

Message Alert

 You have **1 message** waiting for you.

• Feature

- >> [Main](#)
- >> [2002 Supercross](#)
- >> [Product Reviews](#)
- >> [Tech Its Up!](#)
- >> [Back Issues](#)
- >> [Search ORC](#)
- >> [Wallpaper](#)
- >> [Free Classifieds](#)
- >> [Events Calendar](#)
- >> [Staff](#)

• Columns

- >> [Don't Ask](#)
- >> [Checkpoint](#)
- >> [The Wanderers](#)
- >> [MXTuner](#)
- >> [Woman Overbored](#)

• Mailing Lists

- >> [Ride Net](#)
- >> [Desert Racer](#)

 >> **February 2002**


Dirtbike Tech:

Valve Adjustment Honda XR650R

It's Not As Hard As You Might Think!

 by: [Mike Hobbs](#)

Some folks won't make the transition from a 2-stroke to a 4-stroke motorcycle, due to the perceived additional maintenance that a 4-stroke requires. Our 2001 Honda XR650R just had its First-Year Birthday and has approximately 3,000 miles logged. These aren't simple trail riding miles; in fact, "Big Red" competed in the 2001 Baja 500 taking 4th place in the Sportsman class. Besides being ridden hard and being put away dirty more than a few times, Big Red has been raced in a few local events. She has also been subject to trail rides with the likes of Destry Abbott as well, so the level of abuse is only second to that of a full on race bike.

What has she asked for in return? Not much! A few sets of tires, her air filter cleaned every other ride, oil changed every few rides and the valves adjusted every six hundred miles or so. The following steps and values are specific to the XR650R but most modern 4-strokes on the market today will do just fine with the same level of maintenance we've described above. Even if you get a 4-stroke with a bucket-shim type valve adjustment, it's not that difficult. Since the first three 4-stroke survival tips are self explanatory we'll go through the XR650R valve adjustment step-by-step to show those that haven't yet made the stroke leap, just how simple it is. Well that, and for those that are too cheap to buy a service manual.

Remember-these steps are only for XR650R valve adjustment.

1. Remove the seat and gas tank.
2. Remove the valve hole caps
3. Remove the left crankcase cover.
4. Rotate the flywheel (Big nut in the center of where you removed the crankcase cover) counterclockwise two or three revolutions, lining the "T" up with the "notch" on top of the housing that you removed the side cover from. If the "T" goes past the notch, start over. You don't want to



Feeler Gauge - A very useful and very necessary tool for valve adjustments



Remove the valve caps



Do yourself a favor and place the side cover bolts on the ground in the order you removed them. This keeps you from guessing what length goes where.

activate the decompressor mechanism. Make sure you are at top dead center (TDC) on the compression stroke. A simple way to check this is by moving the "rocker arms" up and down once you've aligned the "T". Slight up and down movement = top dead center. Locked up tight with no movement= turning the flywheel a few more turns, lining up the "T".

- Using a feeler gauge check the tolerances on the 4 valves. Intake (closest to carburetor) should be from 0.15 +/-0.02 mm (0.006 +/-0.001 in). Exhaust (Closest to where the exhaust system comes out of the engine) should be 0.20 +/-0.02 mm (0.008 +/-0.001 in).
- If any of the valves are out of adjustment the easiest way to adjust them is by using a box end wrench and standard screwdriver. Loosen the lock nut while the screwdriver is in the slot, turn the screwdriver counterclockwise placing the feeler gauge in-between the adjuster screw and rocker arm. Now, tighten or loosen the adjusting screw with the screwdriver so the feeler gauge has a slight drag while pulling it out and sliding it back in.

To put you right smack dab in the middle of the tolerances use these values.

Intake Valves-XR650R

Exhaust Valves-XR650R

Use .152 mm or .006 in. These are both the same size, just one is metric and the other is standard.

Use .203 mm or .008 in. Again, these are both the same size just a metric and standard measurement.

Be sure to keep the screwdriver steady with no turning while you re-tighten the lock nut. Now check your work.

- On the intake valves a size .178 mm/.007 in. feeler gauge might still tightly squeeze in, this is ok, but a .203mm/.008in. should not fit. On the exhaust valves a .229mm/.009 in. might fight its way in but a .2254mm/010in. should not gain access.
- Re-assemble everything and fire her up. With the valves properly adjusted she should sound like a sewing machine.

Adjusting the exhaust valves is somewhat tricky because of the limited room you have to work with. Don't stress over this, after the first adjustment ours haven't needed further tweaking. On the other hand, the intakes have, but they are easy to get to and adjust.

The first time you adjust the valves it will probably take you an hour. After you get the hang of it, 20 minutes tops.

There you have it, the feared valve adjustment and it's



If you're careful you don't need to replace the gasket after each valve adjustment. We're still using the original gasket after many valve checks/adjustments.



Crank counterclockwise

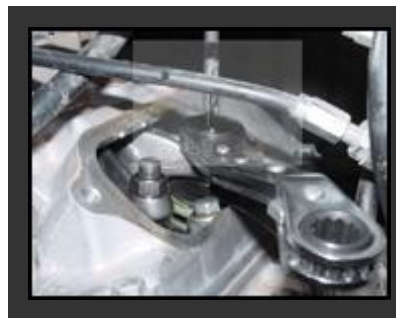


Line the "T" up with the notch



7. The tip of the feeler gauge is right where it needs to be but notice the bolt head under it. This might cause an inaccurate reading. It's best to angle the feeler gauge so it's even with the carburetor when checking the intake clearance.

almost painless.



● **NEW! FREE CLASSIFIEDS!** . . . 



[[Main Page](#) | [About](#) | [Staff](#) | [Advertising Inquiries](#)]

[[Table of Contents](#) | [Race Pages](#) | [Find/Search](#)]

[[Off-Road Products](#) | [Off-Road Vendors](#) | [Yellow Pages](#)]

[[Privacy Policy](#)]

Important Disclaimers - Please Read

Activities and vehicle modifications appearing or described in this publication and its pages may be potentially dangerous. We do not endorse any such activity for others or recommend it to any particular person - we simply describe our experiences and opinions. If you choose to engage in these activities it is by your own free will and at your own volition. Any and all modifications will likely cause a vehicle to behave differently than stock - some modifications may significantly increase your risk when driving the vehicle or be dangerous in some driving situations. Use your brain and common sense when engaging in any activity or making any modifications. Do not take unwise risks, consult a certified professional if you are not sure of something. - **Off-Road.Com and the authors of these articles assume no liability for how any particular individual chooses to use the information presented here.**

Remember: Safety first, always use common sense. Never drink and drive - either on or off-road! Never do more than you are comfortable with. Always wear safety belts and use all appropriate safety equipment.

Copyright © 1997,1998,1999,2000 - Off-Road.Com and the Rubicon Media Group, Inc. Off-Road.com is a monthly periodical made up of content contributed by volunteers or purchased from freelance authors. All Rights Reserved, All content with exception of corporate trademarked logos are property of Off-Road.com, Inc. and The Rubicon Media Group, Inc.

/*hierMenus.js * by Peter Belesis. v3.10.3 000731 * Copyright (c) 2000 internet.com Corp. All Rights Reserved. * Originally published and documented at www.dhtmlab.com

Rubicon Media Group, Inc., a Nevada Corporation and its Internet site at "www.off-road.com" is not affiliated with in any way with, [PRIMEDIA, Inc.](#), McMullen Argus Publishing, Inc. or the print magazine, titled "Off-Road".