Valve lash is very important to achieving maximum engine performance. It is defined as the lash or distance between the end of the valve and the cam. More lash will equate to less duration but higher compression as the valve stays closed longer before opening, while less lash will equate to longer duration and a higher lift valve enabling more air to get into or out of the engine. Exactly what lash is best for your particular engine is dependent on a lot of factors. A trip to the dyno is the best way to find out what combination makes the most power and/or torque.

As an engine is raced and stressed, the valves will begin to wear in the area of the valve seat. As the valves wear the valve lash will get smaller or ***tighten up*** as an engine builder will term it. That is why you will see a range of acceptable limits in the engine manual. As the lash tightens, the engine performance will lessen. You should check your lash after 15 races, then every 5. If the lash tightens up more than .002" the head should be removed and a valve job performed. Do not just re-shim the valves at this point to get the clearance back. The reason the lash tightened up was because the seat area of the valve wore and is no longer seating or sealing at optimum levels.

It is best to have the engine manual if you are new to this procedure. Here is an overview.

To check your valve lash, you will need to to:

- Take off the valve cover (10mm socket)
- Take off the crank cover (8mm socket)
- For each cylinder you must rotate the crank until that piston is at top dead center
- slide a feeler gage under each crank lobe to measure the clearance
- document the largest feeler you can fit between the valve cap and the cam lobe
- Do this for all 16 cam lobes
- remove the cams
- remove the valve caps
- Flip the cap upside down and pull out the shim
- The shim will have the thickness in millimeters x 100 on it. A 190 shim is 1.90 mm in thickness.
- determine what new shim you will need using the following formula

Old shim size - (desired clearance -current clearance) = New shim size

The conversion for millimeters to inches is mm x 25.4 = inches

Here is a spreadsheet to help you calculate and document your valve lash.

Valve Lash Spreadsheet