#### 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

H4M1265B

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.	<ol> <li>Leak test.</li> <li>Repair leak.</li> <li>Charge system.</li> <li>Evacuate, as necessary, and recharge system.</li> </ol>
ALMOST NO REFRIGERANT	No cooling action.	Serious refrigerant leak.	<ul> <li>Stop compressor immediately.</li> <li>1. Leak test.</li> <li>2. Discharge system.</li> <li>3. Repair leak(s).</li> <li>4. Replace receiver drier if necessary.</li> <li>5. Check oil level.</li> <li>6. Evacuate and recharge system.</li> </ul>
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

		Duchahl	0
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.	<ol> <li>Discharge system.</li> <li>Replace receiver drier.</li> <li>Evacuate and charge system.</li> </ol>
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 <sup>2</sup> , 6 psi) vibra- tion.	moisture. Moisture has frozen at expansion valve. Refrigerant flow is restricted.	<ol> <li>Replace receiver drier (twice if neces- sary).</li> <li>Evacuate system completely (Repeat 30 minute evacuating three times.).</li> <li>Recharge system.</li> </ol>
G4M0679			

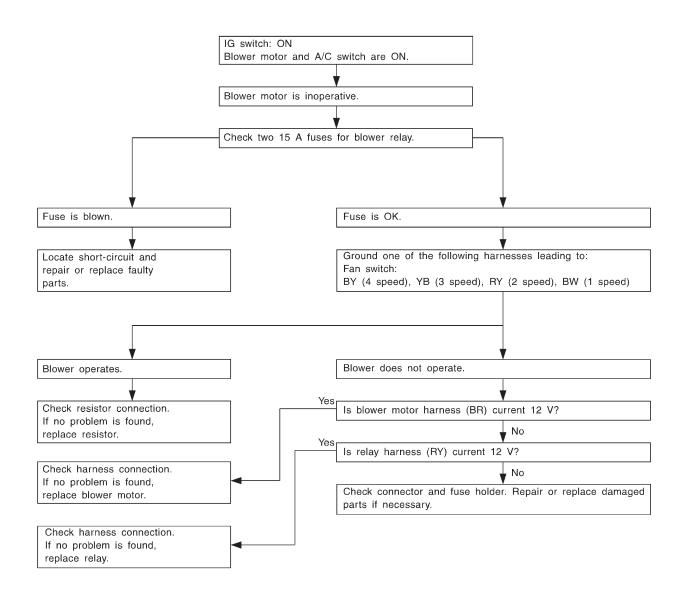
## GENERAL DIAGNOSTICS HVAC System (Heater, Ventilator and A/C)

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.	<ul> <li>Check condenser cooling fan.</li> <li>Check condenser for dirt accumulation.</li> <li>Check engine cool- ing system for over- heat.</li> <li>Check for refrigerant overcharge.</li> <li>If pressure remains high in spite of all above actions taken, remove and inspect the condenser for pos- sible oil clogging.</li> </ul>
HIGH-PRESSURE LINE BLOCKED	Insufficient cooling. Frosted high-pressure liquid line.	Drier clogged, or restriction in high- pressure line.	<ol> <li>Discharge system.</li> <li>Remove receiver drier or strainer and replace it.</li> <li>Evacuate and charge system.</li> </ol>
FAULTY COMPRESSOR	Insufficient cooling.	Internal problem in compressor, or dam- aged gasket and valve.	<ol> <li>Discharge system.</li> <li>Remove and check compressor.</li> <li>Repair or replace compressor.</li> <li>Check oil level.</li> <li>Replace receiver drier.</li> <li>Evacuate and charge system.</li> </ol>
G4M0682			

GENERAL DIAGNOSTICS

HVAC System (Heater, Ventilator and A/C)

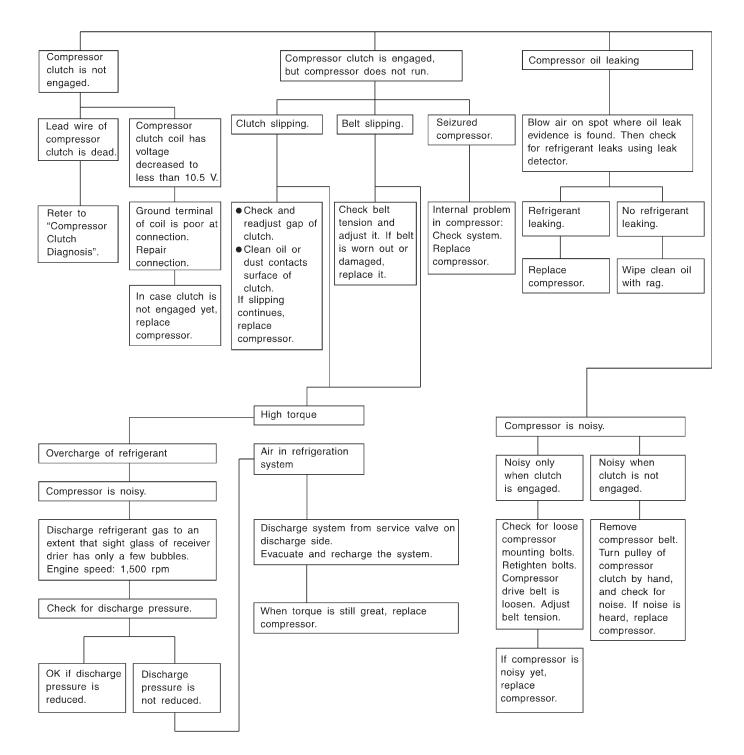
### C: BLOWER MOTOR CHECK STO1278E32



H4M1266A

#### D: COMPRESSOR CHECK 5701278E36

#### 1. COMPRESSOR STO1278E3601



H4M1267A

#### 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 <sup>1</sup> 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	

H4M1268A