



# SPEED SHOP SCHOLAR

Welcome to another edition of the "Speed Shop Scholar." As we embark upon another calendar year and prepare for a new season of racing, it is important that we start out on the right foot.

With the Clone engine being the dominant engine in most areas, we are going to make the most



of our time together this month and change our valve springs, and verify, or reset our valve lash.

Let's begin with the springs. As most everyone is well aware of, the valve springs on the clone engine are highly regulated, and for good reason. They are highly important to the performance of the engine, especially in the higher rpm ranges. Even with the best of springs, scheduled replacement is



necessary for the engine to perform as intended; time to start the new year fresh.

Remove the valve cover and the spark plug. With the plug removed, shine a light into the cylinder to help you see, and rotate the engine by hand until the piston is at the top and both valves closed. Turn the engine backwards until the piston is about an inch or so below the top.

Using a section of 5/16 or so nylon rope, push about 7-8 inches into the cylinder, then rotate the engine back to the top to gently compress the rope between the piston and the head. The goal here



is to hold the valves in position so once we unhook the retainers it will keep them from dropping into the cylinder. You can check yourself by pushing down on the valve, if it moves downward over 1/8" or so, you may need more rope.

While lifting up on the pushrod side of the rocker arm, and pushing down on the spring side, slide the rocker arm off to the side. This allows your spring change to be done without any major disassembly. Unhook the retainer, and lift the old spring out of the way. Be aware of any spring shims as well as the lash cap on the exhaust side. Simply place the new spring into position, and reverse the procedure. Do the exact same for the other side, and you've got it.

If you choose to remove the rocker arms completely to change the springs, that is your choice. However, keep all the parts for the intake side together, and all the parts for the exhaust side together. Mixing these parts can adversely affect performance as well as create problems in tech.

Speaking of springs, every spring manufacturer is pushing the springs to the extreme limits because of the



performance benefit associated with it. Be certain to have your springs checked before installation, or purchase from someone that will check them first. It only takes a little bit to put you over the line and tossed from tech.

Before we complete our work, it's a good time to verify our valve lash. Engine builders vary on the number, but essentially a zero lash is the overall most popular setting. There isn't a zero feeler gauge, so this is where we have to get a little crafty.

With the rope removed from the cylinder, and the plug still out of the way, turn the engine until the piston is at the very top of the bore and the valves are closed. Grab



one of the rockers, let's start with the exhaust, and sweep left to right over the tip of the valve. You should feel a slight bit of friction, but no tension as you sweep across. There should be no upward movement on rocker arm either. Use a feeler gauge if necessary to determine if you have too much lash, if it fits, it's too much lash.

To close the lash, loosen the 10mm jam nut, and adjust the ball adjuster with a 14mm wrench. Small, small turns make a big change to the lash. Adjust, tighten the jam nut, and check. Just as I said above, get as close as possible without preloading the valve. It may take several

tries to get it where you want it. You can check yourself by trying to insert the feeler gauge to be sure you aren't too loose, and by making sure the pushrod spins freely to be sure you aren't too tight. Both of those are really good indicators you are not too tight, or too loose, but "just right." Repeat the procedure on the intake side, and you're done.

Replace your valve cover, using a new gasket, and start with a fresh spark plug as well. Give a quick once over on all your fasteners and make sure everything looks correct, and all that's needed from here is for Race Day to arrive.

As I have stated many times before, if you don't feel comfortable with these tasks, enlist the help of some-



one that can help you through it. Lots of good help is available for the asking. Be smart, be safe, be fast! See you next month!

