



## **36-1 Tooth Universal Crank Wheels P/N 556-125 (8") & 556-126 (7-1/4") Installation and Adjustment Instructions**

### **1.0 INTRODUCTION:**

Congratulations on your purchase of a Holley 36-1 Tooth Crank Trigger Wheel! Holley Performance Products cannot and will not be responsible for any alleged or actual engine damage, or any loss or damage resulting from misapplication of the product described herein. However, it is our intent to provide the best possible products for our customers-products that perform properly and exceed your expectations. Should you need information or parts assistance, please contact our Technical Service Department at 1-270-781-9741, Monday through Friday, 8 a.m. to 5:00 p.m. Central Time. Please have the part number of the product you purchased when you call.

These systems are designed to provide an engine speed & position signal specifically to Holley EFI systems. The kit's 1/4", 35 tooth wheel will provide a very accurate crankshaft speed & position signal to the ECU in the most-demanding of racing applications.

**WARNING! These instructions must be read and fully understood before beginning installation. Failure to follow these instructions may result in poor performance, vehicle damage, personal injury or death. If these instructions are not fully understood, installation should not be attempted. Extreme caution should be exercised when working near or around the 36-1 crank wheel during regular engine operation as serious injury or dismemberment could occur. Keep hair, clothing, & hanging objects away from the crank wheel at all times.**

### **2.0 APPLICATIONS, MOUNTING, and SENSOR**

These wheels are universal and require machining to be mounted to a specific application. They come with a 1" diameter pilot hole. Make sure that the wheel used is at least 3/4" larger than the balancer it is installed on. If not, false tooth detection can occur.

The wheel must be centered on the balancer, and runout should be kept below .005" after installation. Fasteners should not be used to center the wheel, but just to secure it. The wheel should be physically centered either by 1) machining a recess on the back of the wheel that locates to the balancer or 2) by the use of a centering piece that pilots off the crankshaft or balancer. Read "Installation of the 36-1 Crank Trigger Wheel" below, on how to properly index the wheel before machining it. Make sure that the sensor is centered axially on the wheel.

For examples of brackets and mounting, download the instructions for Holley PN 556-116 from [www.holley.com](http://www.holley.com).

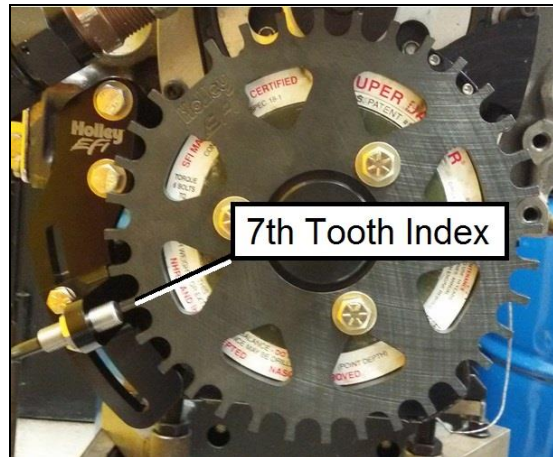
Holley PN 554-124 is a sensor specifically designed for this wheel. This is required to be used with this wheel. It has M12 x 1 threads. Bracketry to mount this sensor is required to be fabricated. It is IMPERITIVE that the mounting bracket for this sensor be VERY rigid. If the bracket flexes during use, a loss of crank signal can occur.

### 3.0 INSTALLATION OF THE 36-1 CRANK TRIGGER WHEEL

1. Manually rotate the engine to TDC (Top Dead Center) of the #1 cylinder as shown in **Figure 1** below.
2. Check the hub surface to which the crank trigger wheel will be mounted to ensure that it is smooth & free of any excess dirt, debris, or oil. Clean the face of the balancer as required.
3. With the *Holley EFI* logo facing outward, center the wheel on the hub of the balancer.
4. The system is intended such that the sensor lines up with the 7<sup>th</sup>-tooth (after the gap/missing tooth) when the engine is at TDC (**Figure 2**). The 7<sup>th</sup> tooth is marked on the wheel with an engraved line on that tooth. The mounting holes that need to be machined in the wheel, in combination with the design of the sensor mounting bracket, need to be such that this sensor/tooth alignment occur. The software can be set to adjust for another tooth. But if this is done, it is recommended that it only be teeth #8-9. Otherwise, timing accuracy can be degraded.

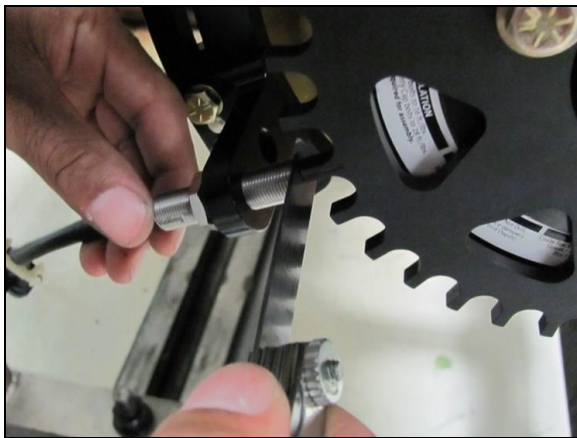


**Figure 1:** Rotating the engine to TDC #1.



**Figure 2:** Aligning 7<sup>th</sup> tooth index mark for mounting.

### 4.0 ADJUSTING SENSOR ALIGNMENT & SETTING SENSOR GAP



**Figure 3:** Adjusting the sensor gap.



**Figure 4:** Locking the sensor gap.

1. Use a feeler gauge to set the gap to .040"-.080" by backing the jam nut off and screwing the sensor in or out of the sensor bracket, as shown in **Figure 3** above. The closer the better.
2. With a small crescent wrench on the sensor & a 17mm on the jam nut, lock the sensor in place by holding the sensor stationary & torqueing down on the nut, as shown in **Figure 4** above. Do not tighten the jam nut beyond 23 ft.-lbs or damage to the sensor's threads may result.


**NOTE:** Ensure there will be no physical contact between the sensor and crank wheel when the engine is in operation. This should be done by manually rotating the engine a full revolution & visually verifying no contact can be made.

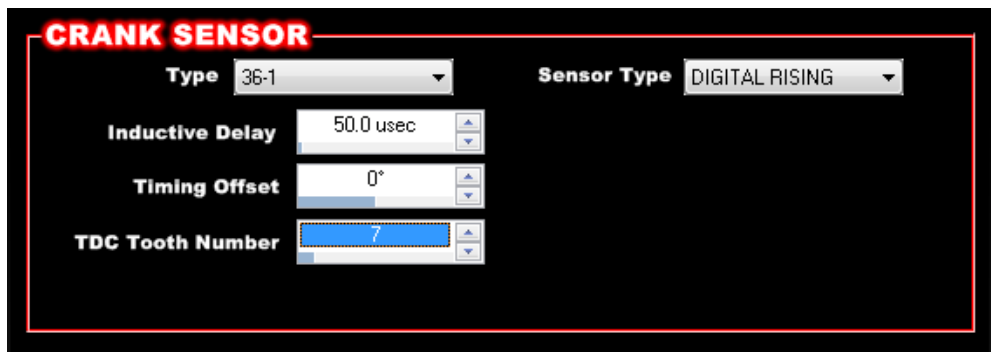
## 5.0 SENSOR WIRING & SETUP

There are a few different options to connect to the 554-124 sensor. Holley P/N 558-431 is fully terminated and will plug directly into this crank sensor and connect to the “Ignition Adapter” in the main wiring harness. If custom wiring is desired Holley P/N 558-306 can be used terminated by the installer. The 554-124 sensor comes with connector, TPA, and loose pins and seals for this purpose. Use the proper tools to crimp Metripak 150 style pins (Delphi P/N: 12155975 - Available thru Waytek, Inc. Item No.: 509). It is advised to use shielded wiring (with drain wire grounded at the ECU end) to connect to this sensor. The pins are inserted into the back of the connector. Install the TPA lock after the wires are inserted.

The following is the proper wiring for this sensor:

- A – Red – 8V to 20V clean switched power. Pin B20 (“EST 12V Output”) on Holley EFI systems would be a good choice. Pin E at the “Ignition” connector of Holley P/N 558-431 or 558-306.
- B – White – Sensor Output to ECU crank signal (Pin A30 on Holley EFI). Pin A at the “Ignition” connector of Holley P/N 558-431 or 558-306.
- C – Black – Sensor ground. Connect to a “clean” ECU ground, such as pin A14 (“IPU Ground”) on Holley EFI systems. Pin C at the “Ignition” connector of Holley P/N 558-431 or 558-306.

1. If using Holley EFI, set initial ignition software parameters as seen in **Figure 5** below.
2. Be sure to check the ignition timing after the engine is started. This is best performed using the “Static Timing Set” feature located under the ECU Sync  drop-down. Discrepancies in ignition timing can be corrected using the “Timing Offset” field. Ignition timing drift with engine speed can be corrected using the “Inductive Delay” parameter. Adding inductive delay will advance ignition timing with increasing engine speeds & removing it will retard ignition timing with increasing engine speed. These adjustments can be made in increments of 10 usec until the ignition timing is close. A key-off cycle will be required before any of these modifications will be effective.



**Figure 5:** Initial software settings.

**HOLLEY TECHNICAL SUPPORT: 1-270-781-9741**

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