I N S T A L L A T I O N I N S T R U C T I O N S
102075 CAMSET TOOL 1984-1989 TURBO 3.8 Liter

This kit is designed to provide a means to properly set the CAM sensor on GM turbo 3.8 liter engines. The CAM sensor is responsible for **injector** timing, **NOT spark timing.**

The CAM sensor assembly is made up of two components; the drive shaft portion and the sensor cap. The sensor cap contains a Hall-Effect sensor which is basically a switch that senses a magnetic field. The CAM sensor drive provides an interrupter wheel with a "window" notch, which is lined up with the sensor in the sensor cap. As the engine is rotated, the window opens to the Hall-Effect sensor, which toggles the electronic switch within the sensor. When the engine is started, the ignition system needs to know when to fire the spark coils and the fuel injectors. The firing order for the ignition is pre-programmed into the CCCI computer, but it requires a starting point which is the No. 1 plug. The ECM also needs to know where top dead center (TDC) is in order to initiate the fuel injector sequence. The CRANK sensor sets the spark firing and the CAM sensor initiates the spark timing AND the fuel injector timing sequence.

With each revolution of the CAM sensor drive shaft, a signal is sent to the CCCI module telling the computer when to initiate fuel injector timing for No. 1 injector, which then interfaces with the ECM. Since the CAM sensor rotates at one-half of the crankshaft speed, the CAM sensor sends one signal each time the injector order is initiated, setting the injector timing. The electronic circuitry is designed to deliver correct fuel timing when the sensor is set at 25 degrees after TDC. This is why it is critical that the CAM sensor timing be accurate.

SETTING CAM SENSOR

Loosen the two phillips screws holding the CAM sensor cap on to the CAM sensor assembly. You will notice the "window" cutout on the metal cup attached to the drive shaft. Locate the timing mark groove on the harmonic balancer. Now carefully rotate the engine until this mark is lined up to the "0" mark in the timing window (see illustration). The window should be facing the driver's side of the car, just past the 3:00 position. IF THE WINDOW IS FACING THE PASSENGER SIDE OF THE CAR, ROTATE THE ENGINE ONE FULL TURN UNTIL THE CUTOUT IS IN THE CORRECT LOCATION. *Refer to ILLUSTRATIONS for details.*

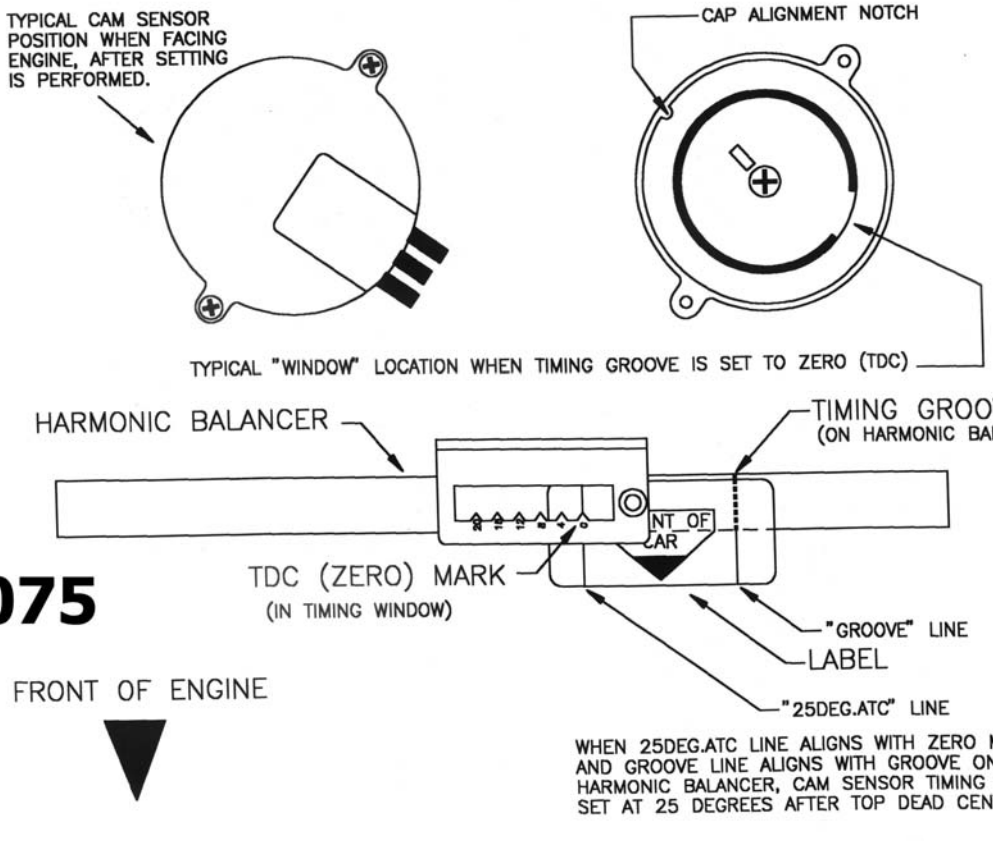
Now rotate the engine COUNTER-CLOCKWISE so that the timing groove on the harmonic balancer is near the oil filter side of the engine. This will make it easier to affix the timing degree label. Be sure this area is clean and free of dirt, oil, grease, etc. to allow the label to stick. Place the "GROOVE" line of the label directly over the timing groove on the harmonic balancer, then affix the label as shown in the illustration. Now, rotate the engine so that the "25DEG.ATC" line directly lines up with the "0" timing mark, being sure the CAM sensor window is again facing toward the driver's side of the car**. NOTE: The timing degree label provided in this kit has two lines exactly 1-15/32" apart. This provides the proper location for the 25 degree ATC mark on the balancer.**

Re-install CAM sensor cap onto assembly with phillips screwdriver. NOTE THERE IS AN ALIGNMENT GROOVE ON THE SHAFT ASSEMBLY THAT ALIGNS TO THE CAM SENSOR CAP. Un-plug the CAM sensor from the engine wiring harness and plug the Camset tool into the CAM sensor plug.

Using a 3/8" drive 9/16" short socket, universal joint and 6 inch extension, loosen the bolt behind the base of the CAM sensor assembly. Rotate CAM sensor assembly 1/4 turn **CLOCKWISE.** Now, slowly rotate **COUNTER-CLOCKWISE** until the LED just illuminates. DO NOT ROTATE ANY FURTHER. Tighten locking bolt behind CAM sensor being careful not to move the CAM sensor while tightening. The CAM sensor is now set properly at 25 degrees AFTER TOP DEAD CENTER.

ILLUSTRATIONS

LINES ARE
1-15/32" APART



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