INSTALLATION INSTRUCTIONS

MSD Billet Crank Trigger w/Adjustable Cam Sync Chevrolet V8 Distributor

PN 23401MSD

Parts Included:

1 - MSD Distributor
1 - Wire Retainer
2 - 1.5" Self Tapping Screw
1 - Gasket
1 - Tube of Gear Lubricant
2 - O-Rings
1 - Rotor Phasing Tech Brief

Replacement Parts:

Rotor, PN 8457
Distributor Cap, PN 84083
Cap Bolt Down Kit, PN 8499
Chevrolet Bronze Gear:
Standard (0.500" ID), PN 8471
Oversized (+0.006"), PN 8472

WARNING: When installing any electronic accessory or component, disconnect the battery cables. When disconnecting, always remove the negative cable first and install it last.

Note: A Crank Trigger System must be used with this distributor.
An MSD Billet Hold-Down Clamp, PN 8110, is recommended.

This distributor is equipped with an adjustable Hall-Effect Cam Sync Sensor for fuel injected engines. The Cam Sync can be adjusted to achieve the proper lead time required for the particular ECU being used.

HALL-EFFECT PICKUP

LED OPERATION

The LED is On whenever the magnet is **not** in front of the pickup. The LED turns Off when the magnet passes over the center of the pickup (for approximately 40°).

SPECIFICATIONS

Accepts 5 – 18 Volts continuous
Output: Within 1.5V, of supply voltage, on the red wire (Signal Hi) and 0.3V above ground (Signal Lo).
Protected from reverse polarity, short circuit, and over voltage.

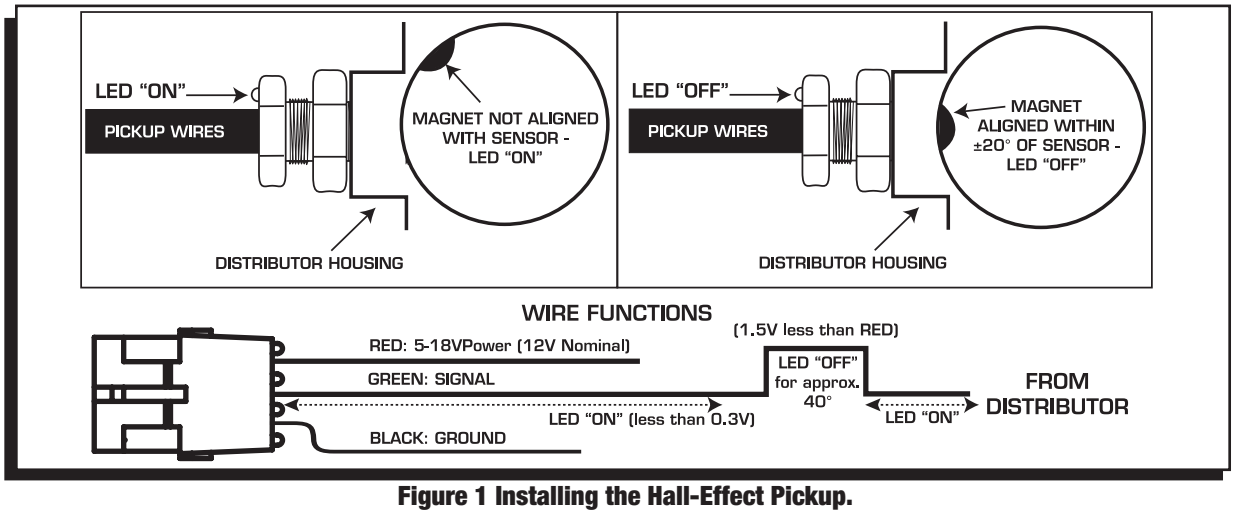

Figure 1 Installing the Hall-Effect Pickup.

ADJUSTING THE SLIP COLLAR

Before installing the Crank Trigger Distributor, the slip collar height must be set.

1. Loosen the slip collar and slide onto the distributor. Do Not install the gasket yet.
2. Insert the distributor into the engine until it bottoms out against the oil pump drive.
3. After it bottoms out, slide the slip collar down into position and tighten it.
4. Remove the distributor and install the gasket.

CHECKING GEAR MESH

It is recommended to check for proper gear mesh between the cam gear and distributor gear. To do this, coat the distributor gear with moly grease and install the distributor. Crank the engine over several times, pull the distributor out and inspect the gear pattern shown on the grease. The proper mesh will leave an even pattern in the middle of the gear (Figure 2). Adjust the slip collar to obtain the correct mesh.

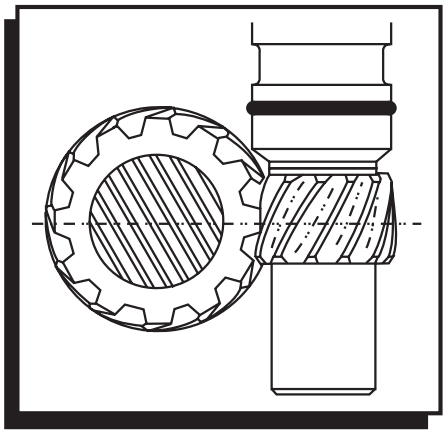

Figure 2 Correct Gear Mesh.

CHECKING THE OIL PUMP TO DISTRIBUTOR SHAFT OVERLAP

The proper overlap between the distributor shaft and the oil pump shaft is very important. The tongue of the distributor shaft should fit into the groove of the oil pump shaft by at least 1/4". To check this:

1. Measure the distance between the base of the slip collar to the tip of the distributor shaft (Figure 3).
2. Using a straight edge, measure the distance from the intake manifold distributor flange to the bottom groove on the oil pump shaft (Figure 3).
3. Take the two measurements and subtract them. The difference is the overlap. If there is not enough or too much overlap a different oil pump shaft is required.

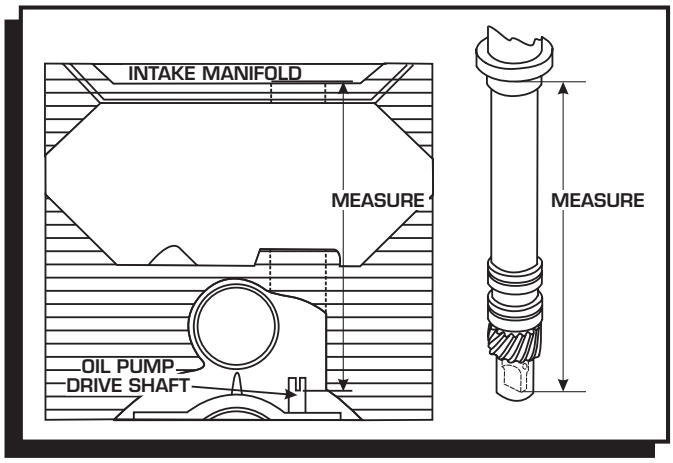

Figure 3 Measuring Oil Pump Overlap.

INSTALLING THE DISTRIBUTOR

1. Position the engine at your desired timing.
2. With the slip collar height set and the gasket installed, apply a liberal amount of the supplied lubricant to the distributor gear. (The supplied O-rings can **only** be used if the block has been modified as shown in Figure 4.)
3. Position the rotor contact in your desired direction of the #1 spark plug wire. Install the distributor making sure it fully seats. If the distributor will not fully seat with the rotor pointing to the desired position, you may need to rotate the oil pump shaft until the rotor lines up and the distributor fully seats.
4. With power going to the cam sync pickup, rotate the distributor housing until the red LED turns off. Adjust the housing to align the rotor to the nearest terminal on the cap, this will be number one.
5. Position and tighten the distributor hold down clamp onto the housing step.

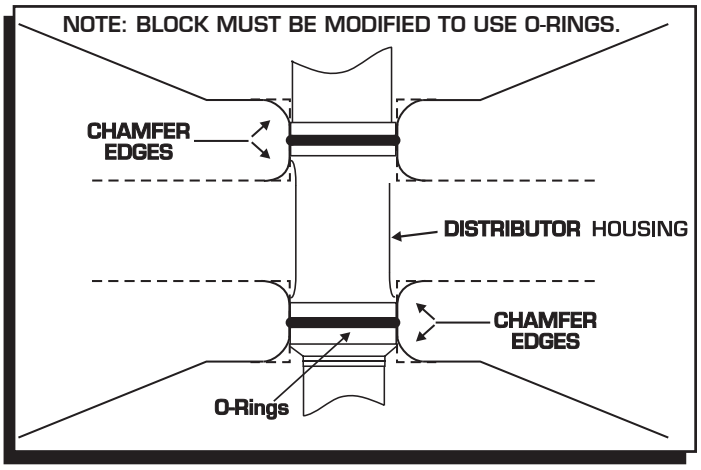

Figure 4 Modified Block for use with O-Rings.

SETTING THE CAM SYNC PICKUP

The Hall-Effect Pickup is designed to provide an aftermarket ECU with a sync signal. This signal must be advanced more than the corresponding Cylinder #1 ignition trigger signal. The amount of advance or lead depends on the EFI system being used. Always check with the EFI manufacturer to determine the amount of advance required for the cam sync signal.

For example: An ECU requires 10° of cam sync signal advance relative to the Cylinder #1 ignition trigger event, and your engine will be running a total ignition timing of 36°.

a. Once the distributor is installed, rotate the engine until the number one cylinder is positioned at the required cam sync position. Referring to the example above, if 10° of cam sync lead is required, position Cylinder #1 at 46° BTDC.

b. With power going to the Hall-Effect sensor, adjust the pickup until the red LED turns Off (the sensor output will be 'Signal Hi'). This will be the 10° of advance for the ECU. It is important to rotate the pickup clockwise (CW) until the LED turns on, to find the edge of the magnet. Then rotate the pickup counter-clockwise (CCW) just until the LED turns off.

c. Lock the sensor pick up in position.

6. Install the distributor cap and spark plug wires one at a time to ensure correct location. A wire retainer is supplied to secure the wires in place. Align the mounting bosses and use the supplied 1.5" self-tapping Phillips screws to hold the retainer in place.
7. It is recommended to check and confirm correct rotor phasing. The supplied tech brief explains rotor phasing in detail.

MSD INSTALLATION INSTRUCTIONS

TECH NOTES

Service

In case of malfunction, this MSD component will be repaired free of charge according to the terms of the warranty. When returning MSD components for warranty service, **Proof of Purchase** must be supplied for verification. After the warranty period has expired, repair service is based on a minimum and maximum fee.

All returns must have a Return Material Authorization (RMA) number issued to them before being returned. To obtain an RMA number please contact MSD Customer Service at 1 (888) 258-3835 or visit our website at www.msdperformance.com/rma to automatically obtain a number and shipping information.

When returning the unit for repair, leave all wires at the length in which you have them installed. Be sure to include a detailed account of any problems experienced, and what components and accessories are installed on the vehicle. The repaired unit will be returned as soon as possible using Ground shipping methods (ground shipping is covered by warranty). For more information, call MSD at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 5:00 p.m. Monday - Friday (mountain time).

Limited Warranty

MSD warrants this product to be free from defects in material and workmanship under its intended normal use*, when properly installed and purchased from an authorized MSD dealer, for a period of one year from the date of the original purchase. This warranty is void for any products purchased through auction websites. If found to be defective as mentioned above, it will be repaired or replaced at the option of MSD. Any item that is covered under this warranty will be returned free of charge using Ground shipping methods.

This shall constitute the sole remedy of the purchaser and the sole liability of MSD. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representation whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall MSD or its suppliers be liable for special or consequential damages.

*Intended normal use means that this item is being used as was originally intended and for the original application as sold by MSD. Any modifications to this item or if it is used on an application other than what MSD markets the product, the warranty will be void. It is the sole responsibility of the customer to determine that this item will work for the application they are intending. MSD will accept no liability for custom applications.

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