

REVOLUTION ENGINES OWNERS MANUAL

REVMASTER IGNITION SYSTEM

The REVMASTER ignition system with proportional advance timing was designed for use in two-cycle gasoline engines, which require smooth low and high rpm operating conditions. The uses for this ignition system are in model aircraft, cars and boats. The module eliminates the need for a heavy flywheel with the magneto-type ignition, therefore a significant weight saving is achieved.

IGNITION MODULE

The electronic components of the ignition module are housed in an aluminum box 2 $\frac{7}{8}$ "L x 1 $\frac{1}{8}$ "H x 1 $\frac{1}{4}$ "W. The box has 2 tabs for attaching it to a suitable location in the model airplane. The box is grounded to the negative side of the battery to shield the high voltage coil and reduce the RF output to a level, which does not interfere with the radio receiver. The ignition module is based on a capacitive discharge ignition system. It will operate over a voltage range from 4.8VDC to 7.2VDC. Care must be taken to make sure that the correct polarity is applied to the power input (red is positive and black is negative). While the ignition module is designed to operate with minimum power consumption, we recommend using a high capacity battery pack with a minimum capacity of 1000mAh.

Please note that there is power drain from the battery when the ignition module is turned on even though the engine is not running. Switch off the battery whenever the engine is not being operated.

IGNITION WIRE AND CAP

The high voltage wire exiting the ignition module is a carbon conductor wire. The carbon conductor wire is selected because of its RF noise suppression property. To further reduce the chance of RF interference from the high voltage ignition wire, the ignition wire is shielded with a braided sleeve, which is grounded to the aluminum box of the ignition module. Although this braided wire could provide a ground connection between the engine and the ignition module, a ground wire between the engine and the ignition module is recommended to assure a fail-safe ground connection. The ignition wire is approximately 12 inches in length. It should be routed away from the hot exhaust pipes to avoid burning through the rubber insulation, which could result in shorting the high voltage in the wire to ground resulting in engine shut down.

The spark plug cap is a machined cap designed for the NGK CM6 spark plugs commonly used in model engines. The rubber insulation is molded into each plug individually. This

provides the best insulation to eliminate internal arcing under extremely high voltage condition. A coil spring in the cap conducts the high voltage to the spark plug ensuring good contact without internal arcing in the cap. A ring spring at the mouth of the cap grips the spark plug base and firmly holds the cap in place even under severe vibration. To remove the spark plug cap, grip firmly on the spark plug cap and pull.

Warning! Never pull the spark plug cap off by the ignition wire.

SPARK ADVANCE

The REVMaster ignition system is equipped with a spark advance feature to provide optimum engine performance at all the speed ranges. During hand starting of the engine, the spark is retarded to avoid any kickback of the engine. The engine should be flipped with a firm and swift motion with a electric starter or a chicken stick. Moving the propeller slowly through the compression cycle will result in a kickback and may injure the operator.

Warning! Never touch or move the propeller unless you intend to start the engine or you have checked that the ignition is turned off.

The ignition module can go into a failure mode if there is a loss of ground connection. In this mode there is no spark. To reset the ignition module, turn the power off and on, and then check for spark.