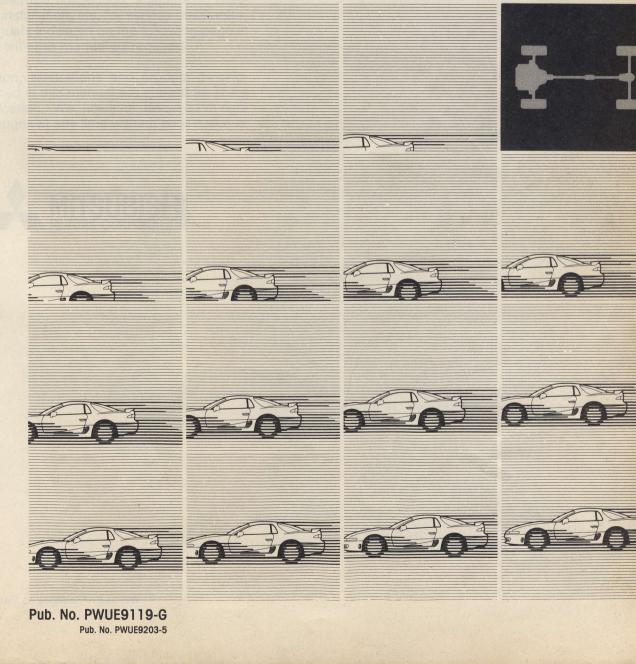


# Workshop Manual

chassis SUPPLEMENT

# **3000GT** '98



(1)

# 20.08/00/

# MITSUBISHI 3000GT WORKSHOP MANUAL SUPPLEMENT

# FOREWORD

This Workshop Manual contains procedures for removal, disassembly, inspection, adjustment, reassembly and installation, etc. for service mechanics. Use the manuals indicated on the following page in combination with this manual as required.

All information, illustrations and product descriptions contained in this manual are current as at the time of publication. We, however, reserve the right to make changes at any time without prior notice or obligation.



General	00
Fuel	13
Engine Electrical	16
Heater, Air conditioner and Ventilation	55

# **RELATED PUBLICATIONS**

#### **TECHNICAL INFORMATION MANUAL**

<General Export, GCC and

#### **PYUE9201**

WORKSHOP MANUAL Chassis Group <Europe>

Australia>

PWUE9119 (Loose-leaf edition) PWUE9119-E(Supplement) PWUE9119-F (Supplement) PWUE9119 (Loose-leaf edition) PWUE9203 (Basic) PWUE9203-1 (Supplement) PWUE9203-2 (Supplement) PWUE9203-3 (Supplement) PWUE9203-4 (Supplement) PWUE9203-4 (Supplement)

Engine Group

Australia>

ELECTRICAL WIRING <Europe>

PHUE9201 (Loose-leaf edition) PHUE9201-D (Supplement) PHUE9201-E (Supplement) PHUE9201-F (Supplement) PHUE9406 (Basic) PHUE9406-1 (Supplement) PHUE9406-2 (Supplement)

PARTS CATALOGUE <Europe> <General Export, GCC> <Australia>

<General Export, GCC and

B608K408A B808K408A BFA8K408A

# WARNINGS REGARDING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

#### WARNING!

- (1) Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver (from rendering the SRS inoperative).
- (2) If it is possible that the SRS components are subjected to heat over 93°C (200°F) in baking or in drying after painting, remove the SRS components (air bag module, SRS-ECU) beforehand.
- (3) Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.
- (4) MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B Supplemental Restraint System (SRS), before beginning any service or maintenance of any component of the SRS or any SRS-related component.

# GENERAL 00 GENERAL

# **VEHICLE IDENTIFICATION**

# MODEL

#### VEHICLES FOR EUROPE

Model code	Engine model	Transmission model	Fuel supply system
Z16AMJGFL6	6G72 (2,972 mℓ )	W6MG1	MPI
Z16AMJGFR6	the <sup>r</sup> 9 0	nont hand drive to the	F - For Australias

#### VEHICLES FOR GENERAL EXPORT

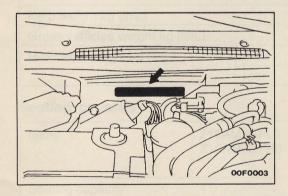
Model code	Engine model	Transmission model	Fuel supply system
Z16AMNGFL	6G72 (2,972 mℓ )	W5MG1	MPI
Z16AMNGFR		Addition (2.2.2) holissing the second	(1) (1) 6-spood manual

#### VEHICLES FOR GCC

Model code	Engine model	Transmission model	Fuel supply system
Z16AMNGFLW	6G72 (2,972 mℓ )	W5MG1	MPI

#### VEHICLES FOR AUSTRALIA

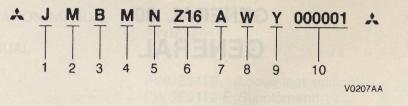
Model code	Engine model	Transmission model	Fuel supply system
Z16AMNGFR8	6G72 (2,972 mℓ)	W5MG1	MPI



# **CHASSIS NUMBER**

The chassis number is stamped on the toeboard inside the engine compartment.

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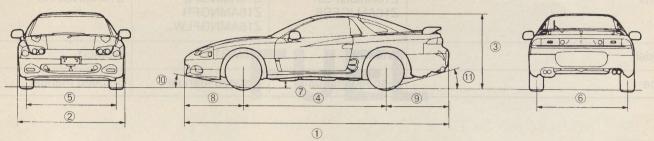


- Asia 1.
- 2. Japan
- MITSUBISHI 3.
  - A For Europe, right hand drive
  - B For Europe, left hand drive F For Australia, right hand drive

  - Y For General Export or GCC
- Body style 4. M - 2-door hatchback
- Transmission type 5.
  - N 5-speed manual transmission
  - J 6-speed manual transmission

- Development order 6.
- Z16 2,972 mℓ (Full time 4WD) 7. Sort
  - A Passenger car
- Model year 8. W - 1998
- 9. Plant Y - Ohe Motor Vehicle Works
- 10. Serial number

# MAJOR SPECIFICATIONS



00F0064

F

#### Dimensions

Items		Z16AMJGFL6 Z16AMJGFL6	Z16AMNGFL Z16AMNGFR Z16AMNGFLW	Z16AMNGFR8
Overall length mm (in.)	1	4,570 (1799.9)	4,570 (1799.9)	4,570 (1799.9)
Overall width mm (in.)	2	1,840 (72.4)	1,840 (72.4)	1,840 (72.4)
Overall height (unladen) mm (in.)	3	1,285 (50.6)	1,285 (50.6)	1,285 (50.6)
Wheelbase mm (in.)	(4)	2,470 (97.2)	2,470 (97.2)	2,470 (97.2)
Track-front mm (in.)	5	1,560 (62.2)	1,560 (62.2)	1,560 (62.2)
Track-rear mm (in.)	6	1,580 (62.2)	1,580 (62.2)	1,580 (62.2)
Ground clearance (unladen) mm (in.)	0	140 (5.5)	140 (5.5)	140 (5.5)
Overhang-front mm (in.)	8	1,030 (40.6)	1,030 (40.6)	1,030 (40.6)
Overhang-rear mm (in.)	9	1,070 (42.1)	1,070 (42.1)	1,070 (42.1)
Angle of approach	10	11.2°	11.2°	11.2°
Angle of departure depress	(1)	11.7°	11.7°	11.7°

# Weight

Items		Z16AMJGFL6 Z16AMJGFR6	Z16AMNGFL Z16AMNGFR Z16AMNGFLW	Z16AMNGFR8
Kerb weight kg (lbs.)		1,730 (3,858)	1,695 (3,737)	1,700 (3,748)
Gross vehicles weight kg (lbs.)		2,120 (4,674)	2,075 (4,575)	2,080 (4,586)
Max. axle weight kg (lbs.)	front	1,150 (2,535)	1,150 (2,535)	1,150 (2,535)
	rear	1,020 (2,249)	1,020 (2,249)	1,020 (2,249)

# Seating capacity

Items	Z16AMJGFL6 Z16AMJGFR6	Z16AMNGFL Z16AMNGFR Z16AMNGFLW	Z16AMNGFR8
Seating capacity	4	4	4

# Engine

Items	Z16AMJGFL6 Z16AMJGFR6	Z16AMNGGFL Z16AMNGFR Z16AMNGFLW	Z16AMNGFR8
Model	6G72	6G72	6G72
Total displacement mℓ	2,972	2,972	2,972

# Transmission

Items	Z16AMJGFL6 Z16AMJGFR6	Z16AMNGFL Z16AMNGFR Z16AMNGFLW	Z16AMNGFR8
Model	W6MG1	W5MG1	W5MG1
Туре	6-speed manual	5-speed manual	5-speed manual

ANNUAR Legond TRAMNUGERS		

#### Veight

#### eating capacity

#### enions

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	Model . 6072

# FUEL

# CONTENTS

GENERAL	2
Outline of Change	2
ON-VEHICLE INSPECTION OF MPI COMPONENTS	2
Mixture Adjusting Screw (variable resistor) <vehicles and="" export="" for="" gcc="" general=""></vehicles>	2

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# **13-2** FUEL – General/On-vehicle Inspection of MPI Components

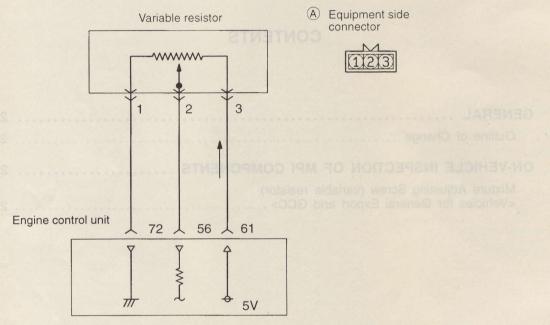
# GENERAL

#### **OUTLINE OF CHANGE**

• The connector for the mixture adjusting screw (variable resistor) has been changed. The following maintenance service points which are different from previous vehicles have been established to correspond to this.

# **ON-VEHICLE INSPECTION OF MPI COMPONENTS**

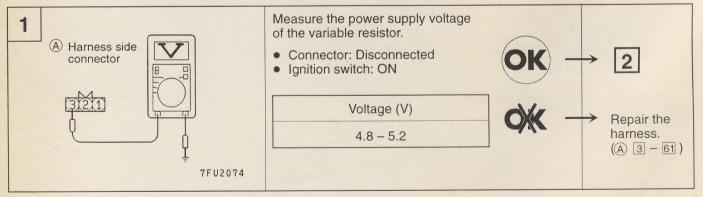
MIXTURE ADJUSTING SCREW (Variable Resistor) <Vehicles for General Export and GCC>

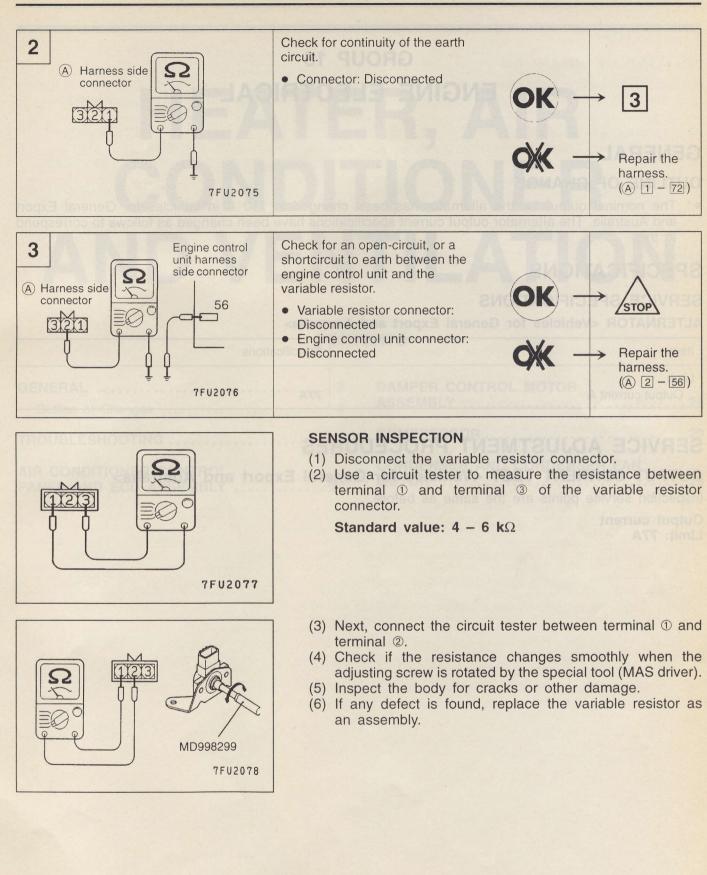


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#### HARNESS INSPECTION





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13-3

# GROUP 16 ENGINE ELECTRICAL

# GENERAL

## **OUTLINE OF CHANGE**

 The nominal output for the alternator has been changed to 110 A in vehicles for General Export and Australia. The alternator output current specifications have been changed as follows to correspond to this.

# SPECIFICATIONS

#### SERVICE SPECIFICATIONS

#### ALTERNATOR <Vehicles for General Export and Australia>

Item stopp	Specifications
Limit Output current A	77A

# SERVICE ADJUSTMENT PROCEDURES

**OUTPUT CURRENT TEST <Vehicles for General Export and Australia>** 

Inspection service points are the same as before.

Output current Limit: 77A

# HEATER, AIR CONDITIONER AND VENTILATION

## CONTENTS

GENERAL	2	DAMPER CONTROL MOTOR	EI .
Outline of Changes		ASSEMBLY	. 28
TROUBLESHOOTING	2	COMPRESSOR	. 29
AIR CONDITIONER CONTROL PANEL AND ECU ASSEMBLY	7	CONDENSER AND CONDENSER FAN MOTOR	. 29

F

# GENERAL

# **OUTLINE OF CHANGES**

An air conditioning control panel and ECU assembly which integrates the air conditioning control panel and the ECU has been adopted. The following items have been changed to correspond to this.

- Troubleshooting
- Removal and installation service points for the air conditioning control panel and ECU assembly
- Removal and installation service points for the damper control motor assembly
- Inspection service points for operation of the thermostat and the compressor's magnetic clutch
- Inspection service points for the revolution pickup sensor
- Inspection service points for the condenser fan motor

# TROUBLESHOOTING INSPECTION CHART FOR DIAGNOSIS CODES

Code No.	Diagnosis item	Reference page
11	Interior temperature sensor system (open circuit)	55-3
12	Interior temperature sensor system (short circuit)	55-3
13	Air inlet sensor system (open circuit)	55-4
14	Air inlet sensor system (short circuit)	55-4
15	Engine coolant temperature sensor system (open circuit)	55-5
16	Engine coolant temperature sensor system (short circuit)	55-5
21	Air thermo sensor system (open circuit)	55-6
22	Air thermo sensor system (short circuit)	55-6
31	Potentiometer system of blend air damper motor assembly	55-7
32	Potentiometer system of mode selection damper motor assembly	55-8
41	Drive system of air mix damper motor assembly	55-9
42	Drive system of mode selection damper motor assembly	55-9

# INSPECTION PROCEDURES FOR DIAGNOSIS CODES

This diagnosis code is output if the interior temperature sense	or is defectiv	<ul> <li>Malfunction of connector</li> <li>Malfunction of harness</li> <li>Malfunction of interior tempe</li> <li>Malfunction of the A/C-ECU</li> </ul>	
	NO		
Interior temperature sensor check	NG	Replace	
OK OK OK	NO		
<ul> <li>Measure at the interior temperature sensor connector F-01</li> <li>Disconnect the connect the connector, and measure at the harness side connector.</li> <li>Voltage between terminal (2) and body earth</li> </ul>	NG	Check the following connectors: F-01, F-32, F-97 <l.h. drive="" vehicles=""> F-01, F-32, C-62 <r.h. drive="" vehicles=""></r.h.></l.h.>	
OK: 5V		OK	NG
ОК	_	Charles the second second second second	Repair
Check the harness between that a intel sensor and the A/C-EOU.		Check the trouble symptom.	
OK NG		NG	
Tippeff		Check the harness between the interior	tomporaturo sonsor an
Replace the ArO-ECU		the A/C-ECU.	temperature sensor an
		ОК	NG
Oneck the following connectors: C-05		hapince the MO-ECU, TE-O. toto minoo .	Repair
DK PK		•	Connect the connect
Ressure MegaRive BOU compare C.87		Replace the A/C-ECU.	0K 23 - 29 V
Chansel Inc. doin allow	NG	MOK.	
Measure at the A/C-ECU connector C-97 Connect the connector. Voltage between terminal (15) and body earth		Check the following connectors:F-01, F-32 <l.h. drive="" vehicles="">F-01, F-32, C-62<r.h. drive="" vehicles=""></r.h.></l.h.>	
OK: 2.3 – 2.9V		ОК	NG
OK		*	Repair
niacos			
		Check the trouble symptom.	
Replace the Arth-EQU / 19-3 patentico privolity and social			NG
pk			Repair
Probable cause		Check the harness between the interior the A/C-ECU, and if necessary.	temperature sensor an
• Maltunction of ham			
Check the following connector: C-97	NG	- Repair	
OK	NO		
Check the trouble symptom.	NG	Replace the A/C-ECU.	

L)

# 55-4 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

or connection	on, or if	<ul> <li>Malfunction of co</li> </ul>	prostor	and the wild entry
evitorieb solatory	a tokine Vrhich V	<ul> <li>Malfunction of connector</li> <li>Malfunction of harness</li> <li>Malfunction of the air inlet sensor</li> <li>Malfunction of the A/C-ECU</li> </ul>		
NG				
	- Replac	ce		
NIC				nor temperature
).	- Check	the following conne	ector: C-97	
Tasin		enuage connector F (	ОК	v NG Repair
	Check	the trouble symptom.	in the manufactures	Ve sk
			NG	
	Check	the harness between t	he air inlet sens	sor and the A/C-E
	*		ОК	NG ▼ Repair
	Replace the A/C-ECU.			and a second
				1 hereit
NG	Check the following connectors: C-05			
R			ОК	NG ▼ Repair
	Check	the trouble symptom		
			NG	AREA ON IN COUR
			he air inlet sen	sor and the A/C-E
NG				
	Repai	r		
NG				
	Repla	ce the A/C-ECU.		146-8
macombi				
circuit)	<u></u>	Probable caus	se	
	sensor	<ul> <li>Malfunction of c</li> <li>Malfunction of th</li> </ul>	onnector ne air inlet ser	nsor
	ON	Mairunction of th	IE AVC-ECU	
NG				
	Repla	ice		
NC				
	Check	k the harness between repair if necessary.	the air inlet sen	sor and the A/C-E
	NG NG NG Circuit)	NG Replace NG Check Check Check Replace Check	Malfunction of the      NG     Replace      NG     Check the following connel      Check the trouble symptom.      Check the harness between t      Replace the A/C-ECU.      NG     Check the following connel      Check the following connel      Check the following connel      Check the harness between t      Replace the A/C-ECU.      NG     Probable cause e air inlet sensor     NG     Replace NG     NG     Replace	<ul> <li>Malfunction of the A/C-ECU</li> </ul> NG <ul> <li>Check the following connector: C-97</li> <li>OK</li> <li>Check the trouble symptom.</li> <li>NG</li> <li>Check the harness between the air inlet sens</li> <li>OK</li> <li>Replace the A/C-ECU.</li> </ul> NG <ul> <li>Check the following connectors: C-05</li> <li>OK</li> <li>Check the harness between the air inlet sen and repair if necessary.</li> </ul> NG <ul> <li>Replace the A/C-ECU.</li> </ul> NG <ul> <li>Replace</li> <li>Malfunction of harness</li> <li>Malfunction of the air inlet sen</li> <li>Malfunction of the air inlet sen</li> <li>Malfunction of the A/C-ECU</li> </ul> NG <ul> <li>Check the harness between the air inlet sen</li> </ul>

Replace the A/C-ECU.

# HEATER, AIR CONDITIONER AND VENTILATION – Troubleshooting 55-5

l

Code No.15 Engine coolant temperature se (open circuit)	Probable cause				
This diagnosis code is output if there is a defective connector there is an open circuit in the harness.	<ul> <li>Malfunction of connector</li> <li>Malfunction of harness</li> <li>Malfunction of the engine coolant temperature sensor</li> <li>Malfunction of the A/C-ECU</li> </ul>				
Replace	NG				
ngine coolant temperature sensor check		<ul> <li>Replace</li> </ul>	e		
OK	NG	1 22	measure at the nation	brie haben	D MG SIN IS PIDS
Measure at the engine coolant temperature sensor connector C-35. Disconnect the connector, and measure at the harness side connector. Voltage between terminal (1) and body earth OK: 5 V			the following connect	OK	NG Repair
ОК	_	Check	the trouble symptom.	110	
CO 3- DVA edit bita contrast una sun trasmac assemblication Aced				NG	
		Check and th	the harness between the A/C-ECU.	engine coola	nt temperature ser
Repair Re WO-BOU				OK	NG ▼ NG Repair
Check the following counterpy C-34		Replac	ce the A/C-ECU.	Income Inco	LING off Is and
NA STATE AND DATE OF A STATE OF A			and the second	ector.	innop eril loenino
Measure at the A/C-ECU connector C-97.	NG	- Check	Check the following connector: C-35		V 8.5 - 1 5 M
<ul> <li>Connect the connector.</li> <li>Voltage between terminal (14) and body earth</li> <li>OK: 2.3 - 2.9 V</li> </ul>					NG ▼ Repair
ОК		Check	the trouble symptom.		
Check the names between the art hermosen or and the AVO-EEU.				NG	
singer		Check and th	the harness between the A/C-ECU, and repai	e engine coola r if necessary	nt temperature se <sup>7</sup> .
+	NG				
Check the following connector: C-97	J	- Repair			
ОК	NG				
Check the trouble symptom.	(HUDY	Replac	ce the A/C-ECU.	er finerme	A SS.ovi st
Code No.16 Engine coolant temperature se (short circuit)	ensor s	ystem	Probable cause	e	<del>diagramii anda</del> cicuit.
This diagnosis code is output if there is a short circuit in the temperature sensor input circuit.		olant	<ul> <li>Malfunction of ha</li> <li>Malfunction of co</li> <li>Malfunction of the sensor</li> <li>Malfunction of the</li> </ul>	nnector e engine cool	ant temperature
Direct the harrest between the all thermo sensor and the A.C. ECU.	NC		r 0-97.	OU conneote	ure At the A/C E
Engine coolant temperature sensor check	NG	- Repla	ce mise yood br		
ОК	NC				V RS - GS - X
Measure at the A/C-ECU connector C-97.	NG		the harness between the A/C-ECU, and repai		
<ul> <li>Connect the connector.</li> <li>Voltage between terminal (14) and body earth</li> <li>OK: 2.3 – 2.9 V</li> </ul>					
<ul><li>Connect the connector.</li><li>Voltage between terminal (14) and body earth</li></ul>					

# 55-6 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

Code No.21 Air t	hermo sensor system (ope	n circuit	nes en	Probable cause	Engine ci	Code No.15
This diagnosis code is there is an open circuit	output if there is a defective connector in the harness.	or connection	n, or if	<ul> <li>Malfunction of connection</li> <li>Malfunction of harmed</li> <li>Malfunction of the a</li> <li>Malfunction of the A</li> </ul>	ess air thermo sen	sor
	Mailunction of the A/C/ECU	- NG				
Air thermo sensor check	(		<ul> <li>Replac</li> </ul>	e		
	OK	NG		sor obeck	net entered	er tasiooo ander
Measure at the air therr	no sensor connector C-34.		- Check	the following connected	or: C-97	
side connector.	ector, and measure at the harness minal (2) and body earth	6			OK	NG ▼ Repair
<b>OK:</b> 5 V			Chock	the trouble symptom.	Y	hotoenad engliny
	OK		Check	the trouble symptom.	NG	OK: 5 V
	heck the trouble symptom.		Charle	the harness between the a	Y	randthe A/C-ECI
	NG hack the hamoss between the engine coo		Check	Ine namess between the a	OK	↓ NG
	In the A/C-FOLL				V	Repair
			Replace the A/C-ECU.			
		NC				
leasure at the A/C-EC	U connector C-97.	NG	- Check	Check the following connector: C-34		
<ul> <li>Connect the connector.</li> <li>Voltage between terminal (8) and body earth</li> <li>OK: 2.3 - 2.9 V</li> </ul>		D a Di			ОК	NG Repair
DA L	OK		Check the trouble symptom.			
			NG			CH 23 110
	neck the trouble symptom.		Check the harness between the air thermo sensor and the A/C-EC and repair if necessary.			
	teck the harness between the even	al.				
Check the following c	connector: C-97	NG	- Repair	r		
	ОК					
Check the trouble symp	otom.	NG	Replace the A/C-ECU.			amono: em voe
Code No 22 Air	thermo sensor system (sho	ort circui	t)	Probable cause		
			and the second second	Malfunction of harr		
This diagnosis code is input circuit.	s output if there is a short circuit in th	e all thermo	Sensor	<ul> <li>Malfunction of har</li> <li>Malfunction of cont</li> <li>Malfunction of the</li> <li>Malfunction of the</li> </ul>	nector air thermo se	nsor
	Mailunction of namets     Mallunction of contractor	NG	ngua aut i			
Air thermo sensor chec	ck		Repla	ce		
	OK to the other than the second	NC				
Measure at the A/C-EC Connect the connec Voltage between te OK: 2.3 - 2.9 V		NG	Check and re	the harness between the a epair if necessary.	airthermosens	orand the A/C-EC
UN. 2.5 - 2.5 V	ОК					
ter temperature sansor	sok the harness between the Y later wa					
Replace the A/C-ECU.						

# HEATER, AIR CONDITIONER AND VENTILATION – Troubleshooting 55-7

Code No.31 Potentiometer system of blend motor assembly	r Probable cause	Probable cause		
This diagnosis code is output if there is an open or short circ potentiometer input circuit, or if there is an open circuit in the earth circuit.	<ul><li>assembly</li><li>Malfunction of conn</li><li>Malfunction of harn</li></ul>	<ul> <li>Malfunction of the blend air damper motor assembly</li> <li>Malfunction of connector</li> <li>Malfunction of harness</li> <li>Malfunction of the A/C-ECU</li> </ul>		
Blend air damper motor potentiometer check	NG ► Rej	place	Imper potention	
	NG	All the fellowing connect		
Measure at the blend air damper potentiometer connector C-14. • Disconnect the connector, and measure at the harness	► Ch	eck the following connect	OK	NG
<ul> <li>side connector.</li> <li>Voltage between terminal (4) and body earth</li> <li>OK: 5 V</li> </ul>	NG			♥ Repair
OK	Ch	eck the trouble symptom.		OK SV
OM			NG	
Check the names between the all outlet changeover damper motor potention material and the A/C-ECI		eck the harness between the d the A/C-ECU.	e blend air dam	per potentiometer
OK	111	pupe the AGEOU	ОК	NG
Repair				Repair
Pervace the AO-EOU	Re	place the A/C-ECU.	<u>v</u>	
assembly				
Measure at the A/C-ECU connector C-97.	NG Ch	eck the following connect	or: C-14	A on the enurse
<ul> <li>Connect the connector.</li> <li>Blend air damper position: MAX.HOT</li> <li>Voltage between terminal (5) and body earth</li> </ul>		Melhunstion of con     Authors 190 ppol     Melhunstion 190 ppol     Melhunstion 190 ppol	ОК	NG Repair
OK: 4.7 – 5.0 V	Ch	eck the trouble symptom.		
ОК		Hare	NG	
Checktrie harmone between them, deselection dampet potentieme- ter and the Arc BOU, and report if necessary.		eck the harness between the d the A/C-ECU, and repair		nper potentiometer
C 15, C-99	¬ NG			
Check the following connector: C-97	Re	pair		
ОК	NG	inck the hernest between t	the mode radiat	
Check the trouble symptom.	Re	place the A/C-ECU.		

# 55-8 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

Code No.32 Potentiometer system of mo damper motor assembly	Probable cause				
This diagnosis code is output if there is an open or short circuit in the potentiometer input circuit, or if there is an open circuit in the power circuit or earth circuit.			<ul> <li>Malfunction of the mode selection damper motor assembly</li> <li>Malfunction of connector</li> <li>Malfunction of the A/C-ECU</li> <li>Malfunction of harness</li> </ul>		
Mode selection damper potentiometer check	]NG	Replac	e doedo tolem		
Measure at the mode selection damper potentiometer connector	NG	Check	the following connect	or: C-97	and out to do not M
<ul><li>C-15.</li><li>Disconnect the connector, and measure at the harness</li></ul>				OK	NG
<ul> <li>side connector.</li> <li>Voltage between terminal (4) and body earth</li> </ul>				(A) Istrinital (A)	Repair
OK: 5 V		Check	the trouble symptom.	A CONTRACTOR	
OK		(Cherek	Parties and a second parties of	NG	orandine ACC-C(C)
Check the barness between the blend air damper potentiometer and the AVC-ECU			heharnessbetweenthea ometer and the A/C-EC		eover damper motor
OK NG		L		OK	↓ NG
Repair					Repair
Replace the A/C-ECU		Replac	e the A/C-ECU.	the master	
Connect the contractor				1 Alexandre	NO.
Measure at the A/C-ECU connector C-97.	NG	Chack	the following connect	or: C 15	The second s
Connect the connector.	, P	CHECK	the following connect	OK	NG
<ul> <li>Mode selection damper position: DEF</li> <li>Voltage between terminal (6) and body earth OK: 4.8 - 5.2 V</li> </ul>					Repair
OK		Check the trouble symptom.			
				NG	
Check the harness between the blend all dampet potentiometer and the AVC-ECU, and repair a nearing minority, and repair of			heharnessbetweenthem the A/C-ECU, and rep		
Check the following connectors 0.07	NG				
Check the following connector: C-97 OK		Repair			
Could be 92 fir than a secold 3. Martin etcholi-	NG		Section 1	moleure	Check the trouble i
Check the trouble symptom.		Replace	e the A/C-ECU.		

# HEATER, AIR CONDITIONER AND VENTILATION – Troubleshooting 55-9

assembly					Contraction of the local of
This diagnosis code is output if the motor drive circuit is defective.			<ul> <li>Malfunction of the blend air damper motor assembly</li> <li>Malfunction of connector</li> <li>Malfunction of harness</li> <li>Malfunction of the A/C-ECU</li> </ul>		
The ARC ECU DOWN LEDIS ASSIST LOSIN,	NG				
Blend air damper motor check		Replac	e and characteristic to the		
OK	NG				
Check the following connectors: C-14, C-98					
↓ OK	NG	Tell sonne	dor Check	the followin	P.SSTREES
Check the trouble symptom.			the harness between the	blend air dam	per motor and th
		[		ОК	_ NG
			be changed.	Idnnas Inuc	Repair
		Replac	e the A/C-ECU.	cannot be c	if outlet podl
Code No.42 Drive system of mode sele	ection dampe	a connector:	Probable cause		enoster func
Code No.42 Drive system of mode sele assembly This diagnosis code is output if the motor drive circ		a connector:	Malfunction of the r assembly     Malfunction of conn     Malfunction of harne     Malfunction of the A	ector ess	n damper motor
assembly		a connector:	<ul> <li>Malfunction of the r assembly</li> <li>Malfunction of conn</li> <li>Malfunction of harne</li> <li>Malfunction of the A</li> </ul>	ector ess	n damper motor
assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check	uit is defective.	a connector:	<ul> <li>Malfunction of the massembly</li> <li>Malfunction of conn</li> <li>Malfunction of harne</li> <li>Malfunction of the A</li> </ul>	ector ess A/C-ECU	n damper motor
assembly This diagnosis code is output if the motor drive circ	uit is defective.	r motor	<ul> <li>Malfunction of the massembly</li> <li>Malfunction of conn</li> <li>Malfunction of harne</li> <li>Malfunction of the A</li> </ul>	ector ess A/C-ECU	a damper motor
assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check ↓OK Check the following connectors: C-15, C-98	uit is defective.	r motor	<ul> <li>Malfunction of the rassembly</li> <li>Malfunction of conn</li> <li>Malfunction of harne</li> <li>Malfunction of the A</li> </ul>	ector ess A/C-ECU	n damper motor
assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check OK Check the following connectors:	uit is defective.	r motor	<ul> <li>Malfunction of the rassembly</li> <li>Malfunction of conn</li> <li>Malfunction of harned</li> <li>Malfunction of the A</li> </ul>	ector ess A/C-ECU	ondenset fat
Assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check OK Check the following connectors: C-15, C-98 OK	NG	r motor 	<ul> <li>Malfunction of the rassembly</li> <li>Malfunction of conn</li> <li>Malfunction of harne</li> <li>Malfunction of the A</li> </ul>	ector ess A/C-ECU	ondenser far <u>C.ECU now</u> AC compress
Assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check OK Check the following connectors: C-15, C-98 OK	NG	r motor 	Malfunction of the r assembly     Malfunction of conn     Malfunction of harne     Malfunction of the A     Malfunction of the A     the harness between the market of the the the market of the the the market of the	ector ess A/C-ECU	ondenser far <u>C.ECU now</u> AC compress
Assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check OK Check the following connectors: C-15, C-98 OK	NG	r motor 	Malfunction of the r assembly     Malfunction of conn     Malfunction of harne     Malfunction of the A     Malfunction of the A     the harness between the market of the the the market of the the the market of the	ector ess A/C-ECU e mode selec	tion damper
assembly This diagnosis code is output if the motor drive circ Mode selection damper motor check ↓OK Check the following connectors: C-15, C-98	NG	r motor Replac Repair Check motor	Malfunction of the r assembly     Malfunction of conn     Malfunction of harne     Malfunction of the A     Malfunction of the A     the harness between the market of the the the market of the the the market of the	ector ess A/C-ECU e mode selec	tion damper

# 55-10 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

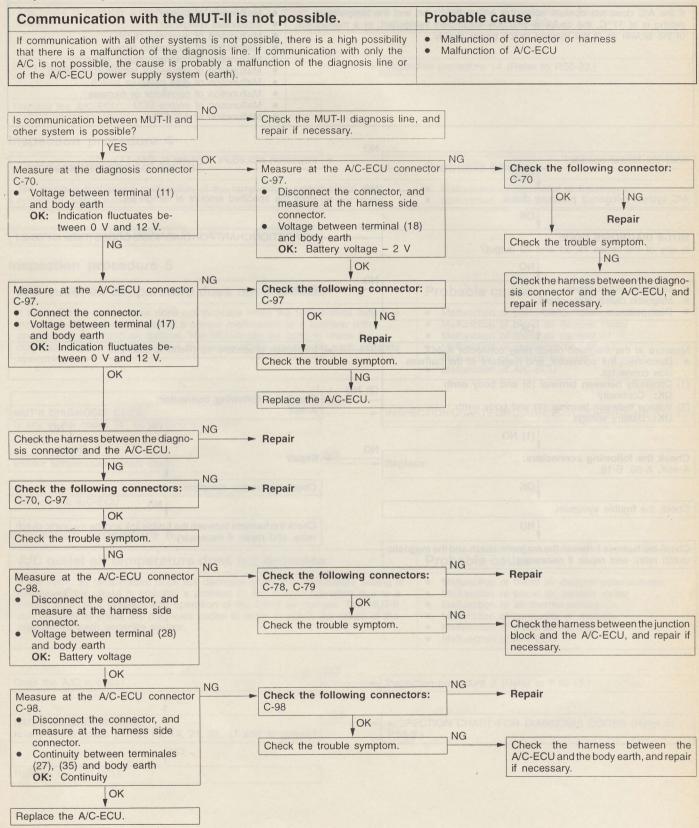
# INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection proce- dure No.	Reference page
Communication with the MUT-II is not possible.	1 Clorent Ind AlC-EL	55-11
Air conditioner does not operate.	2	55-12
A/C graphic display on control panel is blank.	3	55-13
Temperature cannot be set.	4	55-13
A/C outlet air temperature does not increase.	5	55-13
A/C outlet air temperature does not decrease.	6	55-13
Blower does not operate.	7	55-14
Blower air amount cannot be changed.	8	55-15
Air outlet port cannot be changed.	9	55-15
Inside/outside air selection is not possible.	10	55-16
Defroster function does not operate.	system of month selectio	55-17
Radiator fan does not operate.	12	55-18
Condenser fan does not operate.	13	55-20
A/C-ECU power supply circuit check	14	55-22
A/C compressor control circuit check	15	55-23

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# INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

#### **Inspection procedure 1**



# 55-12 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

# Inspection procedure 2

Air conditioner does not operate.		Probable cause		inspection, s	
If the A/C does not operate when the A/C switch is on and setting is at 17°C, the cause is probably insufficient refrigera of the blower or of the magnet clutch power supply.			ant gnetic clutch thermo sensor gnetic clutch re igerant temper al pressure swi nector or harn gine-ECU	elay ature switch tch	
	NO		ninder i	Calcian Calcian	
Does the blower operate?		<ul> <li>Inspec</li> </ul>	tion procedure 7 (Refer	r to P.55-14.)	
YES	NG				
A/C system refrigerant pressure check		Refill t	he specified amount of	refrigerant.	teewied epartor
ОК		notoenn		inclusies he	OK: indication.
MUT-II DIAGNOSIS CODE	YES	► INSPE	CTION CHART FOR DIA	GNOSIS CODI	ES (Refer to P.55-2.)
Is any of the codes 11, 21 and 22 output?	y voltage -	an <u>nan</u> 17	9 July		
NO	XO				
<ul> <li>Magnetic clutch check</li> <li>Magnetic clutch relay check</li> <li>Dual pressure switch check</li> </ul>	NG	► Replace	;e		
ОК					
Measure at the magnetic clutch relay connector A-46X.	ОК		tion procedure 15 (Refe	er to P.55-23.)	OK: Indication
Disconnect the connector, and measure at the harness side connector.	ible symptom	usin eill a	5660	1000	in the second
(1) Continuity between terminal (5) and body earth	(2) NG				and the second
OK: Continuity (2) Voltage between terminal (4) and body earth OK: Battery voltage		(2) NG Check the followi A-46X		tor:	
(1) NG				OK	NG
Check the following connectors:	NG	- Repair	adau - ore	the A/G-ECU	Repair
A-46X, A-50, B-18				↓ DM	
ОК		Check	the trouble symptom.	notaennoa ign	Check the followi
Check the trouble symptom.				NG	
NG			the harness between the and repair if necessary		the magnetic clutch
Check the harness between the magnetic clutch and the magnetic clutch relay, and repair if necessary.	c	Telay,		NG Y	
ectors: Pepair	lowing conn				

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#### Inspection procedure 3

Probable cause	
Malfunction of connector or harness     Malfunction of A/C-ECU	

Does the A/C operate?

Inspection procedure 14 (Refer to P.55-22.)

Replace the A/C-ECU.

#### Inspection procedure 4

Temperature cannot be set.	Probable cause		
The cause is probably a malfunction of the temperature setting signal input system or output system.	Malfunction of connector or harness     Malfunction of A/C-ECU		

Inspection procedure 14 (Refer to P.55-22.)

YES

#### **Inspection procedure 5**

A/C outlet air temperature does not increase.	Probable cause
If the outlet air temperature does not increase when the temperature setting is increased, the cause is probably a sensor malfunction or a problem with operation of the blend air damper. The MUT-II can be used to check the diagnosis codes in order to check the cause of the problem for each separate system.	<ul> <li>Malfunction of blend air damper potentiometer</li> <li>Malfunction of blend air damper motor</li> <li>Malfunction of blend air damper</li> <li>Malfunction of connector or harness</li> <li>Malfunction of interior temperature sensor</li> <li>Malfunction of A/C-ECU</li> </ul>

MUT-II DIAGNOSIS CODE Is any of the codes 11, 12, 31 and 41 output?	INSPECTION CHART FOR E	DIAGNOSIS CODES (Refer to P.55-2.)
NO	Repair	
Interior temperature sensor check	───── NG ► Replace	
ОК	04	
Replace the A/C-ECU.		

#### Inspection procedure 6

Replace the A/C-ECU.

NO

A/C outlet air temperature does not decrease.		Probable cause
If the outlet air temperature does not decrease when the temperature decreased, the cause is probably a problem in A/C system operation sensor error, or a problem with operation of the blend air damper. The can be used to check the diagnosis codes in order to check the cau problem for each separate system.		<ul> <li>Malfunction of blend air damper motor</li> <li>Malfunction of air thermo sensor</li> </ul>
Does the A/C operate?	NO Ir	spection procedure 2 (Refer to P.55-12.)
MUT-II DIAGNOSIS CODE Is any of the codes 11, 12, 13, 14, 21, 22, 31 and 41 output?	YES	NSPECTION CHART FOR DIAGNOSIS CODES (Refer to

# 55-14 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

# Inspection procedure 7 Blower does not operate. Probable cause If no air comes out of the blower even though the blower switch is on, the cause is probably a malfunction of the blower motor relay circuit. • Malfunction of blower motor relay • Malfunction of blower motor • Malfunction of connector or harness • Malfunction of A/C-ECU

(3) NG

NG

NG

NG

C-78

 NO
 Can an operating sound be heard when the blower speed changeover switch is operated?
 YES
 Blower motor relay check
 NG
 Replace

		,
Blower	motor	check

OK
(1) NG
(2) NG
(2) NG
(3) OK
(1) Continuity between terminal (2) and body earth
(2) NG
(3) Continuity

OK

OK

OK

- (2) Voltage between terminal (4) and body earth (Ignition switch: ON) OK: Battery voltage
- (3) Voltage between terminal (1) and body earth OK: Battery voltage

Measure at the blower motor connector C-31.
Disconnect the connector, and measure at the harness side connector.

• Voltage between terminal (1) and body earth (Ignition switch: ON) OK: Battery voltage

Check the following connector:

Check the trouble symptom.

C-31

► Repair

Check the harness between the blower motor relay and the body

Check the harness between the blower motor relay and the ignition

Check the harness between the blower motor relay and the fusible

OK

NG Check the harness between the blower motor relay and the blower

NG

Repair

earth, and repair if necessary.

switch, and repair if necessary.

link No.6, and repair if necessary.

Check the following connector:

Check the trouble symptom.

motor, and repair if necessary.

Check t

Check the harness between the blower motor and the A/C-ECU, and repair if necessary.

# Inspection procedure 8

Blower air amount cannot be changed.	Probable cause		
If the blower does not operate in any mode other than HI setting, the cause is probably a malfunction of the power transistor system.	<ul> <li>Malfunction of powe</li> <li>Malfunction of common of com</li></ul>		

Malfunction	of	power transistor
Malfunction	of	connector or harness

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•	Malfunction	of	A/C-ECU	
			and an and an an and an an	

	OK		
Measure at the power transistor connector C-18.		Check the following connector:	
Blower switch position: LO	NG	C-18 C-18	an an operating
Connect the connector.		OK	NG
(1) Continuity between terminal (1) and body earth			1
OK: Continuity			Repair
(2) Voltage between terminal (2) and body earth (Ignition	NO	Hand of the second s	ab montacion the
switch: ON)		Check the trouble symptom.	
OK: Battery voltage – 2 V	1	NG	
(3) Voltage between terminal (4) and body earth (Ignition	No		and in many
switch: ON)		Replace the power transistor.	
OK: Approx. 1.3 V		101	side connect
NG NG	(1) NG	HD snatud topics	tie obleto
North company hor not have dealer	-	Check the harness between the power transisto	r and the body
		earth, and repair if necessary.	GT DO
	(2) NG	lact button: ON	e linitte air se
		<ul> <li>Check the harness between the power transistor and the blower motor, and repair if necessary.</li> </ul>	
(3) NG			
(0) NG			
	NG		
Measure at the A/C-ECU connector C-97.	-	Check the following connector:	
Blower switch position: LO		C-97	Fileck the folk
Connect the connector.		OK	NG
(1) Voltage between terminal (1) and body earth (Ignition		OK	V.
switch: ON)			Repair
OK: Approx. 7 V		Charle the trauble sumptom	dame only shoot?
(2) Voltage between terminal (2) and body earth (Ignition switch: ON)		Check the trouble symptom.	
OK: Approx. 1.3 V	0	NG	
			top noticelee 12
OK		Replace the A/C-ECU.	
OL III I was had a set to a superior and the A/C ECII	NG	- Repair	
Check the harness between the power transistor and the A/C-ECU.			
LOK			
	7		
Replace the power transistor.			

# Inspection procedure 9

Air outlet port cannot be changed.	Probable cause	
The cause is probably a malfunction of the air outlet port chainput system or output system. The MUT-II can be used to codes in order to check the cause of the problem for each s	<ul> <li>Malfunction of mode selection damper potentiometer</li> <li>Malfunction of mode selection damper motor</li> <li>Malfunction of mode selection damper</li> <li>Malfunction of connector or harness</li> <li>Malfunction of A/C-ECU</li> </ul>	
	NO	tion procedure 14 (Refer to P.55-22.)
Can an operating sound be heard when the air outlet port changeover switch is operated?		ation procedure 14 (Heler to F.55-22.)
YES	YES	
MUT-II DIAGNOSIS CODE	INSPE	ECTION CHART FOR DIAGNOSIS CODES (Refer to P.55-2.)
Is either code 32 or code 42 output?		
Mode selection damper check	NG Repai	r

Replace the A/C-ECU.

# 55-16 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

#### Inspection procedure 10 Inside/outside air selection is not possible. **Probable cause** If inside/outside air selection is not possible even when the inside/outside air Malfunction of air selection damper motor . changeover switch is on, the cause is probably a malfunction of the air selection . Malfunction of air selection damper damper motor. . Malfunction of connector or harness . Malfunction of A/C-ECU NO Can an operating sound be heard when the inside/outside air selec- Inspection procedure 14 (Refer to P.55-22.) tion switch is operated? YES NG Air selection damper motor check Replace OK NG Measure at the air selection damper motor connector C-20. Check the following connector: Disconnect the connector, and measure at the harness . C-98 side connector. NG OK . Outside air select button: ON Voltage between terminal (1) and body earth . **OK:** 10 V Repair . Inside air select button: ON Check the trouble symptom. Voltage between terminal (2) and body earth . OK: 10 V NG OK Check the harness between the air selection damper motor and the A/C-ECU, and repair if necessary. NG Check the following connector: OK - Repair NG C-20 Repair OK Replace the A/C-ECU. Check the trouble symptom. NG NG Air selection damper check Repair OK Replace the A/C-ECU.

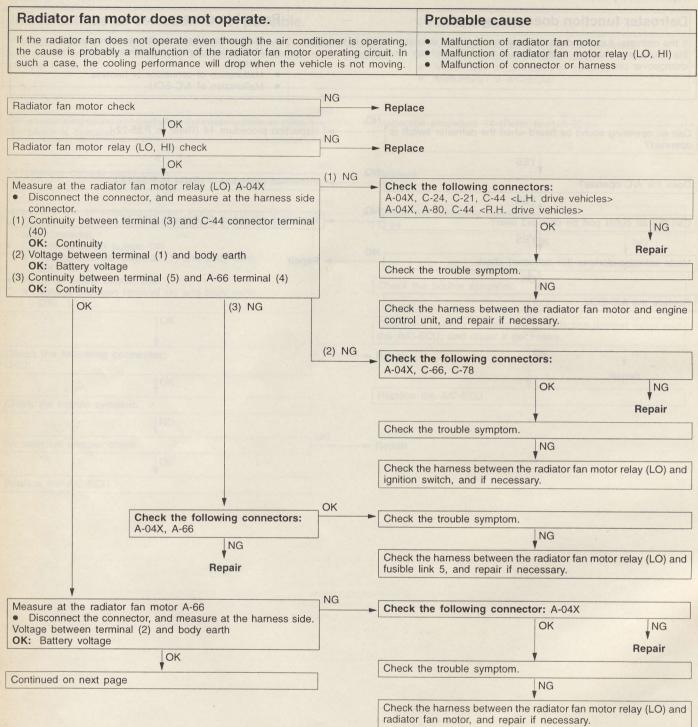
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# Inspection procedure 11

Defroster function does not operate.		Probable cause		
If the defroster function does not operate when the defroster s the cause is probably a malfunction of the A/C or of the air o changeover circuit.	ed on,	<ul> <li>on,</li> <li>Malfunction of air conditioner drive system</li> <li>Malfunction of mode selection damper drive system</li> <li>Malfunction of connector or harness</li> <li>Malfunction of A/C-ECU</li> </ul>		
teplace this you the (1) lational manager (1)	9		alor fan motor, check	
Can an operating sound be heard when the defroster switch is operated?	NO	Inspect	tion procedure 14 (Refer to P.55-22.)	
YES				
Does the A/C operate?	NO	Inspec	tion procedure 2 (Refer to P.55-12.)	
YES	_ NO		accorned the connector and measure at the homes	
Can the air outlet port be changed over?	<b></b>	- Inspec	tion procedure 9 (Refer to P.55-15.)	
YES	NG	Densis		
Mode selection damper (for defroster) check	-	- Repair		
Replace the A/C-ECU.	٦.			

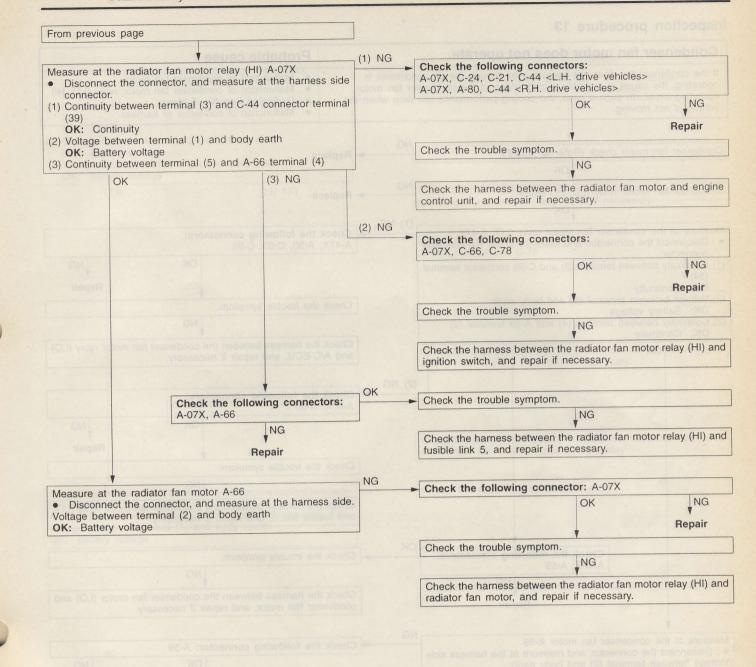
# 55-18 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

#### Inspection procedure 12



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# HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting 55-19



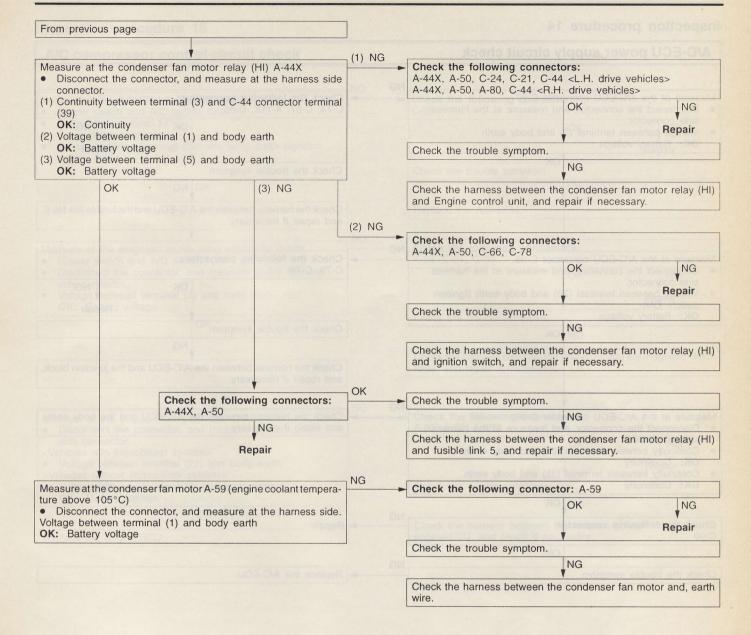
# 55-20 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

# Inspection procedure 13

Conden	ser fan	motor does no	t operate.	- DM (	11	Probable c	ause	
operating, operating c	If the condenser fan does not operate even though the air conditioner is operating, the cause is probably a malfunction of the condenser fan motor operating circuit. In such a case, the cooling performance will drop when the vehicle is not moving.					Malfunction of condenser fan motor relay /I O HI		
				NO	honiaci	dhae ybo	terminal (1) and b	OK: Contingity 2) Voltage between
Condenser	fan motor o	check (Refer to P.55-	29)	NG	- Replac	e		
		OK						
Condenser	fan motor i	relay (LO, HI) check	CONSIGN SITE ASSAULT	NG	- Replac	e		
		OK						
<ul> <li>Disconne</li> </ul>	ect the con	nser fan motor relay nector, and measure	(LO) A-47X at the harness side	(1) NG		the following co A-50, C-01, C-9		
(34)	ty between	terminal (3) and C-98	connector terminal				ОК	VG ▼ Repair
OK: Co (2) Voltage	ntinuity between te	rminal (5) and body	arth	(	Chaoli	the trankle survey	•	nepair
OK: Ba	ttery voltag	e terminal (4) and A-5			Check	the trouble symp	NG	
OK: Co	ntinuity	terminar (4) and A-5	9 terminal (2)		Charl		*	
нау (H) ано	ОК	belwoen the radiator I repair, if necessary.	(3) NG		and A/	C-ECU, and repa	een the condenser f ir if necessary.	an motor relay (LO
				(2) NG				
			Check the trouble		► Check A-47X,	the following co A-50	onnectors:	
						DUI	ОК	ING
	an notor n		Check the hamess					Repair
					Check	the trouble sympt	tom.	
			Check the follow		И		_NG	
					Check and fus	the harness betwee	een the condenser f epair if necessary.	an motor relay (LO)
						sible link 5, and 1	epair in necessary.	enter general con
		Check the follow		ок	Chock	the trouble sumpt		
		A-47X, A-59	ng connectors.		Clieck	the trouble sympt	NG	<u></u>
	fan molor e	hotween the radiator	NG		Charle	4h - h	*	
	ary.	Re	pair		conden	ser fan motor, an	d repair if necessa	fan motor (LO) and ry.
	*		and the second second second	NG	-			
Measure at Disconne	the conden	nser fan motor A-59 nector, and measure a	at the harness side		Check	the following co	nnector: A-59	
Voltage betw OK: Battery	veen termin	nal (2) and body eart	1				OK	NG
JA. Ballery	voltage	ОК		]				Repair
Continued				1	Check	the trouble sympt	om.	
Continued or	n next page	9					NG	
					Check t	he harness betwe	en the condenser fa	an motor and, earth

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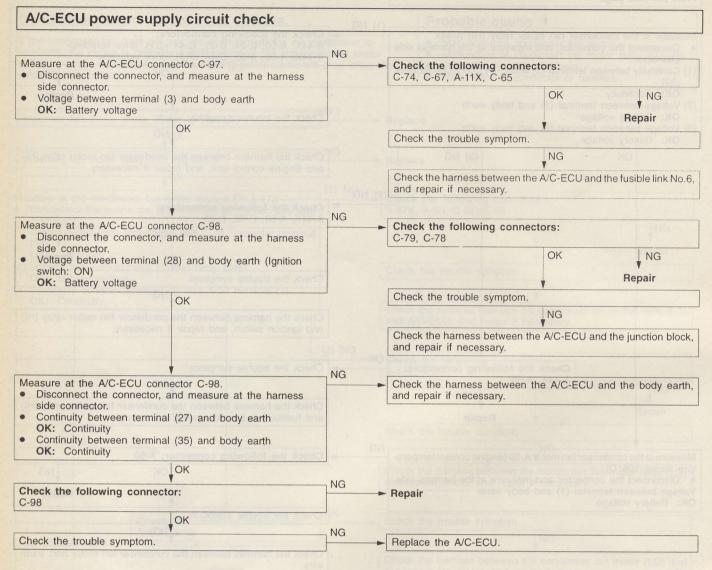
## HEATER, AIR CONDITIONER AND VENTILATION – Troubleshooting 55-21



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# 55-22 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

#### Inspection procedure 14



# Inspection procedure 15

Engine coo					
	octor C 08	NG	Check the following con	nector:	
easure at the A/C-ECU conn Blower switch and A/C swi		Tapana da	C-98		
Setting temperature: 17°C	ulter moltarborentienneren			OK	NG
Connect the connector. Voltage between terminal (3	34) and body earth (Ignition			Ingine coolant.	V
switch: ON)	st) and body earth (ightion	Wine a	moer is moved to	DEN anteregree	Repair
OK: Battery voltage	The MUT	possion	Check the trouble sympto	m. 102/19	2
	ОК			NG	
			Replace the A/C-ECU.		
	UM soft				
L. Ar Dorres	•	NG	Check the following our	nontoro:	V
easure at the magnetic clutc Blower switch and A/C swi	h relay connector A-46X. tch: ON	2510.(4)	- Check the following cor A-50, C-01, C-98	mectors.	
Disconnect the connector,	and measure at the harness			OK	NG
side connector. Voltage between terminal (	3) and body earth			UX P	V
OK: Battery voltage	3) and body earth	Damper	A Manue antigat	V	Repair
	OK	Anima	Check the trouble sympto		n
	Approx			NG	
	or supply		Check the harness betwee		e magnetic cl
	JOC ADDRESS		relay, and repair if neces	sary.	
	nosition Opening				
	*	NG		antipation as a mainter	6
easure at the engine-ECU c	onnector C-43 and measure at the harness		- Check the following con A-80, A-50, A-46X	nnectors:	
side connector.	and measure at the namess	and the second second	A 00, A 00, A 40A	ОК	NG
<pre>side connector. </pre> Vehicles with immobilizer system>					
Vehicles with immobilizer sys	tem>	HUGH G		UK	
Voltage between terminal (	22) and body earth	O POGRUM	ntion switch is UN		▼ Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal	22) and body earth system>	0 1004	Check the trouble sympton		
Voltage between terminal ( Vehicles without immobilizer	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>		Check the trouble sympton		
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal	22) and body earth system>		Check the harness betwee	om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>			om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>		Check the harness betwee	om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>		Check the harness betwee	om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>		Check the harness betwee	om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>		Check the harness betwee	om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	<ul><li>22) and body earth</li><li>system&gt;</li><li>8) and body earth</li></ul>	Set the s	Check the harness betwee	om. NG een the magnetic clut	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	22) and body earth system> (8) and body earth		Check the harness betwee engine-ECU, and repair i	om. NG een the magnetic clut	Repair
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Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	22) and body earth system> 8) and body earth OK		Check the harness betwee engine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage	22) and body earth system> 8) and body earth OK		Check the harness betwee engine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair ch relay and
Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage eplace the engine-ECU.	22) and body earth system> (8) and body earth OK		Check the harness betwee engine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair ch relay and
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Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage eplace the engine-ECU.	22) and body earth system> (8) and body earth ↓OK		Check the harness betwee engine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair ch relay and
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Voltage between terminal ( Vehicles without immobilizer Voltage between terminal OK: Battery voltage eplace the engine-ECU.	22) and body earth system> (8) and body earth CK		Check the harness betweengine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair ch relay and
Voltage between terminal vehicles without immobilizer Voltage between terminal OK: Battery voltage eplace the engine-ECU.	22) and body earth system> (8) and body earth ↓OK		Check the harness betweengine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair ch relay and
Voltage between terminal of Vehicles without immobilizer Voltage between terminal OK: Battery voltage eplace the engine-ECU.	22) and body earth system> (8) and body earth CK		Check the harness betweengine-ECU, and repair i	om. NG een the magnetic clut f necessary.	Repair ch relay and

# 55-24 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

# DATA LIST REFERENCE TABLE

Item No.	Check item	Check condition		Normal condition
11	Interior tempera- ture sensor	Ignition switch: ON		Inside air temperature and tem- perature displayed on the MUT-II are identical.
15	Engine coolant temperature sensor	Ignition switch: ON	notingt) data y	Heater core surface temperature and temperature displayed on the MUT-II are identical.
21	Air thermo sensor	Ignition switch: ON	Sheck De names to and repart resolution	Evaporator surface temperature and temperature displayed on the MUT-II are identical.
25	Photo sensor	Ignition switch: ON	A DATE THE DATE OF THE SECOND	Amount of incident light is proportional to voltage displayed on the MUT-II.
31	Blend air damper motor potentiome-	Ignition switch: ON	Damper position	Opening degree (%)
	ter		MAX. HOT	Approx. 100
datula olterap	een ihe A/C-ECU and the ma essary	Check the hamass beth relay, and repair if no	MAX. COOL	Approx. 0
32	Mode selection damper potentiom-	Ignition switch: ON	Damper position	Opening degree (%)
	eter	Check the following	FACE	Approx. 0
	atrices) intering (27) and	body earth	FOOT	Approx. 50
	Service and the 135" and	pody earth	FOOT/DEF.	Approx. 75
	DV DN		DEF.	Approx. 100

# CHECK AT THE A/C-ECU TERMINALS

-					2		-		
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

1	-	-	-	-	2			_
	21	22	23	24	25	26	27	28
	29	30	31	32	33	34	35	36

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Terminal No.	Check item	Check condition	Normal condition
1	Air conditioner power transistor collector	When blower switch is at OFF	System voltage
		When blower switch is at LO	Approx. 9 V
		When blower switch is at HI	Almost no voltage (0 V)
2	Air conditioning power transistor base	When blower switch is at OFF	0 V
		When blower switch is at LO	Approx. 1.3 V
		When blower switch is at HI	Approx. 2.5 V
3	A/C-ECU backup power supply	At all times	System voltage

# HEATER, AIR CONDITIONER AND VENTILATION – Troubleshooting 55-25

Terminal No.	Check item	Check condition	Normal condition
4	Engine coolant temperature sensor input	When sensor section temperature is $25^{\circ}C$ (4 k $\Omega$ )	2.3 – 2.9 V
5	Blend air damper motor potentiometer input	When damper is moved to MAX. HOT position	4.7 – 5.0 V
6	Mode selection damper potentiometer input	When damper is moved to DEF. position	4.8 – 5.2 V
7	Air inlet sensor input	When sensor section temperature is 25°C (4 $k\Omega)$	2.3 – 2.9 V
8	Air thermo sensor input	When sensor section temperature is $25^{\circ}C$ (4 k $\Omega$ )	2.3 – 2.9 V
9	Photo sensor (-)	At luminous intensity of 100,000 lux or more	-0.1 - 0.2 V
	Continuity	At luminous intensity of 0 lux	0 V
10	Sensor power supply	At all times	4.8 – 5.2 V
15	Interior temperature sensor	When sensor section temperature is $25^{\circ}C$ (4 k $\Omega$ )	2.3 – 2.9 V
17	Diagnosis date output	When ignition switch is ON	$0 V \leftrightarrow System voltag$
18	Diagnosis control input	When ignition switch is ON	Battery voltage - 2 V
19	Photo sensor (+)	At all times	0 V
20	Blend air damper motor and mode selection damper potentiometers	At all times	0 V
21	Mode selection damper motor (+)	Set to FACE position (OFF after 40 seconds of output)	10 V
		Set to DEF. position (OFF after 40 seconds of output)	0.5 V
22	Blend air damper motor (–)	Set the setting temperature to 17°C and set to MAX. COOL position (OFF after 40 seconds of output)	10 V
	NOTE For service point, refer to Basic M	Set the setting temperature to 32°C and set to MAX. HOT position (OFF after 40 seconds of output)	0.5 V
23	Air selection damper motor (-)	Set to inside air position (OFF after 40 seconds of output)	0.5 V
		Set to outside air position (OFF after 40 seconds of output)	10 V
24	Mode selection damper motor (-)	Set to FACE position (OFF after 40 seconds of output)	0.5 V
		Set to DEF. position (OFF after 40 seconds of output)	10 V

# 55-26 HEATER, AIR CONDITIONER AND VENTILATION - Troubleshooting

Terminal No.	Check item	Check condition	Normal condition
25	Blend air damper motor (+)	Set the setting temperature to 17°C and set to MAX. COOL position (OFF after 40 seconds of output)	0.5 V
	Didutive notional Inclose engone per is moved to DEF. PRIBUSE Tourse	Set the setting temperature to 32°C and set to MAX. HOT position (OFF after 40 seconds of output)	10 V
26	Air selection damper motor (+)	Set to inside air position (OFF after 40 seconds of output)	10 V
	pr section temperature is 2.3 - 2.9 V	Set to outside air position (OFF after 40 seconds of output)	0.5 V
27	Earth	At all times	Continuity
28	A/C-ECU power supply	When ignition switch is ON	System voltage
29	ILL earth (rheostat)	At all times	Continuity
30	ILL power supply	When lighting switch is at ON	System voltage
33	Engine-ECU output	When air mix damper is at MAX. COOL position	0 V
	tan(2 ↔ V 0 0 0 0 ↔ Synak	When air mix damper is at MAX. HOT position	System voltage
34	A/C output	When A/C is OFF	0 V
	Vol	When A/C is ON	System voltage
35	Earth	At all times	Continuity

 Set the setting temperature to 17°C
 10

 and set to MAX\_COOL position (OFF
 11

 after 40 seconds of output)
 0.9

 Set the setting temperature to 32°C
 0.9

 Set the setting temperature to 32°C
 0.9

 and set to MAX\_HOT position (OFF
 0.9

 and set to that
 0.00 position (OFF

 set to the setting temperature to 32°C
 0.9

 set to the setting temperature to 32°C
 0.9

 set to the setting temperature to 0.00 position (OFF after 40, 0.00

Satulo QEF, position (OFF after 40 seconds of output)

ECU backup power supply

At all prace

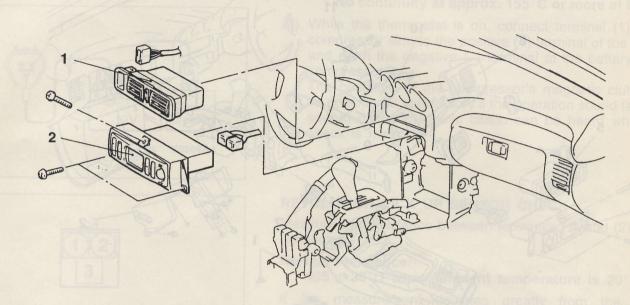
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# AIR CONDITIONER CONTROL PANEL AND ECU ASSEMBLY

# **REMOVAL AND INSTALLATION**

Pre-removal and Post-installation Operation
 Floor Console Removal and Installation

CAUTION: SRS When installing or removing the floor console, don't allow any impact or shock to the SRS-ECU.



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#### Removal steps

Center air outlet assembly
 Air conditioning control panel and ECU assembly

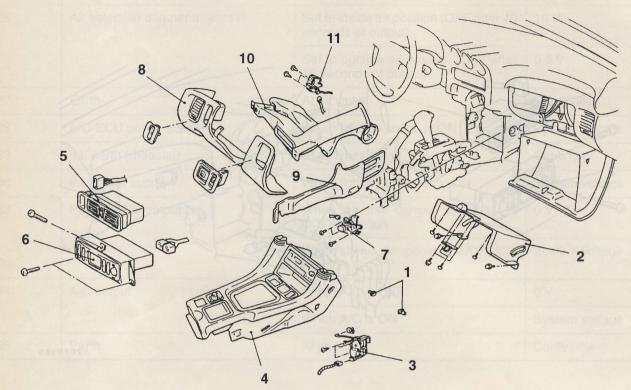
NOTE

For service point, refer to Basic Manual.

# DAMPER CONTROL MOTOR ASSEMBLY

#### **REMOVAL AND INSTALLATION**

CAUTION: SRS When installing or removing the floor console, don't allow any impact or shock to the SRS-ECU.



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#### Air selection damper motor assembly removal steps

- 1. Stopper
- 2. Glove box outer case
- 3. Air selection damper motor assembly

#### Blend air damper motor assembly removal steps

4. Floor console

NOTE For service point, refer to Basic Manual.

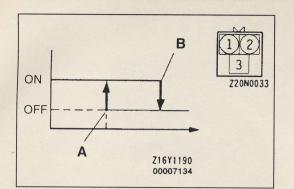
- 5. Center outlet assembly
- 6. Air conditioning control panel and ECU assembly
- 7. Blend air damper motor assembly

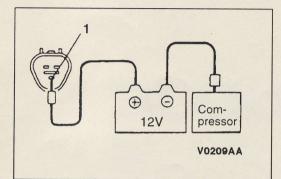
#### Mode selection damper motor assembly removal steps

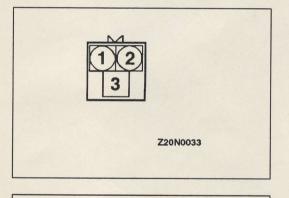
- 8. Knee protector
- 9. Side console cover 10. Shower duct and lap cooler duct
- 11. Mode selection damper motor assembly

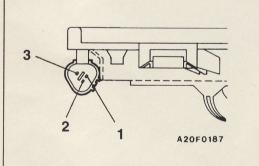
INSPECTION

Refer to Basic Manual.









# COMPRESSOR

# INSPECTION

# THERMOSTAT CHECK AND COMPRESSOR'S MAGNETIC CLUTCH OPERATION CHECK

- (1) Dip the thermostat in engine oil.
- (2) Check for continuity across terminals (3) and compressor body earth when the engine oil is heated:

#### Standard value: Continuity at approx. 110°C or less at A point No continuity at approx. 155°C or more at B point

(3) While the thermostat is on, connect terminal (1) at the compressor side to the positive (+) terminal of the battery and earth the negative (-) terminal of the battery to the compressor.

The condition of the compressor's magnetic clutch can be considered satisfactory if the operation sound (a "click" sound) of the magnetic clutch can be heard when this check is made.

# **REVOLUTION PICK UP SENSOR CHECK**

Measure the resistance between terminals (1) and (2) of the connector.

#### Normal resistance:

#### 405 $\pm$ 35 $\Omega$ when ambient temperature is 20°C

If the measurement deviates greatly from the above resistance, replace the revolution pick up sensor assembly.

# CONDENSER AND CONDENSER FAN MOTOR

# INSPECTION

#### CONDENSER FAN MOTOR CHECK

- Apply battery voltage (+) to terminal (1) and ground (-) terminal (3); at this time, check that the condenser fan motor turns.
- (2) Apply battery voltage (+) to terminal (2) and ground (-) terminal (3); at this time, check that the condenser fan motor turns.

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