

# INSTALLATION INSTRUCTIONS

## FORD 4.6L MODULAR SOHC ENGINES

9-3162A, 9-3163A, 9-3164A, 9-3165A, 9-3166A, 9-3169A, S764HAJ, S766HAJ

### **STOP: Read all instructions before installation.**

#### **Note:**

These instructions pertain to the adjustable sprockets only. For the step by step instructions to replace the timing set refer to a Ford 4.6L shop manual. Although the degree wheel method is strongly recommended, the process is not covered in these instructions. Installation is suggested to be performed by a shop familiar with the Ford Modular engine.

#### **Tools Needed:**

1. Shop Manual
2. 5/32 in. Hex Wrench
3. ½ in. Wrench
4. Torque Wrench
5. Degree Wheel & Necessary Cam Timing Accessories

#### **Supplies Needed:**

1. Thread Locking Compound
2. Pre-Lube for chain & sprockets

#### **Step 1: Prepare Engine**

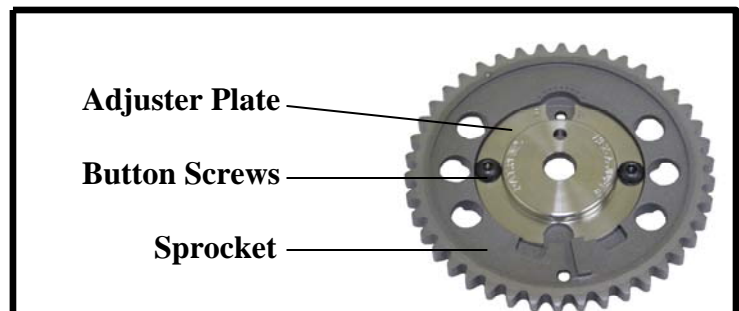
As per Shop Manual disassemble to allow removal of the original timing components. **DISCARD THE OEM CAM BOLT WASHERS; THEY ARE NOT REQUIRED WITH THIS SET.**

#### **Step 2: Prepare Parts**

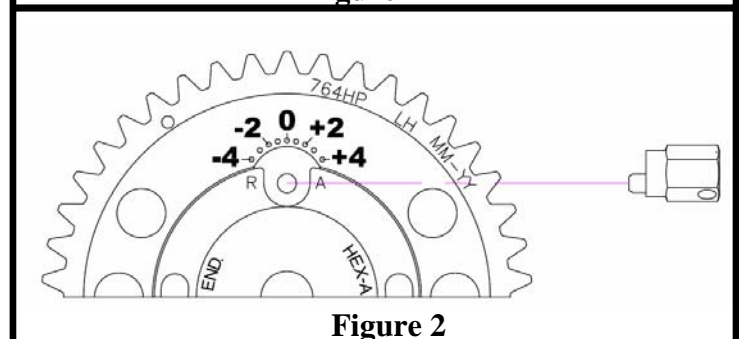
Before assembly clean all parts and mating surfaces.

#### **Step 3A: Adjust and set timing - FOLLOW STEP IF NOT USING A DEGREE WHEEL**

Before mounting the two cam sprockets on the engine, use a 5/32" hex wrench to loosen



**Figure 1**



**Figure 2**

the two button head screws that fasten the adjuster plate to the sprocket (**Figure 1**). Use the HEX-A-JUST® Tool provided to set both the sprockets at the “0” position or any increment of advanced/retarded timing desired of up +/-5 degrees (**Figure 2**). Retarding the cam timing will increase high RPM horsepower, and advancing the cam timing will increase low-end torque. The “0” adjustment will be an Original Equipment timing setting. Make the same adjustment to both the LH and RH sprockets. Torque the button head screws equally to a maximum of 10 ft-lbs. Assemble timing components on engine as instructed by shop manual making sure to properly align timing marks, and to torque the cam bolts to Ford’s specifications for each sprocket.

### **Step 3B: Adjust and set timing - FOLLOW STEP IF USING A DEGREE WHEEL (RECOMMENDED)**

Install the High Performance timing set fully as specified by shop manual with the exception of applying the torque to the two cam bolts. **Leave the cam bolts finger loose, so that the adjustments can be made.** Once the timing set is properly installed, the infinitely adjustable HEX-A-JUST® cam sprockets can be utilized to achieve the most potential out of the Ford Modular Engine. Use a 5/32” hex wrench to loosen the two button head screws that fasten the adjuster plate to the sprocket (**Figure 1**). **Warning: do not adjust cam gear timing against valve spring pressure with the HEX-A-JUST® Tool or sprockets could be damaged. Use the approved Ford tool or aftermarket tool to rotate cam, and make the timing adjustment with no load on the gear.** Use a degree wheel and the appropriate accessories to balance left and right bank timing and achieve the camshaft manufacturers recommended cam timing with respect to TDC. Relative to this point, advance or retard up to +/- 5 degrees as desired for the application. Make the same adjustment to both the LH and RH sprockets. Manufacturing variations in the camshaft may require small differences between the left and right settings. Torque the button head screws equally to a maximum of 10 ft-lbs. Torque the cam bolts to Ford specifications.

### **Step 4: Lubricate Timing Set**

Upon assembly lubricate the timing components to prevent a dry start-up. Make sure that the engine oiling system is working properly, and that the set will have adequate lubrication in service.

### **NO WARRANTY:**

**Cloyes makes no warranty, expressed or implied, of merchantability and fitness for a particular purpose, with regard to the enclosed High Performance Product.**