Component Procedures: Compressor HVAC

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Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Compressor	55037205AH	Compressor	585.00	Order By Description.

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Replace	Compressor, R&R	B	0.8	0.4

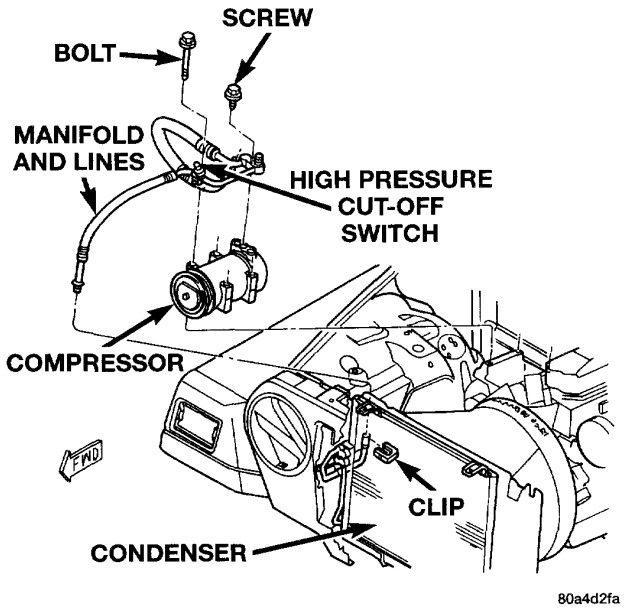
Components (itype_389)

Nippondenso 10PA17

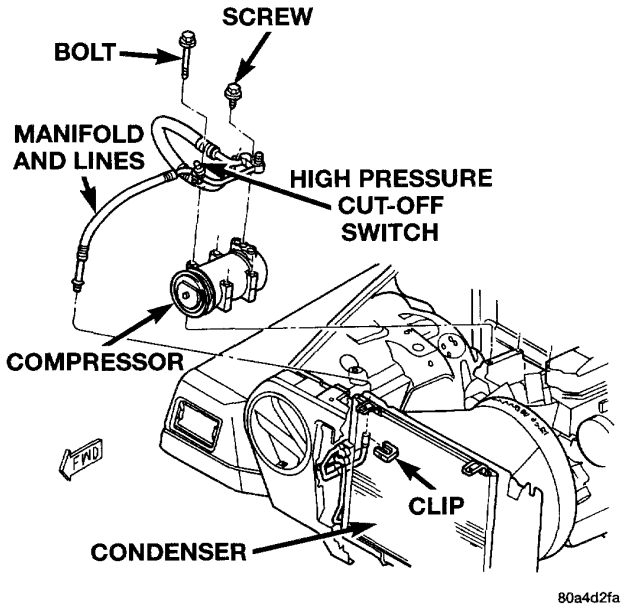
A/C Compressor (Article 2045310)

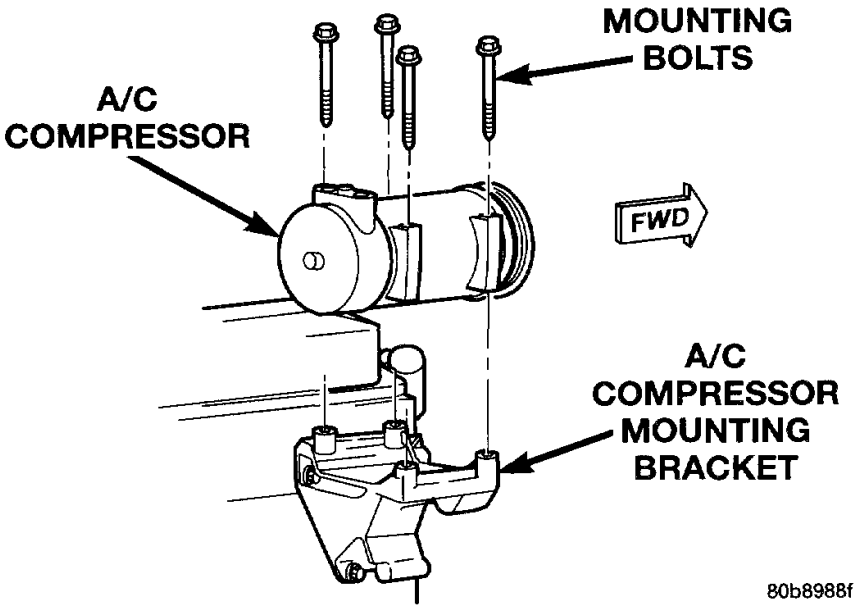
SYSTEM DESCRIPTION
The
air conditioning
system uses a Sanden SD7H15 seven cylinder, reciprocating wobble plate-type
compressor
on all models. This compressor has a fixed displacement of
150 cubic centimeters (9.375 cubic inches)
, and has both the suction and discharge ports located on the cylinder head. A label identifying the use of
R-134a
refrigerant
is located on the compressor.
The compressor is driven by the engine through an electric clutch, drive pulley and belt arrangement. The
compressor is lubricated by
refrigerant oil
that is circulated throughout the refrigerant system with the refrigerant.
The compressor draws in low-pressure refrigerant vapor from the
evaporator
through its suction port. It then compresses the refrigerant into a high-pressure, high-temperature
refrigerant vapor, which is then pumped to the
condenser
through the compressor discharge port.
The compressor cannot be repaired. If faulty or damaged, the entire compressor assembly must be replaced. The
compressor clutch
, pulley and clutch coil are available for service.

A/C Compressor (Article 2043954)



A/C Compressor Removal and Installation (Article 2044031)





Mechanical (including Torque) (itype_28)

A/C Compressor Bracket-To-Engine Bolts 25 ft.lb
A/C Compressor Mounting Bolts 20 ft.lb

Component Tests and General Diagnostics (itype_383)

When investigating an
air conditioning
related noise, you must first know the conditions under which the noise occurs. These conditions include: weather, vehicle speed, transmission in gear or neutral, engine speed, engine temperature, and any other special conditions. Noises that develop during air conditioning operation can often be misleading. For example: What sounds like a failed front bearing or connecting rod, may be caused by loose bolts, nuts, mounting brackets, or a loose
compressor clutch
assembly.
Drive belts are speed sensitive. At different engine speeds and depending upon belt tension, belts can develop noises that are mistaken for a
compressor
noise. Improper belt tension can cause a misleading noise when the compressor clutch is engaged, which may not occur when the compressor clutch is disengaged.
1. Select a quiet area for testing. Duplicate the complaint conditions as much as possible. Switch the compressor on and off several times to clearly identify the compressor noise. Listen to the compressor while the clutch is engaged and disengaged. Probe the compressor with an engine stethoscope or a long screwdriver with the handle held to your ear to better localize the source of the noise.
2. Loosen all of the compressor mounting hardware and retighten. Tighten the compressor clutch mounting nut. Be certain that the clutch coil is mounted securely to the compressor, and that the clutch plate and pulley are properly aligned and have the correct air gap. See Compressor and Compressor Clutch/Service and Repair for the procedures.
3. To duplicate a high-ambient temperature condition (high head pressure), restrict the air flow through the condenser
. Install a manifold gauge set to be certain that the discharge pressure does not exceed
2760 kPa (400 psi)
.
4. Check the
refrigerant
system plumbing for incorrect routing, rubbing or interference, which can cause unusual noises. Also check the refrigerant lines
for kinks or sharp bends that will restrict refrigerant flow, which can cause noises. See Suction and Discharge Line

/Service and Repair for more information.
5. If the noise is from opening and closing of the
high pressure relief valve
, evacuate and recharge the refrigerant system. See Refrigerant System Evacuate and Refrigerant System Charge in the Service Procedures. If the high
pressure relief valve
still does not seat properly, replace the compressor.
6. If the noise is from liquid slugging on the
suction line
, replace the accumulator. See Accumulator/Service and Repair for the procedures. Check the
refrigerant oil
level and the refrigerant system charge. See Refrigerant Oil Level and Refrigerant System Charge in the Service Procedures. If the liquid slugging condition continues following accumulator replacement, replace the compressor.
7. If the noise continues, replace the compressor and repeat Step 1.