

**Upgrade to electronic ignition –
Suzuki GS550 B – DYNA-2
By Stig Poulsen**

The earlier GS550 (1977-1979) are equipped with mechanical contact breaker ignition of type Nippon-Denso or Kokusan.

When getting tired of replacing contacts, and adjusting ignition, a shift to a retrofit electronic ignition is possible.

Several brands are available, with the main difference being, whether the mechanical ignition advancer is remained, or the advancing is taken care of by a computerized system.

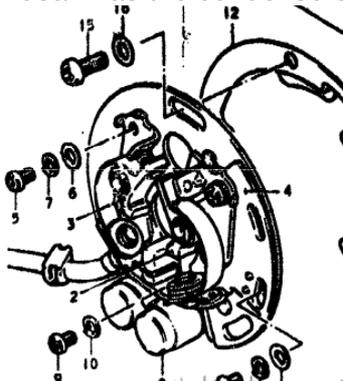
I have chosen the DYNA-2,

- which is known to be very reliable,
- will take no extra space,
- will utilize the existing mechanical advancer
- and will run with the stock ignition coils

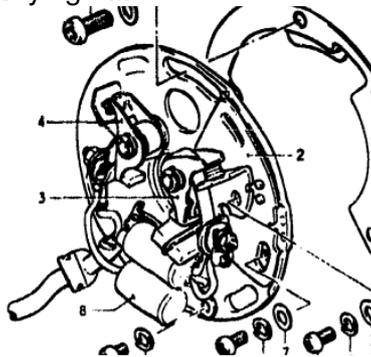
This guide will show how to replace.

Before you begin

At first find out whether the existing ignition system is of brand Nippon Denso or Kokusan. The Kokusan has the condensers placed “pointing” out of the base plate.



Nippon Denso have the condensers lying flat.



Before starting, check that the right unit is at hand, and that all the stuff is in the box:



For Kokusan, You will need a DS3-1 model



Including:

- An installation guide (short), and some other papers.
- The base plate with the two pick-up/amplifier units.
- The rotor – a piece of wire, and a connector.

The rotor has a magnet placed at the side (grey dot) which will trig the pick-ups:



Disassembling

With everything at place, start to remove the tank, since the ignition coils and wires are underneath it.

The tank is fixed with one bolt only

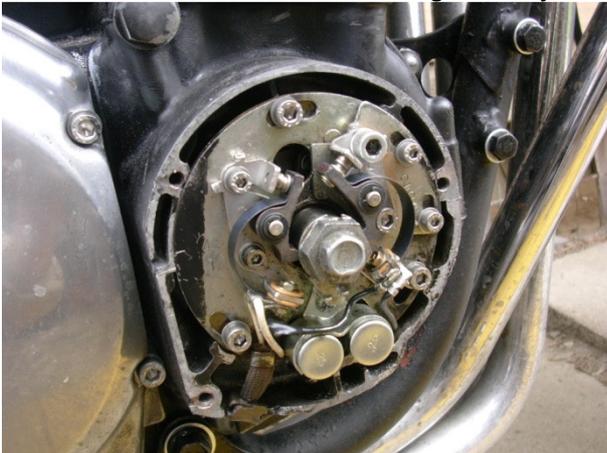


Remember to disconnect the fuel line and the vacuum hose before removing the tank.

The ignition system is hidden under a cover at the right hand side of the motor. Remove the cover:

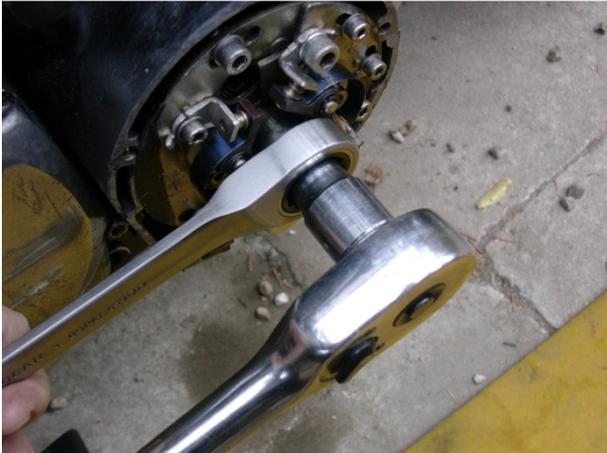


With the cover removed, the old ignition system is shown:



First remove the retainer bolt for the automatic ignition advancer. In the centre you see a smaller hex – which is the bolt, and a larger hex, which is used to turn the motor.

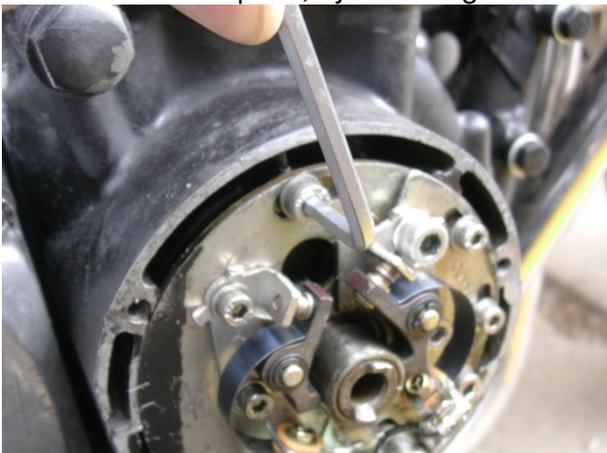
To remove the advancer, remove the bolt, and hold back on the large hex:



Remove the bolt:



Remove the base plate, by removing the 3 screws holding it:



Remove the base plate, and take out the advancer:



Behind the base plate, is a gauge with marks for ignition positions. This will be reused.



The advancer moves the point of ignition, when speed arises – by spreading two weights (hold by springs) due to centrifugal force. Spread the weights by hand, and pull out the advancer unit.

Assemble the advancer unit



The new rotor is shown to the right, and the old eccentric guide in the middle. Oil the axel of the advancer, pull out the weights, and mount the new rotor. With the advancer placed with 1-4 marks facing upwards, the little magnet in the rotor should face left



Assembling

Before mounting the advancer again, check the recommended torque. Clymer says:

ENGINE TORQUE SPECIFICATIONS		
Item	mkg	ft.-lb.
Camshaft cover bolt		
1977-1982	0.7-1.1	
1983-1984	1.3-1.5	5.0-8.0
Ignition advance governor	1.8-2.3	9.5-11.0
Cylinder head nut	2.3-2.8	13.0-16.5
Cylinder head bolt	0.7-1.1	16.5-20.0
Camshaft bearing cap bolts		5.0-8.0
Camshaft sprocket bolt		6.0-8.5
1977-1979 (6 mm hex)	1.5-2.0	
1977-1979 (6 mm Allen)	0.8-1.2	11.0-14.5
1980-1984 (7 mm hex)	2.4-2.6	6.0-8.5
Cam chain tensioner bolts	0.6-0.8	17.5-19.0
Cam chain adjuster locknut		4.5-6.0
1977-1982	1.0-1.2	7.0-8.5
1983-1984	0.9-1.4	6.5-10.0
Alternator rotor bolt		
1977-1982	6.0-7.0	43.5-50.5
1983-1984	14.0-16.0	101.5-115.5
Starter clutch bolts		
1977-1982	1.5-2.0	11.0-14.5
1983-1984	2.3-2.8	16.5-20.0
Crankcase bolts (1977-1982)		
6 mm	0.6-1.0	4.5-7.0
8 mm	1.8-2.2	13.0-16.0
Starter motor bolts	0.4-0.7	3.0-5.0
Oil sump bolts		
1977-1982	1.0	7.0
1983-1984	1.2-1.6	8.5-11.5

1.8-2.3 mkg, or 13.0-16.5 ft.-lb.

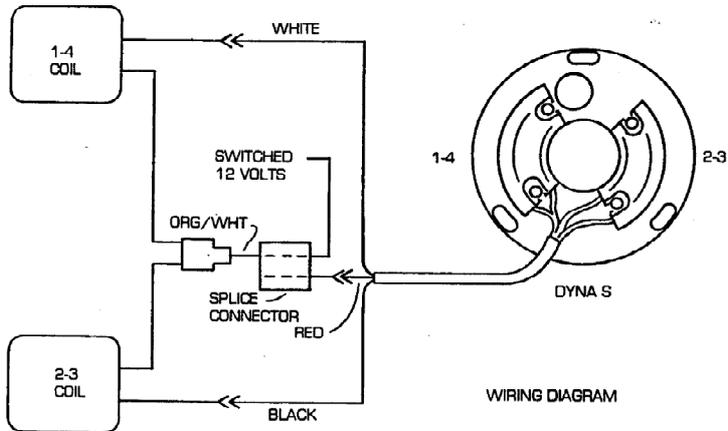
Mount the advancer with this torque:



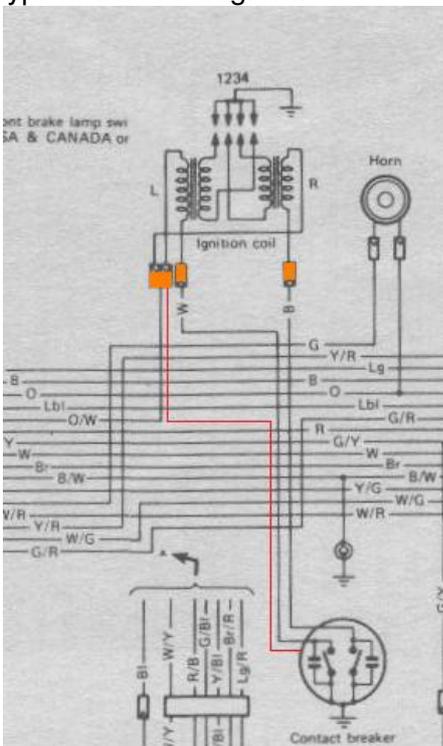
Fix the new base plate with the 3 screws you removed earlier. Remember to fix the old marker plate behind the new plate, and remember to place the hole in the base plate facing upwards, enabling you to see the top-mark.

Wiring

At the DYNA-S data sheet, this drawing shows the principle of connections:



The connections to the coils, and the new 12V supply (red) to the DYNA module is shown at a typical GS550 diagram:



Now disconnect the old wires and the old base plate. Notice the routing of the cable.

Route the new cable the same way.



Connect the white and black wires in the same way the old wires were connected, and connect the red wire to a 12V switched with the ignition key. The orange wire to one of the ignition coils could be used.

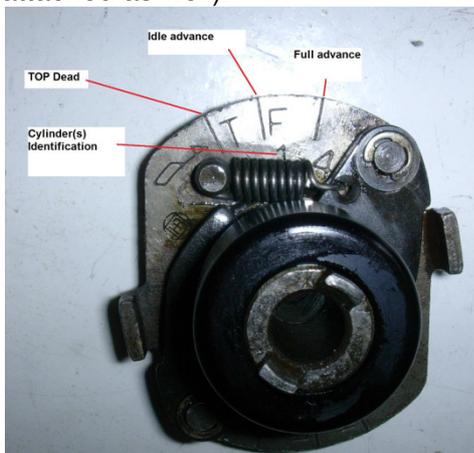
My bike is completely rewired, so I can't show.

Setting ignition

When wired, the ignition must be set. This can be done either statically with a test-lamp, or dynamically with an ignition gun.

First I did it statically.

Connect the test-lamp from the white wire to ground. (I had to make a test-wire – the coil should be attached as well).



Turn the engine clockwise until the rightmost mark (full advance) for 1-4 is at mark. Turn the advancer fully by hand.

You would expect the light to go on, exactly when the advancer is fully turned. If not loosen the base plate and turn it slightly in the elongated holes.

If you are suspicious, check the black wire for 2-3 as well.

If you don't get a reading, you probably forgot to turn the ignition-key and/or switch on the kill-switch.

Double check, that the white wire leads to the coil, which is connected to cylinder 1-4 (not 2-3) – if switched the motor will not start, and after a while you will get scared by the noise when the gas is ignited after all – with the valves open – it is loud – I know.

Attach the cover again, and mount the tank (remember the hoses).

Checking dynamically

Just to be sure, I later on borrowed an ignition gun to check the ignition and the function of the advancer unit.

The gun looks like:



And it must be attached to one of the four ignition cables.



Here it is attached to cylinder 3, and I will use the 2-3 checkmark. Had I used cylinder 4, I would have used the 1-4 checkmark.

Both marks should be checked, since the two pickups can be individually adjusted.

Start the engine in idle, and point the gun at the checkmarks:



The mark should match the first 2-3 mark. If not, move the base plate. Raise the engine speed slowly. The mark should move smoothly, and by 2500 RPM, the mark should match the other 2-3 mark. Redo for 1-4, if necessary move the black pick-up. If the second mark is not met, at 2500RPM, check the advancer unit for correct function.

The static adjustment showed up to be quite accurate.

Done!