



# SPEED SHOP SCHOLAR

Welcome to another edition of the "Speed Shop Scholar." Unless you have been living under a rock for the last few years, you know the clone engine has taken over



and become the dominant engine in many areas of the country, especially the Southeast. Just like with any other engine, the clone has parts and components that need constant attention to ensure peak performance is maintained between rebuilds. For the clone, valve springs trump everything else. This month, we are going to dig into the steps



necessary to replace your valve springs without removing the cylinder head.

The frequency in which you need to change your springs is dependent upon the division in which you participate in and the rpm's your engine obtains. Some racers change their springs in the middle of each race day, while others change every few races. Consult your engine builder for their recommendations.

Be aware, not all stock springs are legal right from the box, the only way to be certain of legality is to have the springs verified, some will require minor grinding to bring



into specs, others simply will not pass some of the new criteria.

Just a few basic tools are needed to complete this task, along with a short section of rope. The rope will be stuffed into the cylinder to keep the valves from dropping and hold them in position during the change out.

First, we need to remove the valve cover to access the springs. Carefully wipe away any collected dirt or grease from the edges; we do not want this to enter the engine. Remove the spark plug and rotate the engine by hand until both valves are closed and the piston at the top of the cylinder. A good flashlight comes in handy and helps

you see into the bore. Rotate the cylinder back just a bit and gently push about 6 inches of the rope into the cylinder, then bring the piston up to squeeze the rope between the head and the piston.

When it comes to unhooking the rocker arms, you have two choices. You can remove the jam nut and ball



rocker, requiring you to reset the valve lash, or you can lift the rocker arm off the pushrod and slide the rocker to the side. I personally prefer option two. This is a good bit quicker and if you are changing at the track, the time is usually valuable. Anytime you can do less disassembly trackside, it's always a good thing.

Do one valve at a time, regardless of the method chosen; it is imperative that the valve train parts are not mixed up. This can create issues in tech and possibly performance.

To release the valve from the retainer, push the spring down and slide over until the retainer will lift off the valve stem. Remove the old spring and replace with the



new one. Reverse the procedure to reconnect the valve. Move the rocker arm back into position by pushing down on the valve and rotating the rocker arm back into position. If you removed it completely, replace and reset the valve lash. Repeat the procedure for the other valve, being sure to reinstall the lash cap on the exhaust valve.

Now we can rotate the engine to free the rope in



the cylinder and remove completely. Visually inspect the spark plug and tighten. Check the valve cover gasket, replace if necessary, and securely tighten the mounting bolts. Now we are ready for action once more.

Keep record and look for drop offs in high rpm power, this will help with your spring change scheduling.



If you are uncomfortable with any part of this process, do not risk damage to your engine trying to perform a task you aren't sure of. Never be afraid to ask for help and guidance if needed. Good luck, see you next month!

