

SECTION 12-03C Compressor and Clutch—FX-15

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VEHICLE APPLICATION

Taurus/Sable with 3.0L and 3.8L engines.

DESCRIPTION AND OPERATION

FX-15 Compressor

The FX-15 is a swashplate design ten-cylinder aluminum compressor utilizing the tangential design mount. The compressor mainshaft is driven by a belt from the engine crankshaft pulley. A one-piece lip-type seal (replaceable from the front of the compressor) is used to seal it at the shaft opening in the assembly. Five double-acting pistons, positioned axially around the compressor shaft, operate within the cylinder assembly. The pistons are actuated by a swashplate that is pressed on the compressor shaft. The swashplate changes the rotating action of the shaft to provide a reciprocating driving force to each of the five pistons. This driving force is applied, through shoes, to the midpoint of each of the double end pistons.

Reed-type discharge valves are assembled on the valve plate which is located with the suction reed valve between the cylinder assembly and the head at each end of the compressor. The heads are connected to each other by gas-tight passageways through the cylinder assembly which direct the refrigerant gas to the suction and discharge ports located in the rear head.

A magnetic clutch is used to drive the compressor shaft. When voltage is applied to the clutch field coil, the clutch plate and hub assembly (which is solidly coupled to the compressor shaft) is drawn rearward by magnetic force toward the pulley which rotates freely on the compressor front head casting. The magnetic force locks the clutch plate and hub assembly and the pulley together as one unit. The compressor shaft then turns with the pulley. When voltage is removed from the clutch field coil, springs in the clutch plate and hub assembly move the clutch plate away from the pulley. The clutch plate hub assembly and compressor shaft cease to rotate.

