



## M-12390-A/B/C/D/E/F/G/H/J/K/L Distributor Gear INSTALLATION INSTRUCTIONS

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF FORD RACING PERFORMANCE PARTS.

Please visit [www.fordracingparts.com](http://www.fordracingparts.com) for the most current instruction information

**!!! PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION.  
AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD RACING  
TECHLINE AT 1-800-367-3788 !!!**

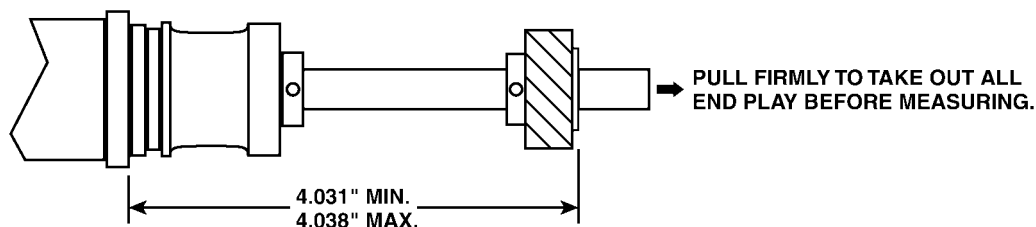
### OVERVIEW:

The following information covers the installation of a new distributor gear onto an existing distributor. When replacing the distributor gear, it is important that you choose the appropriate gear for your application. If you have questions regarding your gear selection, please contact the Ford Racing Tech Line at (800) 367-3788. **Failure to use the correct gear will lead to premature gear failure.** Premature gear failure may also be attributed to improper meshing of the gear teeth between the camshaft and distributor. For that reason, we recommend that you install a new distributor gear when installing a new camshaft.

### INSTALLATION INSTRUCTIONS:

- STEP 1:** Remove roll pin from distributor gear and shaft. Save pin for re-assembly.
- STEP 2:** Verify that the shaft endplay is .024" to .035". Modify collar if necessary. Some aftermarket distributors may be constructed in a manner that does not allow you to achieve .024" to .035" of endplay. See "ALTERNATIVE METHOD OF VERIFYING CORRECT DISTRIBUTOR GEAR INSTALLATION" (on page 2 of this instruction sheet) if your distributor does not have .024" to .035" endplay.
- STEP 3:** Press original distributor gear off shaft.
- STEP 4:** Mark location of original roll pinhole on the shaft by drawing a vertical line along the shaft that intersects the hole. Measure from the centerline of the roll pinhole to a fixed point above it. Note that dimension.
- STEP 5:** Press new distributor gear onto shaft.
- NOTE:** Replacement distributor gear does not have roll pinhole.
- STEP 6:** Pull distributor shaft out of distributor housing to eliminate endplay (see Figure 1).
- STEP 7:** Check location of distributor gear on distributor shaft (see Figure 1). If it is not in the correct location, use a press to move the gear to the correct location.

FIGURE 1



Factory Ford shop manuals are available from Helm Publications, 1-800-782-4356



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**STEP 8:** Using the vertical line on the distributor shaft and the noted dimension (see **STEP 4**), roughly plot where the original roll pinhole is located. Drill a new .125" hole 90° from the original hole, above or below it, through the gear and the shaft.

**NOTE:** It is important that the dimensions called out in Figure 1 are maintained while drilling.

**STEP 9:** Insert roll pin and check dimensions (see Figure 1).

**WARNING:**

IF THE DISTRIBUTOR GEAR IS INSTALLED INCORRECTLY, IT MAY BE FORCED DOWN AGAINST THE SUPPORT IN THE BLOCK OR MAY BE HELD UP AWAY FROM THE SUPPORT IN THE BLOCK. BOTH CONDITIONS WILL CAUSE DAMAGE TO THE BLOCK AND OR THE BLOCK AND GEARS. WHEN THE GEAR IS PROPERLY INSTALLED, THE CUT ON THE GEARS AND THE DIRECTION OF ROTATION WILL PULL THE DISTRIBUTOR GEAR DOWN AGAINST THE SUPPORT (DISTRIBUTOR GEAR THRUST FACE) IN THE BLOCK.

**ALTERNATIVE METHOD OF VERIFYING CORRECT DISTRIBUTOR GEAR INSTALLATION:**

After **STEP 7**, install distributor assembly in the block you are using. Timing chain set and camshaft must be removed. With the aluminum distributor housing fully seated against the block, verify that the distributor gear can be lifted off the support in the block at least .005". Next, pull the distributor gear down against the support in the block and hold it there. Pull up on the aluminum distributor housing and verify you can lift it up at least .005" while holding the gear against the support in the block. This procedure will confirm that the gear is not being forced down against the support and not being held up off the support in the block. Then, continue with **STEP 8**.

**COMMON DISTRIBUTOR PROBLEMS:**

Distributors with very little or no shaft endplay. This has been found with new and remanufactured distributors. Improper endplay may force the gear against the support in the block or hold it up off the support, causing damage.

Distributors that have a different material gear than advertised. It is important to run the correct distributor gear for the camshaft that you are using. Consult the manufacturer of the camshaft you are using for gear recommendation.

Some heavy-duty oil pump drive shafts may not allow an EFI distributor to slide down far enough over the oil pump drive shaft. EFI distributors have a longer shaft below the gear.

Running an HV oil pump with production bearing clearances can cause abnormally high oil pressure and possible premature distributor gear wear.

Gears on camshafts with a very poor finish. This could cause premature distributor gear wear.

New and remanufactured distributors with the gear installed at the wrong height.

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### DISTRIBUTOR GEARS

| PART NUMBER      | MATERIAL  | COLOR                    | DIAMETER |        | APPLICATION                                                                                       |
|------------------|-----------|--------------------------|----------|--------|---------------------------------------------------------------------------------------------------|
|                  |           |                          | OUTSIDE  | INSIDE |                                                                                                   |
| <b>M-12390-A</b> | Cast Iron | Orange                   | 1.249"   | 0.467" | 289/302 hydraulic flat tappet engines with point-type or Duraspark distributors. ①                |
| <b>M-12390-B</b> | Steel     | None                     | 1.249"   | 0.467" | 302 with steel billet and production roller camshaft with point-type or Duraspark distributors. ① |
| <b>M-12390-C</b> | Bronze    | Bronze                   | 1.249"   | 0.467" | All 289/302 engines with point-type or Duraspark distributors. ①                                  |
| <b>M-12390-D</b> | Cast Iron | Blue                     | 1.249"   | 0.531" | All 302 hydraulic flat tappet engines with EFI. All 351W engines. ①                               |
| <b>M-12390-E</b> | Bronze    | Bronze with Blue Stripe  | 1.249"   | 0.531" | All 302 hydraulic (flat or roller) tappet engines with EFI. All 351W engines. ①                   |
| <b>M-12390-F</b> | Steel     | Yellow                   | 1.249"   | 0.531" | All 302/351W hydraulic roller tappet engines with EFI and 351W Duraspark distributors. ①          |
| <b>M-12390-G</b> | Cast Iron | Green                    | 1.421"   | 0.531" | All 351C/351M/400/429/460 engines. ①                                                              |
| <b>M-12390-H</b> | Bronze    | Bronze with Green Stripe | 1.421"   | 0.531" | All 351C/351M/400/429/460 engines. ①                                                              |
| <b>M-12390-J</b> | Steel     | None                     | 1.421"   | 0.531" | All 351C/351M/400/429/460 engines. ①                                                              |
| <b>M-12390-K</b> | Polymer   | None                     | 1.249"   | 0.467" | 302 distributors with .467" diameter shaft ①                                                      |
| <b>M-12390-L</b> | Polymer   | None                     | 1.249"   | 0.531" | 302 and 351W distributors with .531" diameter shaft ①                                             |

### MATERIAL SELECTION NOTES:

Cast Iron gears are compatible with cast iron camshafts (hydraulic or solid flat tappet type).

Steel gears are compatible with billet steel camshafts (hydraulic roller tappet type).

Bronze gears can be used with either cast iron or billet steel camshafts. They are usually recommended by manufacturers of aftermarket billet steel solid roller tappet camshafts. Since the bronze is softer than cast iron or steel, it will wear at a faster rate.

### IMPORTANT INSTALLATION NOTE:

- 1: Some of the distributor gears come with a pre-drilled pilot hole. The pre-drilled pilot hole is not intended to line up with the original randomly drilled hole and achieve correct gear installed height.

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