



Installation Instructions

99031 RTR Distributor

Carb EO #
XXXXXXXXXX

These instructions will help you to install a Ford V8 distributor with Mechanical Advance or Mechanical with Vacuum advance or the Ready to Run (RTR) style distributor.

Please read these instructions before installing:

You should always disconnect the battery, negative lead first, before working on the ignition system. When you are done reconnect the battery installing the positive lead first.

The drive gear installed on this distributor is cast iron and therefore is compatible with flat tappet camshafts. If it is to be installed with a billet steel hydraulic roller camshaft, a compatible steel gear will need to be purchased and installed. If it is to be installed with a mechanical roller camshaft, a bronze or other such compatible gear will need to be purchased and installed.

Included with the distributor:

- | | |
|--|-------------------------------|
| 1 – Billet Ford V8 Distributor with O-ring | 1 – Distributor Rotor and Cap |
| 1 – Distributor Cap Spark Plug Wire Retainer | 1 – Installation hardware kit |

How to Install the Distributor

1. If the distributor to be replaced has not already been removed from the engine, remove its cap. Do not remove the spark plug wires at this time.
2. Crank the engine slowly until the rotor blade aims at a fixed point on the engine or firewall. Note this point for future reference.
3. Unplug all external connectors coming from the distributor.
4. Now put the existing cap back on and note and mark which spark plug wire the rotor (blade) is pointing at. Then number the wires according to cylinder and remove the wires. If in doubt you can leave the wires connected to the old cap and transfer them to the new cap later in the process (see point # 9).
5. Loosen and remove the distributor hold-down bolt and clamp. Lift the old distributor out. At this point the rotor may move from its position. Note the direction of movement. The rotor is moving due to the helical cut teeth on the distributor gear.
6. Install the gasket and lower the new distributor into position. Please note that the rotor will move in the opposite direction as when the removing the old distributor. When the distributor is fully seated make sure that the rotor is aimed at the same fixed point as was the rotor from the old distributor. After the new distributor has been lowered into place, you may find that it hasn't seated firmly against the engine block. This indicates that the lower end of the distributor shaft is not properly aligned with the oil pump drive. Do not attempt to force the distributor into position.
7. Either remove the distributor and use a long appropriate sized hex drive to turn the oil pump shaft until it properly aligns with the distributor shaft, or reinstall the hold-down clamp and thread the bolt just enough to exert a very slight pressure against the distributor. Then manually rotate the engine until the distributor drops down into place. When the distributor is fully seated make sure that the rotor is aimed at the same fixed point as was the rotor from the old distributor.
8. With the distributor properly seated, tighten the hold-down bolt just enough so that the distributor is held in

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place, but can still be rotated with a little effort.

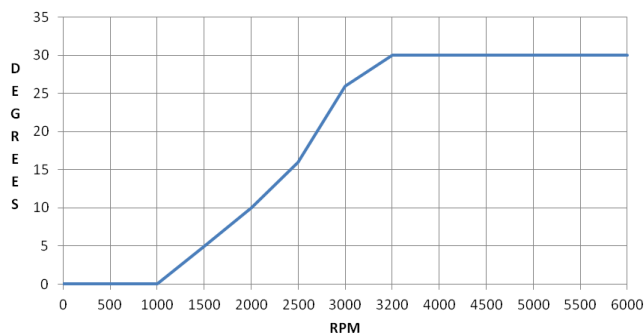
9. Remove the plug wires one at a time from the old cap and install them in the corresponding positions of the new cap. After all wires have been transferred, verify that the wire in the terminal post that is aligned with the rotor leads to number one cylinder. If you are unsure of cylinder number position or firing order, this information can be found in the service manual that covers your particular engine. Install the distributor cap.
10. Use a timing light to verify that the initial timing is set correctly and tighten the hold down bolt.

Mechanical Advance Curve – Spring Selection

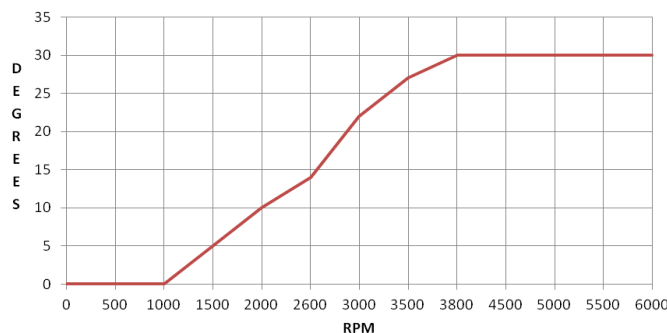
This distributor comes equipped with the Blue medium tension mechanical advance springs installed along with a Blue mechanical advance stop bushing. This produces a mechanical advance curve of approximately 21° crankshaft degrees, beginning at approximately 1000 RPM and all in by approximately 3200 RPM.

In the included installation hardware kit you received two sets of optional mechanical advance springs. The silver-metallic springs are heavy tension and the light silver springs are light tension. The springs can be used in sets or mixed depending on the advance curve you desire. To change the springs you will need needle nose pliers. First remove the distributor cap and rotor. You will find the springs under the rotor. Take the needle nose pliers and carefully lift the springs off their posts (so you can reuse them if needed). Do not lose the spacer bushings under the springs. When installing the new springs make sure that the eyelet of the spring sits completely in the groove on the post. Please see the mechanical advance curve charts to select the curve and springs that will produce the mechanical advance curve best suited for your engine.

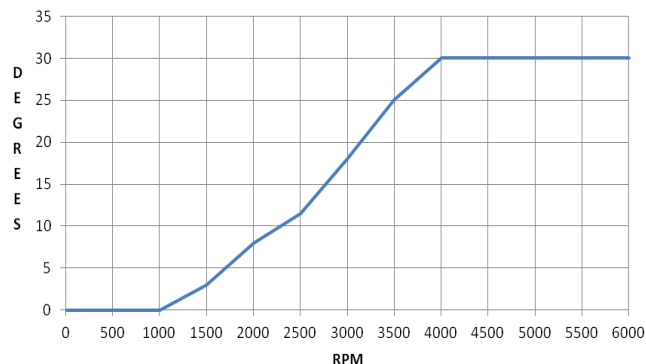
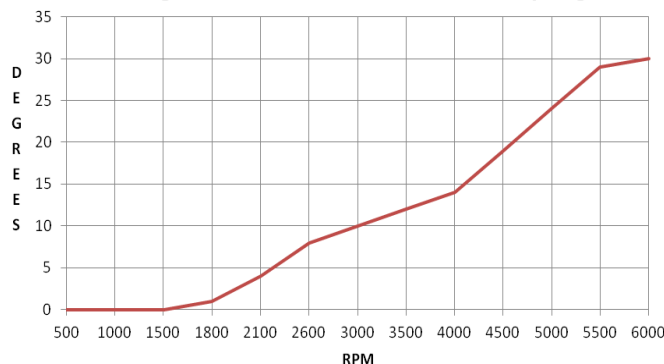
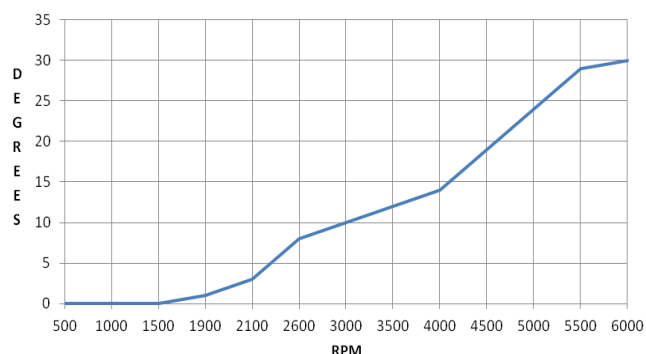
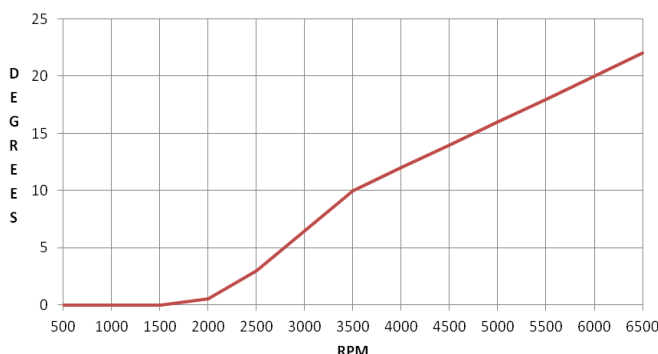
Timing Curve - 2 LT Silver Springs



Timing Curve - 1 Blue & 1 LT Silver Spring



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Timing Curve - 2 Blue Springs**Timing Curve - 1 HD Silver & 1 LT Silver Spring****Timing Curve - 1 HD Silver & 1 Blue Spring****Timing Curve - 2 HD Silver Springs**

Mechanical Advance Stop Bushing

The stop bushing limits the total amount of mechanical advance that the distributor can produce. The distributor comes equipped with a Blue 21° crankshaft degrees advance stop bushing already installed. There are 3 different mechanical advance stop bushings included in the installation hardware kit. If a different amount of total mechanical advance is desired, follow the procedures to change the bushings.

Bushing Sizes:

28°



Red

25°



Silver

21°



Blue

18°



Black

How to change the Mechanical Advance Stop Bushing

1. Remove the distributor cap and rotor.
2. Remove the locknut and washer on the bottom of the advance assembly.
3. Remove the bushing and install the new one.
4. Install the washer and locknut, the distributor rotor and cap.

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How to set up the Mechanical Advance Lock Out

1. Remove the advance components including the springs, weights and the advance stop bushing from the advance assembly.
2. Remove the roll-pins from the drive gear and the retainer collar, remove the retainer collar, drive gear and thrust washer from the shaft.
3. Slide the shaft two inches out of the housing.
4. Rotate the shaft 180° and insert the advance stop bushing pin into the small hole on the advance plate.
5. Install the locknut and washer to the advance stop bushing pin. This locks the advance in place.
6. Install the thrust washer, retainer collar and drive gear and roll-pins.

Vacuum Advance

If the distributor comes equipped with a vacuum advance canister, it is designed to produce a total of approximately 10° crankshaft degrees at advance, starting at a vacuum signal of 6" of Hg and all in at a vacuum signal of 18" Hg. The amount of vacuum advance can be adjusted by inserting the 3mm Allen wrench in the installation hardware kit into the hose nipple on the vacuum advance canister. Turn the wrench clockwise to increase the amount of vacuum advance or counter-clockwise to decrease. Hook up the vacuum hose from a ported (typically) vacuum source on the carburetor to the nipple on the vacuum advance canister.

How to install the Vacuum Advance Lock-Out

If for whatever reason the vacuum advance canister needs to be removed from the distributor, there is a vacuum advance lock-out included in the installation hardware kit. This is best done prior to installing the distributor into the engine.

1. Remove the distributor cap and rotor.
2. Remove the roll-pins from the drive gear and the retainer collar, remove the retainer collar, gear and thrust washer from the shaft.
3. Remove the shaft assembly from the distributor housing. Please note there are numerous spacers and shims on the shaft that can slide off if you are not careful.
4. Remove the five Allen head screws that hold the upper bowl collar in place and remove the collar.
5. Remove the two screws holding the vacuum canister in place.
6. Remove the snap ring that holds the magnetic pickup assembly in place.
7. Carefully lift up on the magnetic pickup plate and remove the vacuum advance canister.
8. Install the Black plastic vacuum advance lock-out in place of the vacuum canister and secure it with the two screws.
9. Lower the magnetic pickup assembly plate back into place making sure it is level and not cocked to one side. Reinstall the snap ring.
10. Lower the shaft assembly into the housing, slowly turn the distributor shaft and make sure that the reluctor wheel does contact the magnetic pickup.
11. Install the thrust washer, retainer collar, drive gear and roll pins.

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12. Install the upper bowl collar and secure with the five Allen head fasteners.
12. Install the rotor and cap.
13. If the old distributor had a vacuum advance canister, make sure to disconnect the vacuum line and plug the vacuum port.

Wiring - Mechanical & Mechanical with Vacuum advance 2-wire distributor

A high performance ignition system, such as a Digital CD Ignition, must be installed with these distributors. Please refer to the instructions, included with the ignition control box, for wiring connections utilizing a 2-wire magnetic pick up.

- Black Wire with Orange Tracer = Positive (+)
- Black Wire with Violet Tracer = Negative (-)

Wiring - Ready to Run (RTR) 3-wire distributor

The Ready to Run (RTR) 3-wire distributor has an internal ignition control module and does not require an external ignition control box to run.

There are three (3) wires coming out of the distributor, terminating in a Weather Pack 3 pin connector. The wire colors are Orange, Red, and Black. These plug into the mating Weather Pack 3-pin connector on the pig tail harness that is in the installation hardware kit. Attach the ring terminals on the pigtail harness as noted below.

Red: Connect to Coil (+)
Orange: Connect to Coil (-)
Black: Connect to engine, frame or chassis ground

Note: Check to see that your coil location will reach the distributor when wired.

Note: Weather Pack connectors will only plug together one way. Make sure the connectors are locked together.

Note: For best performance, use a coil with 0.50 Ohms primary resistance or less

Note: To install with an external ignition control module, please refer to the instructions that come with the ignition control module

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3-Year Limited Warranty

FiTech extends the following limited warranty to the original purchaser of a FiTech EFI system purchased after November 1, 2022. FiTech warrants its products against defects in materials and workmanship, under normal use and service for 3 years from the date of original purchase. However, that does not extend to issues that arise because of normal wear and tear. This means that typical degradation from regular use, which can occur over time, is not covered under our warranty terms. This applies only to the original purchaser and the parts must remain installed on the original vehicle for which they were purchased. This warranty is void if the product was improperly installed, was installed on a vehicle for which it was not designed, if it was modified in any manner, or was removed from the original vehicle and reinstalled on another vehicle. Coolant temperature sensors, oxygen sensors, distributor caps, and distributor rotors are not covered under this warranty. This warranty shall not apply to any product installed improperly, or contrary to FiTech's instructions, altered, misused, repaired or damaged from an accident, collision, or willful or negligent act. To make a claim under the terms of this Warranty, the original purchaser must contact FiTech tech support. If FiTech tech support deems the product in need of warranty service, proof of original purchase will be required. Purchaser must call FiTech Technical Support (951-340-2624) option 2 or email: Techmail@fitechefi.com, to obtain a Returned Material Authorization (RMA). Proof of purchase must clearly show the place of purchase, purchase price, product purchased, and date of purchase. Purchaser needs to register their product here: <https://fitechefi.com/warranty-registration> or using the mail-in registration form found in the product box. FiTech's 3-Year Limited Warranty does not cover factory refurbished parts, this warranty is only valid for new purchases from an authorized dealer. FiTech's liability is expressly limited to replacing or repairing the defective part or parts (refunds are not covered under FiTech's 3- year Limited Warranty). FiTech will have no liability for the cost of installation or removal of the defective product or for the cost of labor or any additional parts required to complete the installation of the replacement product. FiTech is not responsible for any shipping charges accrued during the warranty process/claim. In no event will FiTech be liable for any indirect, special, incidental, or consequential losses or damages (including but not limited to interruption of business or loss of business or profit) resulting from the use or inability to use the product, any breach of warranty, or any defect in the product, even if FiTech shall have been advised of the possibility of such potential damages or losses. Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state. If the product is in the FiTech facility for repair, the amount of time the product is in repair will be added to the existing warranty period. In the event that your EFI System that is under warranty is in for repair and FiTech has authorized a replacement, and if that EFI System has been discontinued, FiTech will replace it with a similar product for the same application. The replacement EFI System will maintain the existing warranty period of the original EFI System.

California Proposition 65 Warning: This product may contain one or more substances or chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

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