

## **BRE Hall Effect Conversion for Ford Engines**

Congratulations on your purchase! Enclosed you will find everything you need to convert your Ford engine to Hall effect crank and/or cam sensors. The adapter has been designed in a way that allows it to be installed in any of the OEM positions, with only the sensor depth needing to be adjusted.

### **Included Items:**

- BRE Billet Hall Sensor Adapter
- ZF “Cherry” Hall Effect Sensor
- Hall Effect Sensor jam nut
- M5 and M6 hardware for mounting location flexibility
- Buna-N O-ring

### **Setting Sensor Depth:**

Before permanently mounting your sensor, you will first need to adjust the depth. This is a very simple process and requires no special tools. There are two different ways to accomplish this. Incorrect sensor depth will cause the sensor to read poorly or not at all, and could also cause damage to the sensor and engine if set too deep.

#### **Method 1:**

- Turn the engine over until a trigger tooth is directly centered in the sensor hole.
- Mount the sensor bracket to the engine but leave the jam nut loose.
- Carefully screw the sensor down until it touches the trigger tooth. **DO NOT FORCE**
- Make a note of the position, then loosen the sensor 1.5 turns.
- This will set the gap at roughly 0.060”, which is the middle of the recommended range.
- Lock the length with the included jam nut.

#### **Method 2:**

- Compare sensor length to your original and adjust the new sensor until they match.
- Simply place the sensors opposite each other and adjust until they sit flush.
- Lock the length with the included jam nut.





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## **Wiring:**

The ZF “Cherry” sensor is a very robust and flexible sensor, operating from 5 volts up to 24 volts. If your ECU does not have an internal pull-up resistor available, one will need to be added. 1k resistors typically work well, though higher voltages made need a higher value resistor.

### **Pinout:**

- Brown - Supply voltage 5-24V
- Blue – Ground
- Black - Signal Output

### **Pull-Up Values:**

- 5 volt – 1k Ohm
- 9 volt – 1.8k Ohm
- 12 volt – 2.4k Ohm
- 15 volt – 3k Ohm

ECU configuration changes will be required to suit the Hall effect sensor(s) and ignition timing should be verified once the engine is running, as slight adjustments may be required.