

INSTALLATION INSTRUCTIONS FOR THE DYNA JET SKI IGNITION

Unless you are very familiar with the technical details of a jet ski, it is recommended that you refer to a jet ski service manual when performing the following installation.

The most common cause of operational problems is careless installation. Pinched wires, poor connections, shorts, and moisture in the wrong places, all create ignition malfunctions that in many cases are difficult to diagnose and locate. Take the time to do the job right and you will be pleased with the results.

ELECTRICAL —

1. Disconnect and remove battery. Remove cable from starter.
2. Remove fuel tank.
3. Remove generator/flywheel cover.
4. Remove flywheel.
5. Remove the electric box connector cover and unplug the 6 pin connector. Remove pins from connector and remove grommet.
6. Remove stator plate and wires. Thoroughly clean the stator plate mounting area.
7. Install DYNA S stator plate assembly and position as shown in Figure 1. Pass the red and white wires through the hole in the crankcase.

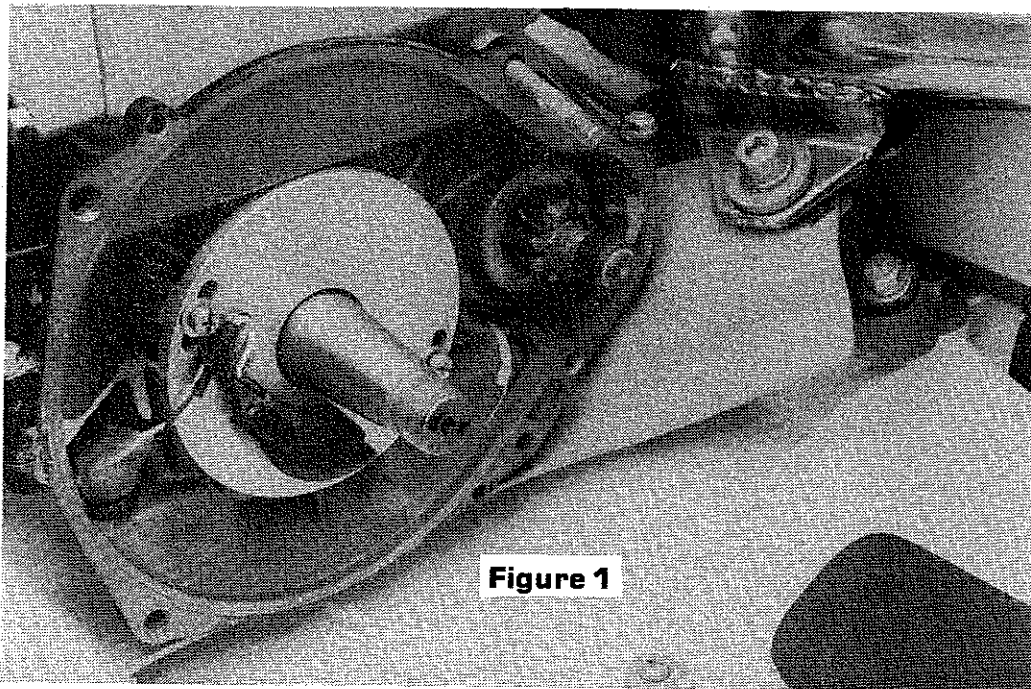


Figure 1

8. Insert the wires through the grommet and cap. Pull the wires through the tube and pass them through the cap and grommet at the electrical box end.

NOTE: The red and white DYNA S module wire connectors will easily pass through the two grommets leading from the engine if the grommets are sprayed with WD-40 or silicone spray.

9. Cut the length of wire supplied with the kit into 1 inch pieces and insert a piece into each of the unused holes in both grommets.
10. Tighten the cap to the crankcase. Position the wires so they will not contact the flywheel. Apply silicone sealant to the hole, on the flywheel side.
11. Attach ignition coil to brackets using the 1/4-28 x 7/8 button head screws and flat washers as shown in Figure 2.

12. Remove and open electrical box. Place coil/bracket assembly in back section of box as shown in Figure 2. Mark bolt positions on box and drill 2 clearance holes for $\frac{1}{4}$ bolts. Attach coil/bracket assembly to box using the $\frac{1}{4}$ -28x $\frac{3}{8}$ button head screws. Apply silicone sealant around the screw heads.

13. Remove all components from the front section of the electrical box except the starter solenoid. Do not cut any wires, just unplug the connections.

14. Grind or mill the three posts shown in Figure 3 approximately $\frac{1}{4}$ inch to clear the ignition coil when the box is closed.

15. Mount the switch module as shown in Figure 3, with the brown wire and separate blue wire under the attachment screw.

16. Connect the short, unterminated white wire from the switch module to the solenoid white wire using the splice block or by soldering.

17. Plug the orange wire into the orange wire receptacle where the regulator originally connected.

18. Attach the red wire with the ring terminal to one primary terminal of the ignition coil. Connect the white wire from the switch module and the separate white wire provided, to the other primary terminal of the coil.

19. Insert the spark plug wires in the caps and grommets on the electrical box front section, and place that section in its approximate normal position in the ski. Clip the spark plug caps on the spark plugs and adjust the slack wire lengths. Tighten the caps on the box.

20. Place the two sections of the box close together and determine how much wire is required inside to reach the bottom of the coil high voltage towers. Allow some extra for service loops and approximately $\frac{1}{2}$ inch for stripping.

21. Slip a coil boot over the end of each wire. Silicone spray makes them slide easier. Strip approximately $\frac{3}{8}$ inch of the jacket and insulation, and bend the conductor back over the jacket.

22. Place a clip on the wire so that it lies on the conductor. The end of the cable should come to the hole in the clip.

23. Plug the wires into the coil towers and slide the boots down over the towers.

24. As the box is closed, make sure no wires will become smashed and that the spark plug wires do not rub against sharp edges.

NOTE: The box must be completely watertight. Take every precaution to seal it properly or you will have problems.

25. Close the electrical box using the original hardware and install it in the ski.

26. Make the orange & white and blue & black connections for the start and stop switches, and tighten the caps on the box.

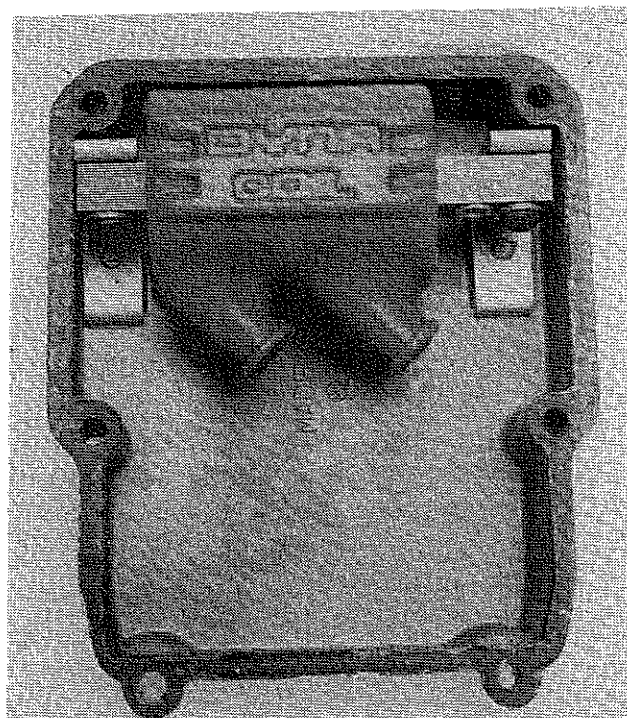


Figure 2

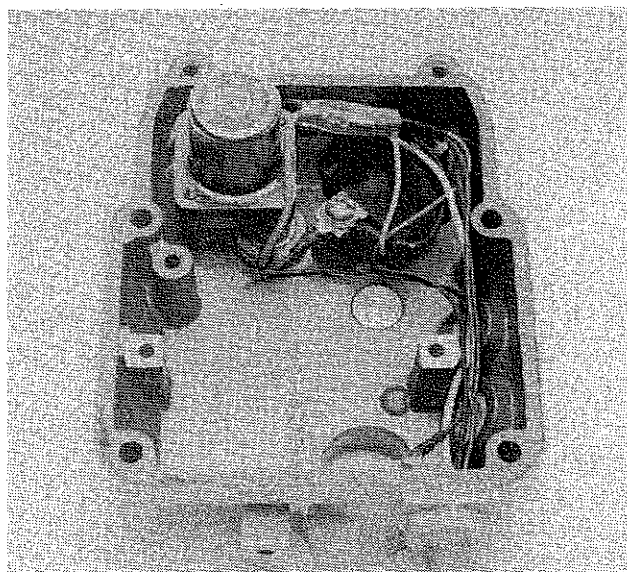


Figure 3

27. Connect the pins and sockets on the red and white wires for the stator plate. Replace the connector cover on the box.
28. It is recommended that two ground wires or one heavy cable be used between the engine and the electrical box. If that connection fails, the ignition will not operate.

FLYWHEEL —

The DYNA Jet Ski Ignition is designed to be used with the stock flywheel on 440 and 550 jet skis.

1. There are three groups of three rivets holding the hub to the flywheel. Using a 1/4 inch drill bit, drill the center rivet of each group approximately one half way through. Using a punch or press, drive the remainder of the three rivets out.
2. The magnets may be removed as follows: Remove any screws or rivets holding the magnets. Using a torch, heat the flywheel in the area behind each magnet. When hot, strike the magnet with a hammer. If done properly, each magnet will be removed in one piece.

NOTE: Removal of the magnets alone will result in a substantial improvement in performance, and a reduction in stress on the engine. If further improvement is desired, additional work on the flywheel can be performed as shown in Figure 4.

3. Place the rotor in the flywheel so that the red mark aligns with the keyway. Using loctite, install the three 1/4 - 28 x 7/8 button head screws and tighten.
4. Before installing the flywheel permanently, check the rotor to power module air gap as follows:
Place the piece of clay included in the kit on top of the power module. Place the flywheel on the crankshaft without the key, and tap gently with a mallet to assure it is on as far as it will go. Remove the flywheel and check the clay thickness. It should be .030 to .070 thick.
5. Install the key, flywheel, lockwasher and nut, and torque to factory specification.
6. Install the battery, cables, and starter cable.

NOTE: When the start button is pressed, 12 volts should appear at the red wire going to the DYNA S module, and the LED on the switch module should light. Once the engine is running, the 12 volts will remain, however, if the engine stops, the 12 volts will be removed, the LED will go out and the ignition will be deenergized. Pressing the stop button will also stop the engine and deenergize the ignition.

If the jet ski will not be operated for extended periods, the battery should be disconnected.

The timing procedure should be performed as specified in the Jet Ski Service Manual. If there is a need to power up the ignition system without the engine running, such as for performing timing, connect the white wire that normally attaches to the solenoid white wire to a source of +12 volts.

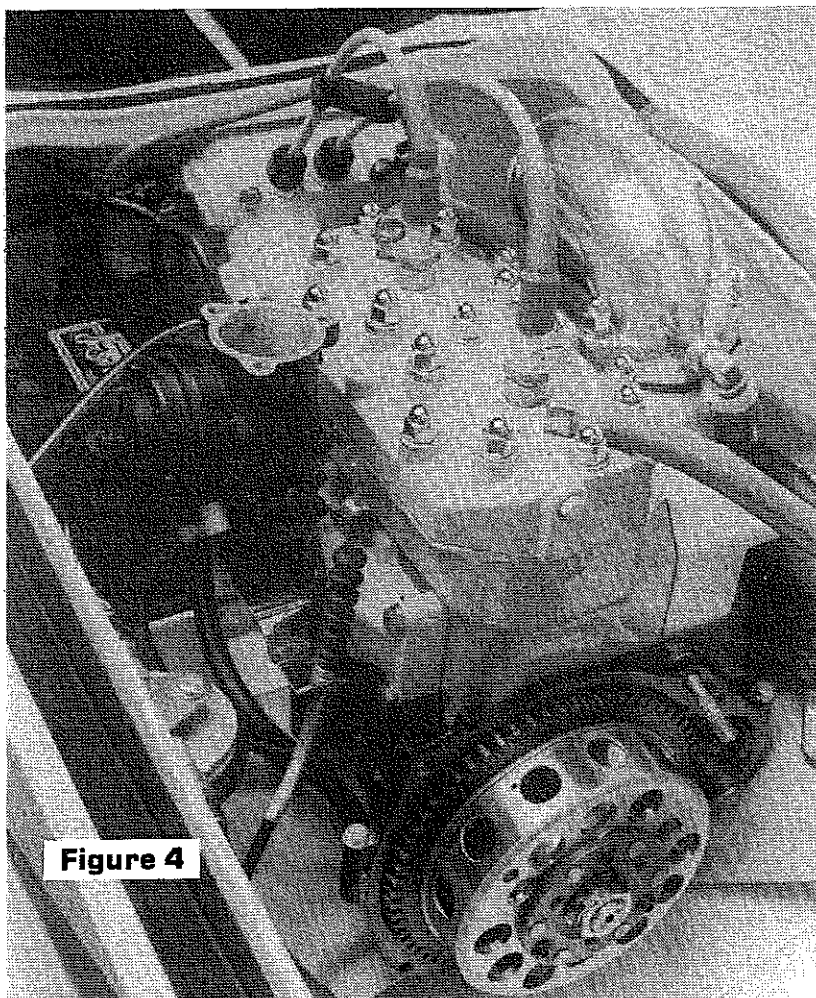
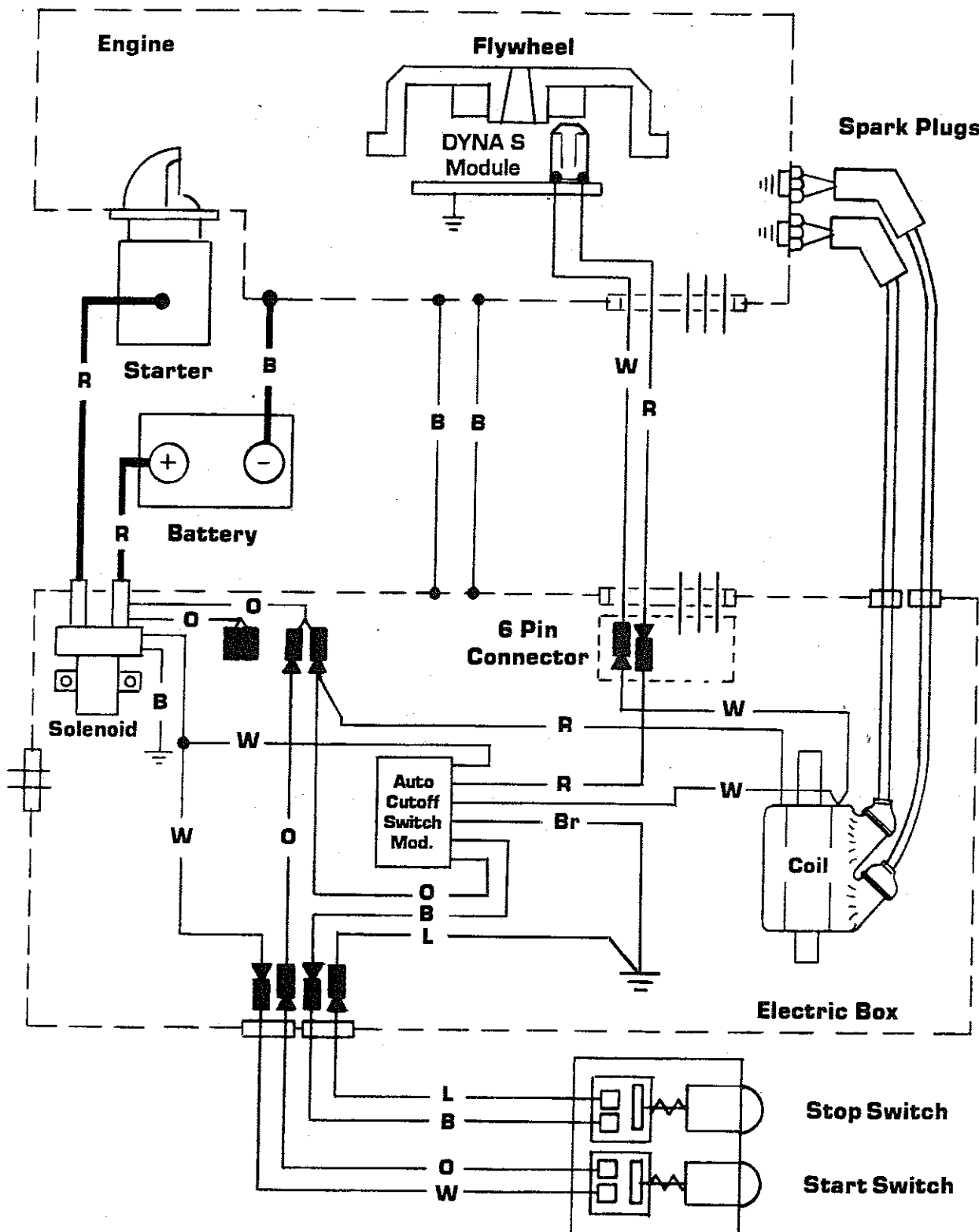


Figure 4

***** **WIRING DIAGRAM** *****



WIRE COLOR CODE

B	Black	LG	Light Green
Br	Brown	O	Orange
B/R	Black/Red	O/W	Orange/White
Gy	Gray	R	Red
L	Blue	W	White

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There have been cases when using the automatic cut-off switch module where the engine will start, but immediately stop when the start button is released. The parts we have seen checked out good in all of our tests, and in fact, function perfectly on a different jet ski.

One of the causes has turned out to be corrosion on the stop switch contacts that allows enough current to flow to ground to turn off the switch module. The solution is cleaning the switch contacts. Anything that offers a low resistance (400 ohms or less) from the switch module stop wire to ground, will turn it off. This could be the aforementioned problem or something like a pinched wire.

Another cause is electrostatic energy getting into the switch module from the spark plug wires. The spark plug wires should be routed as far away from the switch module as possible. If the problem persists, the switch module can be wrapped with aluminum foil and the foil grounded through the mounting screw.