

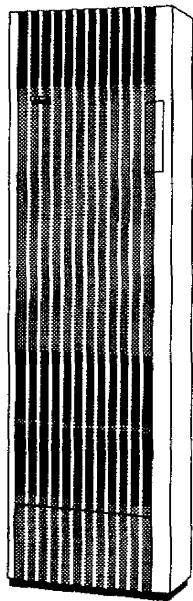
SERVICE MANUAL (Expanded Information)

SANYO

V3622 / C3622

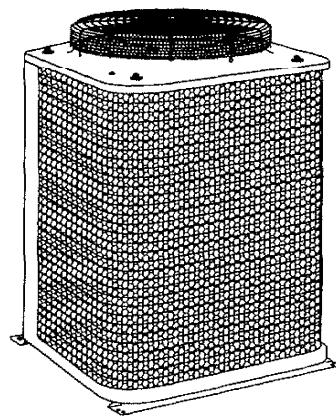
SPLIT SYSTEM AIR CONDITIONER

Indoor Unit



V3622

Outdoor Unit



C3622

SERVICE MANUAL

V3622 / C3622

(Expanded Information)

IMPORTANT! **Please Read Before Starting**

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning
- Follow each installation or repair step exactly as shown
- Observe all local, state, and national electrical codes
- Pay close attention to all warning and caution notices given in this manual



WARNING:

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



CAUTION:

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidental injury or death**.
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing...

...In a Ceiling or Wall

Make sure the ceiling/wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.

...In a Room

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

...In Moist or Uneven Locations

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

...In an Area with High Winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

...In a Snowy Area (for Heat Pump-type Systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE:

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "narrow" or "wide" rather than as "liquid" or "gas."

When Servicing

- Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

Table of Contents

| | Page |
|---|------|
| 1. SPECIFICATIONS | |
| 1-1 Unit Specifications | 1 |
| 1-2 Major Component Specifications | 2 |
| (1) Indoor Unit | 2 |
| (2) Outdoor Unit..... | 3 |
| 1-3 Other Component Specifications..... | 4 |
| (1) Indoor Unit | 4 |
| (2) Outdoor Unit..... | 4 |
| 2. PERFORMANCE CHARTS | |
| 2-1 Operating Current..... | 5 |
| 2-2 High and Low Pressure..... | 6 |
| 3. FUNCTION | |
| 3-1 Room Temperature Control..... | 8 |
| 3-2 Freeze Prevention | 9 |
| 3-3 Outdoor Fan Speed Control..... | 9 |
| 4. ELECTRICAL DATA | |
| ● Schematic Diagram..... | 10 |
| ● Electric Wiring Diagram (PCB Ass'y) | 11 |
| 5. TROUBLESHOOTING | |
| 5-1 Check before and after troubleshooting..... | 13 |
| (1) Check power supply wiring..... | 13 |
| (2) Check inter-unit wiring..... | 13 |
| (3) Check power supply | 13 |
| (4) Check lead wires and connectors in indoor and outdoor units | 13 |
| 5-2 Air conditioner does not operate | 14 |
| (1) Circuit breaker trips (or fuse blows)..... | 14 |
| (a) When circuit breaker is set to ON, it trips in a few moments | |
| (b) Circuit breaker trips in several minutes after turning air conditioner ON | |
| (2) Neither indoor unit nor outdoor unit runs..... | 16 |
| (a) Power is not supplied | |
| (b) Check fuse on PCB Ass'y in indoor unit | |
| (c) Check control unit (RCS-36V) | |
| (d) Check transformer | |
| (e) Check high pressure switch (63PH) | |

| | |
|---|----|
| (3) Only outdoor unit does not run..... | 18 |
| (a) Outdoor unit does not run when air conditioner is in the following conditions | |
| (b) Check electro-magnetic contactor (52C) | |
| (c) Check PCB Ass'y (POW-36V) | |
| 5-3 A particular component of air conditioner does not operate | 19 |
| (1) Only indoor fan does not run..... | 19 |
| (2) Only outdoor fan does not run..... | 20 |
| (3) Only compressor does not run..... | 21 |
| 5-4 Air conditioner operates, but abnormalities occur..... | 22 |
| (1) Poor Cooling..... | 22 |
| (2) Excessive Cooling | 23 |

6. CHECKING ELECTRICAL COMPONENTS

| | |
|---|----|
| 6-1 Measurement of Insulation Resistance | 24 |
| (1) Power Supply Wires | 24 |
| (2) Indoor Unit | 24 |
| (3) Outdoor Unit..... | 24 |
| (4) Measurement of Insulation Resistance for Electrical Parts | 24 |
| 6-2 Checking Continuity of Fuse on PCB Ass'y..... | 25 |
| 6-3 Checking Motor Capacitor | 25 |
| 6-4 Checking Control Unit (RCS-36V) Proper | 26 |
| (1) Checking Operation Switch — SW1 | 26 |
| (2) Checking Fan Speed Selector — SW2 | 26 |
| (3) Checking Auto Deflector Switch — SW3..... | 26 |
| 6-5 Appearance of Electrical Parts | 27 |
| (1) Freeze Protection Thermostat | 27 |
| (2) High Pressure Switch..... | 27 |
| (3) Thermistor (PTC) | 27 |
| (4) Electro-Magnetic Contactor..... | 28 |
| (5) Thermostat | 28 |

I. SPECIFICATIONS

1-1 Unit Specifications

| | | | |
|---------------------|---|-----------------------|---|
| Model No. | Indoor unit | V3622 | |
| | Outdoor unit | C3622 | |
| Performance | Capacity | BTU/h | Cooling |
| | | kW | 34,000 / 33,000 9.96 / 9.67 |
| | Air circulation (High) | cu. ft./min. | 700 / 620 |
| | Moisture removal (High) | pints/h | 10.0 / 9.6 |
| Electrical Rating | Phase, Frequency | Hz | Single, 60 |
| | Voltage rating | V | 230 / 208 |
| | Available voltage range | V | 187 to 253 |
| | Running amperes | A | 16.0 / 16.7 |
| | Power input | W | 3,450 / 3,350 |
| | Power factor | % | 94 / 96 |
| | Starting amperes | A | 98 |
| Features | S. E. E. R. | BTU/Wh | 10.2 / 10.3 |
| | Controls | | IC |
| | Control unit | | Built-in |
| | Temperature control | | IC thermostat |
| | Fan speeds | Indoor / Outdoor | 2 / 1 |
| | Air deflector | Horizontal / Vertical | Automatic / Manual |
| | Air filter | | Washable, easy access |
| | Compressor | | Rotary |
| | Refrigerant amount charged at shipment | lbs. (kg) | R22: 9.9 (4.5) |
| | Refrigerant control | | Capillary tube |
| | Refrigerant tubing connections | | Flare type |
| | Operation sound | In-Hi / Me / Lo | 51 / — / 46 |
| | | Out-Hi | 62 |
| Dimensions & Weight | Max. allowable tubing length at shipment | ft. (m) | 50 (15) |
| | Limit of elevation difference between the 2 units | ft. (m) | Outdoor unit is higher than indoor unit: 50 (15) Outdoor unit is lower than indoor unit: 50 (15) |
| | Refrigerant tube o.d. | Narrow tube | 3/8 (9.52) |
| | | Wide tube | 3/4 (19.05) |
| | Refrigerant tube kit | | Optional |
| | Accessories | | — |
| | | | Indoor unit Outdoor unit |
| | Height | in. (mm) | 74-13/16 (1,900) 38 (965) |
| | Width | in. (mm) | 21-1/4 (540) 26-3/8 (670) |
| | Depth | in. (mm) | 9-3/4 (248) 26-3/8 (670) |
| | Net weight | lbs. (kg) | 110 (50) 209 (95) |
| | Shipping volume | cu. ft. (cu. m) | 16.5 (0.463) 25 (0.708) |
| | Shipping weight | lbs. (kg) | 135 (60.8) 235 (107) |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are: Outside air temperature 95°F DB/75°F WB

Indoor unit entering air temperature 80°F DB/67°F WB

1-2 Major Component Specifications

(1) Indoor Unit

| | | | |
|----------------------|---|------------------------------------|--|
| Unit Model No. | | | V3622 |
| Control Unit | | | RCS-36V |
| Controller PCB | | | POW-36V |
| Controls | | | I.C. |
| Control circuit fuse | | | 250V, 5A |
| Fan Motor | Type | Centrifugal | |
| | Number ... Dia. and length | in. (mm) | 1 ... O.D. 15 (380), L 7 (180) |
| | Model ... Number | KFC8S-81A6P ... 1 | |
| | No. of pole ... rpm (230V, High) | 8 ... 460 | |
| | Nominal output | W | 80 |
| | Coil resistance (Ambient temp. 68°F) | Ω | WHT - BRN: 204.5 WHT - PNK: 25.8 WHT - YEL: 34.3 |
| | Safety devices | Type | Internal |
| | Operating temp. | Open °F | 248 ± 9 |
| | | Close °F | 171 ± 27 |
| | Run capacitor | μF | 6 |
| | | VAC | 440 |
| Auto Deflector Motor | Model | M12 | |
| | Rating | 220 to 240V, 60Hz | |
| | No. of pole ... rpm | 12 ... 5 | |
| | Output | W | 3 |
| | Coil resistance (at 77°F) | kΩ | 11.5 ± 5% |
| Heat Exch. | Coil | Aluminum plate fin / Copper tube | |
| | Rows ... Fins per inch | 3 ... 14.1 | |
| | Face area | ft. ² (m ²) | 4.75 (0.44) |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(2) Outdoor Unit

| Unit Model No. | | C3622 | |
|-----------------|---|--|----------------------|
| Compressor | Model ... Number | Rotary (hermetic) | |
| | No. of cyl. ... rpm | C-R221H8U ... 1 | |
| | Nominal output | W (H.P.) | 1 ... 3,500 |
| | Compressor lubricant | cc | 2,200 (3) |
| | Coil resistance (Ambient temp. 77°F) | Ω | 1,500 |
| | | | C - R: 0.760 |
| | | | C - S: 2.762 |
| | Safety devices | Type | Internal |
| | | Overload relay models | — |
| | Operating temp. | Open °F | 160 ± 5 |
| Fan | | Close °F | 87 ± 11 |
| | | Operating amp. (Ambient temp. 77°F) | — |
| | Run capacitor | μF | 40 |
| | | VAC | 370 |
| Fan Motor | Crank case heater | | — |
| | Type | | Propeller |
| | Number ... Dia. | in. (mm) | 1 ... 19-15/16 (500) |
| Fan Motor | Model | KFC6S-161A6P | |
| | No. of pole ... rpm (230V, High) | 6 ... 820 | |
| | Nominal output | W (H.P.) | 160 (1/5) |
| | Coil resistance (Ambient temp. 68°F) | Ω | WHT - BRN: 34.9 |
| | | | WHT - PNK: 72.1 |
| | | | PNK - YEL: 81.6 |
| | Safety devices | Type | Internal |
| | Operating temp. | Open °F | 248 ± 9 |
| | | Close °F | 171 ± 27 |
| | Run capacitor | μF | 4 |
| Heat Exch. | | VAC | 440 |
| | Coil | Aluminum plate fin / Copper tube | |
| | Rows ... Fins per inch | 2 ... 12.7 | |
| Face area | | ft. ² (m ²) | 13.17 (1.22) |
| External Finish | | Acrylic baked-on enamel finish | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

1-3 Other Component Specifications

(1) Indoor Unit

| Transformer | | ATR-J122U |
|-----------------|--------------------|--|
| Rated | Primary | AC 220V, 60Hz |
| | Secondary | 19V, 0.63A |
| | Capacity | 12VA |
| Coil resistance | Ω (at 79°F) | Primary (WHT – WHT): 146.9 Secondary (BRN – BRN): 1.3 |
| Thermo fuse | | 259°F, 2A 250V |

| Freeze Protection Thermostat | | RTB-4U303 |
|------------------------------|----|---|
| Operating temp. | °F | ON 50 ± 3.5 OFF 23 ± 3 |
| Contact rating | | 200 to 240V, 1A |

| Thermistor (room sensor) | | OCS5K-UL |
|--------------------------|----|---|
| Resistance | kΩ | 32°F $16.54 \pm 4\%$ 50°F $10.03 \pm 4\%$ 68°F $6.27 \pm 4\%$ |
| | | 77°F $5.0 \pm 4\%$ 86°F $4.02 \pm 4\%$ |
| | | |

(2) Outdoor Unit

| High Pressure Switch | | FTB-2UC01 |
|----------------------|------|---------------------------------------|
| Operating pressure | psig | OFF $412 + 14, -7$ ON Manual |
| Contact rating | | AC 240V, 4A |

| Thermistor (PTC) | | TDK 101YV |
|------------------|--------------------|----------------|
| Resistance | Ω (at 77°F) | $100 \pm 20\%$ |

| Electro-Magnetic Contactor | | FMCA-1SUL |
|--------------------------------------|--------------------|-----------------------------|
| Coil rating | | AC 240V |
| Coil resistance | Ω (at 77°F) | $580 \pm 15\%$ |
| Contact rating (Main) (Auxiliary) | | AC 240V, 26A AC 240V, 3A |

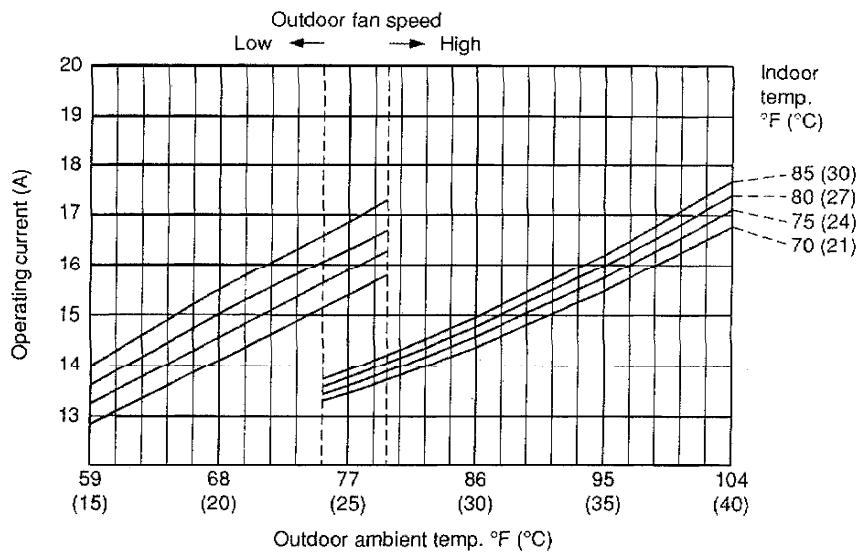
| Thermostat | | YTB-4U305F |
|-----------------|----|---|
| Operating temp. | °F | ON $75 + 3, -1$ OFF 79 ± 3 |
| Contact rating | | 200 to 240V, 1A |

2. PERFORMANCE CHARTS

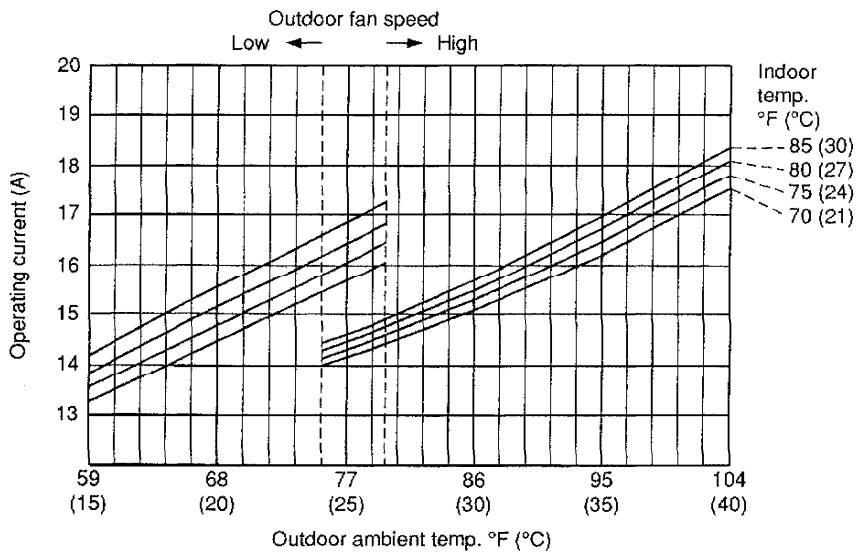
2-1 Operating Current

Operating current characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

230V



208V

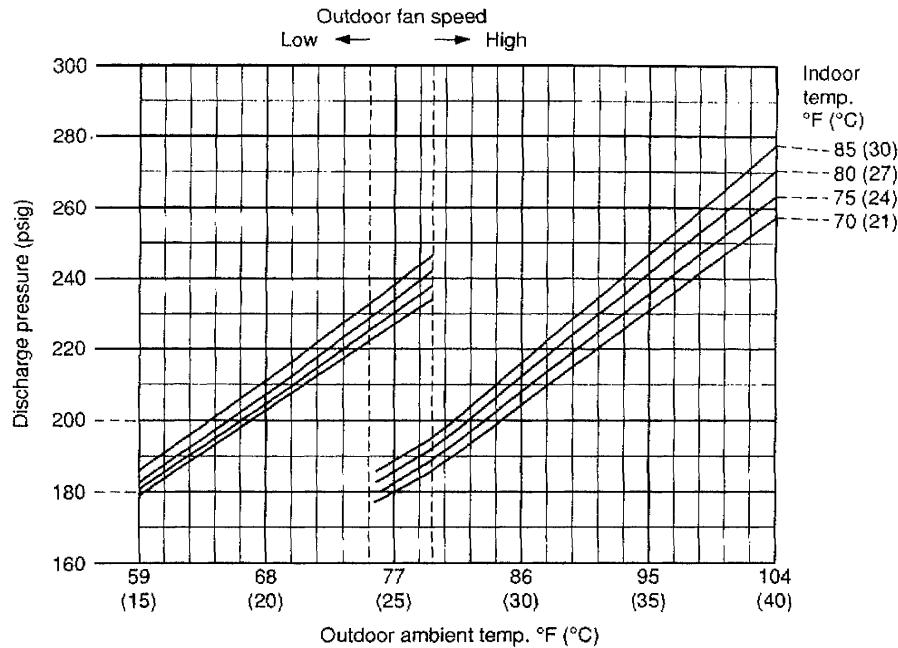


2-2 High and Low Pressure

● High Pressure

High pressure characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

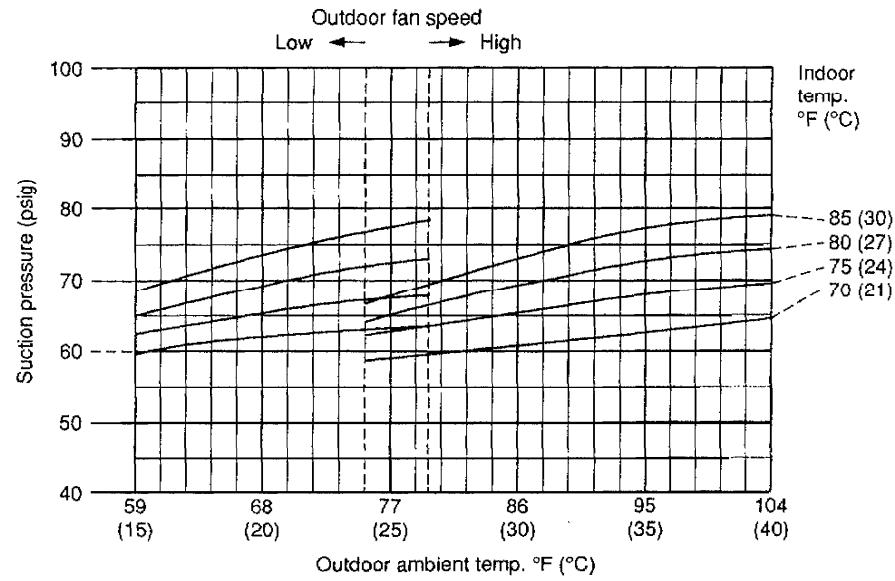
230V



● Low Pressure

Low pressure characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

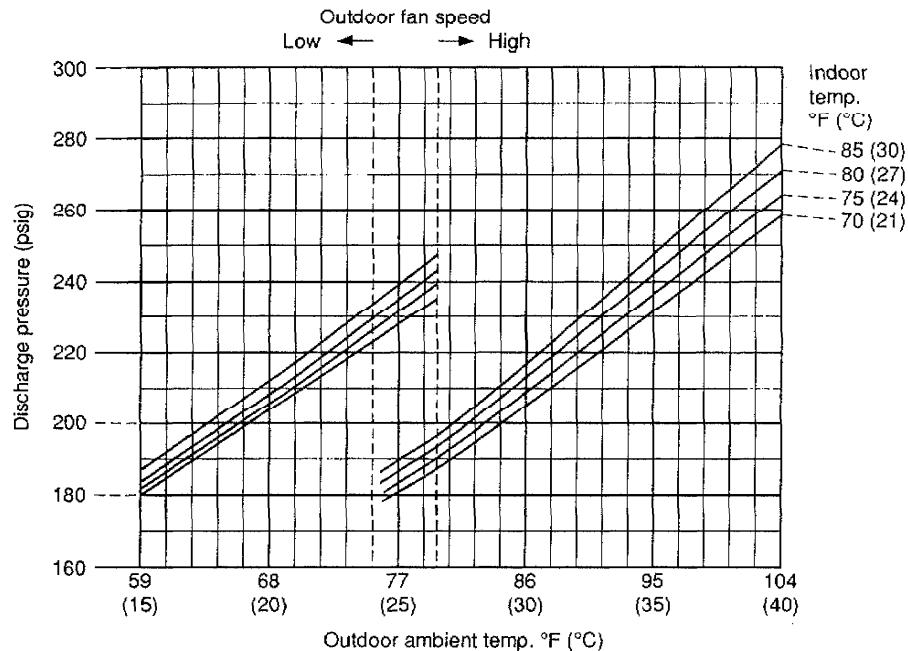
230V



● High Pressure

High pressure characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

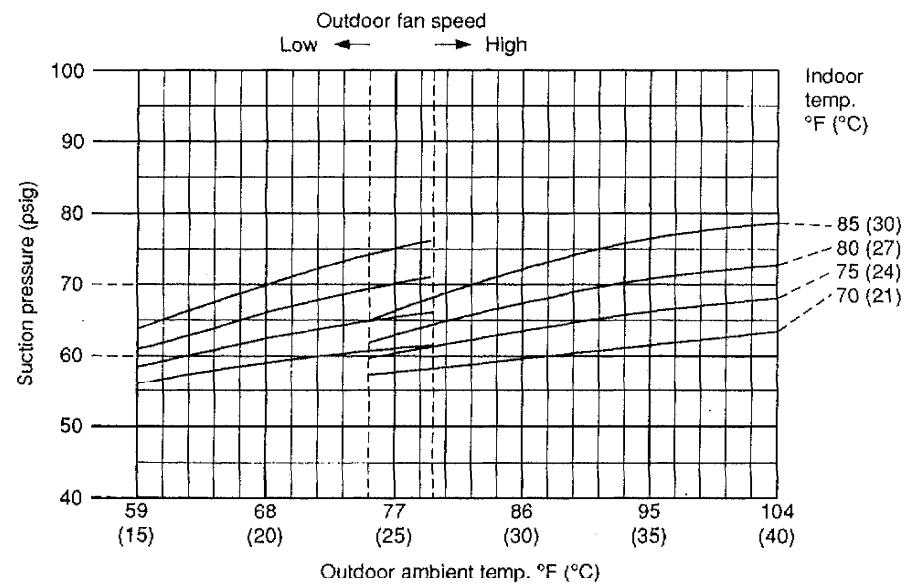
208V



● Low Pressure

Low pressure characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

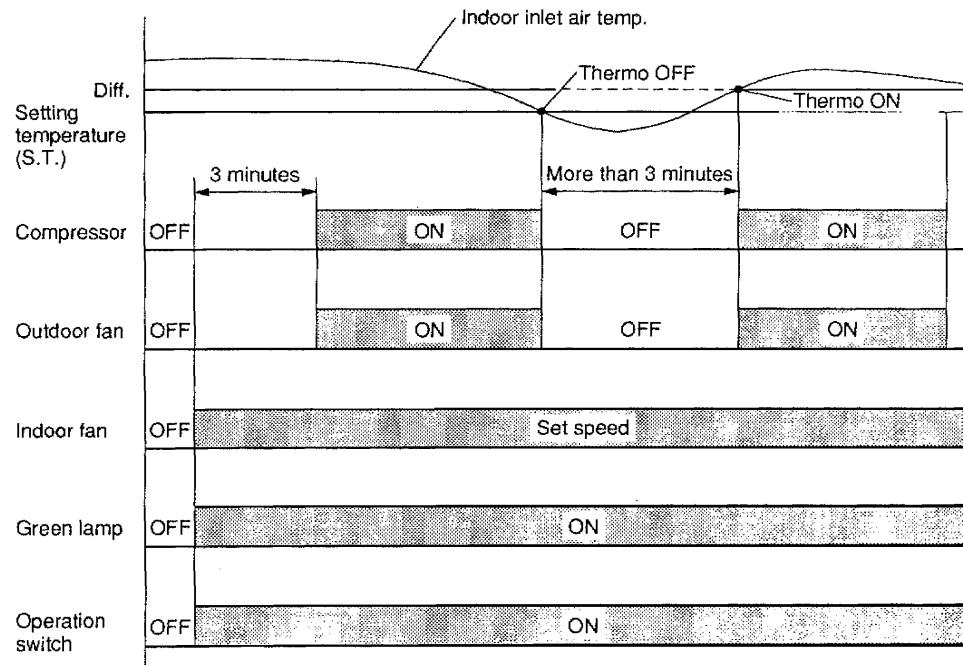
208V



3. FUNCTION

3-1 Room Temperature Control

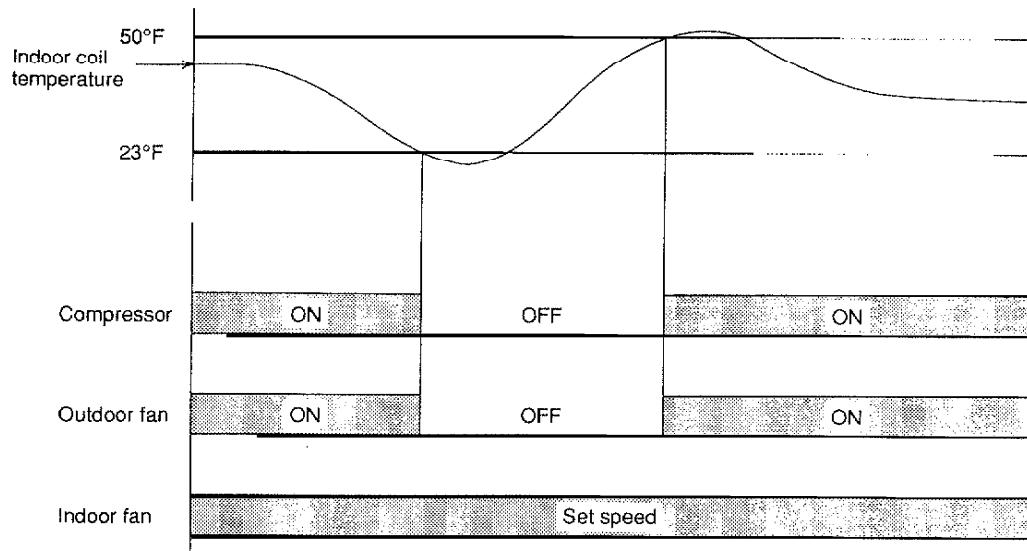
- Room temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The compressor turns OFF below the setting temperature, and turns ON above the differential temperature (about 2°F).



- The control circuit will not attempt to turn the compressor ON until the compressor has been OFF for at least 3 minutes. To protect the compressor from stalling out when trying to start against the high side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize.

3-2 Freeze Prevention

- When the coil temperature falls below 23°F, the compressor turns OFF.
When the coil temperature rises above 50°F, the compressor turns ON again.



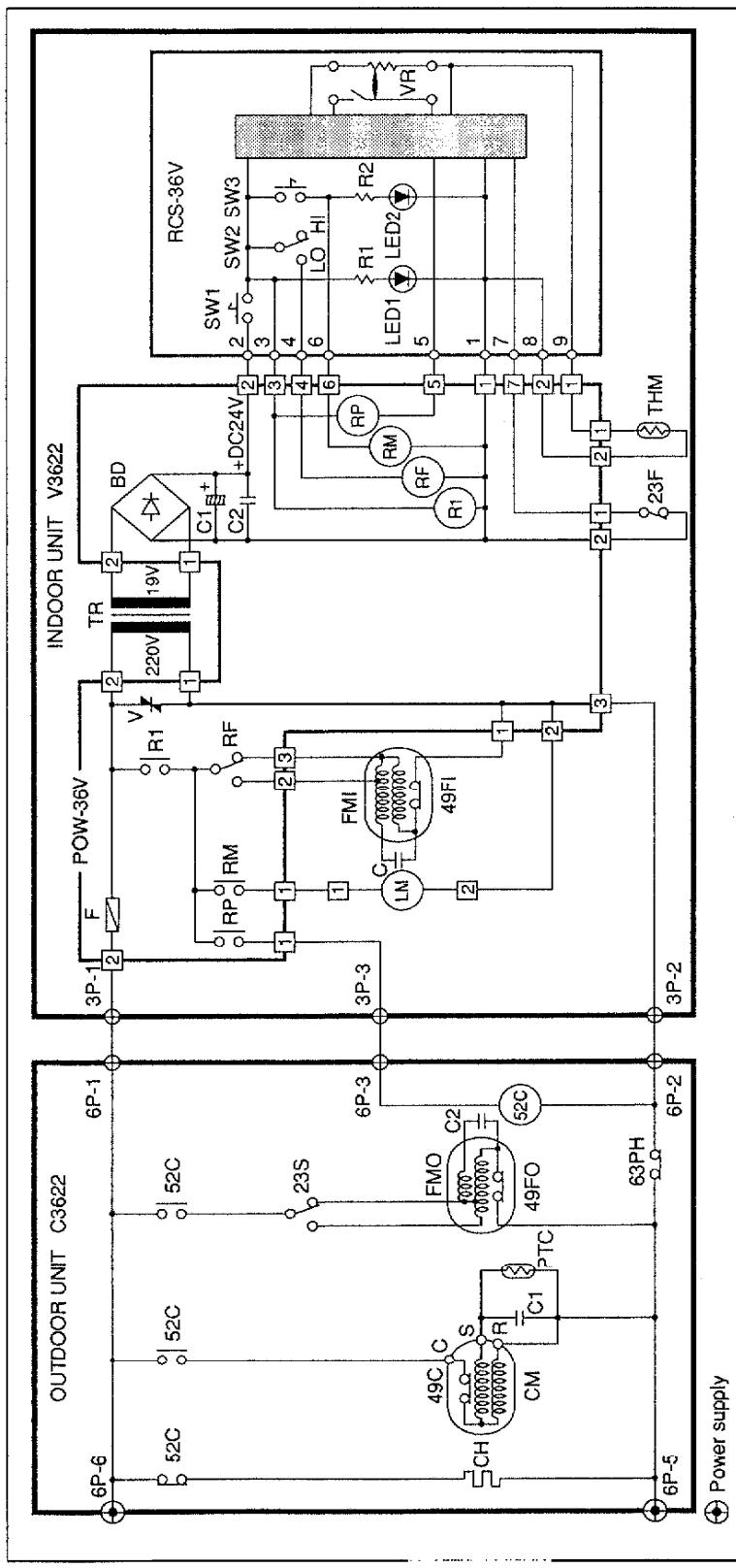
3-3 Outdoor Fan Speed Control

- In low temperature areas, the outdoor fan is set automatically to LOW to prevent freezing.
- When the outdoor air temperature falls below 75°F, the outdoor fan is set to LOW.
When the outdoor air temperature rises to 79°F, the outdoor fan is set to HIGH.

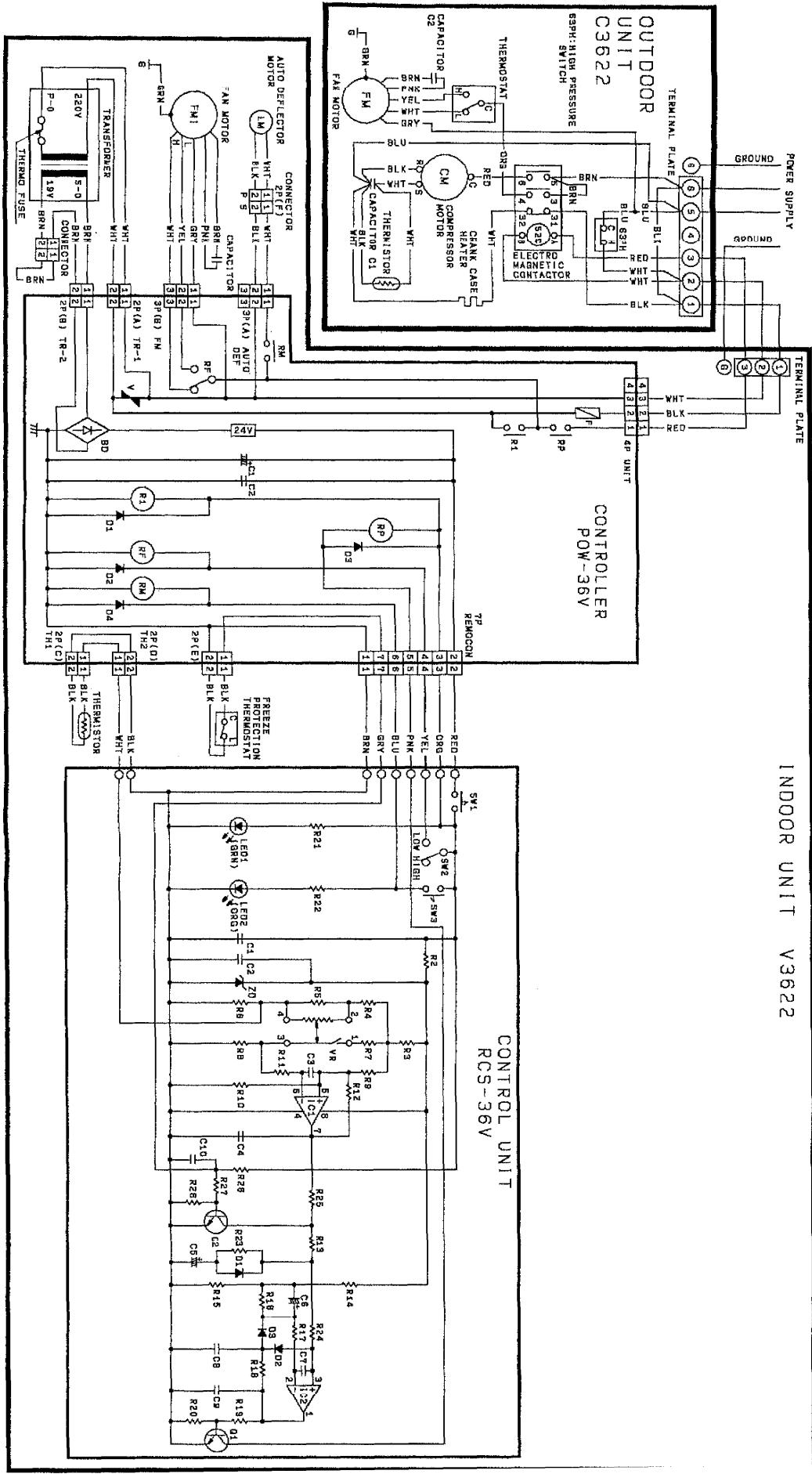
4. ELECTRICAL DATA

● Schematic Diagram

V3622 / C3622



| Symbol | Description | Symbol | Description |
|--------------|--------------------------------------|------------|--------------------------------|
| OUTDOOR UNIT | | TR | TRANSFORMER |
| CH | CRANK CASE HEATER | THM | THERMISTOR |
| CM | COMPRESSOR MOTOR | 23F | FREEZE PROTECTION THERMOSTAT |
| 49C | COMPRESSOR MOTOR INTERNAL PROTECTOR | POW-36V | CONTROLLER PCB ASSY |
| PTC | THERMISTOR | F | FUSE 250V 5A |
| 23S | THERMOSTAT | V | VARISTOR |
| IFO | OUTDOOR FAN MOTOR | BD | BRIDGE DIODE |
| 49FO | OUTDOOR FAN MOTOR INTERNAL PROTECTOR | C1, C2 | CAPACITOR |
| C1, C2 | CAPACITOR | R1, RP, RM | AUXILIARY RELAY |
| 52C | ELECTROMAGNETIC CONTACTOR | RCS-36V | CONTROL UNIT |
| 63PI | HIGH PRESSURE SWITCH | SW1 | OPERATION ON/OFF SWITCH |
| INDOOR UNIT | | SW2 | FAN SPEED SELECTOR SWITCH |
| LM | AUTO DEFLECTOR MOTOR | SW3 | AUTO DEFLECTOR SWITCH |
| FMI | INDOOR FAN MOTOR | R1, R2 | RESISTOR |
| 49FI | INDOOR FAN MOTOR INTERNAL PROTECTOR | LED1, LED2 | INDICATOR LAMP |
| C | CAPACITOR | VR | VARIABLE RESISTOR (THERMOSTAT) |



POW-36V

| Symbol | Description | Specifications |
|--------|--------------|-------------------|
| BD | BRIDGE DIODE | DBA-10C |
| D1 | DIODE | DS-442X |
| D2 | DIODE | DS-442X |
| D3 | DIODE | DS-442X |
| D4 | DIODE | DS-442X |
| C1 | CAPACITOR | 470μF 50V |
| C2 | CAPACITOR | 0.047μF 50V |
| R1 | RELAY | LZG-24HE DC24V |
| RF | RELAY | LZG-24HE DC24V |
| RM | RELAY | LZG-24HE DC24V |
| RP | RELAY | LZG-24HE DC24V |
| V | VARISTOR | SNR-A420K |
| 7P | CONNECTOR | PLUG E1 (WHT) |
| 4P | CONNECTOR | PLUG ULTLEX (BLK) |
| 3P (A) | CONNECTOR | PLUG ULTLEX (RED) |
| 3P (B) | CONNECTOR | PLUG ULTLEX (BLK) |
| 2P (A) | CONNECTOR | PLUG ULTLEX (BLK) |
| 2P(B) | CONNECTOR | PLUG SL156 |
| 2P(C) | CONNECTOR | PLUG 5273-02A |
| 2P (D) | CONNECTOR | PLUG EI (WHT) |
| 2P (E) | CONNECTOR | PLUG 5273-02A-BL |
| F | FUSE | 250V, 5A |

RCS-36V

| Symbol | Description | Specifications |
|--------|--------------|------------------|
| R2 | RESISTOR | 680Ω 2W |
| R3 | RESISTOR | 12KΩ 1/4W ±5% |
| R4 | RESISTOR | 3.9KΩ 1/4W ±1% |
| R5 | RESISTOR | 820Ω 1/4W ±1% |
| R6 | RESISTOR | 18KΩ 1/4W ±1% |
| R7 | RESISTOR | 10KΩ 1/4W ±5% |
| R8 | RESISTOR | 560KΩ 1/4W ±5% |
| R9 | RESISTOR | 2.94KΩ 1/4W ±1% |
| R10 | RESISTOR | 3kΩ 1/4W ±1% |
| R11 | RESISTOR | 10KΩ 1/4W ±1% |
| R12 | RESISTOR | 910KΩ 1/4W ±1% |
| R13 | RESISTOR | 11KΩ 1/4W ±5% |
| R14 | RESISTOR | 10KΩ 1/4W ±5% |
| R15 | RESISTOR | 2KΩ 1/4W ±5% |
| R16 | RESISTOR | 220KΩ 1/4W ±5% |
| R17 | RESISTOR | 10KΩ 1/4W ±5% |
| R18 | RESISTOR | 4.3KΩ 1/4W ±5% |
| R19 | RESISTOR | 6.8KΩ 1/4W ±5% |
| R20 | RESISTOR | 2.2KΩ 1/4W ±5% |
| R21 | RESISTOR | 1.2KΩ 1W |
| R22 | RESISTOR | 2.4KΩ 1/2W |
| R23 | RESISTOR | 12KΩ 1/4W ±5% |
| R24 | RESISTOR | 2.2KΩ 1/4W ±5% |
| R25 | RESISTOR | 10KΩ 1/4W ±5% |
| R26 | RESISTOR | 1.8KΩ 1W |
| R27 | RESISTOR | 12KΩ 1/4W ±5% |
| R28 | RESISTOR | 2KΩ 1/4W ±5% |
| C1 | CAPACITOR | 0.047μF 50V |
| C2 | CAPACITOR | 0.022μF 50V |
| C3 | CAPACITOR | 0.022μF 50V |
| C4 | CAPACITOR | 0.022μF 50V |
| C5 | CAPACITOR | 4.7μF 16V |
| C6 | CAPACITOR | 330μF 10V |
| C7 | CAPACITOR | 0.022μF 50V |
| C8 | CAPACITOR | 0.047μF 50V |
| C9 | CAPACITOR | 0.022μF 50V |
| C10 | CAPACITOR | 0.022μF 50V |
| ZD | ZENER DIODE | GZA 12L |
| D1 | DIODE | DS-442X |
| D2 | DIODE | DS-442X |
| D3 | DIODE | DS-442X |
| Q1 | TRANSISTOR | 2SC536KNP E OR F |
| Q2 | TRANSISTOR | 2SC536KNP E OR F |
| VR | SLIDE VOLUME | S4511P-5KBB |
| SW1 | SWITCH | SSSB 22003A |
| SW2 | SWITCH | SPUZ 12009A |
| SW3 | SWITCH | SUH 22V |
| LED1 | LED (CPN) | HLE-G-LTS |
| LED2 | LED (ORG) | HLE-O-LTS |
| IC | IC | LA6358 |

5. TROUBLESHOOTING

5-1 Check before and after troubleshooting.

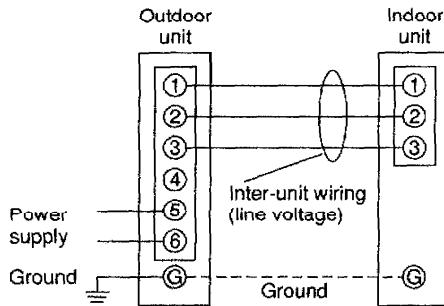
(1) Check power supply wiring.

- Check that power supply wires are correctly connected to terminals No. 5 and No. 6 on the 6P terminal plate in the outdoor unit.

(2) Check inter-unit wiring.

- Check that inter-unit wires are correctly connected to indoor unit from outdoor unit.

Power supply:
60Hz, single-phase, 230/208V



(3) Check power supply.

- Check that voltage is in specified range ($\pm 10\%$ of the rating).
- Check that power is being supplied.



WARNING:

If the following troubleshooting must be done with power being supplied, be careful about any uninsulated live part that can cause ELECTRIC SHOCK.

(4) Check lead wires and connectors in indoor and outdoor units.

- Check that coating of lead wires is not damaged.
- Check that lead wires and connectors are connected firmly.
- Check that wiring is correct.

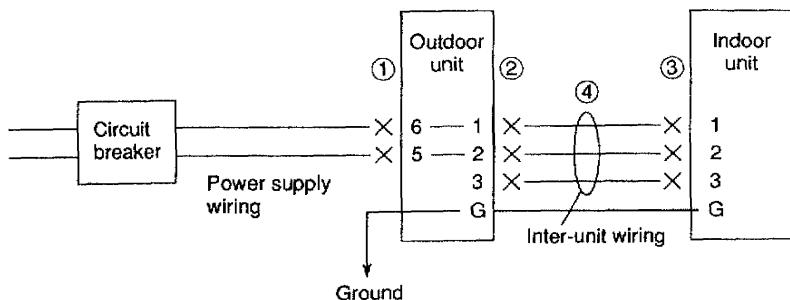
5-2 Air conditioner does not operate.

(1) Circuit breaker trips (or fuse blows).

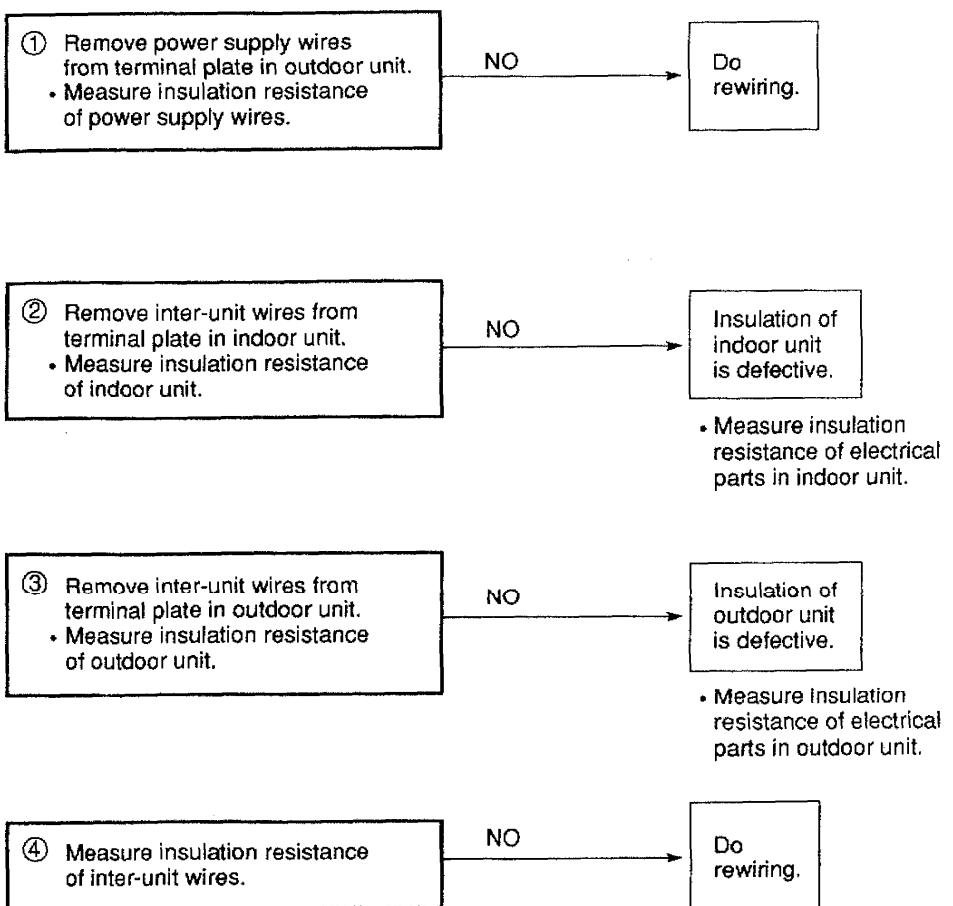
(a) When circuit breaker is set to ON, it trips in a few moments (resetting is not possible).

- There is a possibility of ground fault.
- Measure insulation resistance.

If resistance value is $1M\Omega$ or less, insulation is defective ("NO").

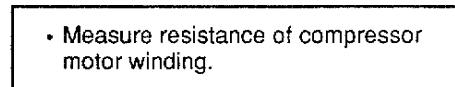
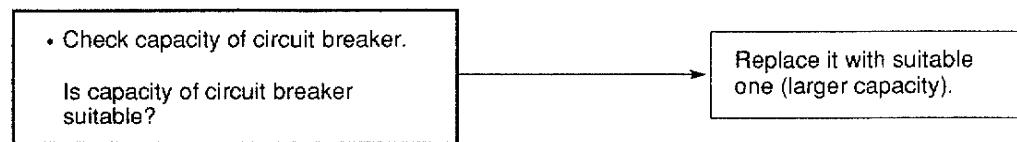


* Set circuit breaker to OFF.



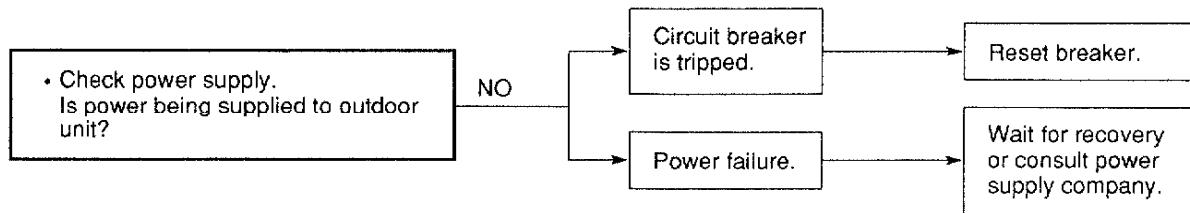
(b) Circuit breaker trips in several minutes after turning air conditioner ON.

- There is a possibility of short circuit.

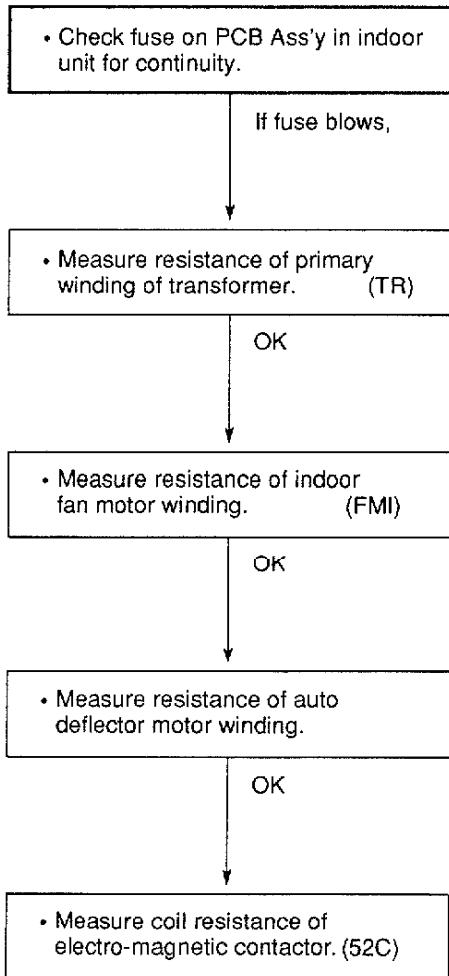


(2) Neither indoor unit nor outdoor unit runs.

(a) Power is not supplied.



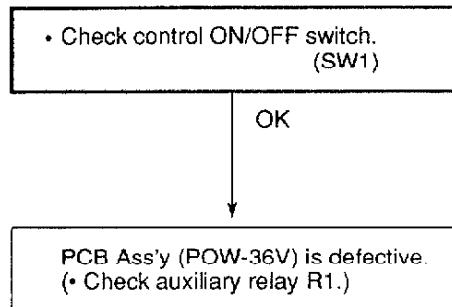
(b) Check fuse on the PCB Ass'y in indoor unit.



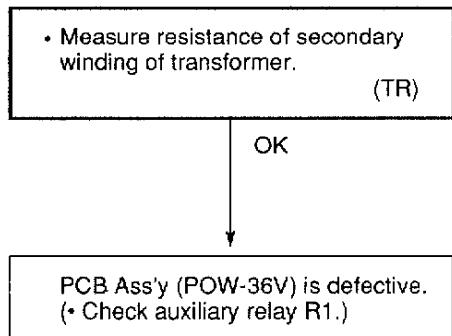
(Neither indoor unit nor outdoor unit runs.) (cont'd)

(c) Check control unit (RCS-36V).

Refer to control unit proper.

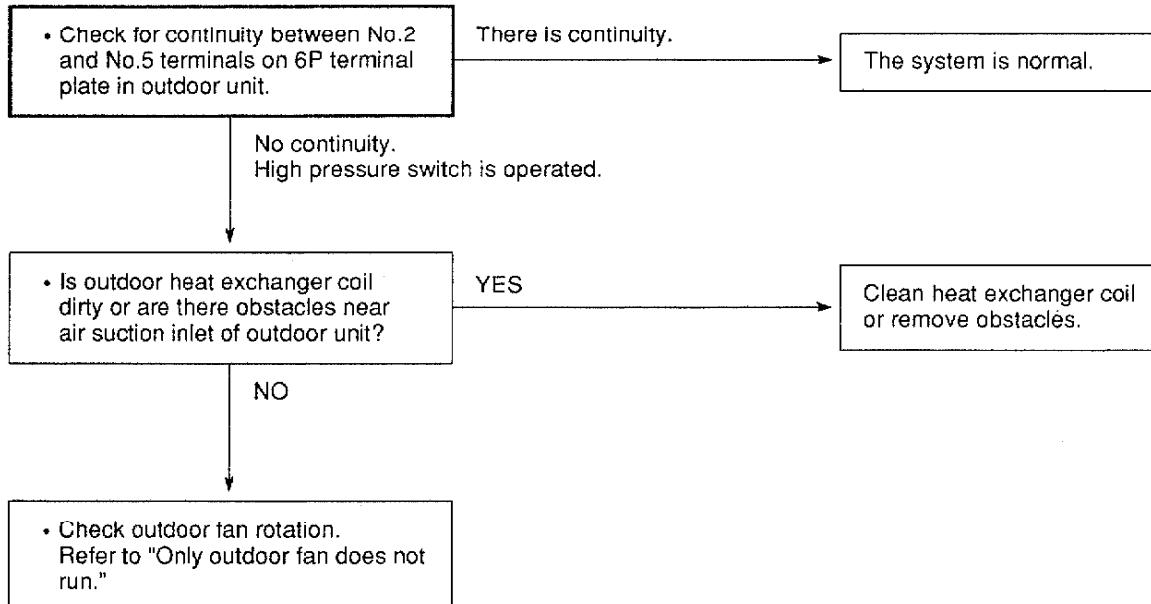


(d) Check transformer.



(e) Check high pressure switch (63PH).

- System does not run when high pressure switch is operated.



(3) Only outdoor unit does not run.

(a) Outdoor unit does not run when air conditioner is in the following conditions.

- In thermo OFF (when the room temperature is below the setting temperature).
- In freeze prevention (when the freeze protection thermo is OFF).

(b) Check electro-magnetic contactor (52C).

- Measure coil resistance of electro-magnetic contactor.

(c) Check PCB Ass'y (POW-36V).

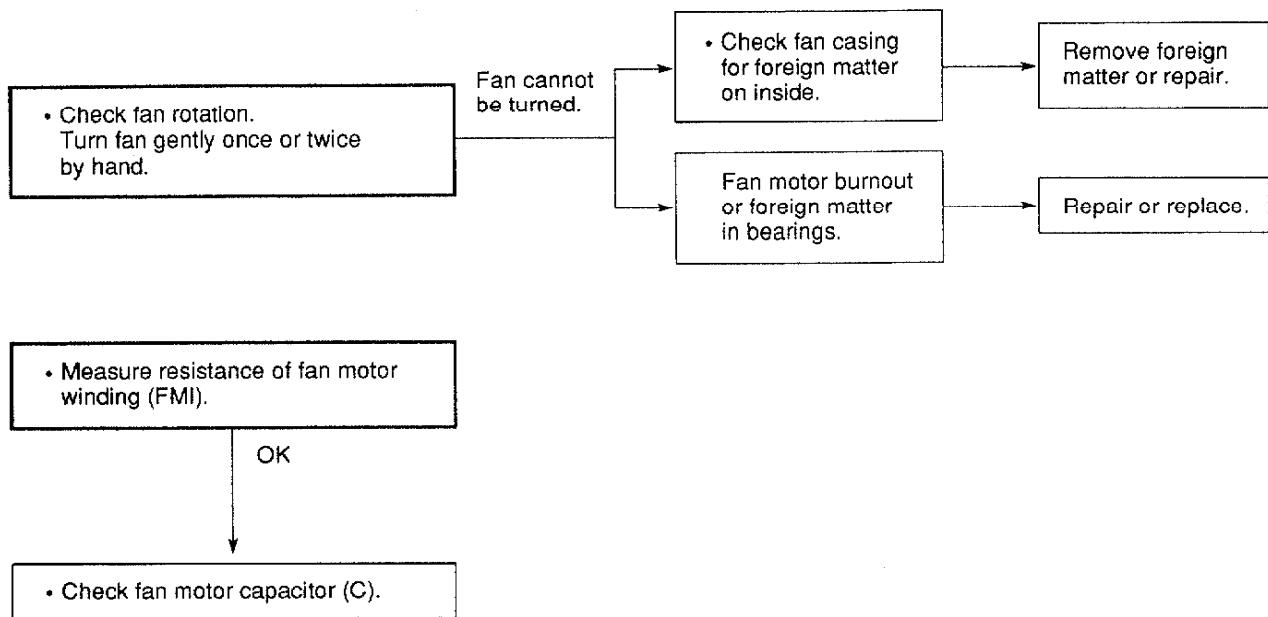
- Measure voltage between No.2 and No.3 terminals on 6P terminal plate in outdoor unit.

No voltage registers.

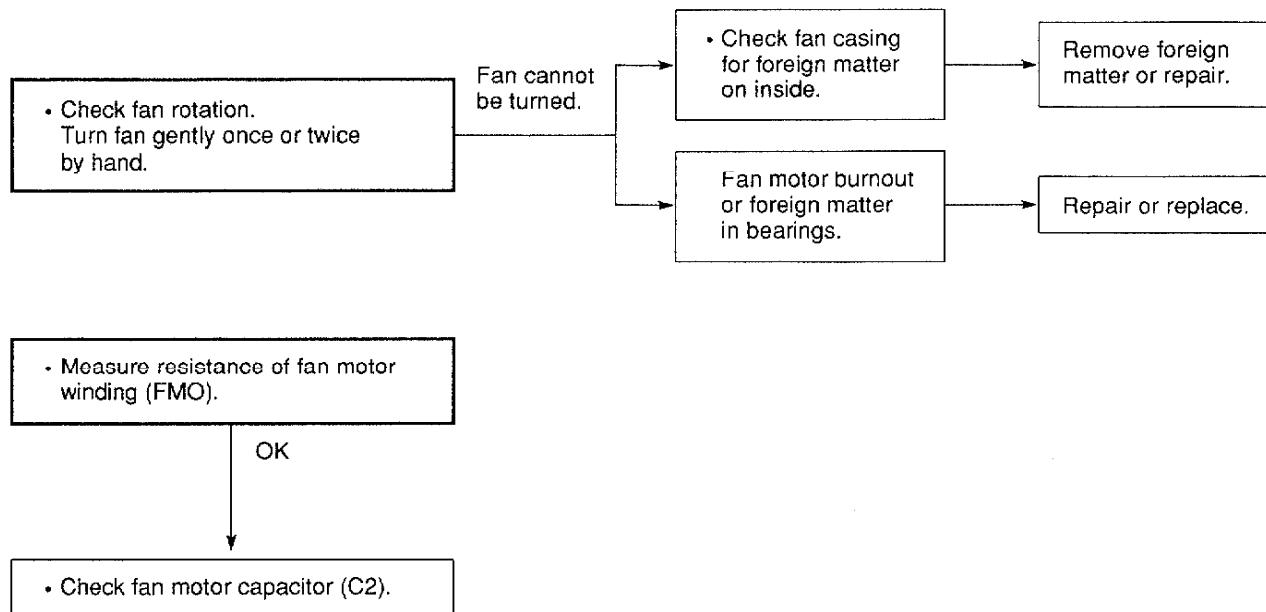
PCB Ass'y is defective.
(Check auxiliary relay RP.)

5-3 A particular component of air conditioner does not operate.

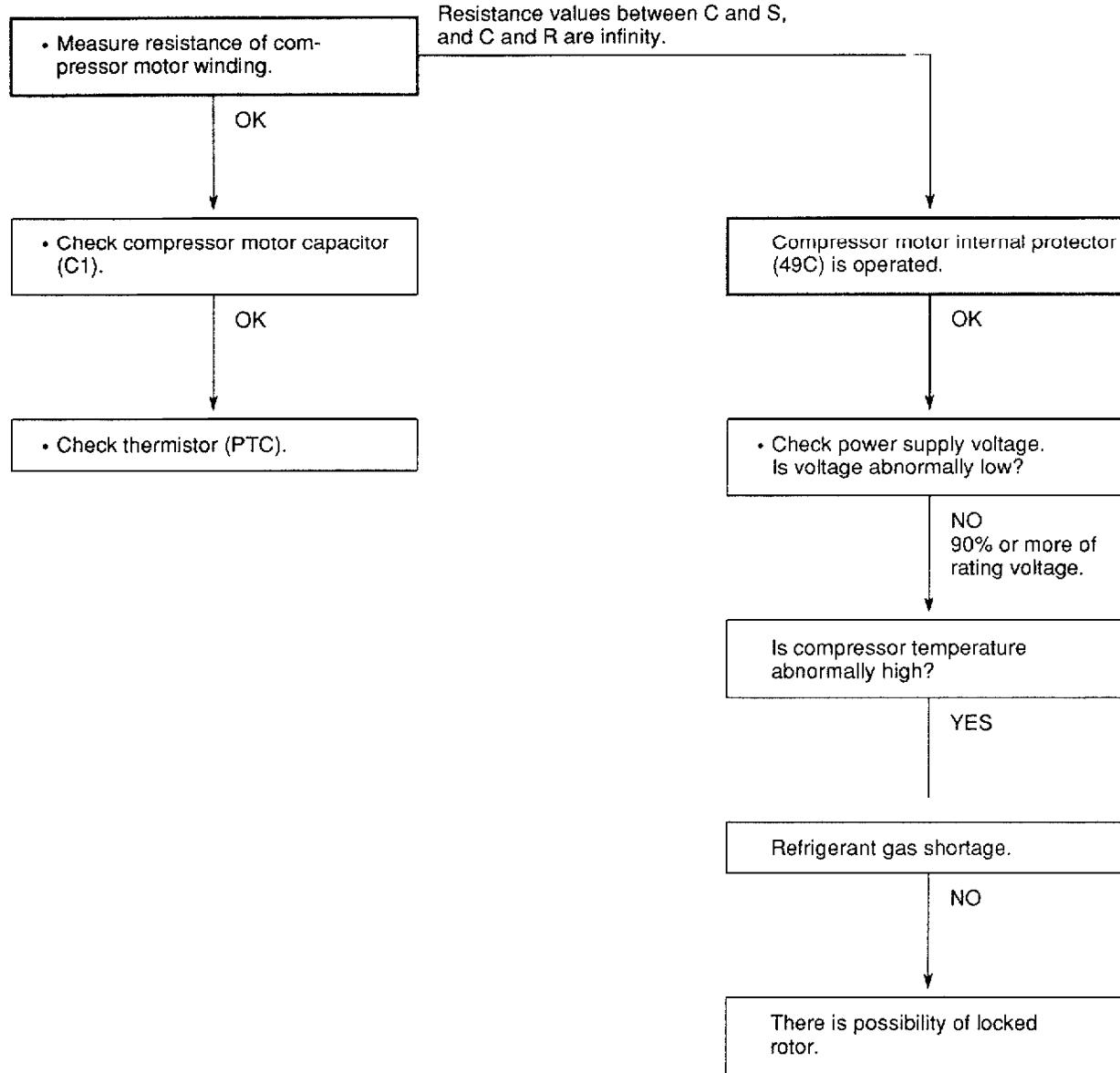
(1) Only indoor fan does not run.



(2) Only outdoor fan does not run.

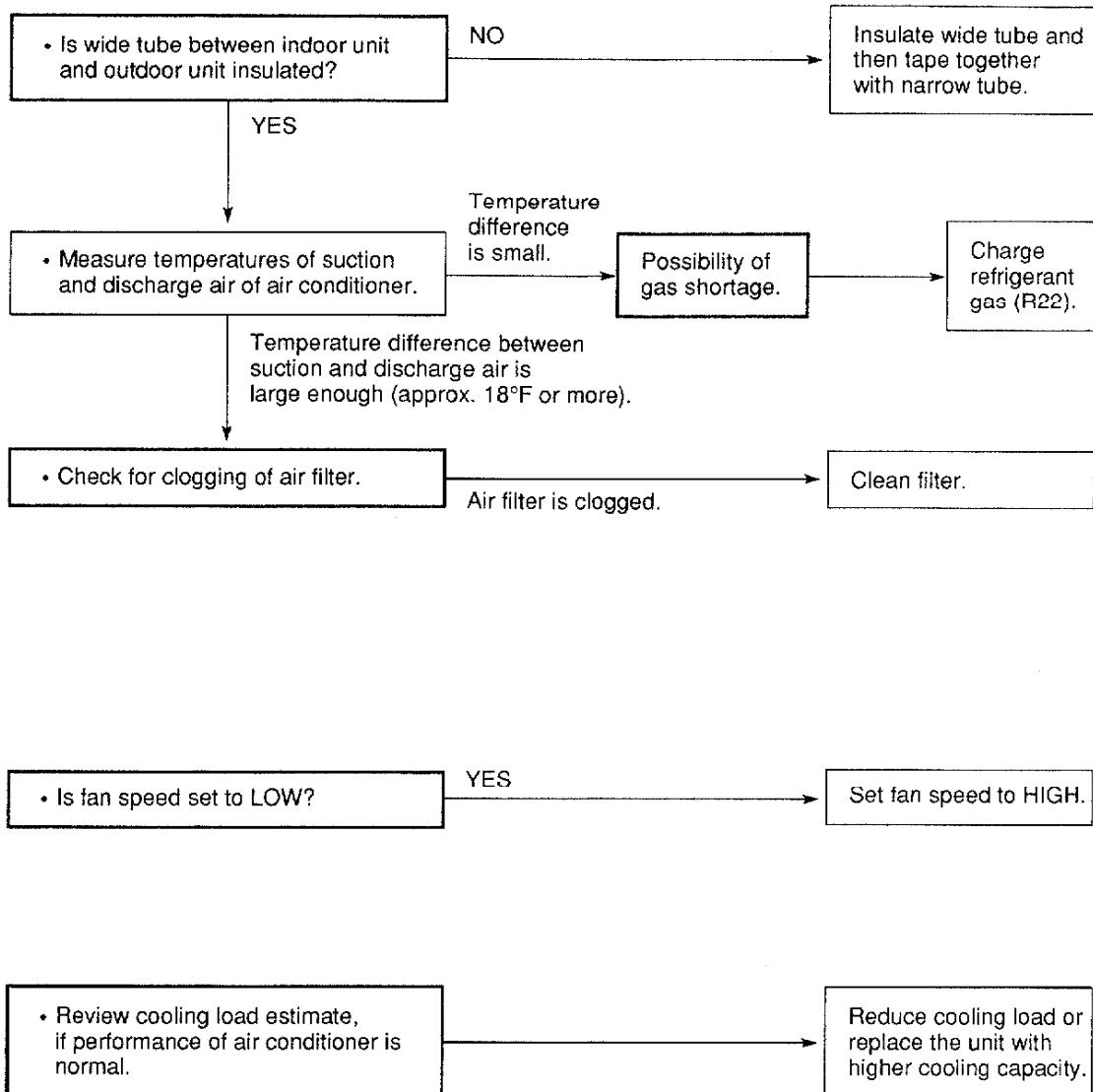


(3) Only compressor does not run.



5-4 Air conditioner operates, but abnormalities occur.

(1) Poor Cooling



(2) Excessive Cooling

- Set thermostat knob to suitable position.

TEST RUN position is used for servicing the air conditioner.
Do not set it to TEST RUN position during normal operation.

- Check thermistor (THM).

When the thermistor is open, the air conditioner does not stop running until the freeze protection thermostat is operated.

6. CHECKING ELECTRICAL COMPONENTS

6-1 Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds $1 \text{ M}\Omega$.

(1) Power Supply Wires

Clamp the grounded wire of the power supply wires with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the power wires. (Fig. 1)

Then measure the resistance between the grounded wire and the other power wires. (Fig. 1)

(2) Indoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on ①, and then ② on the terminal plate. (Fig. 2)

(3) Outdoor Unit

Clamp a metallic part of the unit with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on ⑤, and then ⑥ on the terminal plate. (Fig. 2)

(4) Measurement of Insulation Resistance for Electrical Parts

Disconnect the lead wires of the desired electric part from terminal plate, PCB Ass'y, capacitor, etc. Similarly disconnect the connector. Then measure the insulation resistance. (Figs. 1 to 4)

Refer to Electric Wiring Diagram.

Note: If the probe cannot enter the poles because the hole is too narrow then use a probe with a thinner pin.

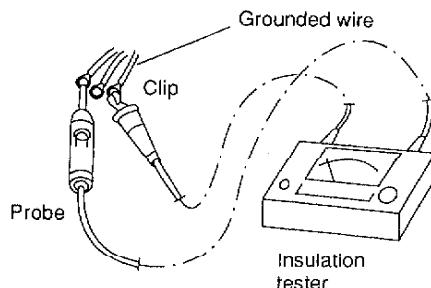


Fig. 1

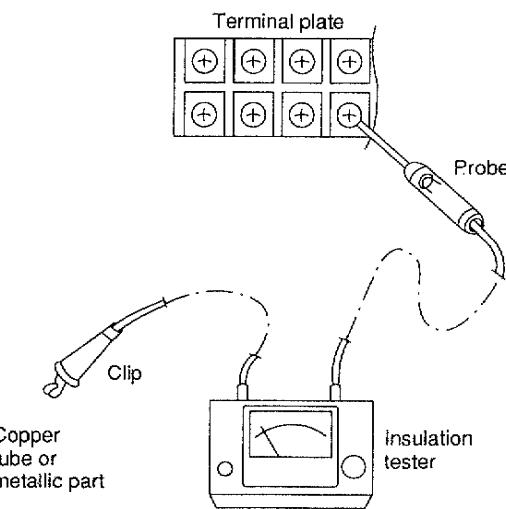


Fig. 2

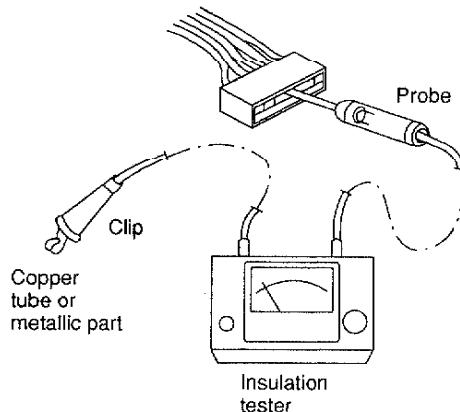


Fig. 3

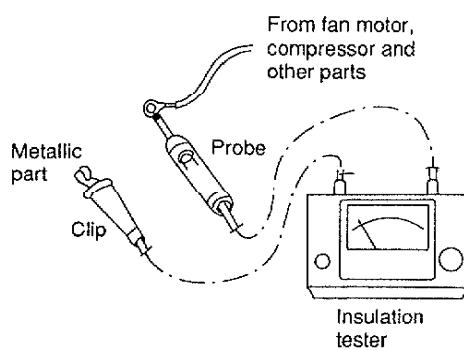


Fig. 4

6-2 Checking Continuity of Fuse on PCB Ass'y

- Check for continuity using a multimeter as shown in Fig. 5.

Note:

Method used to Replace Fuse on PCB Ass'y

- Remove the PCB Ass'y from the electrical component box.
- Pull out the fuse at the metal clasp using pliers while heating the soldered leads on the back side of the PCB Ass'y with a soldering iron (30W or 60W). (Fig. 6)
- Remove the fuse ends one by one. For replacement, insert a fuse of the same rating and solder it. (Allow time to radiate heat during soldering so that the fuse does not melt.)



CAUTION:

When replacing the fuse, be sure not to break down the varistor.

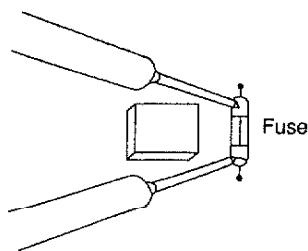


Fig. 5

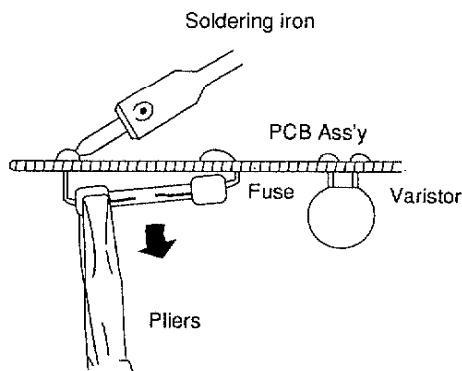


Fig. 6

6-3 Checking Motor Capacitor

Remove the lead wires from the capacitor terminals, and then place a probe on the capacitor terminals as shown in Fig. 7. Observe the deflection of the pointer, setting the resistance measuring range of the multimeter to the maximum value.

The capacitor is "good" if the pointer bounces to a great extent and then gradually returns to its original position.

The range of deflection and deflection time differ according to the capacity of the capacitor.

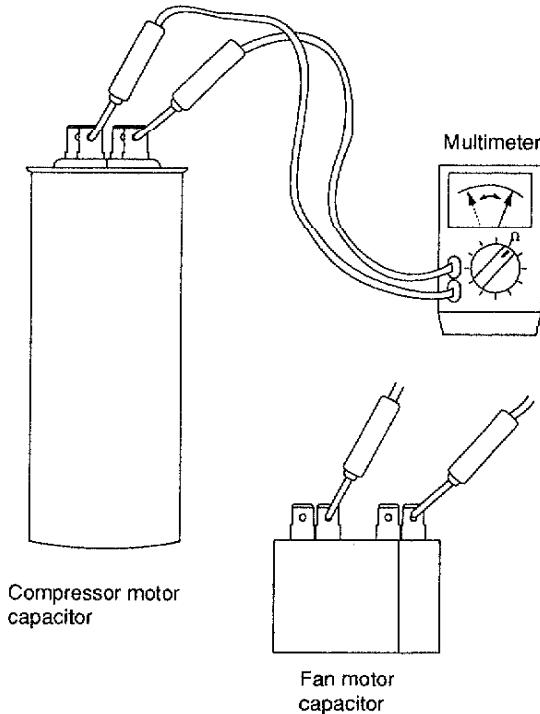


Fig. 7

6-4 Checking Control Unit (RCS-36V) Proper

First, pull out the connector (7P) of the remote control unit from the controller (POW-36V) in the indoor unit.

(1) Checking Operation Switch — SW1

Check the continuity of the terminals between No. 2 and No. 3.

| Checking Point | Operation | |
|----------------|-----------|-----|
| | OFF | ON |
| 2 – 3 | NO | YES |

YES.....Continuity
NO.....No continuity

(2) Checking Fan Speed Selector — SW2

Check the continuity of the terminals between No. 3 and No. 4.

| Checking Point | Fan Speed | |
|----------------|-----------|-----|
| | High | Low |
| 3 – 4 | NO | YES |

YES.....Continuity
NO.....No continuity

(3) Checking Auto Deflector Switch — SW3

Check the continuity of the terminals between No. 3 and No. 6.

| Checking Point | Auto Deflector | |
|----------------|----------------|-----|
| | OFF | ON |
| 3 – 6 | NO | YES |

YES.....Continuity
NO.....No continuity

6-5 Appearance of Electrical Parts

(1) Freeze Protection Thermostat

RTB-4U303

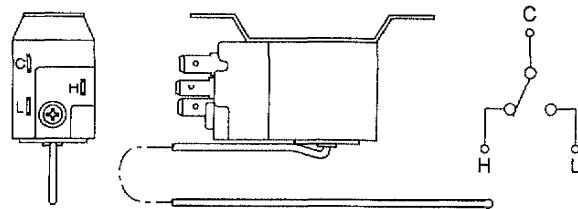


Fig. 8

(2) High Pressure Switch

FTB-2UC01

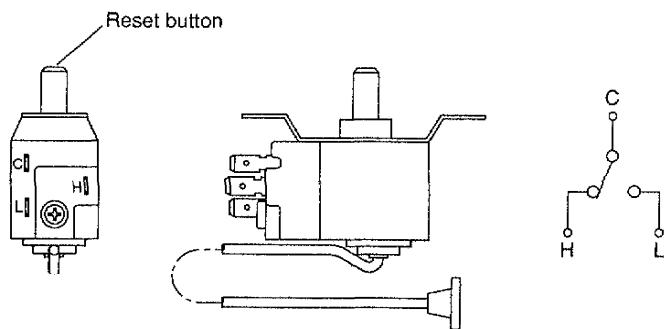


Fig. 9

(3) Thermistor (PTC)

TDK101YV

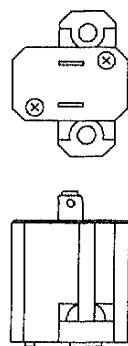


Fig. 10

(4) Electro-Magnetic Contactor

FMCA-1SUL

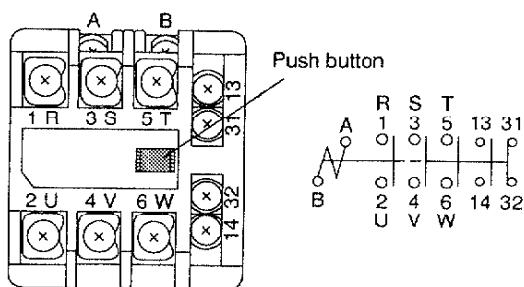


Fig. 11

(5) Thermostat

YTB-4U305F

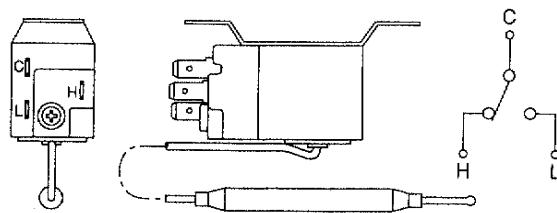


Fig. 12