

10 MINUTE

A Quickie Way to Keep Your Honda Four In Tip Top Shape

Multi-cylinder motorcycle engines can create a hassle for the owner when it comes time for tune-ups. Most Japanese multis have two sets of points that direct the spark to two separate sets of cylinders. In the case of Honda fours, numbers one and four cylinders use the same points, and numbers two and three are partners. This means that both sets must be spot-on for optimum performance.

One way to check timing and dwell is with a feeler gauge. This is the "sort-of-accurate" way to do it. There are many factors to consider, such as geometry of the feeler gauge when measuring gap, and the wear in the points themselves. Any variation in either of these two can throw the entire setting way off.

Another way to check timing and dwell is electronically. This is a better method of doing it, as there is very little room for error as it is all measured in percentages on a gauge. The electronic impulses are constant all the time, so you know that what the meter reads, the engine is doing each and every time. Honda fours are particularly difficult to tune, unless it is done electronically. One of the best ways available is with Action Fours' Trigger-Dwell. Trigger-Dwell is a small box that reads the dwell of a Honda Four engine's points, and transforms the reading into percent. Using percent instead of degrees, helps alleviate chance of error when checking the dwell.

Dwell is the length, or amount, of time the engine ignition points are closed. Using the Trigger-Dwell box, Action Fours found that Honda engines run best with about 42% dwell. It will naturally vary with each engine and the state of tune, but anywhere between 40 and 42% dwell is good. Using Trigger-Dwell makes the matter a simple mechanical procedure. All that is needed is the box, a screwdriver, and

a timing light to set the timing afterward. This will ensure that the timing is set right-on with the dwell. Doing it statically, like the feeler gauge and dwell, creates room for error, and a poorly performing engine. With these three tools, you can make a Honda 350, 400, 500, 550, or 750 run like a champ.

To begin, remove the points cover to expose the points. Connect the timing light to the battery, and clip the high tension lead to the terminal on the panel of the Trigger-Dwell box. Ground the black lead from the box to the motorcycle. A section of the frame is good enough for this. Next thing to do is connect the red leads to ≈ 1 and ≈ 2 hot sides of the points (1 goes to the points on the left, 2 on the right). With this, you are ready to set the dwell on your Honda Four.

Turn the engine switch on, and set the switch on the panel to 1 (left). Zero in the Trigger-Dwell, using the calibration screw to the left side of the number one. After this is done, you can turn the engine over, and begin checking the dwell for both sets of points. Set the switch on 1 (for 1 and 4 cylinders), then check the meter to see that it reads on 40. If it is below 40, then you will have to close the gap a little. Set the dwell so that the meter reads between 40 and 42. After you have set side 1, turn the switch to number 2, and set the dwell for the ≈ 2 set of points, which supply spark to the two inside cylinders. Follow the same procedures as for ≈ 1 .

When this is complete, the engine is ready to be timed. There are marks set on the points plate by the factory to help do this. Although most engines are in tune using just these marks, sometimes it is necessary to re-adjust the timing on some for better performance. This is sometimes dependent on the state of tune of the motor. A

stock machine shouldn't be too far off these marks. Using the factory marks, there is an "F" on the disc, to designate advance for the ≈ 1 set of points. Exactly 180 degrees is the mark for ≈ 2 set of points. Line both of these marks up to the timing mark on the points plate. Use the timing light for this. Switch the Trigger-Dwell on 1 and 2 to check each side of the points.

If the timing mark "F" is to the left of the points plate mark, then the timing is more advanced than necessary. This means that the spark is firing before it should. To retard it, loosen the points plate with the screwdriver, then turn it clockwise until the marks are lined up. When both sets of points have been timed correctly, go back and recheck the dwell, to make sure it hasn't jumped from 40-42. When both sets of points have their marks lined up, and both sets read 40-42% on the Trigger-Dwell, then the timing and dwell are set, and the bike should run a whole bunch better. Put the points cover back on, and go riding. If you really want to tune your Honda Four properly, the carbs should be synchronized, and plugs changed. Using factory recommended plugs, set the gap at about 0.024 - 0.028 inch. The bike should run much better, helping you fight air pollution and the energy crisis.

Tuning a Honda Four can take ten minutes, or three hours, depending on the tools you have at your disposal. The Action Fours Trigger-Dwell cuts the time down to the ten minute neighborhood, and for this reason, many serious enthusiasts use it. The \$130 price tag scares away some riders, but to get around this, some Honda Four owners clubs purchase it for the organization to help members tune their bikes, without having to shell out much money. Action Fours is located at 2621 South Main Street, Santa Ana, California 92707. •

TUNE-UP

by DAIN
GINGERELLI

1

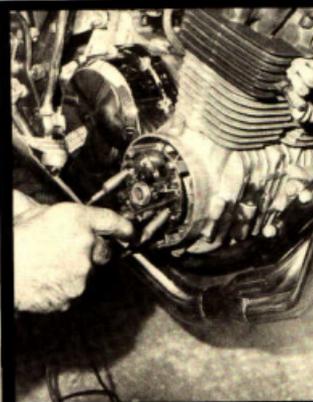
Trigger-Dwell reads in percents, helps eliminate error. Both sets of points should read between 40-42 percent for best engine performance.

2

The black lead from the box is grounded to the motorcycle. It can be attached to either the crankcases or frame tube. Red leads attach to points.

3

The gauge is zeroed with a calibration screw just to the left of the ± 1 switch. The switch controls the set of points being adjusted on scale.



4

First, each set of points is adjusted to the proper dwell by moving the point assembly itself. The needle should read between 40 and 42.

5

Next, the timing must be checked with a timing light. The point plate may have to be moved. Once the timing is set, re-check each point's dwell.

6

A snipe timing operation can take several minutes or more than an hour, it all depends on the quality of the tools and patience of the operator.