

AIR CONDITIONING SYSTEM

REFER TO FOLLOWING REPAIR MANUALS:

Manual Name	Pub. No.
• Land Cruiser (Hardtop and Canvas Top) Chassis and Body Repair Manual	RM183E
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top & Station Wagon) Chassis and Body Supplement Repair Manual	RM290E

NOTE: The following pages contain only the points which differ from the above listed manuals.

(HARDTOP & CANVAS TOP)

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REFRIGERATION LINES.....	AC-11
COMPRESSOR.....	AC-12
COOLING UNIT.....	AC-14
AIR CONDITIONER AMPLIFIER.....	AC-15

(STATION WAGON)

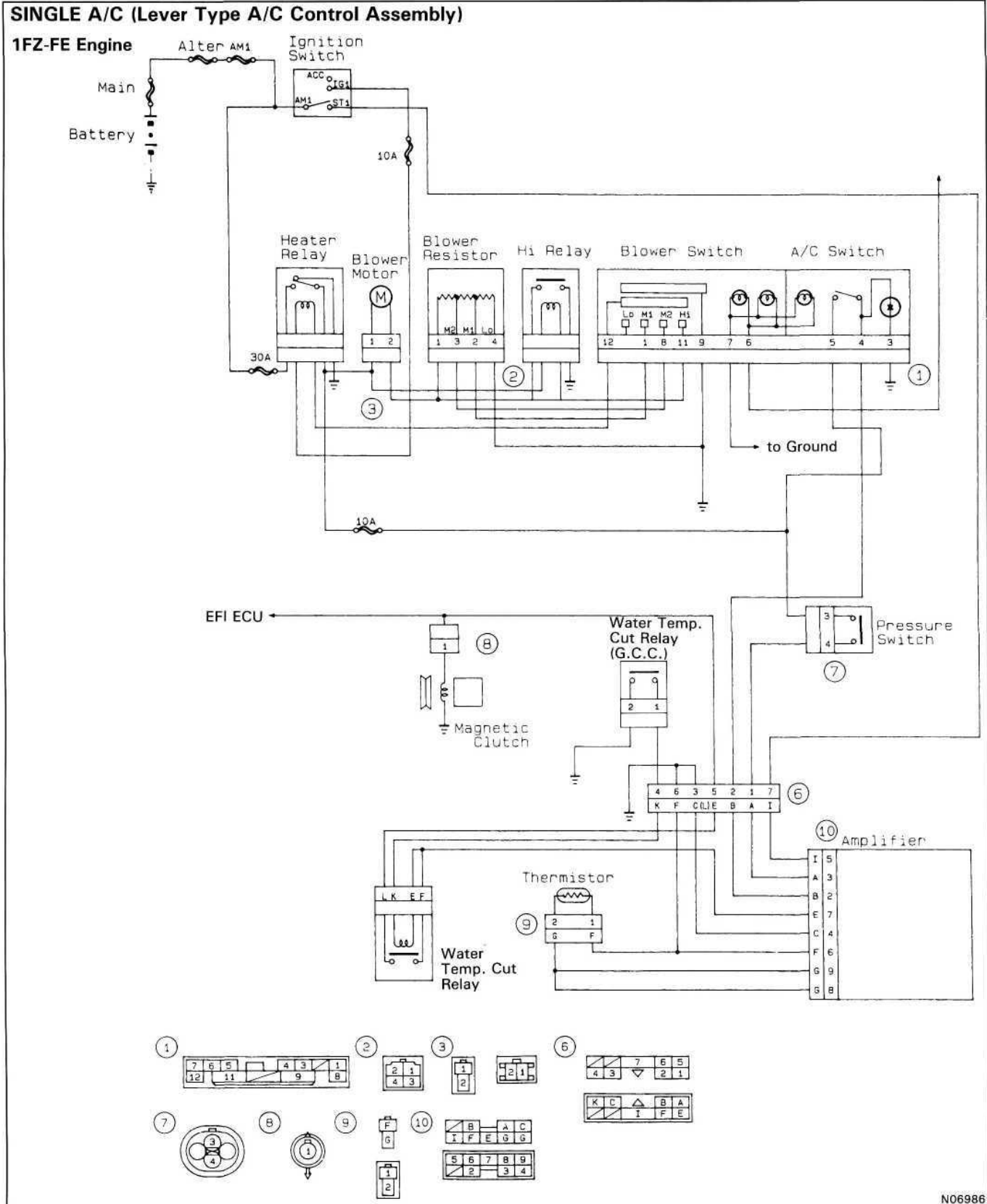
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AC

(Hardtop & Canvas Top)

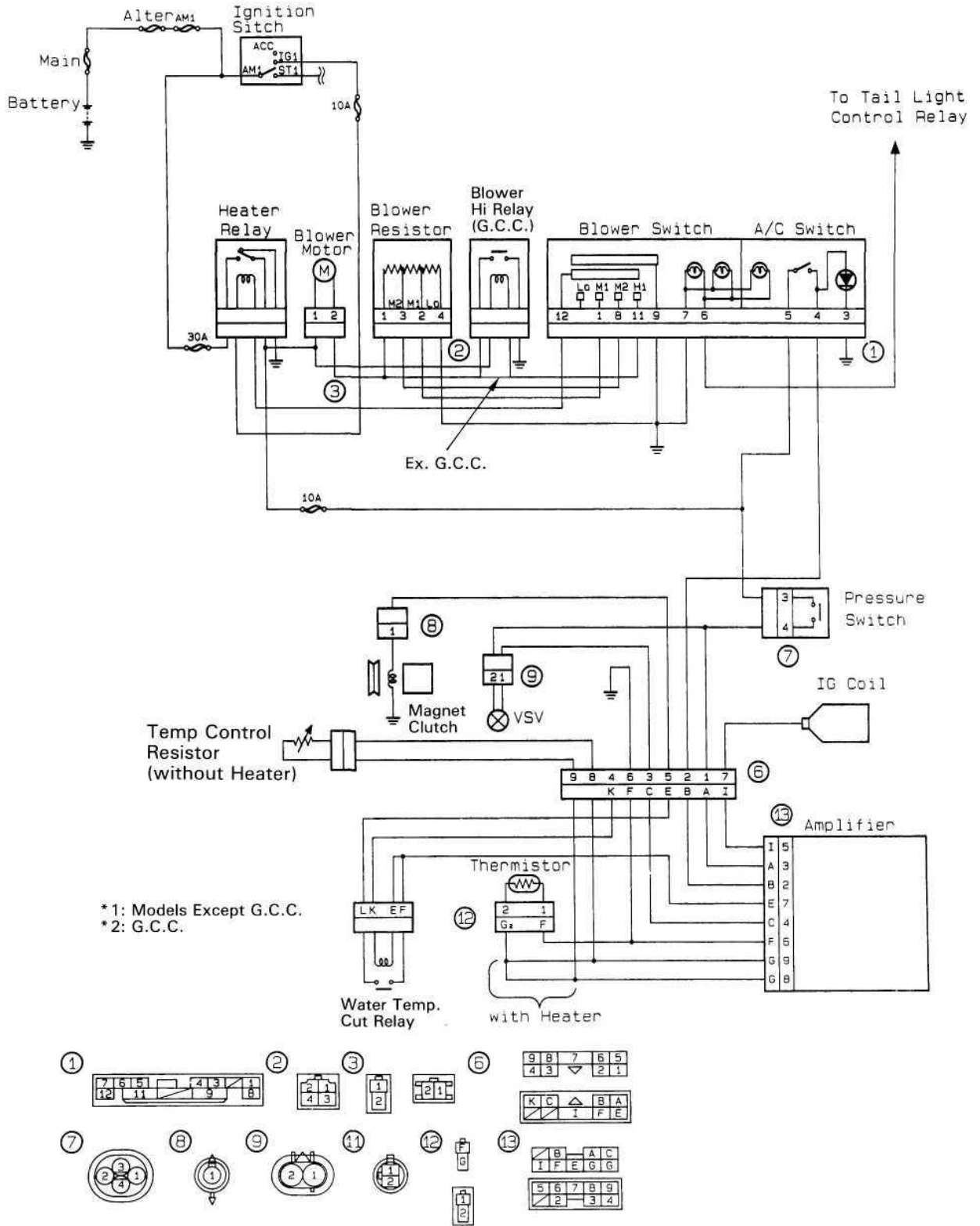
DESCRIPTION

ELECTRICAL WIRING DIAGRAM



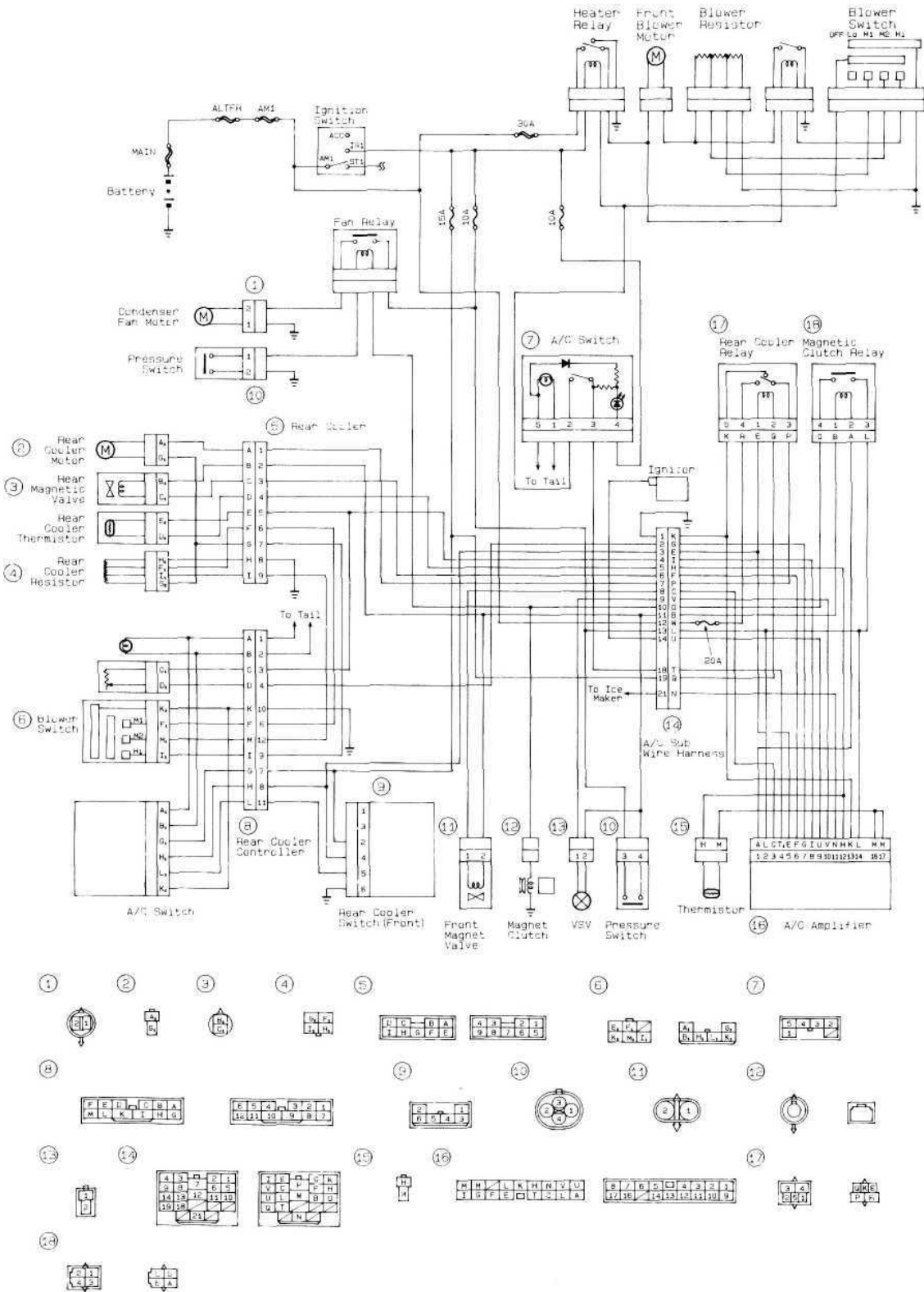
SINGLE A/C (Lever Type A/C Control Assembly)

1FZ Engine



DUAL A/C (Lever Type A/C Control Assembly)

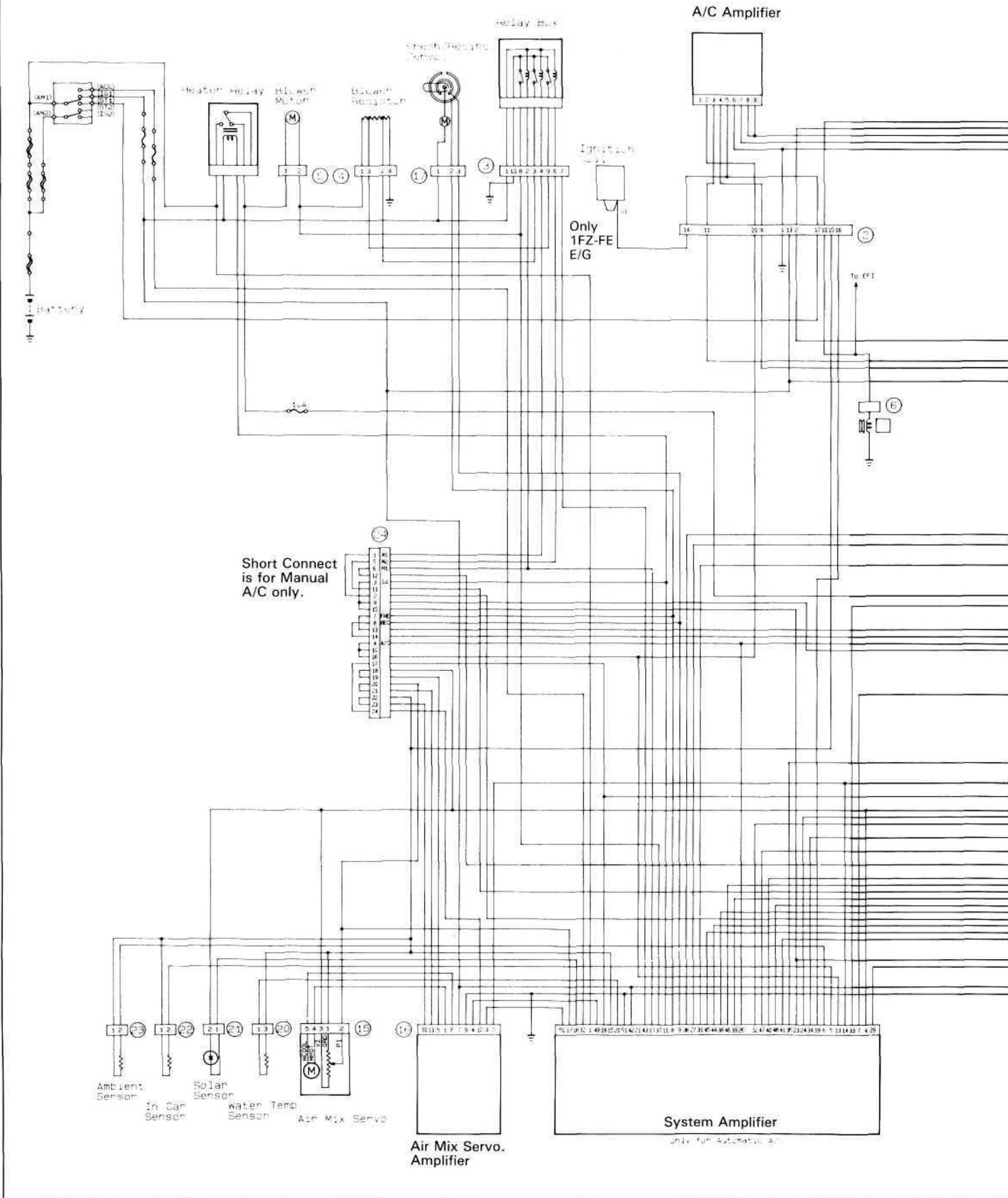
FZ Series Engine

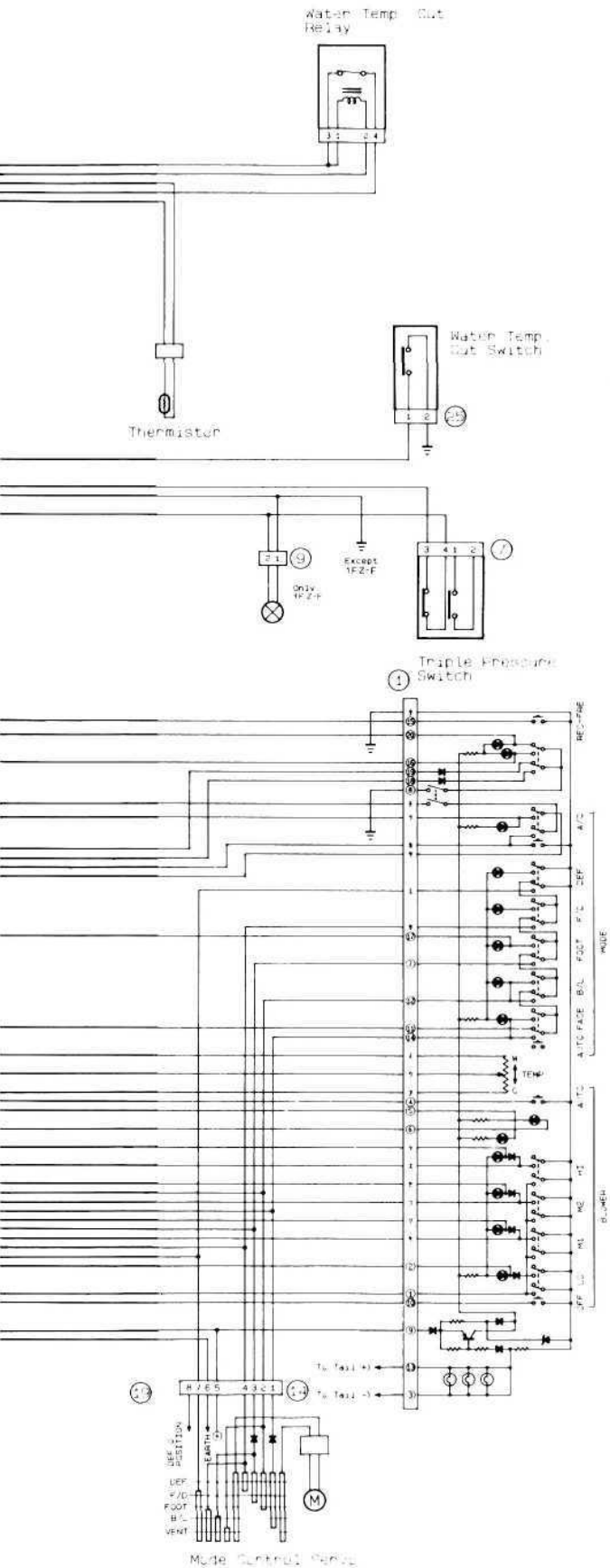


- MEMO -

SINGLE A/C (Push Type A/C Control Assembly)

FZ Series Engine

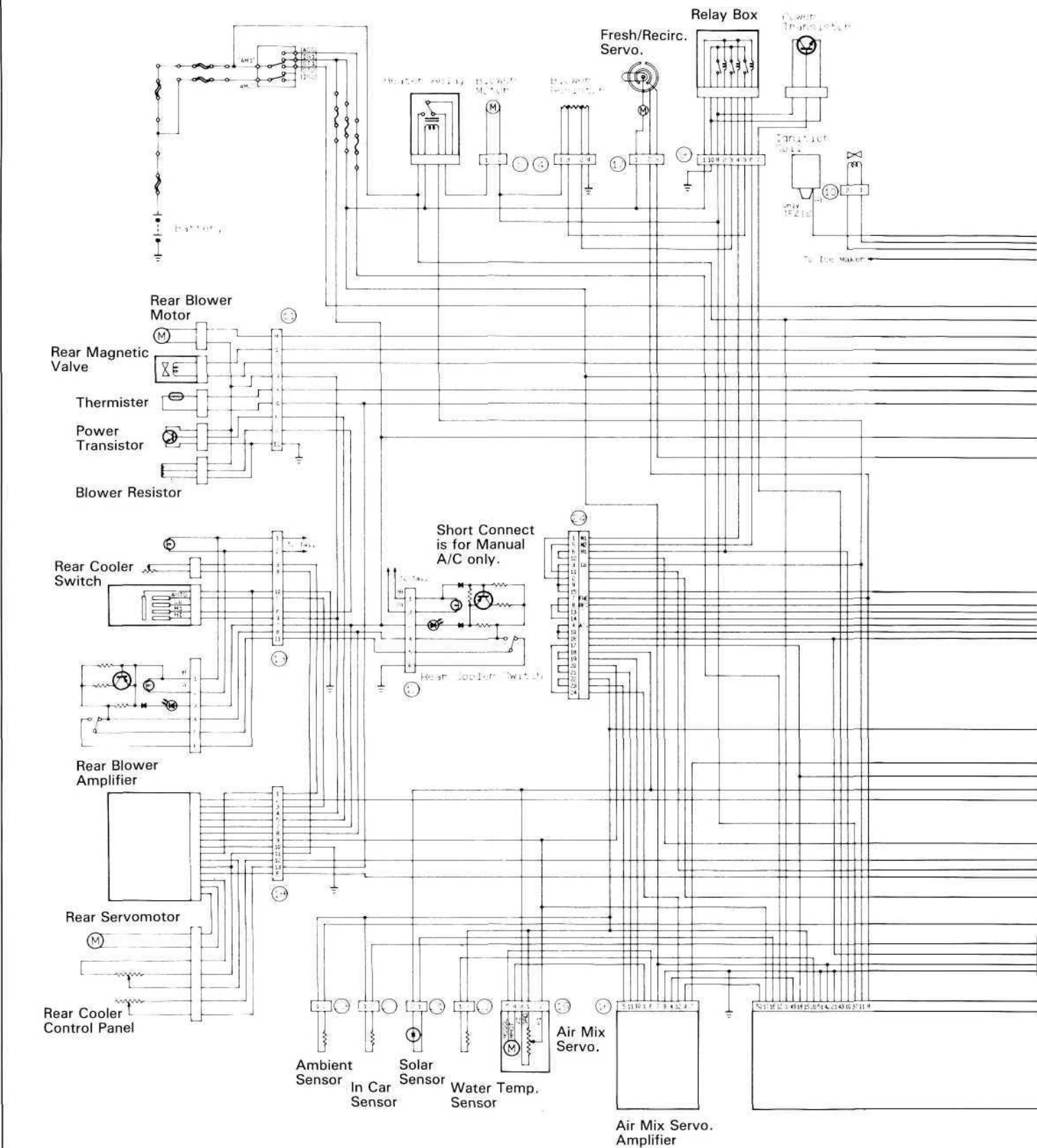


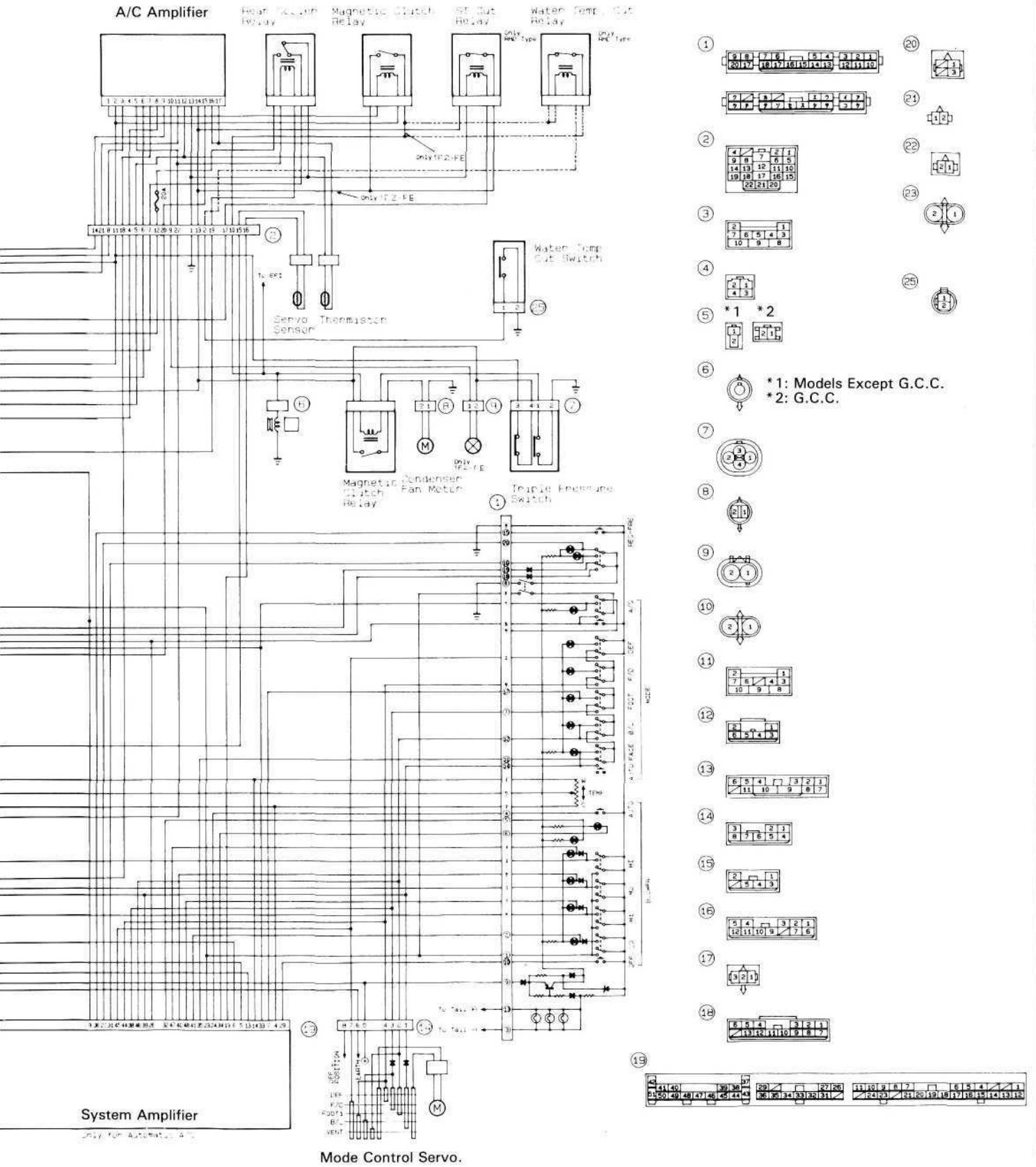


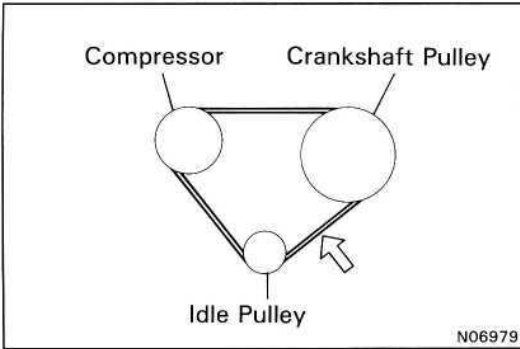
- ①
 - ②
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 - ⑤ *1 *2
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- *1: Models Except G.C.C.
*2: G.C.C.

DUAL A/C (Push Type A/C Control Assembly)

FZ Series Engine







DRIVE BELT

ON-VEHICLE INSPECTION

INSPECT DRIVE BELT TENSION

Drive belt tension at 10 kg (22.0 lb, 98N):

FZ Series Engine

New belt

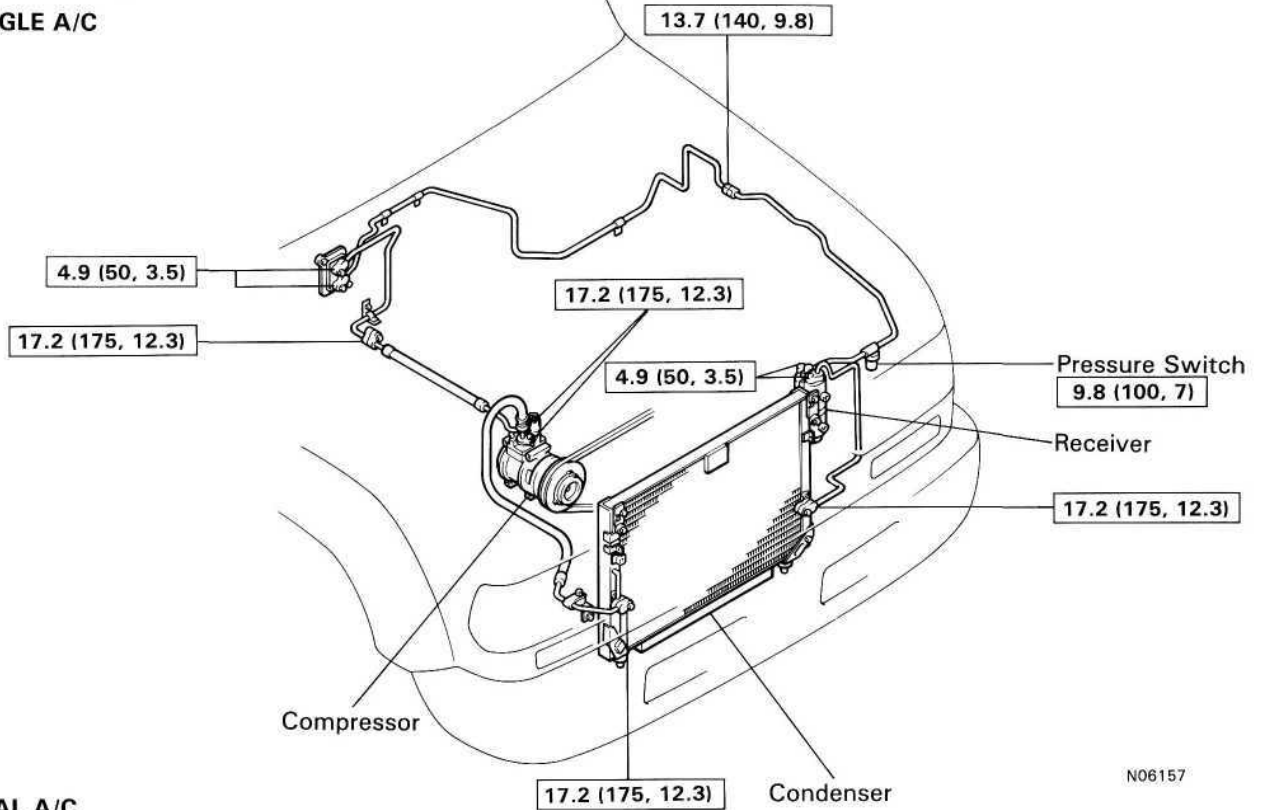
5 - 7 mm (0.20 - 0.28 in.)

Used belt

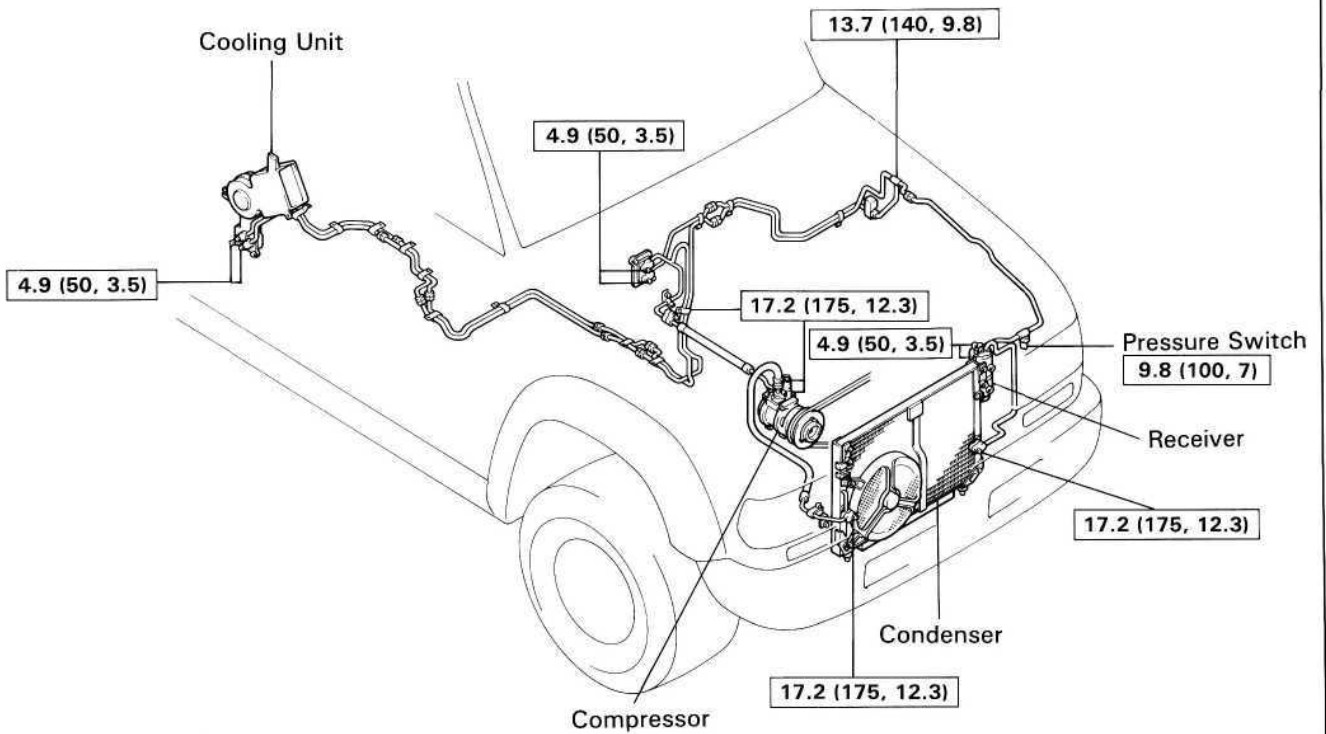
7 - 9.5 mm (0.28 - 0.37 in.)

REFRIGERATION LINES TIGHTENING

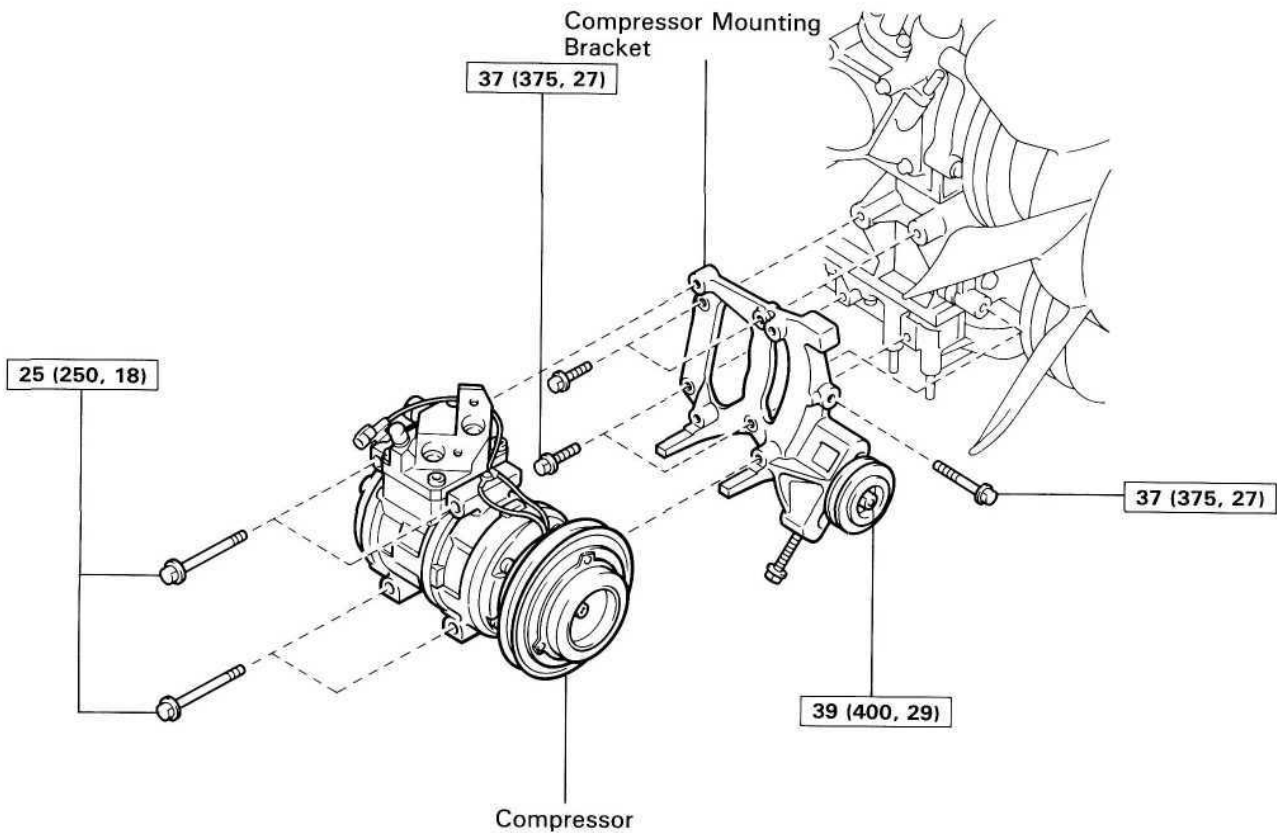
FZ Series Engine
SINGLE A/C



DUAL A/C

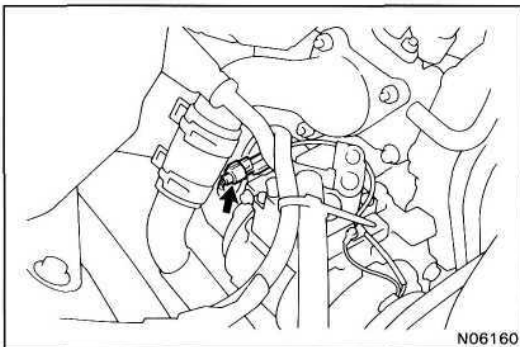


N·m (kgf·cm, ft·lbf) : Specified torque

COMPRESSOR**COMPRESSOR REMOVAL****FZ Series Engine**

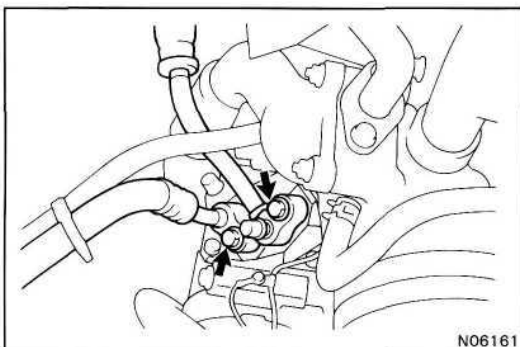
N·m (kgf·cm, ft·lbf) : Specified torque

N06159



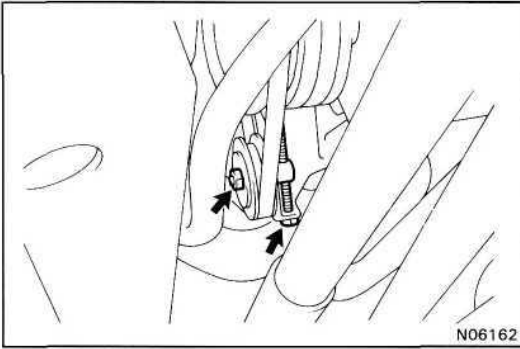
N06160

1. RUN ENGINE AT IDLE SPEED WITH A/C ON FOR TEN MINUTES
2. STOP ENGINE
3. DISCONNECT NEGATIVE CABLE FROM BATTERY
4. DISCONNECT CONNECTOR FROM MAGNET CLUTCH
5. RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM

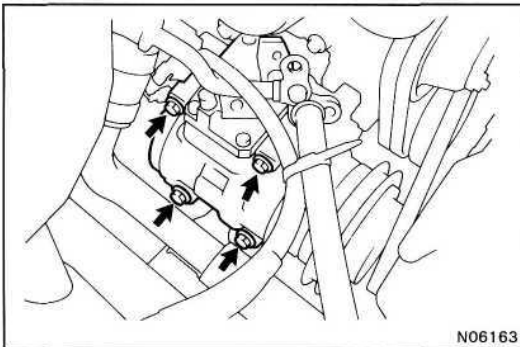


N06161

6. DISCONNECT TWO HOSES FROM COMPRESSOR SERVICE VALVES
Cap the open fittings immediately to keep the moisture and dust out of the system.
7. REMOVE ENGINE UNDER COVER



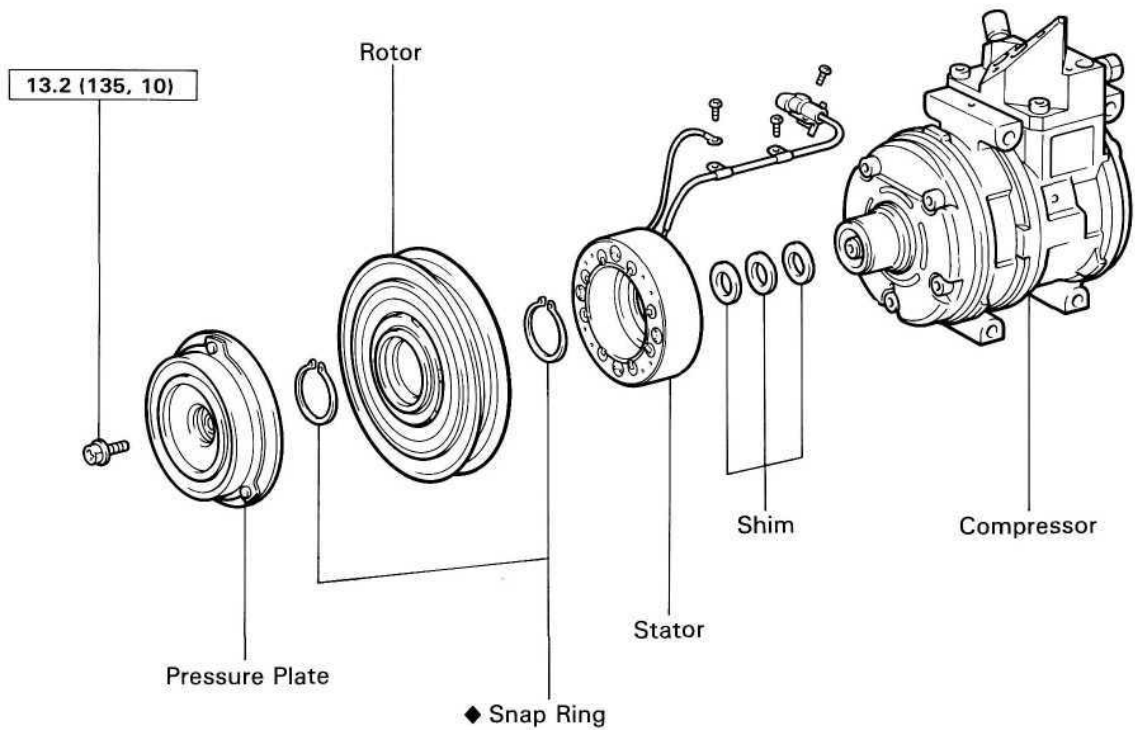
8. **LOOSEN IDLE PULLEY LOCK NUT AND COMPRESSOR DRIVE BELT**



9. **REMOVE COMPRESSOR**
Remove the four bolts and pull the compressor upward.

MAGNET CLUTCH DISASSEMBLY

FZ Series Engine

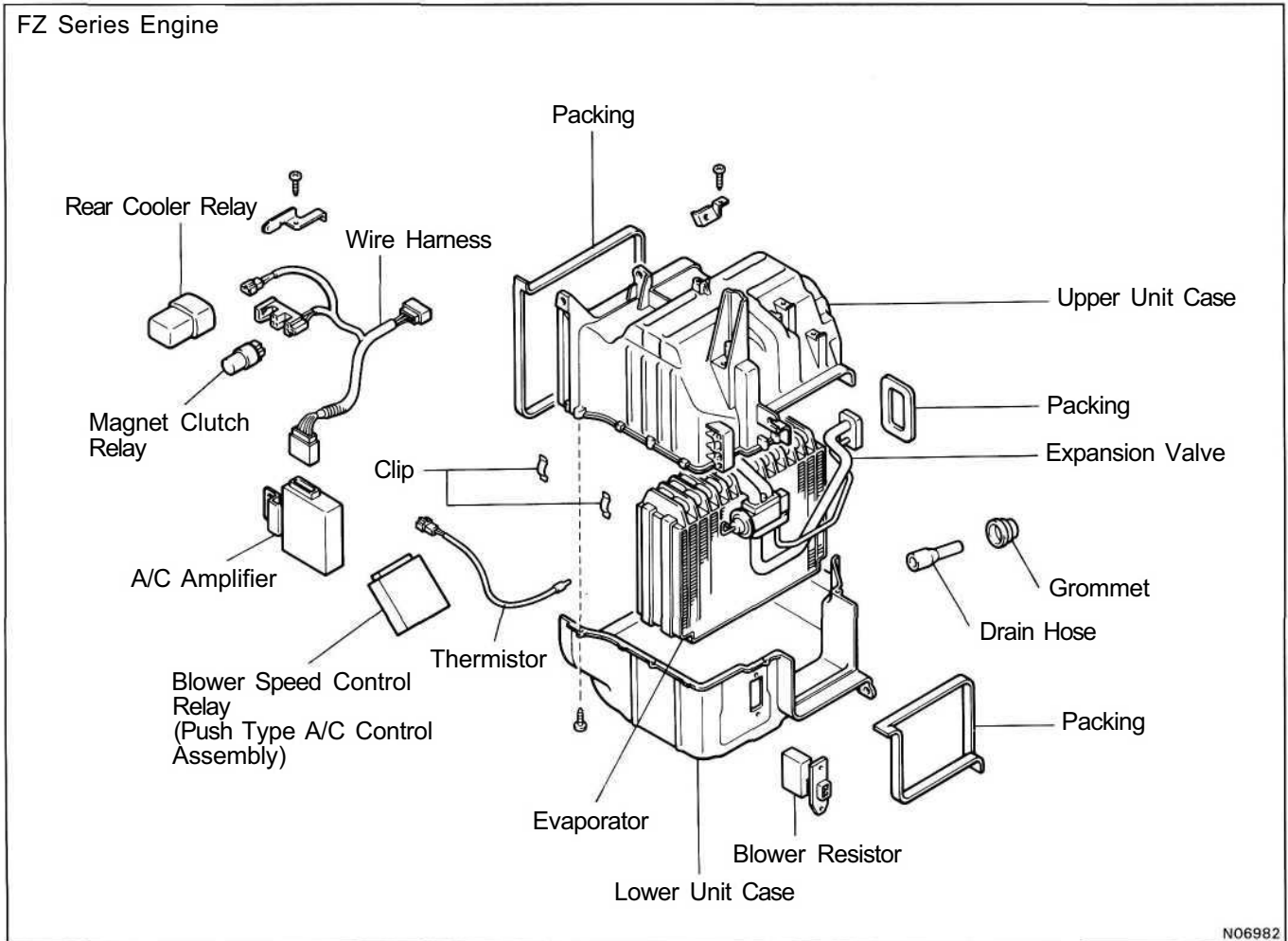


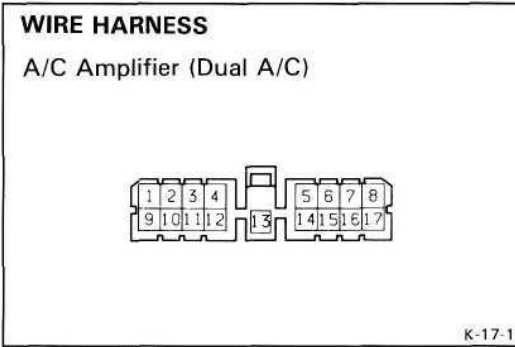
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

COOLING UNIT

COOLING UNIT DISASSEMBLY





AIR CONDITIONER AMPLIFIER

(Dual A/C : 1FZ-F Engine)

INSPECT AMPLIFIER CIRCUIT

Disconnect the amplifier and inspect the connector on the wire harness side as shown in the chart below.

Test conditions:

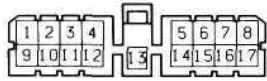
- (1) Ignition switch: ON
- (2) Temperature control lever: MAX COOL
- (3) Blower switch: HI

Check for	Tester connection	Condition	Specified value
Continuity	5 - 13	Turn rear A/C switch on.	Continuity
		Turn rear A/C switch off.	No continuity
	13 - Ground	Constant	Continuity
	16 - 17	Constant	Continuity
Voltage	1 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	2 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	3 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	4 - 13	Turn A/C switch on.	Battery voltage
		Turn A/C switch off.	No voltage
	5 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	6 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	9 - 13	Start the engine.	Approx. 10 to 14 V
		Stop the engine.	No voltage
	10 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
14 - 13	Turn ignition switch on.	Battery voltage	
	Turn ignition switch off.	No voltage	
Resistance	7 - 8	Variable	Approx. 0 to 3 kΩ
	8 - 12	Constant (thermistor)	Approx. 100 - 4,000 Ω
	16 - 12	Constant (thermistor)	Approx. 100 - 4,000 Ω

If circuit is as specified, replace the amplifier.

WIRE HARNESS

A/C Amplifier (Dual A/C)



K-17-1

(Dual A/C : 1FZ-FE Engine)

INSPECT AMPLIFIER CIRCUIT

Disconnect the amplifier and inspect the connector on the wire harness side as shown in the chart below.

Test conditions:

- (1) Ignition switch: ON
- (2) Temperature control lever: MAX COOL
- (3) Blower switch: HI

Check for	Tester connection	Condition	Specified value
Continuity	5 - 13	Turn rear A/C switch on.	Continuity
		Turn rear A/C switch off.	No continuity
	13 - Ground	Constant	Continuity
	16 - 17	Constant	Continuity
Voltage	1 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	2 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	3 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	4 - 13	Turn A/C switch on.	Battery voltage
		Turn A/C switch off.	No voltage
	5 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
	6 - 13	Turn ignition switch on.	Battery voltage
		Turn ignition switch off.	No voltage
14 - 13	Turn ignition switch on.	Battery voltage	
	Turn ignition switch off.	No voltage	
Resistance	7 - 8	Variable	Approx. 0 to 3 k Ω
	8 - 12	Constant (thermistor)	Approx. 100 - 4,000 Ω
	16 - 12	Constant (thermistor)	Approx. 100 - 4,000 Ω

If circuit is as specified, replace the amplifier.

- MEMO -

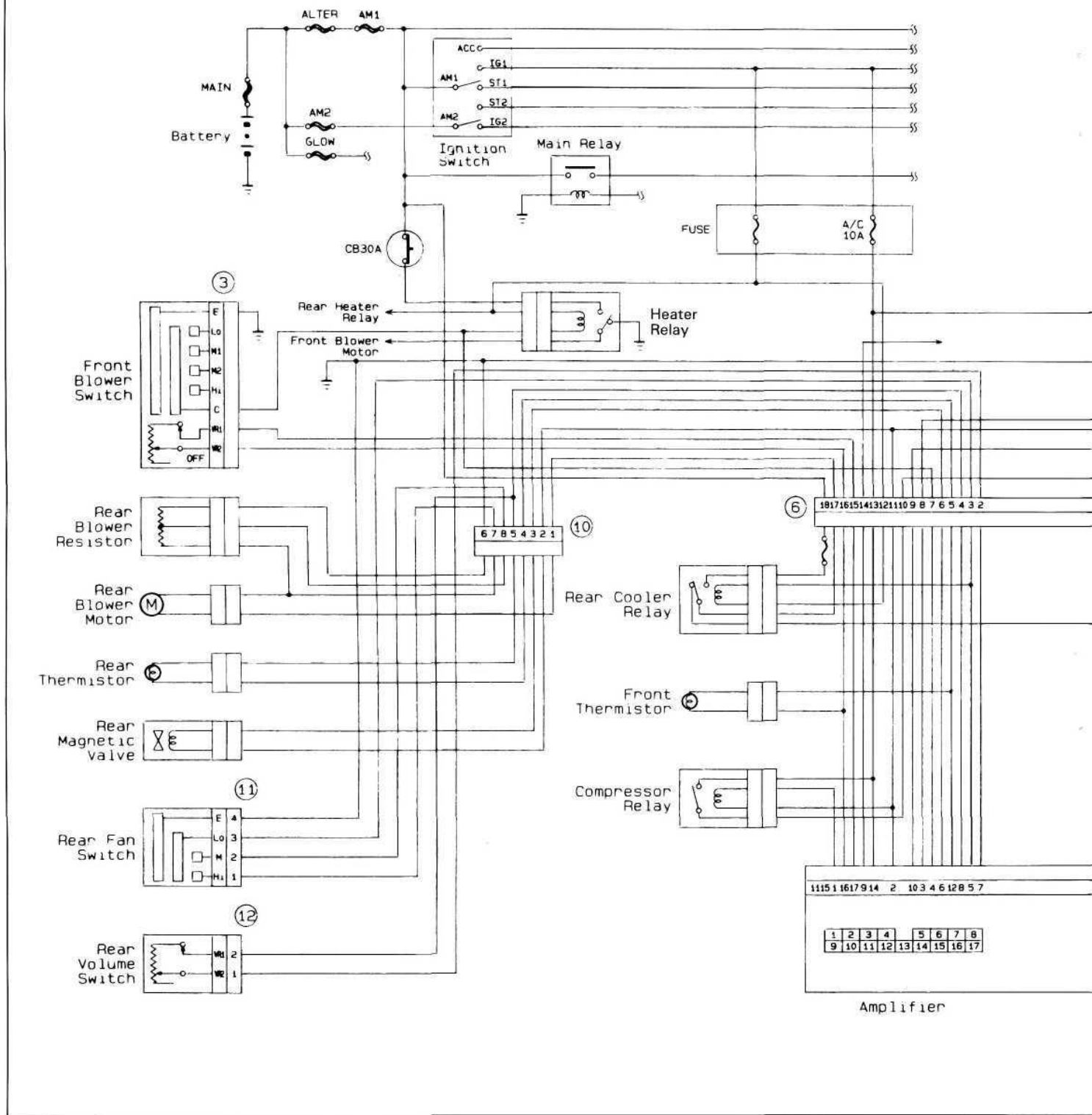
(Station Wagon)

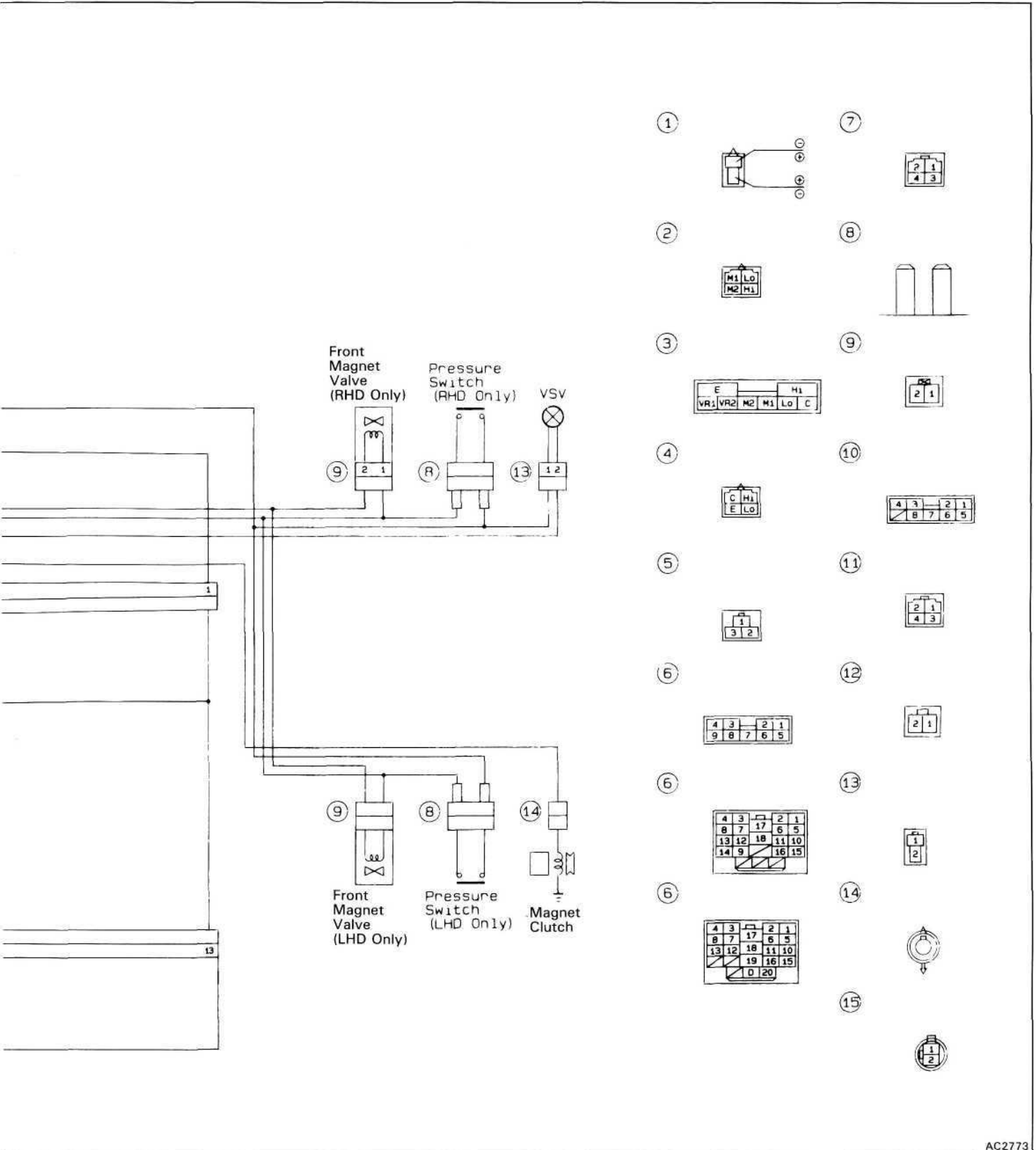
DESCRIPTION

ELECTRICAL WIRING DIAGRAM

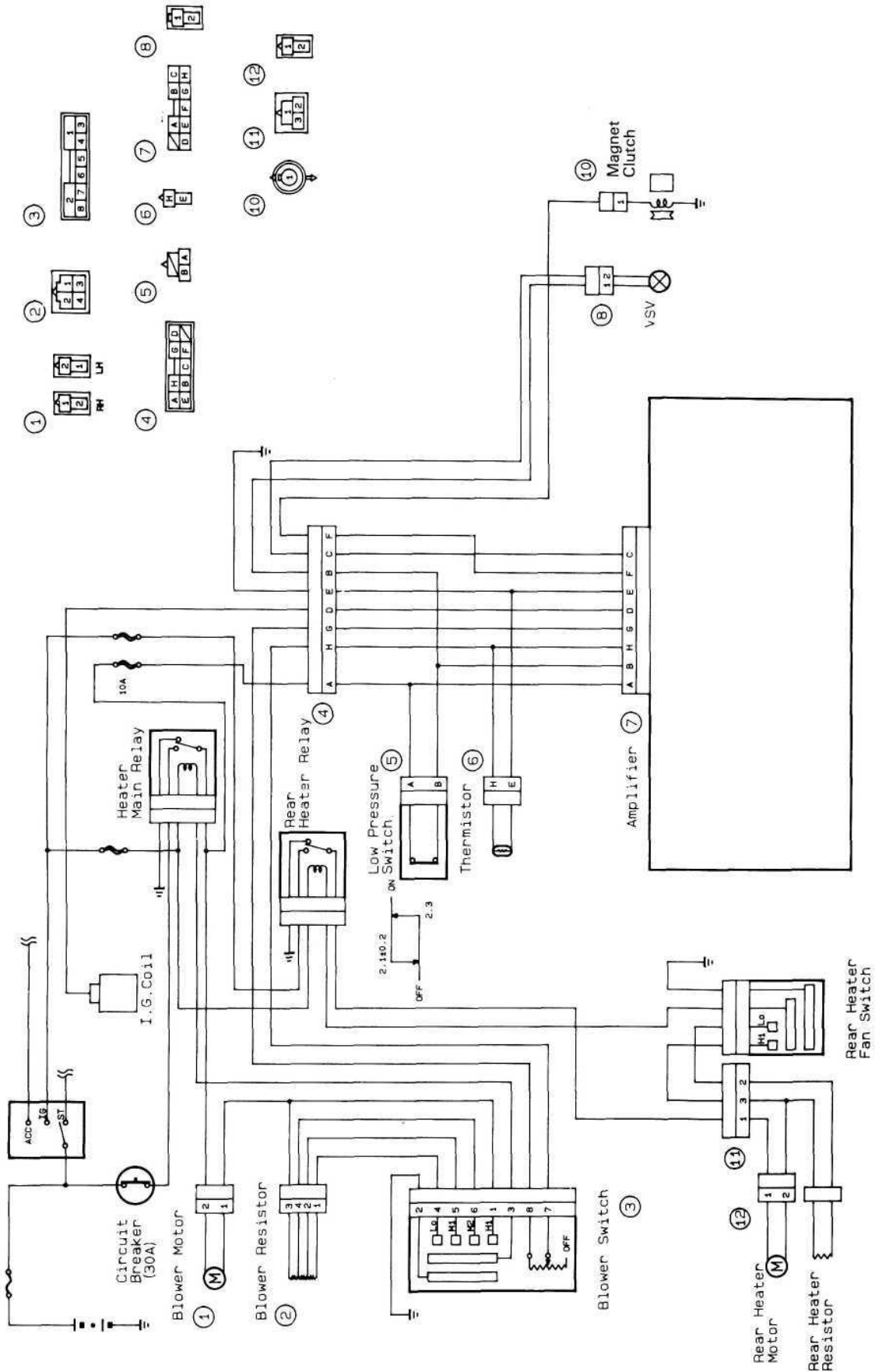
FZ Series Engine

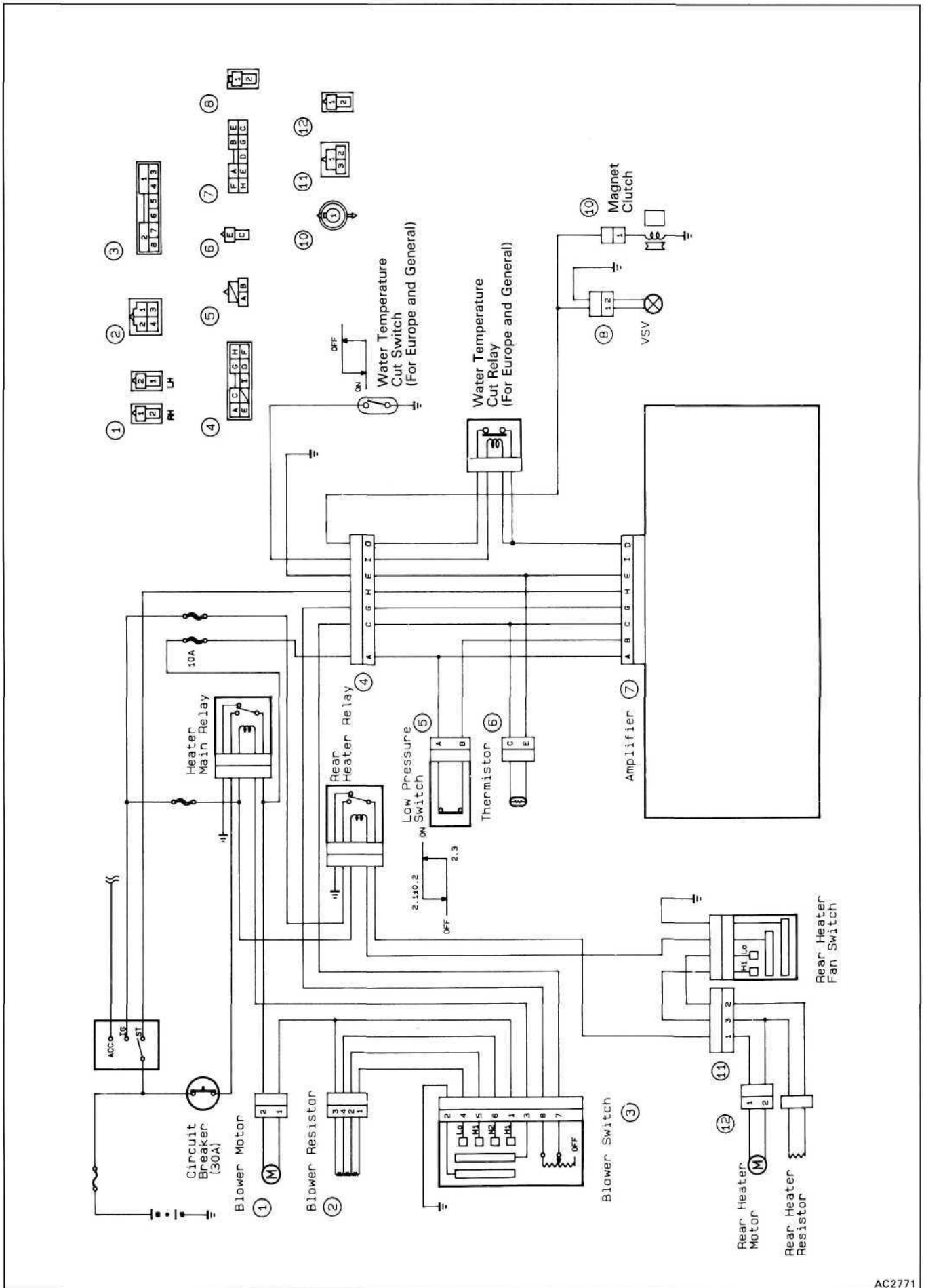
Dual A/C

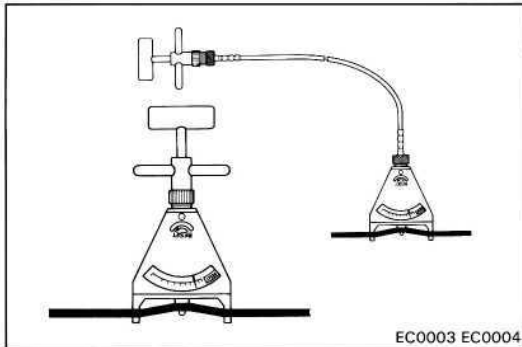
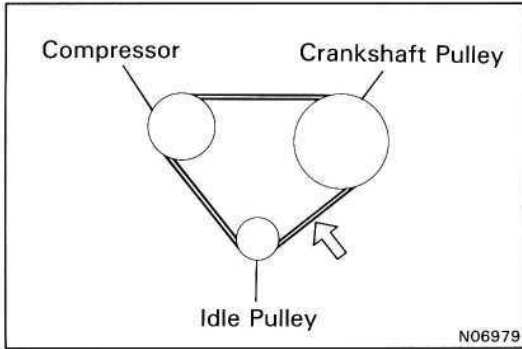




FZ Series Engine
Single A/C







DRIVE BELT

ON-VEHICLE INSPECTION

INSPECT DRIVE BELT TENSION

Drive belt tension at 10 kg (22.0 lb, 98 N):
FZ Series Engine

New belt

5 - 7 mm (0.20 - 0.28 in.)

Used belt

7 - 7.5 mm (0.28 - 0.37 in.)

(Reference)

Using SST, check the drive belt tension.

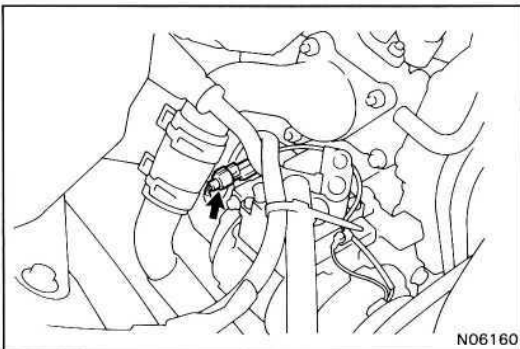
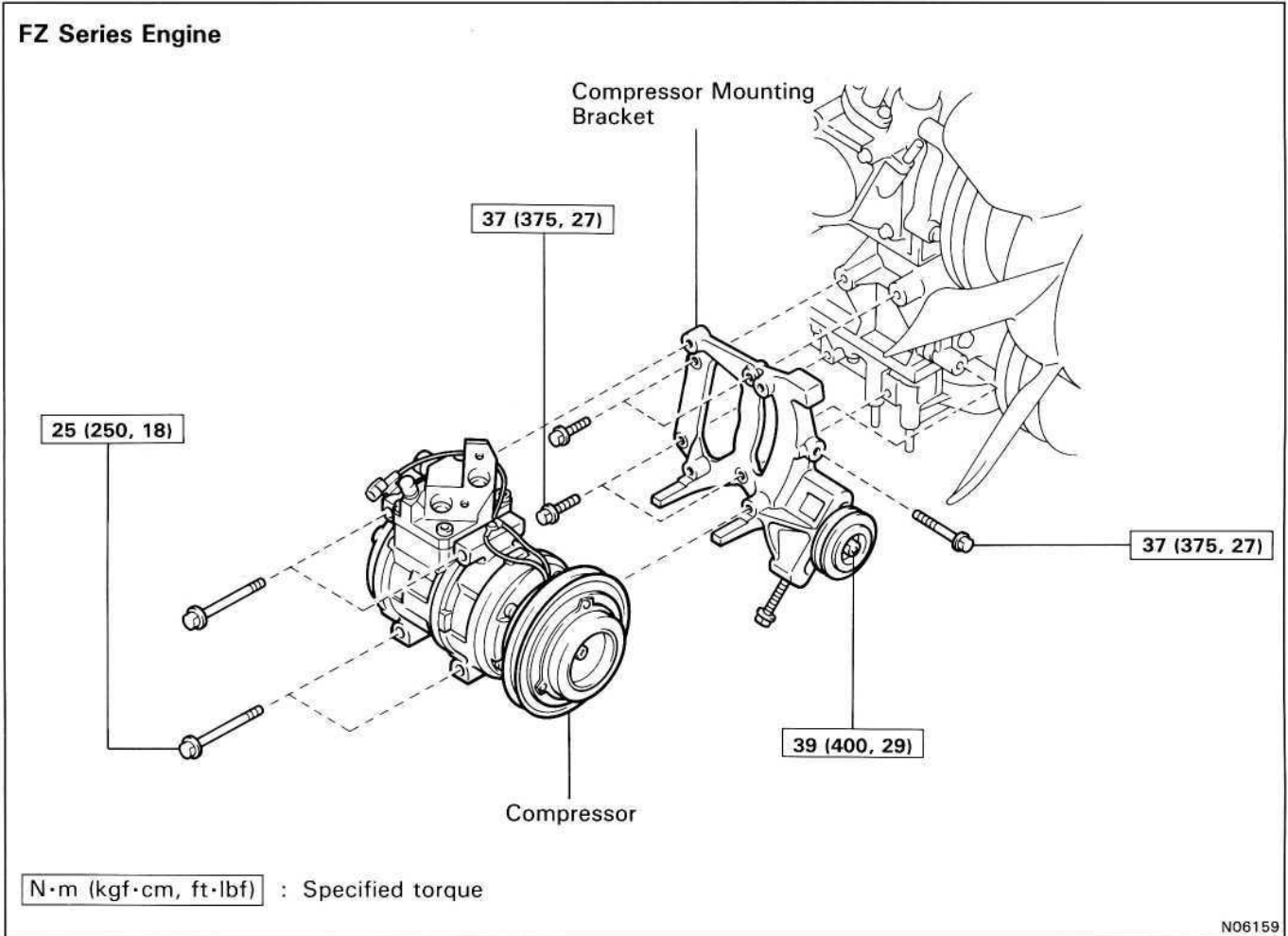
SST 09216-00020 and 09216-00030

New belt: 40 - 60 kg

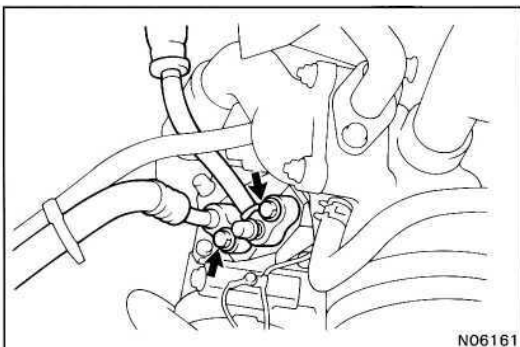
Used belt: 20 - 40 kg

COMPRESSOR

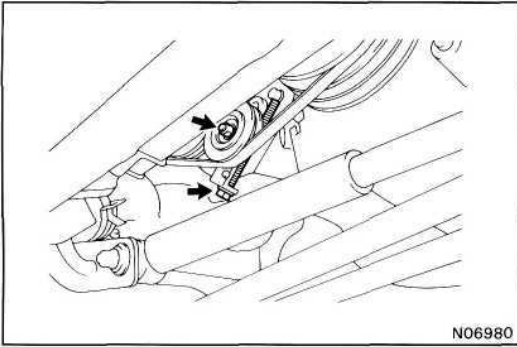
COMPRESSOR REMOVAL



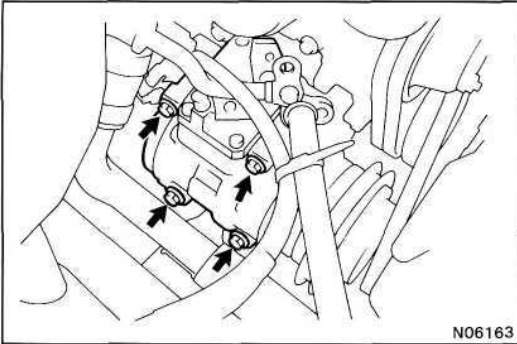
1. RUN ENGINE AT IDLE SPEED WITH A/C ON FOR TEN MINUTES
2. STOP ENGINE
3. DISCONNECT NEGATIVE CABLE FROM BATTERY
4. DISCONNECT CONNECTOR FROM MAGNET CLUTCH
5. RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM



6. DISCONNECT TWO HOSES FROM COMPRESSOR SERVICE VALVES
Cap the open fittings immediately to keep the moisture and dust out of the system.
7. REMOVE ENGINE UNDER COVER

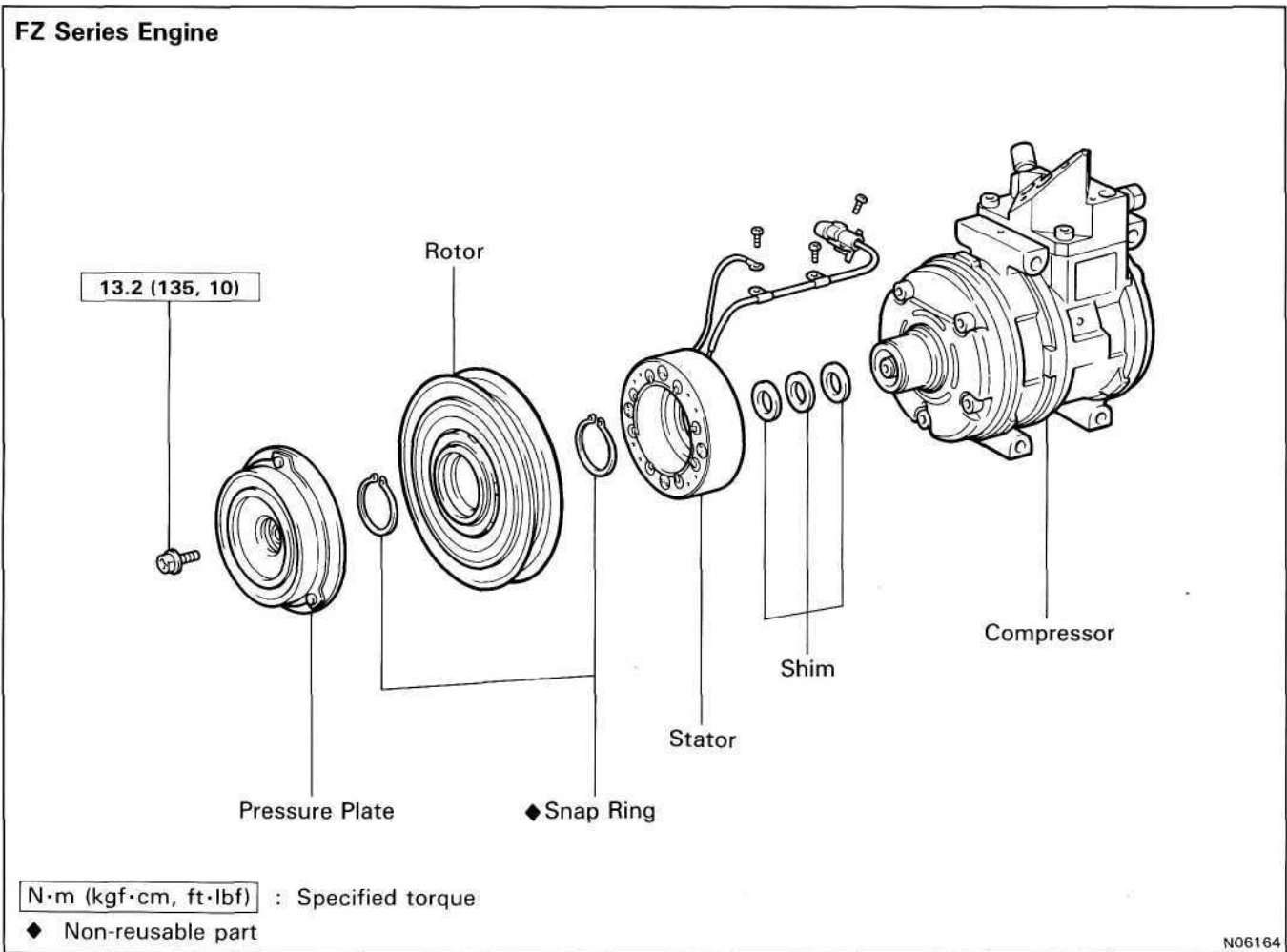


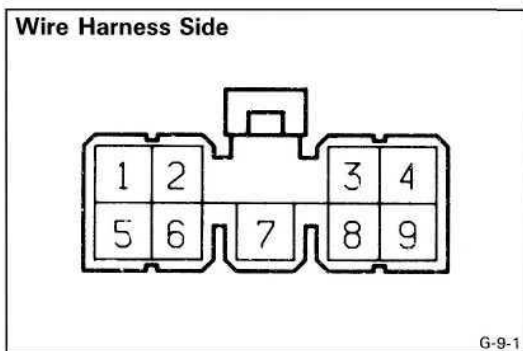
8. LOOSEN IDLE PULLEY LOCK NUT AND COMPRESSOR DRIVE BELT



9. REMOVE COMPRESSOR
Remove the four bolts and pull the compressor upward.

MAGNET CLUTCH DISASSEMBLY





AIR CONDITIONER AMPLIFIER

INSPECT AMPLIFIER CIRCUIT

Disconnect the amplifier and inspect the connector on the wire harness side as shown in the chart below.

Test conditions:

- (1) Ignition: ON
- (2) Temperature control lever: MAX. COOL
- (3) Blower switch: HI

FZ Series Engine

Check for	Tester connection	Condition	Specified value
Voltage	2 - 6	Turn A/C switch on	No voltage
		Turn A/C switch off	Battery voltage
	3 - 6	Turn A/C switch on	No voltage
		Turn A/C switch off	Battery voltage
	5 - 6	Start engine	Approx. 10 to 14 V
		Stop engine	No voltage
Resistance	3 - 4	Constant	Approx. 40 Ω at 25°C (77°F)
	6 - 7	Constant	Approx. 3.8 Ω
	8 - 9	Max. cool	Apporx. 0 Ω
		Min. cool	Apporx. 3 kΩ
	6 - 9	Constant	Approx. 1.5 kΩ at 25°C (77°F)

If circuit is as specified, replace the amplifier.