

Honda Element Valve Clearance Adjustment

Information compiled from thread <http://www.elementownersclub.com/forums/showthread.php?t=8768>

1. Preparation

Suggested list of tools:

- Angled feeler gauges, covering at least from 0.008 to 0.013 inches or 0.21 to 0.32mm.
- Two 3/8" Ratchets
- 3" and 6" extensions for 3/8" drive
- 10mm and 19mm sockets
- 10mm crescent wrench
- Flat screwdriver (or Honda special tool 07MAA-PR70100)
- Pliers (for breather hose)
- Torque wrench (good up to 20 N*m)
- Handheld Mirror
- Non-chlorinated brake cleaner
- Hondabond HT or equivalent gasket sealant (such as Permatex 82194 Ultra Grey)
- 5/8" spark plug socket (optional to remove plugs but help for rotating the engine)
- Helm or Honda shop manual to complement this procedure.

Suggested list of spares:

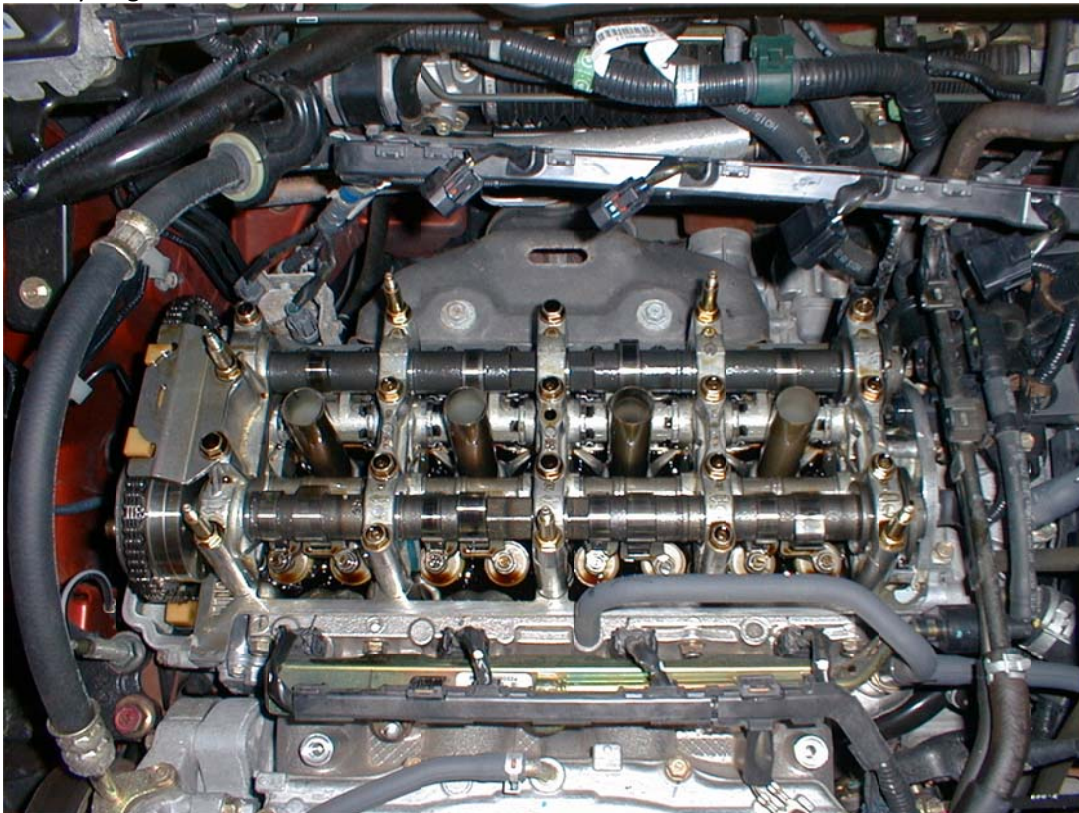
Some have done the valve adjustment and re-used the same gasket that was there, but if you find a cracked/dry seal or bust the gasket, might be a good idea to have some spares on hand:

- Valve Cover gasket. (Honda P/N: **12341-RAA-A00**)
- Spark plug tube seals (bottom), qty: 4. (Honda P/N: **12342-PCX-004**)
- Spark plug tube seals (top), qty: 4. (Honda P/N: **30522-PFB-007**)
- Valve cover washer grommets, qty: 6. (Honda P/N: **90441-RAA-A00**)
- You can also get a kit for the 4 above items from 3rd party companies.
(example: **FEL-PRO VS50614R**)
- If you decide to disconnect power steering line and need to replace o-ring: **91370-SV4-000**

2. Getting access to the valves:

1. If manual transmission, make sure it's in **NEUTRAL**. (to easily rotate engine later on).
2. Turn steering wheel all the way to the right (or for even more space, remove the passenger side wheel).
3. Remove **intake manifold cover (two 10mm bolts)**.
4. Remove **ignition coil cover (four 10mm nuts)**.
5. Remove **ignition coils (four 10mm nuts and four connectors)**.
6. Remove **two 10mm bolts** securing **vacuum lines** on the right of the valve cover.
7. Remove **10mm bolt** securing **P/S hose bracket** on the back left of the valve cover.
8. Move P/S hose to the left and the ignition harness to the back. *(Note: Some people disconnect the steering hose for more working space. In that case, don't forget to connect it back when rotating your engine for adjustment or else fluid will spit out of the hose)*
9. Remove the **oil dipstick**
10. Remove the **breather hose** on the right of the valve cover with pliers on the bracket and pull off nipple.
11. Remove the **six 10mm nuts & washers & grommets** from **cylinder head cover**.
12. Lift **head cover** straight up to take off.
13. Optional: Remove the 4 spark plugs using 5/8" spark plug wrench. (makes turning engine easier)
14. Put **19mm ratchet** on **crankshaft bolt**.

What you get once valve cover is removed:



3. Adjusting valves clearances

WARNING: PERFORM THE ADJUSTMENT ONLY WHEN THE CYLINDER HEAD IS LESS THAN 100°F (38°C)
(having car parked overnight is a good idea)

WARNING: NEVER ROTATE THE ENGINE COUNTER-CLOCKWISE !

WARNING: ALWAYS ROTATE ENGINE THROUGH CRANK ACCESS BEHIND THE PASSENGER SIDE WHEEL, NEVER ROTATE BY THE CAMSHAFT !

Valve Clearance specs:

Intake : 0.008-0.010 in. (0.21-0.25 mm)

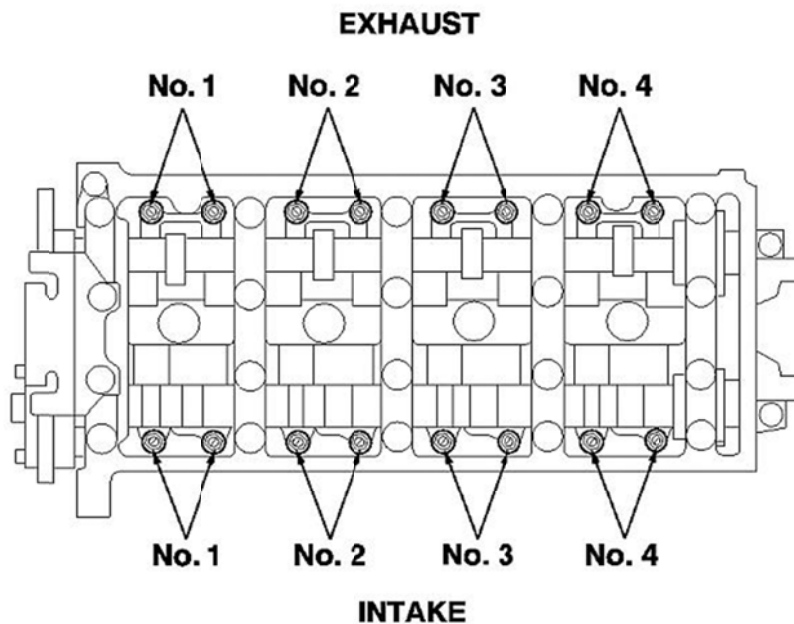
Exhaust: 0.011-0.013 in. (0.28-0.32 mm)

Valve adjusting nuts torque specs:

Intake : 14 lb./ft (20 N.m)

Exhaust: 10 lb./ft (14 N.m)

Cylinder numbering:

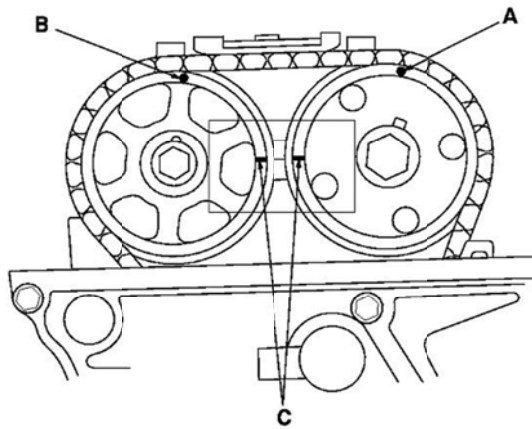


1. Rotate the engine, turning wrench **CLOCKWISE** until you obtain desired Top Dead Center (TDC) for each cylinder. NEVER COUNTER-CLOCKWISE.



2. With cylinder # 1 on top dead center compression, the marks (C) on the exhaust (B) and intake (A) cams should look like this.

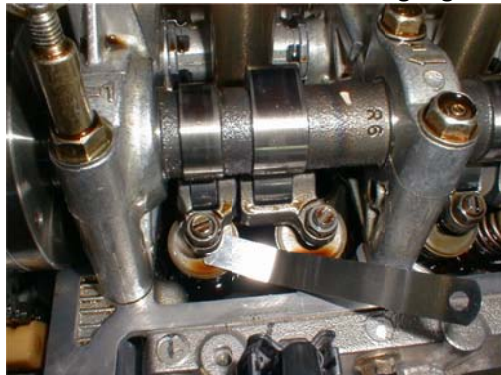
Note: The marks (C) inside the rectangle boxes on these diagrams are “lines” while A and B are round “dots”



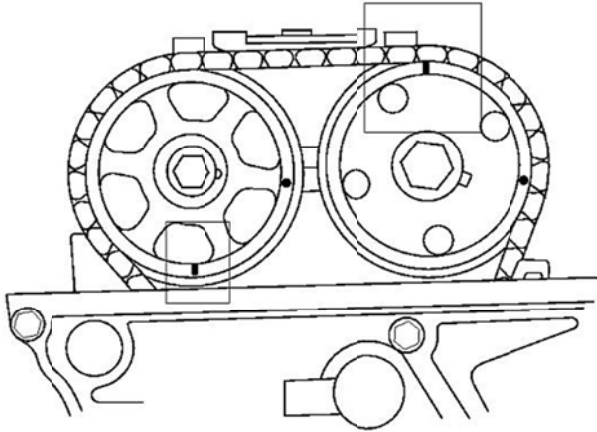
CYL.1

3. When set to the above position, proceed to measuring the valve clearance for the intake and exhaust valves of cylinder #1. Select proper feeler gauge for the tolerances of the valves you are checking. Insert feeler gauge between valve stem head and adjusting screw. (See next picture) Make sure gauge is free to move and not resting on the engine head's casing at this would create an angle and false reading). If too much or not enough clearance, loosen the lock nut and then turn the adjuster screw to adjust the clearance. When desired tolerance achieved, retighten the lock nut using torque wrench and respecting 14 lb./ft for intake or 10 lb./ft for exhaust.

How / where to insert the feeler gauge:

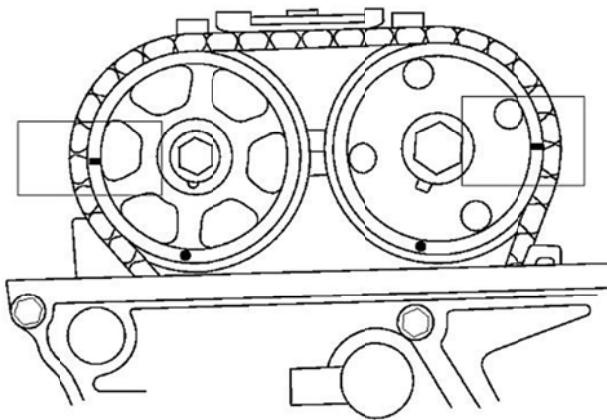


4. Rotate the crank 180 degrees clockwise (the cam pulleys will rotate 90 degrees), the next cylinder in the firing order is **#3**, so the marks will look like on the next picture. Proceed to clearance adjustment just as you did for cylinder 1.



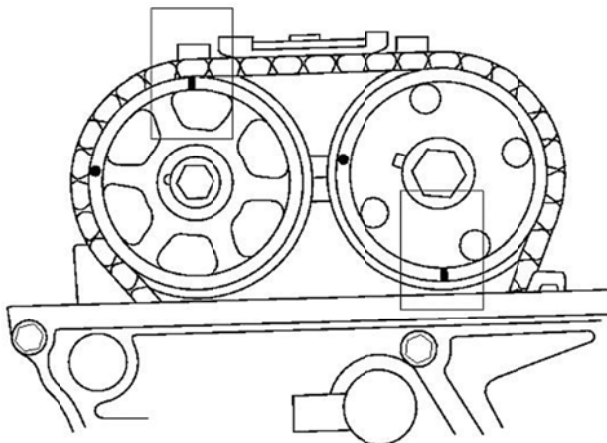
CYL.3

5. Rotate crank 180°, clockwise always, and perform adjustment for cylinder **#4**:



CYL.4

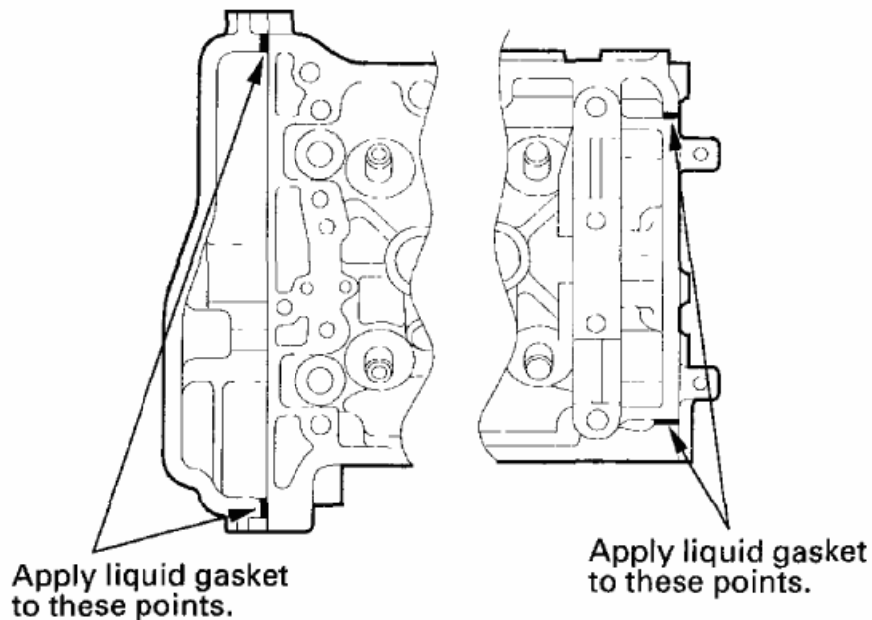
6. Lastly, another 180° clockwise and you're ready to adjust last cylinder, **#2**:



CYL.2

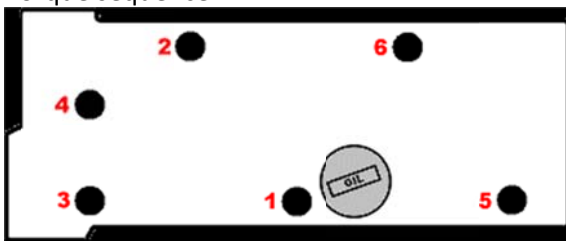
4. Re-assembly:

1. Clean valve cover seating surface and rubber gasket with non-chlorinated brake parts cleaner.
2. Apply Hondabond HT to four locations, two corners and timing chain cover interface with the head.



3. Put valve cover back on, carefully making sure you're not crushing anything (use a mirror) and that the spark plug seals are properly seating.
4. Put the grommets and washers and nuts on the studs. Tighten in steps per the torque sequence to 8.7lb./f (12 N.m). Easy to strip threads, do not over-tighten!

Torque sequence:



5. Optional: Check spark plugs torque to 18 N*m, or re-install if you had them out!
6. Install dipstick.
7. Replace breather hose.
8. Reinstall P/S hose bracket, torque the bolt to 12 N*m.
9. Reinstall vacuum line bracket, torque the two bolts to 12 N*m.
10. Replace ignition coils, torque the four bolts to 12 N*m.
11. Replace the spark plug cover, torque the four bolts/nuts to 9.8 N*m.
12. Replace the intake manifold cover, torque the two bolts to 12 N*m.
13. Wait at least 30 minutes before driving so the Hondabond HT can fully cure. Spend the time accounting for all your tools, checking over your work. Make sure you didn't leave ratchet on crank 😊
14. Start engine check for leak or abnormal noises. Hopefully you're all good!