



CB400A - Hondamatic Ignition Checks

The CB400A Hondamatic is equipped with a CDi ignition that is linked to the transmission via a change-over relay. Before replacement of CDi or change-over relay the tests below must be carried out to ensure transmission control functions are all working correctly. These parts are only for professional fitment as new parts can be damaged by faulty systems.

The OEM Honda CB400A shop manual is required to refer to when working on the ignition system. Nothing in this publication overrides any warnings or cautions given in the OEM publication.

Warning: The motorcycle must not be operated or ridden if **ANY** of the tests in the table below fail. If a fault develops while in use, stop immediately and do not ride until the problem is repaired by a professional motorcycle workshop. The CDi unit and change over relay must only be fitted by qualified, professional mechanics who can verify correct function of the system.

Warning: The transmission is in Drive when Range 1 or Range 2 is selected and the rear wheel will accelerate with the engine. Ensure the machine is mechanically secured and the wheel is free to rotate during tests where the engine is started. Keep objects and body parts clear of the rear wheel, sprockets and drive chain.

Caution: The replacement change over relay can be easily damaged by improper tests. The only allowable testing of the replacement relay is when connected to a motorcycle system as below.

If any tests below fail do not ride or operate the machine until the fault is repaired.

	Test	Test pass when the follow are true:	Pass/Fail
1	Switch the ignition on and select neutral. Do not start engine.	The neutral light comes on. Range 1 and 2 lamps remain off.	
2	Press the starter button	The starter motor operates	
3	Switch the ignition on. Do not start engine. Select 'Range 1'	The neutral light goes off. The 'Range 1' lamp comes on. 'Range 2' remains off	
4	Press the starter button.	The starter does not operate	
5	Switch the ignition on. Do not start engine. Select 'Range 2'	The neutral light goes off. The 'Range 1' lamp goes off. 'Range 2' lamp comes on.	
6	Press the starter button	The starter does not operate	
7	Secure the motorcycle so the rear wheel can not contact the surface the bike is standing on. Select neutral. If it is safe to do so, start the engine. Select Range 1. Warning: transmission is in Drive during test.	In this configuration, lower the side stand. At 30-45 degrees of side stand movement the engine cuts out. Refer to the Honda manual for more information if needed.	
8	Repeat test 7 with Range 2 selected. Warning: transmission is in Drive during test.	In this configuration, lower the side stand. At 30-45 degrees of side stand movement the engine cuts out.	
9	Secure the motorcycle so the rear wheel can not contact the surface the bike is standing on. Gain access to the generator flywheel. Use a strobe lamp to observe the timing marks. Select neutral. If it is safe to do so, start the engine. Do not rev the engine un-necessarily when Range 1 or 2 are selected.	Using the strobe lamp check the 'FN' mark is roughly in line with the pointer when neutral is selected and the engine running at idle. Select Range 1. Observe that the 'F' mark now aligns with the pointer. Warning: transmission is in Drive during test.	

Actions after a failed test result.

**If any of the tests fail the fault must be identified and repaired before the machine is ridden.
Do not ride the machine with a faulty CDI or change-over relay.**

Tests 1-8

If tests 1-8 fail use the Honda CB400A manual to check the electrics, wiring and switches. If the switches and wiring are confirmed to be satisfactory replace the change-over relay. Carry out tests 1-9 again, if the fault still exists replace the CDI unit. Note a faulty change-over relay can damage a new CDI unit. Do not ride the machine with a failed CDI or change-over relay.

Test 9 fail.

The CDI unit and idle mode switching function of the change-over relay are not testable by mechanics. Both units must be sent to us for specialist checking.

The replacement change-over relay must not be tested by following the Honda test chart.

Important!

The neutral and range indicator lamps must be filament type bulbs. The use of LED bulbs is prohibited. If LED bulbs are fitted, remove them and replace with the specified bulbs.

The starter solenoid must be the correct genuine Honda item. Use of non standard parts may cause the change-over relay to fail.

Note: The timing may appear to jump between the idle range and the main timing advance when revving the engine. This effect is normal and is due to the dual range idle mode turning off.

Stator faults

The source windings produce over 200 volts for CDI ignition, not 12 volts as commonly believed. Stator faults happen because the insulation of the source coils becomes weak or the wires become shorted together in the coil. Such failure leaks power away in a random fashion, hence faults are random E.G, all the time - no spark or white/yellow sparks, or maybe intermittent, often coming on with a warm engine. Symptoms of a failing stator winding also include; running on one cylinder, having to bump start, not starting when hot or misfiring or cutting out after warming up.

Be aware that weak windings can cause a new CDI unit not to work, however an old CDI will appear to run OK. This is not a CDI unit fault, the windings are simply no longer up to the task of powering up the new capacitors. Old CDI units will be tired and not charging up fully.

The CDI unit is not user testable. Be aware tests in the Honda manual often give confusing results even with the correct Honda test box. The CDI unit should be sent for testing along with the changeover relay so that each function can be confirmed.

Stator resistance readings at 20°C (70°F) with cold engine. Use 5% tolerance for precise results. Tests that give no reading, ones outside the limits, or show one reading that has drifted away from correct readings while all the others meet specification, indicate a fault (even if within the limit). Any repaired stator must meet these specifications exactly or the system may not work correctly.

Temperature when measuredC/F

Test between	Actual resistance	5% Range at 20°C	Your readings
Green- White	320 Ohms	305 - 336 Ohms	
Blue - White	6 Ohms	5.5 - 6.5 Ohms	
Brown - Orange	140 Ohms	134 - 147 Ohms	
Pink - Green	16 Ohms	15 - 17 ohms	

The green wire is connected to the metal frame of the stator or pick-up, these two items may not be in good contact with each other. If no resistance reading is obtained when checking a green wire, check the other green wire or put one probe on the metal frame of the part under test!