TRANE®

Installation Manual

CASSETTE

Split System, 1-5 Tons
18,000 - 38,000 Btu
Underceiling Type
MCC Series 50 Hz

Models
Cooling Only
MCC 518 AB
MCC 524 AB
MCC 530 AB
MCC 536 AB

February 2000 **MCC-SVN01A-EN**

General Information

General Information

This Installation Manual is given as a guide to good practice in the installation by the installer of MCC mini-split system. Installation procedures should be performed in the sequence that they appear in this manual.

For installing the unit to operate properly and reliably, it must be installed in accordance with these instructions. Also, the services of a qualified service technician should be employed, through the maintenance contract with a reputable service company.

Read this Installation Manual completely before installing the air conditioning system.

About this Manual

Cautions appear at appropriate places in this Installation Manual. Your personal safety and the proper operation of this machine require that you follow them carefully.
The Trane Company assumes no liability for installations or servicing performed by unqualified personnel.
All phases of the installation of this air conditioning system must conform to all national, provincial, state and local codes.

About the Unit

These MCC units are assembled, pressure tested, dehydrated, charged and run tested before shipment. The information contained in this manual applies to MCC units are designed to operate in cooling mode only.

Trane MCC series offer ceiling mounted installation to leave the floor space uncluttered, and equipped with LCD wireless remote control.

Reception

On arrival, inspect the unit before signing the delivery note. Specify any damage of the unit on the delivery note, and send a registered letter of protest to the last carrier of the goods within 72 hours of delivery. Notify the dealer at the same time.

The unit should be totally inspected within 7 days of delivery. If any concealed damage is discovered, send a registered letter of protest to the carrier within 7 days of delivery and notify the dealer.

Warning

Warnings are provided at appropriate places in this manual to indicate to installers, operators and service personnel of potentially hazardous situations which, if not avoided, COULD result in death or serious injury.

Caution

Cautions are provided at appropriate places in this manual to indicate to installers, operators, and service personnel of potentially hazardous situations which, if not avoided, MAY result in minor or moderate injury or malfunction of the unit.

Your personal safety and the proper operation of this unit require that you follow them carefully. The Trane Company assumes no liability for installations or servicing performed by unqualified personnel.

Warranty

Warranty is based on the general terms and conditions by country. The warranty is void if the equipment is modified or repaired without the written approval of The Trane Company, if the operating limits are exceeded or if the control system or the electrical wiring is modified.

Damage due to inappropriate installation, lack of knowledge or failure to comply with the manufacturer's instructions, is not covered by the warranty obligation.
If the installation does not conform to the rules described in Installation Manual, it may entail cancellation of warranty and liabilities by The Trane Company.

Important

This document is customer property and is to remain with unit. Please place in service information pack upon completion of work.
These instructions do not cover all variations in systems, nor do they provide for every possible contingency to be met in connection with installation.
Should further information be desired or should particular problems arise which are not covered sufficiently in this manual, the matter should be referred to your authorized Trane dealer.

Contents

Indoor Unit Installation

Where to install Indoor Unit

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.

Indoor Unit Installation

- Select the location where a space is more than 100 cm. as shown in figure 1 also ensure that the position dose not interfere with light fitting, sprinkle head, etc.
- Determine the ceiling hole by using the paper pattern.

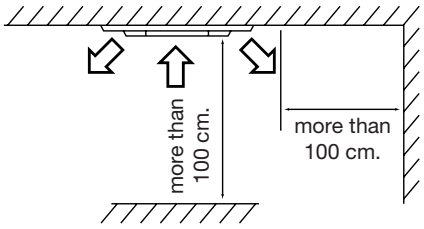


Figure 1

- Determine the mounting position on ceiling by using position Ⓐ Ⓑ Ⓒ and Ⓓ in the paper pattern.

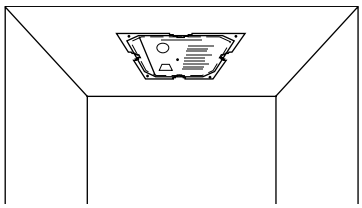


Figure 2

- Hang the four mounting rods to the positions marked as picture shown in figure 3 (using twelve nuts and eight washers to support the suspension brackets). Suspend the unit to the mounting rods. Lock the nuts, ensure for good drainage, and check whether the unit is on horizontal level by using leveling guage.

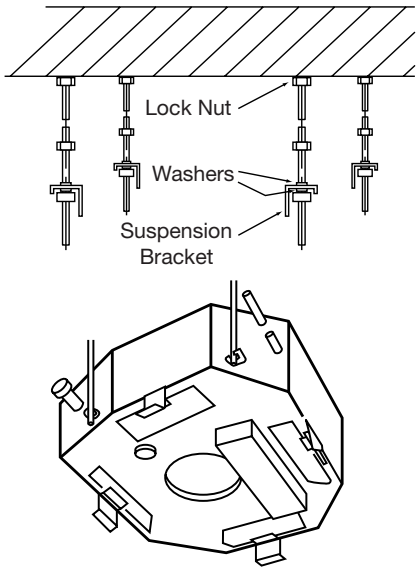


Figure 3

- Install the leveling metal plate to adjust the gap between the unit and a ceiling, fixing the screws following No. ①②③ and ④ in paper pattern.

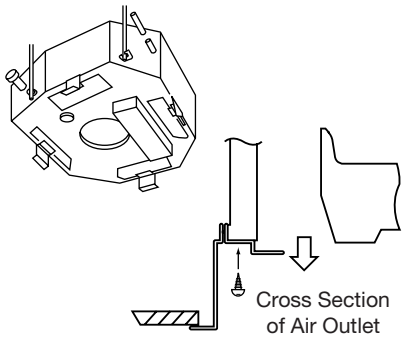


Figure 4

- Remove four screws (M8). Fix the front panel with the units by tighten up four screws (M8).

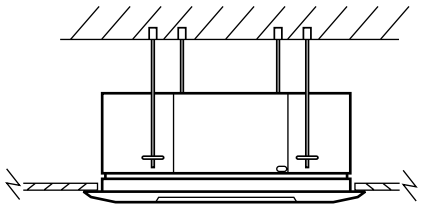


Figure 5

Caution: Over tightening the screws will distort the front panel.

Outdoor Unit Installation

Where to install Outdoor Unit

- The foundation must be solid enough to bear the weight and vibration of the unit.
- The space around the unit is adequate for ventilation.
- The location is not close to any flamable gases.
- The location is sufficiently isolated so that the running noise and the hot exhaust air do not disturb the users or their neighbors.
- Easy access to check and to maintain.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.

Caution

Installation in the following places may cause problems. If it is unavoidable to use such places, consult with your distributor or dealer.

- A place with machine oil.
- A saline place such as a place very close to a seashore.
- A place with sulphur gas.
- A place where high-frequency waves are generated by radio equipment, welder and medical equipment.

Remote Control Installation

Locate and attach the wireless remote control as follows:

- Do not place the remote control near heat sources or expose to the direct rays of the sun.
- Do not expose the remote control to the indoor unit's supply air stream.
- Do not place in a confined space.
- Attach the remote control holder as shown in figure 8.

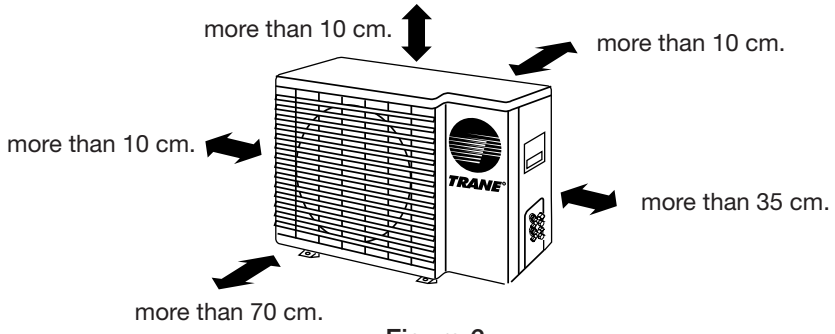


Figure 6

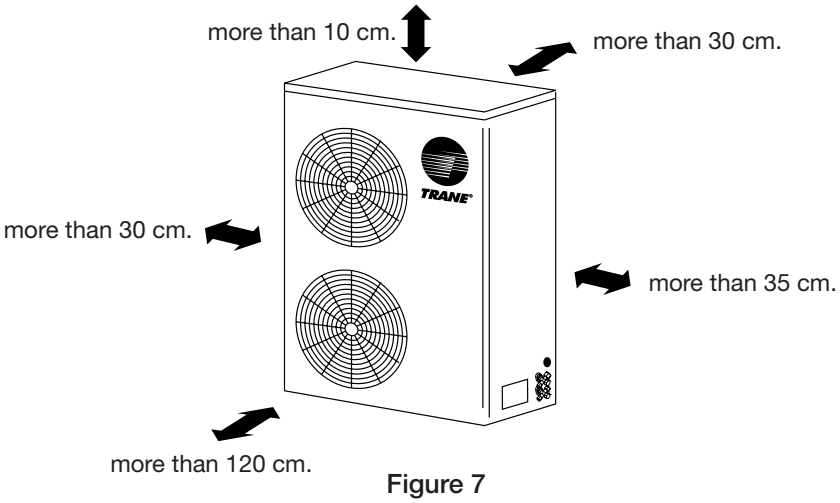
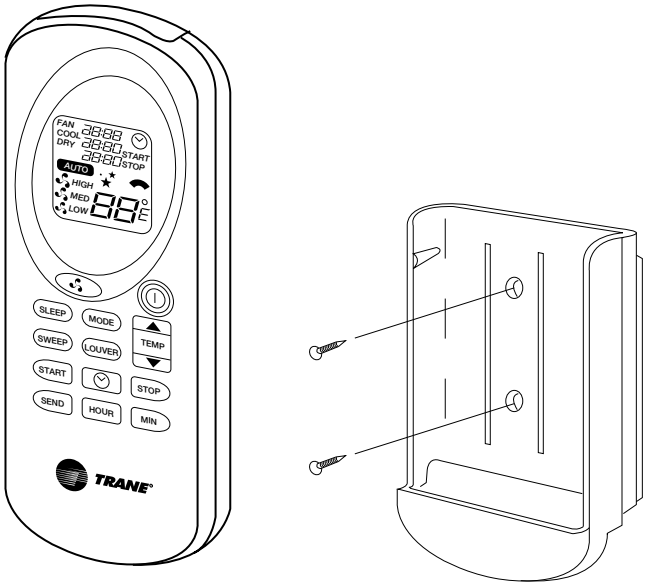


Figure 7



Wireless Remote Control

Figure 8

Connection of Refrigerant Tubing and Condensate Drain Piping

Connecting the unit with flaring procedure

1. Flaring (If piping is procured or cut at the site). Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 30-50 cm. longer than the tubing length you estimate.
2. Hold each pipe downward when cutting and remove burrs at the end of the copper tube with a tube reamer or file. This process is important and should be done carefully to make a good flare (Figure 9 and Figure 10).

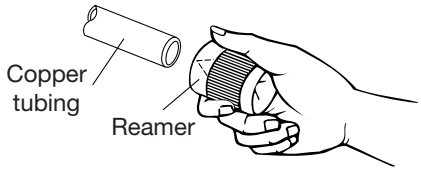


Figure 9

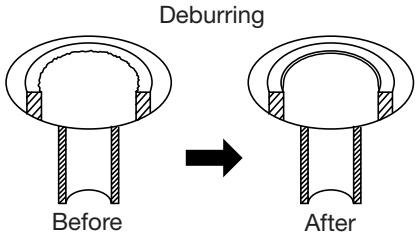


Figure 10

When reaming, hold the tube end downward and be sure that no copper scraps fall into the tube.

3. Remove the flare nut from the unit and be sure to mount it on the copper tube.
4. Make a flare at the end of copper tube with a flare tool (Figure 11).

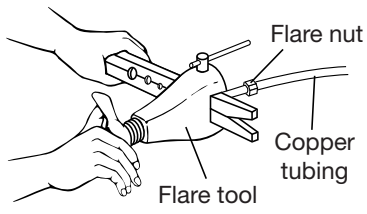


Figure 11

A good flare should have the following characteristics:

- Inside surface is glossy and smooth.
- Edge is smooth.
- Tapered sides are of uniform length.

Bending

5. When bending the tube, be careful not to crush it. To prevent crushing of the tube, bend it gently and do not bend the tube at a radius curvature of less than 100 mm.
6. If the copper tube is bent or pulled too often, it will become stiff. Do not bend the pipe more than three times at one place.

Cautions before Connecting Tubes Tightly

7. Be sure to apply a sealing cap or water-proof tape to prevent dust or water from getting into the tubes before they are used.
8. Be sure to apply refrigerant lubricant to the matching surfaces of the flare and union before connecting them together. This is effective for reducing gas leaks (Figure 12).

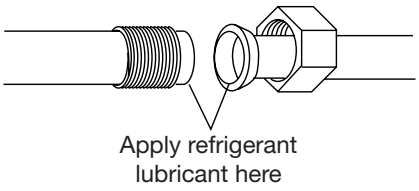


Figure 12

Connection

9. For proper connection, align the union tube and flare tube straight with each other, then screw in the flare nut lightly at first to obtain a smooth match (Figure 13).

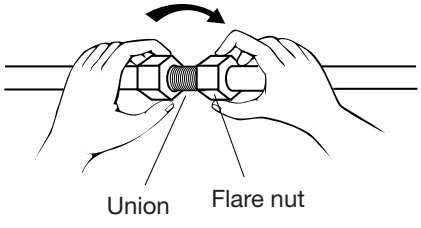


Figure 13

10. Tighten the flare nut to the specified tightening torque with torque wrench and adjustable wrench.

Condensate Drain Piping

- The drain hose should run straight down the wall to a level where the runoff will not stain the wall.
- There should be no traps. Avoid putting the end of the hose in water.
- To conveniently drain the system, the drain hose must slant downward, with a slope of at least 1 : 50 to prevent leakage as shown in figure 14.

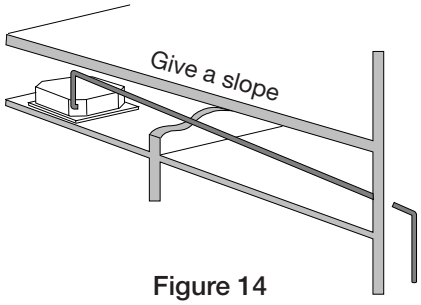


Figure 14

- When the drain hose is placed in the room, insulate the hose with foam polyethylene to avoid damage to the ceiling or furniture.
- After completing installation of refrigerant lines, wiring and drain connections, bind the tubing, wiring and drain hose (check if local codes permit binding) into a bundle by using tape at 100 or 200 mm (4" to 8") intervals. Make sure the drain hose is at the bottom of the bundle (Figure 15).

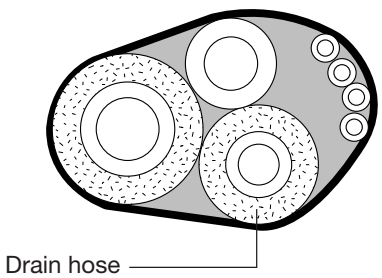


Figure 15

Leak Check and System Evacuation

Leak Check
After the connection operation of refrigerant lines to both the outdoor and indoor unit is completed, the field brazed connections must be checked for leaks. Pressurize the system through the service valve with dry nitrogen to 250 psi. Use soap bubbles or other leak-checking methods to ensure that all field joints are leak free. If not, release pressure, repair and repeat leak test.

System Evacuation
1. After completion of leak check, evacuate the system.
2. Attach appropriate hoses from manifold gauge to gas and liquid line pressure taps.
   Note: Unnecessary switching of hoses can be avoided and complete evacuation of all lines leading to sealed system can be accomplished with manifold center hose and connecting branch hose to a cylinder of R-22 and vacuum pump.
3. Attach center hose of manifold gauges to vacuum pump.
4. Evacuate the system to hold a 350 micron vacuum.
5. Close off valve to vacuum pump and observe the micron gauge. If gauge pressure rised above 500 microns in one (1) minute, then evacuation is incomplete or the system has a leak.
6. If vacuum gauge does not rise above 500 microns in one (1) minute, the evacuation should be complete.
7. With vacuum pump and micron gauge blanked off, open valve on R-22 cylinder and allow refrigerant pressure to build up to about 40 psig.
8. Close valve on the R-22 supply cylinder. Close valves on manifold gauge set and remove refrigerant charging hoses from liquid and gas gauge ports.
9. Leak test the entire system. Using proper procedures and caution, repair any leaks found and repeat the leak test.

Refrigerant Charging Procedure
Charge refrigerant through the gauge port on the liquid line until pressure at gauge is up to 120-150 psi. Once the charge enters the system, backseat (open) the liquid line service valve and disconnect the charging line and replace the cap on the gauge port.

Gaseous Charging
This procedure is accomplished with the unit operating. Electrical connections must be complete. Do not proceed until the system is ready to operate.

Procedure
1. Connect R-22 drum with gauge manifold to the Schrader valves (pressure taps) on the compressor discharge and suction lines.
2. Turn on power to the unit. Allow the system to run for five to ten minutes to stabilize operating conditions.
3. Once proper airflow is established, observe the suction and head pressure gauges on the gauge manifold. Pressure reading should fall approximately at the normal points. Add or remove refrigerant (gas only) as required to obtain correct head and suction pressures. Check suction line superheat and condenser sub-cooling to ensure the unit is operating properly.
4. Disconnect all power to the unit.
5. Remove the charging system from the unit and close the opening in the bottom of the control box with the pivotal cover before attempting to replace access panel.

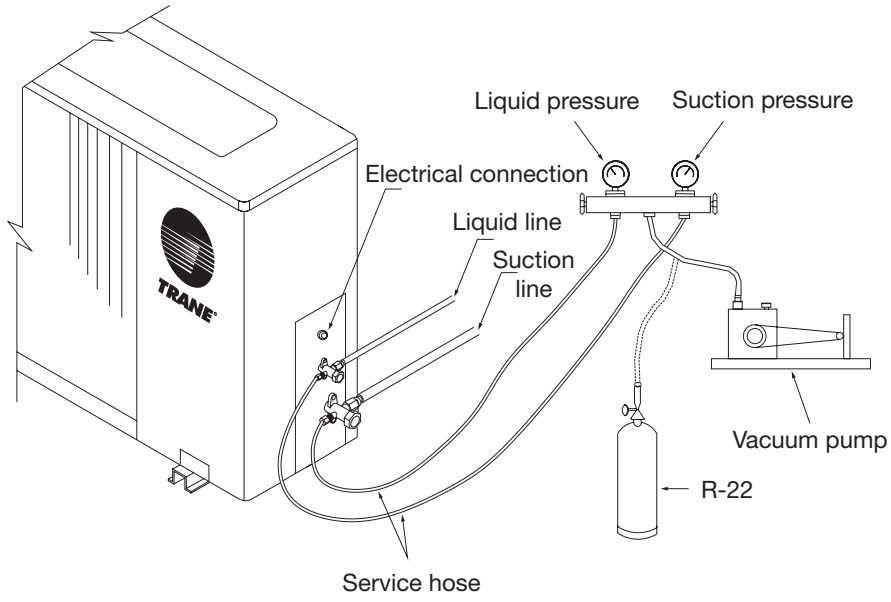


Figure 16

Electrical Installation

All wiring and grounding must comply with local electrical codes.

1. **Wiring**
   Important Safeguards:
   - Check the unit nameplate for electrical rating. Be sure wiring is done according to local codes and wiring diagram.
   - Connect electrical ground to all units.
   - Wiring should not touch refrigerant tubing, compressor, motors or moving parts.
   - The manufacturer will accept no responsibility for problems caused by unauthorized changes in the internal wiring.
   - Connect the wiring firmly.
   - Use copper conduction only.

2. **Electrical Connections**
   - See Section: Wiring System Diagram.
   - Bare the ends of electric wire.
   - After retaining the wire, check that all the terminal screws are firmly tightened.

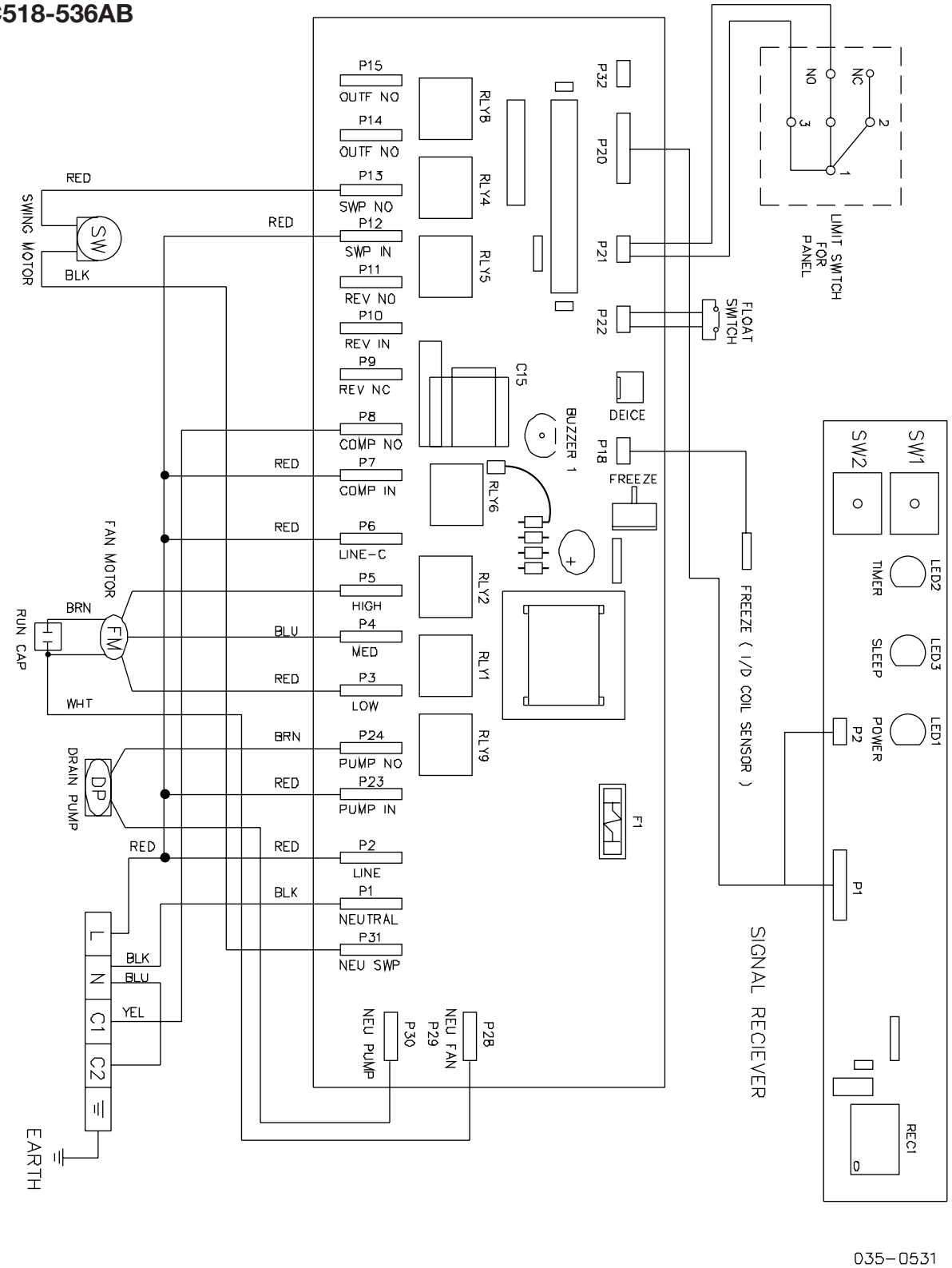
Indoor Unit

Remove the right side panel and return grille (see previous instructions), to access the terminal base.
- Pass the system wiring through the PVC pipe, referred to unit installation section, (both power and control lines) to interconnect indoor and outdoor units.
- Connect the wire terminals to the terminal base. (See connection indication on system wiring diagram).
- Make sure all connections are tight.

Note:
- All wiring must comply with national state and local codes.
- After completing the connections, re-confirm them to be in accordance with the unit and system wiring diagrams.

Wiring Diagram

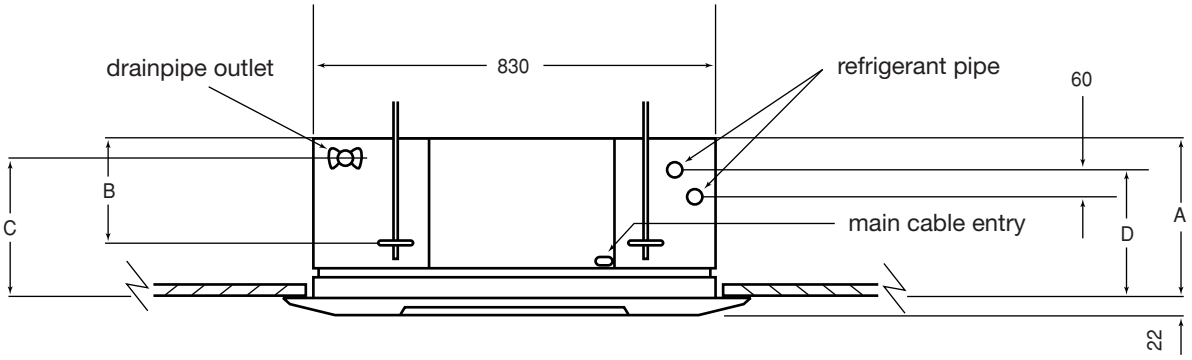
220-240/1/50 Hz
MCC518-536AB

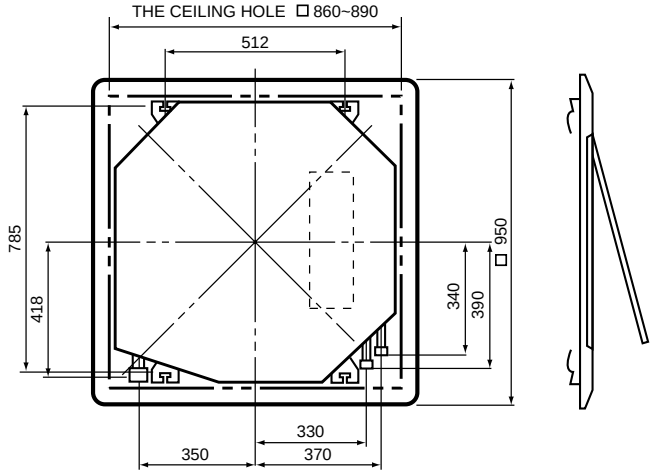


035–0531

Dimensional Data

Model	MCC518AB	MCC524AB	MCC530AB	MCC536AB
A. Height above ceiling	290 mm.	290 mm.	340 mm.	340 mm.
B. Height above suspension brackets	180 mm.	180 mm.	230 mm.	230 mm.
C. Height of condensate drain above ceiling	230 mm.	230 mm.	280 mm.	280 mm.
D. Pipe exit position	165 mm.	165 mm.	215 mm.	215 mm.





Notes

Trane Thailand
7th Floor, Ploenchit Center Building
2 Sukhumvit Road, Klongtoey
Bangkok 10110

http://www.trane.com

An American Standard Company

Literature Order Number	MCC-SVN01A-EN 0200
New	
Stocking Location	Bangkok, Thailand