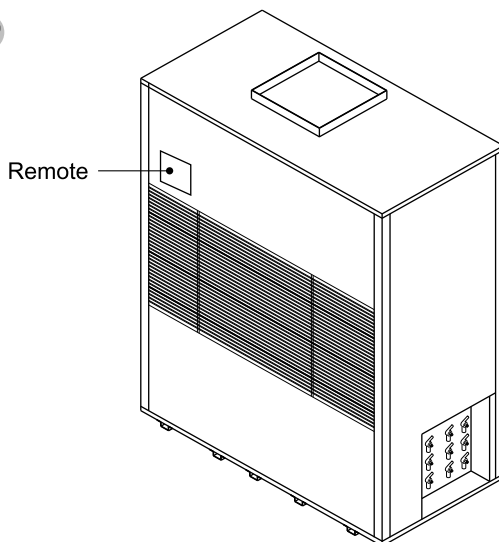


DUCTED SPLIT TYPE AIR CONDITIONERS INSTALLATION INSTRUCTIONS

- Please read this instruction sheet completely before installing the product.
- When the power supply location is wanted to replace, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with national wiring standards by authorized personnel only.

Indoor Unit



Outdoor Unit

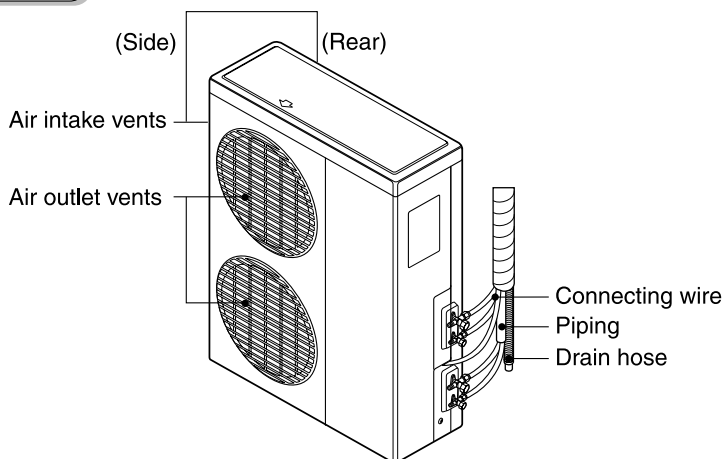


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1. The following should be always observed for safety

- Please report to or take consent by the supply authority before connecting to the system.
- Be sure to read "THE FOLLOWING SHOULD BE ALWAYS OBSERVED FOR SAFETY" before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- The indications and meanings are as follows.

	WARNING	Could lead to death, serious injury, etc.
	CAUTION	Could lead to serious injury in particular environments when operated incorrectly.

- After reading this manual, be sure to keep it together with Warranty Card in a handy place.



WARNING

Do not install it yourself (customer).

- Incomplete installation could cause injury due to fire, electric shock, the unit falling or a leakage of water. Consult the dealer from whom you purchased the unit or special installer.

Perform the installation securely referring to the installation manual.

- Incomplete installation could cause a personal injury due to fire, electric shock, the unit falling or a leakage of water.

Install the unit securely in a place which can bear the weight of the unit.

- When installed in an insufficient strong place, the unit could fall causing injured.

Perform electrical work according to the installation manual and be sure to use an exclusive circuit.

- If the capacity of the power circuit is insufficient or there is incomplete electrical work, it could result in a fire or an electric shock.

Use the specified wires to connect the indoor and the outdoor units securely and attach the wires firmly to the terminal board connecting sections so the stress of the wires is not applied to the sections.

- Incomplete connecting and fixing could cause fire.

Attach the electrical part cover to the indoor unit and the service panel to the outdoor unit securely.

- If the electrical part cover if the indoor unit and/or the service panel if the outdoor unit are not attached securely, it could result in a fire or electric shock due to dust, water, etc.

Check that the refrigerant gas do not leak after installation is completed.

Be sure to use the part provided or specified parts for the installation work.

- The use of defective parts could cause an injury or leakage of water due to a fire, electric shock, the unit falling, etc.



CAUTION

Perform the drainage/piping work securely according to the installation manual.

- If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged.

Do not install the unit in a place where an inflammable gas leaks.

- If gas leaks and accumulates in the area surrounding the unit, it could cause an explosion.

Do not touch discharge line while running the unit.

- Discharge piping shall be marked with red color at site by the installer.

2. Installation of Indoor, Outdoor Unit

1. Inspection

- 1) Check for damage after unit is unloaded.
Report promptly, to the carrier, any damage found to unit. Do not drop unit.
- 2) Determine if adequate electrical power is available. Refer to the application specifications.
- 3) Check to be sure if the nitrogen pressure has been retained during the shipment.

2. Selection of the best location

1) Indoor unit

Install the air conditioner in the location that satisfies the following conditions.

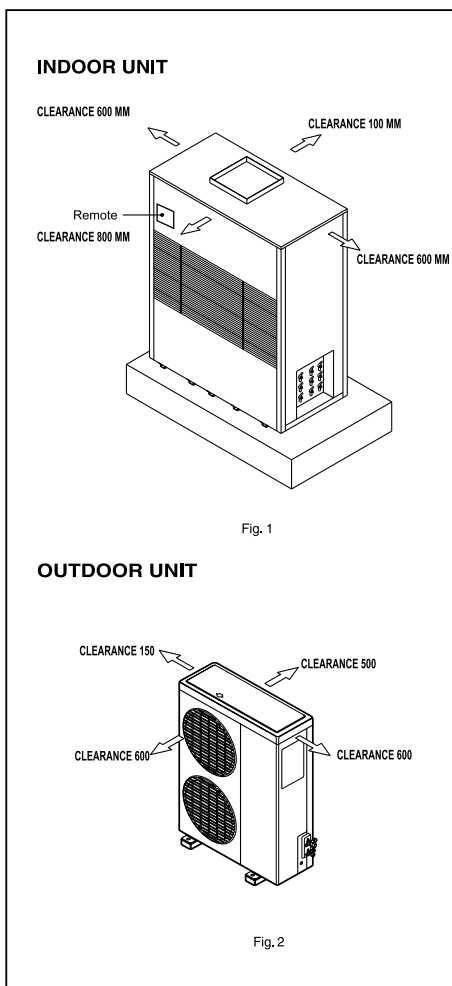
- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.
- The place shall easily connect with the outdoor unit.
- The place where adequate air circulation is available
- There should not be any heat source or steam near the unit.
- Remote to be connected with remote wire and to be fixed at location specified in. **(Fig. 1)**

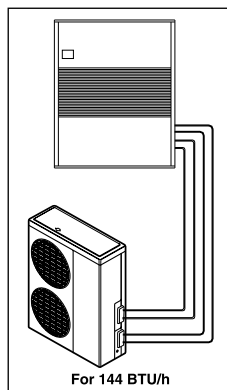
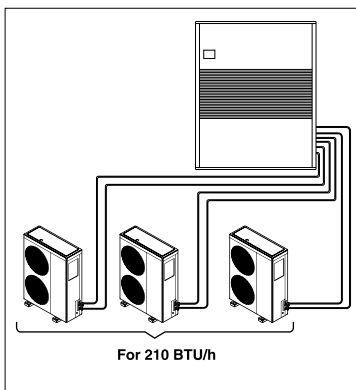
※ Suggested airflow clearances and service clearances are given in. **(Fig. 1)**

2) Outdoor unit

- If an awning is built over the unit to prevent direct sunlight or rain exposure, be careful that heat from the condenser is not restricted.
- There should not be any animals or plants which could be affected by hot air discharged.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.

※ Suggested airflow clearances and service clearances are given in. **(Fig. 2)**





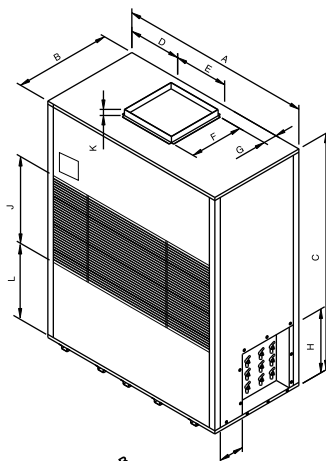
Capacity	Pipe Size (Diameter)		Length A(m)		Elevation B(m)	
	Discharge	Liquid	Standard	Max.	Standard	Max.
144 BTU/h	7/8"	1/2"	7.5	30	7.5	10
210 BTU/h	7/8"	1/2"	7.5	30	7.5	20

- Capacity is based on standard length and maximum allowance length is on the basis of reliability

3. Dimensional Data

INDOOR UNIT

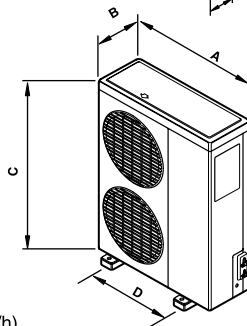
	Capacity	
	144 BTU/h	210 BTU/h
	Dimension (mm)	Dimension (mm)
A	1275	1525
B	767	767
C	1820	1820
D	355	555
E	402	477
F	348	410
G	102	102
H	382	382
I	152.6	152.6
J	710	732
K	28	28
L	557	557



OUTDOOR UNIT

	Capacity	
	144 BTU/h	210 BTU/h
	Dimension (mm)	Dimension (mm)
A	970	906
B	745	406
C	1310	1135
D	599	606

Unit : mm



Note : Each IDU is attached to 03 nos. of ODU (210 BTU/h).

4. Specification Sheet

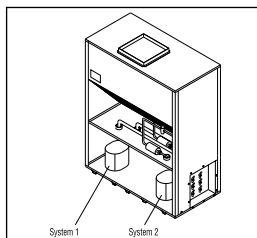
Model Name		Unit	144 BTU/h	210 BTU/h
Cooling Capacity		TR	12	17.5
Power Input		KW	14.5	19
Power Supply		V / Hz / Phase	415 / 50 / 3	415 / 50 / 3
Refrigerant Control		Device	Exp. Valve	Exp. Valve + By Pass Capillary
MassFlow Rate of Air		CFM	4800	6600 ± 10%
Compressor	Number of Compressor	No	2	3
	Type		Scroll	Scroll
	Make		LG	LG
	Model		SR073YAC	SR073YAC
Evaporator	Face Area	Sq M	0.784m ²	1.11m ²
	Fin Density / Rows	FPI / No	16 / 4	17 / 4
	Material of Tube / Fin		Cu / Al	Cu / Al
	Fan Motor	HP	3	3
Condenser	Face Area	Sq M	1.32	0.65
	FPI / Rows	FPI / No	17 / 2	14 / 2
	Material of Tube / Fin		Cu. / Al	Cu. / Al
	Fan Motor	Watt	0.6 HP	93W
Unit Dimension	Indoor (W x D x H)	mm x mm x mm	1275 x 767 x 1820	1525 x 760 x 1820
	Outdoor (W x D x H)	mm x mm x mm	970 x 745 x 1310	906 x 406 x 1135
Connection (mm)	Hot Gas (OD)	inch	7/8"	7/8"
	Liquid Line (OD)	inch	1/2"	1/2"
	Evaporator Drain	inch	1"	1"
	Supply Air Outlet Size	mm x mm	348x402	406x473

Note : All specifications are subject to change due to continuous innovative changes by R&D.

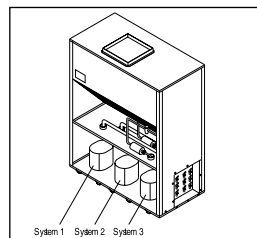
R-22 Charge (gms)

Capacity	System 1	System 2	System 3
144 BTU/h	4600	4600	—
210 BTU/h	5200	5200	5200

144 BTU/h



210 BTU/h



Note : Care should be taken during charging (Qty).

5. Ductwork

Connections to the unit should be made with three-inch canvas connectors to minimize noise and vibration transmission.

Elbows with turning vanes or splitters are recommended to minimize air noise and resistance.

The first elbow in the ductwork leaving the unit should be no closer than three times blower diameter to avoid turbulence and back pressure.

6. Condensate Drain Piping

Connect a 1" flexible pipe to connect the drain pipe to the drain outlet of the Drain Pan.

A 1" male condensate drain connection is located on the corner of the unit next to the evaporator section access panel. A trap should be installed and filled with water before starting the unit to avoid air from being drawn through. Follow local codes and standard piping practices when running the drain line. Pitch the line downward, away from the unit, and avoid long horizontal runs. See Fig. 1.

Do not use reducing fittings in the drain lines.

The condensate drain must be:

1. Made of 1" pipe size.
2. Pitched 1/4" per foot to provide free drainage to convenient drain system.
3. Trapped
4. Must not be connected to closed drain system.

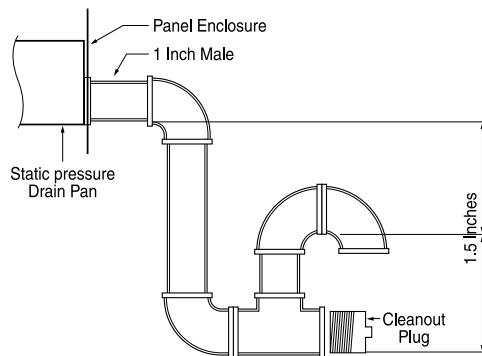


Fig. 1

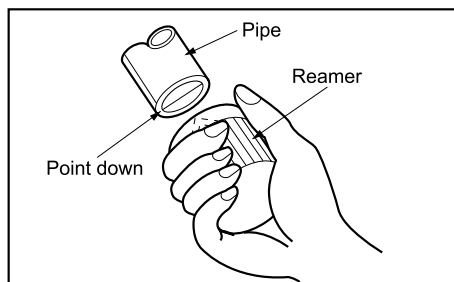
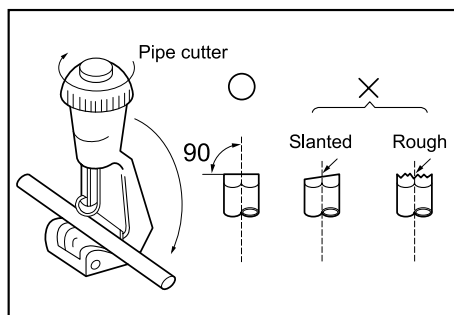
7. Piping of Indoor Unit

1. Preparation of piping

- 1) The connecting tubes should be 7/8", 1/2" diameter hard pipes of thickness of 16 SWG. The straight connector, elbows etc. should be of 16 SWG.
- 2) Cut the pipes and the cable
 - Use the accessory piping kit or the pipes purchased locally.
 - Measure the distance between the indoor and the outdoor unit.
 - Cut the pipes a little longer than measured distance.
 - Cut the cable 1.5m longer than the pipe length.
- 3) Remove burrs.
 - Remove burrs from cut edges of pipes.
 - Turn the pipe end down to avoid the metal powder entering the pipe.

Caution:

If burrs are not removed, they may cause a gas leakage.



2. Connection of piping

- 1) Move the indoor tubing and drain hose to the hole
 - Remove tubing holder and pull the tubing out of the chassis.
- 2) Replace the tubing holder into original position
- 3) Route the tubing and the drain hose straight backwards.
- 4) Insert the connecting cable into the indoor unit through the hole.
 - Do not connect the cable to the indoor unit
 - Make a small loop with the cable for easy connection later.
- 5) Tape the tubing and the connecting cable.
- 6) Connecting the pipings to the indoor unit.
 - Align the center of the pipings and sufficiently tighten the flare nut with fingers.
 - Finally, tighten the flare nut with torque wrench until the wrench clicks. When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

CAUTION

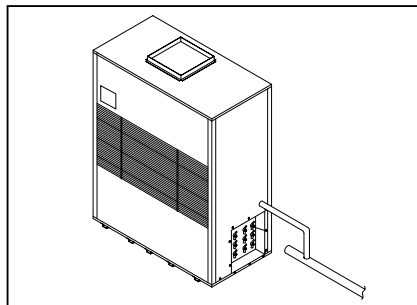
After the confirmation of the above conditions, prepare the wiring as follows:

- 1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram pasted inside the control box cover.**
- 2) Provide a circuit breaker switch between power source and the unit.**
- 3) The screw which fasten the wiring in the casing of electrical fittings are liable to become loose due to vibrations, to which the unit is subjected, during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)**
- 4) Specification of power source**
- 5) Confirm that electrical capacity is sufficient.**
- 6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.**
- 7) Confirm that the cable thickness is as specified in the power sources specification.
(Particularly note the relation between cable length and thickness.)**
- 8) Never fail to equip a leakage breaker where it is wet or moist.**
- 9) The following troubles would be caused by voltage drop-down.**
 - Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.
 - Proper starting power is not given to the compressor.

3. Form the Piping Drain

1) Wrap the connecting portion of indoor unit with the insulation material and secure it with two Plastic Bands. (for the right piping)

- If you connect an additional drain hose, the end of the drain-outlet should be kept distance from the ground. (Do not dip it into water, and fix it on the wall to avoid swinging in the wind.)



In case of the outdoor unit is installed below position of the indoor unit.

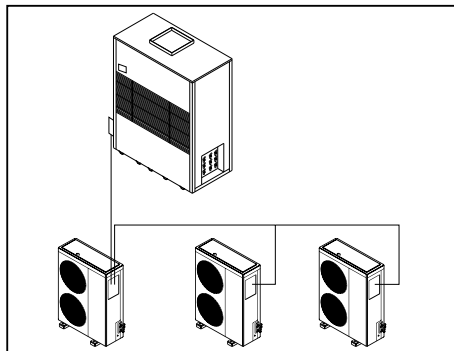
- 2) Tape the Piping, and Connecting Cable from down to up.**
Form the piping gathered by taping along the exterior wall and fix it onto the wall by saddle or equivalent.

In case of the outdoor unit is installed upper position of the indoor unit.

- 3) Tape the piping and connecting cable from down to up.**
In order to prevent water from entering the room, form a trap and tape the piping. Fix the piping onto the wall with saddle or bracket.

8. Electrical Wiring

- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.

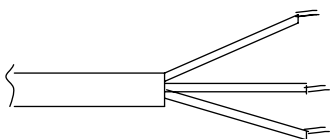
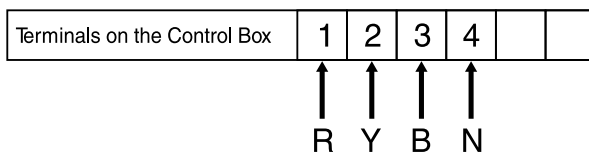


Note : ODU 3 is not applicable for 144 BTU/h.

Connecting cables Control Box (3 Phase Power Supply)

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor and the terminal no. are the same to connecting cable.

Cooling Only



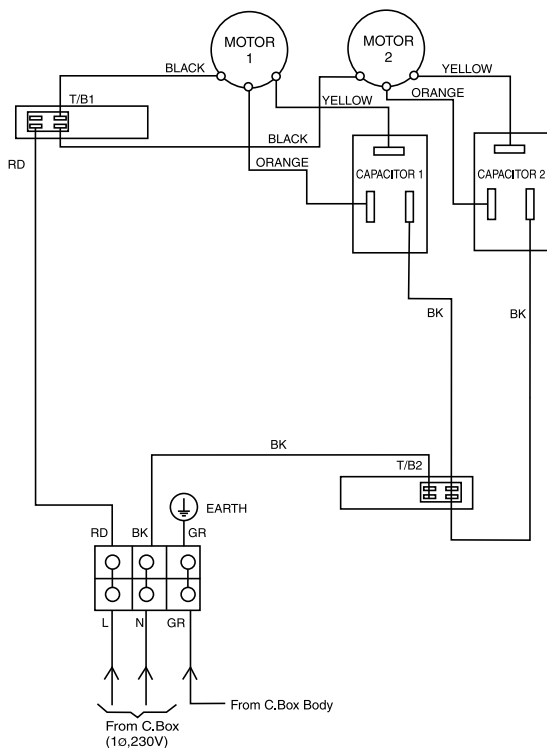
Normal cross-sectional
area 10.00 sq. mm
Copper armoured cable

WARNING

Make sure that the screws of the terminal are free from looseness.

OUTDOOR WIRING DIAGRAM

210 BTU/h



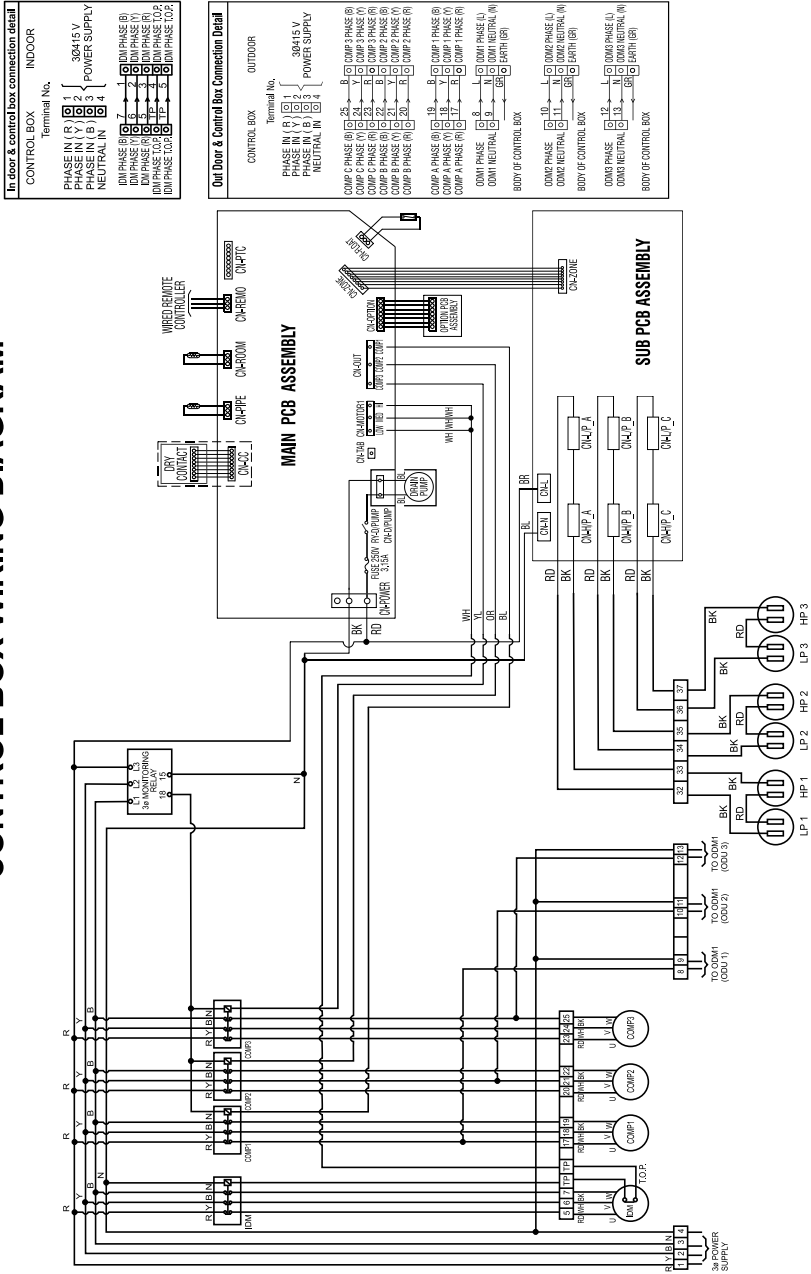
Out Door & Control Box Connection Detail

CONTROL BOX	OUTDOOR
Terminal No.	
PHASE IN (R)	1
PHASE IN (Y)	2
PHASE IN (B)	3
NEUTRAL IN	4
3Ø415 V POWER SUPPLY	
ODM1 PHASE	8 → L
ODM1 NEUTRAL	9 → N
	GR → EARTH (GR)
BODY OF CONTROL BOX	
ODM2 PHASE	10 → L
ODM2 NEUTRAL	11 → N
	GR → EARTH (GR)
BODY OF CONTROL BOX	
ODM3 PHASE	12 → L
ODM3 NEUTRAL	13 → N
	GR → EARTH (GR)
BODY OF CONTROL BOX	

EBY35812904

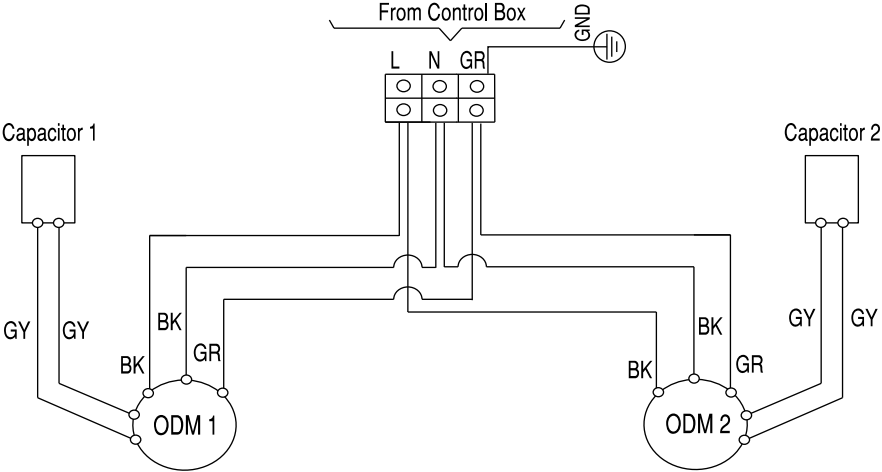
210 BTU/h

CONTROL BOX WIRING DIAGRAM



EBY33415412

OUTDOOR WIRING DIAGRAM
144 BTU/h

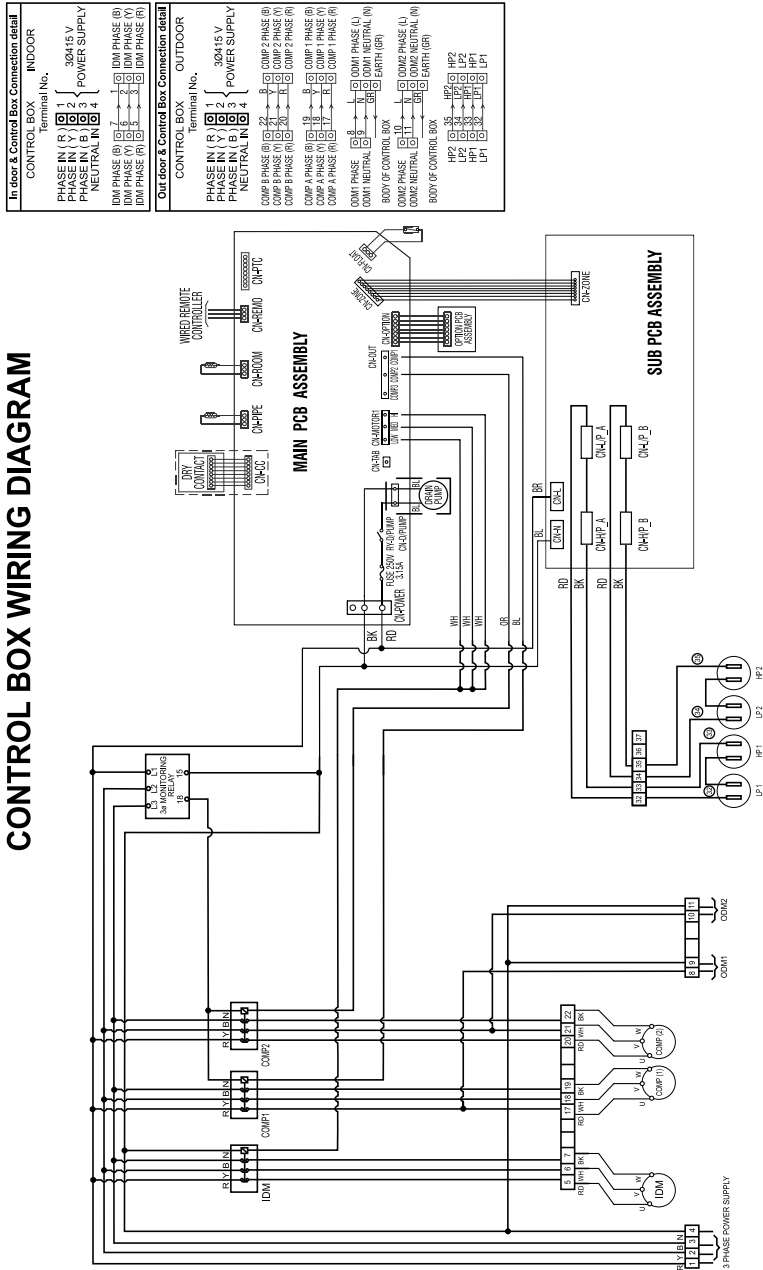


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144 BTU/h

144 BTU/h

CONTROL BOX WIRING DIAGRAM



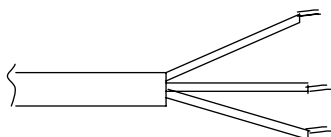
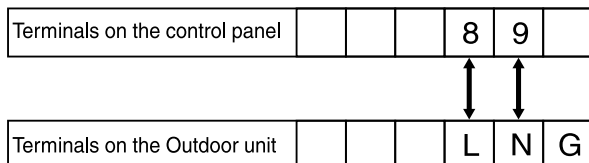
EBY33415407

InterConnecting cables between Indoor 1-Control panel (ODM1)

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

For ODM1

Cooling Only



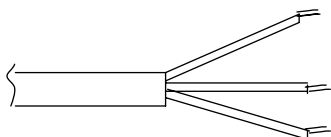
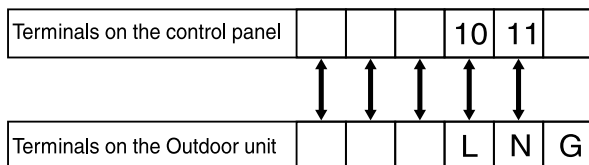
Normal cross-sectional area 1.25 sq. mm

InterConnecting cables between Outdoor 2-Control panel (ODM2)

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

For ODM2

Cooling Only



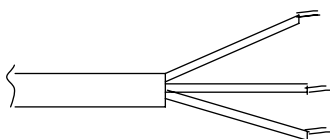
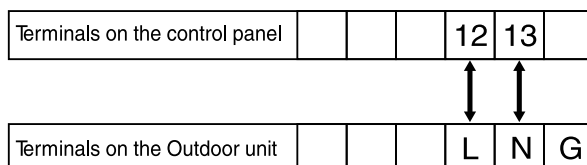
Normal cross-sectional area 1.25 sq. mm

InterConnecting cables between Outdoor 3-Control panel (ODM3)

- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

For ODM3

Cooling Only



Normal cross-sectional area 1.25 sq. mm

Note : ODU 3 is not applicable for 144 BTU/h.

9. Start-Up Pre-Start Quick Check List

- Is unit level and located with proper clearances?
- Is the duct work correctly sized, run, taped, insulated and weather proofed with proper unit arrangement?
- Is condensate line properly sized, run trapped and pitched?
- Is the filter of the correct size, clean and in place?
- Is the wiring properly sized and run in according to the unit wiring diagram?
- Are all wiring connections tight including those in unit and compressor electrical boxes?
- Has the unit been properly grounded and fused with the recommended fuse size?
- Have the air conditioning systems been checked at the service ports for charge and leak tested if necessary?
- Does the condenser fan and indoor fan turn freely without rubbing and are they tight on the shafts?
- Visually inspect the unit to ensure that the airflow required for the condenser coil is not obstructed from the unit.
- Inspect the control panel wiring to verify that all electrical connections are tight, and that wire insulation is intact.
- Has the indoor fan speed been determined and the proper speed been set?
- Has all work been done in accordance with applicable local and national codes?
- Are all covers and access panels in place to prevent air loss and safety hazards?

WARNING

Bodily injury can result from high voltage electrical components. If operating checks must be performed with the unit operating, it is the technician's responsibility to recognize these hazards and proceed safely. Failure to do so could result in severe personal injury or death due to electrical shock or contact with moving parts.

10. Final Installation Checklist and Maintenance

- Is the condenser fan and indoor blower operating correctly, with proper rotation and without undue noise?
- Are the compressors operating correctly and has the system been checked with a charging chart?
- Have voltage and running currents been checked to determine if it is within limits?
- Have the air discharge grilles been adjusted to balance the system?
- Has the ductwork been checked for air leaks and condensation?
- Has the indoor airflow been checked and adjusted if necessary?
- Has the unit been checked for tubing and sheet metal rattles and are there unusual noises to be checked?
- Are all covers and panels in place and properly fastened?
- Has the owner or maintenance personnel been given this manual, warranty, and been instructed on proper operation and maintenance?

Routine Maintenance By Owner

You can do some of the periodic maintenance functions for your unit yourself; this includes cleaning air filters, cleaning unit cabinet, cleaning the condenser coil, and conducting a general unit inspection on a regular basis.

WARNING

Before removing access panels to service unit, disconnect power supply. Failure to disconnect power before attempting any servicing can result in severe injury or death.

Air Filters

It is very important to keep the central duct system air filters clean. Be sure to inspect them at least once each month when the system is in constant operation. (In new buildings, check the filters every week for the first 4 weeks.)

Permanent type filters can be cleaned by washing with a mild detergent and water. Ensure that the filters are thoroughly dry before reinstalling them in the unit (or duct system).

Condenser coil

Unfiltered air circulates through the unit's condenser coil and can cause the coil's surface to become clogged with dust, dirt, etc.. To clean the coil, vertically (i.e., along the fins) stroke the coil surface with a soft bristled brush.

Keep all vegetation away from the condenser coil area.

Maintenance Performed by Serviceman-Cooling Season

To keep your unit operating safely and efficiently, the manufacturer recommends that a qualified serviceman check the entire system at least once each year, or more frequently if conditions warrant. Your serviceman may examine these areas of your unit:

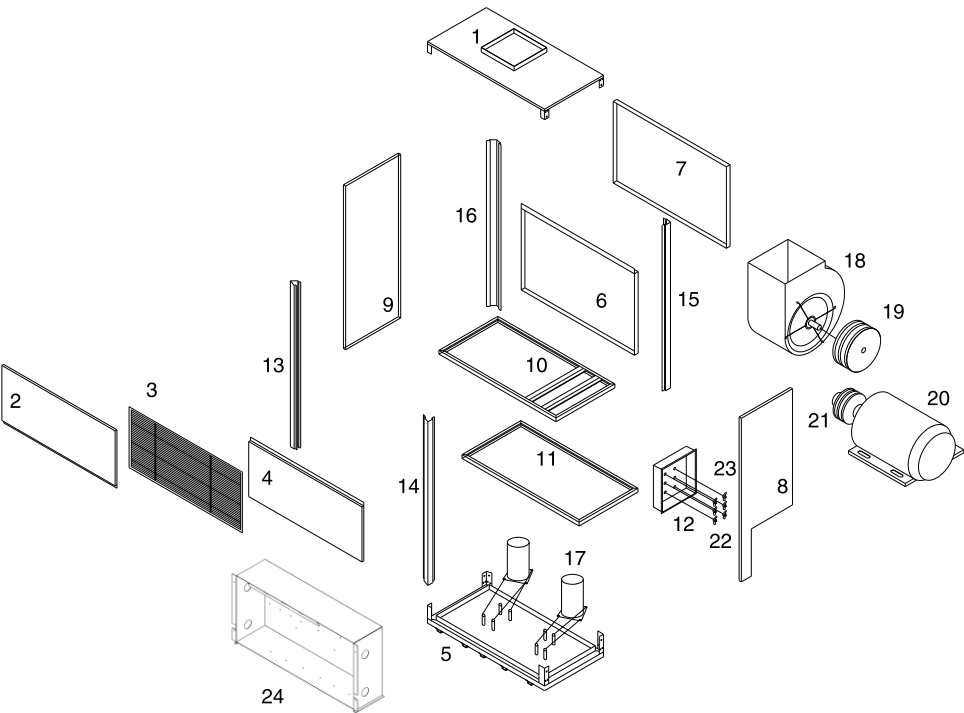
1. Filters	→ For cleaning
2. Motors and drive system components	
3. Condenser coils	→ For cleaning
4. Safety Controls	→ For mechanical cleaning
5. Electrical components and wiring	→ For possible replacement or connection tightness
6. Condensate drain	→ For cleaning
7. Inspect the unit duct connections to ensure they are physically sound and sealed to the unit casing.	
8. Inspect the unit mounting support to see that it is sound.	
9. Inspect the unit to ensure there is no obvious deterioration.	

WARNING

- To prevent injury or death due to electrical shock of contact with moving parts, lock unit disconnect switch in open position before servicing unit.
- To prevent an explosion and possible injury, death and equipment damage, do not store combustible materials, gasoline or other flammable vapors and liquids near the unit.
- Inspect the control panel wiring to verify that all electrical connections are tight and wire insulation is intact.

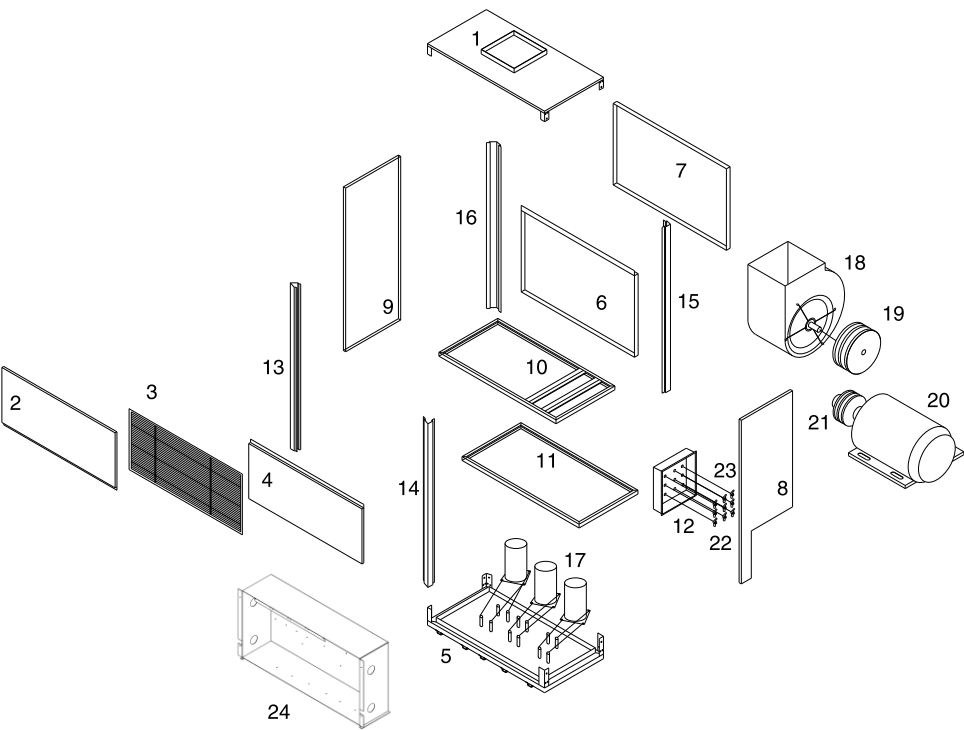
EXPLODED VIEW (INDOOR UNIT)

144 BTU/h



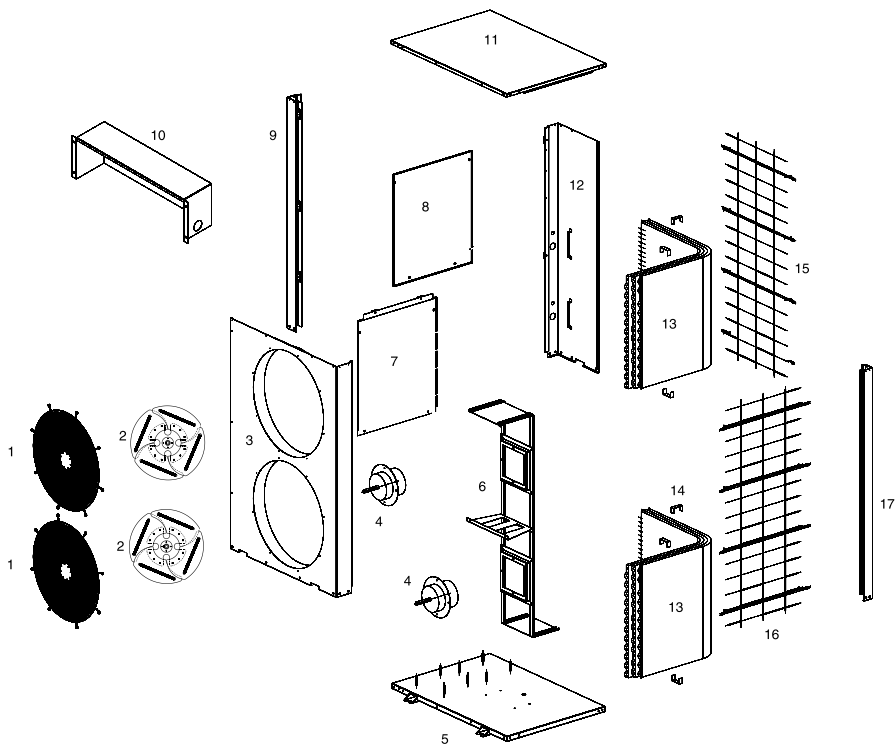
EXPLODED VIEW (INDOOR UNIT)

210 BTU/h



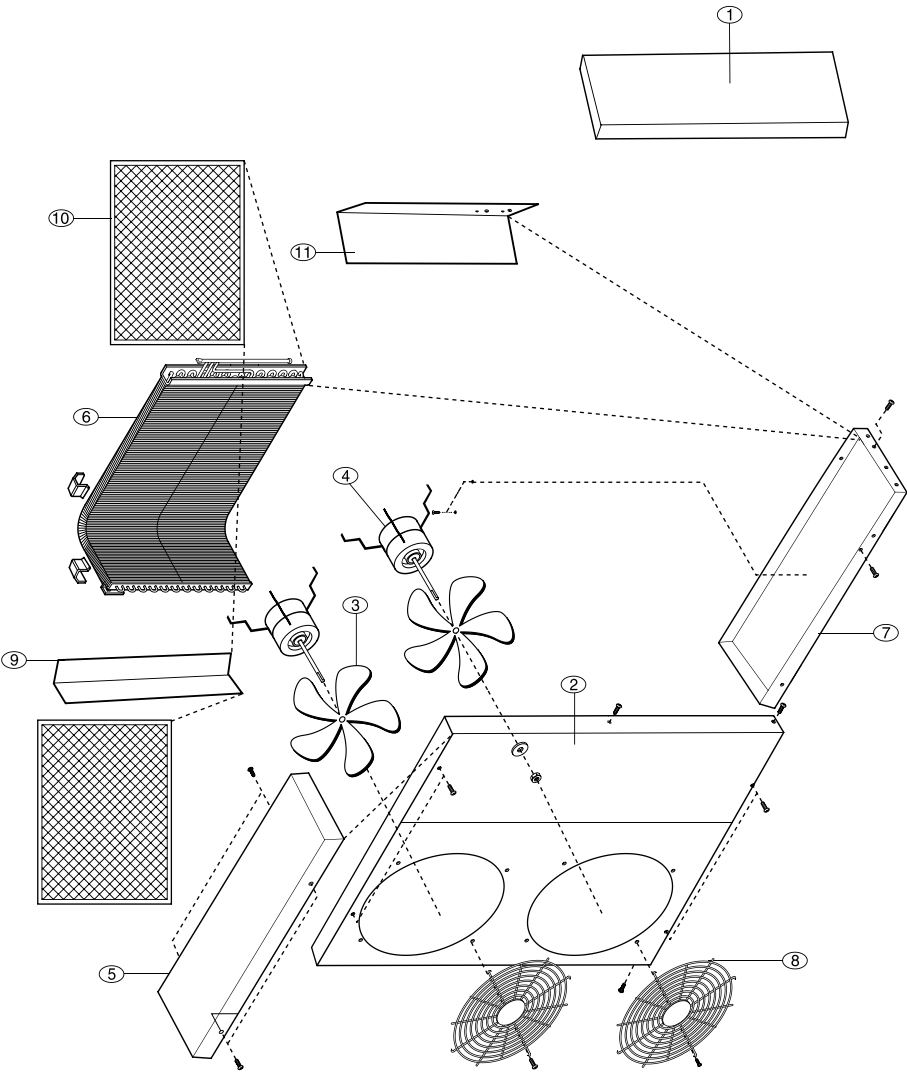
EXPLODED VIEW (OUTDOOR UNIT)

144 BTU/h



EXPLODED VIEW (OUTDOOR UNIT)

210 BTU/h



Part List

INDOOR UNIT			Model	
			144 BTU/h	210 BTU/h
S.No.	Name	Unit	Qty	Qty
1	TOP PANEL	Nos	1	1
2	PANEL FRONT TOP	Nos	1	1
3	GRILL	Nos	1	1
4	FRONT BOTTOM PANEL	Nos	1	1
5	BASE PANEL	Nos	1	1
6	PANEL REAR BOTTOM	Nos	1	1
7	PANEL REAR TOP	Nos	1	1
8	PANEL SIDE LEFT	Nos	1	1
9	PANEL SIDE RIGHT	Nos	1	2
10	MOTOR BASE FRAME (ASSLY)	Nos	1	1
11	DRAIN PAN SUPPORT (ASSLY)	Nos	2	2
12	VALVE BOX	Nos	1	1
13	PANEL CORNER RGT FRONT (ASSLY)	Nos	1	1
14	PANEL CORNER LEFT FRONT	Nos	1	1
15	PANEL CORNER LEFT REAR	Nos	1	1
16	PANEL CORNER RGT REAR	Nos	1	1
17	COMPRESSOR	Nos	2	3
18	BLOWER ASSEMBLY	Nos	1	1
19	PULLEY MOTOR	Nos	1	1
20	MOTOR BLOWER	Nos	1	1
21	PULLEY BLOWER	Nos	1	1
22	VALVE 1/2"	Nos	2	3
23	VALVE 1/4"	Nos	2	3
24	CONTROL BOX ASSEMBLY	Nos	1	1

OUTDOOR UNIT			Model	
			144 BTU/h	210 BTU/h
S.No.	Name	Unit	Qty	Qty
1	FAN GUARD	Nos	2	2
2	CONDENSER FAN	Nos	2	2
3	FRONT PANEL	Nos	1	1
4	MOTOR	Nos	2	2
5	BASE PANEL	Nos	1	1
6	MOUNT MOTOR	Nos	1	1
7	SIDE PANEL BOTTOM	Nos	1	1
8	SIDE PANEL TOP	Nos	1	1
9	SIDE PANEL CORNER	Nos	1	1
10	CONTROL BOX	Nos	1	1
11	TOP PANEL	Nos	1	1
12	REAR PANEL	Nos	1	1
13	CONDENSER COIL	Nos	2	2
14	CONDENSER CLAMP	Nos	6	6
15	REAR GRILL	Nos	1	1
16	SIDE GRILL	Nos	1	1
17	REAR CORNER	Nos	1	1

