16. General Diagnostics STO1278 A: GENERAL DIAGNOSTIC PROCEDURE 5701278A09 SUFFICIENT COOLING Check air flow. Normal air flow No or low air flow Check blower motor operation. Check compressor operation. Abnormal Normal operation Abnormal Normal operation operation operation Check discharge or no or no pressure. <Ref. operating operating Clogged blower inlet/clogged duct/ to AC-(*1) at all. at all. loose connection duct/air leakage, etc. **OPERATION**, Refrigerant Recovery Procedure.> Abnormal Normal Malfunctioning Malfunctioning Malfunctioning pressure pressure internal circuit electrical circuit. blower motor fan. of blower motor. Malfunctioning temperature Discontinued wiring or component circuits, Loosen fan/ control operation. or poor connection/faulty resistor, improper contact (Air mix door amplifier, etc./burned-out fuse or low of fan and case/ position improperly battery voltage deformed fan adjusted) Belt Magnet clutch Magnet clutch slipping. slipping. does not engage. Check Faulty electrical Foreign particles Malfunctioning Activation of Check magnet Check electrical circuit (poor on clutch internal parts safety/protection clutch. (coil compressor circuit. (wiring, belt and belt connection, low frictional of clutch, devices (such as circuit, disc component's tension. battery voltage, surface or compressor. pressure switch, to pulley circuit) lock protection clearance) etc.) excessive disc clearance circuit, etc.) Low-pressure Low-pressure Both high and low High-pressure High-pressure side Both high and low side sometimes

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pressure sides are

too high.

*1: AC-16

side becomes

negative.

becomes

negative.

side is too low

and low-pressure

side is too high.

is too high and

is too low.

low-pressure side

pressure sides are

too low.

B: PERFORMANCE CHECK ST01278E44

If various conditions caused to other air conditioning system, the characteristics revealed on manifold gauge reading are shown in the following.

As to the method of a performance test, refer to the item of "Performance Test".

Each shaded area on the following tables indicates a reading of the normal system when the temperature of outside air is 32.5°C (91°F).

| Condition | | Probable cause | Corrective action |
|---------------------------------|--|--|--|
| INSUFFICIENT REFRIGERANT CHARGE | Insufficient cooling. | Refrigerant is small, or leaking a little. | Leak test. Repair leak. Charge system. Evacuate, as necessary, and recharge system. |
| ALMOST NO REFRIGERANT | No cooling action. | Serious refrigerant leak. | Stop compressor immediately. 1. Leak test. 2. Discharge system. 3. Repair leak(s). 4. Replace receiver drier if necessary. 5. Check oil level. 6. Evacuate and recharge system. |
| FAULTY EXPANSION VALVE | Slight cooling. Sweating or frosted expansion valve inlet. | Expansion valve restricts refrigerant flow. • Expansion valve is clogged. • Expansion valve is inoperative. • Valve stuck closed. Thermal bulb has lost charge. | If valve inlet reveals sweat or frost: 1. Discharge system. 2. Remove valve and clean it. Replace it if necessary. 3. Evacuate system. 4. Charge system. If valve does not oper- ate: 1. Discharge system. 2. Replace valve. 3. Evacuate and charge system. |

GENERAL DIAGNOSTICS

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|---|--|--|---|
| Condition | | Probable cause | Corrective action |
| Low-pressure gauge High-pressure gauge | Insufficient cooling. Sweated suction line. No cooling. Sweating or frosted suction line. | Expansion valve allows too much refrig- erant through evapora- tor. Faulty seal of O-ring in expansion valve. | Check valve for opera- tion. If suction side does not show a pres- sure decrease, replace valve. 1. Discharge system. 2. Remove expansion valve and replace O-ring. 3. Evacuate and replace system. |
| G4M0676 | | | |
| Low-pressure gauge | | | |
| | | | |
| G4M0677 | han the instance line. | | |
| AIR IN SYSTEM | Insufficient cooling. | Air mixed with refriger- ant in system. | Discharge system. Replace receiver drier. Evacuate and charge system. |
| MOISTURE IN SYSTEM | After operation for a | Drier is saturated with | 1. Discharge system. |
| Low-pressure gauge High-pressure gauge | while, pressure on suction side may show vacuum pressure reading. During this condition, discharge air will be warm. As warning of this, read- ing shows 39 kPa (0.4 kg/cm ² , 6 psi) vibra- tion. | moisture. Moisture has frozen at expansion valve. Refrigerant flow is restricted. | Replace receiver drier (twice if neces- sary). Evacuate system completely (Repeat 30 minute evacuating three times.). Recharge system. |
| G4M0679 | | | |

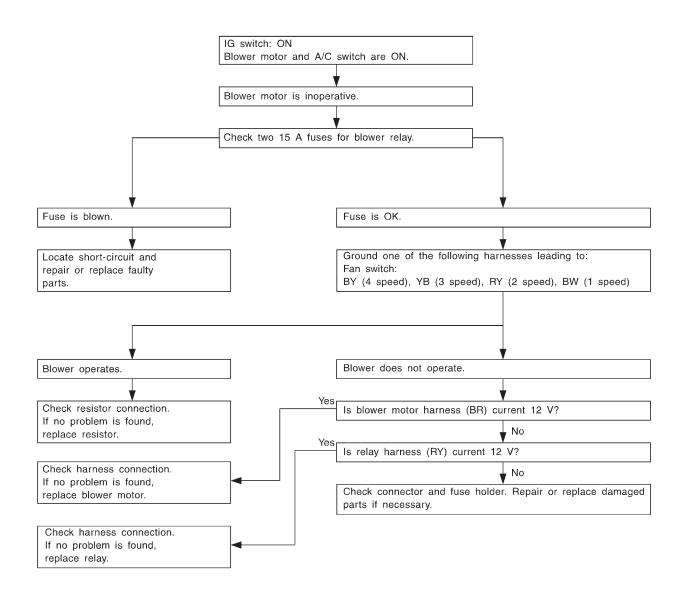
GENERAL DIAGNOSTICS HVAC System (Heater, Ventilator and A/C)

| Condition | | Probable cause | Corrective action |
|----------------------------|--|---|---|
| FAULTY CONDENSER | No cooling action. Engine may overheat. Suction line is very hot. | Condenser is often found not functioning well. | Check condenser cooling fan. Check condenser for dirt accumulation. Check engine cool- ing system for over- heat. Check for refrigerant overcharge. If pressure remains high in spite of all above actions taken, remove and inspect the condenser for pos- sible oil clogging. |
| HIGH-PRESSURE LINE BLOCKED | Insufficient cooling. Frosted high-pressure liquid line. | Drier clogged, or restriction in high- pressure line. | Discharge system. Remove receiver drier or strainer and replace it. Evacuate and charge system. |
| FAULTY COMPRESSOR | Insufficient cooling. | Internal problem in compressor, or dam- aged gasket and valve. | Discharge system. Remove and check compressor. Repair or replace compressor. Check oil level. Replace receiver drier. Evacuate and charge system. |
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GENERAL DIAGNOSTICS

HVAC System (Heater, Ventilator and A/C)

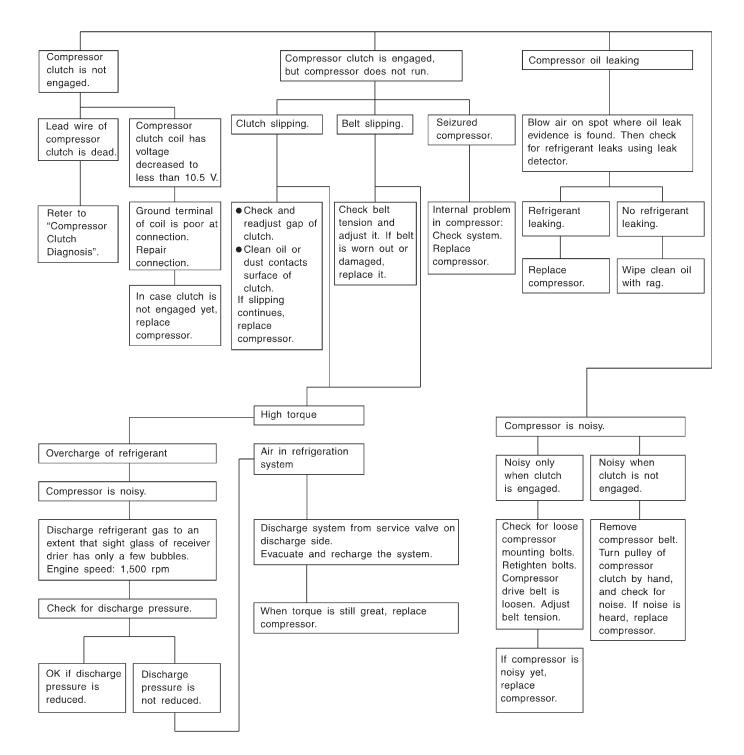
C: BLOWER MOTOR CHECK STO1278E32



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D: COMPRESSOR CHECK 5701278E36

1. COMPRESSOR STO1278E3601



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2. COMPRESSOR CLUTCH ST0127BE3602

| IG switch ON, blower switch and A/C switch are ON. | | | | |
|--|---------------------------|---|--|--|
| Compressor clutch is not engaged. | | | | |
| | | | | |
| Check both 10 A fuses for A/C. | | | | |
| F | use blown. | - Fuse O.K. | | |
| Locate short-circuit and repair or replace faulty pa | arts. Check if 12 V ar | e present at A/C relay harnes | ss (BrR) with relay connected. | |
| Check if 12 V are present at A/C relay harness (| RW) with relay connected. |] Yes No | Faulty harness | |
| Check if 12 V are present at A/C relay harness (| (BW). No Yes (| Check if 12 V are present at | thermal switch harness (RW). | |
| Check if 12 V are present at A/C relay Yes Harness (BW). | | Check if 12 V are present at - nermal switch harness (RG). | -Yes-No-Faulty harness | |
| Check if A/C relay harness (BrY) is grounded. | | | ck if 12 V are present at A/C relay harness (GR). | |
| grounded. | | Check if 12 V are present at - /C cut relay harness (YG). | -Yes⊥No-Faulty harness | |
| No Yes | No Yes | | Yes | |
| | ck if 12 V Faulty harnes | s | | |
| harness (BrY) and Hi/Low A/C | switch ness (RB). | Check if 12 V are present at A/C cut relay harness (BrR). | Check if 12 V are present at compressor clutch harness (YG). | |
| Faulty A/C Ye switch | s No Faulty harnes | ss No Yes | Yes No | |
| | | | | |
| Faulty harness - No ¹ Yes - Check if pressure in h is in 206 to 2,648 kPa 30 to 384 psi) range. | | Ity harness Check if ECM A/C signal (G) is grounded. | Faulty clutch Faulty harness | |
| Check if continuity exists between Hi/Low switch harness (GR) and EVA thermo harness (GR). | _ Yes | ow switch | Yes | |
| Check if 12 V are present at Yes No EVA thermo harness (RB). | Faulty harness | Check if 12 V are presnt a ECM A/C signal. | t Check if A/C cut relay harness (L) is grounded. | |
| Faulty harness No Yes Check if EVA thermo (BrW) is grounded. | o harness No | Yes | No Yes | |
| Faulty harness No Yes Faulty EV | /A thermo Faulty harr | ness Faulty ECM Fa | aulty harness Faulty relay | |

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