

## Instructions

# B&M StarTek Starter

(see [www.bmracing.com](http://www.bmracing.com) for the latest vehicle fitment applications and model years)

**Part Number 77102, Ford V8, 351 (C/M), 400, 429, 460**

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Proper installation of your *StarTek* Starter is essential for trouble free operation. Correct alignment and spacing is required. Please read all instructions before installing your new high performance starter.

### INTRODUCTION

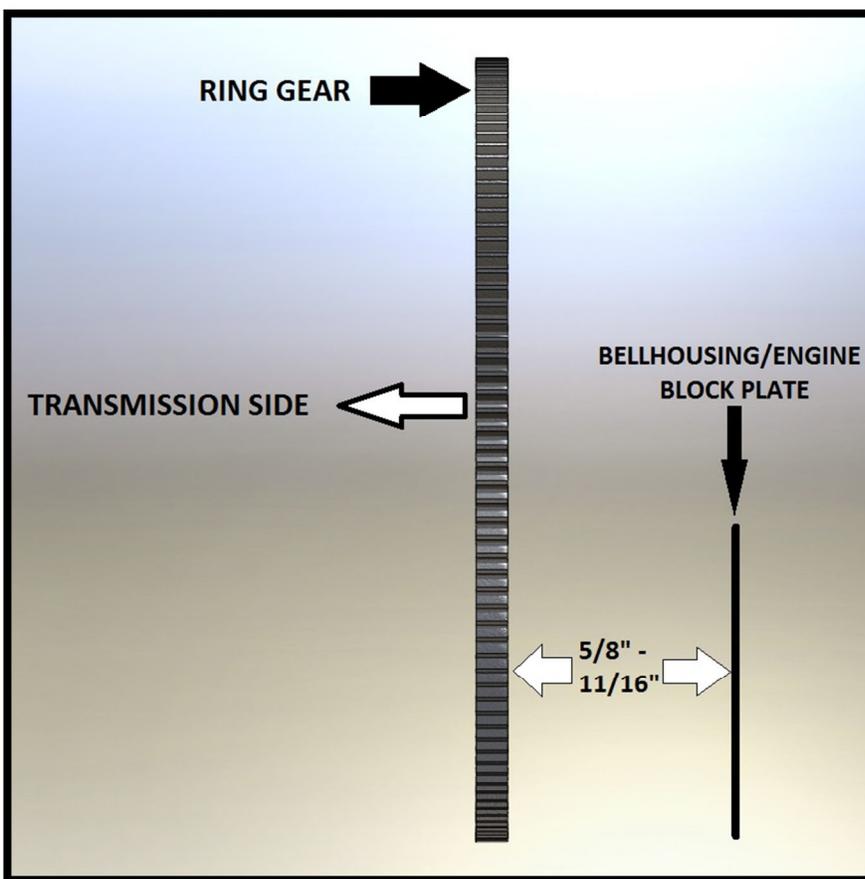
This starter can be installed in about an hour by carefully following the instructions. It is suggested that the vehicle be allowed to cool off for a few hours to avoid burns from hot parts, especially any exhaust parts which might be near the starter. The vehicle should be off the ground for ease of installation - jack stands, wheel ramps or a hoist will work fine. **MAKE SURE VEHICLE IS FIRMLY SUPPORTED - DO NOT WORK UNDER A VEHICLE IF IT IS SUPPORTED BY ONLY A JACK!** Try to raise the vehicle 1-2 feet so you will have plenty of room to work.

### INSTALLATION

**STEP 1.** Disconnect the battery cables, removing the negative cable first.

**STEP 2.** Remove the old starter, and make sure the mounting flange is clean and burr free.

**STEP 3.** Before mounting your new starter, measure the distance from the front (or engine side) of the ring



**Figure 1: Measuring Bellhousing to Ring Gear**

gear to the starter mounting surface. (See Figure 1.) For this starter application, the distance should be 5/8" to 11/16".

**If the distance is less than 5/8":** Remove the three front mounting block bolts and remove the block.

Install the outer shim and shim ring. This will move the pinion away from the ring gear by approximately .060", or 1/16". Re-Torque bolts to 8 ft-lbs. (See Figure 2.)

**If the distance is greater than 11/16":**

The application is incorrect for the starter being used.

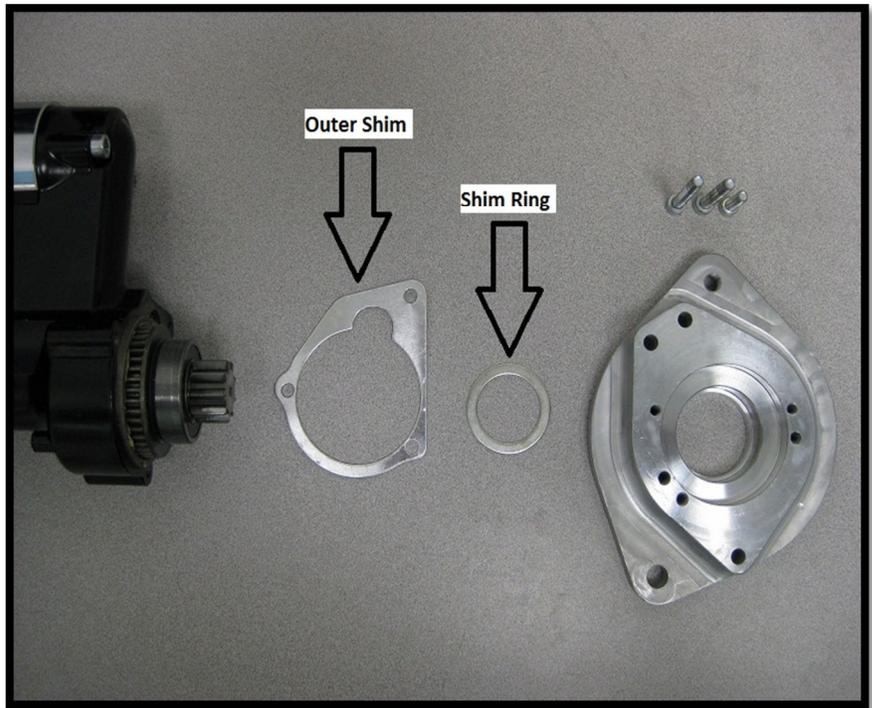
**STEP 4.** Mount the new starter. With the starter in position, make sure the solenoid housing has maximum clearance from heat sources and other components. The starter can be clocked in two different locations on the mounting block to obtain the best position. To re-clock the starter, first remove the starter, then remove the mounting block bolts and re-position accordingly. Re-Torque to 8 ft-lbs. Please see Figure 3.

**STEP 5.** Connect the solenoid switch wire. With the amperage being considerable (~30A) to pull the bendix, B&M recommends 12 Ga. wire as a minimum. Figure 4 shows wiring without a remote solenoid, Figure 5 shows wiring with a remote solenoid. While your B&M starter does not require a remote solenoid, it is generally easier to keep as much of the original wiring as possible. **Note:** If your original starter had a second terminal, or “R” terminal, this can generally be omitted. Please see trouble shooting information at the end of this procedure for further information.

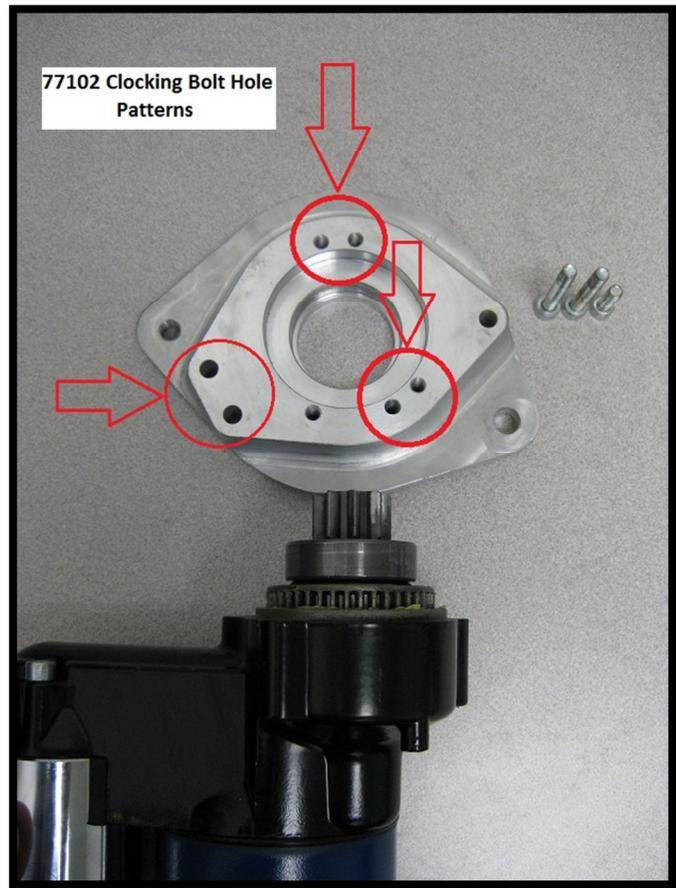
**STEP 6.** Connect the main cable to the starter. Please see Figures 4 and 5 for reference. Due to the high amperage required to turn the starter motor, it is important to size the wire in accordance to its length. Keep in mind to size all ground wires accordingly also, these are carrying equal current. Please see Table 1 for cable length versus gage recommendations.

**STEP 7.** Reconnect the battery terminals, starting with the positive and ending with the negative.

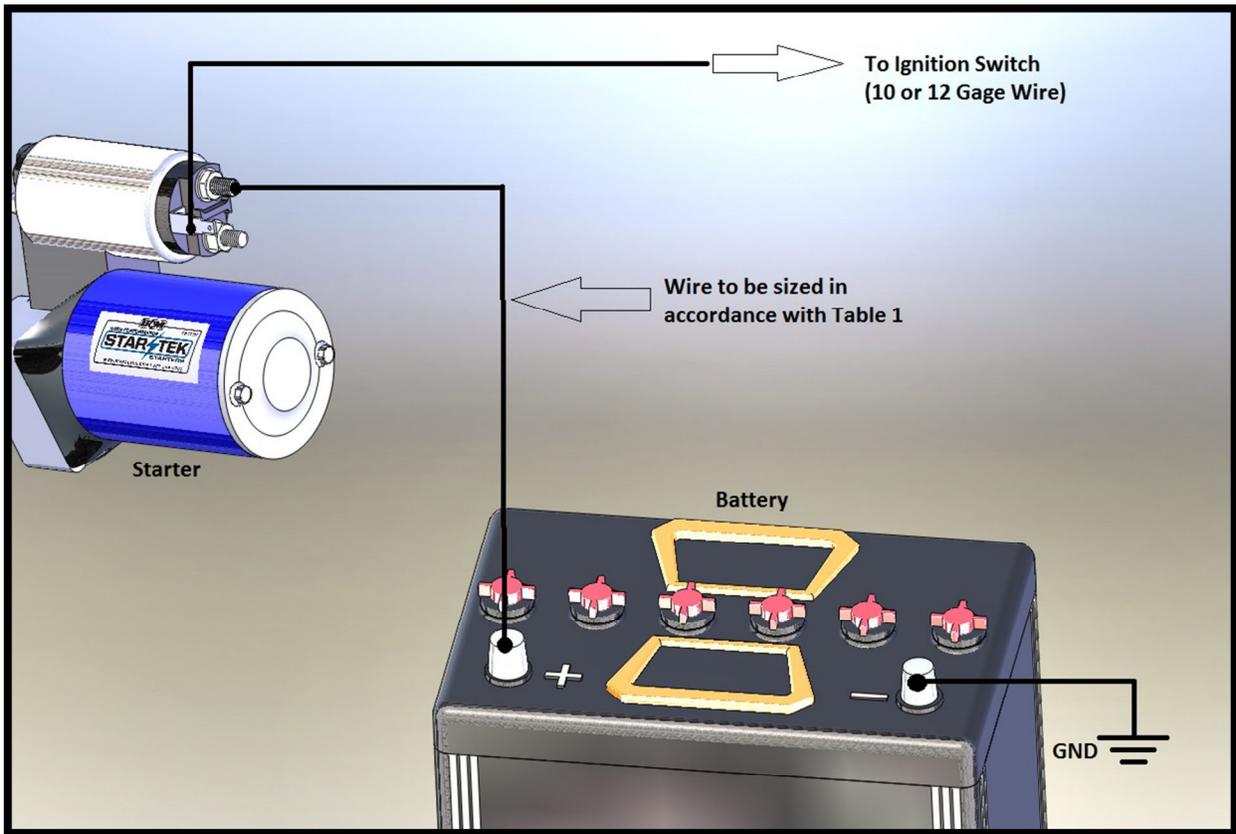
**STEP 8.** Start the engine. In order to not exceed the duty cycle of the starter, please do not operate the starter for more than 30 seconds at a time. Allow the starter to cool at least two minutes between repeated cycles.



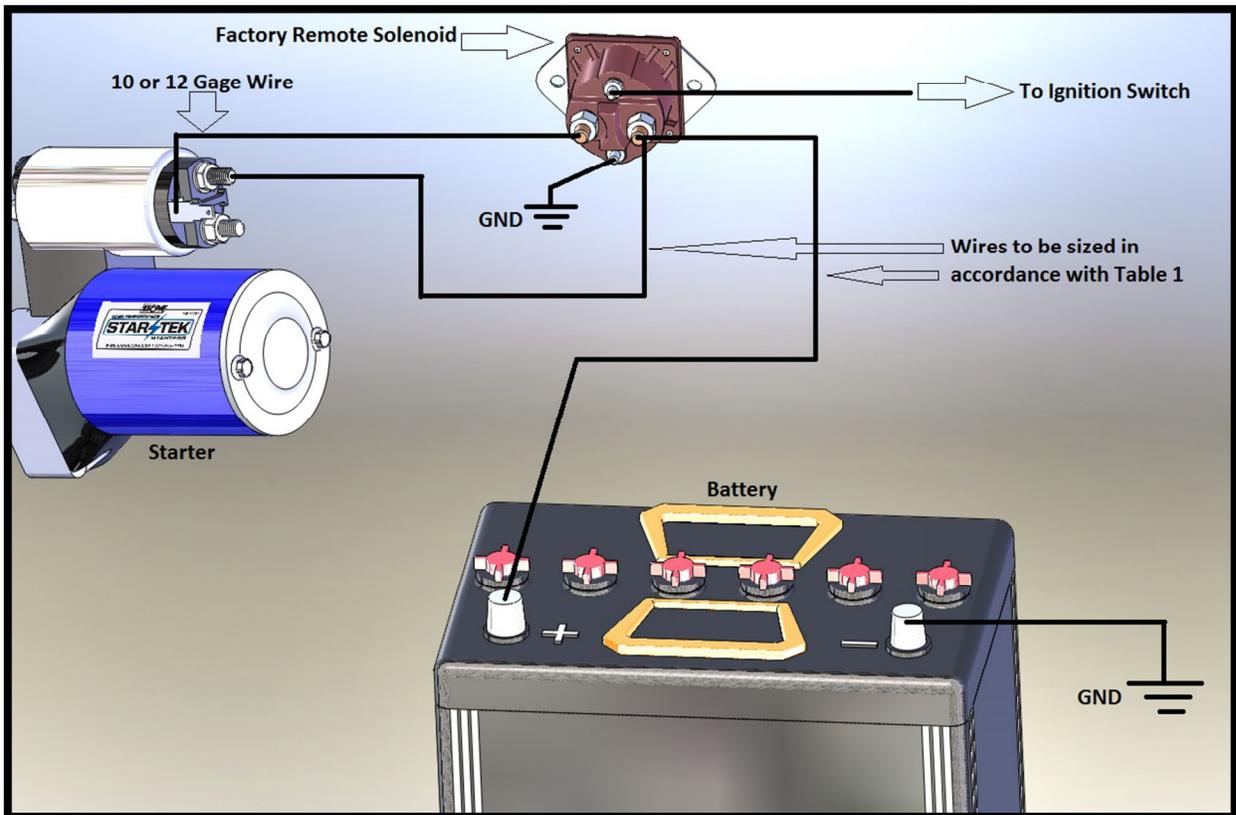
**Figure 2: Starter Shim Assembly, (If Required)**



**Figure 3: Re-Clocking the Starter for Clearance**



**Figure 4: Starter Wiring Without Remote Solenoid**



**Figure 5: Starter Wiring With Remote Solenoid**

**Table 1: Cable Gage Chart**

Starter Cable Length vs. Gage					
Length	3'	5'	7'	10'	10+'
AWG	4	2	1	0	00

**Trouble Shooting Information:**

**Slow Cranking:** Generally this can be attributed to low voltage at the starter. The battery should be checked, as well as wire size, terminals, and switches. ***Keep in mind any switches (such as master kill switches used in race kill switches in race cars) must have very high amperage ratings, between 400 to 700 amps.***

**R-Terminal:** On older vehicles with point type ignition systems, there was an extra terminal and wire on the original starter. This fed 12V during cranking directly to the ignition coil when cranking, serving as a ballast resistor by-pass. The B&M StarTek starter does not have this terminal, as most modern ignition systems do not require it. If it is found that your ignition system has low or no voltage during cranking, connect a 10A/250V diode in-line with the starter motor connection to the positive on the coil. The banded end of the diode goes away from the starter. This acts as a check valve, allowing current to travel from the starter to the coil during cranking, and not allowing current to feed back to the starter while the engine is running.

**Gear Mesh:** The gear mesh, or radial distance between gears is not adjustable on this application.

Please make sure that all parts are correct for the application, and that the starter is mounted properly on the block plate.

Tools List
Jack & Jack Stands
Work Light
5mm Allen
3/8" Drive Std. Socket Set
3/8" Drive Ratchet
1/2" Wrench
9/16" Wrench

Parts List
(1) B&M StarTek Starter
(1) Shim Ring
(1) Outer Shim



**Customer Assistance Helpline**  
**Phone: 707-544-4761**

B&M provides a telephone helpline staffed by knowledgeable people to assist you with answers to questions regarding any B&M product. Our Customer Assistance Department is available 6AM to 5PM Monday through Friday, and 7:30AM to 5:00 PM Saturday, PST.