

## Rcexl Ignitions Ver 2.0 INSTRUCTIONS

Thank you for purchasing our Rcexl Ignition!  
If installed properly and maintained, you will receive many years of good flying.

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### 1.) Specifications

- I.) **WARNING** - Rcexl ignitions were designed for use in model aircraft and should NEVER be used in a Human Carrying Vehicle!!
- II.) BPMR6F 14mm and BMR6A Ignition:

Input voltage 4.8-7v  
Output voltage 12-16 kV  
Max Draw @8000 rpm - 650 ma  
Case - ABS with Nickel plate  
Weight Single: less battery - 4.4oz  
Weight Twin: less battery - 6.1oz  
Plug size - 14MM NGK (BPMR6F)  
Warranty - 2 Years

- III.) CM6 10mm and ME-8 1/4 32 Ignition:

Input voltage 4.8-7v  
Output voltage 12-16 kV  
Max Draw @8000 rpm - 650 ma  
Case - ABS with Nickel plate  
Weight Single: less battery - Single 4.4oz  
Weight Twin: less battery - 6.1oz  
Plug size - 10MM NGK (CM-6)  
Warranty - 2 year

### 2.) Selecting a Power Source

- I.) 4.8 and 6v volt NiCd/NiMh Packs:  
  
The Rcexl Ignition ver 2.0 is rated 4.8 to 6v a max of 7 volts. A 4 cell 4.8v pack and 5 cell 6v pack with a minimum of 800 mAh is fine and creates a hot spark. The Rcexl ignition ver 2.0 runs most efficiently on 4 cell packs and 5 cell 6v pack . Do not use an old Pack!! If it's not good enough for your receiver, it's not good enough for your ignition..  
If Use 4.8v pack the engines not highest rotational speed, Also use 6V pack
- II) 6.4 Volt Li-Fe(A123) Packs  
  
2cell Li-Fe(A123) The Volts Max of 7.2 volts. Nominal 6.6 Volts, use a voltage regulator. Or connects one IN4007 diode to fall voltage the use.  
If engines not highest rotational speed, Also may directly use
- III.) 7.4+ Volt Li-Poly Packs.:

We have found that 2cell Li-Poly Packs at peak charge can be as high as 8 +v. If you are going to use a 2 cell Li-Poly Packs, you must use a voltage regulator. Or Serially connects two IN4007 diode to fall voltage the use The Rcexl ignition runs more efficiently on about 4.8-6Volts and

will draw more current at around 8+v, as well as operate at a higher temperature. You also have a higher chance of RFI interference.

*In satisfies the engine under the highest rotational speed a as far as possible use lower voltage*

Once again, do not use an old pack to power your ignition!

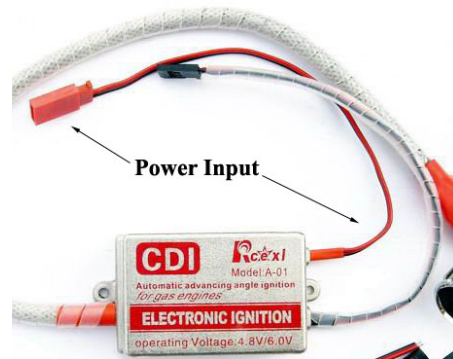
### 3.) Installation

- I.) Spiral Wrapping:  
  
Use the supplied Spiral Wrapping included with your Ignition to protect the wires from heat and chafing. Wrap the braded Spark Plug Lead, Hall Sensor Harnesses and Battery Harnesses.
- II.) Mounting:  
  
Mount your Ignition on the engine box if possible. Wrap the ignition in foam to reduce the effects of engine vibration on the circuitry like you would do with your receiver. You can use the mounting tabs on the ignition but we recommend using zip ties or Velcro ties to secure it. Do not install your ignition in the fuselage. Keep the ignition as far away from you receiver as possible and never use the same power source to run your ignition and receiver jointly.
- III.) Connecting the Battery:

The Rcexl ignition utilizes the Futaba style plug ends and comes with an additional pigtail to add to your ignition switch if necessary. Be sure to follow the color coding (Red +, Black -) when attaching you're your power source and on / off switch to your ignition power leads (see

fig.1). Wrap you battery with foam and mount it as far away from the receiver as possible, preferably on the motor box.

fig 1.



#### IV.) Hall Effects Sensor:

Chose the Sensor housing the best suits your engine and determine the orientation of your magnet if unknown. (fig. 2) Most seem to be a south orientation. A quick way to determine the orientation is connect the hall sensor to the ignition, insert the plug and connect you power source. Quickly pass the sensor over the magnet without stopping over the magnet, this may damage the sensor. If the plug doesn't fire, flip the sensor over and repeat.

Fig 2.



Insert fully the sensor into the sensor housing. Use the supplied wedge to hold the sensor in its housing. (fig. 3) **Warning!!** The wedge provides a one way fit; make sure you have the proper sensor orientation before inserting the wedge as it will be very difficult to remove!

Fig. 3



If you are going to attempt to use your existing hall sensor, see (fig. 4) for the wire orientation. (Red +, Black -, white signal)

Fig. 4



#### V.) Timing:

Timing will vary from manufacture to manufacture. Usually, 28° ~30° Top Dead Center (TDC) is recommended.

Mount the Degree Wheel to the Crank Shaft (fig. 5). Rotate the engine crankshaft so the piston is set at TDC. This can be ascertained by using a small wooden dowel to make contact with the piston top thru the spark plug hole. Rotate the crankshaft back and forth to get TDC as close as possible. For absolute accuracy, a dial indicator can be used but not necessary.

Without moving the Crank, move the Supplied Degree wheel so it reads 0 degrees TDC and lock it down.

Fig. 5



Turn the crankshaft clockwise (opposite to the engine rotation) until the wheel reads 28 degrees.

Connect the Battery to the ignition insuring that the Spark Plug is not in the cylinder. **Warning!!** Avoid turning the engine over with the ignition energized without the spark plug being attached to the H.T. lead. Failure to do so could damage the Hall sensor pickup.

#### For Adjustable Magnet Rings:

Turn magnet fixed ring Counter Clockwise. When you see the plug firing, stop and lock down the ring, the correct ignition timing is now set. (28o ~30o.) The plug will fire as the magnet passes slightly past the Hall Sensor, this is a normal condition.

#### For Fixed Hall Sensors:

Try to use your existing hall sensor mounting holes, if this is a conversion you will need to estimate the hall sensor position and drill and tap your own. The holes on the hall sensor housing are ovalar and allow for some adjustment.

#### 4.) Trouble Shooting your Ignition.

##### I.) Battery:

Check the voltage on your battery and make sure it's healthy and fully charged.

Insure that the voltage is 6v or less to the ignition.

II.) Connections:

Check that all connections are correct from the battery, to the switch, to the ignition. Use a volt meter on the switch to ensure the ignition is getting power and the polarity is correct.

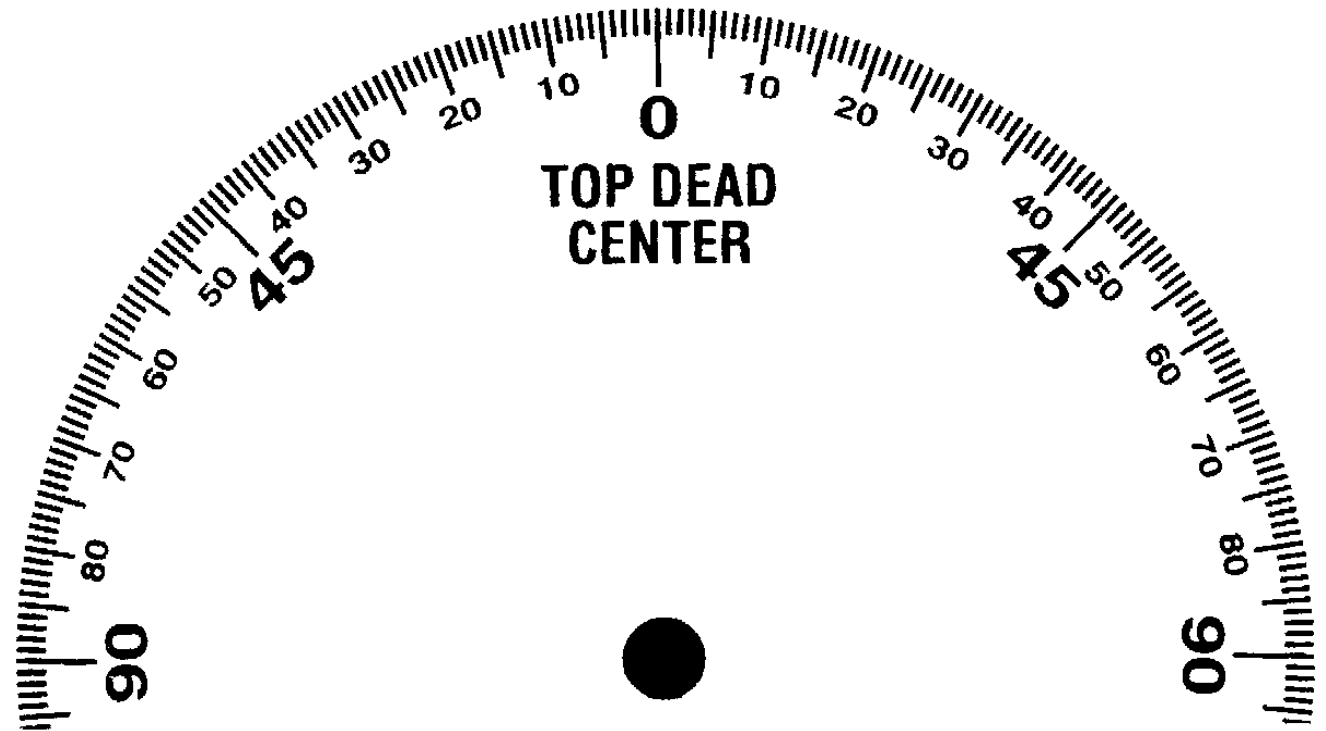
III.) Hall Effects Sensor:

Ensure that the orientation of the hall sensor is correct with the orientation of your hub magnet. If you used your existing hall sensor, make sure that the wire orientation (fig. 4) is correct.

5.) **Safety Precautions.**

Never power the ignition with the plug in the head when you're working on your engine, it could fire off!! Always wear a glove when starting your engine!! After turning off your ignition, beware that the ignition could still have a charge and fire the motor. Always range check your model!!

## Cut out Degree Wheel



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