

ALL NEW ALL EMPI LONG BLOCK

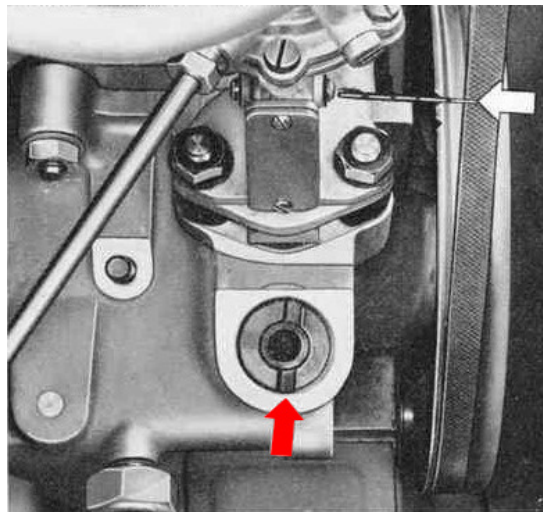


Basic Set-up & Break-in Procedures

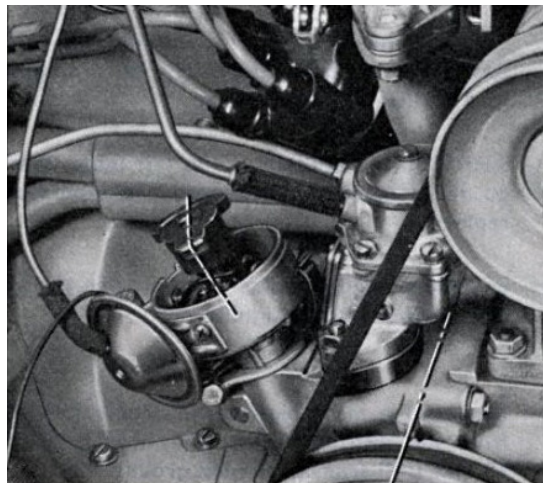
Congratulations you have chosen a certified 100% new EMPI long block that will provide years of reliable service if broken in and maintained properly. Please read the following set-up and break-in tips carefully before installing and running engine.

1. **Note:** Your new EMPI Engine has been assembled with the crank shaft located at (T.D.C. Top Dead Center). This is the initial timing point for the #1 cylinder.

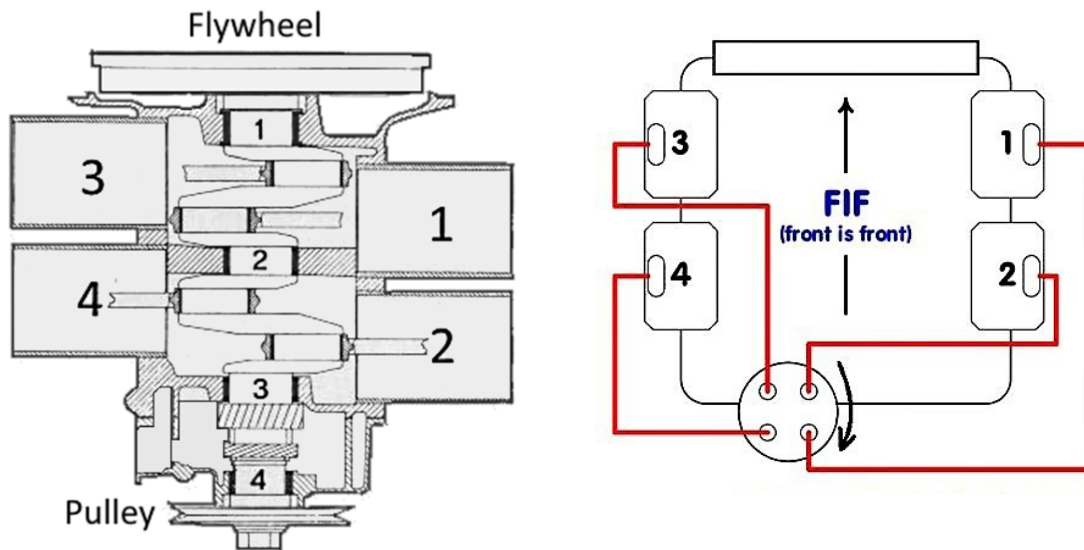
DO NOT ROTATE ENGINE UNTIL THE DISTRIBUTOR IS INSTALLED, confirm the distributor drive off-set is as shown below before completing Step 2.



2. Install distributor with rotor clocked to the #1 spark plug position, this is typically denoted on the distributor body by a hash mark.



- Firing order is 1-4-3-2. Install wires in that order but leave spark plugs out at this point. Please see illustration below for detail.



- Once the ignition system is installed the engine can be completed before the initial start-up and break-in. (Intake system, Fuel pump, Cooling System, Accessories, etc)
- Install 3 quarts PennGrade 1® Break-In Oil SAE 30. (Double check oil level on dipstick)
- Connect the oil pressure sender wire to the oil pressure switch, correct battery, and briefly crank engine no more than 20 seconds at a time until oil light extinguishes. This will ensure all oil galleries, cam, tappets, and bearings will have sufficient oil for start-up. Check for any leaks and after oil pressure is achieved, check oil level and add oil if needed
- Start-up/Break-In procedure is critically important to keeping your VW alive.
 - Initial startup:** Fire engine and hold engine at 2200-2500 RPM for **One Minute** while checking for any fuel and oil leaks. Shut down engine and allow a cool down period for minimum of ten minutes, then re-check oil level.
 - Second start-up:** maintain 2200-2500 RPM for **One Minute** again shut down engine and allow another cool down period of ten minutes
 - Final start-up:** hold at 2200/2500 RPM for **One Minute**, lower to idle and adjust carburetor to desired idle speed.
- Set ignition timing per factory specifications, check for oil or fuel leaks, set carburetor mixtures and balance as necessary, and road test tuning as necessary.
- Break-in oil must be changed and valves re-adjusted per factory specs after the first 50 miles or it can void the warranty.