



OWNER'S MANUAL

PACKAGED TERMINAL AIR CONDITIONER

Cool / Heat Model

STW-2 Series

Operating Instructions

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Installation Instructions

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<p>Model No. STW-2 Series</p> <p>Power Source: 60 Hz, single-phase, 230/208V & 265V</p>

Alert Symbols

The following symbols used in this manual alert you to potentially dangerous conditions to users, service personnel or the appliance:



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.

OPERATING INSTRUCTIONS

Installation Location

- We recommend that this air conditioner be installed properly by qualified installation technicians in accordance with the Installation Instructions provided with the unit.
- Before installation, check that the voltage of the electric supply in your home or office is the same as the voltage shown on the nameplate.



WARNING

- Do not install this air conditioner where there are fumes or flammable gases, or in an extremely humid space such as a greenhouse.
- Do not install the air conditioner where excessively high heat-generating devices are placed.

Electrical Requirements

1. All wiring must conform to the local electrical codes. Consult your dealer or a qualified electrician for details.
2. Each unit must be properly grounded with a ground (or earth) wire or through the supply wiring.
3. Wiring must be done by a qualified electrician.
4. Never use an extension cord with this air conditioner.

Safety Instructions

- Read this Instruction Manual carefully before using this air conditioner. If you still have any difficulties or problems, consult your dealer for help.
- This air conditioner is designed to give you comfortable room conditions. Use this only for its intended purpose as described in this Instruction Manual.
- Avoid letting cooled/heated air blow directly on your body for a long time.



WARNING

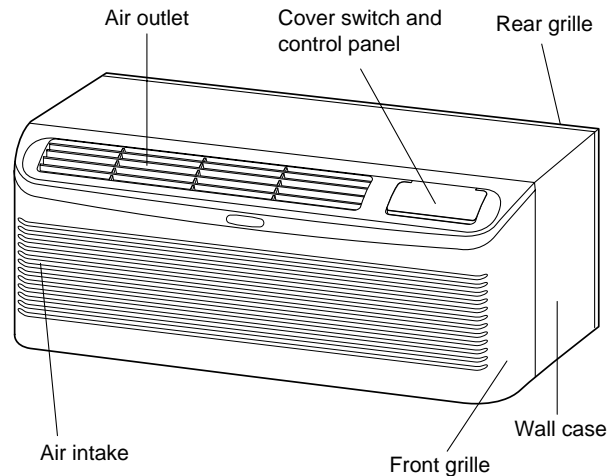
- Never use or store gasoline or other flammable vapor or liquid near the air conditioner — it is very dangerous.



CAUTION

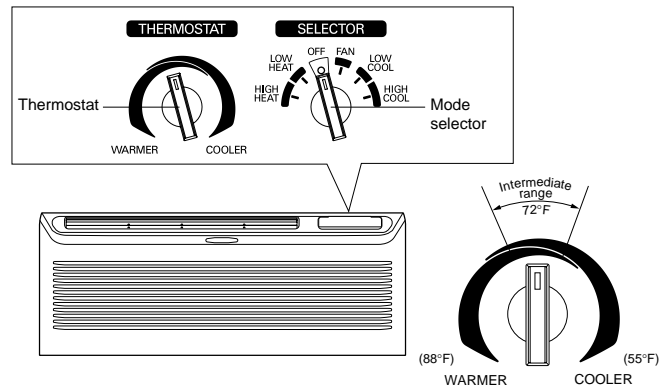
- Do not turn the air conditioner on and off from the power mains switch. Use the mode selector switch.
- Do not stick anything into the air outlet of the unit. This is dangerous because the fan is rotating at high speed.
- Do not let children play with the air conditioner.
- Do not cool or heat the room too much if babies or invalids are present.

Names of Parts



Air Intake	Air from the room is drawn into this section and passes through air filters which remove dust.
Air Outlet	Conditioned air is blown out of the air conditioner through the air outlet.

Control Panel and Operation Functions



Thermostat Control

The thermostat knob is used to control the room temperature. The unit automatically cycles on and off to maintain room temperature. A comfortable temperature will be maintained in most rooms when the control is set to about intermediate range.

Mode Selector

- HI HEAT** provides heating with high fan speed operation.
- LOW HEAT** provides heating with low fan speed operation.
- OFF** setting stops heating or cooling operation.
- FAN** provides fan operation without cooling or heating.
- LO COOL** provides cooling with low fan speed operation.
- HI COOL** provides cooling with high fan speed operation.

* As long as power is connected to the unit, Freeze Protection always functions at any position even at OFF position.

Operation:

1. Set the mode selector for fan, cooling or heating operation.
2. Set the thermostat to the desired position. (Refer to the Setting Temperature Guide on page 2.)

NOTE

The temperatures at the Setting Temperature Guide on Page 2 are provided for reference only, and may differ from the actual temperature of the room.

How to stop the air conditioner:

Set the mode selector to OFF position.

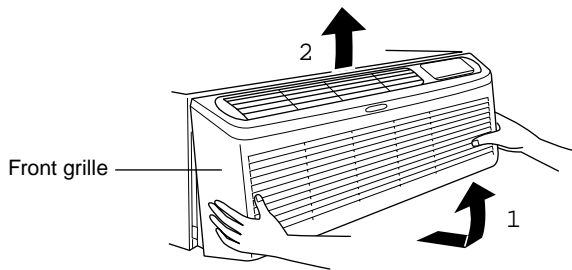
How to restart the air conditioner:

Set the mode selector to the desired position.

Front Grille

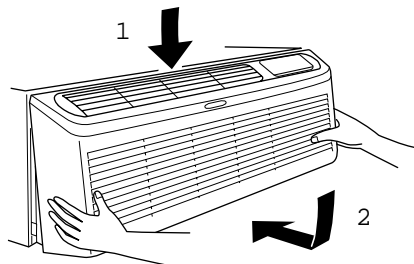
To remove:

Additional controls are located behind the front grille. Pull out to release it from the tabs. Then lift up.



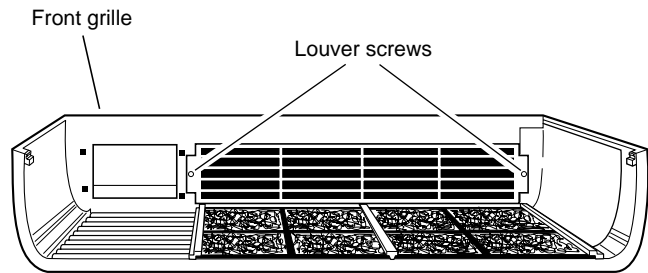
To reinstall:

Place the tabs over the top rail. Push inward until it snaps into place.

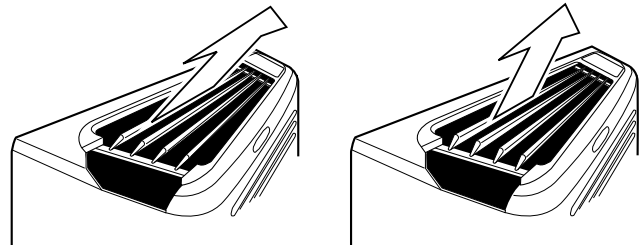


Air Louvers

To change the louver direction, remove the front grille and 2 louver screws that hold the louvers in place. Turn the louver section 180° (end for end), replace the screws and replace the front grille. The textured face of the louver section must be facing toward the room side.



The direction of the heated or cooled air may be adjusted by removing and turning the louvers around.



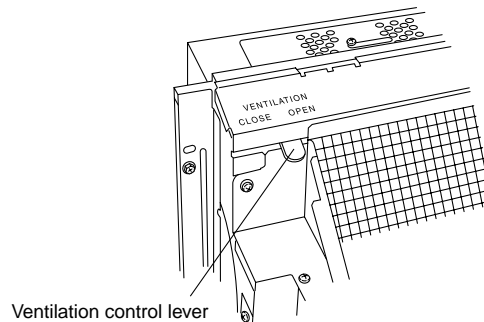
37° OFF VERTICAL

20° OFF VERTICAL

Other Features

Ventilation Control

The ventilation control lever is located at the upper left side of the unit, behind the front grille. This knob is set to CLOSE at the factory. When in this position, the vent door is closed and only indoor air is circulated by the air conditioner. Switching the knob to OPEN opens the vent door to allow outdoor air to enter the room. However, leaving the vent door at OPEN reduces heating or cooling effectiveness and increases operating costs.



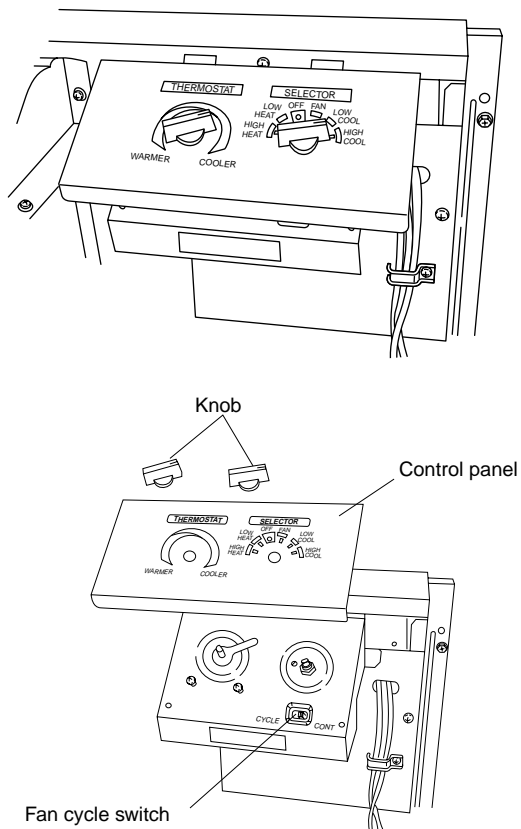
Ventilation control lever

Remote Control

Remote controlling is available with the optional Class 2 Remote Controller and Interface kit. See the Installation Instructions.

Fan Cycle Switch

The Fan Cycle Switch is located under the control panel behind the front grille. This switch is set to CONT at the factory to provide continuous fan operation in cool or heat modes. Leaving the switch at the CONT setting allows continuous circulation of room air and will keep the room temperature at stable condition. If you want the fan to cycle on and off with the compressor or electrical heater, set the switch to CYCLE.



Freeze Protection

Freeze Protection helps prevent plumbing damage due to sub-freezing temperatures — even if you have turned the mode selector switch to OFF. The unit automatically turns on the heater and fan if the room temperature falls to about 46°F.

You do not have to do anything to activate the Freeze Protection. It will work as long as power to the unit has not been interrupted.

Care and Cleaning

Turn off the air conditioner before cleaning.

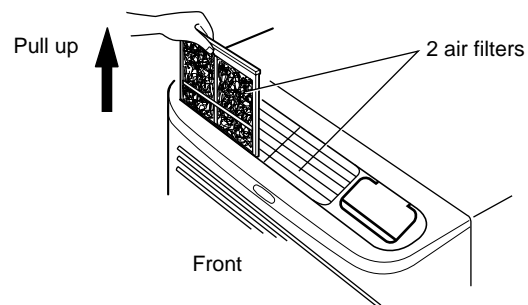
Air Filters

The air filters should be cleaned at least once every two weeks. Clogged filters reduce cooling, heating and air flow.

Keeping these filters clean will:

- Decrease cost of operation.
- Save energy.
- Prevent clogged heat exchanger coils.
- Reduce costly compressor problems.

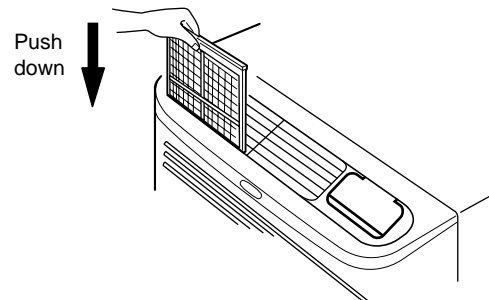
To remove the air filters:



To clean the air filters:

- Vacuum off heavy dirt.
- Run water through the filters.
- Dry thoroughly before replacing.

To reinstall the air filters:



NOTE

Do not operate the air conditioner without the filters in place. If a filter becomes torn or damaged it should be replaced immediately. Operating the unit without the filters in place or with damaged filters will allow dirt and dust to reach the indoor coil and reduce the efficiency of the unit.

Replacement filters (STK01AF) are available from the dealer or installer.

Front Grille & Wall Case

Wash the front grille and wall case finish with mild soap or detergent and lukewarm water.

Control Panel

The control panel is shipped with a protective plastic film. This film can be left on or removed. To clean, use a damp cloth and mild detergent.

Outdoor Coil

The coil on the outdoor side of the unit should be checked periodically and cleaned if clogged with dirt or soot from the atmosphere. If extremely dirty, it may need to be professionally steam cleaned.

Base Pan

In some installations, dirt or other foreign matter may be blown into the unit from the outside and settle in the base pan (the bottom of the unit). Check the base pan periodically and clean it out, if necessary.

Tips for Energy Saving

Do not

- **Block the air intake and outlet of the unit. If they are obstructed, the unit will not work well, and may be damaged.**
- Let direct sunlight into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer to cool the room.

Do

- Keep the air filter clean. (Refer to "Care and Cleaning.")
A clogged filter will impair the performance of the unit.
- To prevent conditioned air from escaping, keep windows, doors and any other openings closed.
- Keep the ventilator closed for economy and maximum cooling.

Troubleshooting

PROBLEM	POSSIBLE CAUSE
AIR CONDITIONER DOES NOT OPERATE	<ul style="list-style-type: none"> • The power cord is not plugged in or circuit breaker is tripped.
AIR CONDITIONER "DOES NOT COOL OR HEAT AS IT SHOULD"	<ul style="list-style-type: none"> • The unit is waiting for the compressor overload protector to reset. • Curtains, blinds or furniture blocking the front of the air conditioner are restricting the air flow. • Thermostat control may not be set high/low enough. Turn the control to a lower or higher position. (NOTE: In some installations, the thermostat control cannot be turned all the way to the highest end or lowest end. This is normal. Do not attempt to force the control beyond its stopping points.) • A dirty air filter is blocking air flow. The filter should be cleaned at least once every 2 weeks. See the instructions in the cleaning section. • The room may have been very hot or very cold when the air conditioner was first turned on. Allow time for it to cool down or warm up. • The ventilation control may be set to the OPEN position, allowing outside air to enter the room.
"BURNING" ODOR AT START OF HEATING OPERATION	<ul style="list-style-type: none"> • Dust on the surface of the electrical heater can cause a "burning" odor at the beginning of the heating operation. This odor should quickly fade.
OPERATING SOUNDS	<ul style="list-style-type: none"> • Relay clicks may be heard when the compressor or fan cycles on and off. This is normal. • The fan runs continuously when the unit is operating unless the Fan Cycle Switch under the control panel is set to CYCLE. In this case, the fan cycles on and off with the electrical heater or compressor.
AIR IS NOT ALWAYS COOL DURING COOLING OPERATION	<ul style="list-style-type: none"> • The Fan Cycle Switch may be set to Fan Cont (continuous). This causes the fan to blow room air even when the compressor is off. The continuous air flow provides better overall temperature control.
AIR IS NOT ALWAYS HOT DURING HEATING OPERATION	<ul style="list-style-type: none"> • The Fan Cycle Switch may be set to Fan Cont (continuous). This causes the fan to blow room air even when the electrical heater is off. The continuous air flow provides better overall temperature control.

INSTALLATION INSTRUCTIONS

IMPORTANT!

Please Read Before Starting

This air conditioner 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 OWNER'S MANUAL before installation and service.
- Follow each installation or service 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.

SPECIAL PRECAUTIONS

When Wiring

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

- All wiring must conform to local electrical codes.
- Each unit must be properly grounded with a ground (or earth) wire or through the supply wiring.
- DO NOT, under any circumstances, cut or remove the third (ground) prong from the power cord plug.
- Never use an extension cord with this air conditioner.
- DO NOT use a damaged power cord, plug, or wall outlet. Replace them immediately.
- DO NOT change the internal wiring or any part of the system.

- DO NOT turn the air conditioner on and off by plugging and unplugging. Use the Operation switch (SELECTOR).
- Follow National Electrical Code (NEC) and local codes, ordinances and regulations. All wiring — including installation of receptacles, must be in accordance with these codes.
- The NEC requires permanent connection for installations over 250 volts.
- Protective devices (fuses or circuit breakers) acceptable for this air conditioner are specified on the nameplate of each unit.
- Aluminum building wiring may pose special problems — consult a qualified electrician.

When Transporting

Be careful when picking up and moving the air conditioner. 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 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.

Tools Needed

- Phillips screwdriver
- Flat blade screwdriver

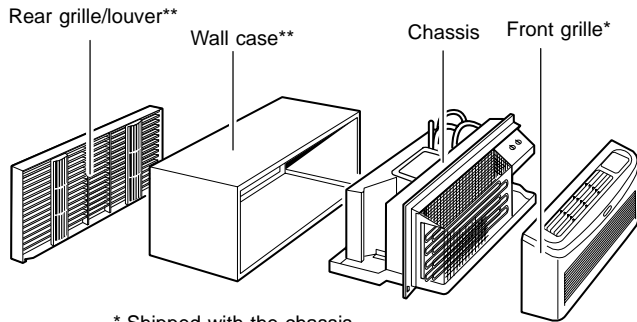
Others



CAUTION

- Before starting the installation, the power to the direct connect wiring should be set to OFF.
- Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.
- Confirm upon completing installation that no refrigerant gas is leaking. If escaped gas comes in contact with a stove, gas water heater, electric room heater or other heat source, it can produce dangerously toxic gas.

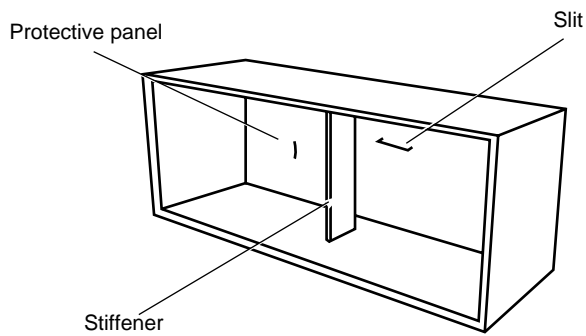
1. NAMES OF PARTS



* Shipped with the chassis
 ** Check essential components list on chassis

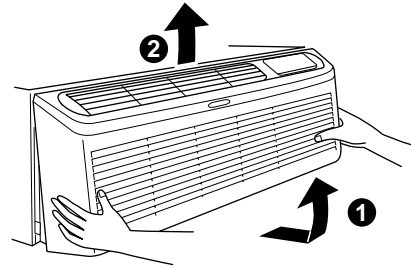
2. WALL CASE AND REAR GRILLE

- 1) The STK01WC wall case must be properly installed according to the instructions packed with the case.
- 2) Remove the corrugated stiffener and the outdoor protective panel. Use the slit in the outdoor panel as a grip and push out.
- 3) Install the rear grille from the room side according to the instructions packed with the grille.

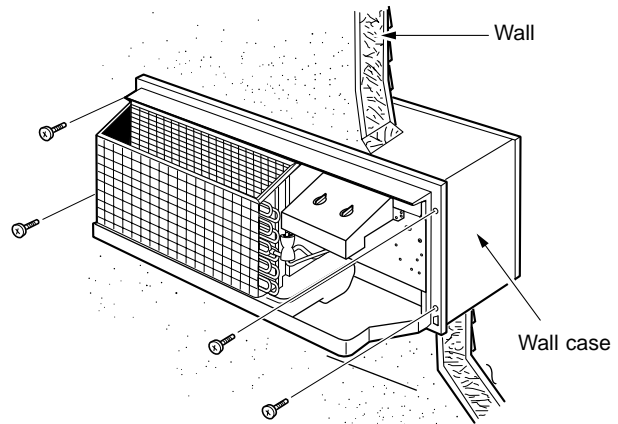


3. INSTALLATION

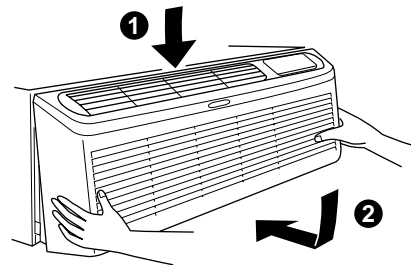
- 1) Remove the front grille by pulling out at the bottom to release it, then lift it up to clear the rail along the chassis top.



- 2) Slide the chassis into the wall case and secure with four screws through the chassis flange holes.



- 3) Reinstall the front grille by hooking the top over the rail along the chassis top, then pushing it in at the bottom.



4. PERMANENT CONNECTION

4-1. For 230/208V Units

The 230/208V model is equipped for connection with a power cord according to the unit capacity at the time of shipment.

Should local codes or special requirements specify permanent connection of this unit, use optional adapter kit (Cover plate and Bottom plate) STK02JB.

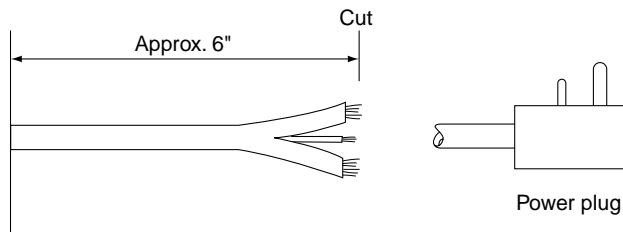
A power cord is supplied with 230/208V units. For direct-connect applications, the power cord is cut and a wire nut connection is made to the building power supply. The cover plate and bottom plate are the junction box kit. The conduit and wire nuts are supplied by the installer.

4-1-1. Preparation

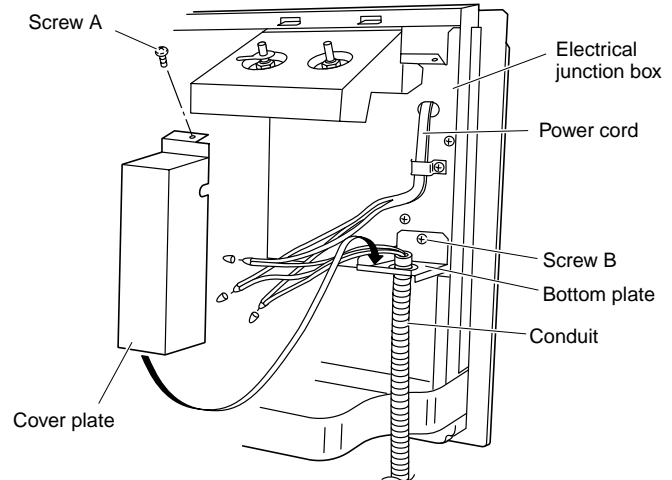
- 1) The electrical rating marked on the previously installed air conditioner must be the same as the supply branch circuit.
- 2) The modification kit provides for connection of 1/2" trade size electrical conduit and connection to a wiring system in accordance with the National Electric Code, ANSI/NFPA No. 70-1999.

4-1-2. Installation

- 1) Remove the Front Grille from the chassis by lifting out and up.
- 2) Cut the power cord approximately 6" from the Electrical Junction Box.



- 3) Split and strip the wires as shown above.
- 4) Install the Bottom Plate using the provided field supplied conduit and power supply conductors to the unit with screw "B".
- 5) Connect Power Supply wires to the stripped inner wires with the wire nuts.
- 6) Dress the wiring inside the compartment and attach the cover plate with screw "A".
- 7) Reinstall the Front Grille.



4-2. For 265V Units

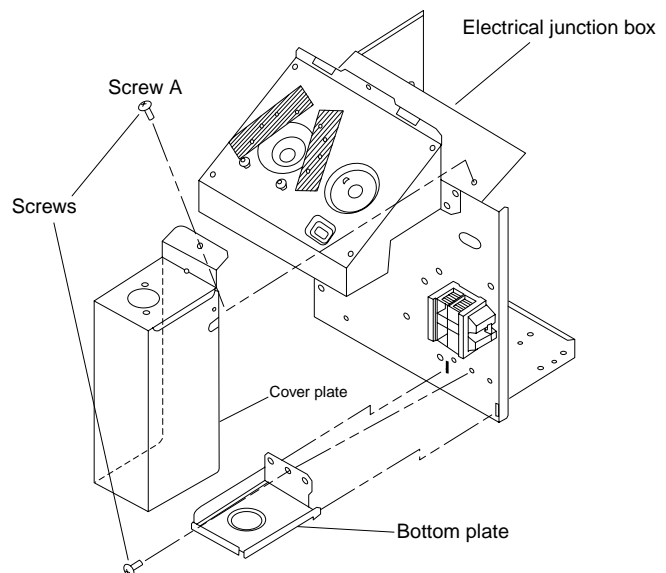
All 265V units are direct connected and come with the cover plate (junction box) and bottom plate. The conduit is field-supplied by the installer.

4-2-1. Preparation

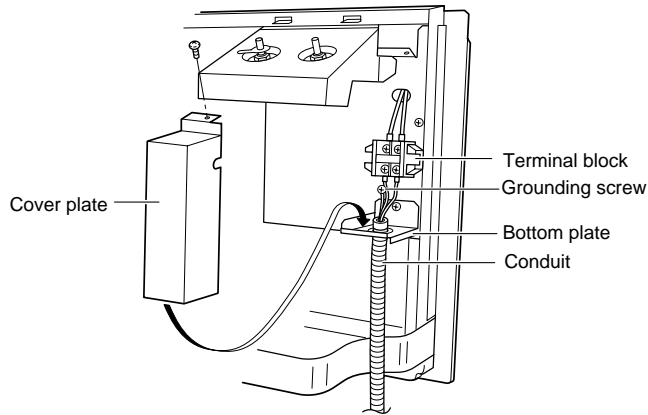
- 1) The electrical rating marked on the previously installed air conditioner must be the same as the supply branch circuit.
- 2) The unit provides for connection of 1/2 trade size electrical conduit and provision for connection to a wiring system in accordance with the National Electrical Code ANSI/NFPA No. 70-1993.

4-2-2. Installation

- 1) Remove the front grille from the chassis by lifting out and up to clear mounting brackets. (See "Front Grille" on page 3.)
- 2) Remove the "A" screw and cover plate from the mounting plate.



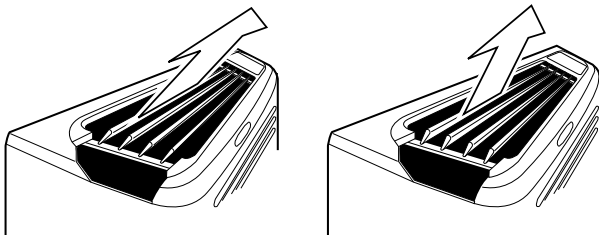
- 3) Attach the field-supplied conduit to the bottom plate.
- 4) Connect the power supply conductors to the Terminal block and the Grounding screw.
- 5) Attach the cover plate.



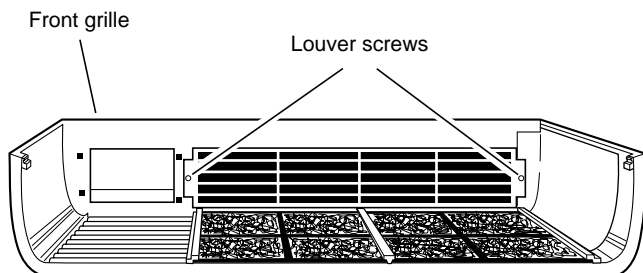
- 6) Reinstall the front grille. (See "Front Grille" on page 3.)

5. AIR LOUVERS

The direction of the heated or cooled air may be adjusted by removing and turning the louvers around.



To change the louver direction, remove the front grille and 2 louver screws that hold the louvers in place. Turn the louver section 180° (end for end), replace the screws and replace the front grille. The textured face of the louver section must be facing toward the room side.

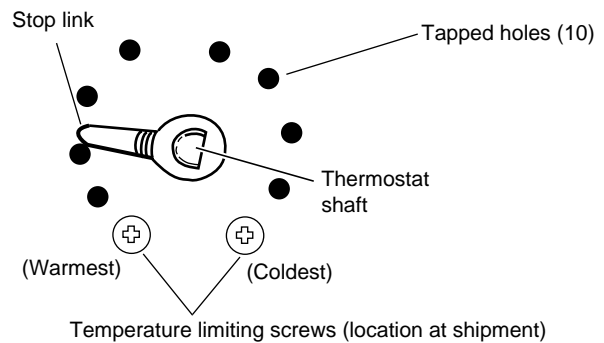


6. TEMPERATURE LIMITING

The normal range of the thermostat control is approximately 55°F to 88°F. The control range may be narrowed by the use of the Temperature Limiting screws located behind the control panel.

Repositioning the screw on the left will limit the maximum temperature about 3.7°F for each hole in a clockwise rotation; the screw on the right will limit the minimum temperature when moved counter-clockwise. Limiting the maximum and minimum settings prevents users from turning the controls to extreme positions. Restrictions to full rotation of the thermostat knob may require explanation to the room occupant that the unit will provide comfortable conditions at the settings allowed.

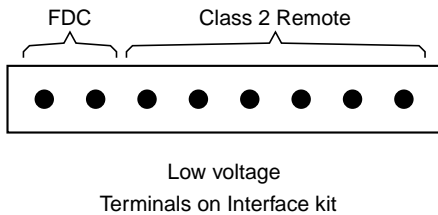
To access the limiting screws, remove the front grille, the thermostat knob and the operation knob by pulling each knob off its shaft and the control panel. (See the illustration "Fan Cycle Switch" on page 4.) Set the limiting screws to the desired setting, and replace the control panel and the control knobs. If the settings do not allow sufficient room temperature control, the limiting screws may have to be repositioned.



When the limiting screws are relocated, it is recommended that the screws be set no higher than the second hole from the original bottom position. This provides an operating range between approximately 58°F and 80°F. In order to maximize the benefit of the temperature limiting, it may be necessary to adjust the limiting screws seasonally, maintained at moderate temperatures (i.e., heating season temperatures limited between 60°F and 75°F; cooling season temperatures limited between 85°F and 65°F).

7. REMOTE CONTROL

The unit may be controlled either by the unit-mounted controls (Control Panel) or by optional Class 2 thermo controller (SC2001 for Cool/Heat Model and SC2201 for Heat Pump Model) with optional Interface kit (STK02LVC). Detailed instructions are included in the kit.



8. FRONT DESK CONTROL

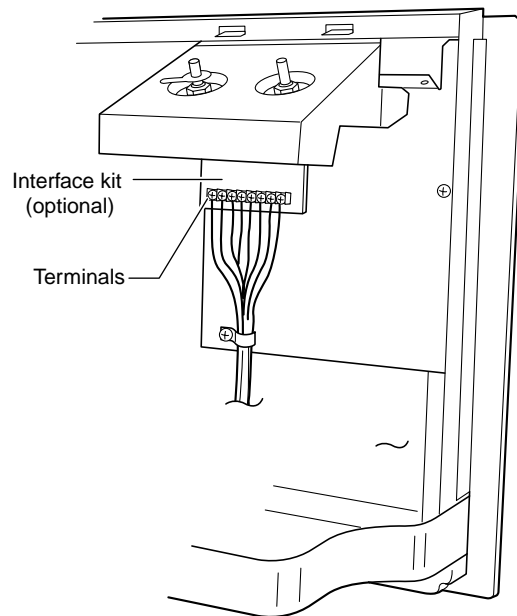
The unit may be connected to a switch at the front desk to control on and off operation of the compressor or heater from the front desk with the optional interface kit. (See the picture below.) When the switch is set to OPEN, the unit is operable. When the switch is set to CLOSED, the unit is made inoperative. Detailed hook-up instructions are in the interface kit. Follow the recommended wire sizing in the table below. Two wires must be used from each FDC switch to each individual unit.

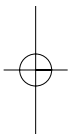
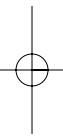
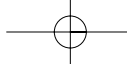
Good wiring practices (e.g. twisted pairs, SEPARATION FROM POWER CIRCUITS) must be followed to minimize induced voltages which may harm the control system. Do not use a common line in the FDC wiring.

A 24V A/C transformer is contained within the unit and no external voltage should be applied to the unit through the FDC switch. The Freeze Protection remains in active mode to help protect against low temperature damage even though the unit may be OFF by FDC.

Recommended Wire Size for Front Desk Control Installation

Wire Size #AWG	Maximum Allowable Length
#22	600 ft.
#20	900 ft.
#18	1500 ft.
#16	2000 ft.





Product Information

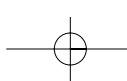
If you have problems or questions concerning your Air Conditioner, you will need the following information. Model and serial numbers are on the nameplate of the cabinet.

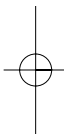
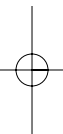
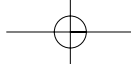
Model No. _____ Serial No. _____

Date of purchase _____

Dealer's address _____

Phone number _____





SANYO FISHER COMPANY
A DIVISION OF SANYO NORTH AMERICA CORPORATION
21605 plummer Street, Chatsworth, CA 91311 U.S.A.

In Canada
SANYO Canada Inc.
300 Applewood Crescent, Concord, Ontario, L4K 5C7, Canada

