IGNITION SYSTEM PARTS & SERVICE INDEX OF PARTS

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Firing Order: Specifications

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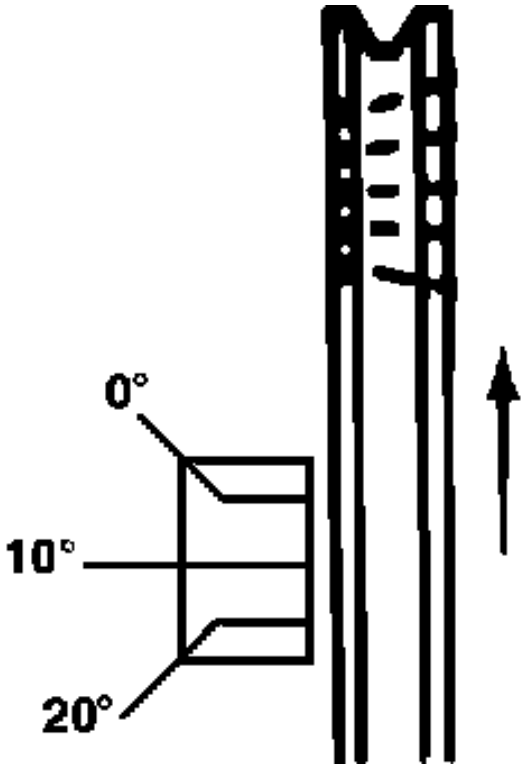
Timing Marks and Indicators: Locations

Fig. 5 Timing Mark:



Ignition Timing: Adjustments

Ignition Timing should be set to 24°BTC +/-3° @ 700 rpm

Distributor Advance Unit: Description and Operation

This system is controlled in two stages, warm-up and normal driving, to obtain good fuel economy and quick warm up of the catalyst. The thermal vacuum valve monitors coolant temperature and activates system above 131'F.

Distributor Advance Unit: Specifications

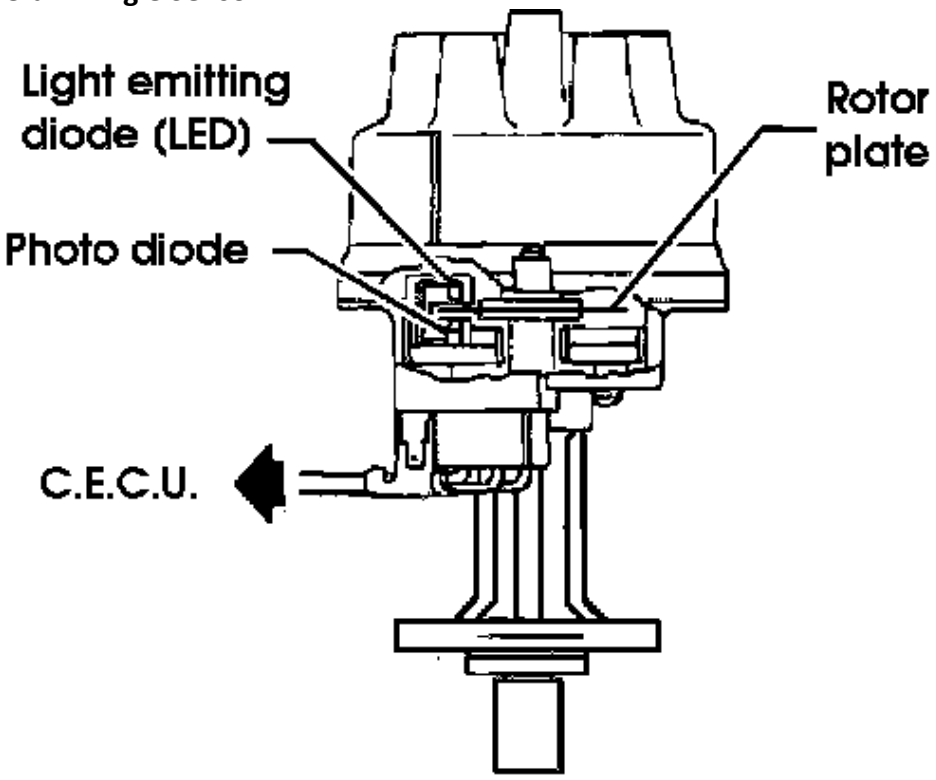
Fig. 6 Distributor Timing Advance Specifications:

Engine	Trans-mission	Year	Distributor Number	Degrees @ 2500 RPM	
				Total	Centrifugal
L24E	MT & AT	1981	D6K9-22	26-34	13-17
L24E	MT & AT	1981	D6K80-04	26-34	13-17
L24E	MT & AT	1982	D6K81-01	31.5-39.5	5.5-9.5
L24E	MT & AT	1983-84	D6K81-02	41.4-49.4	13.4-17.4
L28E	MT & AT	1981	D6K9-02	38-46	15-19
L28E	MT & AT	1981	D6K80-03	43-51	15-19
L28E	MT & AT	1982	D6K81-01	23.4-31.4	10.4-14.4
L28E	MT & AT	1983	D6K82-01	40.9-48.9	12.9-16.9

Engine degrees at engine rpm, no load , in addition to base timing setting . Mechanical advance distributors only.

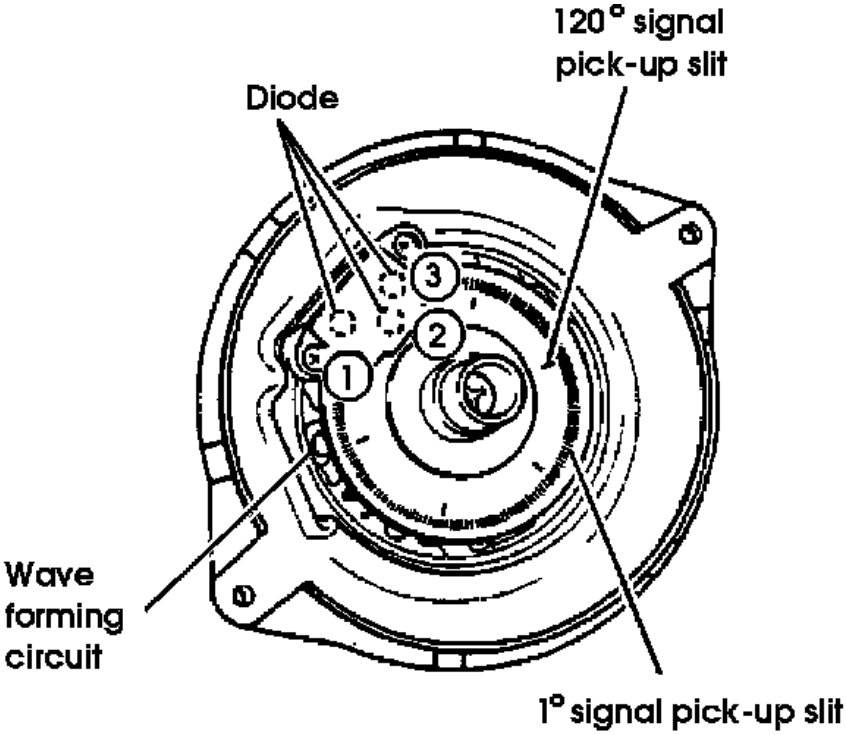
Crankshaft Position Sensor: Description and Operation

Crank Angle Sensor:



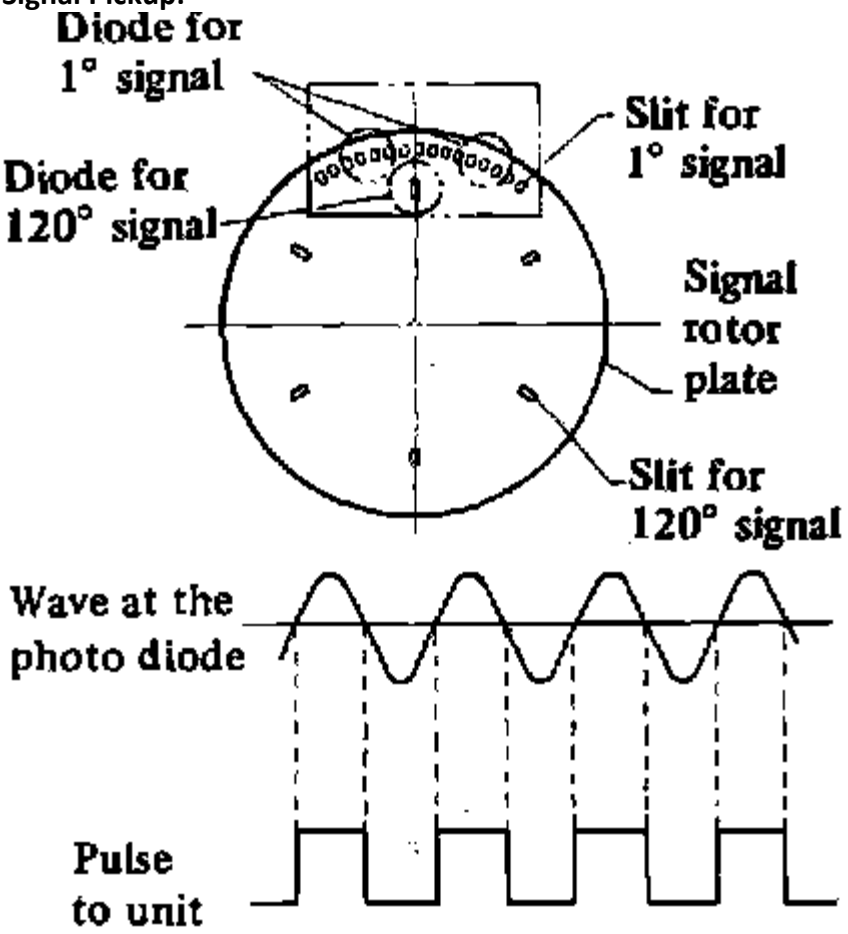
The crank angle sensor, detects engine RPM and crank angle (piston position) and transmits these signals to the control unit. The sensor consists of a signal rotor plate and light emitting diodes (LED) located in the distributor. The signal rotor plate has 360 slits spaced at 1 deg. on it's outer perimeter. It also has six slits at 60 deg. intervals located inboard from the outer slits. The inner slits are used to detect the crank angle position (piston position). The outer slits are used to provide the 1 deg. signal used to control ignition timing and engine RPM's.

Crank Angle Sensor Layout:



Engine RPM is determined by the the 1 deg. signal that is created as each of the 360 slits on the signal rotor plate allow light to pass from LED's 1 and 3 to the photo diodes. When the light from the LED reaches the photo diode, it causes an alternative voltage. Thus, each wave from each diode is compounded. Then, the compound wave is converted into an on-off pulse. this 1 deg. on-off signal is sent to the control unit.

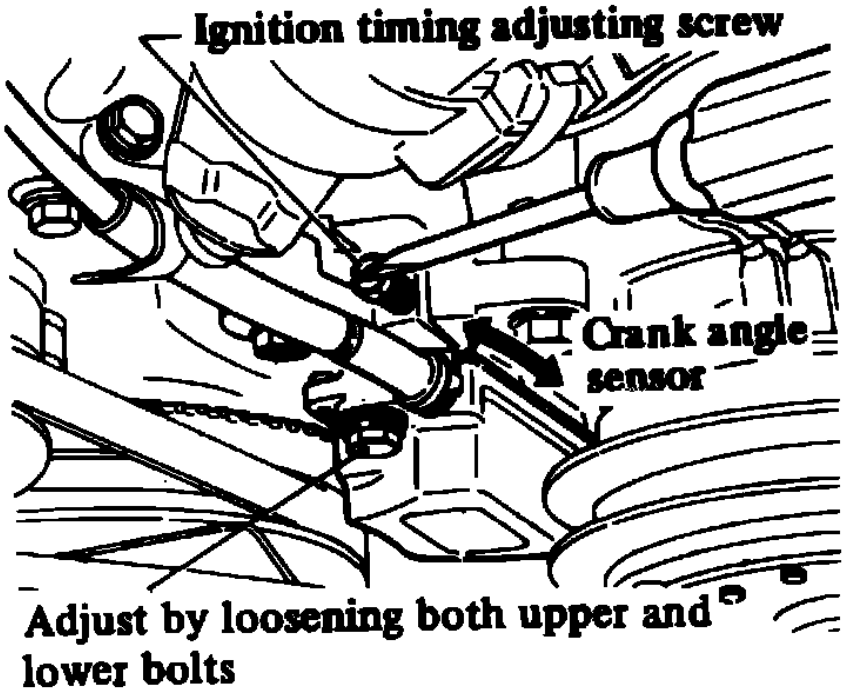
Signal Pickup:



Top dead center (TDC) is detected by the 120 deg. signal created as the 60 deg. slits pass between LED 2 and the photo diode. When the light from the LED reaches the photo diode, it causes an alternative voltage. At this time, a signal on-off pulse is generated. Since engine RPM is twice that of the distributor, the rotor plate has six slits at 60 deg. intervals.

Crankshaft Position Sensor: Adjustments

Fig. 39 Adjusting ignition timing with crankshaft angle sensor:



1. Connect inductive type timing light to No. 1 cylinder high tension lead, following manufacturer's instructions.
2. Loosen bolts securing crank angle sensor to adjustor, **Fig. 39.**
3. Start engine and check timing at specified idle speed.
4. To advance timing, turn adjuster screw, **Fig. 39,** clockwise, moving sensor upward. To retard timing turn adjuster screw counterclockwise, moving sensor downward.

Fig. 40 Crankshaft angle sensor adjustments:

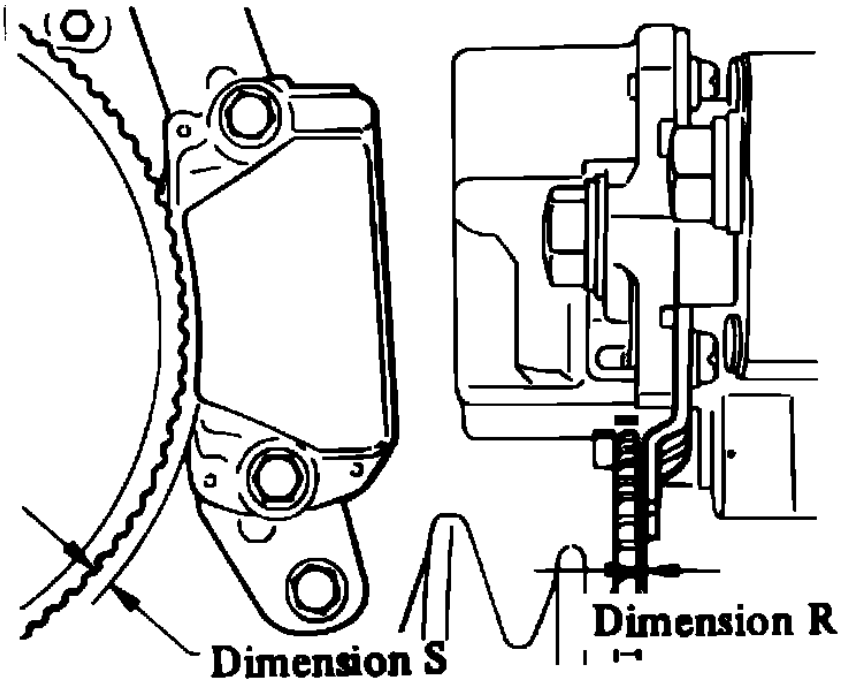
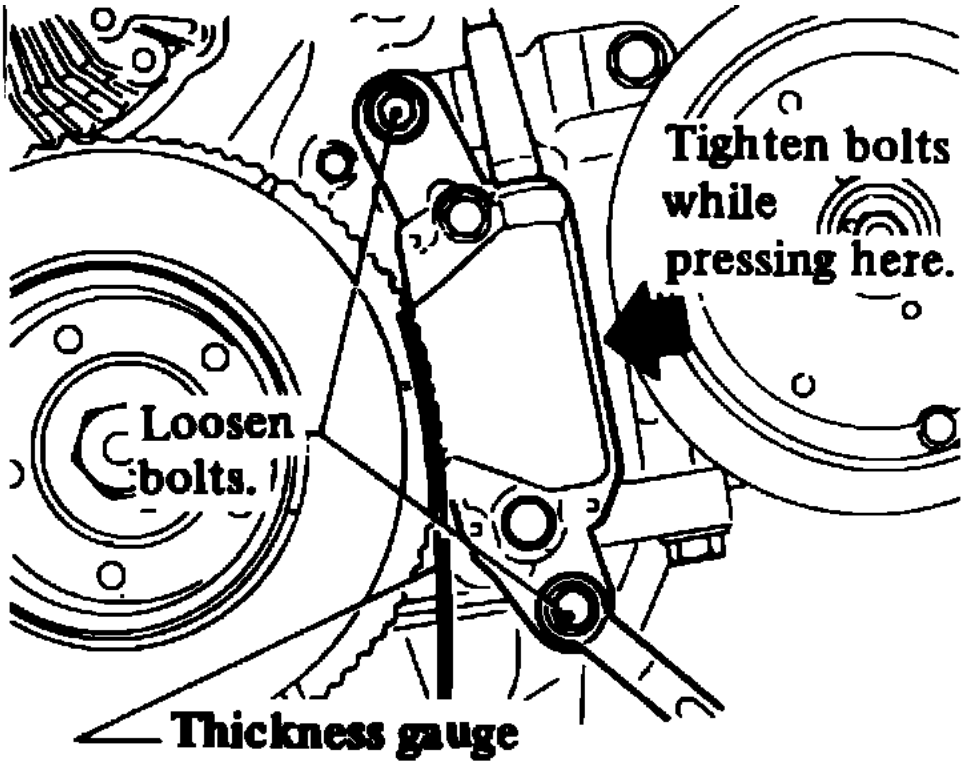
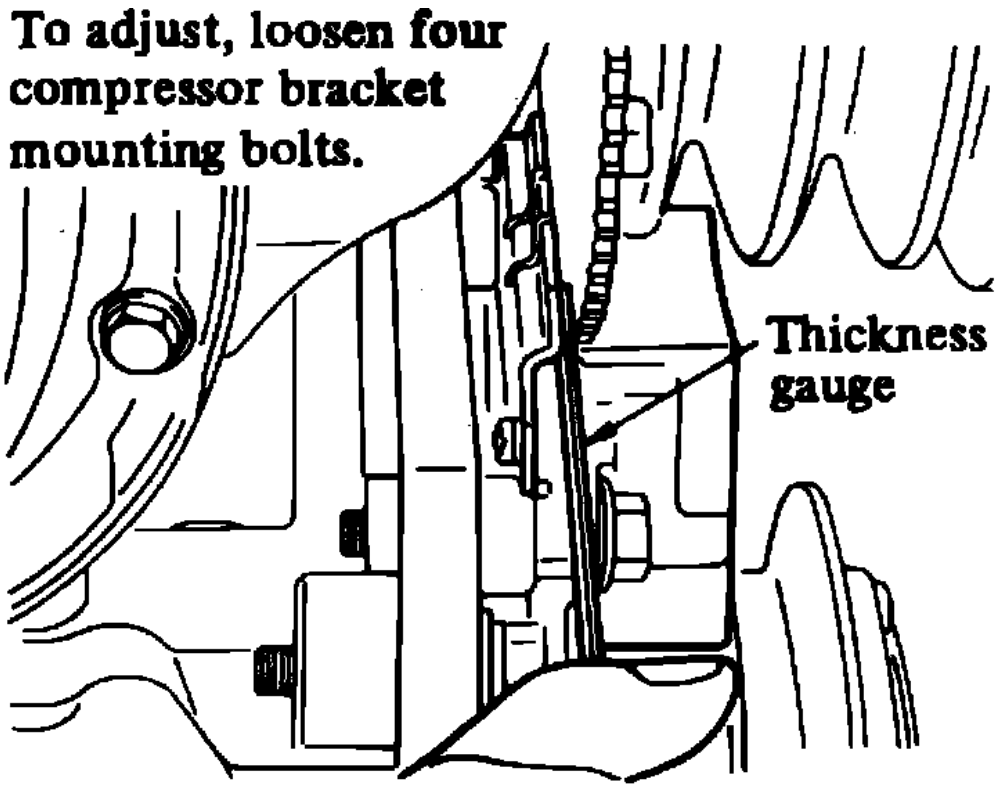


Fig. 41 Adjusting crankshaft angle sensor radial dimension "S":



5. Stop engine. Tighten crank angle sensor mounting bolts and check radial direction dimension adjustment.
6. To adjust dimension "S", **Fig. 40**, loosen crank angle sensor adjuster bolts, **Fig. 41**.
7. Using a thickness gauge, set dimension as shown in **Fig. 41** to .039 -.055 in. and tighten adjuster mounting bolts.
8. To adjust dimension "R", **Fig. 40**, loosen air conditioning compressor and loosen four compressor Racket mounting bolts.

Fig. 42 Adjusting crankshaft angle sensor axial dimension "R":



9. Place .047 in. thickness gauge between signal disc plate and bracket **Fig. 42**, and tighten compressor mounting bolts.

10. Insure that dimension "R" is .039-.055 in. Tighten compressor mounting bolts making sure belt is tensioned correctly and recheck ignition timing at specified idle speed.

Distributor Service Models W/O Crank Angle Sensor

Fig. 11 Exploded view of IC type distributor with external IC unit (typical):

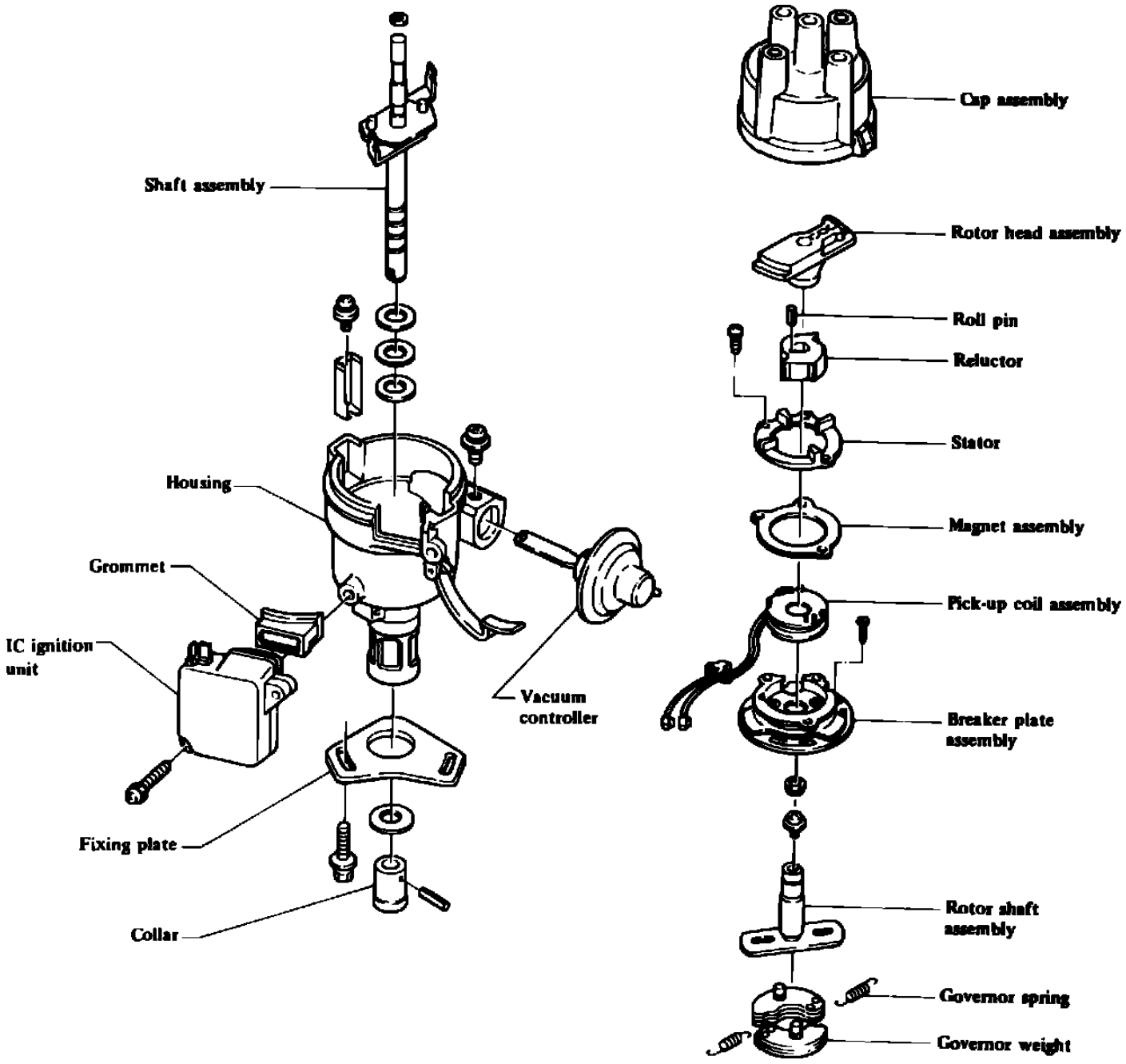
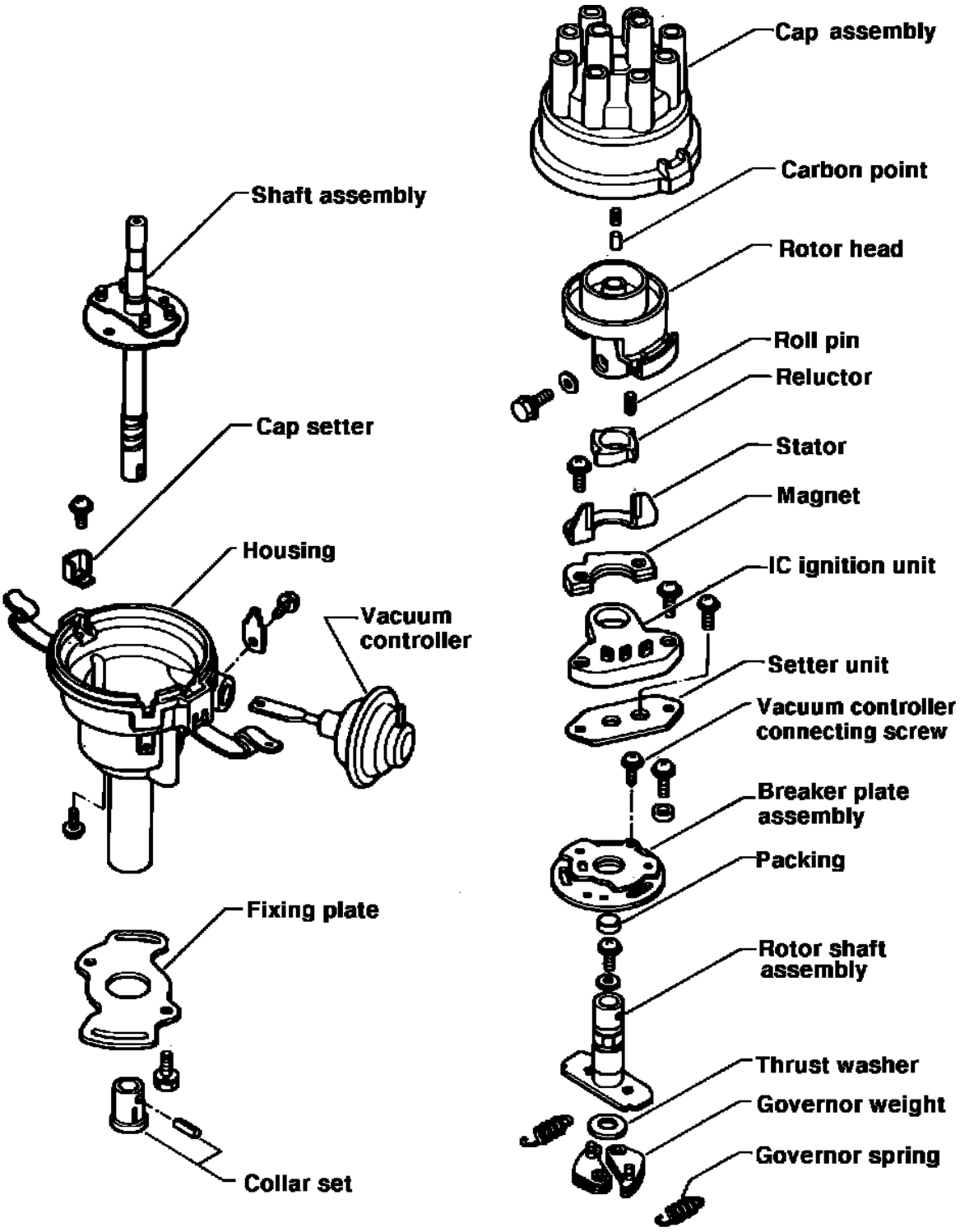


Fig. 12 Exploded view of IC type distributor with internal IC unit (typical):



1. Remove distributor cap and rotor, **Figs. 11 and 12.**
2. Remove IC ignition unit.
3. Remove stator and magnet hold-down screws, then remove stator and magnet assembly.
4. Remove vacuum advance unit.
5. Using 2 pry bars or suitable puller, remove reluctor from shaft.
6. Remove roll pin, then remove pickup coil assembly.
7. Remove breaker plate setscrews, then remove breaker plate.
8. Remove drive gear roll pin, then remove drive gear from shaft.
9. Remove rotor shaft and driveshaft assembly.

10. Mark rotor shaft to driveshaft relationship, then remove packing from top of rotor shaft, remove rotor shaft setscrew and the rotor shaft.

11. Mark relationship of one governor spring to its bracket and one governor weight to its pivot pin, then remove the governor springs and weights.

12. Reverse procedure to install, noting the following:
    a. Lubricate governor weight pivot points.
    b. Clean the mating surfaces between IC ignition unit and distributor housing.
    c. All parts marked for relationship should be assembled in their original positions.
    d. Using a new roll pin, ensure reluctor is properly aligned on rotor shaft.

Distributor Service Models W/ Crank Angle Sensor

1. This type of distributor cannot be serviced and must be replaced as a unit. Models with the internal crank angle sensor can easily be identified by a lack of vacuum advance unit.

Distributor Replace

REMOVAL

1. Mark position of No. 1 tower of distributor cap on distributor housing.
2. Remove distributor cap.
3. Crank engine to align rotor with No. 1 mark on housing.
4. Place a mark between distributor housing and engine.
5. Remove distributor retaining bolt and the distributor.
   Do not crank engine when distributor is removed from engine.

INSTALLATION

1. Align rotor with No. 1 mark on housing.
2. If engine was cranked when distributor was removed from engine, crank engine until No. 1 cylinder is on compression stroke and the timing marks align on the pulley and front cover.
3. Install distributor into engine, aligning all index marks made during removal.
4. Loosely install distributor retaining bolt.
5. Adjust ignition timing and tighten distributor retaining bolt.

INDEX OF IGNITION SYSTEM PART NUMBERS