

# DYNA S ELECTRONIC IGNITION INSTALLATION INSTRUCTIONS

**KIT NUMBER: DS3-3C, FOR 1977-78 SUZUKI GS 400**

## **DESCRIPTION:**

The Dyna S Electronic Ignition System was designed as a points replacement but can be used on many late model motorcycles with the addition of a mechanical advancer.

## **INSTALLATION PROCEDURE:**

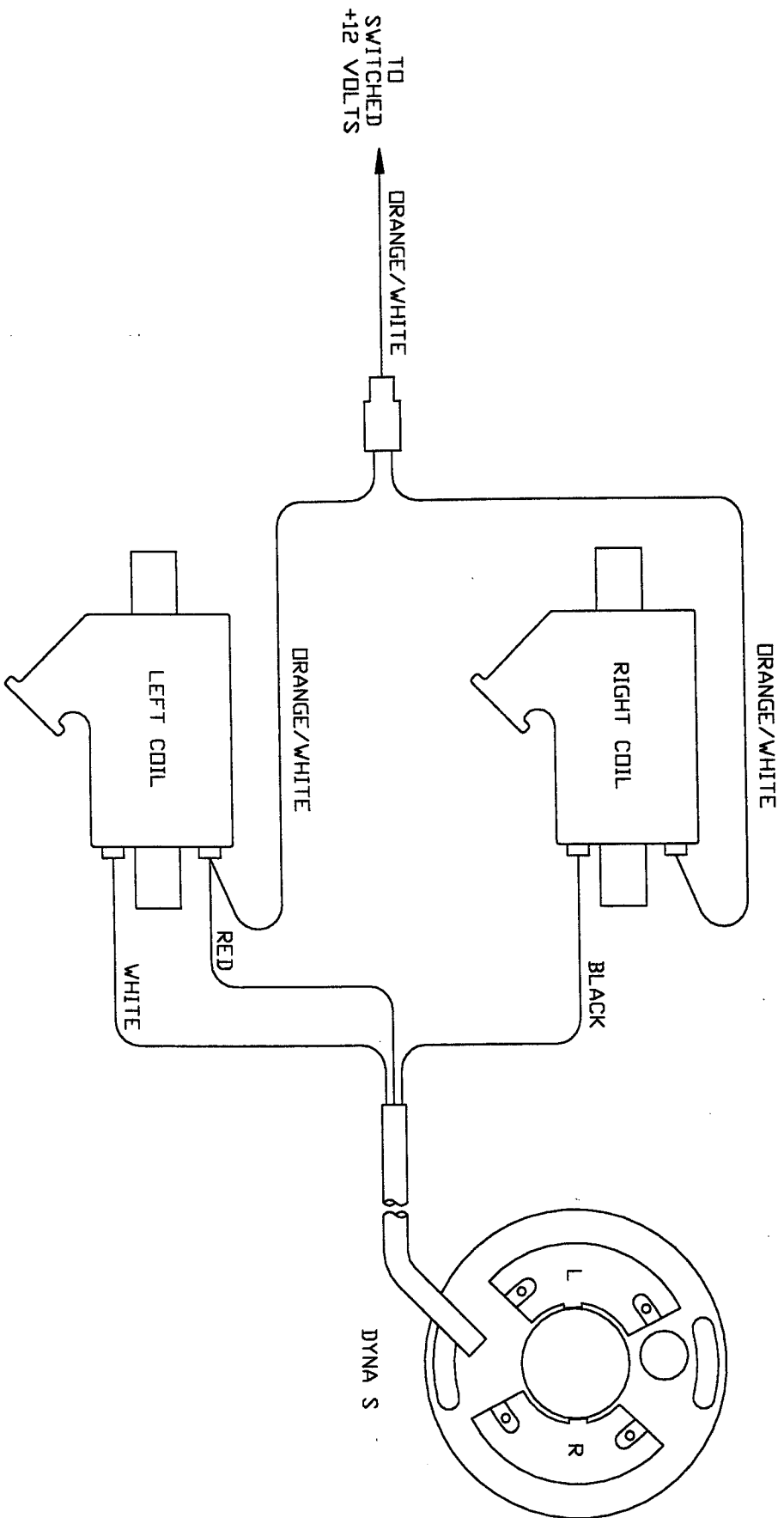
1. Remove the fuel tank. Locate the two ignition coils. There is a orange/white wire coming from each coil to a common junction in the wire harness. These wires carry the switched 12 volts to the coils. Unplug them.
2. There is a black wire going to the right coil and a white wire going to the left coil. These wires carry the signal from the points. Unplug them.
3. Unplug the spark plug caps and remove the coils.
4. Remove the starter cover.
5. Remove the points cover.
6. Remove the bolt and hex washer holding the spark advance assembly to the engine.
7. Remove the two screws holding the points plate to the engine, and remove the entire point/plate assembly.
8. Remove the spark advance assembly from the engine.
9. Remove the points cam from the advance assembly.
10. Coat the advance assembly shaft with oil. While holding it with the R side pointing up, slip the DYNA S rotor over the shaft. A magnet approximately  $\frac{1}{4}$  inch in diameter will be noticed on one side of the rotor. This magnet must face to the right when the R side on the advance assembly is pointing up. Spread the weights and push the rotor down until it engages the weights. Ensure that the rotor rotates freely on the shaft as the advance weights move out and back.
11. Install the advance/rotor assembly on the engine making sure the pin on the advance assembly is engaged in the pinhole in the crankshaft. Reinstall the hex washer and bolt, and tighten. Ensure that the rotor is still free to rotate.
12. Install the DYNA S using the two screws previously removed, and tighten.
13. Route the cable through the starter compartment, up the frame, and over to where the points originally plugged in. Strip the ends, crimp #10 ring terminals to all wires, solder the joints for permanent attachment, and heat shrink tubing over joints.
14. Cut the orange/white wire off the old coils. Cut where the wire meets the plastic housing. Strip the cut ends, crimp #10 ring terminals to both wires, solder the joints for permanent attachment, and heat shrink tubing over joints.

15. Note: DO NOT use any coils, other than black DYNA COILS, or damage may result. Position the DYNA COILS for mounting with the coil terminals and spark plug wire terminals pointing to the rear of the motorcycle. Mount the front hole of the DYNA COILS using the standoffs and screws from the old coils in the front most frame bracket. Use the supplied bracket extension to mount the back hole of the DYNA COILS to the rear most frame bracket. Tighten with supplied lock nuts.
16. Connect the black wire to the right coil and white wire to the left coil using the lower terminal holes as the wiring diagram shows. Connect the orange/white wires to the upper terminal holes of both coils and the red wire along with the orange/white going to the left coil. Tighten using the screws and lock washers provided.
17. Push both bullet terminals of the orange/white coil wires into their harness connector.
18. Find the 8mm Grey silicone suppression-core wire included with this kit. Cut the wire in half and trim to 15 inches. Install rubber boot, strip the insulation back ½ inch, fold conductor over and crimp on the coil terminal. Connect the right coil to the right spark plug and the left coil to the left spark plug.
19. This completes the installation. Make sure that all connections are secure and that all colors match the wiring diagram.

## **TIMING PROCEDURE:**

### Note:

- A. The left module fires the left cylinder, the right module fires the right cylinder, and each provides  $\pm 5^\circ$  of adjustment. Moving them counterclockwise advances the timing and clockwise movement retards the timing.
  - B. All timing adjustments should be made using the advance timing marks which are approximately ½ inch to the right of the F marks on the advance assembly.
1. To time the engine statically, connect a 12 volt test light from the junction of the white coil wire to ground (engine case). Do not disconnect the wires. Use a wrench on the advance assembly hex washer to rotate the engine.
  2. Turn ignition switch on. While holding the rotor in the fully advanced position (clockwise), slowly rotate engine forward until the light turns on. The right hand advance mark for the L cylinder should align with the fixed mark on the engine case.
  3. If the marks do not align, loosen the screws holding the DYNA S plate to the engine, and rotate it clockwise or counterclockwise, as appropriate, and retighten the screws.
  4. Rotate the engine backwards until the light goes out, and repeat Steps 2 and 3.
  5. After the left cylinder timing is verified, connect the test light to the black coil wire, and repeat Step 2, using the R cylinder timing marks. If it is necessary to adjust the right cylinder timing, loosen the cap screws holding the right module using allen wrench supplied with the kit: and move it clockwise or counterclockwise as appropriate, (.010 inch equals 1°) and retighten screws.
  6. Recheck timing and adjust as necessary using the above procedure until proper timing is verified.
  7. The engine can also be timed dynamically using a strobe light in the normal manner. Use the advance marks and an engine speed of about 2500 RPM (full advance).
  8. Replace timing cover, starter cover, and fuel tank.



WIRING DIAGRAM

## **PROBLEM DIAGNOSIS:**

The DYNA S Electronic Ignition is manufactured from the highest quality parts and materials available, using the greatest care as possible. Many times operational problems are due to improper installation or intermittent connections.

During timing, if the test light remains bright at all times, it indicates that there is a bad connection in the wiring. Ensure that there is 12 volts at the red wire.

The DYNA S uses two identical power modules, one for each cylinder. If loss of ignition on both cylinders is experienced, it is not likely to be caused by the DYNA S. The probable cause would be loss of 12 volts to the coils or to the red wire on the DYNA S.

If loss of ignition on one cylinder is experienced, remove spark plugs, replace in caps, and lay them on cylinder head. Turn engine over and watch sparks to determine which cylinder is missing. Disconnect (key off) the DYNA S output wires and reconnect them in reverse. If spark transfers to opposite plug, it indicates a bad DYNA S power module. If spark stays with the same plugs, it indicates a bad coil, or a problem somewhere in the wiring.

## **DYNATEK**

164 S. VALENCIA ST.  
GLEN DORA, CA 91741  
(626) 963-1669  
FAX (626) 9637399