

# Valve Opener Installation Tips

The valve opener lets you automate the process of stepping through the different valve lifts when testing cylinder heads on a flow bench. Here's the basic installation process:

The opener has 2 connections, one to a computer's USB port, and one to power. You should here the "USB connect" tone when you connect when it is powered up. DO NOT use USB extension cables to lengthen the USB cable, as this can cause communications problems.

You need the Port Flow Analyzer Pro software v3.5 or later. You need a special unlocking code to activate this feature. Once this feature has been activated, you will see "Valve Opener" at the top of the Flow Bench Specs, as shown in Fig 4.

Click on Valve Opener and set the Type to "Std Type" to tell the program to look for a Valve Opener when you go into the Recording Screen, Fig 4. Other settings shown in Fig 4 are good defaults.

When you go into the recording screen, the Valve Lift "box" will be shortened so the program can display the Opener's actual valve lift also (A). The bar below it shows the status of the "Home" switch (B), which darkens when the opener is in its fully retracted "Home" position or in contact with the valve tip.

Figure 5 shows new Options Commands for the Valve Opener. The Ctrl-H command is useful to fully retract the Opener to its Home position.

When you install the Opener on the head, be sure to leave at least a .100" gap between the fully retracted Opener and the tip of the valve, Fig 2. Also be sure to use the light "testing spring" supplied, as the opener has limited power.

Also the Opener senses the valve tip electrically. To do this there must be continuity (less than 50 ohms resistance) between the valve and the 2" square aluminum body of the Opener. This continuity depends largely on the set screw shown in Figure 2 breaking through the black paint on the "snout" of the valve opener. DO NOT overtighten this screw, but you may have to slightly twist the valve opener as you tighten the screw to break through the paint.

Testing Procedure: When you run a test, the Opener will find its Home (fully retracted) position, then extend out to find the tip of the valve and zero itself out. It will then move to the valve lift for the current "Data Point" you are on. It will wait the "Time Delay" shown in Fig 4, then record data. When finished, it will move to the next row and repeat until it encounters the first row where the Valve Lift is blank. Then it will retract to zero valve lift and see if any slippage has occurred, then retract about .050" more. It will then turn off the flow bench's motors if you have a FlowCom with motor controller and you've set this in Fig 4.

