Installation, Operation, Maintenance

MXW / TXK

R410A Split System - Wall Unit Heat Pump - *Up To 16.9 SEER*

9,000 - 18,000 Btu/Hr

MXWA09 / TXKA09
MXWA12 / TXKA12
MXWA18 / TXKA18

MS-SVX10A-EN

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Safety Precautions

WARNINGS

All phases of this installation must comply with National, State and Local codes.

⚠ WARNING

This information is intended for use by individuals possessing adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury or property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

NOTICE:
Trane has always recommended installing Trane approved matched indoor and outdoor systems.

The benefits of installing approved matched systems are maximum efficiency, optimum performance and best overall system reliability.

⚠ WARNING

These units use R410A refrigerant which operates at 50 to 70% higher pressures than R-22. Use only R-410A approved service equipment. Refrigerant cylinders are painted a "rose" color to indicate the type of refrigerant and may contain a "dip" tube to allow for charging of liquid refrigerant into the system. All R-410A systems use a POE oil that readily absorbs moisture from the atmosphere. To limit this "hygroscopic" action, the system should remain sealed whenver possible. If a system has been open to the atmosphere for more than 4 hours, the compressor oil must be replaced. Never break a vacuum with air and always change the driers when opening the system for component replacement. For specific handling concerns with R-410A and POE oil, reference Retrofit Bulletin TRN-APG02-EN.

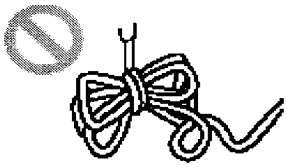
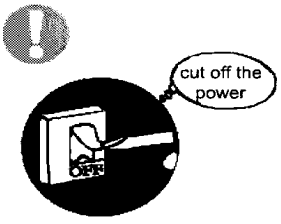
⚠ CAUTION

R410A

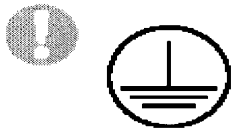
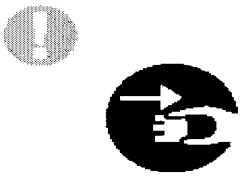
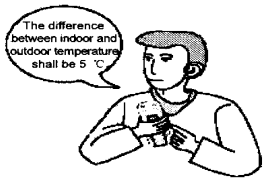
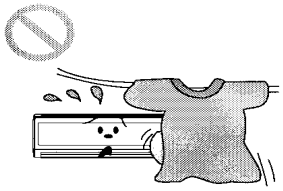
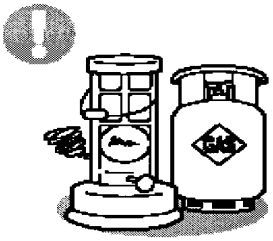
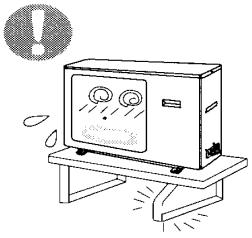
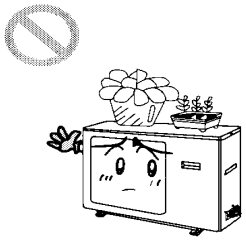
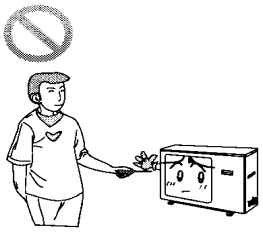
UNIT CONTAINS R-410A REFRIGERANT!
R-410A OPERATING PRESSURE EXCEEDS THE LIMIT OF R-22. PROPER SERVICE EQUIPMENT IS REQUIRED. FAILURE TO USE PROPER SERVICE TOOLS MAY RESULT IN EQUIPMENT DAMAGE OR PERSONAL INJURY.

SERVICE
USE ONLY R-410A REFRIGERANT AND APPROVED POE COMPRESSOR OIL.

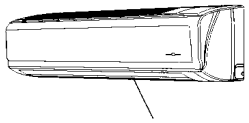
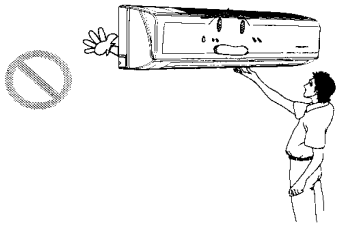
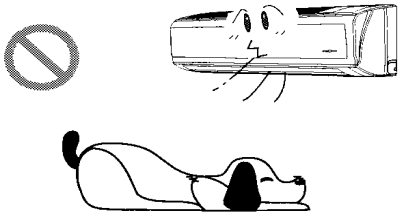
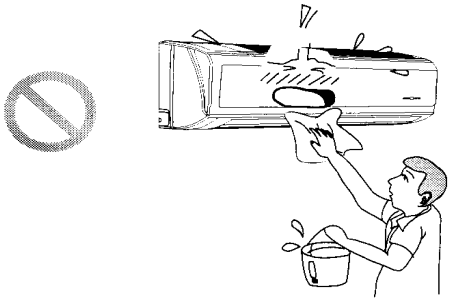
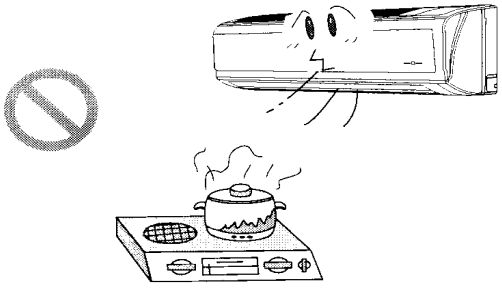
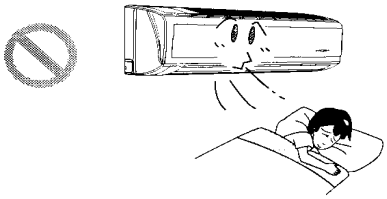
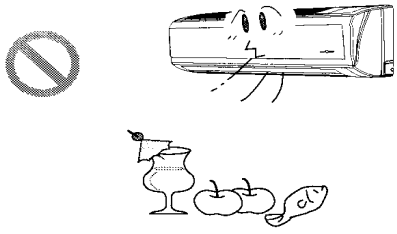
Safety Precautions

WARNING		
In the case of an unusual burnt smell, disconnect all power supply and contact your local Trane Service.  If abnormal state continues, the air conditioner may be damaged or perhaps an electric shock may have initiated a fire.	Never operate the air conditioner with wet hands.  Otherwise there is risk of electric shock.	DO NOT cut or damage power cords, nor control lines. Damaged power cords or signal control lines must be replaced by authorized technicians using appopriate cords or lines. 
To avoid fire, be sure to use an independent circuit for power supply.  Otherwise it might cause electric shock or fire.	Disconnect the power supply if the air conditioner is not to be used for a prolonged period.  The accumulation of dust may cause overheating or fire.	Never damage the cable and never use unauthorized type of cable.  Otherwise it might result in cable overheating and fire hazard.
Disconnect all power supply before cleaning the air conditioner.  Otherwise it might cause electric shock or injury.	Rated voltage of this air conditioner 208-230V~, with a tolerable fluctuation of 10%. If voltage is too low, the compressor will vibrate and may damage the refrigerating system. If the voltage is too high, it may damage the electrical components.	For power supply, be sure to use an independent circuit with a disconnect switch of adequate capacity. The air conditioner may automatically start or stop according to requirements. Avoid cycling the unit too frequently as it will have a negative impact on the air conditioner.

Safety Precautions

⚠ The unit must be grounded appropriately. Grounding cable shall be connected to a special grounding device in the building.  If such device is non-existant, have one installed by an authorized technician. Never connect grounding cable to a gas pipe, water pipe, sewage pipe or any other place deemed unreliable for this purpose.	If a grounding device is non-existant, have one installed by an authorized technician. Never connect a grounding cable to a gas pipe, water pipe, sewage pipe or any other place deemed unreliable for this purpose.  Otherwise accumulation of dust might cause heating or fire.	Set the room temperature appropriately.  Appropriate adjustment of the preset temperature is effective to avoid abrupt changes in temperature.
When the air conditioner is running, avoid keeping doors and windows open for long periods.  Otherwise the effect of air conditioning will decrease.	Never block the air inlet or air outlet of the indoor and outdoor units.  This will decrease the effect of air conditioning or may even shut down the unit or initiate a fire.	Chemical sprays and gas tanks must be placed 1m away from the indoor and outdoor units.  They are likely to explode or cause fire.
Verify that the mounting base of the outdoor unit is secure.  If the base is damaged and is not repaired, the unit may tip over risking damage.	Do not place any objects of any kind on the outdoor unit.  Do not climb on top of the unit as you risk personal injury.	Do not repair the air conditioner at your discretion.  Incorrect repair may cause electric shock or fire. Contact your local Trane service for repair.

Safety Precautions

Power supply of this air conditioner must be connected using terminal clamps in "Y" shape. If the external cable is damaged, it must be replaced by an authorized technician. 	Adjust the air flow and direction properly. When the air conditioner is running, you can press the SWING key on the remote control to adjust the guide louver and change the direction of air flow.  Guide Louver
Never insert your finger or any object into the indoor or outdoor outlet. There is risk of harm. 	Never blow the air directly at pets or plants, as this may cause harm to them. 
Never spray water onto the unit or wash the air conditioner with water.  There is danger of electric shock and of malfunction of the unit.	Never place a space heater in the way of an air conditioner.  Air flow could cause incomplete combustion and danger of carbon monoxide poisoning.
To avoid any harm to your health, do not blow the cold air directly onto your body. Do not lower the room temperature too much. 	This air conditioner cannot be used for drying clothes or refrigerating food. 

Specifications and Technical Data

Technical Specifications R410a; 60Hz; Heat Pump

Models	Indoor unit	MXWA09S9U0A		MXWA12S1U0A		MXWA18S1U0A	
	Outdoor unit	TXKA09S9UAA		TXKA12S1UAA		TXKA18S1UAA	
Functions		Cooling	Heating	Cooling	Heating	Cooling	Heating
Power supply	(Ph-Hz-V)	115V/1/60Hz		1/60/208V-230V		1/60/208V-230V	
Capacity High/Low	W	3,100 / 2,500	3,800 / 2,750	4,100 / 3,500	4,400 / 3,850	5300	5800
	Btu	10,600/9,000	13,000 / 9,500	14,000 / 12,000	15,000 /13,000	18000	20000
Rated current	A	12	13.6	7.4	7.6	10.6	10.6
Air flow	CMH	550		600		800	
Dehumidity	L/H	1.2		1.2		1.2	
SEER / HSPF		16	8.1	16.9	11.1	14	10.6
EER / COP	W/W	3.42	3.27	3.18	3.2	3.93	3.22

Indoor Units

Models		MXWA09S9U0A	MXWA12S1U0A	MXWA18S1U0A
Fan Motor	Speed L/M/H (RPM)	1200/1060/700	1350/1200/1110	1350/1200/1100
	Output Power (w)	13	22	20
Fan	Type - Number	Cross flow -1	Cross flow -1	Tangential - 1
	Diameter x L (mm)	97 x 583	92.1 x 616	96 x 797
Evaporator	Type	Aluminium foil fin - copper tube		
	Tube Diameter (mm)	7	7	7
	Row - Fin space (mm)	2-1.4	2-1.4	2-1.6
	Face Area (m^2)	N/A	N/A	N/A
Stepping Motor	Model	MP28VA	MP28EA	MP24GA
	Input Power (W)	2	2	2
Fuse	(A)	Control Board - 3.15A; Transformer - 0.2A		
Capacitor	(µF)	1	1	1
Sound Pressure Level	(dB(A)) High Speed	43	43	50
	(dB(A)) Medium Speed	37	40	47
	(dB(A)) Low speed	30	39	44
Dimensions	Width (mm)	770	830	1020
	Height (mm)	250	285	310
	Depth (mm)	190	225	228
Weight	(kg)	8.5	11	13

Specifications and Technical Data

Technical Specifications R410a; 60Hz; Heat Pump

Outdoor Unit				
Models		TXKA09S9UAA	TXKA12S1UAA	TXKA18S1UAA
Power Input	(W)	730 | 840	1100 | 1200	1350 | 1800
RLA Current	(A)	3.92	3.92	6.54
Locked Rotor Current	(A)	33	33	27
Expansion device		Capillary	Capillary	Capillary
Compressor	Type	Twin Rotary	Twin Rotary	Scroll
	Power Input(kW)	960	960	1266
	Protection Device	Overload (current, temperature) protection		
	Start-up Type	Transducer start-up		
	Working Temperature	Discharge temp. <= 115°C		
Condenser	Type	Aluminium foil fin - copper tube		
	Tube size (mm)	9.52	9.52	9.52
	Row/Fin Space (mm)	2 - 1.4	2 - 1.4	2 - 1.5
	Face Area (m^2)	N/A	N/A	N/A
Fan Motor	Power Input (W)	30	30	60
	Speed H / L (RPM)	830	830	780 / 620
Fan	Type - Number	Axial - 1	Axial - 1	Axial - 1
	Diameter (mm)	400	400	460
Defrost type		Automatic	Automatic	Automatic
Climate Type		T1	T1	T1
Moisture Protection		IP 24	IP 24	IP 24
Sound Pressure Level	(dB(A))	53	55	57
Sound Power Level	(dB(A))	63	65	67
Dimensions	Width (mm)	848	848	950
	Height (mm)	540	540	684
	Depth (mm)	320	320	340
Net Weight	(kg)	40	40	59
Refrigerant / Charge (kg)		R410A / 1.2	R410A / 1.27	R410A / 1.75
Tube Connections				
Standard length	(m)	6	6	8
Type		Flare	Flare	Flare
Size	Liquid line (mm)	6	6	9.52
	Gas line (mm)	12	12	16
	Liquid line (inch)	1/4	1/4	3/8
	Gas line (inch)	1/2	1/2	5/8
Max. distance	Height difference (m)	5	5	8
	Tube length (m)	15	15	15
Drain Pipe	Internal Diameter (mm)	25	25	25

Operating Instructions

Cooling Mode = Principle and Special Functions

Principle of Operation

The air conditioner absorbs heat from the air and discharges it to the oudoors, thereby cooling the indoor ambient temperature. Cooling capacity decreases with the increase of the outdoor temperature.

Special Anti-freeze Function

If the air conditioner is operating under low-temperature conditions in the cooling mode, frost will appear on the surface of the indoor heat exchanger. As the temperature of the heat exchanger decreases to 0°F or less, the microcomputer in the indoor unit will stop the compressor operation in order to protect the unit.

Heating Mode = Principle and Special Functions

Principle of Operation

The air conditioner absorbs heat from the outdoor air bringing it indoors to heat the space, thereby increasing the indoor ambient temperature. Heating capacity decreases with the reduction of the outdoor temperature.

With this type of hot air circulation system, the indoor temperature increases rapidly.

Use this air conditioner with other heating equipment if the outdoor temperature es extremely low.

Special Defrost Function

When the outdoor temperature is low but the humidity is high, the heat exchanger in the outdoor unit may frost up after a certain period of operation, thus decreasing the heating effect in the room. When this occurs, the defrost cycle is automatically activated, temporarily halting the heating mode function for a period of 8 to 10 minutes.

Both the indoor fan and outdoor fan will be stopped during the defrost cycle.

During the defrost cycle, the indicator on the indoor unit will blink and in some cases you may notice steam flowing from the indoor unit. This is caused by the quick defrost cycle.

Heating mode will automatically resume its operation upon completion of the defrost cycle.

Special Anti-cold-air Function

When in the heating mode, if the indoor heat exchanger fails to reach a specific temperature degree in the following 3 instances, the indoor fan will not be started thereby avoiding to blow cold air into the space (within 3 minutes):

1) Start of heating mode; 2) End of auto defrost; 3) Heating under low ambient temperature

Conditions that Inhibit the Unit from Operating Normally

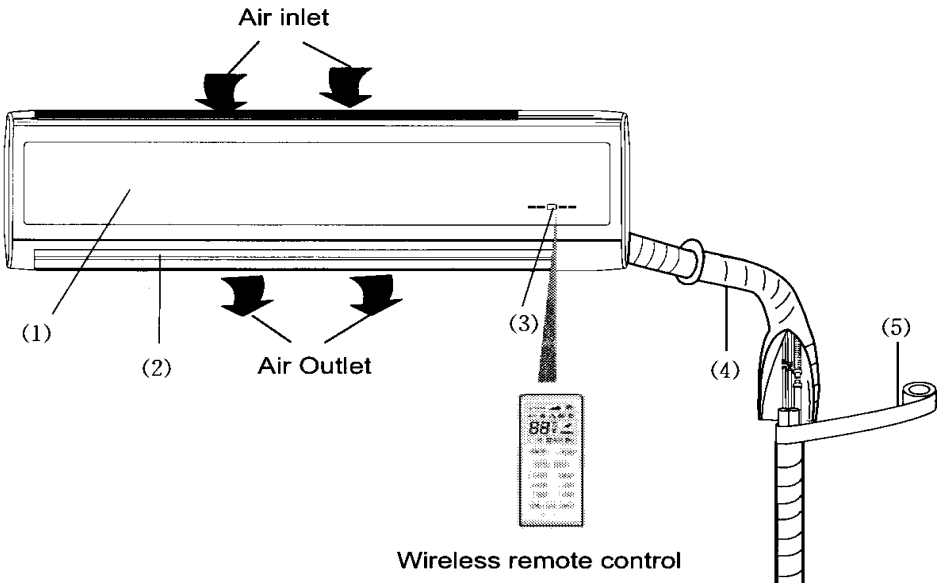
Under temperature ranges as specified below, a protection device may be activated which will stop the unit from operating.

<table>
<tr><td rowspan="3">Heating Mode</td><td>Outdoor temperature over 24°C</td><td rowspan="3">Cooling Mode</td><td rowspan="2">Outdoor temperature over 43°C</td><td rowspan="3">Dehumidifying Mode</td><td rowspan="3">Room temperature below 18°C</td></tr>
<tr><td>Outdoor temperature below -7°C</td></tr>
<tr><td>Room temperature over 27°C</td><td>Room temperature below 21°C</td></tr>
</table>

If the unit is run for long periods in cooling or dehumidifying modes when the relative humidity is higher than 80% (doors and windows are open), condensing may occur near the air outlet.

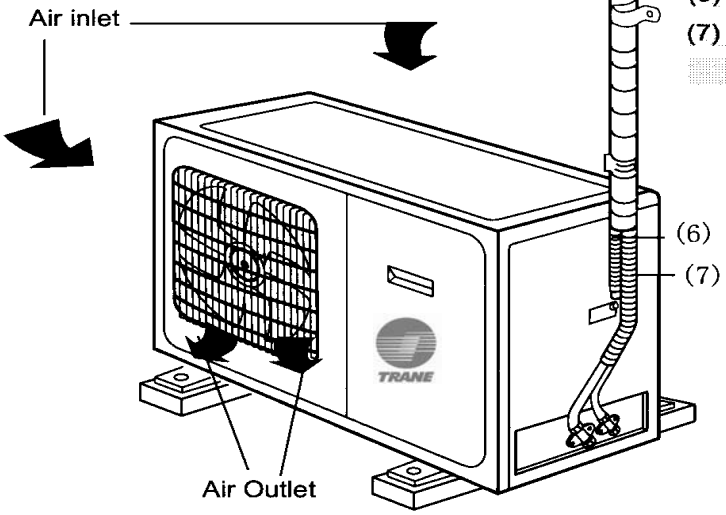
System Description

Indoor Unit



(1) Front Panel
(2) Guide louver
(3) Receiving window
(4) Wall Pipe
(5) Wrapping Tape
(6) Drainage hose
(7) Connection pipe and connection wire

Outdoor Unit



Remote Control Description

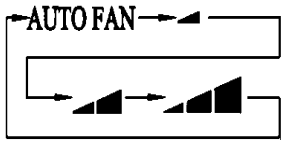
Functions of the Remote Control Unit

Notes:

1) Ascertain that no obstructions are in the path between the remote control and the unit.
2) Do not drop or toss the remote control.
3) Do not expose the remote control to direct sunlight.
4) On a restart of the unit, it can automatically resume the previous running mode prior to being stopped. The oudoor unit starts a bit later.

TEMP+ & TEMP- Button:
In the COOL, DRY, FAN or HEAT modes, press either of these two buttons to set the desired temperature. Temperature setting range is 16°C - 30°C. Temperature setting can be saved in the sistem's memory under each mode.

FAN SPEED Button:
At start-up, in the AUTO, COOL, FAN, or HEAT modes, press this button to select the Fan Speed: *Auto, Low, Medium or High.* In the DRY mode, the fan speed is *Low.* The FAN SPEED setting can be saved in the system's memoriy under various modes.



SLEEP Button:
In the COOL, DRY or HEAT modes , press this button once to start the SLEEP function. To stop this function, press this button once again.

MODE Button:
At unit start-up, press this button to select the operating mode: AUTO, COOL, DRY, FAN, HEAT.

- COOL mode
- DRY mode
- FAN mode
- HEAT mode

CLOCK Button:
To adjust the CLOCK function, press this button once. The clock icon on the screen will flash. To increase the hours, press and hold the TIME+ button and the seconds and minutes digits will advance to the desired setting. To decrease the hours, press and hold the TIME- button and the seconds and minutes digits will turn back the time to the desired setting. After reaching the desired time, press the CLOCK button once again to confirm the setting.

Remote Control Description

Liquid crystal display
showing all functions.

ON / OFFButton:
Press this button to start the unit. Press it again to stop the unit.

T-ON Button:
Press this button once and the minute digit will be increased by one. If you press the button over 1 second, the minutes will be increased in tens. To decrease the time use the TIME- button, in the same manner as described for the TIME+ button.

TIME+ & TIME- Buttons:
For operating instructions, refer to theT-ON Button section.

SWING Button:
When the uit is in operation, press this button once to initiate the automatic swing movement of the louvers. Press it once again to stop the movement of louvers. When pressing the button twice in one second, the light on the panel of the indoor unit will light up. When pressing it twice within one second again, the light will

T-OFF Button:
Press this button once to set the function. The OFF icon on the screen will flash. This function is available in both ON or OFF modes. For setting, refer to the T-ON Button instructions.

CANCEL Button:
press this button once to cancel all TIMER settings.

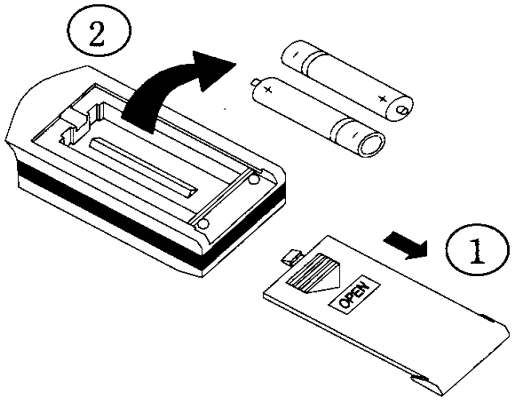
Remote Control Description

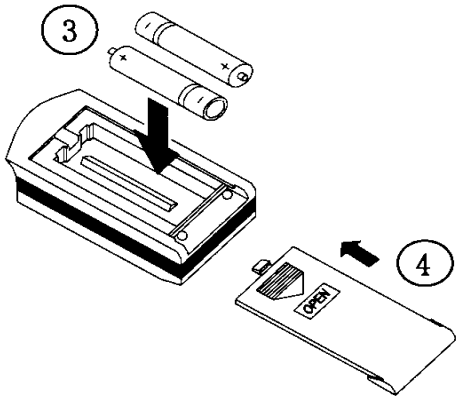
Inserting batteries in the Remote Control Unit

1) Slide open the back cover of the remote control.
2) Insert two AAA batteries
3) Replace the cover

NOTES:

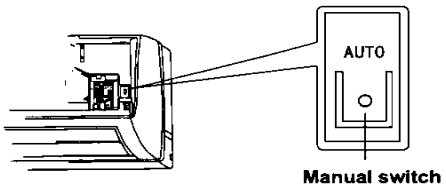
- Be sure not to mix the worn batteries with the new batteries.
- Remove batteries when not in use for an extended period.
- Batteries should not be used longer than a year.
- The remote control should be at a distance of minimum 1 meter away from a television set or other audio device.





Emergency Operation

If the wireless remote control is lost or broken, use the manual switch inside de unit. This will place the system in the AUTO mode, thus settings for fan speed and temperature cannot be changed. To allow for control, using a ball point pen or similar device, do the following:



To turn the unit ON: With the unit off, locate the Manual Switch and with the ball point pen press the manual switch as shown. The unit will automatically go into the AUTO state of operation. The microcomputer will detect the indoor temperature to select COOL, HEAT, FAN to achieve the degree of comfort.

To turn the unit OFF: With the unit on, locate the manual switch STOP button. The unit will stop running.

Care and Maintenance

Warning

- Be sure to cut off the power supply before cleaning the air conditioner; otherwise electric shock might happen.
- Wetting the air conditioner may cause the risk of electric shock. Do not try to wash your air conditioner in any case.
- Volatile liquids such as thinner or gasoline will cause damage to the appearance of air conditioner. (Only use soft dry cloth or wet cloth soaked with neutral detergent to clean the air conditioner cabinet).

Clean the front panel (Be sure to remove the front panel before cleaning).

① **Remove the front panel**

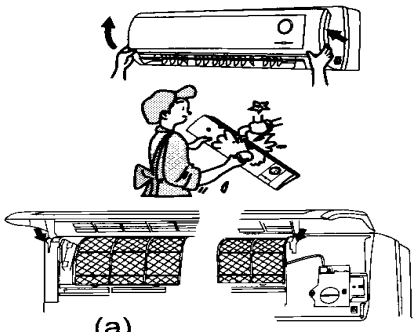
1. Lift up the front panel along arrow direction. Pull the groove on two ends of the front panel with force to remove the front panel.

② **Clean the front panel**

Wash with soft brush soaked with water and neutral detergent. Wipe off the water and dry the panel.

③ **Installing Front Panel**

Place the support at two ends of the panel into supporting groove. Cover up the panel along arrow direction and clamp it. See Fig. 4 (a, b)



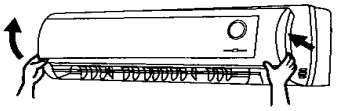
(a) Fig 4 (b)

Clean filter (Every 3 months approximately)

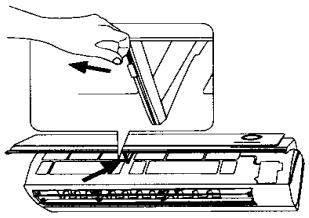
Note: Clean the air filter more frequently if the air conditioner is used under dusty environment. To avoid injury, do not touch the fins of indoor unit with your finger after removing the filter.

① **Remove the air filter**

Hold the groove on two ends of the front panel. Along arrow direction, pull with force to open the front panel at an angle. Then pull the air filter downward for removal. See Fig. 5 (a, b,c)



(a)



(b)

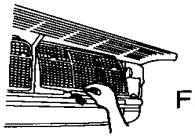


Fig 5 (c)

② **Clean the air filter**

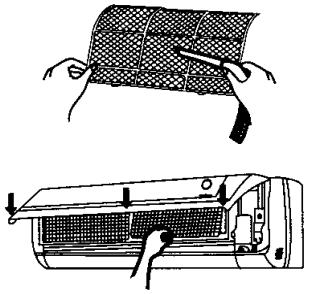
Wash the filter with vacuum cleaner or water. If the filter is too dirty, wash with warm water (below 45℃) with neutral detergent. Then dry it in a cool place.

Note: To avoid decoloring or deformation, do not wash with hot water over 45℃. Never dry over fire, as the filter may be burnt or deformed.

Care and Maintenance

③ **Install the air filter**

Mount the air filter along arrow direction. Then, clamp the cover of front panel securely.



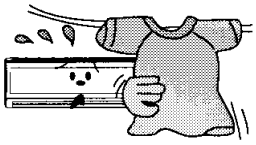
Checks before Seasonal Use

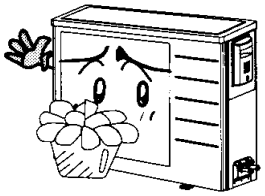
① Check the air inlet/outlet on indoor and outdoor units for any blocking.

② Check grounding for reliability

③ Check the battery of remote controller for replacement.

④ Check the mounting frame of outdoor unit for damage. If damaged, contact your local Trane Service.





Checks after Seasonal Use

① Cut off the power supply to air conditioner.

② Clean the filter and the indoor/outdoor unit.

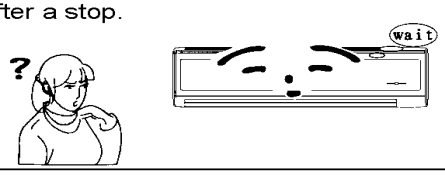
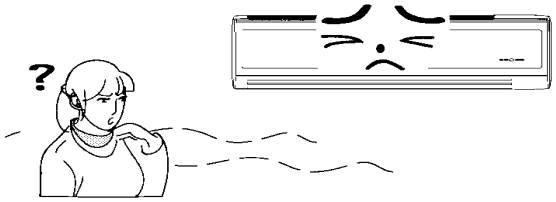
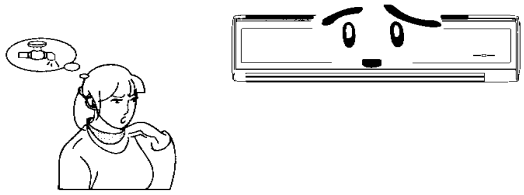
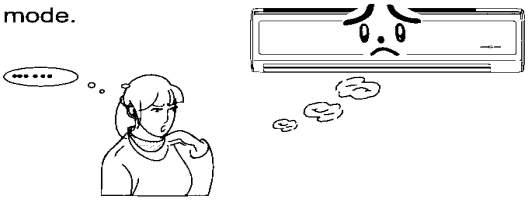
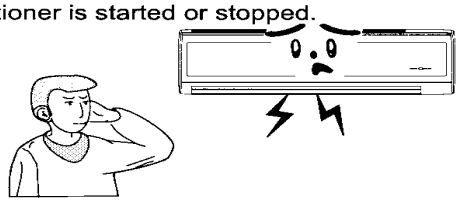
③ Clear off the dust and foreign particles on outdoor unit.

④ If the outdoor unit is rusted, repair the damaged section and finish with new paint.

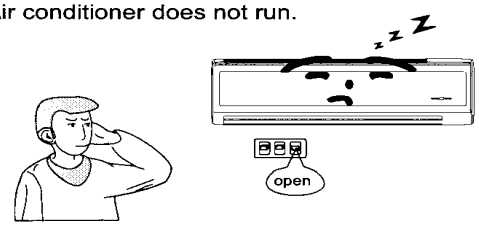
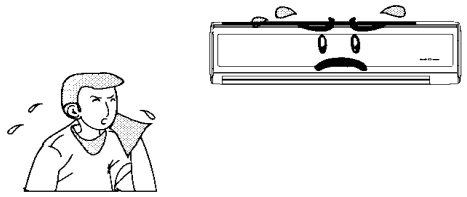
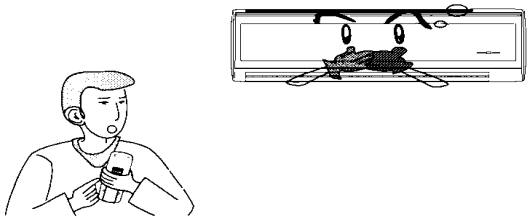
Troubleshooting

Warning

- Do not repair the air conditioner at your discretion. Incorrect repair may cause electric shock or fire. Therefore, contact your Authorized Service Center for professional repair. Regular maintenance check-ups may save you time and money.

Failure	Probable Cause
Air conditioner does not start immediately after a stop. 	To protect the air conditioner from an immediate restart after a stop, the microcomputer controller will delay the unit for 3 minutes before allowing the unit to run again.
Air conditioner emits a bad odor upon initial operation. 	The air conditioner itself has no bad smell. It may be a bad smell accumulated from environment. Solution: Clean the air filter (Refer to Page 10). If the problem persists, the unit should be cleaned. Contact your local Trane Authorized Service Center.
You may hear "water flowing" noise when the air conditioner is running. 	Upon operation of the air conditioner, or when the compressor starts or stops during running time, you may sometimes hear a rippling of water sound. This is actually the sound of flowing refrigerant.
Sometimes light fog will flow out of the outlet when air conditioner is running under cooling mode. 	This might occur when indoor temperature and humidity are high. This is caused by the quick cooling of the indoor air. The fog will dissipate with the decrease of indoor temperature and humidity.
You may hear a slight crack when the air conditioner is started or stopped. 	This is the sound of friction caused by an expansion of the panel or of other parts due to the change in temperature.

Troubleshooting

Failure	Probable Cause
Air conditioner does not run. 	● Was there a power failure? ● Did the circuit protection device trip? ● Was voltage reading too high or too low? (☞ Refer to Page 15). (To be tested by professional technicians). ● Was the timer function used correctly? (☞ Refer to Page 9).
Air conditioner is producing insufficient cooling (or heating). 	● Is the temperature setting well adjusted? (☞ Refer to Page 9). ● Is air inlet or outlet on outdoor unit blocked? ● Is air filter clogged with dust? (☞ Refer to Page 10). ● Are all doors and windows closed? ● Is air flow set to "LOW FAN"? ● Is there another heating source in the room?
Remote controller cannot execute control. 	● Remote controller sometimes cannot execute control if the air conditioner is subject to abnormal interference or frequent switch of functions. To resume normal operation, cycle the power ON/OFF. ● Is there an obstacle? Is the remote control within range? ☞ Refer to Page 9) ● Check the battery in the remote control. If battery is low, replace it. (☞ Refer to Page 9) ● Verify if the remote control is damaged.
Water leaks from indoor unit.	● High humidity. ● Overflow of condensate water. ● Loose fitting on drain pipe coming from the indoor unit.
Water leaks from outdoor unit	● Condensation on pipe or pipe fitting in cooling mode. ● Defrost water flowing in heating mode or in auto-defrost mode. ● Dripping water line attached to heat exchanger (cooling mode).
Indoor unit is noisy.	● Sound coming from the opening and closing of the fan or compressor relay. ● Air conditioner may produce noise in the defrost mode or when stopping, caused by the inverse flow of refrigerant in the unit.

Troubleshooting

Failure	Probable Cause
No air flows from the indoor unit.	● When the temperature in the indoor heat exchanger is low during the heating cycle, the indoor unit will prevent cold air from blowing into the space (3 minute delay). ● Under dehumidify mode, the fan of indoor unit might be stopped sometimes to prevent evaporation of condensing water and inhibit the rise of temperature.
Moisture exists on outlet grill.	● If the unit has been operating long with high humidity, moisture might condense on the grill provoking the same to drip.

In case of the following events, contact your local Trane Authorized Service Center.

- ▲ Air conditioner gives out shrill noise during operation.
- ▲ Air conditioner gives out bad smell during operation.
- ▲ Water leaks indoors.
- ▲ Air break switch or leakage protection switch trips frequently.
- ▲ Foreign matter or water has been poured over the unit or over the remote control.
- ▲ Abnormal overheating of power cord and plug.

→ Stop the air conditioner and pull out the power plug.

Installation Recommendations

Caution

1. The air-conditioning unit must be installed by professional technicians in accordance with the state and local requirements to ensure a smooth and sound operation.
2. Before installing, contact your local Trane Service Center. If the air conditioning unit is installed by an agency not authorized by Trane, the proprietor may suffer inconvenient delays by reason of dealing with unauthorized agencies.
3. For relocation of the air conditioner to another location, be sure to contact your local Trane Service Center.

Basic Requirements for Installation Location

Installation at the following places may cause failure of the air-conditioning unit. Please contact Trane installation and service agency if the installation at such places cannot be avoided.

- An environment with high temperature heat, steam, flammable or explosive gas, or where volatile elements are distributed in the air.
- A place nearby to high-frequency facilities, e.g. welding machine, medical equipment,
- A region with saline-sodic soil near the sea
- A place wherein the air contains oil (mechanical oil).
- A place with sulphide gases (such as sulphur spring);
- An environment with special conditions.

Indoor unit Selection of Installation Location

1. The air inlet and air outlet must be far away from obstacles to ensure that airflow can reach every corner of the room;
2. Choose a position where condensation water can be easily discharged and the outdoor unit can be easily connected;
3. Install the unit in a place where the children can not reach.
4. Choose a place where the weight of indoor unit can be withstood and operating noise and vibration are not increased;
5. Ensure sufficient clearance and space for service and maintenance; Ensure the indoor unit is at least 2.3m from the floor;
6. Choose a position at least 1 meter from any TV, sound system or other household electric appliances.
7. Choose a place so that the air filter can be easily removed;
8. Ensure the installation of indoor unit is in conformity with the requirements of installation dimension drawing. (See page 21).

Outdoor unit Selection of Installation Location

1. A place where the noise and air flow from the fan will not affect the neighbors, animals or plants.
2. Ensure good ventilation of outdoor unit.
3. No obstacles near the outdoor unit obstructing the air intake and air exhaust of the unit;
4. The installation position shall be able to withstand the weight and vibration of the outdoor unit and ensure safe installation;
5. Select a dry place but not exposed to direct sunshine or strong wind.
6. Ensure that the outdoor unit is installed in compliance with installation dimensions for easy repair and maintenance. (See page 21).
7. Height difference of pipes shall be within 5 meters and the length of pipe shall be within 15 meters.
8. Install the unit in a place where the children can not reach.
9. A place not affecting the public passage or city view.

Electrical Safety Requirements

1. The power supply must be of rated voltage via special circuit for air-conditioning. The diameter of power cable shall conform to requirements.
2. Applicable voltage range : the normal operation range of voltage is 90%～110% of rated voltage.
3. Do not pull the power cable with force.

Installation Recommendations

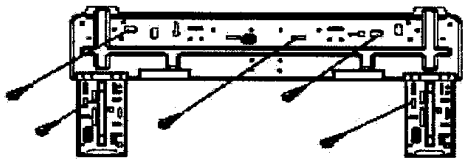
4. Ensure safe grounding and the grounding wire shall be connected with the special grounding equipment of the building and must be installed by professional technicians. In the fixed line there must be an electrical leakage protection switch and an air switch with sufficient capacity. The air switch shall also have the magnetic tripping and thermal tripping functions to achieve protection of both short-circuit and overload.
5. The minimum clearance between air conditioner and flammable surface is 1.5m.

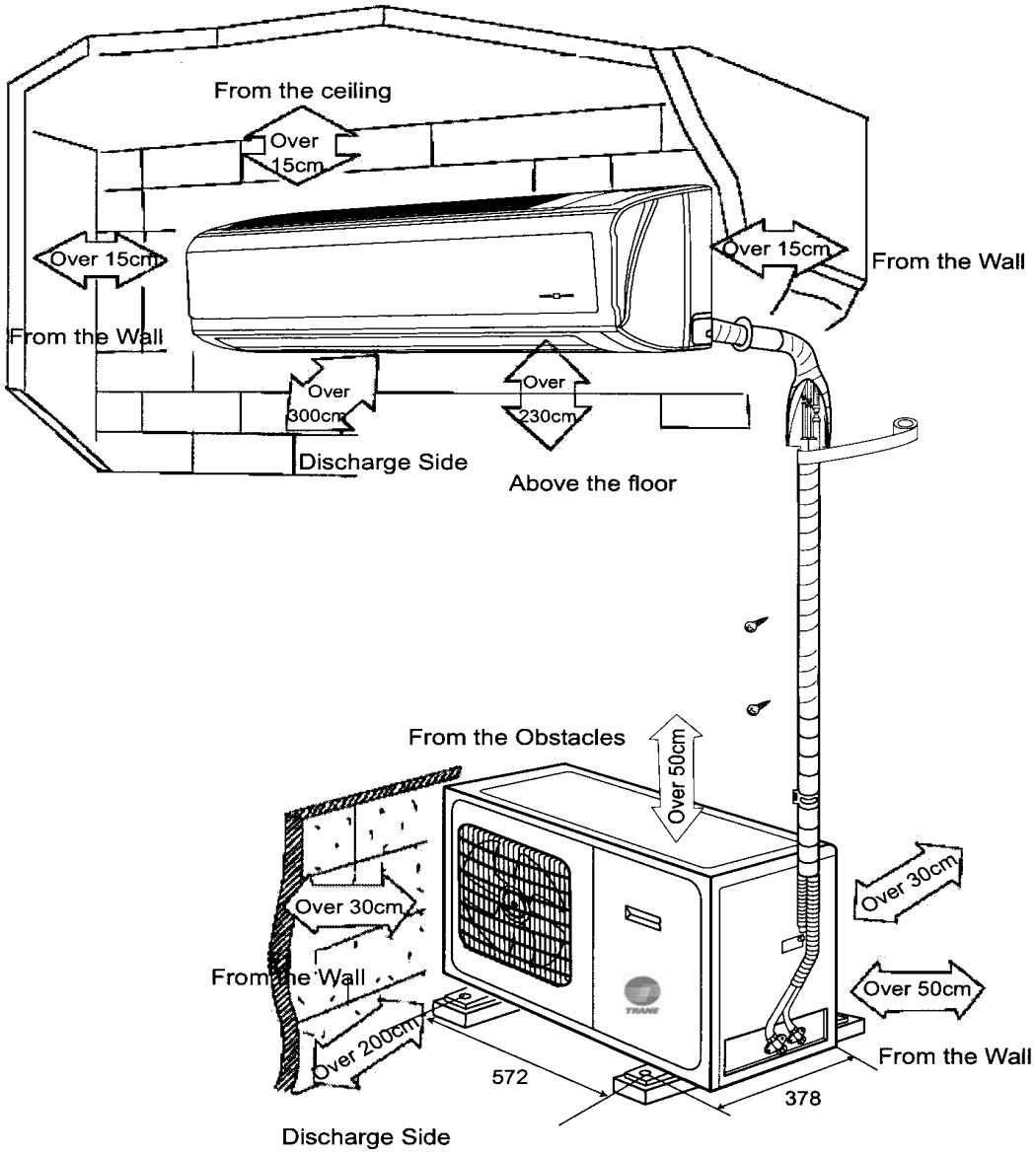
Grounding Requirement

1. As air-conditioning unit is of Class I electrical appliance, reliable grounding measures must be taken for it.
2. The double color (yellow and green) cable inside the air conditioner is for grounding and shall not be used for other purposes nor can it be cut. Do not tighten with tapping screw; otherwise electric shock will be caused.
3. The ground resistance shall be in conformity with local requirements.
4. The user power supply shall have reliable grounding terminal. It is prohibited to connect the grounding wire to the following items:
   ① Water Supply Pipe ② Gas Pipe ③ Sewage Pipe
   ④ Other positions that are considered to be unreliable by professionals.

Installation Location

Installation Dimension Drawing





Installation Indoor Unit

Wall Mounting Frame

1. Level frame with plumb line or spirit level. Since the drain outles is on the left side, it is best that the left side be lower when adjusting the frame on the wall.

2. Use screws to secure the frame onto the wall.

3. After completing installation, tug on the frame to see if it is firmly secured to wall. The wall mounting frame should be able to support the weight of an adult (60 kg) and the fixing screws should bear stress evenly.

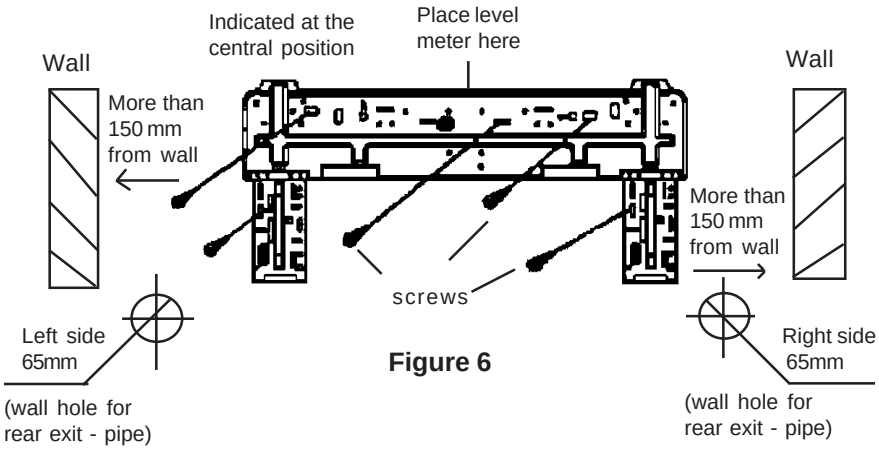
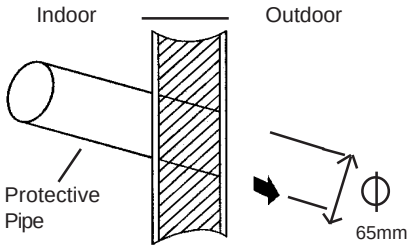


Figure 6

Wall Opening and Wall Pipe

1. After deciding the position of the hole for the fitting pipe according to Figure 6, drill a slanted hole (65 mm dia.)

2. To avoid damages to the fitting pipe and to the cable passing through the wall opening, and to protect it also from rodents, it is recommended to install a protective wall pipe in a downward slant.

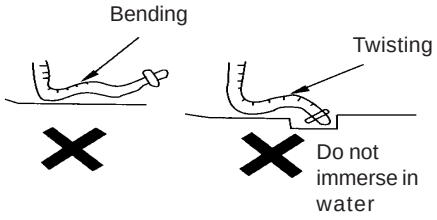


Drain Pipe

1. The flexible drain pipe must be in a slanted position to allow for smooth draining of the water.

2. Be careful not to twist, bend or distort the drain pipe and do not immerse the outlet in water.

3. The extended section of the flexible drain pipe that passed through the indoor unit must be wrapped in thermal insulation material.



Installation Indoor Unit

Indoor/Outdoor Connection Cables

1. Open and lift the front panel. See Page 14 Figure 5 (a).

2. Remove the screw from the covering plate on the terminal board.

3. Pass the power cable through a separate cable duct on the back of the indoor unit and pull it out from the front.

4. Connect the *neutral* wire coming from the power cable to the “N” (1) terminal on the terminal board; connect the *signal* wire to the “2” terminal; connect the *live* wire to the “3” terminal; connect the “*ground*” wire to the ground terminal. See Figure 8.

5. Plug the power cable with protective pipe into the pressing groove and close the cover place. Tighten fixing screws in place to clamp de connecting cable.

6. Install the front panel back into position.

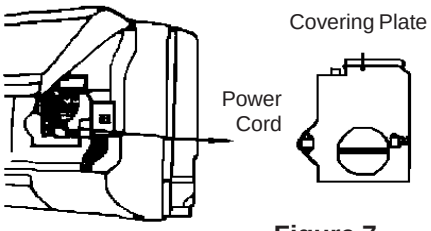


Figure 7

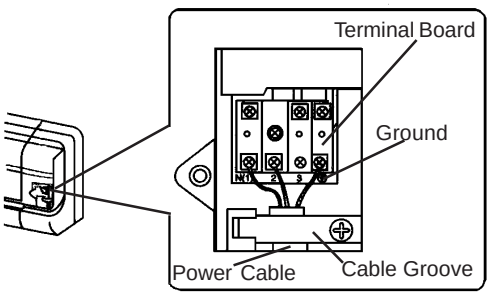


Figure 8

Notes:
If the connecting power cable is not long enough, contact your local service provider to obtain a longer cable.
No union sections are allowed in the middle of the cable.

- Be sure to connect the cable correctly, otherwise it could cause failure in some electrical parts.
- Tighten the terminal screw securely.
- After tightening the screw, pull gently on the cable to ascertain it’s integrity.
- Incorrect connection of the grounding cable may cause electric shock.
- Be sure to place the cover plate securely in its place and press it closely against the connecting cable. Improper
- placemente of the junction box cover place may allow dust or water to penetrate and expose the connections terminal directly to external forces, which could provoke fire or electric shock.

Installation Indoor Unit

Installing Indoor Unit

Fitting pipe can come four directions, that is, right, rear right, left and rear left.

1. When laying the pipe line on either the left or right side, cut out extra part as needed to accommodate piping at the tube exit plate on the base of the unit. See Figure 9.

   (1) When only drawing out the power line, cut Extra Part 1.
   (2) When drawing out the connecting pipe and the electric line, cut Extra Parts 1 and 2 (or 1, 2, 3).

2. Pull out the fitting pipe from bottom case. Use adhesive tape to bind the fitting pipe, electric cable and drain hose and then pass them through the fitting pipe hole. See Figure 10.

3. Hang the brackets at the rear side of the indoor unit to the hooks on the wall-mounting frame. Shift the unit left and right to verify that it is steady. See Figure 11.

4. The installation height of the indoor unit must be at least 2.0 m.

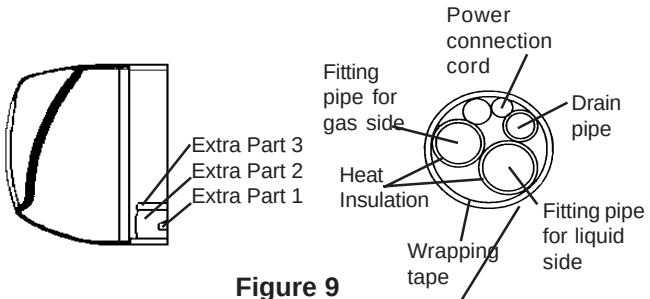


Figure 9

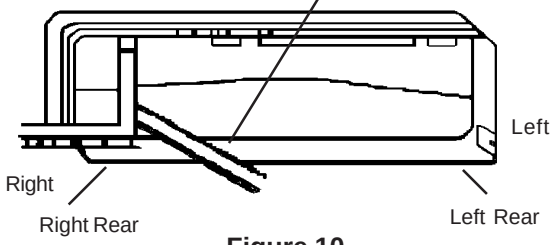


Figure 10

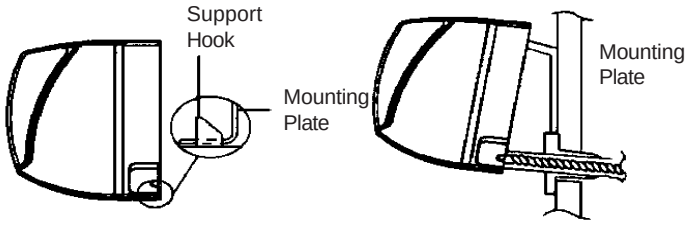


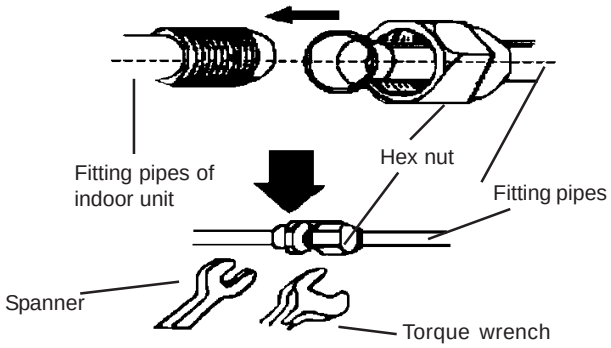
Figure 11

Installation Outdoor Unit

Installing Connecting Pipe

1. The tapered end of the connecting pipe must be in line with the corresponding connecting side of the valve joint.

2. Using strength, manually tighten the nut of the connecting pipe and with the use of a spanner, tighten the hex nut. See Torque Table below.



Hexagonal Nut	Tightening Torque (N . m)
6 dia.	15-20
12 dia.	50-55

Note: First, connect the connecting pipe to the indoor unit and then connect it to the outdoor unit. Avoid bending the pipes. Do not over-tighten the joint as it could provoke leakage.

WARNING!

- √ **Do not use mineral oil to lubricate the flare.**
- √ **Avoid mineral oil from entering into the piping as this would reduce the life time of the unit.**
- √ **Always use R410A pressure rated copper; never install used copper from other installations.**
- √ **Do not attach a refrigerant drier to this unit.**
- √ **The drying material may dissolve and damage the system.**
- √ **The flares must be complete, have the correct collar height, must be clean, and must be performed with a R410A flaring tool.**

Cable Connection

1. Remove the right hand panel of the outdoor unit removing one screw.

2. Remove the cable clamp and connect the power cable to the terminal board. Secure the cables in place. The line sequence must be consistent with the outdoor unit.

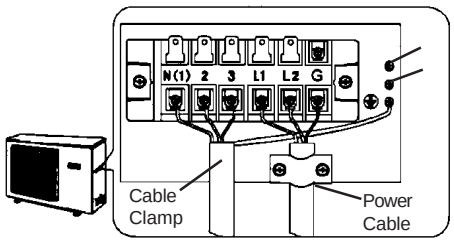
3. Replace the cable clamp to secure the power cable in place.

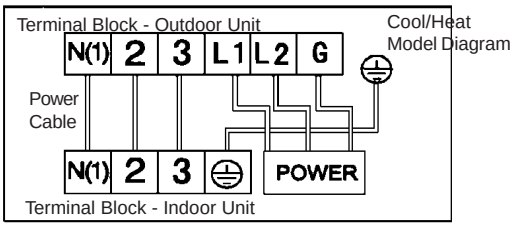
4. Confirm that lines are secure.

5. Replace the panel with the screw removed before.

Notes:

- Wrong line connection may cause the failure of some electrical componentes and parts.
- When securing the lines in place, leave a certain degree of freedom between the connection point and the securing point.





Installation Outdoor Unit

Vacuum Pump and Leak Inspection

After the installation of refrigerant lines to both the outdoor and indoor units are completed, the flare connections must be checked for leaks. Pressurize through the service valve ports, the indoor unit and field refrigerant lines with dry nitrogen to 350-400 psi. Use soap bubbles or other leak-checking methods to see that all flares are leak-free! If not, **release pressure;** then repair!

SYSTEM EVACUATION

NOTE: Since the oudoor unit has a refrigerant charge, the gas and liquid line valves must remain closed.

1. Upon completion of leak check, evacuate the refrigerant lines and indoor coil before opening the gas and liquid line valves.

2. Attach appropriate hoses from manifold gauge to gas and liquid line pressure taps.

3. Attach center hose of manifold gauges to vacuum pump.

4. Evacuate until the micron gauge reads no higher than 350 microns.

5. Close off valve to vacuum pump and observe the micron gauge. If gauge pressure rises above 500 microns in one (1) minute, then evacuation is incomplete or system has a leak.

6. If vacuum gauge does not rise above 500 microns in one (1) minute, the evacuation should be complete.

7. Blank off vacuum pump and micron gauge, close valves on manifold gauge set.

NOTE: DO NOT VENT REFRIGERANT INTO THE ATMOSPHERE.

8. The liquid line shut-off valve can now be opened. Remove shut-off-valve cap. Fully insert hex wrench into the stem and backout counterclock-wise open.

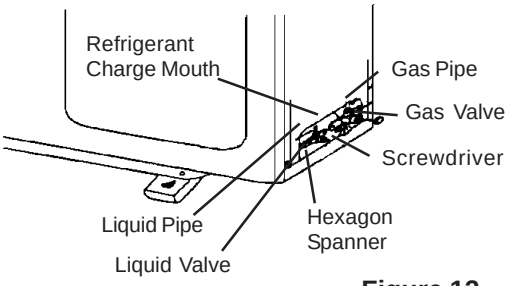
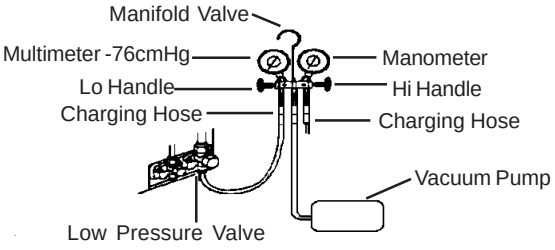


Figure 12



Gauges must be R410A rated

Figure 13

9. The gas valve can now be opened. Open the gas valve by removing the shut-off valve cap and turning the valve stem 1/4 turn counterclockwise using 1/4" Open End or Adjustable wrench.

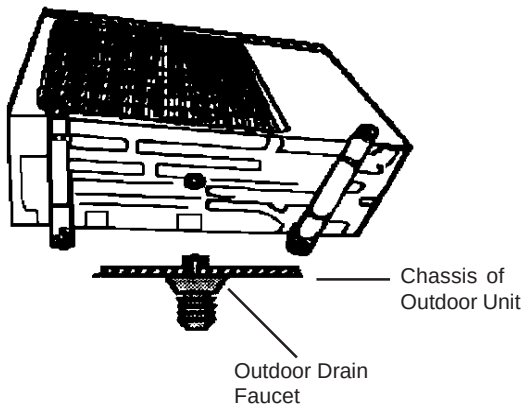
10. The gas valve is now open for refrigerant flow. If refrigerant lines are longer than fifteen feet (8 m), it will be necessary to adjust system refrigerant charge upon completion of installation.

Installation Outdoor Unit

Draining Condensate Water from the Outdoor Unit

When the air conditioning unit is in the heating mode, condensate water generated at the oudoor unit and the water generated by defrosting will be drained through the drain pipe to the outside.

Installation method: As shown in the right-hand figure, insert the drain joint of the oudoor unit into the 25 dia. hole on the base plate of the unit. Connect the drain pipe to the drain mouth in order to drain condensate water and water generated by defrosting to the drain disposal.



Testing and Operating Verification

Check Items After Installation

Check Items	Problems Owing to Improper Installation
Is the installation reliable?	The unit may drop, vibrate or make noises
Has the gas leakage been checked?	May cause unsatisfactory cooling (heating) effect
Is the thermal insulation of the unit sufficient?	May cause condensation and water dropping
Is the drainage smooth?	May cause condensation and water dropping
Does the power supply voltage accord with the rated voltage specified on the nameplate?	The unit may bread down or the components may be burned out
Are the lines and pipelines correctly installed?	The unit may bread down or the components may be burned out
Has the unit been safely grounded?	Risk of electrical leakage
Are the models of lines in conformity with requirements?	The unit may bread down or the components may be burned out
Are there any obstacles near the air inlet and outlet of the indoor and outdoor units?	The unit may bread down or the components may be burned out
Have the length of refrigerating pipe and refrigerant charge amount been recorded?	It is not easy to decide the charge amount of refrigerant.

Test Run

1. Preparation of Test Run
   (1) Do not switch on the power before all installation work is completed.
   (2) Confirm that the control line is correctly installed and all electrical lines are firmly connected.
   (3) Open the shutoff valves of the big and small pipes.
   (4) Remove all foreign articles, especially metal scraps, line ends and forceps, from the unit.
2. Method of Test Run
   (1) Connect to the power supply, press the "ON/OFF" key on the remote controller, and the air-conditioning unit starts to operate.
   (2) Press the Mode key, select the operating modes such as cooling and fan, and observe if the operation is normal.

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