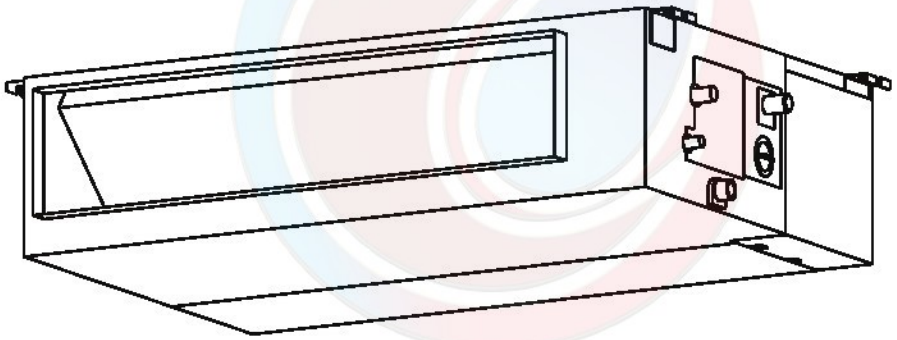
Installation Manual

Duct Series

Indoor Unit Model	Outdoor Unit Model
MTBU-12WRFN1-QRD0W	MOB30U-12HFN1-QRD0
MTB-18WRFN1-QRD0W	MOB30U-18HFN1-QRD0
MTB-24WRFN1-QRD0W	MOCA30U-24HFN1-QRD0
MTB-30WRFN1-QRD0W	MOD30U-30HFN1-QRD0
MTB-36WRFN1-QRD0W	MOD30U-36HFN1-QRD0
MTB-48WRFN1-QRD0W	MOE30U-48HFN1-QRD0
MTB-55WRFN1-QRD0W	MOE30U-55HFN1-QRD0



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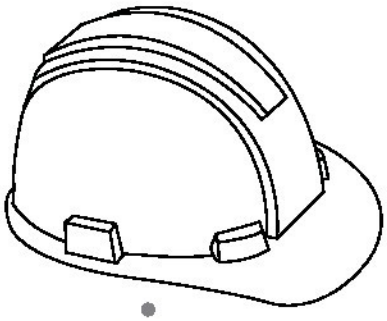
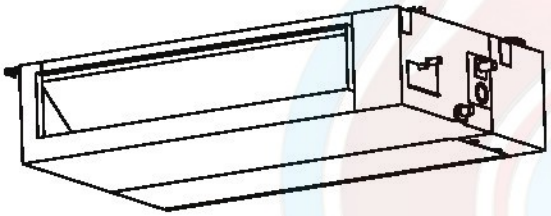
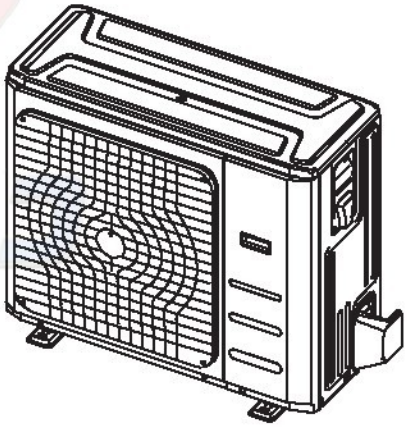
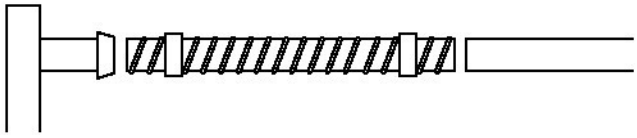
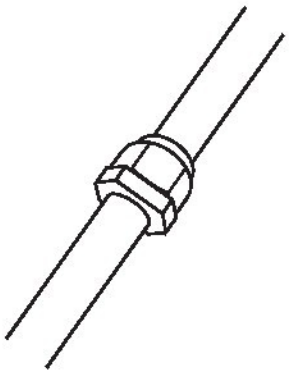


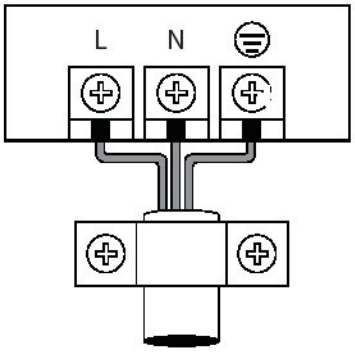


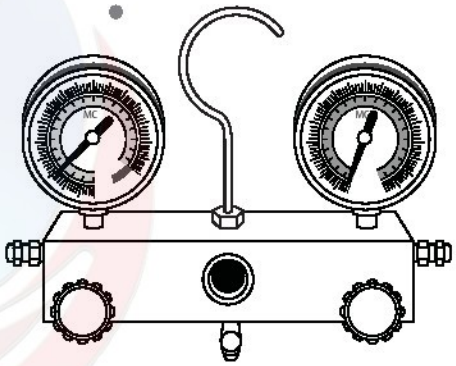




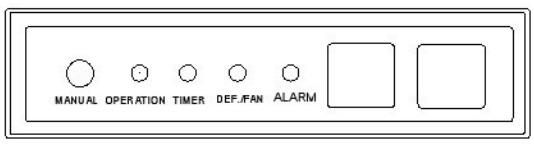
Caution: **Risk of fire**
(for R32 refrigerant ony)







FOR ANTI-COLD WIND				
SW1	ON 1 2	ON 1 2	ON 1 2	ON 1 2
TEL0	24℃	16℃	8℃	EEPROM DEFAULT
FACTORY SETTING	✓			



Accessories

1

The air conditioning system comes with the following accessories. Use all of the installation parts and accessories to install the air conditioner. Improper installation may result in water leakage, electrical shock and fire, or cause the equipment to fail.

	Name	Shape	Quantity
Indoor unit installation	Installation paper template (some models)		1
Refrigeration Fittings	Soundproof/insulation sheath (some models)		1
Drainpipe Fittings	Outlet pipe sheath (some models)		1
	Outlet pipe clasp (some models)		1
	Drain joint (some models)		1
	Seal ring (some models)		1
Remote controller & Its Frame (some models)	Commissioning Remote Controller		1
	Fixing screw for remote controller holder ST2.9 x 10		2
	Remote controller holder		1
	Dry battery AAA		2
	Wired Controller		1
	Owner's manual		1
	Installation manual		1
Ferrite Beads	Magnetic ring (wrap the electric wires S1 & S2 (P & Q & E) around the magnetic ring twice)	 S1&S2(P&Q&E)	1
Ferrite Beads	Magnetic ring (Hitch it on the connective cable between indoor unit and outdoor unit after installation.)		1

Safety Precautions

2

Read Safety Precautions Before Installation

Incorrect installation due to ignoring instructions can cause serious damage or injury. The seriousness of potential damage or injuries is classified as either a WARNING or CAUTION.

WARNING

Failure to observe a warning may result in death. The appliance must be installed in accordance with national regulations.

CAUTION

Failure to observe a caution may result in injury or equipment damage.

WARNING

- Carefully read the Safety Precautions before installation.
- In certain functional environments, such as server rooms, etc., the use of specially designed air-conditioning units is highly recommended.
- Only trained and certified technicians should install, repair and service this air conditioning unit. Improper installation may result in electrical shock, short circuit, leaks, fire or other damage to the equipment and personal property.
- Strictly follow the installation instructions set forth in this manual. Improper installation may result in electrical shock, short circuit, leaks, fire or other damage to the equipment.

  locate it accordingly. Failure to do so could cause the equipment to fail.
- After installation, ensure there are no refrigerant leaks and that the unit is operating properly. Refrigerant is both toxic and flammable and poses a serious health and safety risk.

Note about Fluorinated Gasses

1. This air-conditioning unit contains fluorinated gasses. For specific information on the type of gas and the amount, please refer to the relevant label on the unit itself.
2. Installation, service, maintenance and repair of this unit must be performed by a certified technician.
3. Product uninstallation and recycling must be performed by a certified technician.
4. If the system has a leak-detection system installed, it must be checked for leaks at least every 12 months.
5. When the unit is checked for leaks, proper record-keeping of all checks is strongly recommended.

NOTE: Requirements for units using R32 Refrigerant.

Do not accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

The system should not be installed in areas with ignition sources (for example: open flames,an operating gas appliance or an operating electric heater)

Do not pierce or burn.

The system should be installed where the room size corresponds to specific operation.

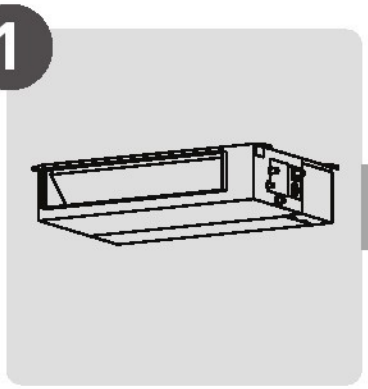
Be aware that refrigerants may not contain an odour.

Installation Overview

3

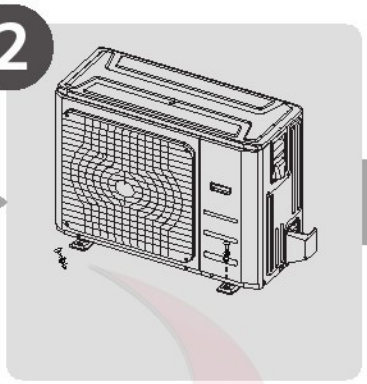
INSTALLATION ORDER

1



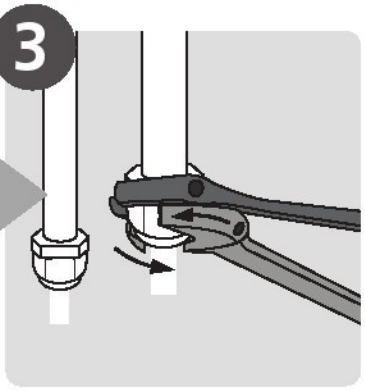
Install the indoor unit
(Page 7)

2



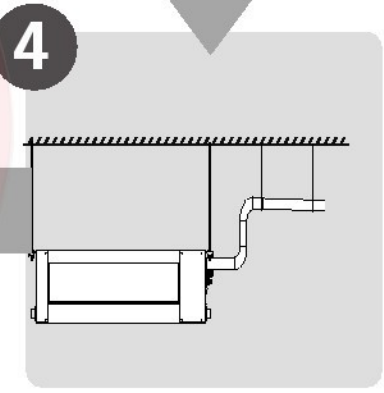
Install the outdoor unit
(Page 18)

3



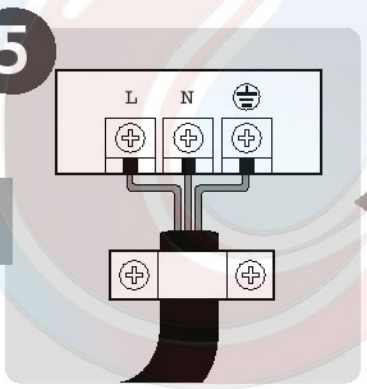
Install the drainpipe
(Page 21)

4



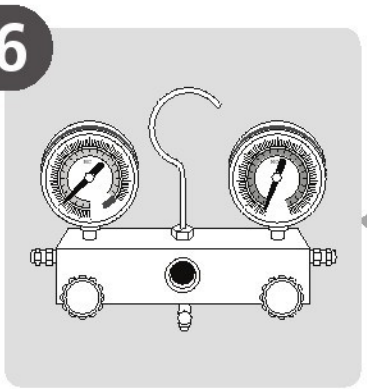
Connect the refrigerant pipes
(Page 23)

5



Connect the wires
(Page 27)

6



Pressure test & Evacuate
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Perform a test run
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Service Documents
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Indoor Unit Installation

4

Indoor Unit Parts

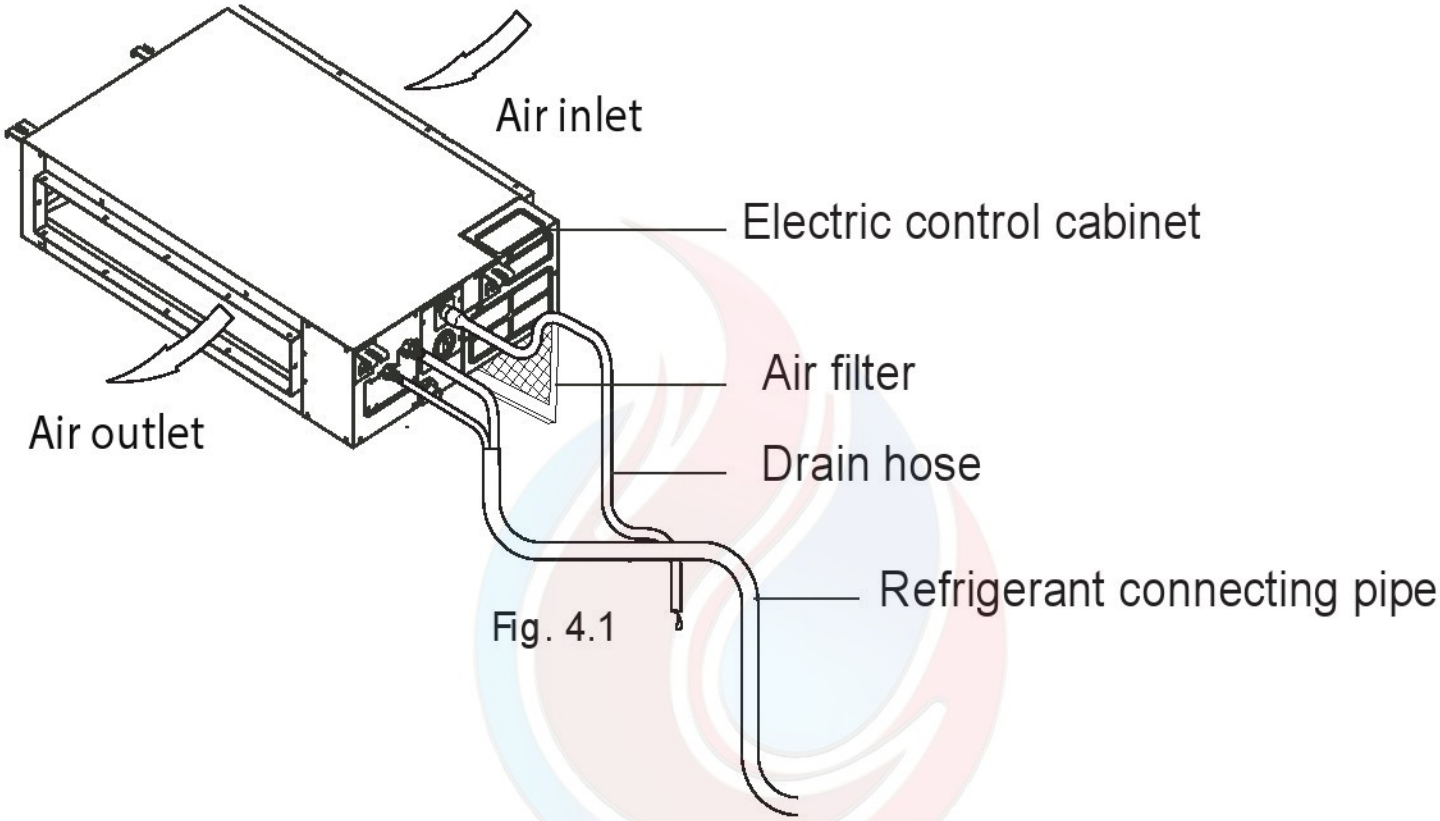


Fig. 4.1

Safety Precautions

WARNING

- Securely install the indoor unit on a structure that can sustain its weight. If the structure is too weak the unit may fall causing personal injury, unit and property damage or death.
- Install the indoor unit at a height of more than 2.5m above the floor.

CAUTION

- Install the indoor and outdoor units, cables and wires at least 1m from televisions or radios to prevent static or image distortion. Depending on the appliances, a 1m distance may not be
- If the indoor unit is installed on a metal part of the building, it must be electrically grounded.

Indoor Unit Installation Instructions

NOTE: Panel installation should be done after piping and wiring.

Step 1: Select installation location

The indoor unit should be installed in a location that meets the following requirements:

- ☑ The unit is at least 1m from the nearest wall.
- ☑ There is enough room for installation and maintenance.
- ☑ There is enough room for the connecting pipe and drainpipe.
- ☑ The ceiling is horizontal and its structure can sustain the weight of the indoor unit.
- ☑ The air inlet and outlet are not impeded.
- ☑ The airflow can fill the entire room.
- ☑ There is no direct radiation from heaters.

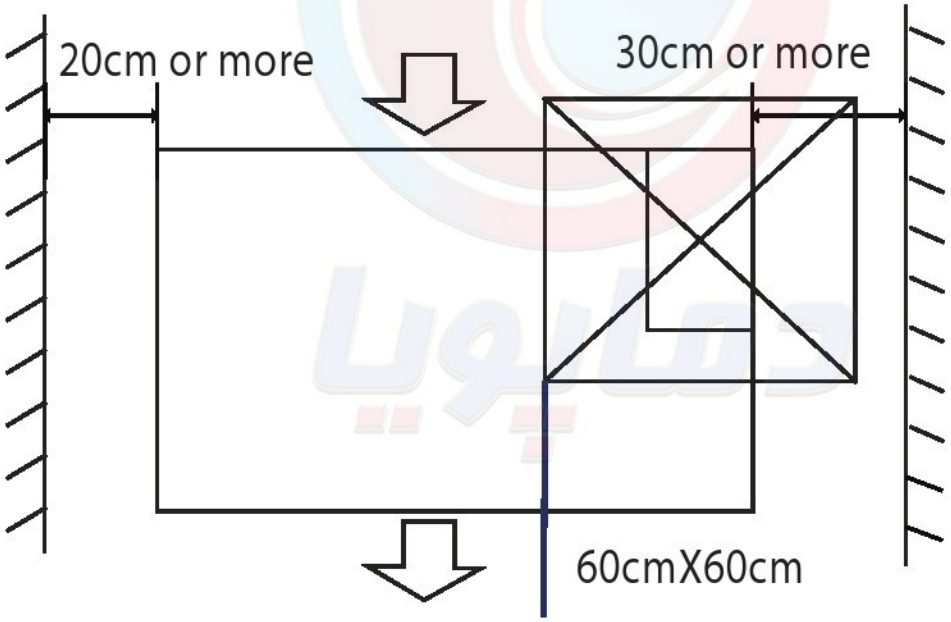
CAUTION

DO NOT install the unit in the following locations:

- ⊘ In areas with oil drilling or fracking
- ⊘ In areas with caustic gases in the air, such as near hot springs
- ⊘ In areas with power fluctuations, such as factories
- ⊘ In enclosed spaces, such as cabinets
- ⊘ In areas with strong electromagnetic waves
- ⊘ In areas that store flammable materials or gas

RECOMMENDED DISTANCES for THE INDOOR UNIT

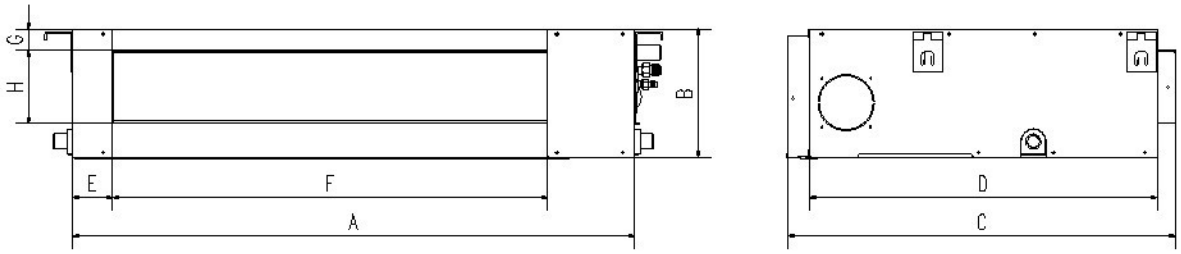
Service Requirements



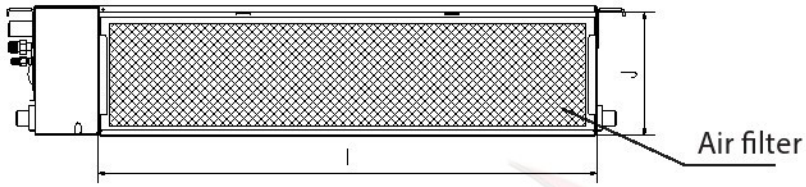
Step 2: Hang indoor unit.

1. Please refer to the following diagrams to locate the four positioning screw bolt holes on the ceiling. Be sure to mark the paces where you will drill ceiling hook holes.

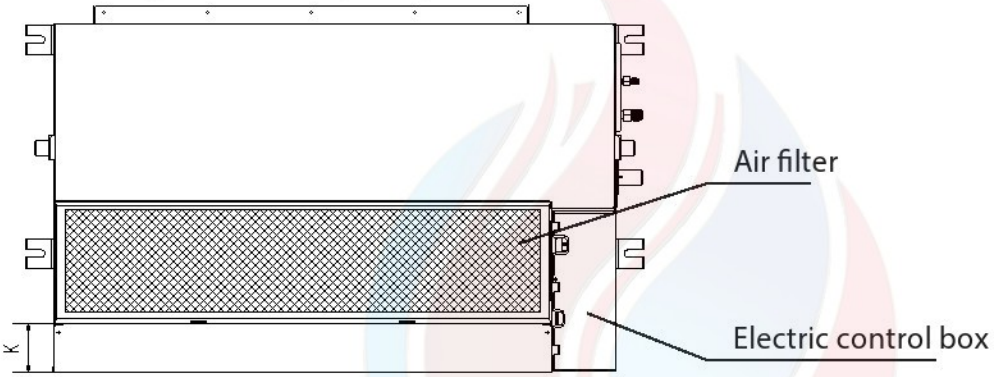
Air outlet dimensions



Air inlet dimensions



Descending ventilation opening



Size of mounted hook

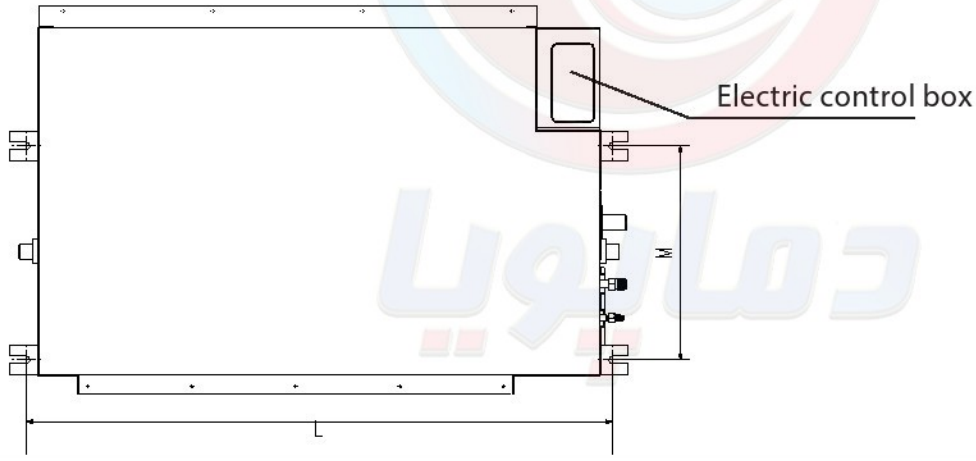


Fig. 4.3

Table.4-1 (unit: mm

MODEL	Outline dimension				air outlet opening size				air return opening size			Size of mounted lug	
	A	B	C	D	E	F	G	H	I	J	K	L	M
12	700	210	635	570	65	493	35	119	595	200	80	740	350
18	920	210	635	570	65	713	35	119	815	200	80	960	350
24	920	270	635	570	65	713	35	179	815	260	20	960	350
30	1140	270	775	710	65	933	35	179	1035	260	20	1180	490
36	1140	270	775	710	65	933	35	179	1035	260	20	1180	490
48~55	1200	300	865	800	80	968	40	204	1094	288	45	1240	500

Wood

Place the wood mounting across the roof beam, then install the hanging screw bolts.(See Fig.4.4)

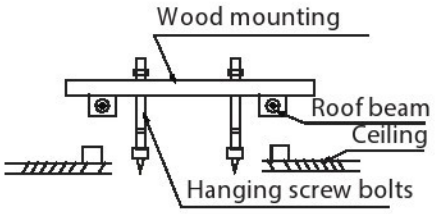


Fig. 4.4

New concrete bricks

Inlay or embed the screw bolts. (See Fig. 4.5)

Fig. 4.5

Original concrete bricks

Use embedding screw bold, crock and stick harness.(Refer to Fig.4-6)

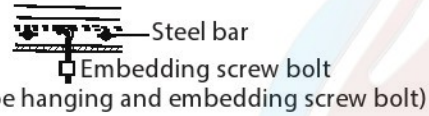


Fig. 4.6

Steel roof beam structure

Install and use the supporting steel angle. (See Fig.4.7)

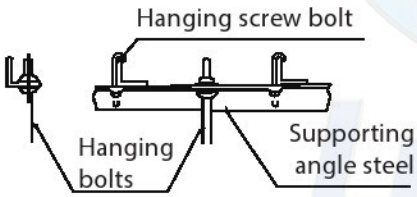


Fig. 4.7

CAUTION

The unit body must be completely aligned with the hole. Ensure that the unit and the hole are the same size before moving on.

2. Install and fit pipes and wires after you have finished installing the main body.When choosing where to start, determine the direction of the pipes to be drawn out. Especially in cases where there is a ceiling involved, align the refrigerant pipes, drain pipes, and indoor and outdoor lines with their connection points before mounting the unit.
3. Install hanging screw bolts.
   - Cut off the roof beam.
   - Strengthen the point at which the cut was made. Consolidate the roof beam.
4. After you select an installation location,align the refrigerant pipes, drain pipes, as well as indoor and outdoor wires with their connection points before mounting the unit.
5. Drill 4 holes 10cm deep at the ceiling hook positions in the internal ceiling. Be sure to hold the drill at a 90° angle to the ceiling.
6. Secure the bolt using the washers and nuts provided.
7. Install the four suspension bolts.
8. Mount the indoor unit with at least two people to lift and secure it. Insert suspension bolts into the unit's hanging holes (See Fig. 4.8).

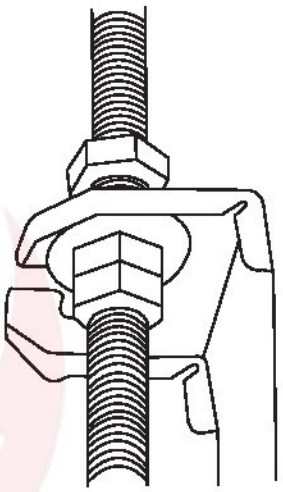


Fig. 4.8

9. Mount the indoor unit onto the hanging screw bolts with a block. Position the indoor unit flat using a level indicator to prevent leaks. (See Fig. 4.9).

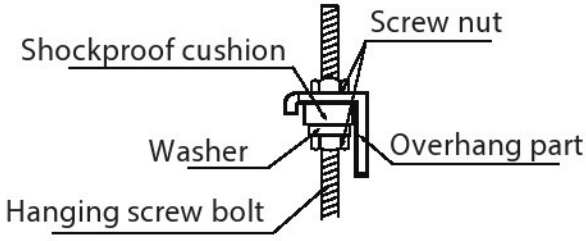


Fig. 4.9

NOTE: Confirm the minimum drain tilt is 1/100 or more.

Step 3: Duct and accessories installation

1. Install the filter(optional) according to air inlet size.
2. Install the canvas tie-in between the body and duct.
3. The air inlet and air outlet duct should be far enough apart enough to a avoid air passage short-circuit.
4. Connect the duct according to the following diagram:

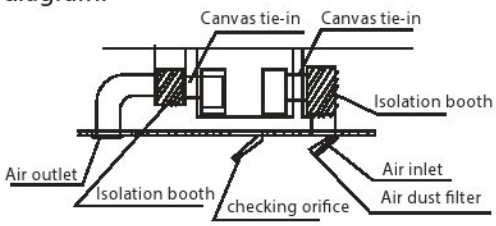
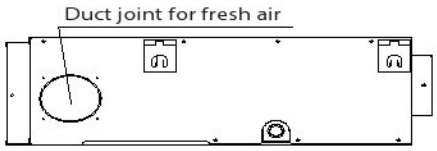


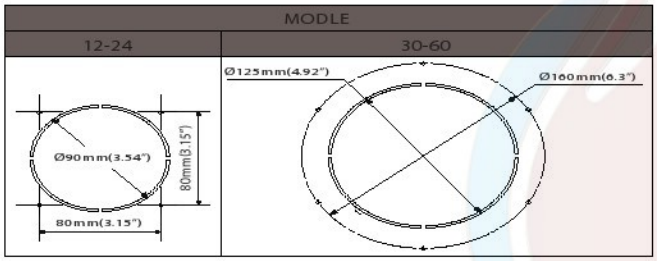
Fig. 4.10

5. Refer to the following static pressure guidelines when installing the indoor unit.

Step 6: Fresh air duct installation

Dimension :



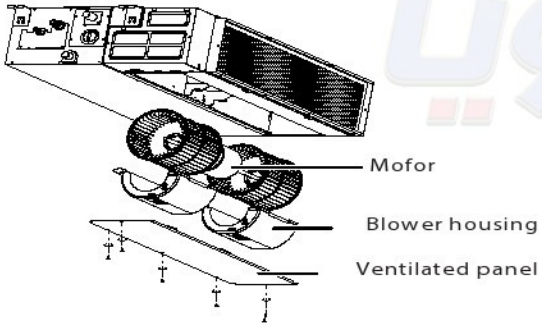


Step 7: Motor and drain pump maintenance

(the rear ventilated panel is used as an example)

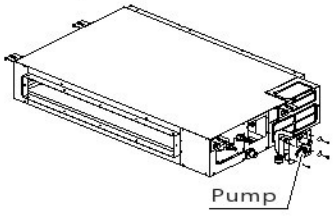
Motor maintain:

1. Take off the ventilated panel.
2. Take off the blower housing.
3. Take off the motor.



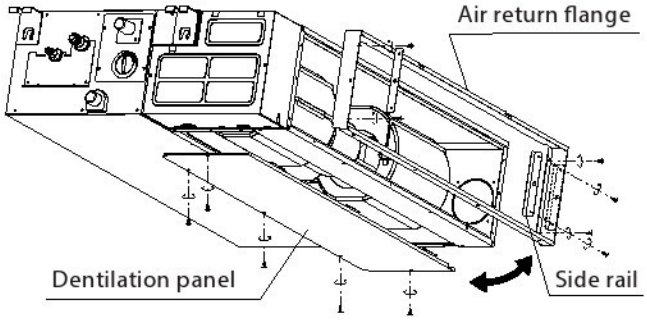
Pump maintainance:

1. Remove four screws from the drain pump.
2. Unplug the pump power supply and water level switch cable.
3. Detach the pump.

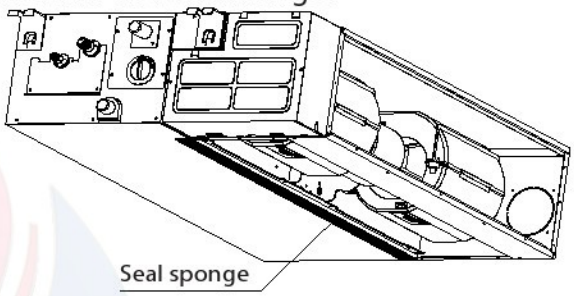


Step 5: Adjust the air inlet direction (From rear side to under-side.)

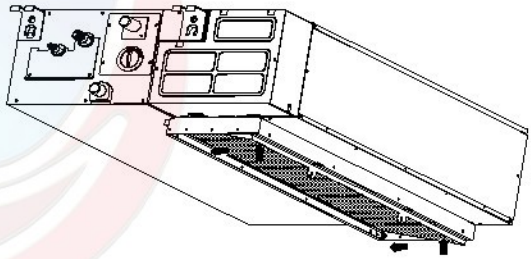
1. Take off ventilation panel and flange, cut off the staples at side rail.



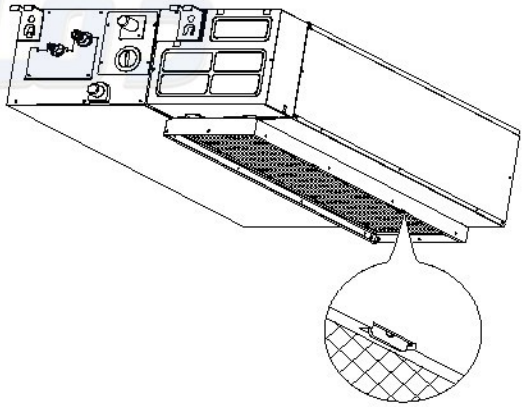
2. Stick the attached seal sponge as per the indicating place in the following fig, and then change the mounting positions of air return panel and air return flange .



3. When installing the filter mesh, fit it into the flange inclined from air return opening, and then push up.



4. The installation has finish, upon filter mesh which fixing blocks have been insert to the flange positional holes.



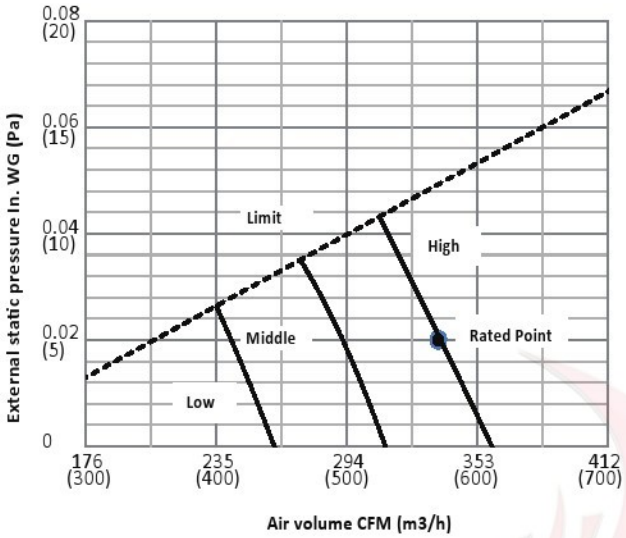
NOTE: All the figures in this manual are for demonstration purposes only. The air conditioner you have purchased may be slightly different in design, though similar in shape.

Fan performances

Static pressure curve(middle static pressure duct)

9K

Code 0



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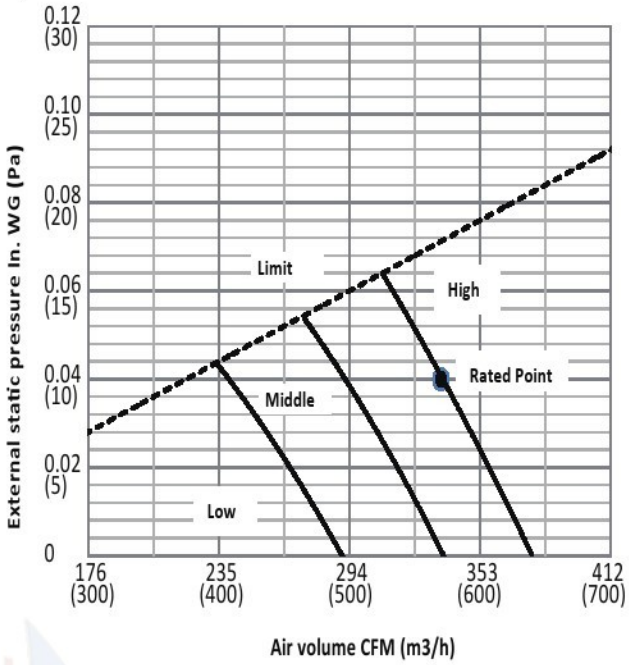

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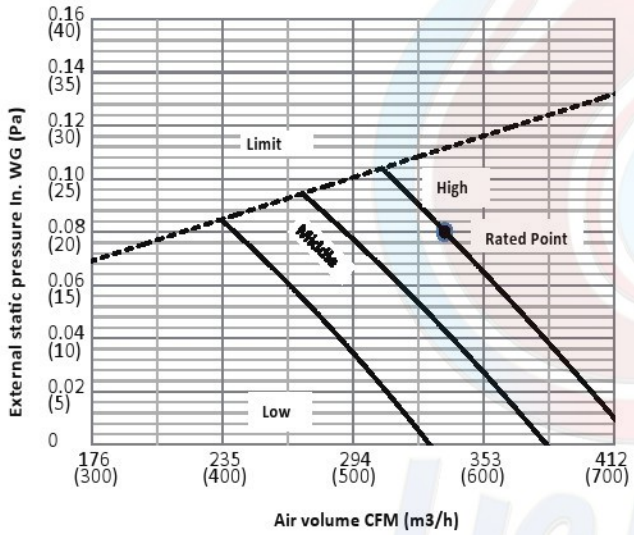

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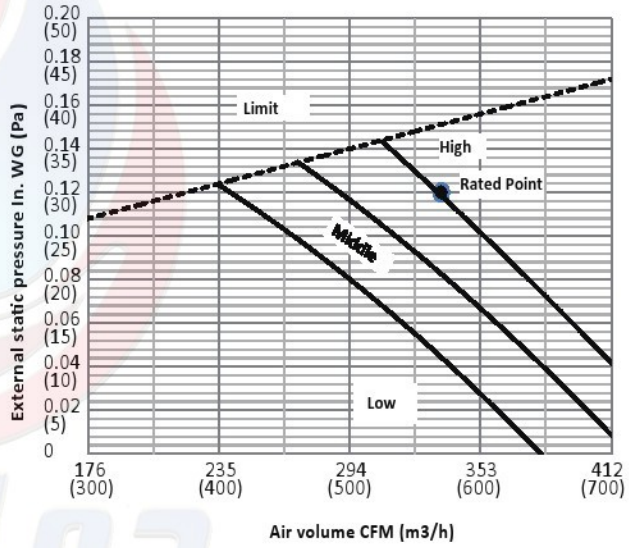

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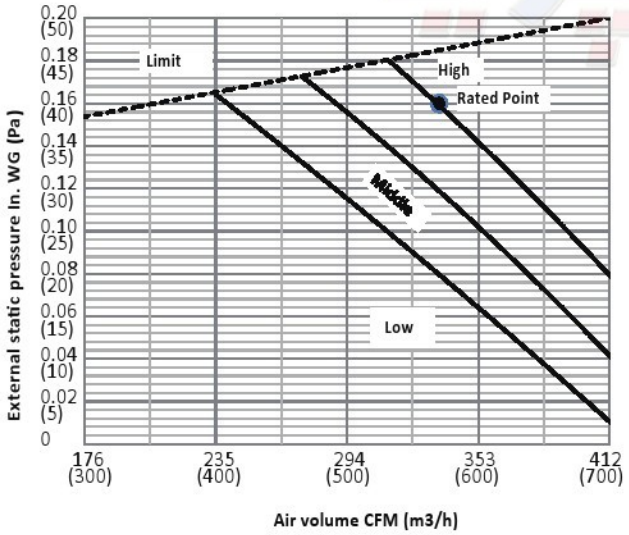
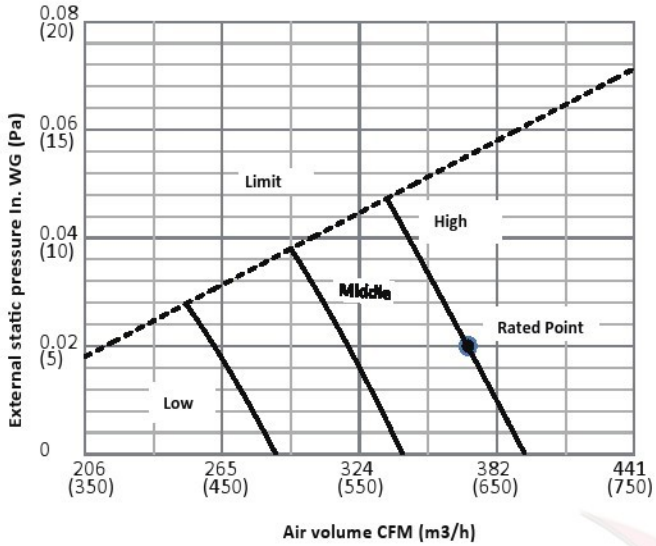


12K

Code 0



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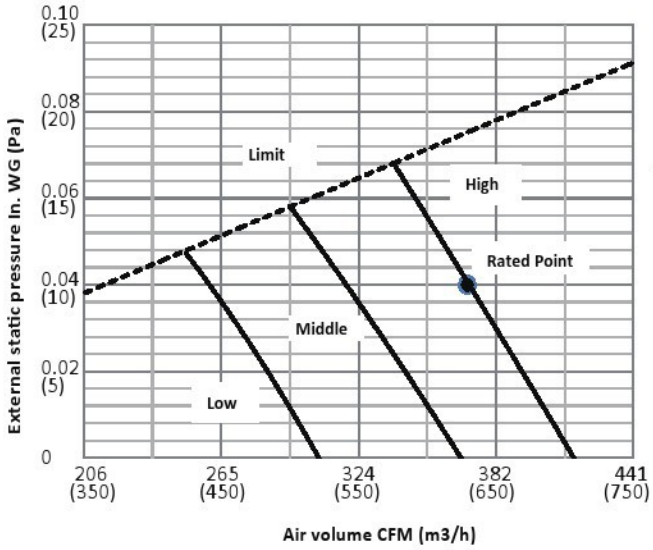

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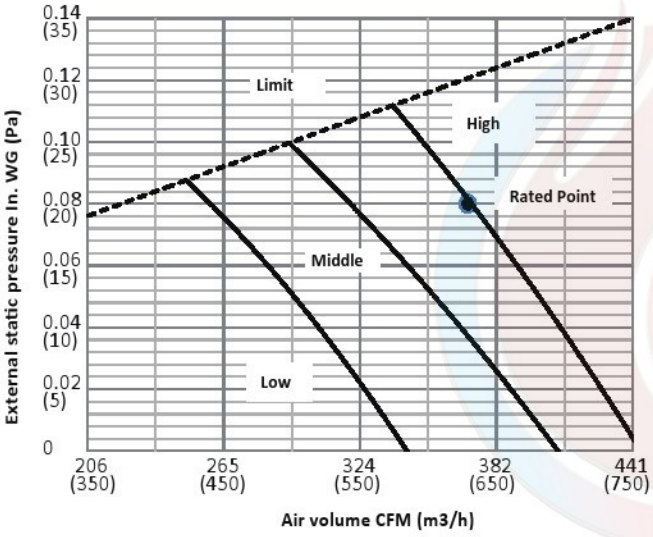

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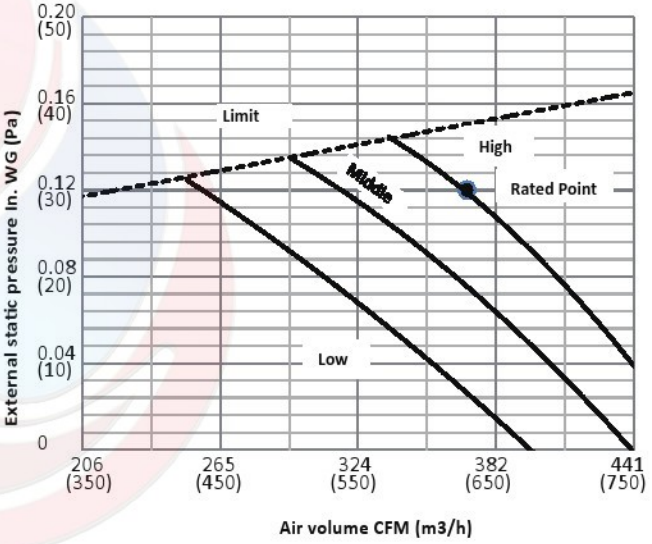

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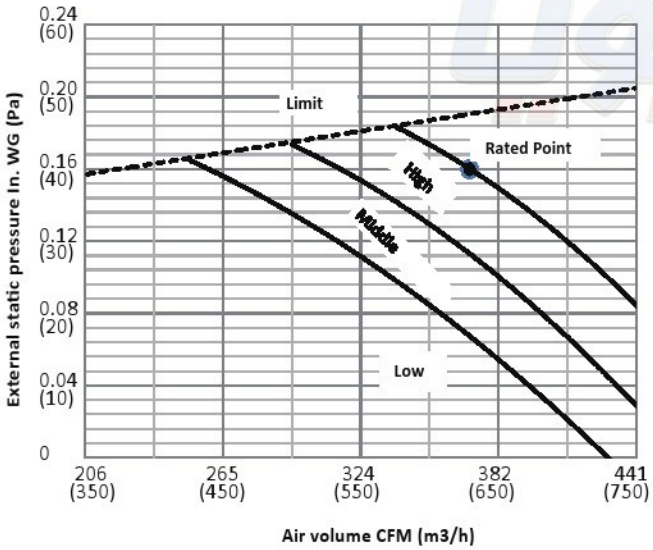

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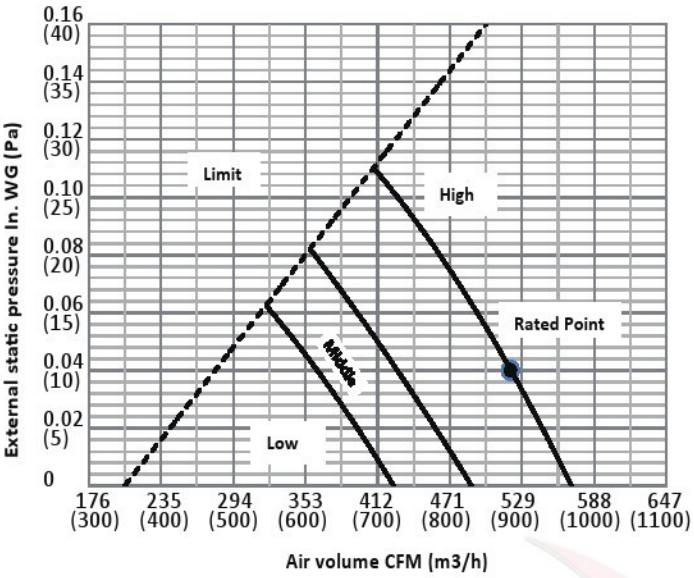

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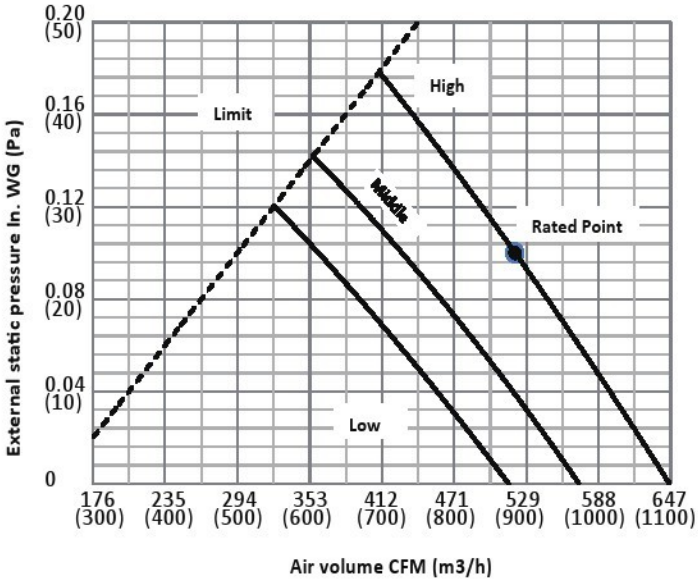

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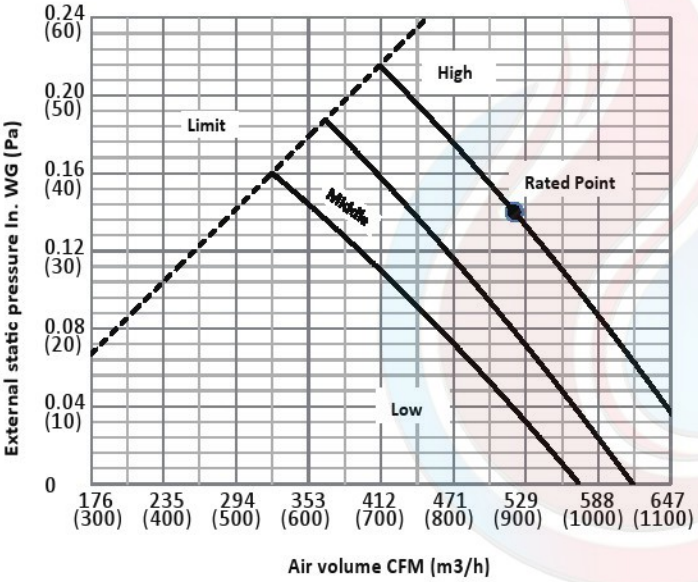

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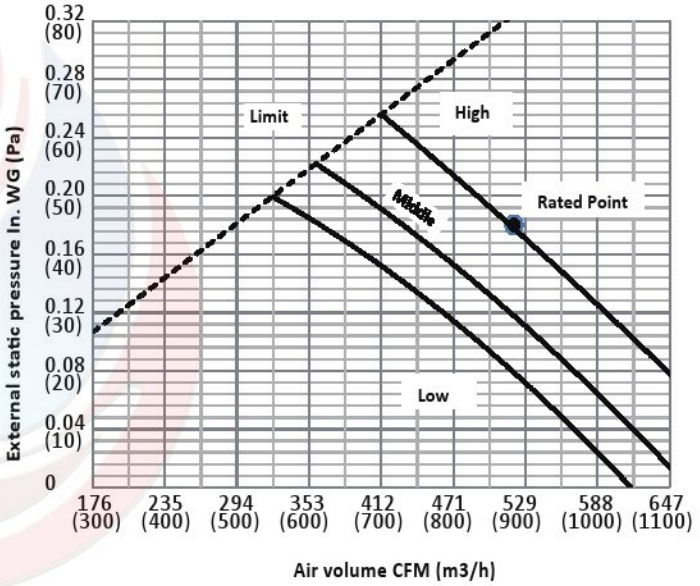

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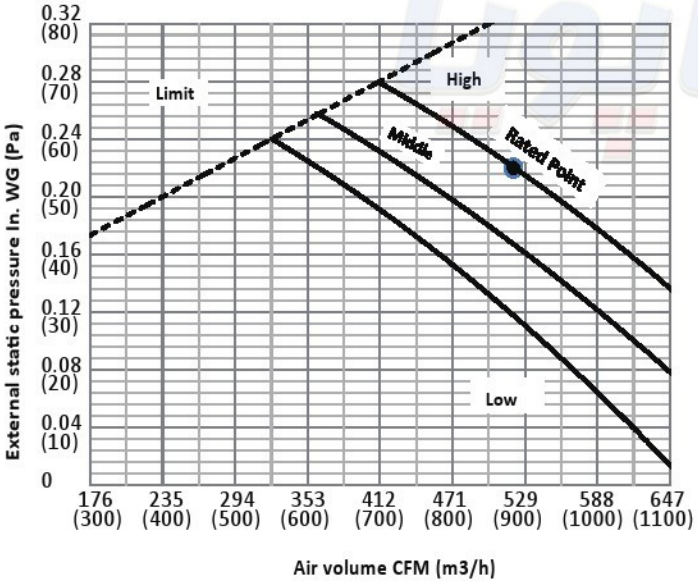

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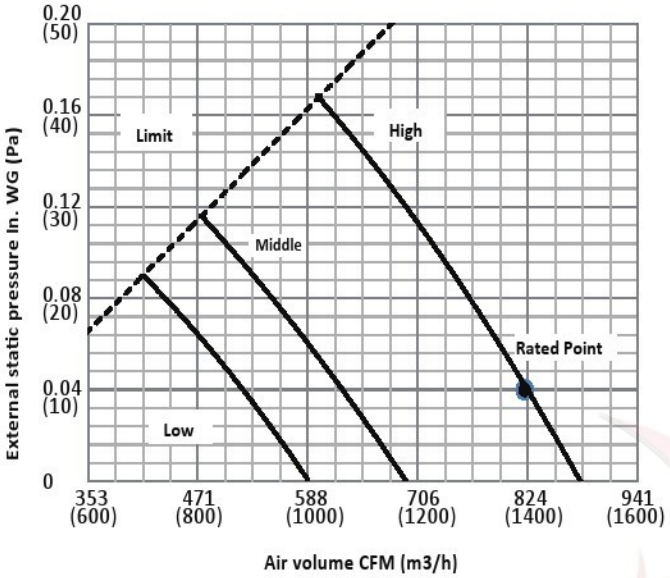

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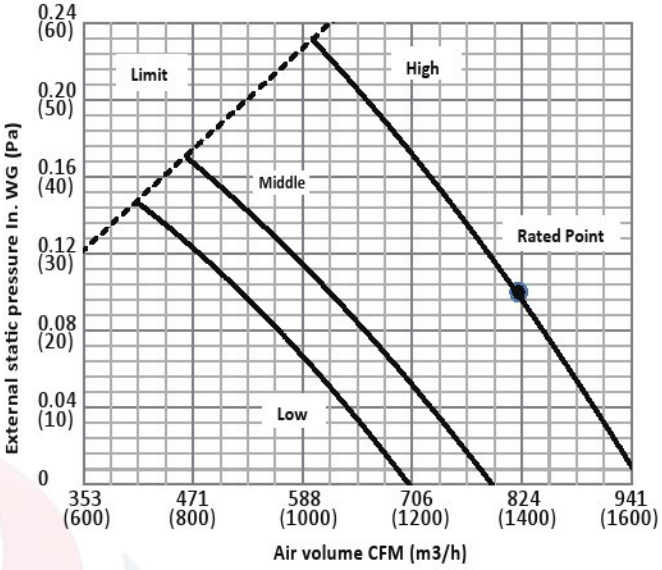

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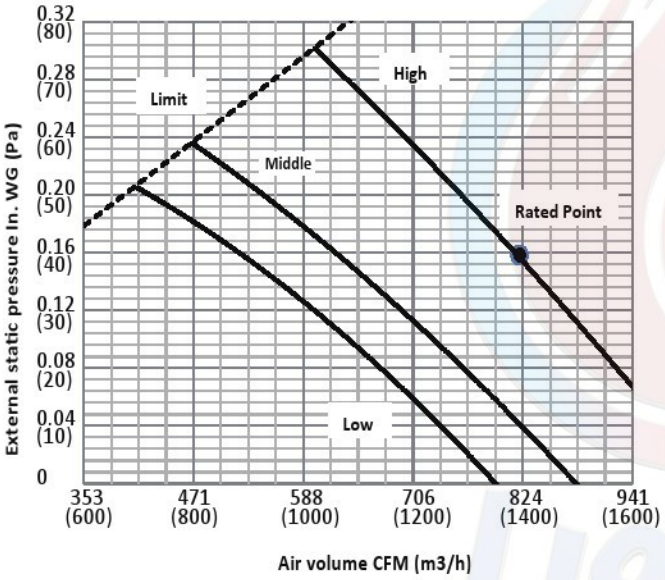

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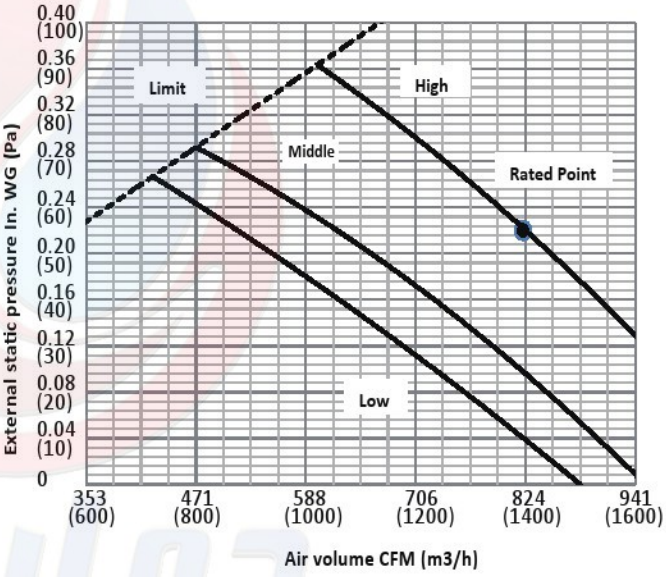

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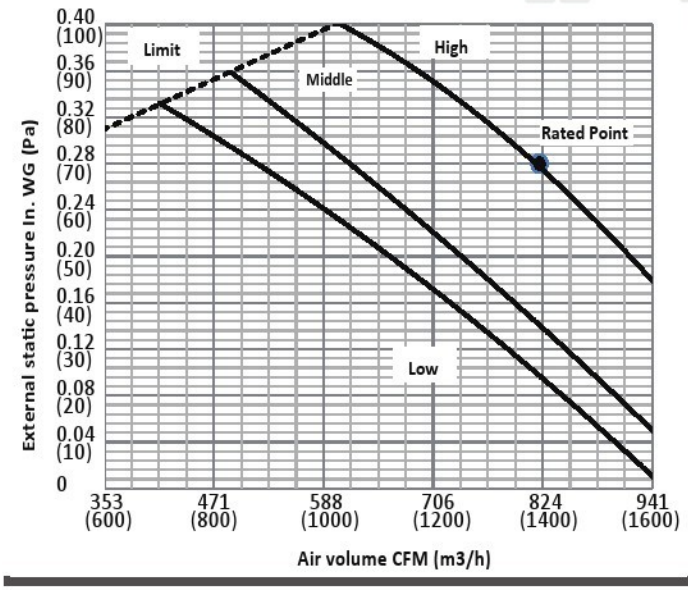

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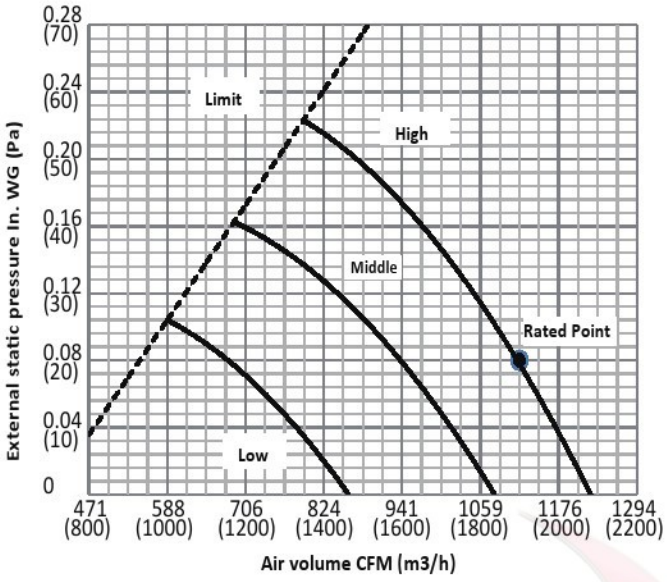

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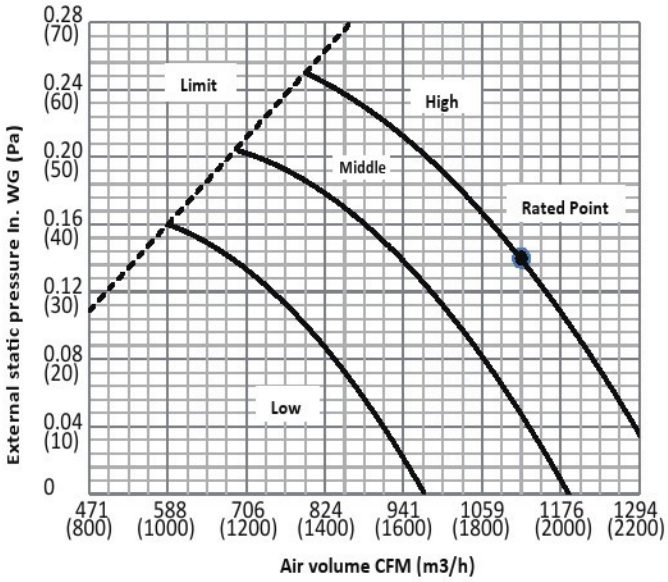

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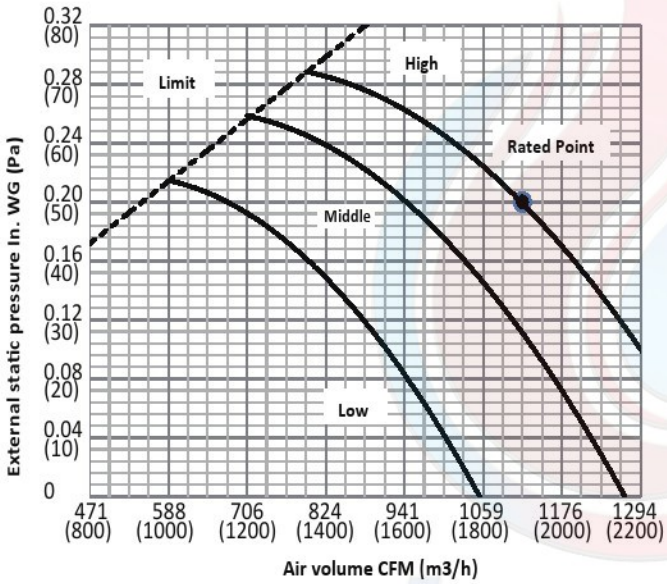

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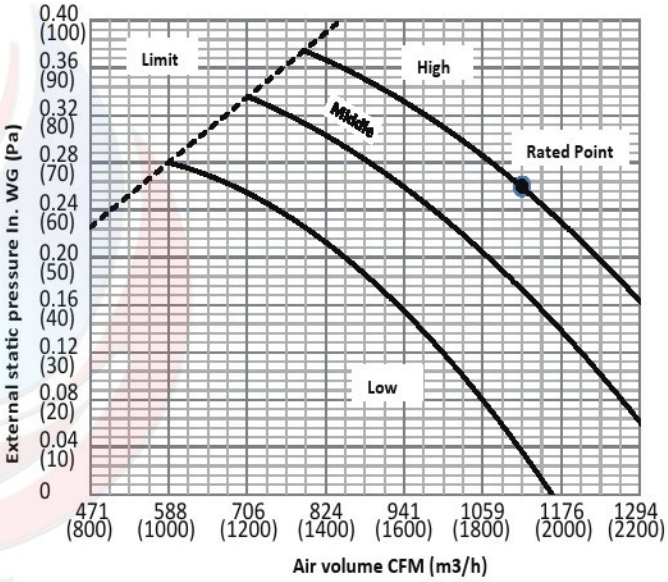

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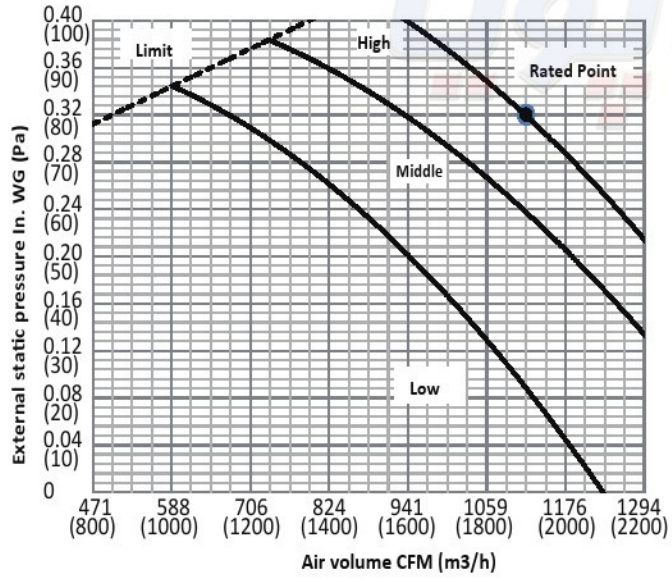

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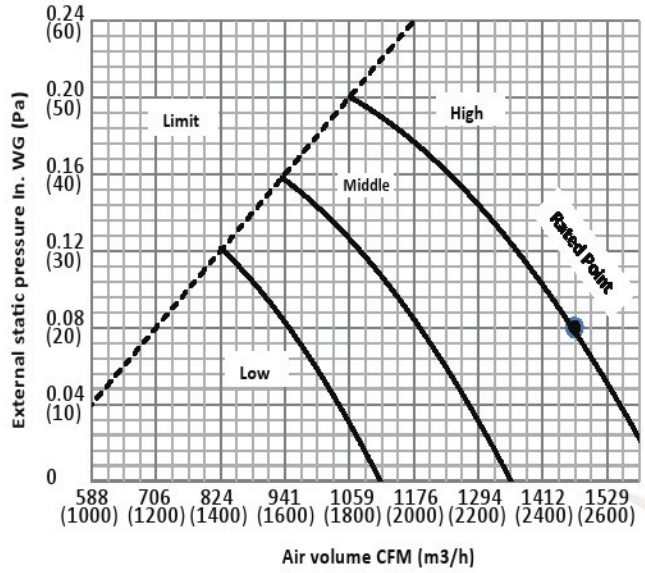

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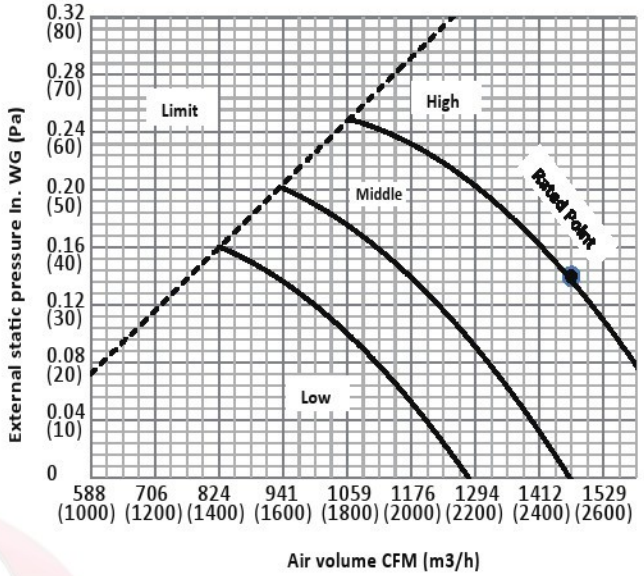

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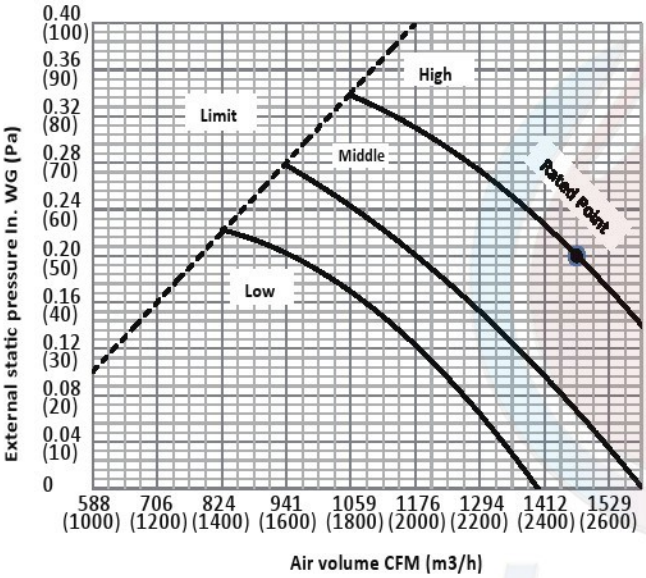

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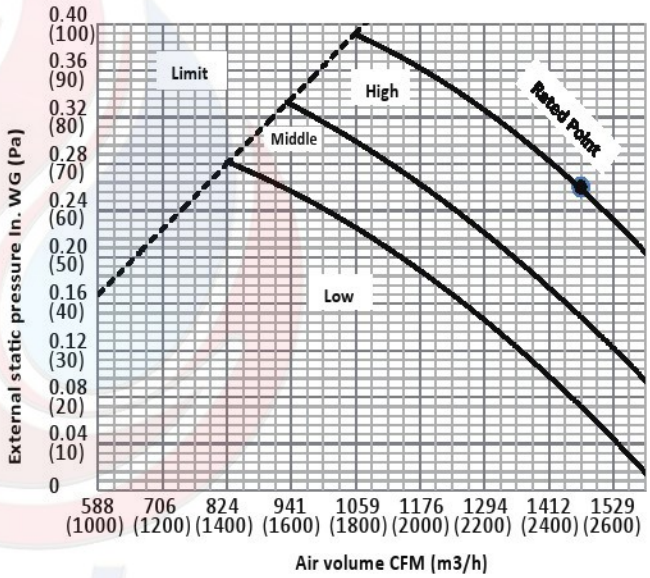

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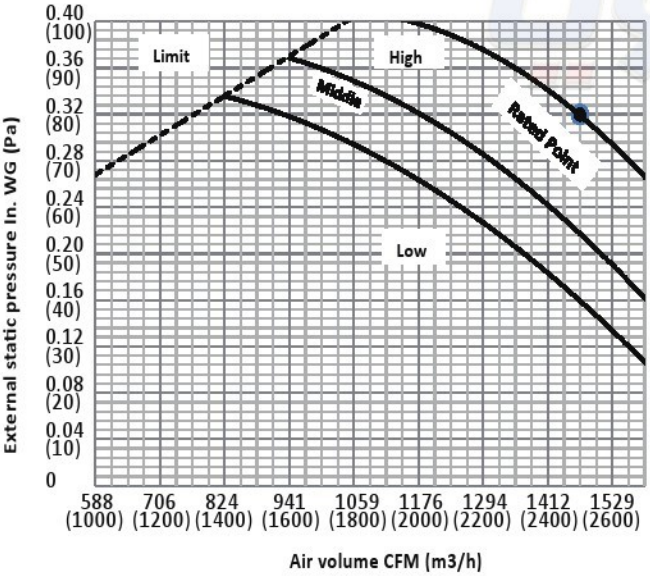


Outdoor Unit Installation

5

Outdoor Unit Installation Instructions

Step 1: Select installation location.

The outdoor unit should be installed in the location that meets the following requirements:

- ☑ Place the outdoor unit as close to the indoor unit as possible.
- ☑ Ensure that there is enough room for installation and maintenance.
- ☑ The air inlet and outlet must not be obstructed or exposed to strong wind.
- ☑ Ensure the location of the unit will not be subject to snowdrifts, accumulation of leaves or other seasonal debris. If possible, provide an awning for the unit. Ensure the awning does not obstruct airflow.
- ☑ The installation area must be dry and well ventilated.
- ☑ There must be enough room to install the connecting pipes and cables and to access them for maintenance.
- ☑ The pipe length between the outdoor and indoor unit may not exceed the maximum allowable pipe length.

- ☑ If the location is exposed to strong winds (for example: near a seaside), the unit must be placed against the wall to shelter it from the wind.

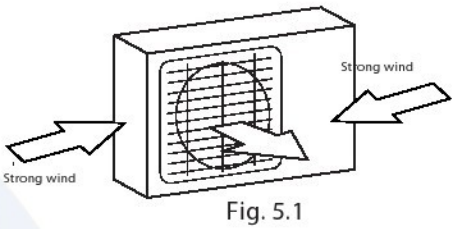


Fig. 5.1

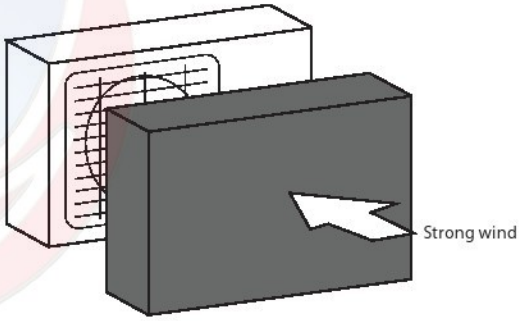


Fig. 5.2

Step 2: Install outdoor unit.

Fix the outdoor unit with anchor bolts (M10)

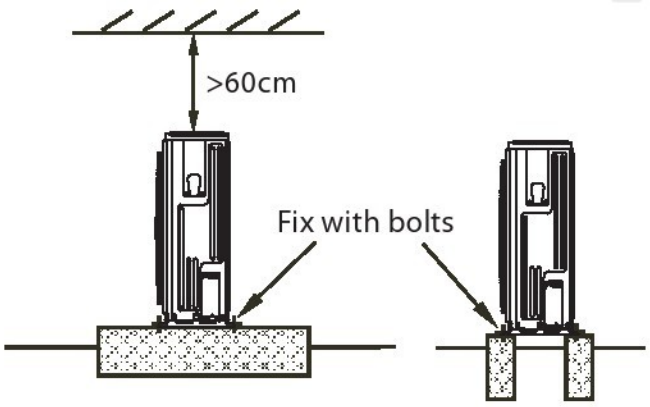


Fig. 5.3

CAUTION

- Be sure to remove any obstacles that may block air circulation.
- Make sure you refer to Length Specifications to ensure there is enough room for installation and maintenance.

Split Type Outdoor Unit

Refer to Fig 5.4, 5.5, 5.6, 5.7 and Table 5.1

Fig. 5.4

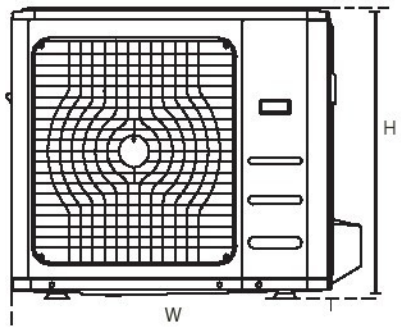


Fig. 5.6

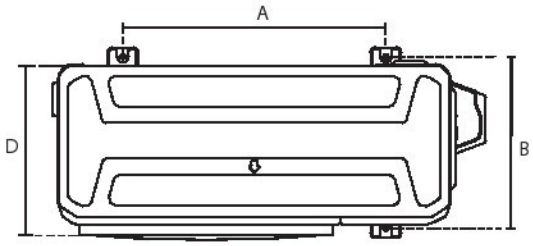


Fig. 5.5

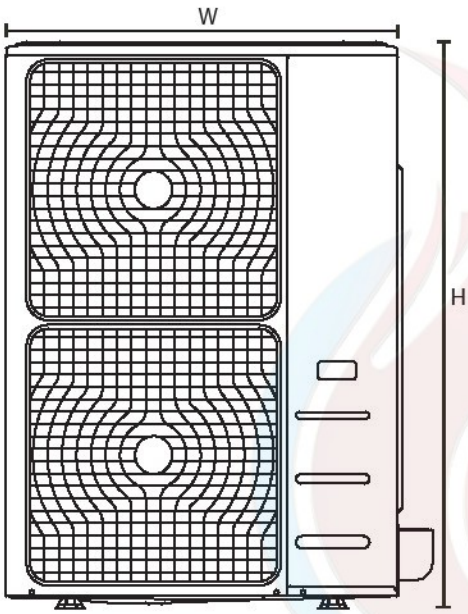


Fig. 5.7

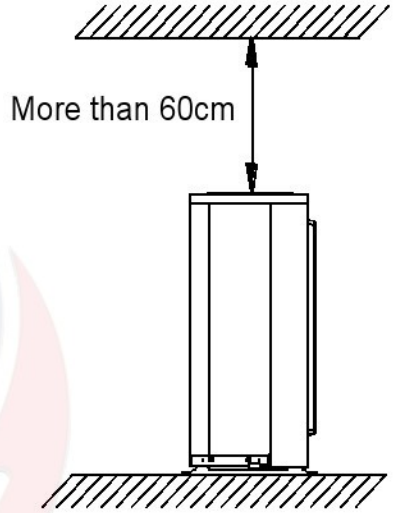


Table 5.1: Length Specifications of Split Type Outdoor Unit (unit: mm)

	Outdoor Unit Dimensions	Mounting Dimensions	
	W x H x D	Distance A	Distance B
12	800x333x554	514	340
18	800x333x554	514	340
24	845x363x702	540	350
30/36	946x410x810	673	403
48/55	952x415x1333	634	404

NOTE

Since the units center of gravity is not at its physical center take care when lifting it with slings.
Never hold the inlet of the outdoor unit to prevent it from deforming.
Do not touch the fan with hands or other objects.
Do not lean it more than 45* and do not lay it sidelong.
Make concrete foundation according to the specifications of the outdoor units.
Fasten the feet of this unit with bolts firmly to prevent it from collapsing in case of strong winds.

NOTE: The minimum distance between the outdoor unit and walls described in the installation guide does not apply to airtight rooms. Be sure to keep the unit unobstructed in at least two of the three directions (M, N, P) (See Fig. 5.6)

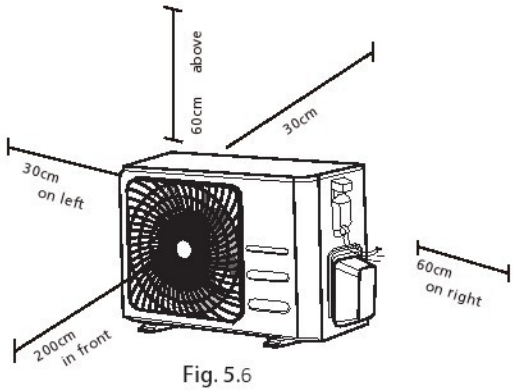
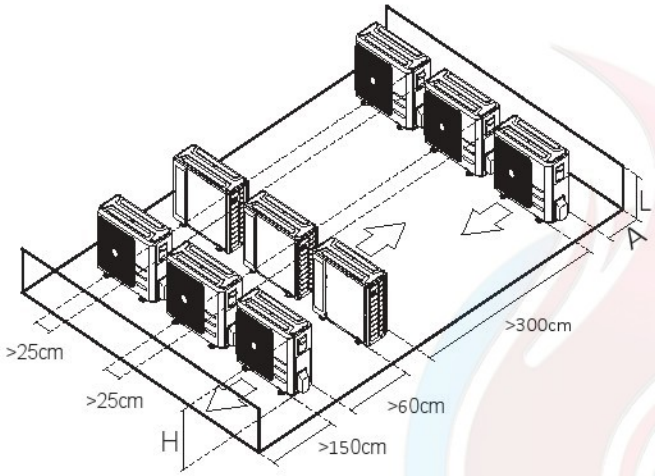


Fig. 5.6



Notes On Drilling Hole In Wall

You must drill a hole in the wall for the refrigerant piping, and the signal cable that will connect the indoor and outdoor units.

1. Determine the location of the wall hole based on the location of the outdoor unit.
2. Using a 65-mm core drill, drill a hole in the wall.

NOTE: When drilling the wall hole, make sure to avoid wires, plumbing, and other sensitive components.

3. Place the protective wall cuff in the hole. This protects the edges of the hole and will help seal it when you finish the installation process.

The relations between H, A and L are as follows.

	L	A
L ≤ H	L ≤ 1/2H	25 cm / 9.8" or more
	1/2H < L ≤ H	30 cm / 11.8" or more
L > H	Can not be installed	

Drain Joint Installation

Before bolting the outdoor unit in place, you must install the drain joint at the bottom of the unit. (See Fig. 5.11)

1. Fit the rubber seal on the end of the drain joint that will connect to the outdoor unit.
2. Insert the drain joint into the hole in the base pan of the unit.
3. Rotate the drain joint 90° until it clicks in place facing the front of the unit.
4. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

NOTE: Make sure the water drains to a safe location where it will not cause water damage or a slipping hazard.

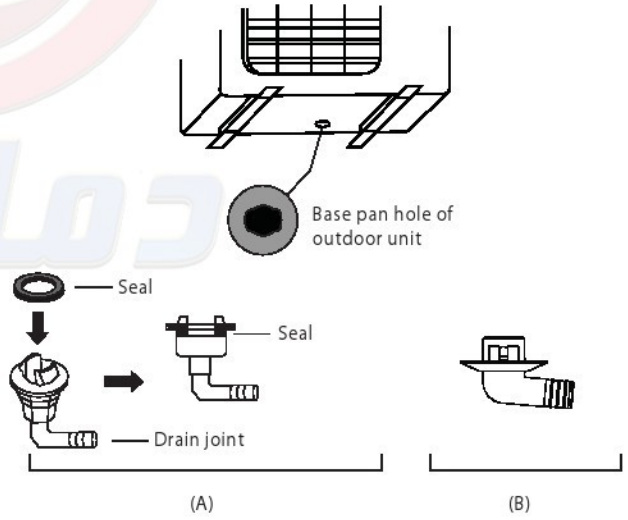


Fig. 5.11

Drainpipe Installation

6

The drainpipe is used to drain water away from the unit. Improper installation may cause unit and property damage.

CAUTION

- Insulate all piping to prevent condensation, which could lead to water damage.
- If the drainpipe is bent or installed incorrectly, water may leak and cause a water-level switch malfunction.
- In HEAT mode, the outdoor unit will discharge water. Ensure that the drain hose is placed in an appropriate area to avoid water damage and slippage.
- DO NOT pull the drainpipe forcefully. This could disconnect it.

NOTE ON PURCHASING PIPES

Installation requires a polyethylene tube (exterior diameter = 3.7-3.9cm, interior diameter = 3.2cm).

Indoor Drainpipe Installation

Install the drainpipe as illustrated in Figure 6.2.

1. Cover the drainpipe with heat insulation to prevent condensation and leakage.
2. Attach the mouth of the drain hose to the unit's outlet pipe. Sheath the mouth of the hose and clip it firmly with a pipe clasp. (Fig 6.1)

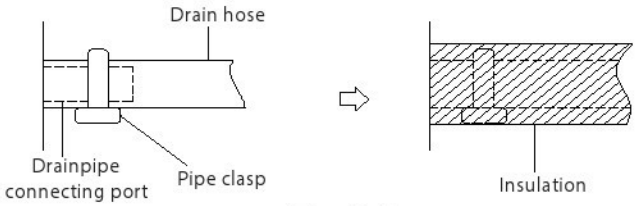


Fig. 6.1

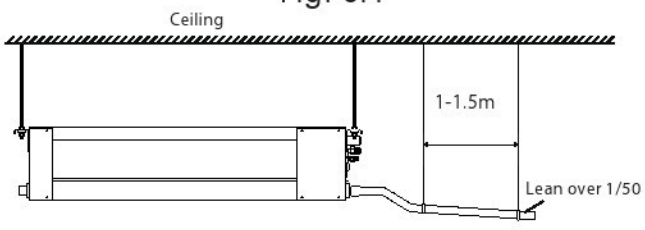


Fig. 6.2

NOTE ON DRAINPIPE INSTALLATION

- When using an extended drainpipe, tighten the indoor connection with an additional protection tube to prevent it from pulling loose.
- The drainpipe should slope downward at a gradient of at least 1/100 to prevent water from flowing back into the air conditioner.
- To prevent the pipe from sagging, space hanging wires every 1-1.5m.
- If the outlet of the drainpipe is higher than the body's pump joint, provide a lift pipe for the exhaust outlet of the indoor unit. The lift pipe must be installed no higher than 55cm from the ceiling board.
  The distance between the unit and the lift pipe must be less than 20cm.
  Incorrect installation could cause water to flow back into the unit and flood.
- To prevent air bubbles, keep the drain hose level or slightly tiled up (<75mm.

Drainpipe installation for units with a pump

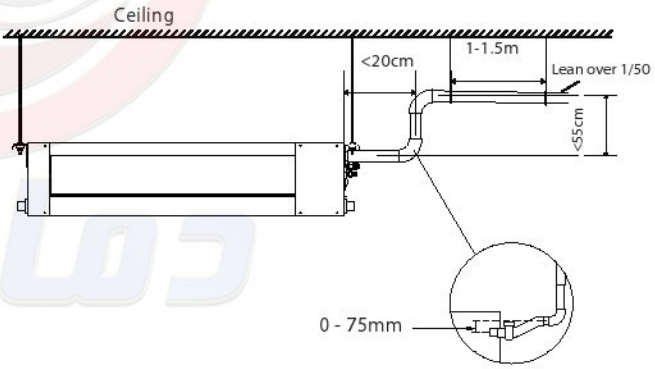


Fig. 6.3

NOTE: When connecting multiple drainpipes, install the pipes as shown in Fig 6.4.

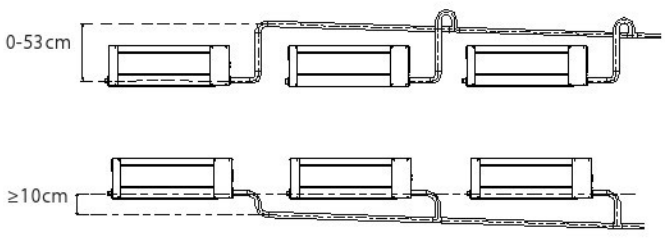


Fig. 6.4

3. Using a 65-mm core drill, drill a hole in the wall. Make sure that the hole is drilled at a slight downward angle, so that the outdoor end of the hole is lower than the indoor end by about 12mm . This will ensure proper water drainage (See Fig. 6.5). Place the protective wall cuff in the hole. This protects the edges of the hole and will help seal it when you finish the installation process.

NOTE: When drilling the wall hole, make sure to avoid wires, plumbing, and other sensitive components.

4. Pass the drain hose through the wall hole. Make sure the water drains to a safe location where it will not cause water damage or a slipping hazard.

NOTE: The drainpipe outlet should be at least 5cm above the ground. If it touches the ground, the unit may become blocked and malfunction. If you discharge the water directly into a sewer, make sure that the drain has a U or S pipe to catch odors that might otherwise come back into the house.

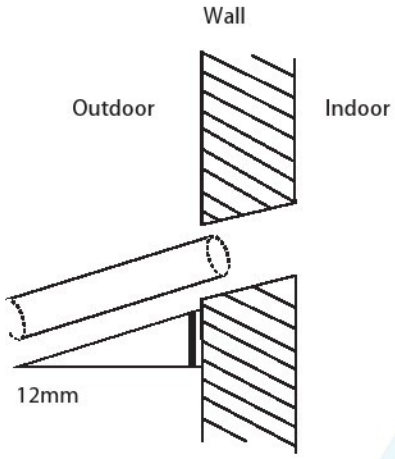
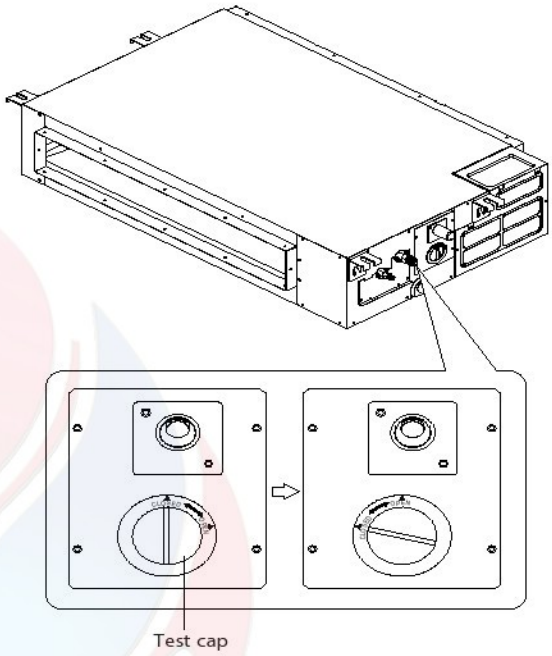
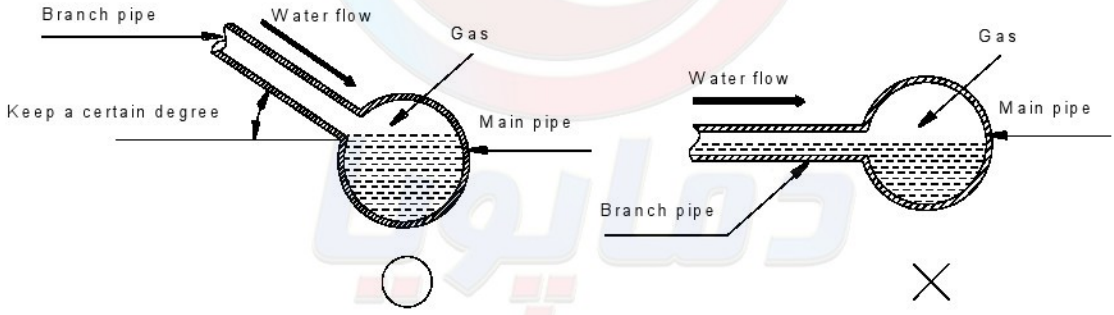
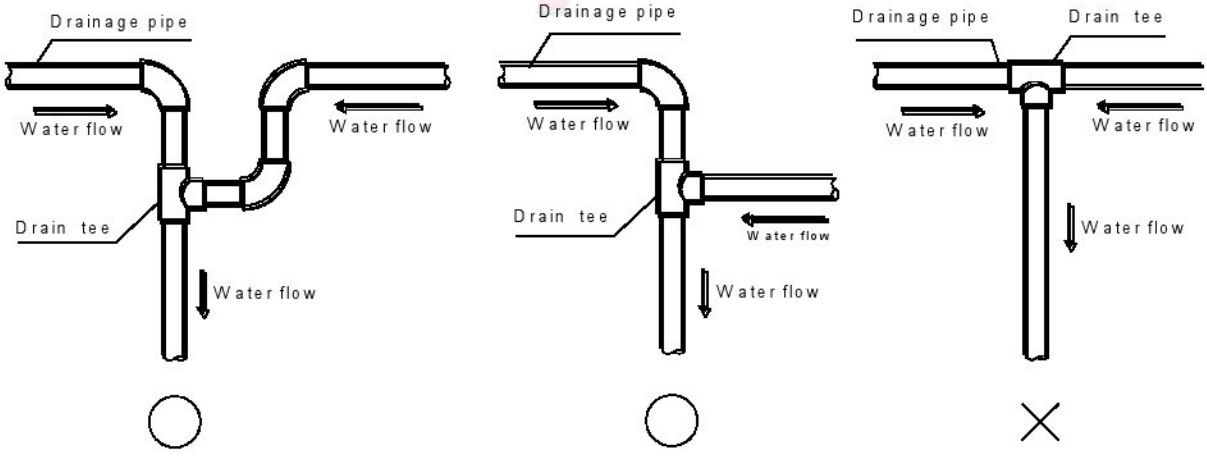


Fig. 6.5







Safety Precautions

WARNING

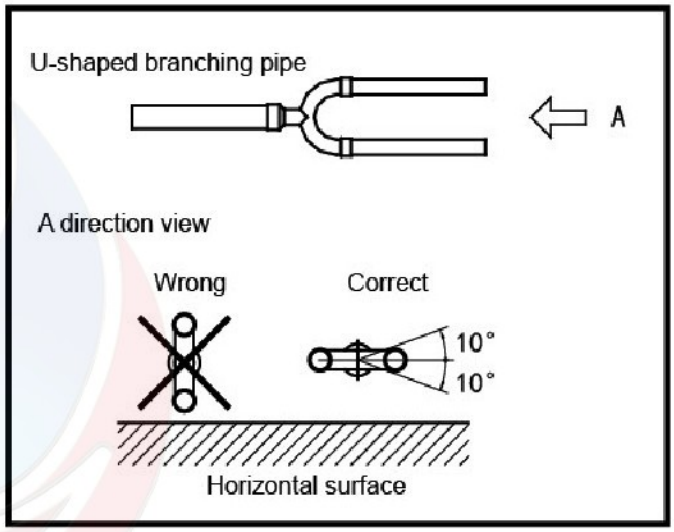
- All field piping must be completed by a licensed technician and must comply with the local and national regulations.
- When the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration in the room from exceeding the safety limit in the event of refrigerant leakage. If the refrigerant leaks and its concentration exceeds its proper limit, hazards due to lack of oxygen may result.
- When installing the refrigeration system, ensure that air, dust, moisture or foreign substances do not enter the refrigerant circuit. Contamination in the system may cause poor operating capacity, high pressure in the refrigeration cycle, explosion or injury.
- Ventilate the area immediately if there is refrigerant leakage during the installation. Leaked refrigerant gas is both toxic and flammable. Ensure there is no refrigerant leakage after completing the installation work.

Notes On Pipe Length and Elevation

Ensure that the length of the refrigerant pipe, the number of bends, and the drop height between the indoor and outdoor units meets the requirements shown in Table 7.1:

Table 7.1: The Maximum Length And Drop Height Based on Models. (Unit: meters)

Capacity Code	Length of piping	Maximum drop height
18	30	20
24	50	25
30	50	25
48	65	30
55	65	30



Refrigerant Piping with Twin Indoor Units

When installing multiple indoor units to a single outdoor unit, ensure that the length of the refrigerant pipe and the height difference between the indoor and outdoor units meets the following requirements:

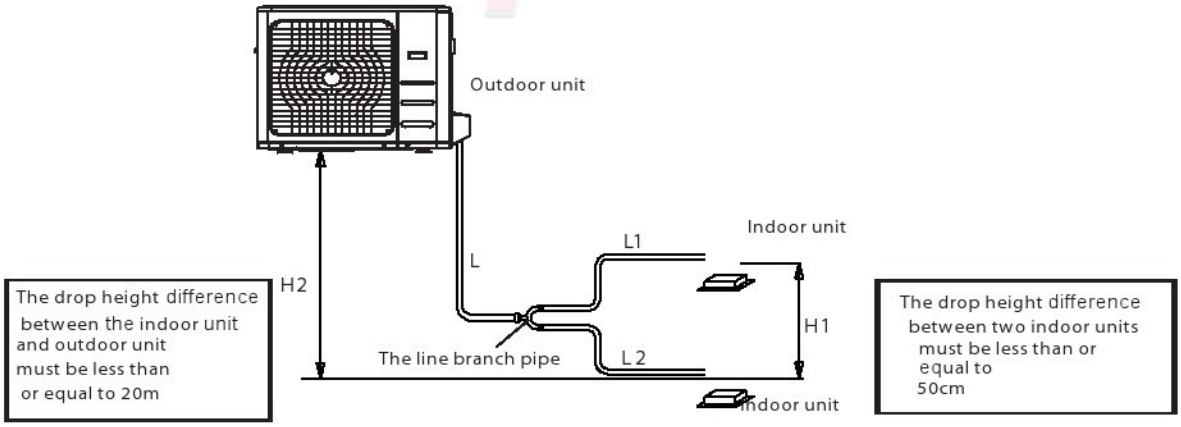


Fig. 7.1

Table 7.2

Permitted length				
Piping length	Total piping length	18K+18K 24K+24K 30K+30K	50m 65m	L+Max (L1, L2)
	(farthest distance from the line pipe branch)	15m		L1, L2
	(farthest distance from the line pipe branch)	10m		L1-L2
Drop height	Drop height between indoor and outdoor unit	20m		H1
	Drop height between two indoor units	0.5m		H2

Refrigerant Piping Connection Instructions

CAUTION

- The branching pipe must be installed horizontally. An angle of more than 10° may cause malfunction.
- DO NOT install the connecting pipe until both indoor and outdoor units have been installed.
- Insulate both the gas and liquid piping to prevent water leakage.

Step1: Cut pipes

When preparing refrigerant pipes, take extra care to cut and flare them properly. This will ensure efficient operation and minimize the need for future maintenance.

1. Measure the distance between the indoor and outdoor units.
2. Using a pipe cutter, cut the pipe a little longer than the measured distance.

CAUTION

DO NOT deform pipe while cutting. Be extra careful not to damage, dent, or deform the pipe while cutting. This will drastically reduce the heating efficiency of the unit.

1. Make sure that the pipe is cut at a perfect 90° angle. Refer to Fig. 7.2 for examples of bad cuts

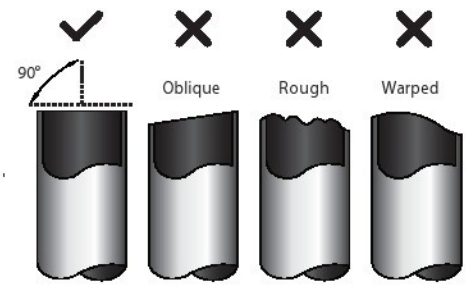


Fig. 7.2

Step 2: Remove burrs.

Burrs can affect the gas-tight seal of refrigerant piping connection. They must be completely removed.

1. Hold the pipe at a downward angle to prevent burrs from falling into the pipe.
2. Using a reamer or deburring tool, remove all burrs from the cut section of the pipe.

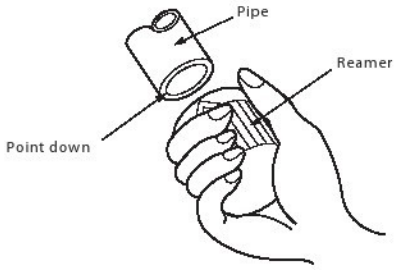


Fig. 7.3

Step 3: Flare pipe ends

Proper flaring is essential to achieve an gas-tight seal

1. After removing burrs from cut pipe, seal the ends with PVC tape to prevent foreign materials from entering the pipe.
2. Sheath the pipe with insulating material.
3. Place flare nuts on both ends of pipe. Make sure they are facing in the right direction, because you can't put them on or change their direction after flaring. See Fig. 7.4

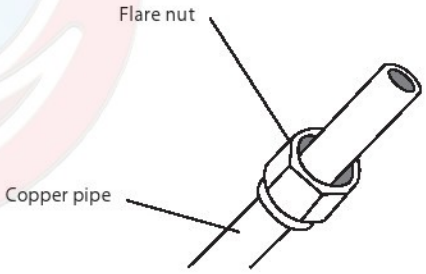


Fig. 7.4

4. Remove PVC tape from ends of pipe when ready to perform flaring work.
5. Clamp flare form on the end of the pipe. The end of the pipe must extend beyond the flare form.

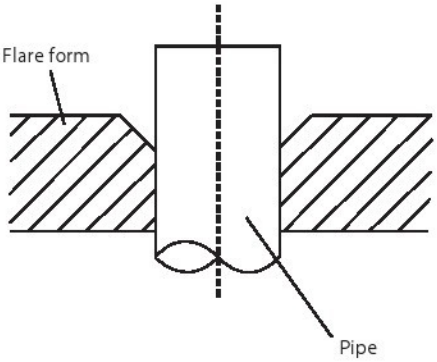


Fig. 7.5

Table 7.3: PIPING EXTENSION BEYOND FLARE FORM

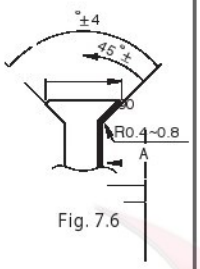
Pipe gauge	Tightening torque	Flare dimension (A) (Unit: mm)		Flare shape
		Min.	Max .	
1/4	14.2-17.2 N.m (144-176 kgf.cm)	8.3	8.3	
3/8	32.7-39.9 N.m (333-407 kgf.cm)	12.4	12.4	
1/2	49.5-60.3 N.m (504-616 kgf.cm)	15.4	15.8	
5/8	61.8-75.4 N.m (630-770 kgf.cm)	18.6	19	
3/4	97.2-118.6 N.m (990-1210 kgf. cm)	22.9	23.3	
7/8	109.5-133.7 N.m (1117-1364 kgf. cm)	27	27.3	

Fig. 7.6

4. Remove PVC tape from ends of pipe when ready to perform flaring work.
5. Clamp flare form on the end of the pipe. The end of the pipe must extend beyond the flare form.
6. Place flaring tool onto the form.
7. Turn the handle of the flaring tool clockwise until the pipe is fully flared. Flare the pipe in accordance with the dimensions shown in table 7-3.
8. Remove the flaring tool and flare form, then inspect the end of the pipe for cracks and even flaring.

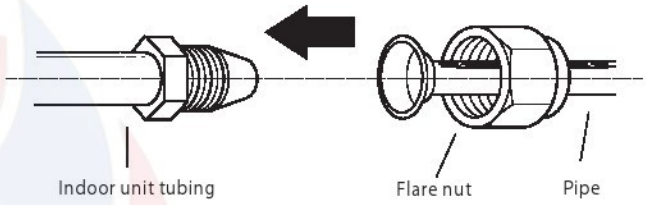
CAUTION

Check to make sure there is no refrigerant leak after completing the installation work. If there is a refrigerant leak, ventilate the area immediately and evacuate the system (refer to the Air Evacuation section of this manual).

Step 4: Connect pipes

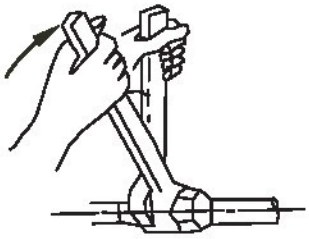
Connect the copper pipes to the indoor unit first, then connect it to the outdoor unit. You should first connect the low-pressure pipe, then the high-pressure pipe.

1. When connecting the flare nuts, apply a thin coat of refrigeration oil to the flared ends of the pipes.
2. Align the center of the two pipes that you will connect.



3. Tighten the flare nut as tightly as possible by hand.
4. Using a spanner, grip the nut on the unit tubing.
5. While firmly gripping the nut, use a torque wrench to tighten the flare nut according to the torque values in table 7-.3.

NOTE: Use both a spanner and a torque wrench when connecting or disconnecting pipes to/from the unit.



CAUTION

- Oil traps

If the indoor unit is installed higher than the outdoor unit:

-If oil flows back into the outdoor unit's compressor, this might cause liquid compression or deterioration of oil return. Oil traps in the rising gas piping can prevent this.

An oil trap should be installed every 10m (32.8ft) of vertical suction line riser.
(See Fig. 7.2)

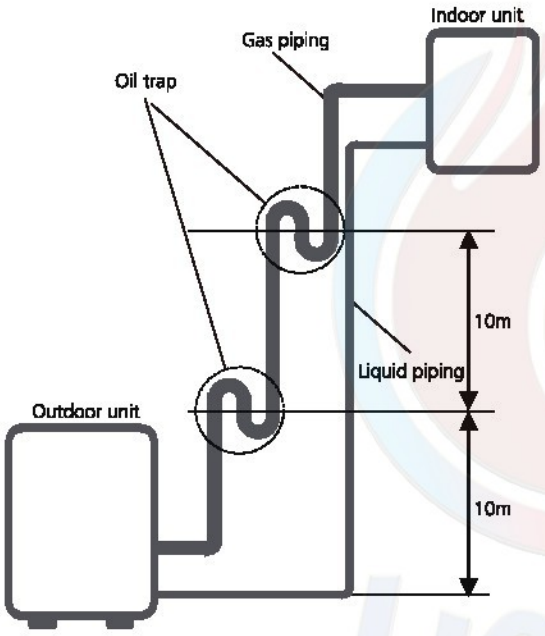


Fig. 7.2

The indoor unit is installed higher than the outdoor unit

CAUTION

If the outdoor unit is installed higher than the indoor unit:

-It is recommended that vertical suction risers not be upsized. Proper oil return to the compressor should be maintained with suction gas velocity. If velocities drop below7.62m/s (1500fpm (feet per minute)), oil return will be decreased. An oil trap should be installed every 6m(20ft) of vertical suction line riser.
(See Fig. 7.3)

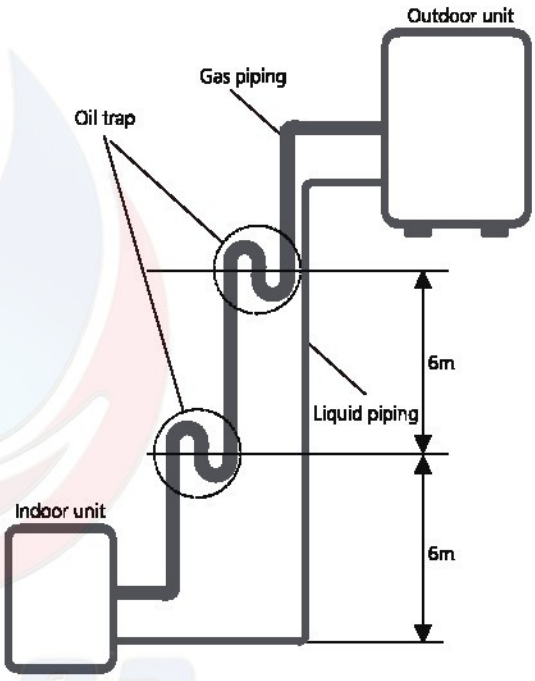


Fig. 7.3

The outdoor unit is installed higher than the indoor unit

Wiring

8

Safety Precautions

WARNING

- Be sure to disconnect the power supply before working on the unit.
- All electrical wiring must be done according to local and national regulations.
- Electrical wiring must be done by a qualified technician. Improper connections may cause electrical malfunction, injury and fire.
- An independent circuit and single outlet must be used for this unit. If the electrical circuit capacity is not enough or there is a defect in the electrical work, it can lead to shock, fire, unit and property damage.
- Connect the power cable to the terminals and fasten it with a clamp. An insecure connection may cause fire.
- Make sure that all wiring is done correctly and the control board cover is properly installed. Failure to do so can cause overheating at the connection points, fire, and electrical shock.
- Ensure that main supply connection is made through a switch that disconnects all poles, with contact gap of a least 3mm.

CAUTION

- Connect the outdoor wires before connecting the indoor wires.
- Make sure you ground the unit. The grounding wire should be away from gas pipes, water pipes, lightning rods, telephone or other grounding wires. Improper grounding may cause electrical shock.
- DO NOT connect the unit with the power source until all wiring and piping is completed.
- Make sure that you do not cross your electrical wiring with your signal wiring, as this can cause distortion and interference.

NOTE: The fuse is made of ceramic.

TAKE NOTE OF FUSE SPECIFICATIONS

The air conditioner's circuit board(PCB) is designed with a fuse to provide overcurrent protection. The specifications of the fuse are printed on the circuit board, such as:
Indoor unit: T3.15A/250VAC, T5A/250VAC. (applicable for unit adopts R32 or R290 r efrigerant only)
Outdoor unit: T20A/250VAC(for <24000Btu/h unit), T30A/250VAC(for >24000Btu/h unit)

Follow these instructions to prevent distortion when the compressor starts:

- The unit must be connected to the main outlet. Normally, the power supply must have a low output impedance of 32 ohms.
- No other equipment should be connected to the same power circuit.
- The unit's power information can be found on the rating sticker on the product.

Outdoor Unit Wiring

WARNING

Before performing any electrical or wiring work, turn off the main power to the system.

1. Prepare the cable for connection

Cross-section area of power

Appliance (A)	Nominal Cross-Sectional Area (mm²)
≤ 6	0.75
6 - 10	1
10 - 16	1.5
16 - 25	2.5
25- 32	4
32 - 45	6

b. Using wire strippers, strip the rubber jacket from both ends of signal cable to reveal about 15cm of the wires inside.

c. Strip the insulation from the ends of the wires.

d. Using a wire crimper, crimp u-lugs on the ends of the wires.

NOTE: While connecting the wires, please strictly follow the wiring diagram (found inside the electrical box cover).

2. Remove the electric cover of the outdoor unit. If there is no cover on the outdoor unit, disassemble the bolts from the maintenance board and remove the protection board. (See Fig. 8.1)

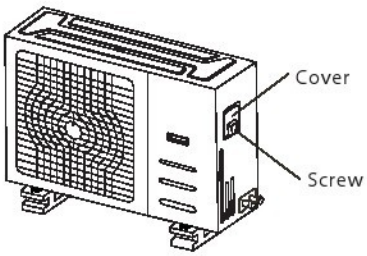


Fig. 8.1

3. Connect the u-lugs to the terminals
Match the wire colours/labels with the labels on the terminal block, and firmly screw the u-lug of each wire to its corresponding terminal.

4. Clamp down the cable with designated cable clamp.

5. Insulate unused wires with electrical tape. Keep them away from any electrical or metal parts.

6. Reinstall the cover of the electric control box.

Indoor Unit Wiring

1. Prepare the cable for connection

a. Using wire strippers, strip the rubber jacket from both ends of signal cable to reveal about 15cm of the wires inside.

b. Strip the insulation from the ends of the wires.

c. Using wire crimper, crimp the u-lugs to the ends of the wires.

2. Open the front panel of the indoor unit. Using a screwdriver, remove the cover of the electric control box on your indoor unit.

3. Thread the power cable and the signal cable through the wire outlet.

4. Connect the u-lugs to the terminals.
Match the wire colours/labels with the labels on the terminal block, and firmly screw the u-lug of each wire to its corresponding terminal. Refer to the Serial Number and Wiring Diagram located on the cover of the electric control box.

5. Clamp down cable with the designated cable clamp to secure it in place. The cable should not be loose, and should not pull on the u-lugs.

6. Reinstall the electric box cover and the front panel of the indoor unit.

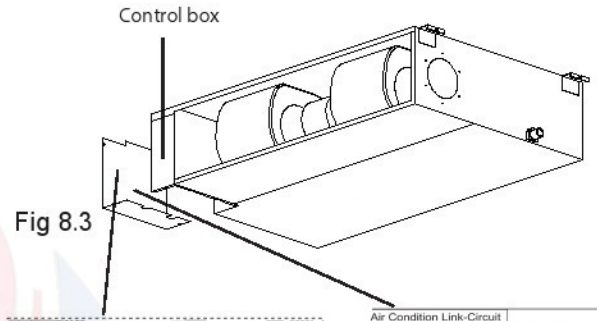
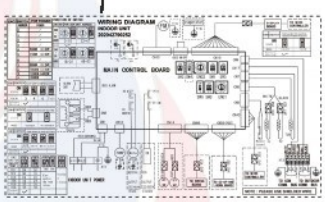
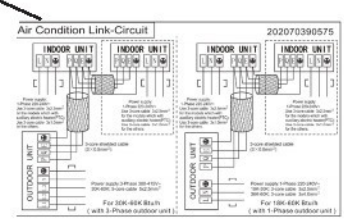


Fig 8.3



Wiring diagram



Connective wiring diagram

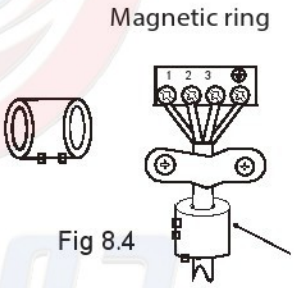


Fig 8.4

CAUTION

- While connecting the wires, please strictly follow the wiring diagram.
- The refrigerant circuit can become very hot. Keep the interconnection cable away from the copper tube.

Power Specifications

Indoor Power Supply Specifications

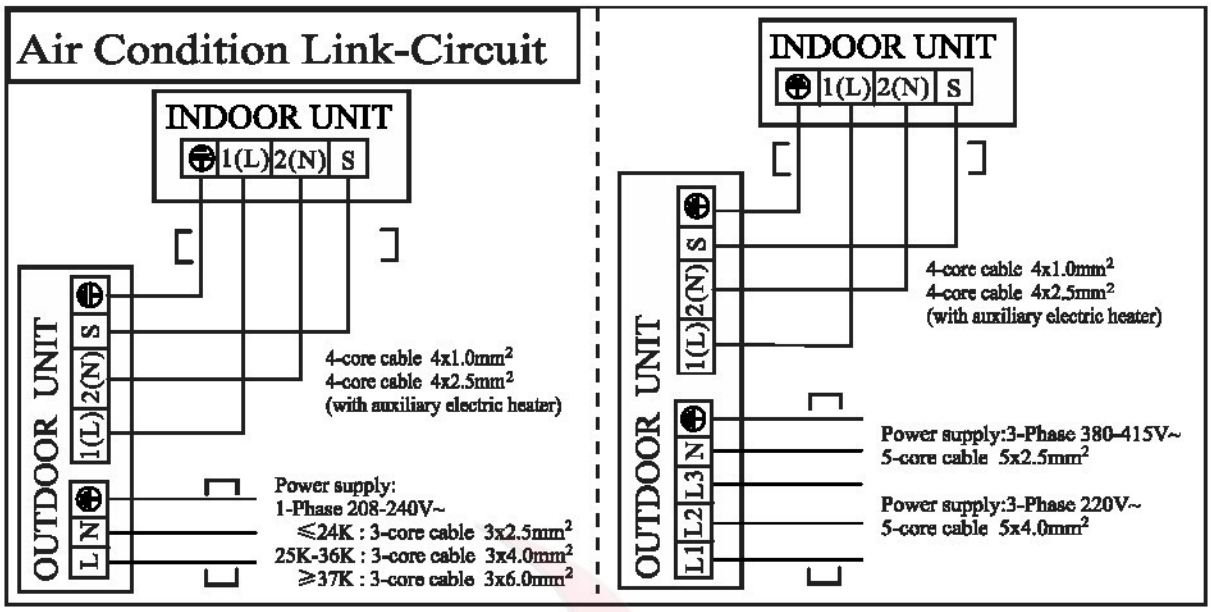
MODEL		18	24	30	48	55
POWER	Phase	1 Phase	1 Phase	1 Phase	1 Phase	1 Phase
	FREQUENCY AND VOLT	220-240V	220-240V	220-240V	220-240V	220-240V
CIRCUIT BREAKER/ FUSE(A)		5A	5A	5A	5A	5A

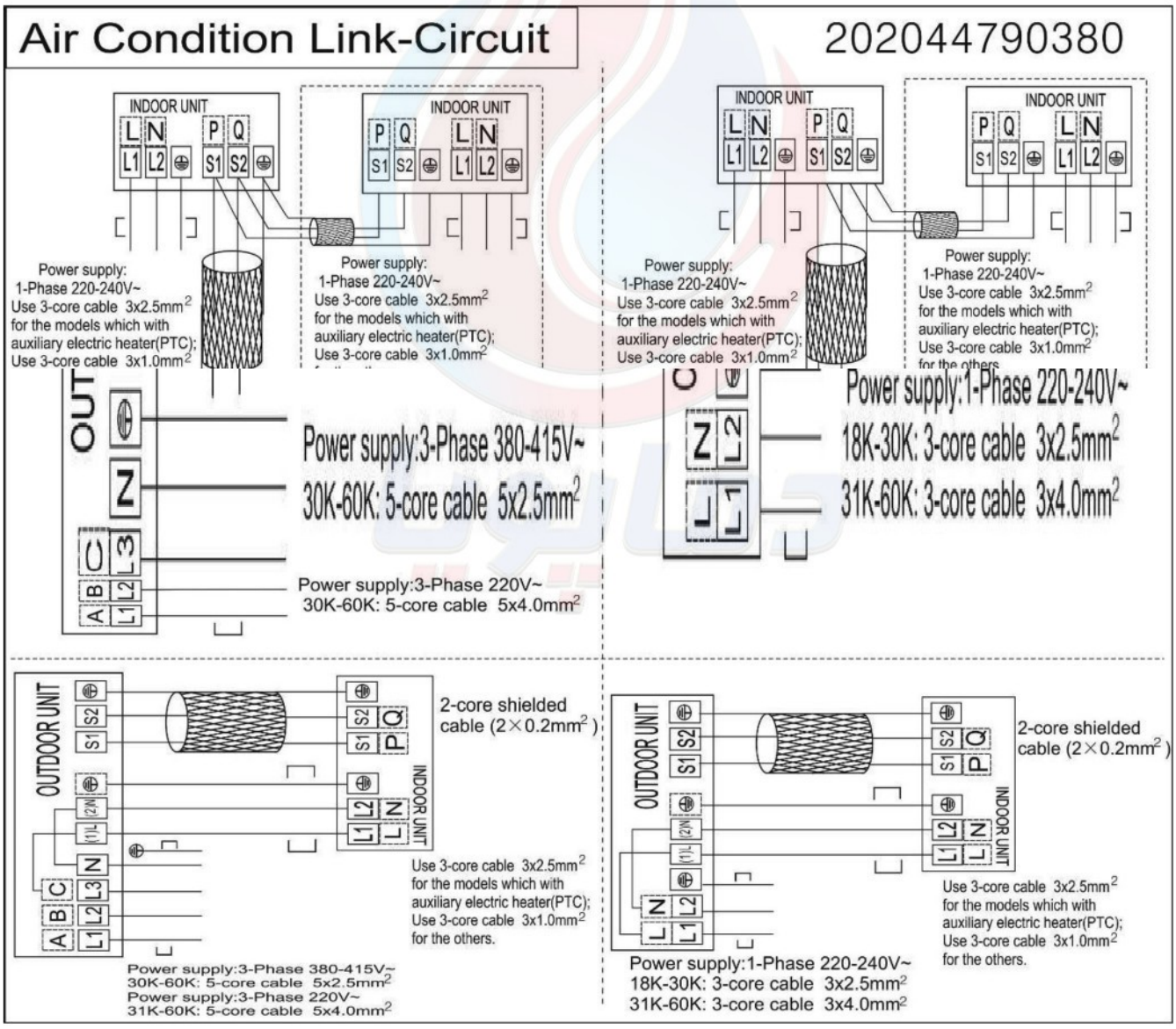
Outdoor 1 Phase Inverter Power Supply Specifications

MODEL		18	24	30	36	48
POWER	Phase	1 Phase	1 Phase	1 Phase	1 Phase	1 Phase
	FREQUENCY AND VOLT	220-240V	220-240V	220-240V	220-240V	220-240V
CIRCUIT BREAKER/ FUSE(A)		20A	20A	32A	32A	32A

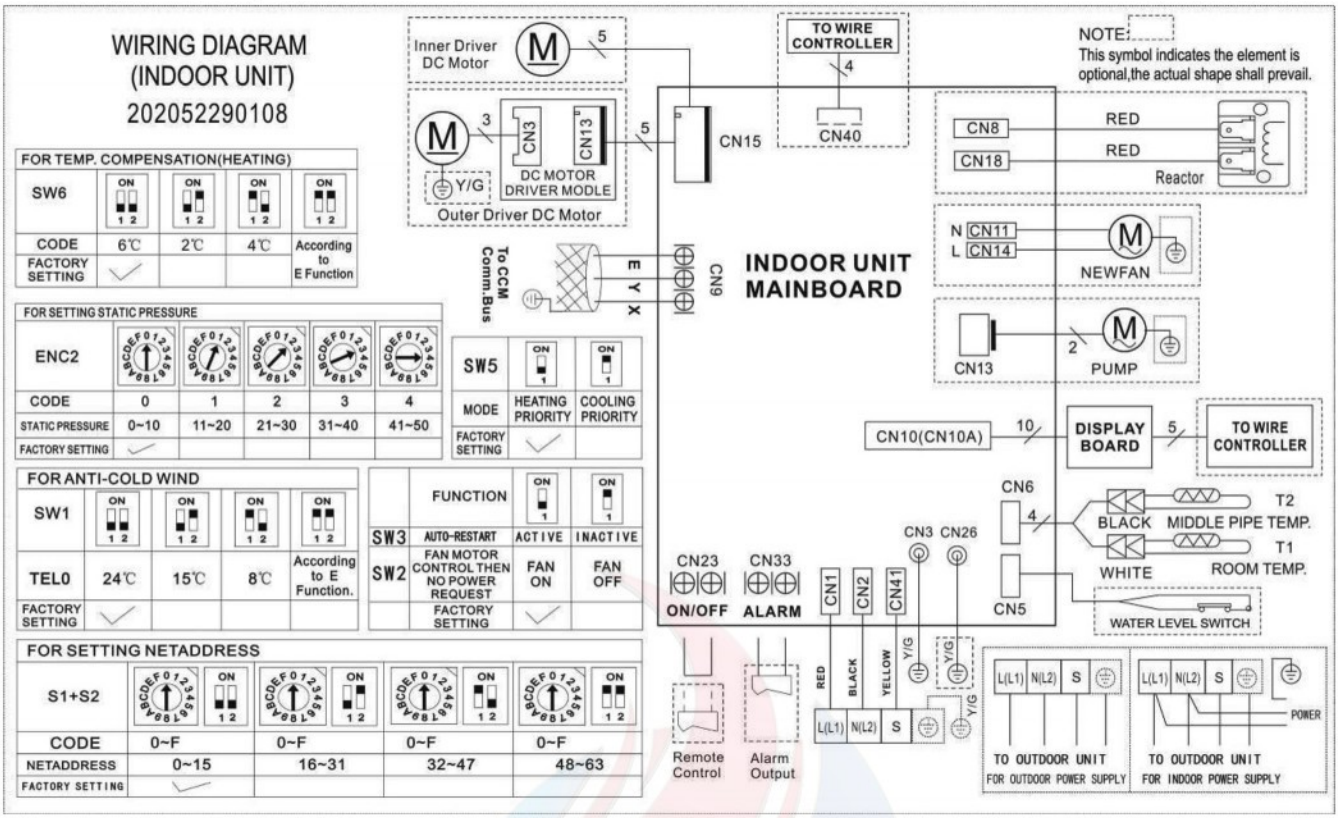
Outdoor 3 Phase Inverter Power Supply Specifications

MODEL		30	36	48	55
POWER	Phase	3 Phase	3 Phase	3 Phase	3 Phase
	FREQUENCY AND VOLT	380-415V	380-415V	380-415V	380-415V
CIRCUIT BREAKER/ FUSE(A)		20A	20A	25A	25A

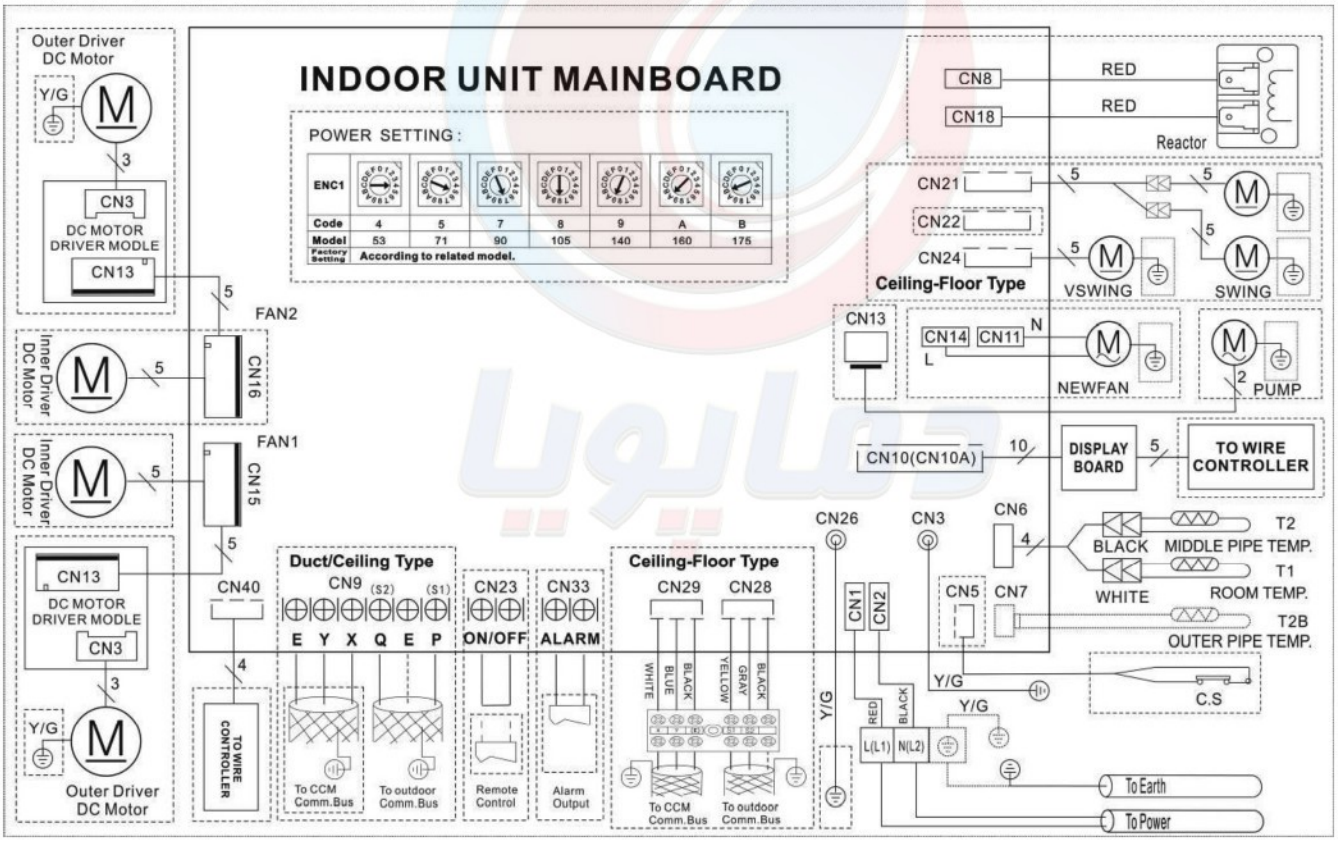

Air Condition Link-Circuit
INDOOR UNIT
1(L) 2(N) S
OUTDOOR UNIT
S 2(N) 1(L)
N L
4-core cable 4x1.0mm²
4-core cable 4x2.5mm²
(with auxiliary electric heater)
Power supply:
1-Phase 208-240V~
≤24K : 3-core cable 3x2.5mm²
25K-36K : 3-core cable 3x4.0mm²
≥37K : 3-core cable 3x6.0mm²
INDOOR UNIT
1(L) 2(N) S
OUTDOOR UNIT
S 2(N) 1(L)
N L3 L2 L1
4-core cable 4x1.0mm²
4-core cable 4x2.5mm²
(with auxiliary electric heater)
Power supply:3-Phase 380-415V~
5-core cable 5x2.5mm²
Power supply:3-Phase 220V~
5-core cable 5x4.0mm²


Air Condition Link-Circuit
202044790380
INDOOR UNIT
L N P Q
L1 L2 S1 S2
Power supply:
1-Phase 220-240V~
Use 3-core cable 3x2.5mm²
for the models which with
auxiliary electric heater(PTC);
Use 3-core cable 3x1.0mm²
OUT
Z
C L3
B L2
A L1
Power supply:3-Phase 380-415V~
30K-60K: 5-core cable 5x2.5mm²
Power supply:3-Phase 220V~
30K-60K: 5-core cable 5x4.0mm²
Power supply:1-Phase 220-240V~
18K-30K: 3-core cable 3x2.5mm²
31K-60K: 3-core cable 3x4.0mm²
OUTDOOR UNIT
S2 S1
2(N) 1(L)
N C L3 B L2 A L1
INDOOR UNIT
Q P
L2 N L1 L
2-core shielded
cable (2×0.2mm²)
Use 3-core cable 3x2.5mm²
for the models which with
auxiliary electric heater(PTC);
Use 3-core cable 3x1.0mm²
for the others.
Power supply:3-Phase 380-415V~
30K-60K: 5-core cable 5x2.5mm²
Power supply:3-Phase 220V~
31K-60K: 5-core cable 5x4.0mm²
Power supply:1-Phase 220-240V~
18K-30K: 3-core cable 3x2.5mm²
31K-60K: 3-core cable 3x4.0mm²

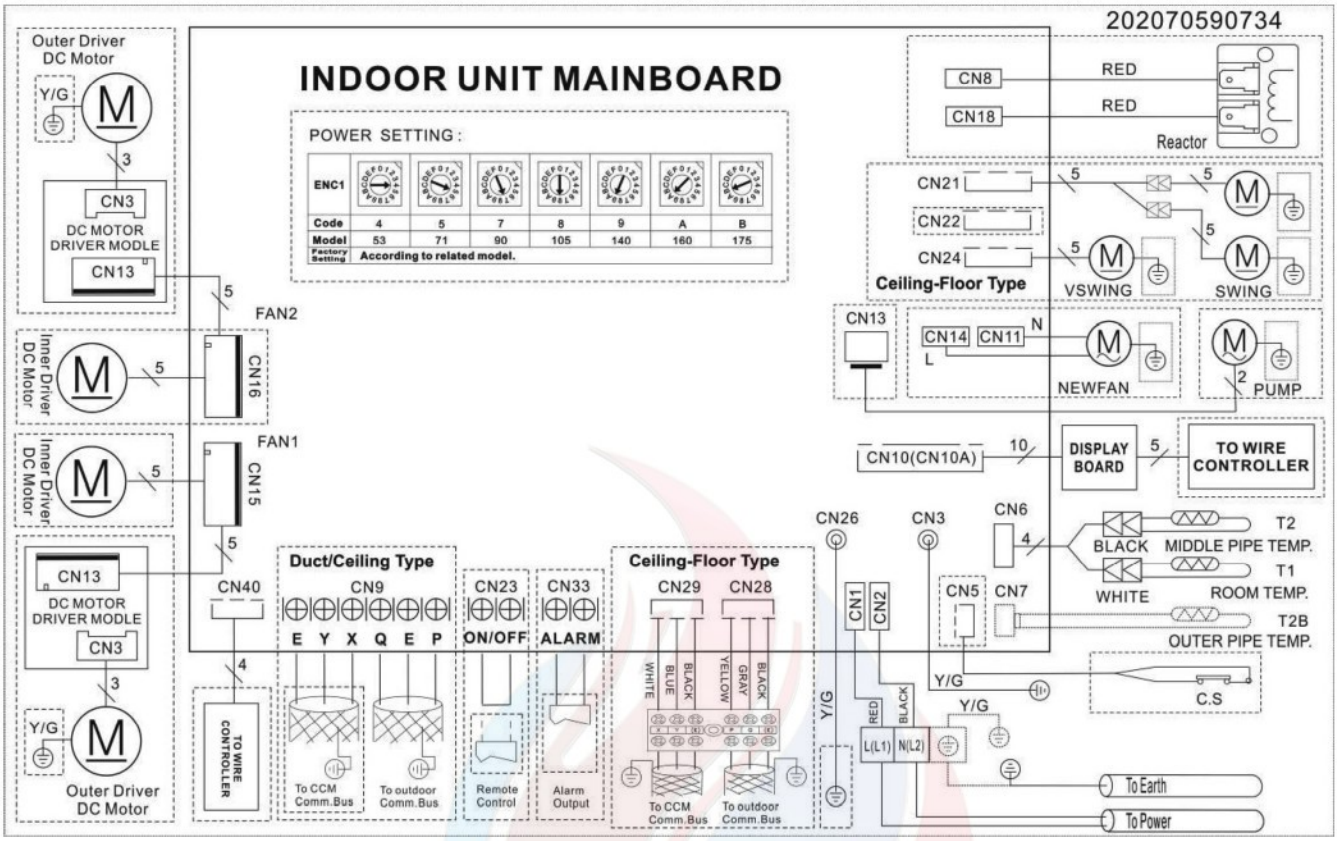
MTBU-12HWFN1-QRD0W



MTB-18HWFN1-QRD0



MTB-24HWFN1-QRD0, MTB-30HWFN1-QRD0, MTB-36HWFN1-QRD0, MTB-48HWFN1-QRD0, MTB-55HWFN1-QRD0



Pressure Test Instructions

9

Systems are pressure tested to ensure they are:

- **Safe** – for this test a pressure above the system's maximum allowable pressure (PSi) is used
- **Leak tight** – this test is at PSi.

Pressure testing is hazardous and should be carried out carefully:

- The nitrogen used for pressure testing is an asphyxiant, so the area around the system should be well-ventilated
- High pressures are used, so all non-essential personal should be evacuated from the area
- Anyone carrying out the pressure testing should wear safety goggles.

Nitrogen and regulation

Dry (oxygen free) nitrogen (OFN) is used to achieve the pressures required for the pressure tests because it is inert. You must **never** use oxygen for pressure testing - pure oxygen at high pressure reacts violently with oil and will explode.

The pressure tests

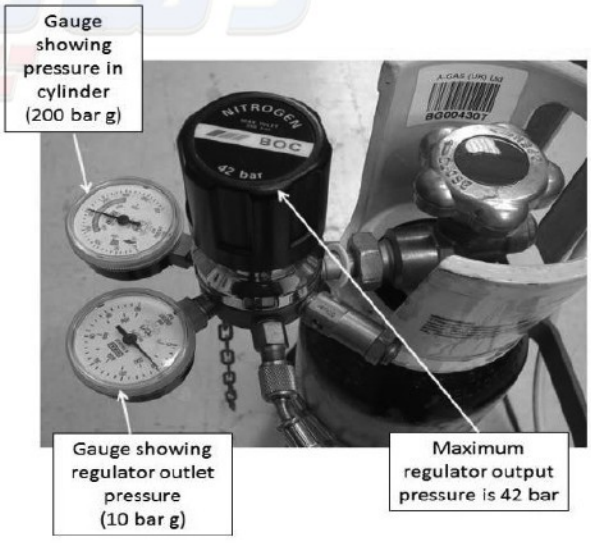
Increase the pressure to approximately 5 bar g and check for leaks using leak detection spray at this pressure initially – many leaks will be identified at this pressure so you will not waste nitrogen and time. It is also safer to find leaks at a lower pressure than the final test pressures.

Increase the pressure slowly to the strength test pressure and hold it for 15 minutes. Under the Pressure Equipment Regulation this strength test might need to be witnessed by a notified body.

Using the nitrogen regulator

1. Ensure the regulator is closed (wound fully anti clockwise);
2. Open the cylinder valve
3. Slowly open the regulator to the pressure required.

Do not use a regulator with an output pressure much higher



Air Evacuation

9

Safety Precautions

CAUTION

- Use a vacuum pump with a gauge reading lower than -0.1MPa and an air discharge capacity above 40L/min.
- The outdoor unit does not need vacuuming. DO NOT open the outdoor unit's gas and liquid stop valves.
- Ensure that the Compound Meter reads -0.1MPa or below after 2 hours. If after three hours of operation and the gauge reading is still above -0.1MPa, check if there is a gas leak or water inside the pipe. If there is no leakage, perform another evacuation for 1 or 2 hours.
- DO NOT use refrigerant gas to evacuate the system.

Evacuation Instructions

Before using manifold gauge and vacuum pump, read their operation manuals to familiarize yourself with how to use them properly.

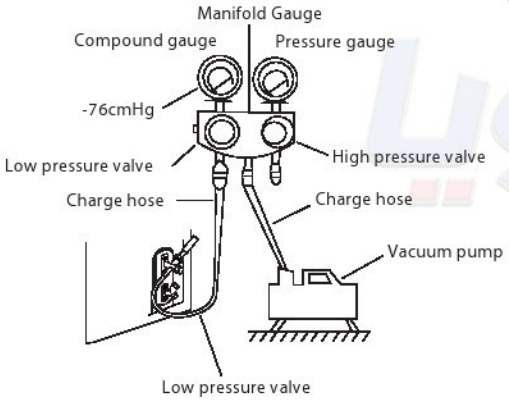


Fig. 9.1

1. Connect the charge hose of the manifold gauge to service port on the outdoor unit's low pressure valve.
2. Connect another charge hose from the manifold gauge to the vacuum pump.
3. Open the Low Pressure side of the manifold gauge. Keep the High Pressure side closed.
4. Turn on the vacuum pump to evacuate the system.
5. Run the vacuum for at least 15 minutes, or until the Gauge reads -76cmHG (-1x105Pa).
6. Close the Low Pressure side of the manifold gauge, and turn off the vacuum pump.
7. Wait for 5 minutes, then check that there has been no change in system pressure.

NOTE: If there is no change in system pressure, unscrew the cap from the packed valve (high pressure valve). If there is a change in system pressure, there may be a gas leak.

8. Insert hexagonal wrench into the packed valve (high pressure valve) and open the valve by turning the wrench in a 1/4 counterclockwise turn. Listen for gas to exit the system, then close the valve after 5 seconds.

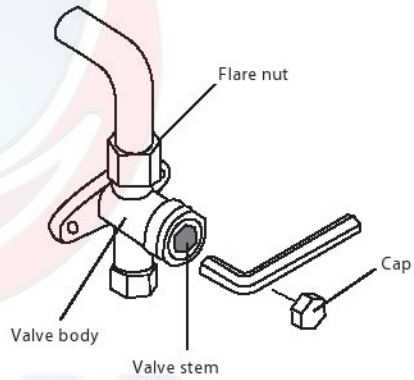


Fig. 9.2

9. Watch the Pressure Gauge for one minute to make sure that there is no change in pressure. The Pressure Gauge should read slightly higher than atmospheric pressure.
10. Remove the charge hose from the service port.
11. Using hexagonal wrench, fully open both the high pressure and low pressure valves.

OPEN VALVE STEMS GENTLY

When opening valve stems, turn the hexagonal wrench until it hits against the stopper. DO NOT try to force the valve to open further.

12. Tighten valve caps by hand, then tighten it using the proper tool.

CAUTION

- Refrigerant charging must be performed after wiring, vacuuming and the leak test.
- DO NOT exceed the maximum allowable quantity of refrigerant or overcharge the system. Doing so can damage or impact the unit's function.
- Charging with unsuitable substances may cause explosions or accidents. Ensure that the appropriate refrigerant is used.
- Refrigerant containers must be opened slowly. Always use protective gear when charging the system.
- DO NOT mix refrigerant types.

Some systems require additional charging depending on pipe lengths
The additional refrigerant to be charged can be calculated using the following Table below.

Additional Refrigerant Charge

To calculate additional gas charge, use the following formula;

W = (L-5) x AC

Where; W = Additional Charge L = Total Pipe Length

AC = g/m charge rate

R32 Additional Refrigerant Charge

Model	Shipment Charge	Charged To	Additional Charge
12	1.38 Kg	5 Meter	12g/m
18	1.48 Kg	5 Meter	12g/m
24	1.95 Kg	5 Meter	24g/m
30	2.8 Kg	5 Meter	24g/m
36	3.2 Kg	5 Meter	24g/m
48	4 Kg	5 Meter	24g/m
55	4.3 Kg	5 Meter	24g/m

R410a Additional Refrigerant Charge

Model	Shipment Charge	Charged To	Additional Charge
12	1.38 Kg	5 Meter	15 g/m
18	1.48 Kg	5 Meter	15 g/m
24	1.95 Kg	5 Meter	30 g/m
30	2.8 Kg	5 Meter	30 g/m
36	3.2 Kg	5 Meter	30 g/m
48	4 Kg	5 Meter	30 g/m
55	4.3 Kg	5 Meter	30 g/m

Note:

- Refrigerant may only be charged after performed the vacuum drying process.
- Always use gloves and glasses to protect your hands and eyes during the charge work.
- Use electronic scale or fluid infusion apparatus to weight refrigerant to be recharged. Be sure to avoid extra refrigerant charged, it may cause liquid hammer of the compressor or protections.
- Use supplementing flexible pipe to connect refrigerant cylinder, pressure gauge and outdoor unit. And The refrigerant should be charged in liquid state. Before recharging, The air in the flexible pipe and manifold gauge should be exhausted.
- After finished refrigerant recharge process, check whether there is refrigerant leakage at the connection joint part.(Using gas leakage detector or soap water to detect).

Dip Switches & Controller

FOR ANTI-COLD WIND				
SW1	ON 1 2	ON 1 2	ON 1 2	ON 1 2
TEL0	24℃	15℃	8℃	EEPROM DEFAULT
FACTORY SETTING	✓			

FOR SETTING AUTO-RESTART		
SW3	ON 1	ON 1
MODE	AUTO-RESTART	NOT AUTO-RESTART
FACTORY SETTING	✓	

FOR MAIN-SLAVE SETTING				
SW5	ON 1 2	ON 1 2	ON 1 2	ON 1 2
MODE	MAIN NO SLAVE	MAIN	MAIN	SLAVE
FACTORY SETTING	✓			

FOR TEMP. COMPENSATION(HEATING)				
SW6	ON 1 2	ON 1 2	ON 1 2	ON 1 2
CODE	6℃	2℃	4℃	EEPROM DEFAULT
FACTORY SETTING	✓			

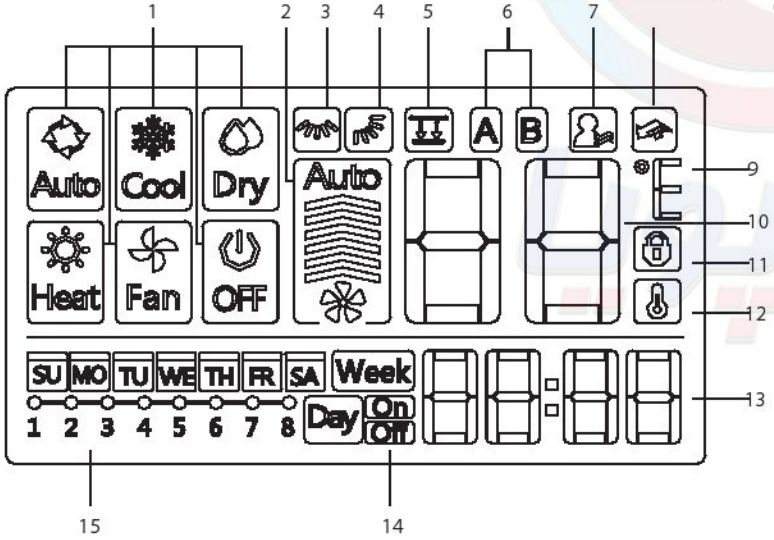
FOR SETTING FAN MOTOR CONTR WHEN THERE IS NO DEMAND		
SW2	ON 1	ON 1
MODE	FAN OFF	FAN ON
FACTORY SETTING	✓	

FOR SETTING POWER(FACTORY USE ONLY)							
ENC1							
CODE	4	5	7	8	9	A	B
POWER	≤53	54~71	72~90	91~105	106~140	141~160	≥161
FACTORY SETTING	ACCORDING TO RELATED MODEL.						

Dip Switches	Definition
SW1	Anti Cold Draft
SW2	Fan motor power request
SW3	Auto Restart after power Fault
S1, S2	Unit Addresses
SW5	Master Slave
SW6	Temperature compensation

Controller

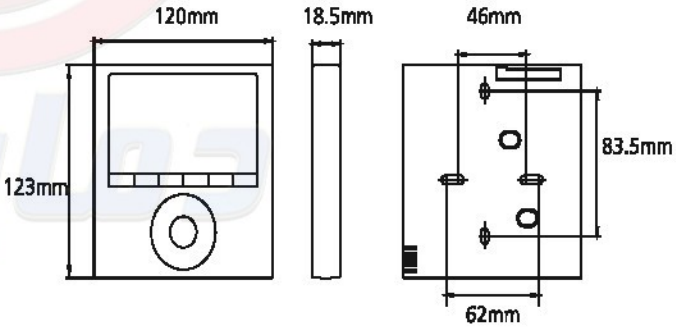
WIRED CONTROLLER DISPLAY



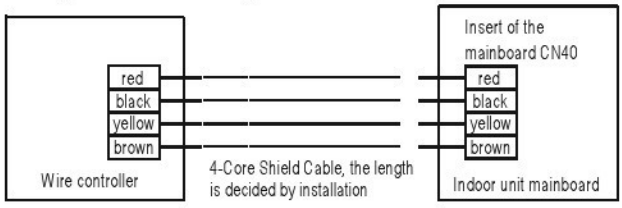
1. Operation mode indicator
2. Fan speed indicator
3. Left-right swing indicator
4. Up-down swing indicator
5. Faceplate function indicator
6. Main unit and secondary unit indicator
7. Follow me function indicator
8. Turbo/Auxiliary Heat function indicator
9. °C / °F indicator
10. Temperature display
11. Lock indicator
12. Room temperature indicator
13. Clock display
14. On/Off timer
15. Timer display

INSTALLATION METHOD

Wired Remote Controller Dimensions



Wiring Connection Diagram



Test Run

11

Before Test Run

A test run must be performed after the entire system has been completely installed. Confirm the following points before performing the test:

a) The indoor and outdoor units are properly installed.

b) Piping and wiring are properly connected.

c) Ensure that there are no obstacles near the inlet and outlet of the unit that might cause poor performance or product malfunction.

d) The refrigeration system does not leak.

e) The drainage system is unimpeded and draining to a safe location.

f) The heating insulation is properly installed.

g) The grounding wires are properly connected.

h) The length of the piping and the added refrigerant stow capacity have been recorded.

i) The power voltage is the correct voltage for the air conditioner.

CAUTION

Failure to perform the test run may result in unit damage, property damage or personal injury.

Test Run Instructions

1. Open both the liquid and gas stop valves.
2. Turn on the main power switch and allow the unit to warm up.
3. Set the air conditioner to COOL mode.
4. For the Indoor Unit
   a. Ensure the remote control and its buttons work properly.
   b. Ensure the louvers move properly and can be changed using the remote control.
   c. Double check to see if the room temperature is being registered correctly.
   d. Ensure the indicators on the remote control and the display panel on the indoor unit work properly.
   e. Ensure the manual buttons on the indoor unit works properly.
   f. Check to see that the drainage system is unimpeded and draining smoothly.
   g. Ensure there is no vibration or abnormal noise during operation.
5. For the Outdoor Unit
   a. Check to see if the refrigeration system is leaking.
   b. Make sure there is no vibration or abnormal noise during operation.
   c. Ensure the wind, noise, and water generated by the unit do not disturb your neighbors or pose a safety hazard.
6. Drainage Test
   a. Ensure the drainpipe flows smoothly. New buildings should perform this test before finishing the ceiling.
   b. Remove the test cover. Add 2,000ml of water to the tank through the attached tube.
   c. Turn on the main power switch and run the air conditioner in COOL mode.
   d. Listen to the sound of the drain pump to see if it makes any unusual noises.
   e. Check to see that the water is discharged. It may take up to one minute before the unit begins to drain depending on the drainpipe.
   f. Make sure that there are no leaks in any of the piping.
   g. Stop the air conditioner. Turn off the main power switch and reinstall the test cover.

NOTE: If the unit malfunctions or does not operate according to your expectations, please refer to the Troubleshooting section of the Owner's Manual before calling customer service.

Duct Series Quick Step Installation Guide

Step 1: Prior to unpacking equipment please inspect boxes for any transport damage to ensure products are in perfect condition.
Step 2: Ensure the equipment model numbers on the boxes correspond with your companies purchase order.
Step 3: Unpack the equipment and ensure all parts are accounted for i.e Indoor / Outdoor / Hard Wired Controller.
Step 4: Review the installation and maintenance manuals which are provided.
Step 5: Carry out the positioning and installation of indoor and outdoor units as per guidelines within the installation manual.
Step 6: Install refrigerant pipework (Purge with OFN while brazing), electrical wiring & drainage pipe work.
Step 7: Interconnecting control wiring between indoor and outdoor units is made by linking into terminals S1 & S2.
Step 8: Connecting of the Hard-Wired controller is made by linking to CN40 on the indoor PC Board.
Step: 9: Set auto restart function by setting SW3 on indoor unit to on position.
Step 10: Set static pressure via ENC2
Step 11: Pressure test pipework (Note do not carry out pressure test while connected to outdoor unit to prevent contamination of factory charge)
(1) Strength test in 5 Bar increments up to full test pressure. (2) Then leak test at lower pressure. Evacuate system to 2 torr or lower for appropriate time.
Step 12: If required please add additional refrigerant charge (see table on reverse).
Step 13: Carry out all the commissioning checks required to activate the warranty of the newly installed system.
Step 14: Perform the test operation in accordance with the installation manual to ensure all functions and parts are working correctly.
Step 15: Complete your warranty card document and e-mail this with dated photo of outdoor serial number to: warranty@fgeuropeuk.co.uk
Note: Installation videos can also be found on the Midea UK YouTube channel.

Please contact your Midea support team if you have any issues during the installation and commissioning process.
Tel: 02074 092009 E-Mail: technical@fgeuropeuk.co.uk

S1 & S2
(Interconnecting Wiring)

Indoor

Outdoor

SW3
(Auto Restart)

Indoor Model	Outdoor Model	Cooling Duty (Kw)	Heating Duty (Kw)	Outdoor Dimensions			Outdoor Weight (Kg)	Indoor Dimensions			Indoor Weight(Kg)
				W(mm)	D(mm)	H(mm)		W(mm)	D(mm)	H(mm)	
MTBU-12	MOB30U-12	4.4	5.0	800	333	554	34.5	700	635	210	18.4
MTB-18	MOB30U-18	6.1	7.0	800	333	554	35.5	920	635	270	26.9
MTB-24	MOCA30U-24	8.2	8.6	845	363	702	49	920	635	270	28
MTB-36	MOD30U-36	12	13.2	946	410	810	78.9	1200	865	300	45
MTB-48	MOE30U-48	16.1	17.6	952	410	1333	108.1	1200	865	300	43.2
MTB-55	MOE30U-55	18.5	20.5	952	410	1333	112.8	1200	865	300	43.1

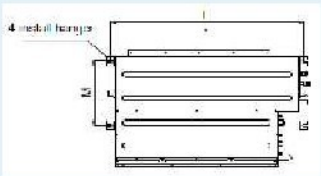
Piping Information							
Model:		12	18	24	36	48	55
Liquid Line	Inch	1/4	1/4	3/8	3/8	3/8	3/8
Gas Line	Inch	3/8	1/2	5/8	5/8	5/8	5/8
Drain Line	Φ mm	25	25	25	25	25	25
Max Length	M	25	30	30	50	65	65
Max Height	M	10	20	25	30	30	30

Refrigerant Charging Information							
Model:		12	18	24	36	48	55
Pre –Charge	Kg	1.38	1.48	1.95	3.2	4	4.3
Charged to	M	5	5	5	5	5	5
Additional	g/m	15	15	30	30	30	30
Refrigerant	Type	R410A					

Electrical Wiring Information								
Power:	Single Phase					3 Phase		
Model:	12	18	24	36	48	36	48	55
Mains Outdoor	3x2.5mm²			3x4mm²		5x2.5mm²		
Mains Indoor	N/A	3x2.5mm²						
Interconnecting	4x1mm²	2x1mm²						
Controller	Plug into CN40 (6 meter included)							

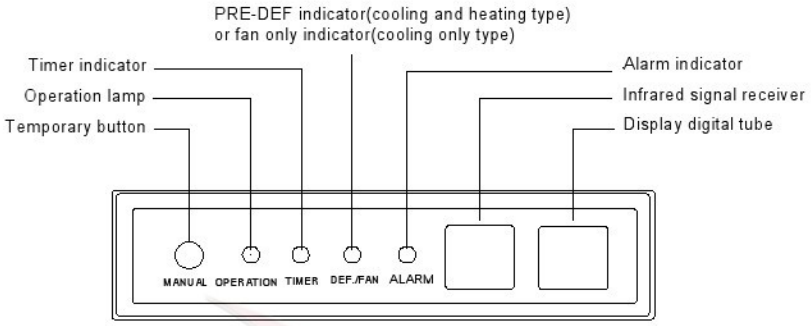
Power Supply Information									
Power:		Single Phase					3 Phase		
Model:		12	18	24	36	48	36	48	55
Outdoor	A	16	20	20	32	32	20	25	25
Indoor	A	N/A	5	5	5	5	5	5	5

Duct Series Fixing Centres



(mm)	12	18	24	36	48	55
M	350	350	960	500	500	500
L	740	960	960	1240	1240	1240

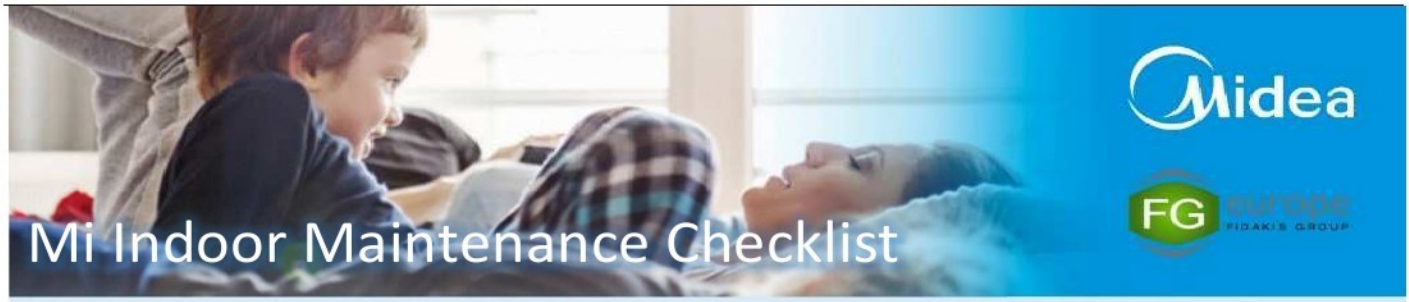
Icon explanation of indoor display board



Error Codes

(18K-60K)

Malfunction	Error Code	Timer Lamp	Operation Lamp (flashes)
Indoor EEPROM malfunction	E0	X	1
Communication malfunction between indoor and outdoor units	E1	X	2
Indoor fan speed is out of control	E3	X	4
Open or short circuit of T1 temperature sensor	E4	X	5
Open or short circuit of T2 temperature sensor	E5	X	6
Refrigerant leakage detection	EC	X	7
Water level alarm	EE	X	8
Communication error between master and slave unit (for twins system)	E8	X	9
Another indoor unit malfunction (for twins system)	E9	X	10
Outdoor unit is faulty (for old communication protocol)	Ed	X	11
Overcurrent protection (For some units)	F0	O	1
Open or short circuit of T4 temperature sensor	F1	O	2
Open or short circuit of T3 temperature sensor	F2	O	3
Open or short circuit of T5 temperature sensor	F3	O	4
Outdoor EEPROM malfunction (For some units)	F4	O	5
Outdoor fan speed is out of control	F5	O	6
Open or short circuit of T2B temperature sensor (For free-match indoor units)	F6	O	7
Communication error between auto-lifting panel and slim cassette (For slim cassette with auto-lifting panel)	F7	O	8
Auto-lifting panel is faulty (For slim cassette with auto-lifting panel)	F8	O	9
Auto-lifting panel is not closed (For slim cassette with auto-lifting panel)	F9	O	10
IPM module malfunction	P0	☆	1
Over voltage or over low voltage protection	P1	☆	2
High temperature protection of top of compressor	P2	☆	3
Too low ambient temperature protection	P3	☆	4
Error rotor position protection of compressor	P4	☆	5
Mode conflict (For free-match indoor units)	P5	☆	6
Low pressure protection of compressor	P6	☆	7
Sensor of outdoor IGBT is faulty	P7	☆	8



17 Old Park Lane, London, W1K 1QT Tel: + 44 (0) 2074 092009

MiPro PARTNER

TRAINING ACADEMY

Customer Contact Information			
Company Name:		Contact Name:	
Contact Number:		E-Mail Address:	
Site Reference		Date of Visit:	

Indoor Details				
Model No.	Serial No.		Location Served	
Maintenance Interval (Months)	3 ☐	6 ☐	9 ☐	12 ☐

Maintenance Activity		
Task	Frequency	Complete/Reading
Check operation of the system in both heating and cooling mode	Every Visit	☐
Check operation of all functions on the remote controller	Every Visit	☐
Inspect & Clean Unit Air Filter(s)	Every Visit	☐
Check unit for noise and vibration	Every Visit	☐
Check Evaporator Coil for Dirt and Clean as required	Every Visit	☐
Test & Clean drain pump (if fitted) and drip tray	Every Visit	☐
Check Fan Motor and Fan Blade Movement	Every Visit	☐
Check Air On Coil Temperature in Heating	Every Visit	°C
Check Air Off Coil Temperature in Heating	Every Visit	°C
Check indoor covers are secure & Clean Indoor Casing	Every Visit	☐

Additional Notes (remedial/additional work completed, faults, follow-up required etc)

Mi Outdoor Maintenance Checklist

17 Old Park Lane, London, W1K 1QT Tel: + 44 (0) 2074 092009

Customer Contact Information			
Company Name:		Contact Name:	
Contact Number:		E-Mail Address:	
Site Reference		Date of Visit:	

Outdoor Details				
Model No.	**Serial No.**		**Location Served**	
Maintenance Interval (Months)	3 ☐	6 ☐	9 ☐	12 ☐

Maintenance Activity		
Task	**Frequency**	**Complete/Reading**
Check and clean Heat Exchanger	Every Visit	☐
Check for Visible Signs of Refrigerant Leaks	Every Visit	☐
Check outdoor pipework and insulation	Every Visit	☐
Check all Electrical Connections (including Mains Isolator)	Every Visit	☐
Check Unit Operation Voltage and record	Every Visit	V
Check Unit Operation Current and record	Every Visit	A
Check Compressor Run Hours & Record	Every Visit	Hours
Check Discharge Temperature & Record	Every Visit	°C
Check Suction Temperature & Record	Every Visit	°C
Check Discharge Pressure & Record	Every Visit	Bar
Check Suction Pressure & Record	Every Visit	Bar
Check Operation of Crankcase Heater	Every Visit	☐
Check outdoor covers are secure	Every Visit	☐

Additional Notes (remedial/additional work completed, faults, follow-up required etc)

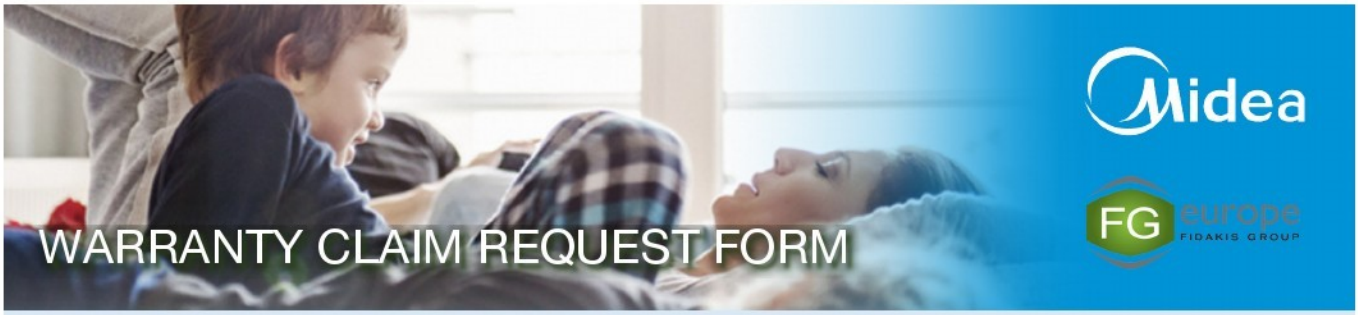
Mi Commissioning & Installation Checklist

17 Old Park Lane, London, W1K 1QT Tel: + 44 (0) 2074 092009

Customer Contact Information			
Company Name:		Contact Name:	
Contact Number:		E-Mail Address:	
Site Reference		Date of Visit:	
Site Address			
County/Region:		Postcode:	

System Details		
Indoor Model No.	**Indoor Serial No.**	**Location Served**
Outdoor Model No.	**Outdoor Serial No.**	**Location**
Drain: Pumped or Gravity	**Refrigerant Type**	**Refrigerant Charge**

Checklist		Complete
1) Indoor unit correctly located		☐
2) Outdoor unit correctly located		☐
3) Wall/Roof Penetration sealed		☐
4) Waffle pad under condensing unit feet		☐
5) Install outdoor unit drain or tray (if required)		☐
6) Purge nitrogen while brazing		☐
7) Pipe work pressure tested (Refer COP)		☐
8) Pipe work insulated, secured & covered		☐
9) Evacuation to less than 2 Torr (Refer COP)		☐
10) Open both L/Line & Suction valves		☐
11) Pour 2- 4 litres of water into the evaporator drain tray		☐
12) Configure wall controller to manufacturer's manual		☐
13) Open remote control: insert batteries & set the clock		☐
14) Operate unit in all modes (cool, heat, dry, fan, auto)		☐
15) Check the operation of the 'Auto' function (if fitted)		☐
16) Measure Suction Pressure	**Bar**	☐
17) Measure Heard Pressure	**Bar**	☐
18) Compressor run current amps	**Amps**	☐
19) Measure Indoor ambient temp	**°C**	☐
20) Measure Indoor supply air temp	**°C Δk**	☐
21) Measure outdoor ambient temp	**°C**	☐
22) Measure condensing unit 'air off' coil temp	**°C Δk**	☐
23) Superheat: suction line temp	**°C - SST °C =Δk**	☐
24) Add or remove refrigerant according to pipe run (refer to manufacture manuals)		☐
25) Carry out site clean (walls, replace furniture, pick up all off cuts)		☐



WARRANTY CLAIM REQUEST FORM

17 Old Park Lane, London, W1K 1QT Tel: + 44 (0) 2074 092009

Once this from is completed please return to: warranty@fgeuropeuk.co.uk

Customer Contact Information			
Company Name:		Contact Name:	
Contact Number:		E-Mail Address:	
Site Reference:		Date:	

Parts to Be Claimed	
Model No.	Serial No.
Components (Including part numbers)	Suspected cause of failure

Defective Product Collection Address	
Address:	
County/Region:	
Postcode:	
Site Contact:	

Warranty Claim Number (Internal Use Only):	

Notes:

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