# HD Exhaust Valve Springs in 5.9 Cummins

**On the Cummins B series motor, you can change the valve springs on 2 cylinders at a time. The thing to remember is that # 1 & 6 are paired, # 2 & 5 are paired, & # 3 & 4 are paired.**

**You will need:**

- KD 2078 valve spring compressor, about US $25.00 (approx.CA $26.76) at any tool place that handles KD tools.
- 3/8 drive torque wrench & a 1/2 drive torque wrench.
- 13mm,15mm,18mm, 9/16", 7/8" wrenches and sockets,
- .010" & .020" feeler gauges & a short flat screw driver [for setting valves afterwards]

1. Clean the area around your valve covers, and then remove valve covers.

2. Use your 7/8" short socket and place it in the reverse position & attach it to the alternator nut. You'll only be able to turn the motor over backwards, but that is fine.

3. Use the ratchet to move the engine & watch your valves, you are looking for an intake valve to be on its way up [doesn't matter what cylinder.]

4. Once you've spotted the valve that's moving *(for example if it is # 2)* watch as it comes up. As it approaches the top, watch the exhaust valve, as soon as the exhaust valve starts to move down STOP that means this cylinder is on exhaust stroke [TDC] and its mate is on compression stroke. You can check this by feeling the rockers on the other cylinder *(In this example # 5)* they should both be loose.

5. Remove the rocker block, loosen the small bolt first [13mm head], then the big bolt [18mm head] Use your thumb & forefinger to hold the push rods in place as you lift the rocker block off.

6. You can now safely remove the valve springs [intake or exhaust] on that cylinder. Once you put that cylinder. back together [the big bolt gets torqued first 120ft. lbs then the little bolt 18 ft. lbs. You can now move onto its mate's cylinder & repeat the procedure. So now you've done cylinder # 2 & 5, rotate the engine some more until you spot another intake valve coming up & the exhaust valve JUST STARTING TO MOVE DOWN STOP you're now ready to do that pair of cylinders.

***A little trick that makes things easier, when you install the new valve spring into the compressor, crank it into the tool to put some preload on the spring before tightening the valve spring compressor, that'll make it a littler easier to get the spring on the valve.***

The reason for this is the KD 2078 is a short throw compressor & the new 60lb springs are a little long for it. When you do get to do # 5 & 6 cylinder...the fun ones, that little trick will make life much easier.

7. Once you have done all the cylinders, you will want to check the valve clearances. This is always done on a cold motor, .010" intake, .020" exhaust. If you roll the engine over until # 1 cylinder is on compression stroke

8. Watch the valves on # 6 cylinder same thing, as intake comes up & exhaust JUST starts to move down STOP you are now on exhaust stroke of # 6 & compression stroke # 1 ]

9. So you can now set some valves. I've tried to show below how the valves are laid out in your motor. You can now set the valves that are marked with the "X". Then roll your engine over 360 degrees [ now both valves on #1 cylinder will be tight & both valves on #6 cylinder will be loose] & set all the valves that are marked with a "@" sign.

| Cylinder # | | Step 1 | Step 2 |
|---|---|---|---|
| 6 | Exhaust | | @ |
| | Intake | | @ |
| 5 | Exhaust | x | |
| | Intake | | @ |
| 4 | Exhaust | | @ |
| | Intake | x | |
| 3 | Exhaust | x | |
| | Intake | | @ |
| 2 | Exhaust | | @ |
| | Intake | x | |
| 1 | Exhaust | x | |
| | Intake | x | |