

R410A Rooftop Packaged B Series

Models: M5RT 90BR
M5RT 120BR
M5RT 150BR
M5RT 180BR



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Note : Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment.

Caution : Sharp edges and coil surfaces are a potential injury hazard. Avoid contact with them.

Warning : Moving machinery and electrical power hazard. May cause severe personnel injury or death. Disconnect and lock off power before servicing equipment.

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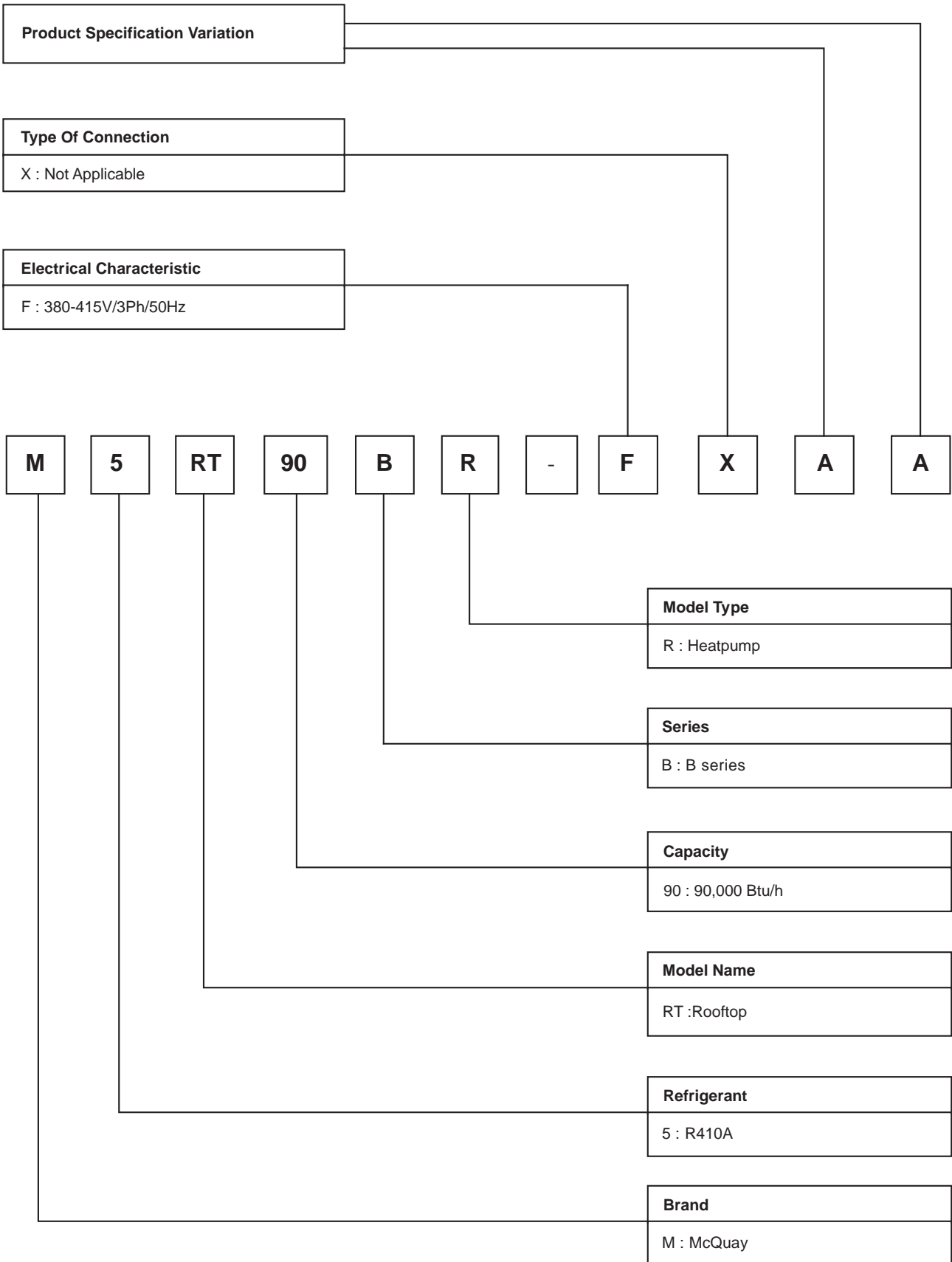
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Bulletin illustrations cover the general appearance of McQuay International products at the time of publication.

We reserve the right to change design and construction specifications at any time without notice.



Nomenclature



Product Line-up

M5RT-BR Series

Heat pump

	Model	Heating	Nomenclature	Classification										
				Rooftop controller	PCB	EXV	Gold Fin (NA549)	Scroll compressor	Saranet Air Filter	Side flow	Convertible	Filter Drier	High pressure switch	Low pressure switch
Heat pump	M5RT	90BR	FXAA	X	X	X	X	X	X	X	X	X	X	X
		120BR	FXAA	X	X	X	X	X	X	X	X	X	X	X
		150BR	FXAA	X	X	X	X	X	X	X	X	X	X	X
		180BR	FXAA	X	X	X	X	X	X	X	X	X	X	X

Remarks: Economizers & CO2 sensor will be ready soon.

Features

- **Package Unit:**

McQuay's new range of rooftop packaged units has been developed specifically to suit commercial applications and are designed to be easy to install, requiring only ducting (and associated fittings), power/ control wiring and drain piping. Along with the light grey colour, the flat top and compact design gives an aesthetic and neat appearance when installed in line of sight. The unit cabinet is made of powder coated sheet metal especially suitable for outdoor use. All parts of the structure are fastened with corrosion resistant screws and bolts.

- **Base Beam:**

The base beams are fixed and provide a rigid foundation for the entire unit. The beam has the forklift slots and rigging holes for better handling purpose. It is also designed to allow mounting on a roof curb, the dimension of the roof curb should be followed strictly in accordance with the installation manual.

- **Flexible Air Supply:**

Since all the units utilize a belt/ pulley driven supply air fan, the units are able to meet a wide range of supply air volumes and external static pressures. Furthermore, the supply air fan motors, pulleys and belts (field supplied) can be easily changed on site to meet exact air flow and ESP requirement if required.

- **Convertible Return and Supply Air:**

Unit can be easily converted from horizontal to vertical (downward) supply and return air duct configuration by relocating the panels and supply air fan mounting.

- **Scroll Compressor:**

Units are equipped with high efficiency and reliable scroll compressors. Each compressor is mounted on rubber vibration isolators in order to reduce the noise level and vibration transmissions.

- **Powder Coated Condensate Drain Pan:**

The sheet metal condensate drain pan is powder coated to resist corrosion.

- **Slots for 2 inches Return Air Filters:**

A 2 inches rail is provided as standard in instances where a field supplied filter casement need to be installed.

- **Higher Energy Efficiency Rating:**

The M5RT-BR series is designed in line with market requirement for better energy saving. Its' performance is claimed to be among the best in the market.

Technical Specification

- **Compressor**

Compressor used in M5RT-BR series Packaged Units are hermetically sealed scroll type. All the compressors are provided with an internal overload protection.

- **Condenser**

Condenser coils are manufactured from seamless inner grooved copper tubes mechanically bonded to aluminium fins to ensure optimum heat transfer. All coils are tested against by Nitrogen holding at 609psig and highly precise Helium leak test at 235psig.

ALL standard coils are up to 3 rows / 14-16 FPI, 3/8" (9.52mm) O.D. tubes.

Hydrophilic Gold Fin coating (NA549) is offered as standard, which has longer life span under corrosive environment.

- **Evaporator**

Evaporator coils are manufactured from seamless inner grooved copper tubes mechanically bonded to aluminium fins to ensure optimum heat transfer. All coils are tested against by Nitrogen holding at 609psig and highly precise Helium leak test at 235psig.

ALL standard coils are 3-4 rows / 14-16 FPI, 3/8" (9.52mm) O.D. tubes.

Hydrophilic Gold Fin coating (NA549) is offered as standard, which has longer life span under corrosive environment.

- **Condenser Fan and Motor**

Fans are of propeller type, direct driven by weatherproof electrical induction motors. Condenser fan motor has class F insulation and splash-proof enclosure, IP44.

- **Evaporator Fan and Drive**

Blower is DWDI centrifugal, forward curved type. It is mechanically and dynamically balanced and being mounted on a rigid shaft in a self aligned bearing block.

The motor is fitted with an adjustable V-belt drive, as standard. It has class B insulation and dripping water proof, IP22.

- **Refrigerant Circuit**

Each refrigerant circuit shall have independent electronic expansion devices, HP/LP switch and refrigerant line service pressure ports as standard factory installed.

- **Expansion Device**

Electronic Expansion Valve is being used to ensure accurate control of refrigerant flow.

- **Casing/Structure**

The unit casing used in M5RT-BR series is made of zinc coated galvanized steel sheets. It is further coated with an electrostatic powder coat and then oven-baked for a tough and lasting weather resistant finish. Zinc plated screws are used throughout to further reduce possibility of unit rusting.

- **Insulation**

ALL possible areas of condensation to happen are insulated by PE, Polyethelene. Panel insulation is 10mm thickness while drain pan insulation is 5mm thickness.

- **Control**

Units shall be completely factory supplied with an integrated controlled Module, with built in resident control algorithms to make decide heating, cooling, or ventilating operations in response to electronic signals from indoor & outdoor temperature sensors.

- **Rooftop Panel - handset**

Rooftop Panel comprises all starting, operating and safety controls setting. It is connected to the IC module PCB and supplied as standard.

Optional Features

- **3rd Party Thermostat**

For application that requires uniform thermostat outlook with other electrical appliances. 3rd Party thermostat can be connected to the factory supplied module via the contact point available on PCB board.

- **Basic BMS Connection**

Unit's standard PCB board provides dry contact for basic BMS connection. Input signal will go to dry contact ON/OFF, COOL/HEAT, and 4 to 20 mA temperature adjuster while output signal will come from ON/OFF, COOL/HEAT, ALARM and DEFROST dry contact.

- **Economizer (in progress of development)**

Field installed economizer is supplied from factory as an accessory. It is also designed to cater for horizontal or vertical down throw air discharge orientation.

- **CO2 Sensor**

Field specified CO2 sensor can be easily plug on the control board's dry contact, which is come as standard.

- **Auxiliary Heater**

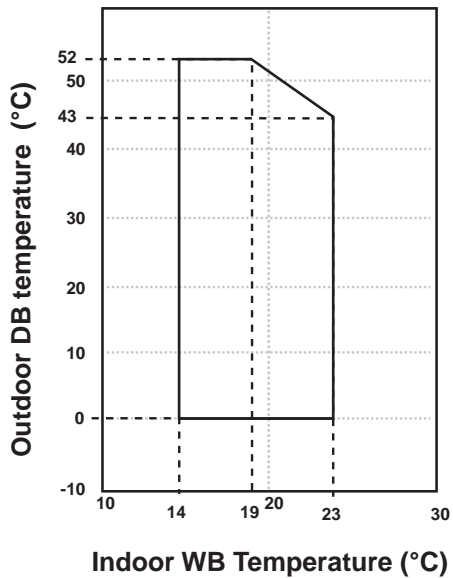
Auxiliary heater connection point is available on the standard PCB for field supplied heater connection.

Application Information

Operating Range

Ensure the operating temperature is in allowable range.

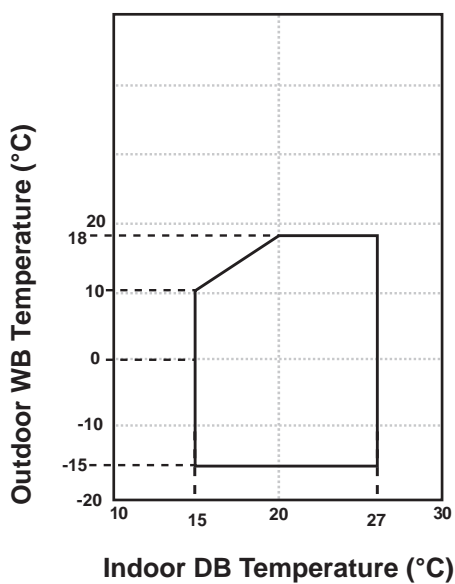
Cooling



Caution :

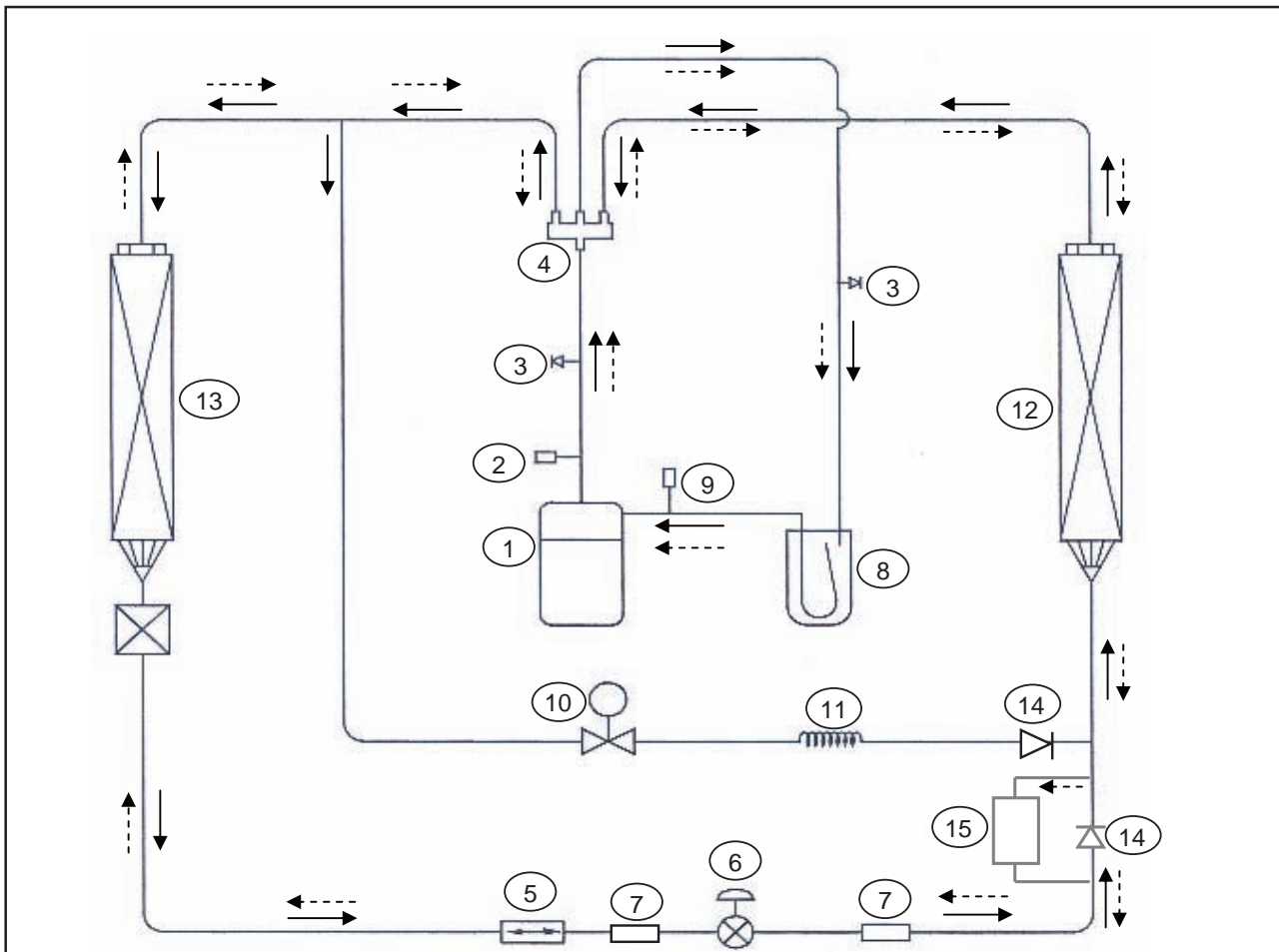
The use of your air conditioner outside the range of working temperature and humidity can result in serious failure.

Heating



Refrigerant Circuit Diagrams

Model: M5RT90/120/150/180BR



Item	Part's Model/Part No/Size
1	Compressor
2	Pressure Switch 600PSI N/C
3	Access Valve
4	4WV
5	Filter Drier
6	EXV
7	Strainer
8	Accumulator
9	Pressure Switch 18PSI N/C
10	Solenoid Valve
11	Bypass Capillary Tube
12	ID Coil
13	OD Coil
14	Check Valve
15	Compensator

→	Cooling Operation
← - - -	Heating Operation

Note: (a) 120, 150, 180 consists of 2 circuits in the system.
 (b) Item 15 is applicable for 120 only

Controllers



A. Operating Guide

1. Upon power up of the unit, the LCD displays the main display screen

* 2000/01/01 [Sat] 12:00am
Status : OFF
Mode : Heating
Set Temp : 24°C ▼

2. Press the ON/OFF button for 1 second to switch on the unit if the status shows OFF. The status will change to ON. The ON/OFF LED will light up.
3. Press the COOL button for 1 second if cooling is required or the HEAT button if heating is required.
4. The 'Set Temp' refers to temperature setting.
5. Press the ▼ button once to view the compressor(s) on, off or defrost status.

* 2000/01/01 [Sat] 12:00am
Compressor 1 : ON
Compressor 2 : DEFROST
 ▲▼

6. Press the ▼ button again to view the temperature for room and outdoor ambient.

* 2000/01/01 [Sat] 12:00am
Return Air : 24.0°C
Outdoor Air : 24.0°C
 ▲▼

7. Press the ▼ button again to view the selected type for unit, number of compressor used, indoor fan 'always on' option, model and EEPROM version.

* 2000/01/01 [Sat] 12:00am
Type : H/Pump
No. Comp : 2 Comp
IDF Opt : --
Model : 5RT90BR_E
EP.Rev : 0.0

8. Press the ▲ button to return to previous screen(s) or ESC to return to main screen.
9. Press the ALARM button to view or clear the alarm history. If alarm occurs, contact your dealer or serviceman.

* Note: Display diagram is for illustration purpose only. It may differ for different models.
 The display information shall be subjected to the setting in the main controller board.

B. Main Menu

1. Changes can be made to the factory setting parameter. This is done in the Main Menu. Press ENTER button to go into the Main Menu.
2. The Main Menu consists of Operation Menu, Settings Menu, Timer Menu, Alarm Menu, Warning Menu and Display Menu.

How to use the Main Menu?

Step 1

Press ENTER to view the sub-Menu under Main Menu.

Step 2

Go to sub-Menu by pressing the ▲ or ▼ button. Press ENTER to select the sub-Menu.

Step 3

Go to parameter to change or view by pressing the ▲ or ▼ button. Press ENTER to select this parameter.

Step 4

Change the parameter by pressing the ▲ or ▼ button. Once completed press ENTER. Press ESC to go back to previous screen until you see the initial display screen.

Operation Menu

This menu is to set the unit status (on or off), set the unit operation mode, change the temperature setting, and manually defrost the unit (applicable for heating mode only).

Settings Menu

This menu is to set the parameters for unit operation (requires password entering), user setting, change password, set panel option and unlock panel. The panel option enables us to set the LCD backlight and contrast, set the alarm buzzer, enable and disable the screen saver and set a screen saver timeout and set the temperature display in °C or °F.

Note: The Set Parameter in the setting menu requires password for any changes to or to view its parameter.

CAUTION:

All the password entering must be done by local dealer/serviceman. User is not allowed to change the value of the set parameter as this may cause damage to unit or deter its operation.

Timer Menu

This menu is to set the clock, set the date, set a 7 days schedule to start and stop the unit and enable or disable the set schedule.

Alarm Menu

This menu is to view the alarm history and also clear the record. The panel can keep up to 20 fault / alarm records.

Warning Menu

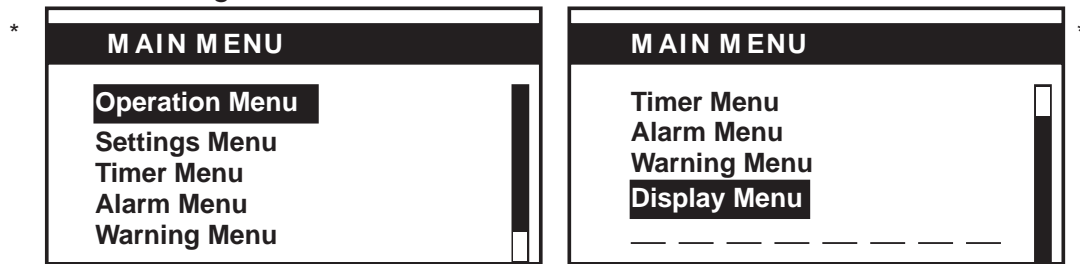
This menu is to view the warning history and also to clear the record. The panel can keep up to 20 warning records.

Display Menu

This menu is to view the indoor heat exchanger sensor(s) temperature, outdoor heat exchanger sensor(s) temperature, discharge sensor(s) temperature, solenoid valve(s) operation status, compressor(s) run time record, EXV opening pulse, economizer operation status (applicable for unit with economizer only), filter checking time, control type and software version. Some of the submenu may require password for entering.

Main Menu

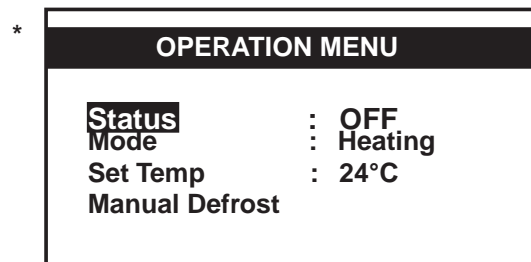
Press ENTER to go to this menu.



There are 6 sub menus in [Main Menu]. Press ▲ or ▼ to select sub menus, ENTER to enter into the sub menu or press ESC to exit to main display screen.

Operation Menu

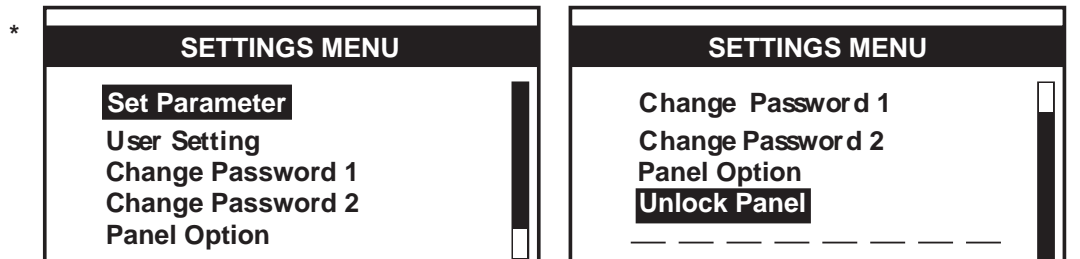
Select [Operation Menu] in [Main Menu] and press ENTER to go into this menu.



Some basic settings can be done here. Press ▲ or ▼ to select the required setting. Then, press ENTER to enter the setting mode. Press ▲ or ▼ to toggle the setting. Press ENTER again to confirm the setting. Press ESC to exit to [Main Menu].

Settings Menu

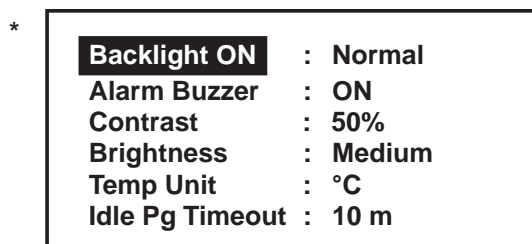
Select [Settings Menu] in [Main Menu] and press ENTER to go into this menu.



Some advance settings can be found here. Press ▲ or ▼ to select the required setting. Then, press ENTER to enter the setting mode. Press ▲ or ▼ to toggle the setting. Press ENTER again to confirm the setting. Press ESC to exit to [Main Menu].

Panel Option

Select [Panel Option] in [Settings Menu] and press ENTER to go into this menu.



Press ▲ or ▼ to select the required setting, ENTER to enter into the setting.

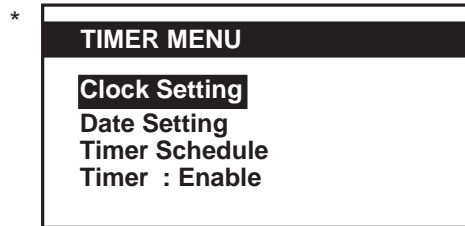
Press ▲ or ▼ to select the required option, ENTER to select the option.

Press ESC to exit to [Settings Menu].

* **Note:** Display diagram is for illustration purpose only. It may differ for different models. The display information shall be subjected to the setting in the main controller board.

Timer Menu

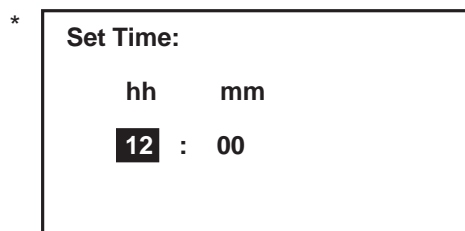
Select [Timer Menu] in [Main Menu] and press ENTER to go into this menu.



All the timer/schedule settings are included in this menu. Press ▲ or ▼ to select the required setting. Then, press ENTER to enter the setting mode. Press ▲ or ▼ to toggle the setting. Press ENTER or to toggle the setting. Press ENTER again to confirm the setting. Press ESC to exit to [Main Menu].

Clock Setting

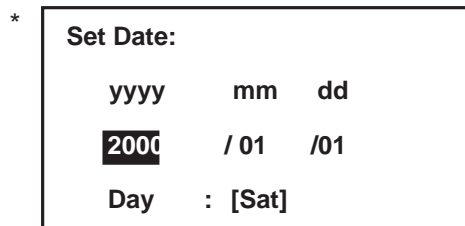
Select [Clock Setting] in [Timer Menu] and press ENTER to go into this menu.



Press ▲ or ▼ to select the required option. Then, press ENTER to enter the setting mode. Press ▲ or ▼ to toggle the setting. Press ENTER again to confirm the setting. Press ESC to exit to [Timer Menu].

Date Setting

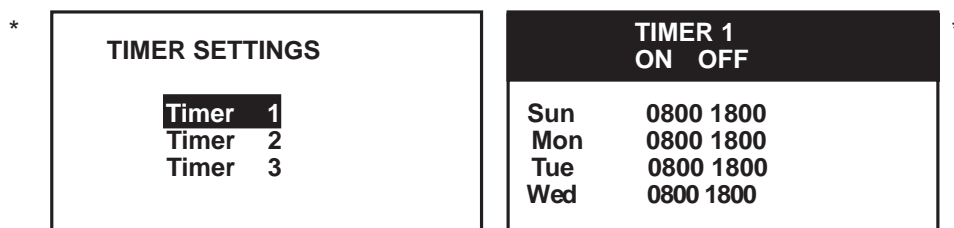
Select [Date Setting] in [Timer Menu] and press ENTER to go into this menu.



Press ▲ or ▼ to select the required option, ENTER to select the option.
Press ESC to exit to [Timer Menu].

Timer Schedule

Select [Timer Schedule] in [Timer Menu] and press ENTER to go into this menu.

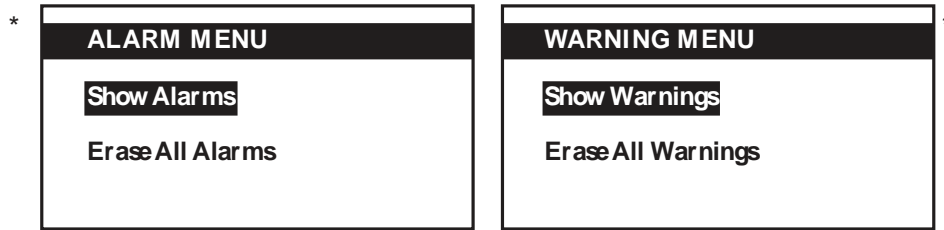


This is the 7 days programmable timer schedule menu. There are 3 ON/OFF events in one day. User can choose to set each day (Sunday - Saturday) ON/OFF timer. To have the schedule in operation, user needs to set the [Timer] in [Timer Menu] to enable. Press ESC to exit to [Timer Menu].

* **Note:** Display diagram is for illustration purpose only. It may differ for different models.
The display information shall be subjected to the setting in the main controller board.

Alarm Menu/Warning Menu

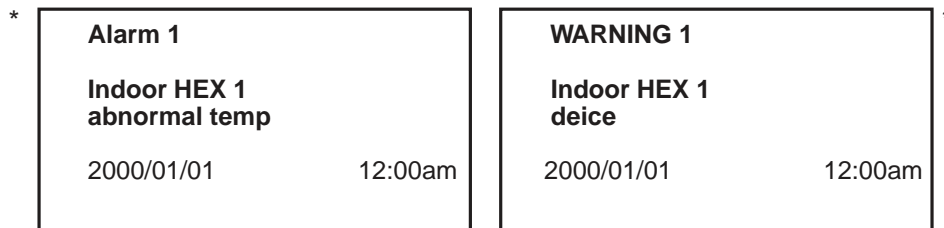
Select [Alarm Menu]/[Warning Menu] in [Main Menu] and press ENTER to go to this menu.



This place keeps records for all previous system faults/alarms/warnings. User can view or clear these records. The panel can keep up to 20 faults/alarm warning records. Press ESC to exit to [Main Menu].

Show Alarms/Show Warnings

Select [Show Alarms]/[Show Warnings] in [Main Menu] and press ENTER to go to this menu.



The record shows:

- Alarm/Warning description
- Alarm/Warning occurrence date
- Alarm/Warning occurrence time

Besides that, user can erase the alarm/warning record(s) in this menu (password is required). Press ESC to exit to [Alarm Menu]/[Warning Menu].

Display Menu

Select [Display Menu] in [Main Menu] and press ENTER to go to this menu.



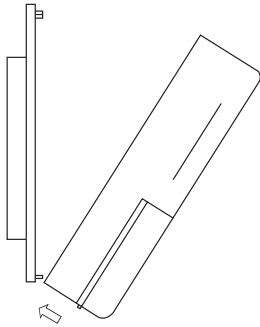
This menu displays indoor heat exchanger sensor(s) temperature, outdoor heat exchanger sensor(s) temperature, discharge sensor(s) temperature, solenoid valve(s) operation status, compressor(s) run time record, EXV opening pulse, economizer operation status (applicable for unit with economizer only), filter checking time, control type and software version. Some of the submenu may require password for entering. Besides that, user can clear the compressor run time record (password is required). Press ESC to exit to [Main Menu].

* **Note:** Display diagram is for illustration purpose only. It may differ for different models. The display information shall be subjected to the setting in the main controller board.

C. Installation

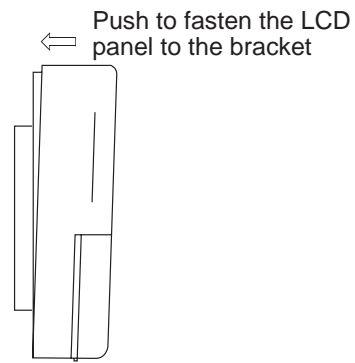
When installing the LCD panel to the bracket,

Step 1



Hook the LCD panel
from the bottom first

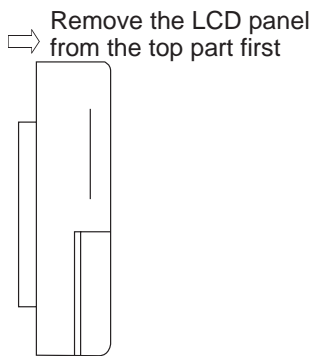
Step 2



Push to fasten the LCD
panel to the bracket

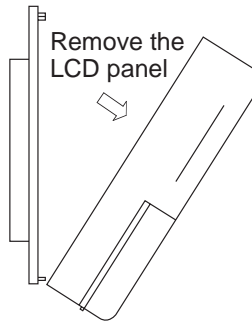
When removing the LCD panel from the bracket,

Step 1



Remove the LCD panel
from the top part first

Step 2



Remove the
LCD panel

1. A 3V DC battery is supplied with the LCD. It is used to ensure that the LCD displays real time once the timer is set.
2. The LCD is wired to the main board via CN8 connection.

Installation

(a) Location For Installation

Install the unit in a manner that prevents short cycling of condenser air back into the unit. (As in the case of short circuit of discharge air). Allow sufficient space for maintenance around the unit.

When two or more units are installed in a location, they must be positioned such that one unit will not be taking the discharge air from another unit.

Ensure that there is no obstruction of air flow into or out of the unit. Remove obstacles which block air intake or air discharge.

The location must be well ventilated, in a manner that prevents short cycling of condenser air back into the unit.

The unit is recommended to install in:-

A place capable of bearing the weight of the unit and isolating noise and vibration.

A place that has adequate drainage.

A place where the unit will not be buried in snow.

A place where air outlet port is not exposed to strong wind.

A place where the air discharge and operating sound level will not annoy the neighbours.

The location where it is not accessible by general public.

(b) Duct Construction

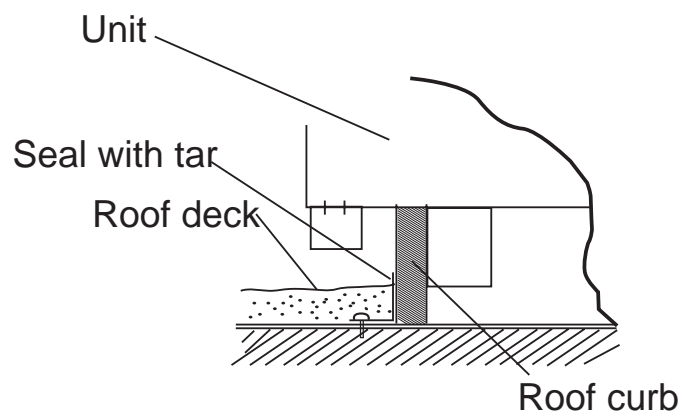
- These unit are equipped with supply and return air openings. Duct connection to the unit should be made with duct flanges and secured directly to the air openings with flexible duct connectors to avoid abnormal noise transmission.
- To prevent air leakage, all duct seams should be sealed.
- Ducts in the unconditioned space must be insulated.
- Ducts exposed to the outside must be weather proofed.
- Ducts that entering building through the roof, the entering should be sealed with weather stripping to prevent rain, sand, dust etc, from entering the building.
- Correct size of filter must be installed at the return air duct.

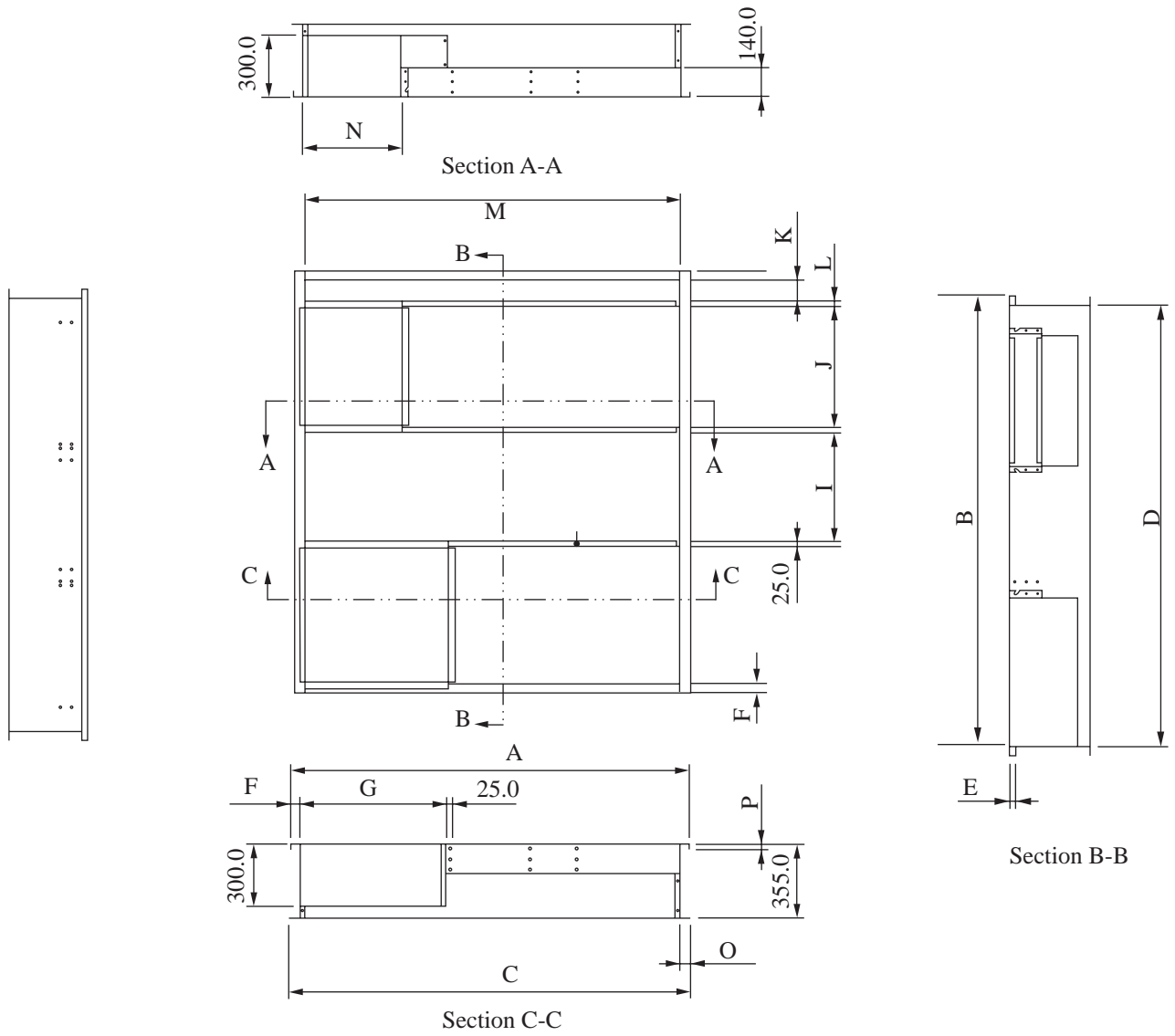
(c) Unit Support (For down throw unit only)

1.The figure shows the use of the roof curb for mounting these units.

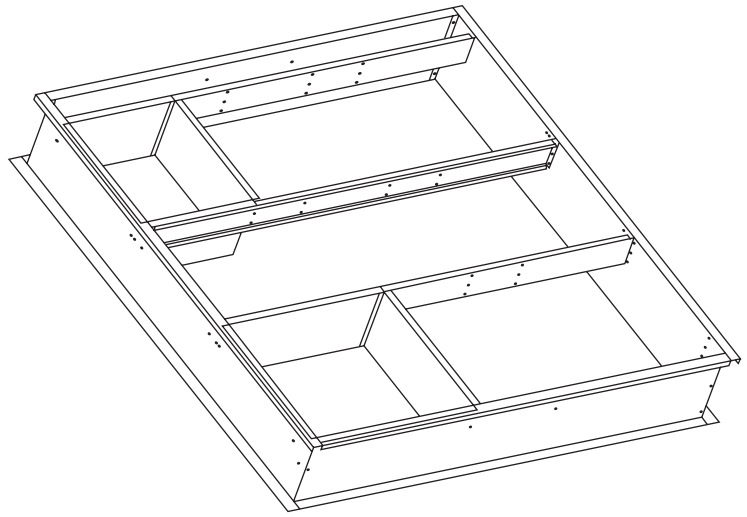
2.The curb should be sealed and fixed to the roof by weather stripping. A suggested means of sealing the unit and roof curb as shown in the right.

3.Recommended roof curb dimension is shown below.





Dimension Label	M5RT90BR	M5RT 120/150BR	M5RT180BR
A	1821.0	1890.0	2448.0
B	1505.5	2081.0	2081.0
C	1881.0	1908.0	2466.0
D	1468.5	1998.0	1998.0
E	15.0	25.0	25.0
F	20.0	43.0	46.0
G	838.2	698.7	827.0
H	538.1	676.0	676.0
I	272.4	538.9	444.6
J	605.1	599.8	645.8
K	0.0	104.6	104.6
L	0.0	25.0	25.0
M	1781.0	1804.0	2362.0
N	479.7	475.7	589.0
O	50.0	52.0	52.0
P	15.0	25.0	25.0



(d) Unit Lifting

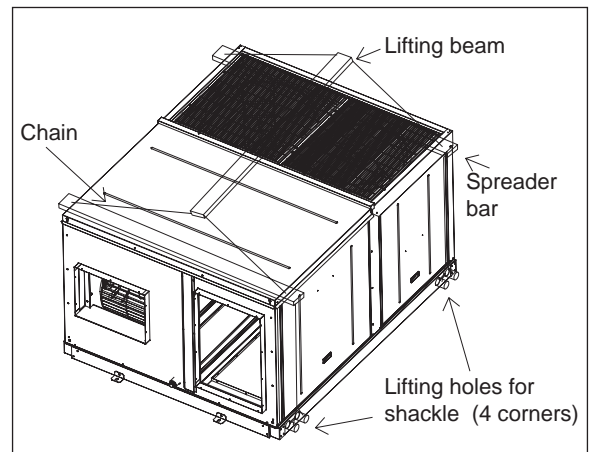
Holes at 4 corners of the unit base are used for unit lifting purpose.

The spreader bar shall be slightly wider than the unit width. The insulation should be added at 4 corners of the chain to prevent the damage of the panel when lifting.

Note:

Unit shown in diagram is M5RT90BR.

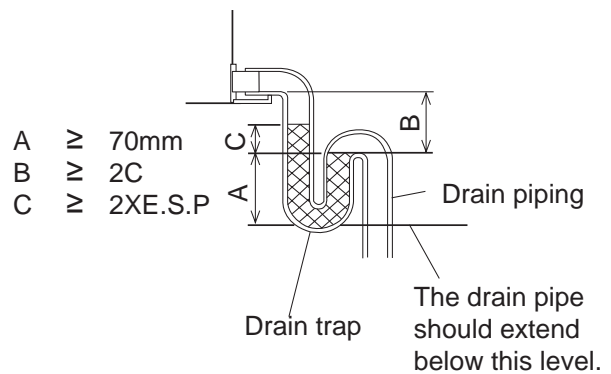
Other models will follow the same method in lifting.



(e) Drain Piping

- A 1" MPT condensate drain fitting is provided. The drain pipe can be led out at the front side.
- The drain pipe must be provided with a trap on the outside of the unit and also installed at an incline for proper drainage, as shown in the right.
- To prevent condensate formation and leakage, provide the drain pipe with insulation to safeguard against sweating.
- Upon completion of piping work, check that there is no leakage and that the water drains off properly.

The drain piping should have a drain trap.



Note: E.S.P = External Static Pressure

Drain trap for condensate

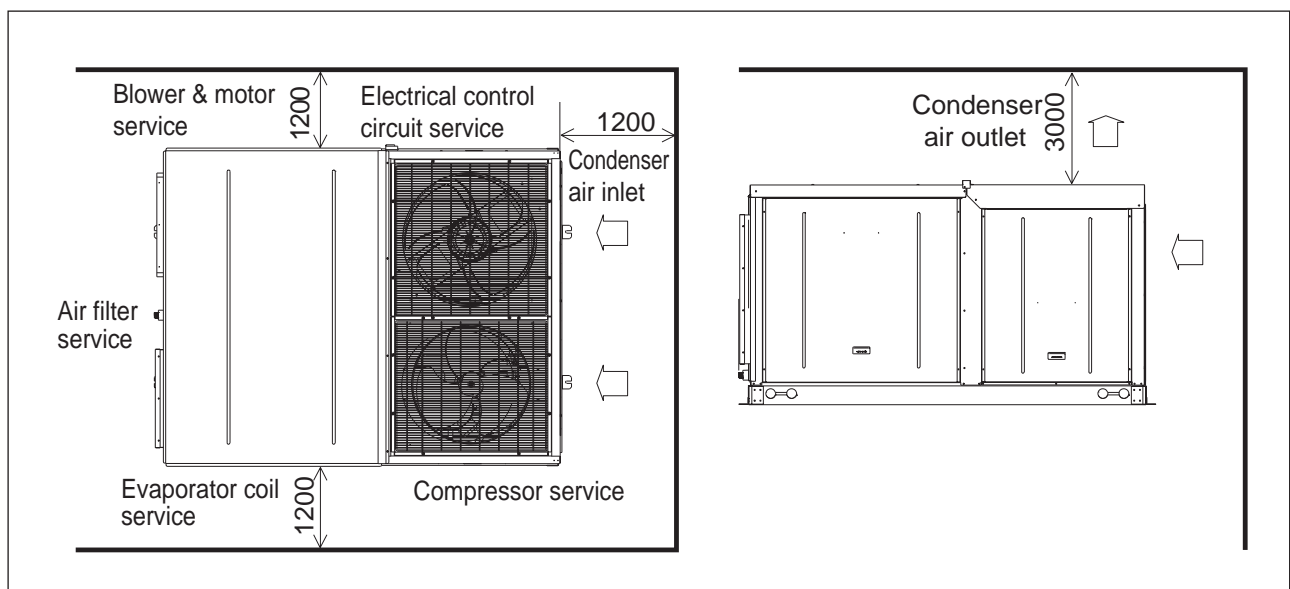
(f) Installation Clearance

Refer diagram below for the space required around the unit. Note that:-

(a) All dimensions shown are in mm.

(b) All space value shown are minimum clearance required for the unit.

(c) Unit shown in the diagram is M5RT90BR. Other models shall follow the same clearance.

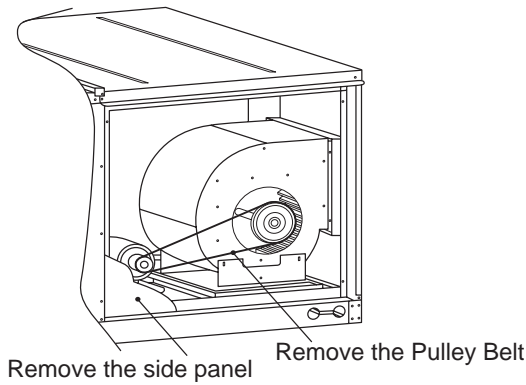


(g) Unit Conversion

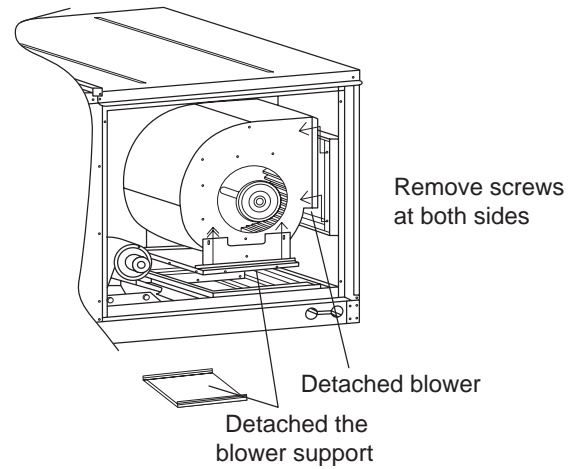
In the case of converting standard unit to downflow unit, follow the steps as stated below:

M5RT 90,120, 150 & 180

Step 1

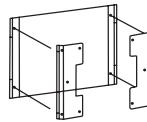


Step 2



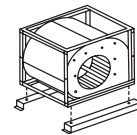
For M5RT90:

The two side plates are screwed on the blower support as shown

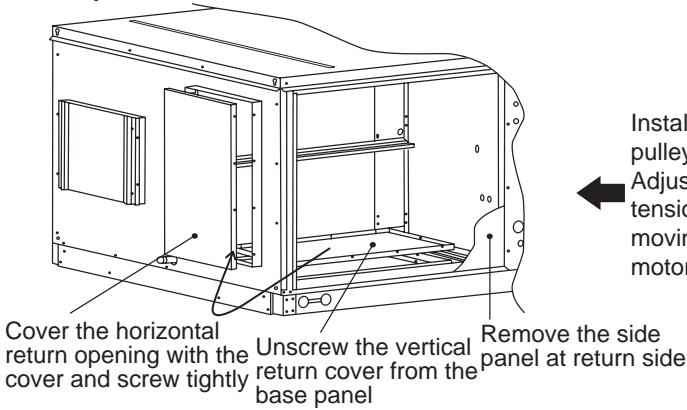


For M5RT120, 150 & 180:

The two down-flow structure are screwed to blower

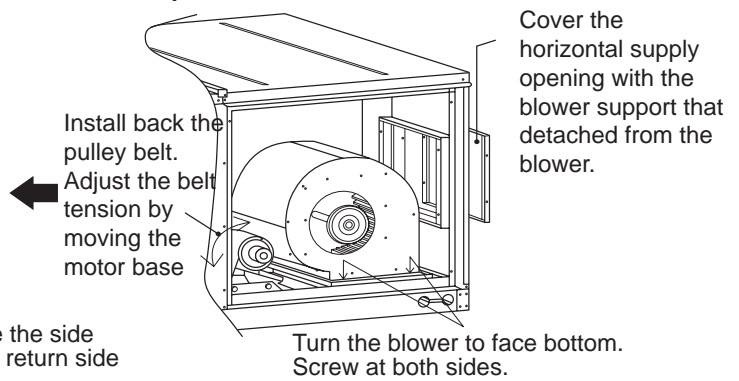


Step 4



Lastly, install back the side panel

Step 3



Install back the pulley belt. Adjust the belt tension. Lastly, install back the side panel

Note:

For down flow conversion, belt length will need to be changed.

For unit with standard pulley, belt length = a mm
Shaft to shaft Distance for downflow, C-C = b mm

	M5RT90	M5RT120	M5RT150	M5RT180
a	1120	1180	1150	1362
b	380	410	380	460

Special Precautions When Dealing With Refrigerant R410A Unit

(1) What is new refrigerant R410A?

R410A is a new HFC refrigerant which does not damage the ozone layer. The working pressure of this new refrigerant is 1.6 times higher than conventional refrigerant (R22), thus proper installation / servicing is essential.

(2) Components

Mixture weight composition R32(50%) and R125(50%)

(3) Characteristic

- R410A liquid and vapor components have different compositions when the liquid evaporates or condenses. Hence, when leak occurs and only vapor leaks out, the composition of the refrigerant mixture left in the system will change and subsequently affect the system performance. DO NOT add new refrigerant to leaked system. It is recommended that the system should be evacuated thoroughly before recharging with R410A.
- When refrigerant R410A is used, the composition will differ depending on whether it is in gaseous or liquid phase. Hence when charging R410A, ensure that only liquid is being withdrawn from the cylinder or can. This is to make certain that only original composition of R410A is being charged into the system.
- POE oil is used as lubricant for R410A compressor, which is different from the mineral oil used for R22 compressor. Extra precaution must be taken not to expose the R410A system too long to moist air.

(4) Check list before installation / servicing

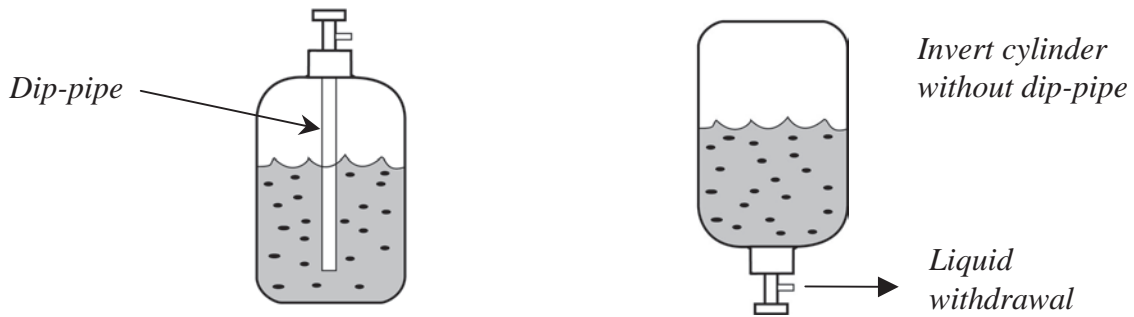
- Tubing
Refrigerant R410A is more easily affected by dust or moisture compared with R22, make sure to temporarily cover the ends of the tubing prior to installation.
- Compressor oil
No additional charge of compressor oil is permitted.
- Refrigerant
No other refrigerant other than R410A
- Tools (size of service port is different from R22 system)
Tools specifically for R410A only (must not be used for R22 or other refrigerant)
 - i) Gauge manifold and charging hose
 - ii) Gas leak detector
 - iii) Refrigerant cylinder/charging cylinder
 - iv) Vacuum pump c/w adapter
 - v) Flare tools
 - vi) Refrigerant recovery machine

(5) Handling and installation guidelines

Like R22 system, the handling and installation of R410A system are closely similar. All precautionary measures; such as ensuring no moisture, no dirt or chips in the system, clean brazing using nitrogen, and thorough leak check and vacuuming are equally important requirements. However, due to its hydroscopic POE oil, additional precautions must be taken to ensure optimum and trouble free system operation.

- (a) During installation or servicing, avoid prolonged exposure of the internal part of the refrigerant system to moist air. Residual POE oil in the piping and components can absorb moisture from the air.
- (b) Ensure that the compressor is not exposed to open air for more than the recommended time specified by its manufacturer (typically less than 10 minutes). Remove the seal plugs only when the compressor is about to be brazed.
- (c) The system should be thoroughly vacuumed to 1.0 Pa (700mmHg) or lower. This vacuuming level is more stringent than R22 system so as to ensure no incompressible gas and moisture in the system.

(d) When charging R410A, ensure that only liquid is being withdrawn from the cylinder or can. This is to ensure that only the original composition of R410A is being delivered into the system. The liquid composition can be different from the vapor composition.



(e) Normally, the R410A cylinder or can is being equipped with a dip pipe for liquid withdrawal. However, if the dip pipe is not available, invert the cylinder or can so as to withdraw liquid from the valve at the bottom.

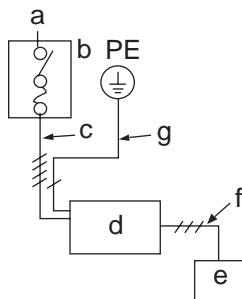
Wire Connection

- All electrical work must be carried out by qualified electrician and accordance with local supply requirement and associate regulation.

Method for connecting electric wire

Before connecting the wire, consult the electric power company of jurisdiction.

(1) The entire wiring diagram of unit



a.	Power supply	d.	Unit
b.	Main switch/fuse (field supply)	e.	Remote control
c.	Power supply wiring for unit	f.	Connection wiring for unit & remote controller
		g.	Earth

(2) Wiring connection to unit

Route the power supply wires and control wire through the knockout holes in the unit.

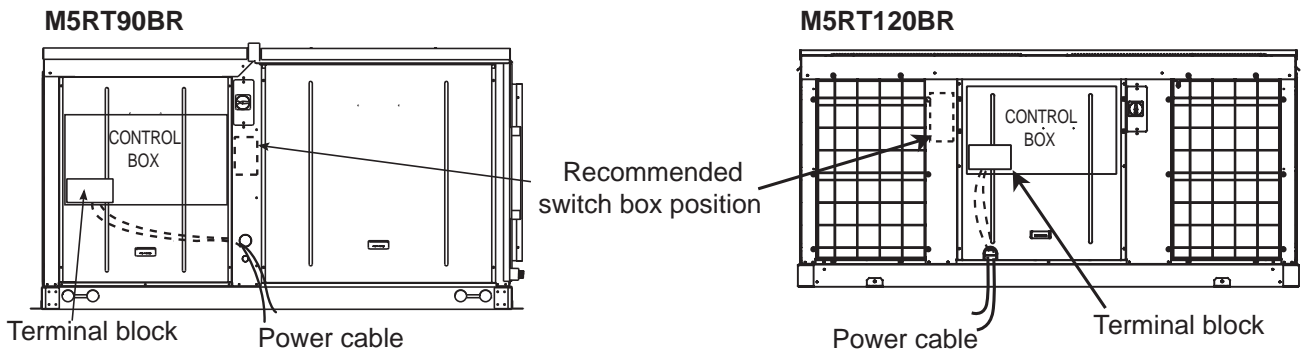
Remove the service panels and connect the units power supply wires to terminal block inside the control box, as shown.

Note:

While installing the circuit breaker onto the unit, make sure that the screws do not damage the components (e.g. coil) inside the unit.

The switch box also can be installed without attaching to the unit.

The knockout holes are only in M5RT90BR; M5RT120BR comes with a power cable hole.




Wiring Example And Selection Of Circuit Breaker

Model	Power cable (mm ²)	Breaker capacity(A)	Over current protection switch (A)	Earth cable (mm ²)
M5RT90BR	4	32	32	4
M5RT120BR	6	40	40	6
M5RT150BR	10	40	40	10
M5RT180BR	10	50	50	10

Note:

A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in fixed wiring in accordance with local and national legislation.

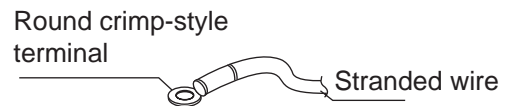
- The unit is to be wired directly from an electrical distribution board either by a circuit breaker (preferred) or HRC fuse.
- Fix the power supply wiring to control module. Connect control wiring to control terminal block through the control box's hole.
- Earth wiring must be connected.
- The power supply cord must be equivalent to H05VV-F (60227 IEC 52 or 60227 IEC 53) which is the minimum requirement, and to be used in protective tube.




WARNING

- Before working in this unit, isolate it from the power supply.
- Electrical wiring to this unit and the remote controller shall be installed in accordance with the appropriate requirement of the local wiring code.

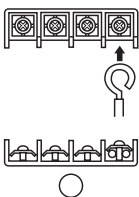
Observe the notes mentioned below when wiring to the terminal block. Precautions to be taken for power supply wiring. (Use a round crimp-style terminal for connection to the terminal block. In case it cannot be used due to unavoidable reasons, be sure to observe the following instruction.)



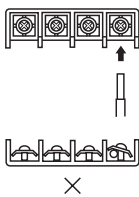


CAUTION


When connecting the connection wires to the terminal block using a single core wire, be sure to perform curling. Problems with the work may cause heat and fires.



○



×



○ Good × Wrong

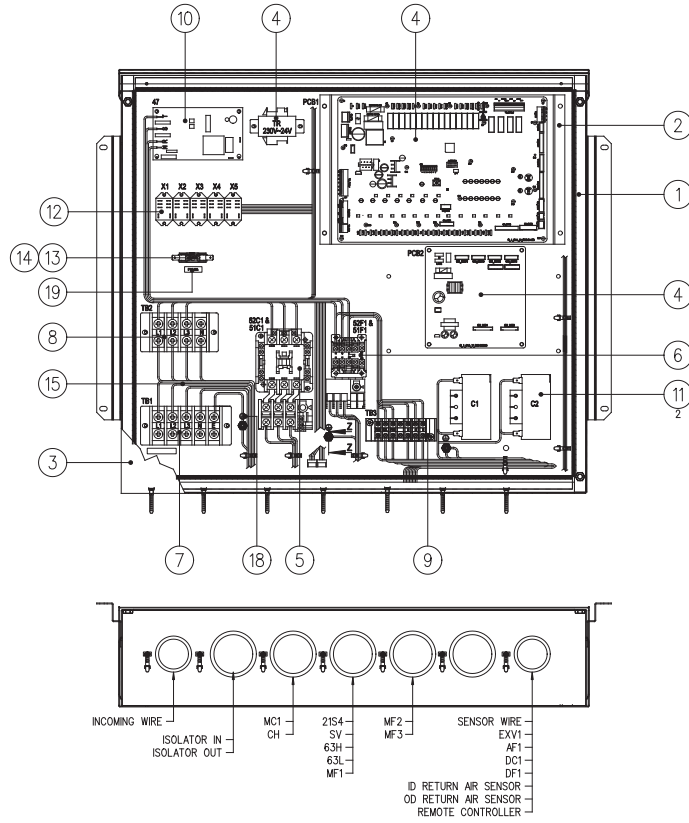
Stripping wire at terminal block

Strip wire end to this point.

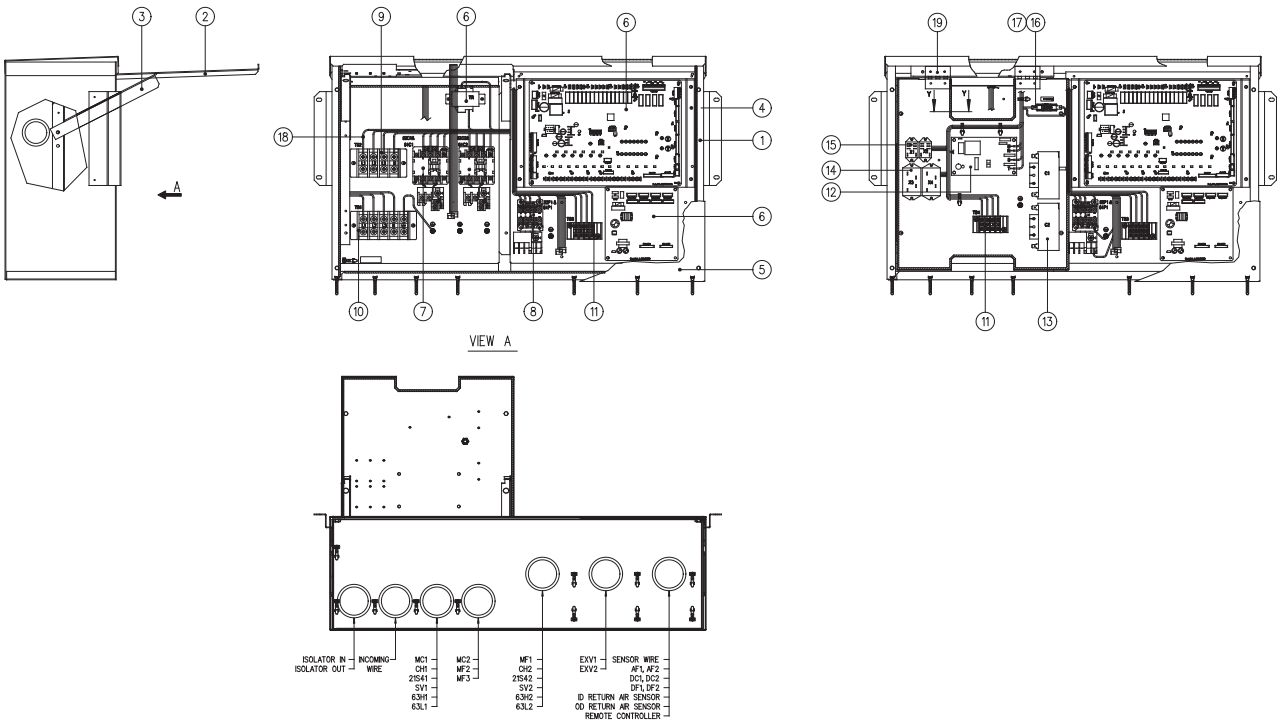
Excessive strip length may cause electrical shock or leakage.

- Pull the wire and make sure that it does not disconnect. Then fix the wire in place with a wire stop.

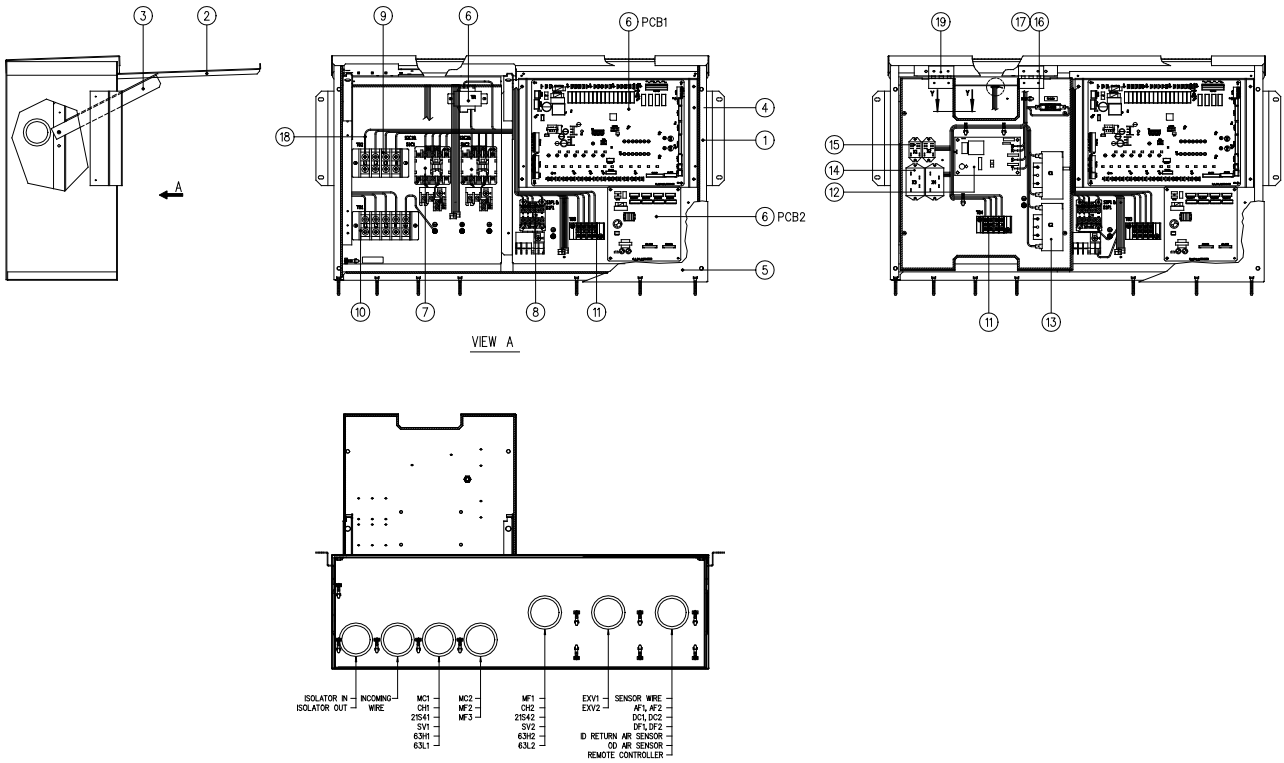
Control Module Of Unit M5RT90BR



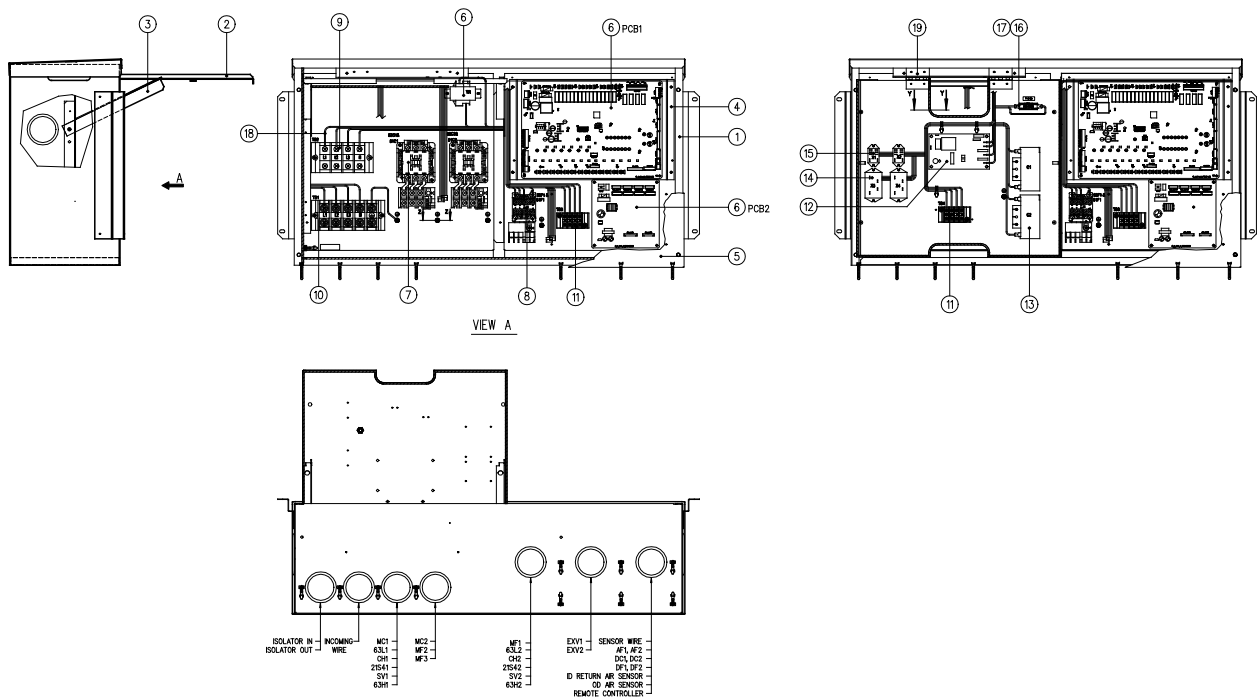
Control Module Of Unit M5RT120BR



Control Module Of Unit M5RT150BR



Control Module Of Unit M5RT180BR



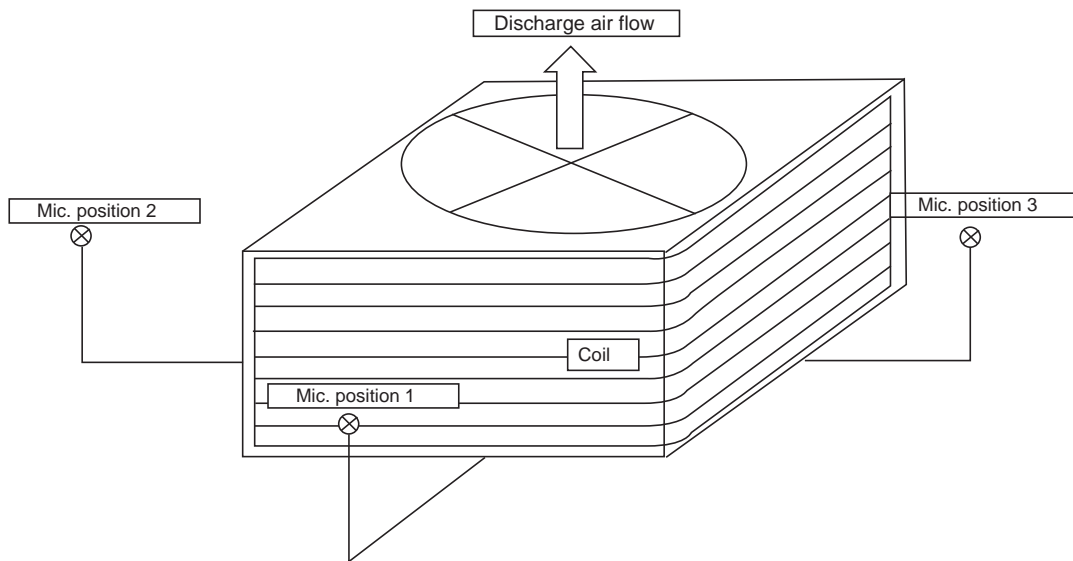
Sound Data

Outdoor Noise Level

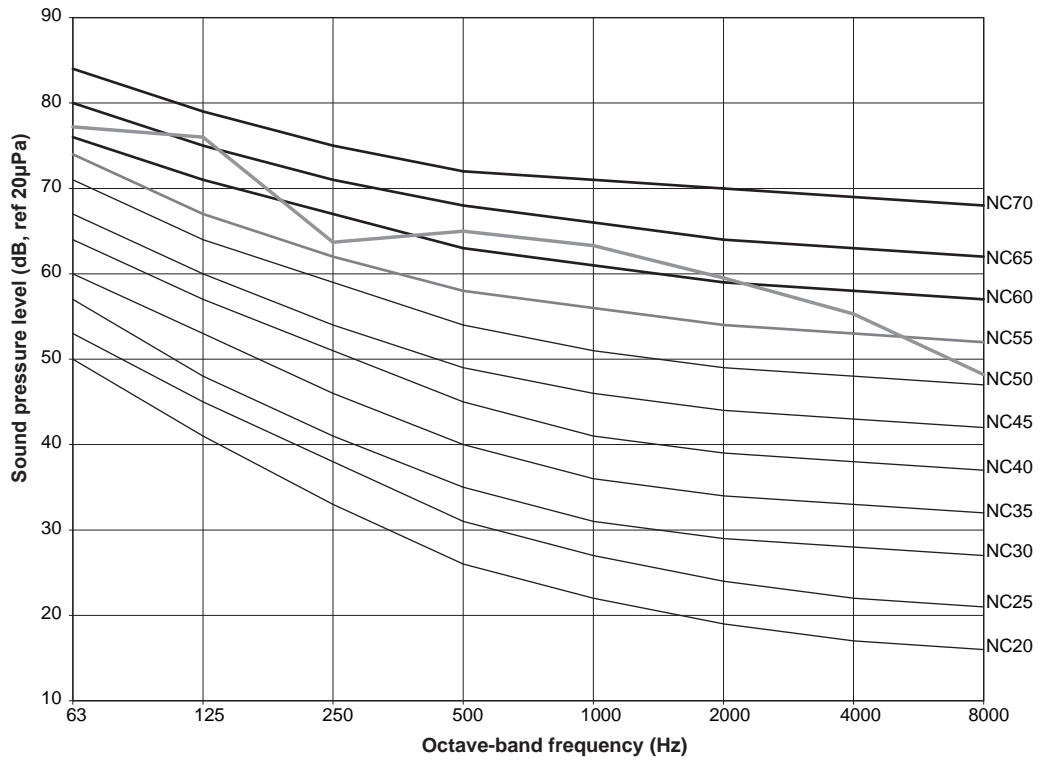
Model	1/1 Octave Sound Pressure Level (dB, ref 20 μ Pa)								Overall (dBA)	Noise Criteria (NC)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz		
M5RT90BR	77	76	64	65	63	60	55	48	68	66
M5RT120BR	78	75	62	60	59	54	50	44	64	65
M5RT150BR	77	74	61	60	61	54	52	45	65	63
M5RT180BR	78	82	66	63	63	56	51	45	68	73

Model	1/1 Octave Sound Power (dB, ref 20 μ Pa)								Overall (dBA)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
M5RT90BR	91	91	79	78	78	72	68	61	82
M5RT120BR	96	91	79	78	80	72	70	64	83
M5RT150BR	93	90	79	78	80	73	71	64	83
M5RT180BR	95	96	83	82	84	78	73	66	87

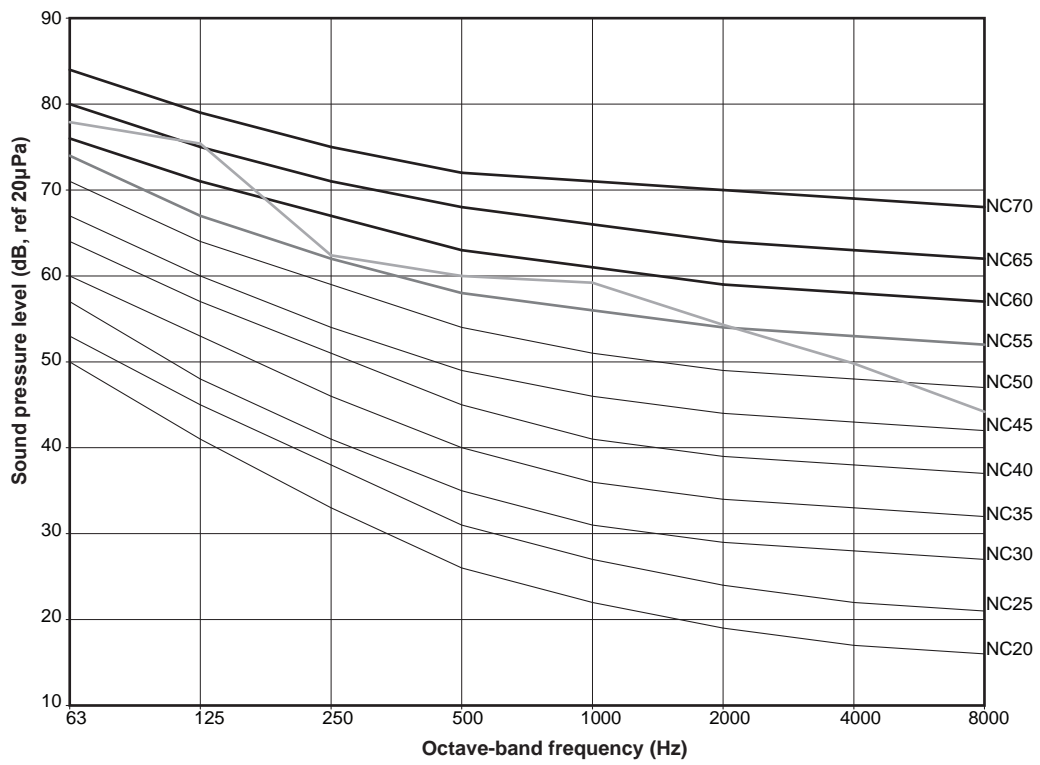
Note:- Microphone position: 1m away from every side of the unit and 1m above floor level



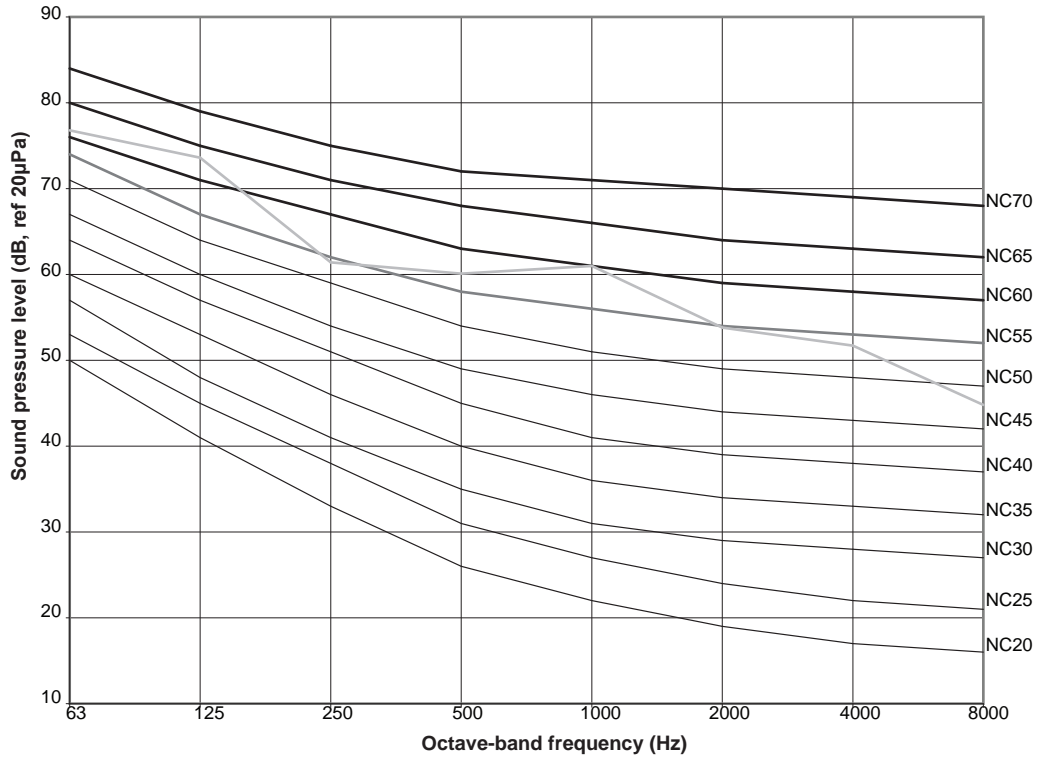
M5RT90BR NC CURVES



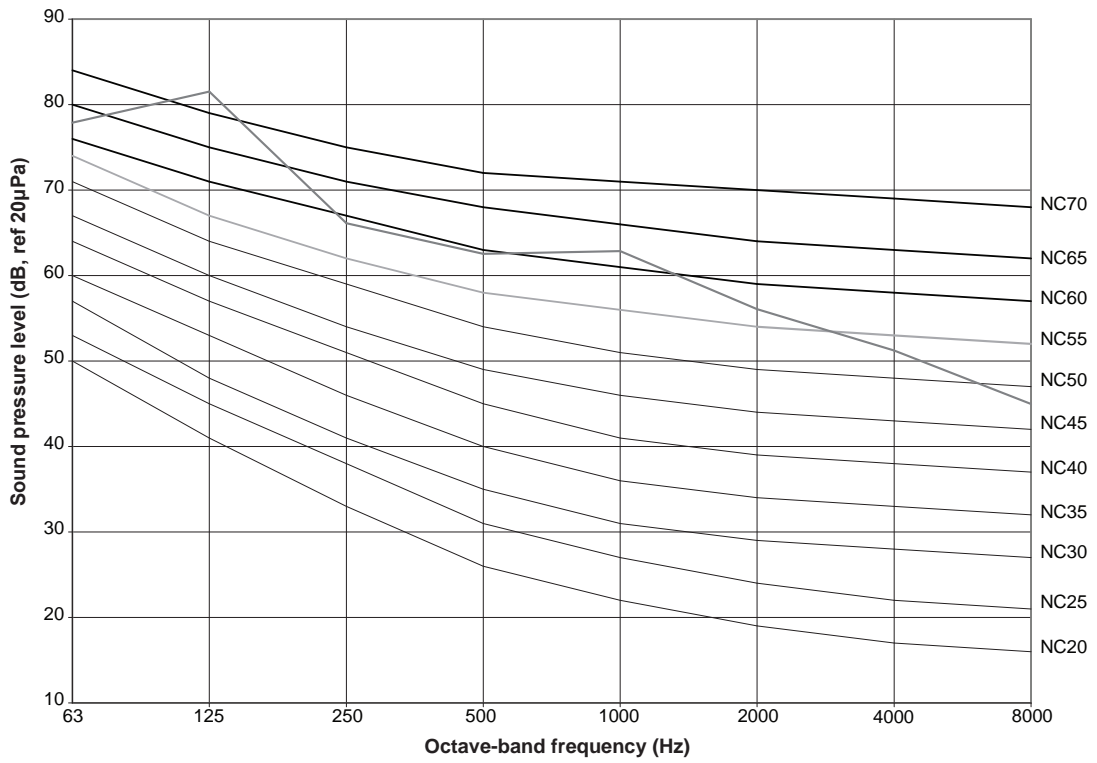
M5RT120BR NC CURVES



M5RT150BR NC CURVES



M5RT180BR NC CURVES

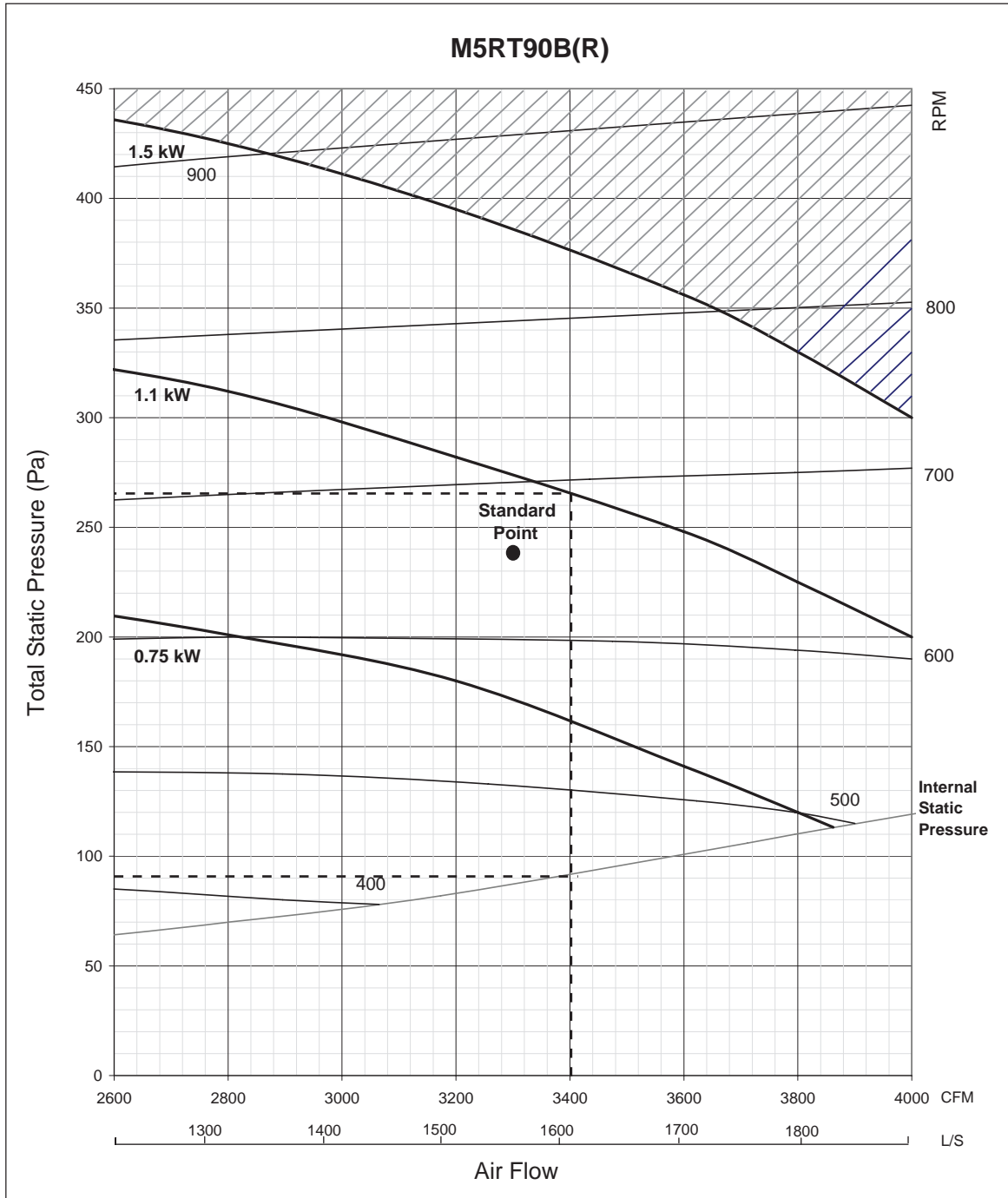


Selection Process

Drive Package Selection

<p>The following are the design requirements for M5RT90BR unit: Model : M5RT090BR Supply air Quantity = 1600 l/s External Static Pressure = 175 Pa</p>	
Step 1:	<p>From the blower curve (at 1600 l/s) Standard operating system; Internal Static Pressure = 90 Pa</p>
Step 2:	<p>Therefore at 1600 l/s and 175 Pa external static pressure Total Static Pressure = 175 + 90 Pa = 265 Pa</p>
Step 3:	<p>From the blower curve, the design requirement calls for RPM about 690 RPM.</p> <p>From the table: Motor pulley = 71 mm Blower pulley = 160 mm Motor RPM = 1480 RPM</p> <p>In order to obtain 700 RPM, we calculate the new blower pulley as: (while maintaining the motor pulley)</p> $D_b = 71 \times (1480/690)$ $= 152.3 \text{ mm}$ <p>Let us take close approximation of 150 mm diameter pulley size Recheck, with $D_b = 142 \text{ mm}$</p> $\text{Blower pulley} = 1480 \times (71/150)$ $= 700 \text{ RPM}$ <p>We thus need to change the blower pulley from 160 mm to 150 mm in order to obtain the higher operating static pressure</p>
Step 4:	<p>When the pulley is changed, the V-belt length must be rechecked.</p> $\text{V-belt length, } L = 2C + 1.57 (D_b + D_m) + (D_b - D_m)^2 / 4C$ $= (2 \times 545) + 1.57 (150 + 71) + (150 - 71)^2 / 4 \times 545$ $= 1439.8$ <p>We thus can use a belt with length of 1440mm</p> <p>Where, C = 545mm distance between the centres of the two pulleys</p>
Step 5:	<p>From the blower curve, we can also notice that the motor power input has maintained within the current operating range of the standard unit's motor.</p> <p>Summary: i) Fan motor kW = 1.1 kW ii) Blower pulley diameter = 150 mm iii) V-belt size = 1440 mm</p>

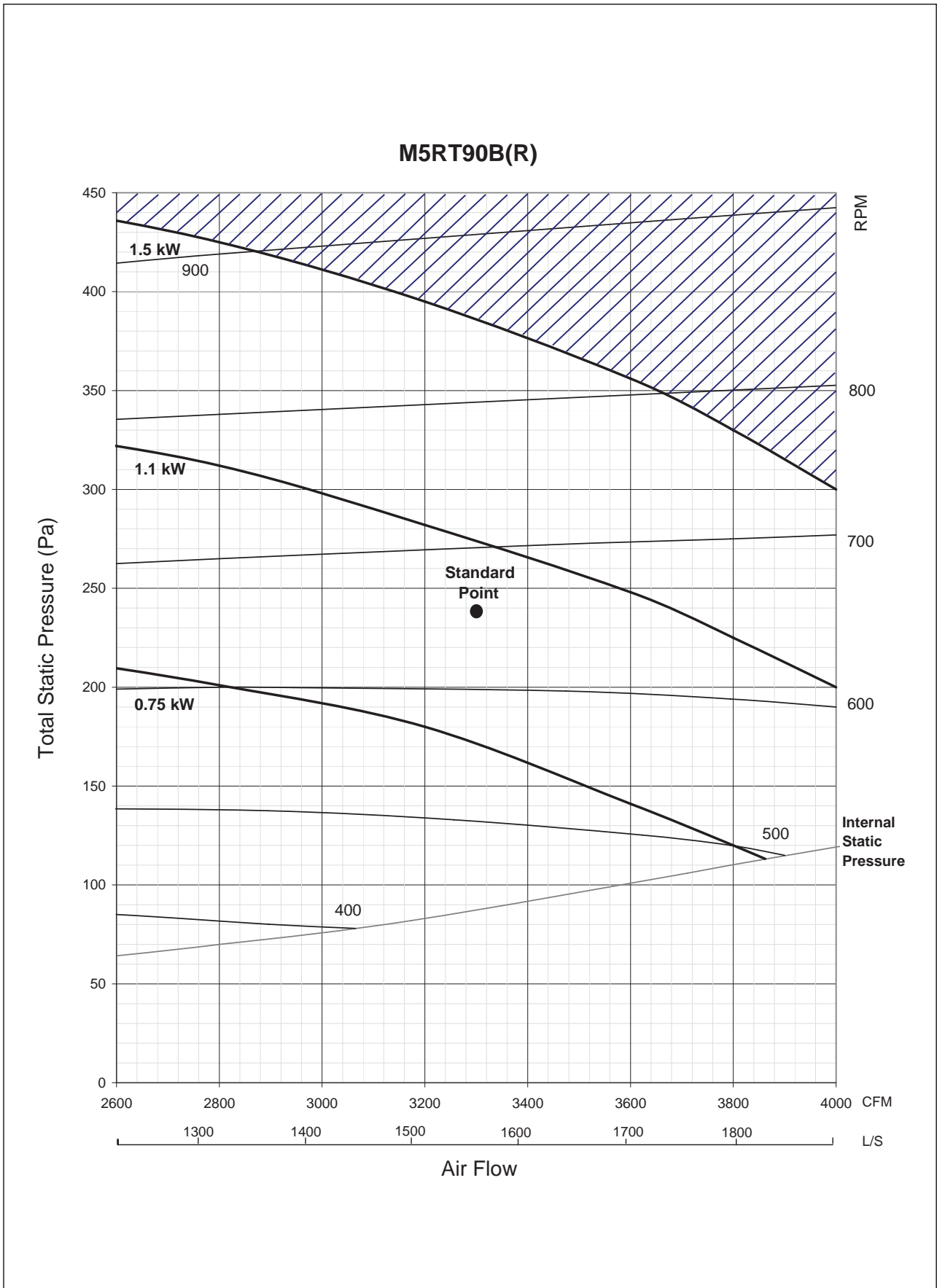
Drive Package



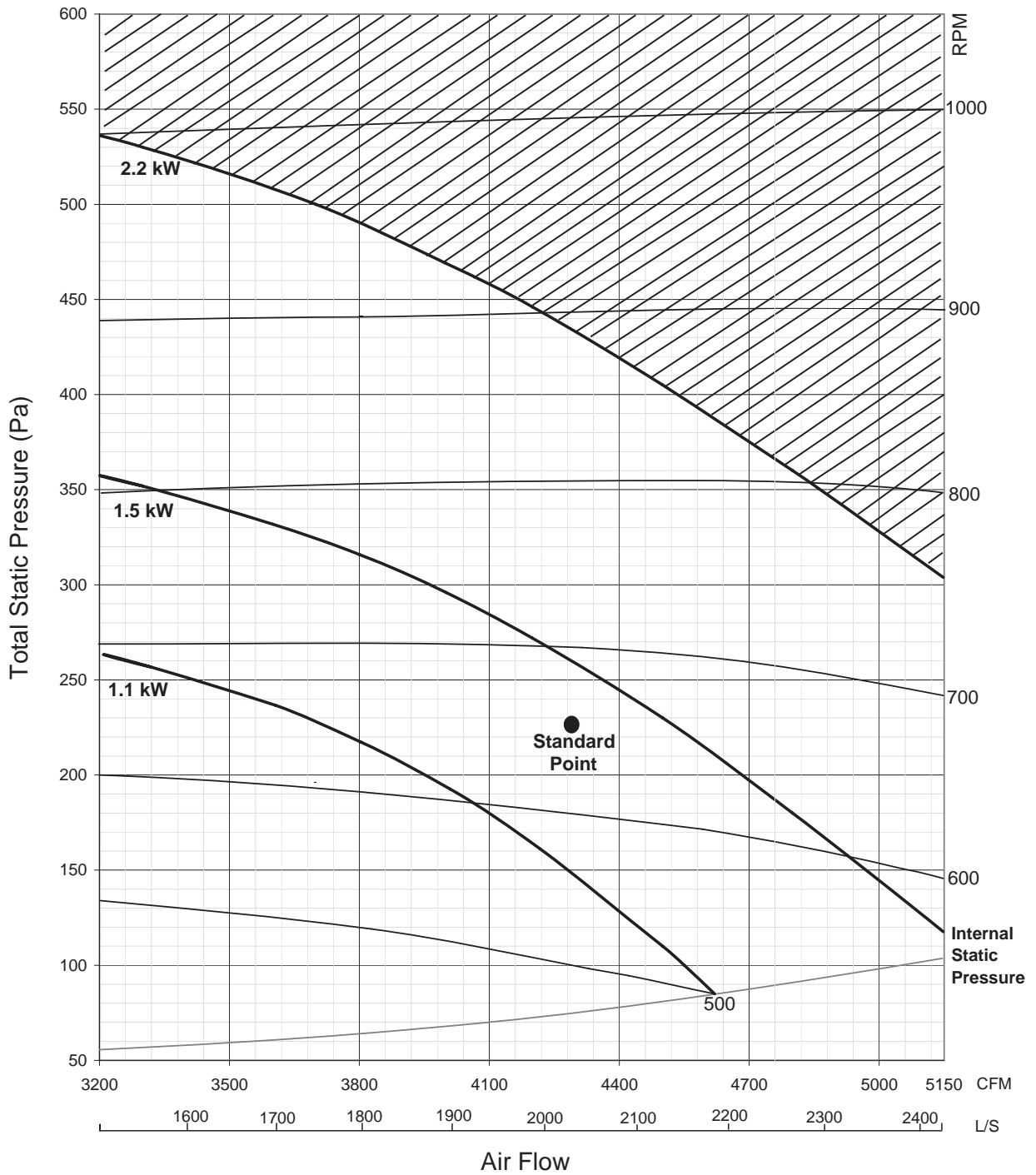
Model	Blower Pulley, Db			Motor Pulley, Dm	
	Type	Diameter(mm)	Bore(mm)	Diameter(mm)	Bore(mm)
M5RT90BR	SPZ1	160	25	71	24
M5RT120BR	SPZ1	160	25	71	24
M5RT150BR	SPZ2	160	25	80	28
M5RT180BR	SPZ2	180	30	95	28

Model	V-belt length, L(mm)	Pulley Centre Distance, C (mm)	Motor kW	Motor RPM
		Nominal		
M5RT90BR	1450	545	1.1	1480
M5RT120BR	1600	620	1.5	1520
M5RT150BR	1420	590	2.2	1520
M5RT180BR	1862	715	3.0	1520

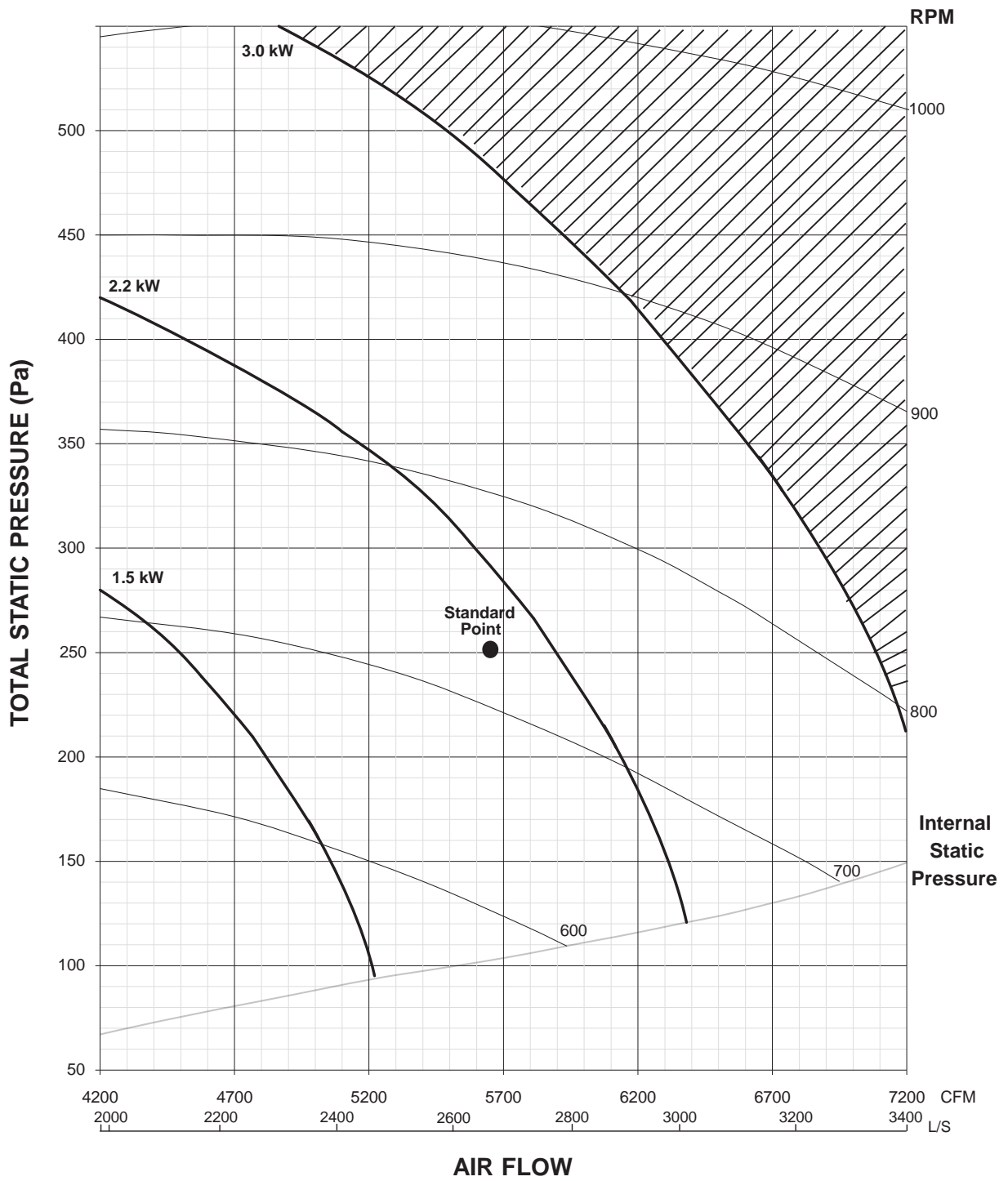
Blower Curves



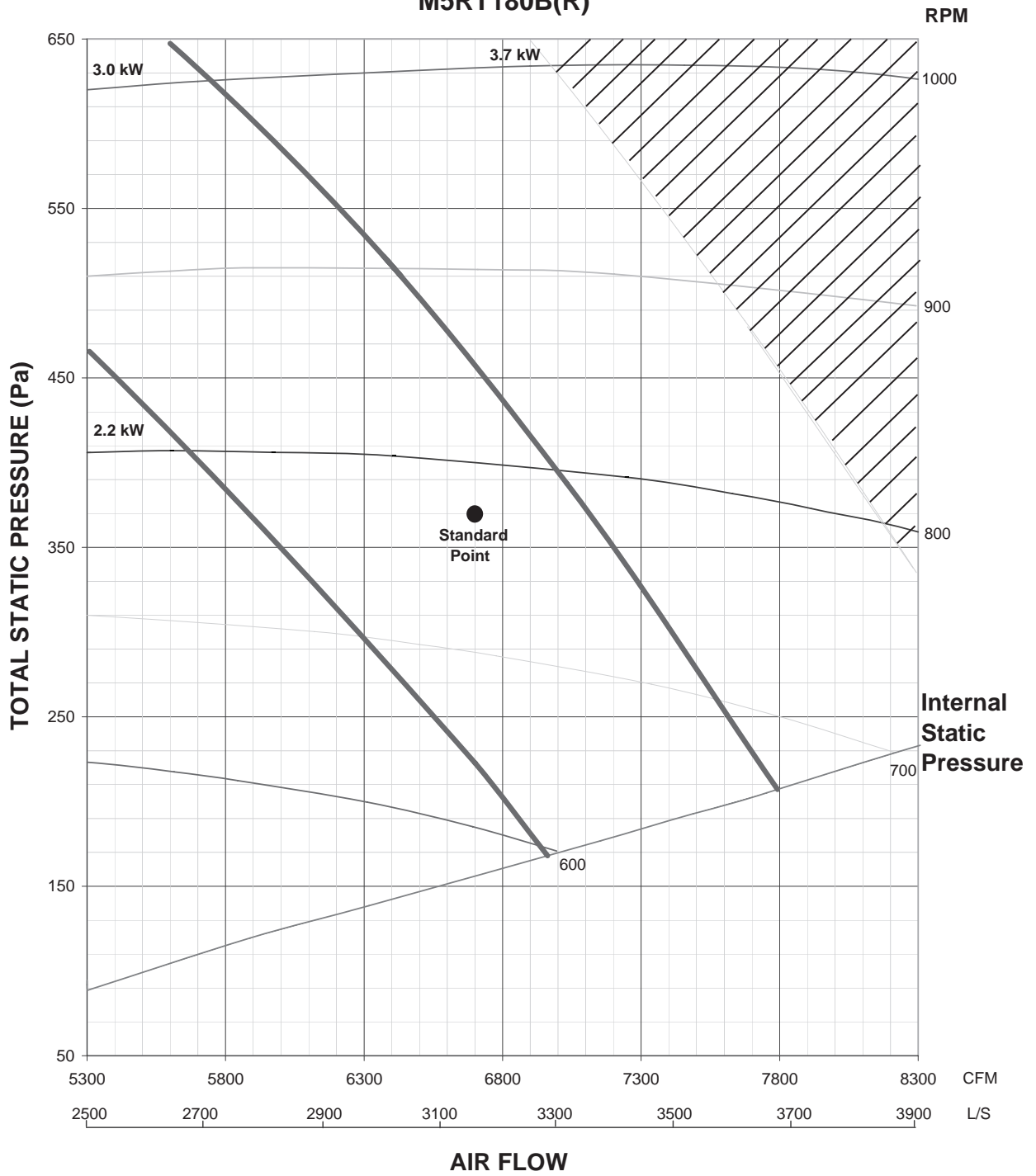
M5RT120B(R)



M5RT150B(R)



M5RT180B(R)



Engineering & Physical Data

General Data - Heat pump (R410a)

MODEL			M5RT90BR	M5RT120BR	
NOMINAL COOLING CAPACITY (GROSS)	Btu/h		93300	121400	
	W		27340	35580	
NOMINAL HEATING CAPACITY (NETT)	Btu/h		85000	118700	
	W		24910	34790	
NOMINAL TOTAL INPUT POWER (COOLING)	W		8140	10780	
NOMINAL TOTAL INPUT POWER (HEATING)	W		7330	10840	
NOMINAL RUNNING CURRENT (COOLING)	A		16.6	21.2	
NOMINAL RUNNING CURRENT (HEATING)	A		14.8	20.8	
POWER SOURCE	V/Ph/Hz		380 ~ 415 / 3 / 50		
REFRIGERANT TYPE / CONTROL			R410A / EXV		
EER (GROSS)	W/W		3.36	3.30	
COP (NET)	W/W		3.40	3.21	
EVAPORATOR	SOUND POWER LEVEL @ 100 ESP		dBA	68	72
	SOUND POWER LEVEL @ Std ESP		dBA	73	76
CONTROL	AIR DISCHARGE OPERATION		DUCTED		
			WIRED		
AIR FLOW		l/s / cfm	1560 / 3300	2030/ 4300	
EXTERNAL STATIC PRESSURE		Pa/in.wg.	147 / 0.6	147 / 0.6	
CONDENSATE DRAIN SIZE		mm/in	25.4 / 1	25.4 / 1.0	
CONDENSER	AIR FLOW		l/s / cfm	3884 / 8230	5664 / 12000
	SOUND POWER LEVEL		dBA	82	83
	UNIT DIMENSION	HEIGHT	mm/in	1150 / 45.3	1028 / 40.5
		WIDTH	mm/in	1638 / 64.5	2209/ 87.0
		DEPTH	mm/in	2063 / 81.2	2113 / 83.2
	PACKING DIMENSION	HEIGHT	mm/in	1345 / 53.0	1223 / 48.1
		WIDTH	mm/in	2321 / 91.4	2372 / 93.4
		DEPTH	mm/in	1758 / 69.2	2304 / 90.7
UNIT WEIGHT (NET)		kg/lb	445 / 981	580 / 1279	
REFRIGERANT CHARGE		kg/lb	6.1 / 13.4	(5.8 X 2) / (12.8 X 2)	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151.

3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :

A) COOLING - 27°C DB / 19°C WB INDOOR AND 35°C DB / 24°C WB OUTDOOR

B) HEATING - 20°C DB INDOOR AND 7°C DB / 6°C WB OUTDOOR

4) SOUND PRESSURE LEVELS ARE MEASURED ACCORDING TO JIS B 8616 STANDARD.

5) ALL PERFORMANCE CALCULATIONS ARE STRICTLY FOLLOWING EUROVENT STANDARD.

General Data - Heat pump (R410a)

MODEL		M5RT150BR	M5RT180BR		
NOMINAL COOLING CAPACITY (GROSS)	Btu/h	152600	190000		
	W	44720	55690		
NOMINAL HEATING CAPACITY (NETT)	Btu/h	142600	184000		
	W	41790	53930		
NOMINAL TOTAL INPUT POWER (COOLING)	W	13040	16740		
NOMINAL TOTAL INPUT POWER (HEATING)	W	12860	15540		
NOMINAL RUNNING CURRENT (COOLING)	A	28.3	30.2		
NOMINAL RUNNING CURRENT (HEATING)	A	26.9	28.8		
POWER SOURCE	V/Ph/Hz	380 ~ 415 / 3 / 50			
REFRIGERANT TYPE / CONTROL		R410A / EXV			
EER (GROSS)	W/W	3.43	3.33		
COP (NET)	W/W	3.25	3.47		
EVAPORATOR	SOUND POWER LEVEL @ 100 ESP		dBA	75	82
	SOUND POWER LEVEL @ Std ESP		dBA	80	84
	CONTROL	AIR DISCHARGE		DUCTED	
		OPERATION		WIRED	
	AIR FLOW		l/s / cfm	2670 / 5650	3160 / 6700
	EXTERNAL STATIC PRESSURE		Pa/in.wg.	147 / 0.6	206 / 0.8
CONDENSATE DRAIN SIZE		mm/in	25.4 / 1	25.4 / 1.0	
CONDENSER	AIR FLOW		l/s / cfm	5710 / 12100	6090 / 12900
	SOUND POWER LEVEL		dBA	83	87
	UNIT DIMENSION	HEIGHT	mm/in	1130 / 44.5	1048 / 41.3
		WIDTH	mm/in	2209 / 87.0	2209 / 87.0
		DEPTH	mm/in	2113 / 83.2	2670 / 105.1
	PACKING DIMENSION	HEIGHT	mm/in	1325 / 52.2	1252 / 49.3
		WIDTH	mm/in	2304 / 90.7	2304 / 90.7
		DEPTH	mm/in	2372 / 93.4	2929 / 115.3
	UNIT WEIGHT (NET)		kg/lb	610 / 1345	780 / 1720
REFRIGERANT CHARGE		kg/lb	(7.2 X 2) / (15.9 X 2)	(8.7 X 2) / (19.2 X 2)	

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- 2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151.
- 3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
 - a) COOLING - 27°C DB / 19°C WB INDOOR AND 35°C DB / 24°C WB OUTDOOR
 - b) HEATING - 20°C DB INDOOR AND 7°C DB / 6°C WB OUTDOOR
- 4) SOUND PRESSURE LEVELS ARE MEASURED ACCORDING TO JIS B 8616 STANDARD.
- 5) ALL PERFORMANCE CALCULATIONS ARE STRICTLY FOLLOWING EUROVENT STANDARD.

Electrical Data -Heatpump (R410a)

MODEL			M5RT90BR	M5RT120BR
EVAPORATOR MOTOR	INSULATION GRADE		B	
	POWER SOURCE	V/Ph/Hz	380 ~ 415 / 3 / 50	
	RATED INPUT POWER	W	800	1,160
	RATED RUNNING CURRENT	A	1.7	3.10
	MOTOR OUTPUT	W	1100	1,500
	POLES		4	
CONDENSER MOTOR 1	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	220 ~ 240 / 1 / 50	
	RATED INPUT POWER	W	560	870
	RATED RUNNING CURRENT	A	2.5	3.8
	MOTOR OUTPUT	W	360	550
	POLES		6	
CONDENSER MOTOR 2	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	220 ~ 240 / 1 / 50	
	RATED INPUT POWER	W	710	870
	RATED RUNNING CURRENT	A	3.2	3.8
	MOTOR OUTPUT	W	420	550
	POLES		6	
COMPRESSOR 1	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	380 ~ 415 / 3 / 50	
	CAPACITOR	µF	N/A	
	RATED INPUT POWER (COOLING)	W	7140	4,460
	RATED INPUT POWER (HEATING)	W	5640	4,350
	RATED RUNNING CURRENT (COOLING)	A	13.1	7.9
	RATED RUNNING CURRENT (HEATING)	A	11.3	7.7
	LOCKED ROTOR AMP.	A	111	74
COMPRESSOR 2	INSULATION GRADE		NA	F
	POWER SOURCE	V/Ph/Hz	NA	380 ~ 415 / 3 / 50
	CAPACITOR	µF	NA	N/A
	RATED INPUT POWER (COOLING)	W	NA	4,360
	RATED INPUT POWER (HEATING)	W	NA	4,160
	RATED RUNNING CURRENT (COOLING)	A	NA	7.8
	RATED RUNNING CURRENT (HEATING)	A	NA	7.5
	LOCKED ROTOR AMP.	A	NA	74

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151.

Electrical Data - Heatpump (R410a)

MODEL			M5RT150BR	M5RT180BR
EVAPORATOR MOTOR	INSULATION GRADE		B	
	POWER SOURCE	V/Ph/Hz	380 ~ 415 / 3 / 50	
	RATED INPUT POWER	W	1910	2,580
	RATED RUNNING CURRENT	A	3.7	4.70
	MOTOR OUTPUT	W	2200	3,000
	POLES		4	
CONDENSER MOTOR 1	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	220 ~ 240 / 1 / 50	
	RATED INPUT POWER	W	790	780
	RATED RUNNING CURRENT	A	3.6	3.4
	MOTOR OUTPUT	W	510	590
	POLES		6	
CONDENSER MOTOR 2	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	220 ~ 240 / 1 / 50	
	RATED INPUT POWER	W	790	780
	RATED RUNNING CURRENT	A	3.6	3.4
	MOTOR OUTPUT	W	510	590
	POLES		6	
COMPRESSOR 1	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	380 ~ 415 / 3 / 50	
	CAPACITOR	μF	N/A	
	RATED INPUT POWER (COOLING)	W	5950	7,530
	RATED INPUT POWER (HEATING)	W	5500	6,740
	RATED RUNNING CURRENT (COOLING)	A	11.0	13.8
	RATED RUNNING CURRENT (HEATING)	A	15.0	12.8
	LOCKED ROTOR AMP.	A	101.0	111
COMPRESSOR 2	INSULATION GRADE		F	
	POWER SOURCE	V/Ph/Hz	380 ~ 415 / 3 / 50	
	CAPACITOR	μF	NA	N/A
	RATED INPUT POWER (COOLING)	W	5940	7,930
	RATED INPUT POWER (HEATING)	W	5180	6,920
	RATED RUNNING CURRENT (COOLING)	A	11.2	14.1
	RATED RUNNING CURRENT (HEATING)	A	10.3	13.0
	LOCKED ROTOR AMP.	A	101.0	111

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2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151.

Components Data-Heatpump (R410a)

MODEL				M5RT90BR		M5RT120BR	
EVAPORATOR FAN	TYPE			CENTRIFUGAL FORWARD CURVE			
	QUANTITY			1			
	MATERIAL			GALVANISED STEEL		GALVANISED STEEL	
	DRIVE			BELT DRIVE			
	DIAMETER	mm/in		381 / 15		381 / 15	
LENGTH	mm/in		381 / 15		381 / 15		
EVAPORATOR FAN MOTOR	TYPE			INDUCTION MOTOR			
	QUANTITY			1			
	INDEX OF PROTECTION (IP)			IP22			
CONDENSER FAN 1	TYPE			PROPELLER			
	QUANTITY			1		1	
	MATERIAL			PLASTIC			
	DRIVE			DIRECT DRIVE			
	DIAMETER	mm/in		610 / 24.0		681 / 26.8	
CONDENSER FAN 2	TYPE			PROPELLER			
	QUANTITY			1		1	
	MATERIAL			PLASTIC			
	DRIVE			DIRECT DRIVE			
	DIAMETER	mm/in		681 / 26.8		681 / 26.8	
CONDENSER FAN MOTOR 1	TYPE			INDUCTION MOTOR			
	QUANTITY			1		1	
	INDEX OF PROTECTION (IP)			IP44			
CONDENSER FAN MOTOR 2	TYPE			INDUCTION MOTOR			
	QUANTITY			1		1	
	INDEX OF PROTECTION (IP)			IP44			
COMPRESSOR 1	TYPE			SCROLL			
	QUANTITY			1			
	OIL TYPE			POE			
	OIL AMOUNT	cm ³ /fl.oz.		3253 / 110		1656 / 56	
COMPRESSOR 2	TYPE			NA			
	QUANTITY			NA		SCROLL	
	OIL TYPE			NA		POE	
	OIL AMOUNT	cm ³ /fl.oz.		NA		1656 / 56	
EVAPORATOR COIL 1	TUBE	MATERIAL		S.I.G.C.			
		DIAMETER	mm/in	9.53 / 3/8			
		THICKNESS	mm/in	0.35 / 0.014		0.35 / 0.014	
	FIN	MATERIAL		ALUMINIUM			
		THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	0.07 / 0.80		0.04 / 0.46	
		ROW		3		3	
			16		16		
			NA		S.I.G.C.		
EVAPORATOR COIL 2	TUBE	DIAMETER	mm/in	NA		9.53 / 3/8	
		THICKNESS	mm/in	NA		0.35 / 0.011	
		MATERIAL		NA			
	FIN	THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	NA		0.04 / 0.46	
		ROW		NA		3	
		FIN PER INCH		NA		16	
CONDENSER COIL 1	TUBE	MATERIAL		S.I.G.C.			
		DIAMETER	mm/in	9.53 / 3/8			
		THICKNESS	mm/in	0.35 / 0.014		0.35 / 0.014	
	FIN	MATERIAL		ALUMINIUM			
		THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	0.12 / 1.28		0.10 / 1.10	
		ROW		2		3	
			16		14		
			NA		S.I.G.C.		
CONDENSER COIL 2	TUBE	DIAMETER	mm/in	NA		9.53 / 3/8	
		THICKNESS	mm/in	NA		0.35 / 0.014	
		MATERIAL		NA			
	FIN	THICKNESS	mm/in	NA			
		FACE AREA	m ² /ft ²	NA		0.11 / 0.004	
		ROW		NA		3	
		FIN PER INCH		NA		14	
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET			
		QUANTITY	pc	2		2	
		LENGTH	mm/in	880 / 34.65		1126 / 44.3	
		WIDTH	mm/in	467 / 18.39		385 / 15.16	
		THICKNESS	mm/in	4 / 0.16		4 / 0.16	
CASING	MATERIAL			ELECTRO GALVANISED MILD STEEL			
	EXTERNAL FINISHING			EPOXY POLYESTER POWDER			
	COLOUR			LIGHT GREY			
	INSULATION / THICKNESS			PE / 10mm			

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2) S.I.G.C. - SEAMLESS INNER GROOVED COPPER.

Components Data-Heatpump (R410a)

MODEL				M5RT150BR		M5RT180BR	
EVAPORATOR FAN	TYPE			CENTRIFUGAL FORWARD CURVE			
	QUANTITY			1			
	MATERIAL			GALVANISED STEEL		GALVANISED STEEL	
	DRIVE			BELT DRIVE			
	DIAMETER		mm/in	381 / 15		400 / 15.7	
LENGTH		mm/in	381 / 15		400 / 15.7		
EVAPORATOR FAN MOTOR	TYPE			INDUCTION MOTOR			
	QUANTITY			1			
	INDEX OF PROTECTION (IP)			IP22			
CONDENSER FAN 2	TYPE			PROPELLER			
	QUANTITY			1		1	
	MATERIAL			PLASTIC			
	DRIVE			DIRECT DRIVE			
	DIAMETER		mm/in	681 / 26.8		681 / 26.8	
CONDENSER FAN 2	TYPE			PROPELLER			
	QUANTITY			1		1	
	MATERIAL			PLASTIC			
	DRIVE			DIRECT DRIVE			
	DIAMETER		mm/in	681 / 26.8		681 / 26.8	
CONDENSER FAN MOTOR 1	TYPE			INDUCTION MOTOR			
	QUANTITY			1		1	
	INDEX OF PROTECTION (IP)			IP44			
CONDENSER FAN MOTOR 2	TYPE			INDUCTION MOTOR			
	QUANTITY			1		1	
	INDEX OF PROTECTION (IP)			IP44			
COMPRESSOR 1	TYPE			SCROLL			
	QUANTITY			1			
	OIL TYPE			POE			
	OIL AMOUNT		cm ³ /fl.oz.	1774 / 60		3253 / 110	
COMPRESSOR 2	TYPE			SCROLL			
	QUANTITY			1			
	OIL TYPE			POE			
	OIL AMOUNT		cm ³ /fl.oz.	1774 / 60		3253 / 110	
EVAPORATOR COIL 1	TUBE	MATERIAL		S.I.G.C.			
		DIAMETER	mm/in	9.53 / 3/8			
		THICKNESS	mm/in	0.35 / 0.014		0.35 / 0.014	
	FIN	MATERIAL		ALUMINIUM			
		THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	0.51 / 5.49		0.61 / 6.55	
		ROW		4		4	
FIN PER INCH			14		14		
EVAPORATOR COIL 2	TUBE	MATERIAL		S.I.G.C.			
		DIAMETER	mm/in	9.53 / 3/8			
		THICKNESS	mm/in	0.35 / 0.014		0.35 / 0.014	
	FIN	MATERIAL		ALUMINIUM			
		THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	0.51 / 5.49		0.61 / 6.55	
		ROW		4		4	
FIN PER INCH			14		14		
CONDENSER COIL 1	TUBE	MATERIAL		S.I.G.C.			
		DIAMETER	mm/in	9.53 / 3/8			
		THICKNESS	mm/in	0.35 / 0.014		0.35 / 0.014	
	FIN	MATERIAL		ALUMINIUM			
		THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	1.24 / 13.35		1.33 / 14.34	
		ROW		3		3	
FIN PER INCH			14		14		
CONDENSER COIL 2	TUBE	MATERIAL		S.I.G.C.			
		DIAMETER	mm/in	9.53 / 3/8			
		THICKNESS	mm/in	0.35 / 0.014		0.35 / 0.014	
	FIN	MATERIAL		ALUMINIUM			
		THICKNESS	mm/in	0.11 / 0.004			
		FACE AREA	m ² /ft ²	1.24 / 13.35		1.33 / 14.34	
		ROW		3		3	
FIN PER INCH			14		14		
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET			
		QUANTITY	pc	2		2	
		LENGTH	mm/in	1126 / 44.33		1497 / 58.9	
		WIDTH	mm/in	435 / 17.16		392 / 15.43	
		THICKNESS	mm/in	4 / 0.16		4 / 0.16	
CASING	MATERIAL			ELECTRO GALVANISED MILD STEEL			
	EXTERNAL FINISHING			EPOXY POLYESTER POWDER			
	COLOUR			LIGHT GREY			
	INSULATION / THICKNESS			PE / 10mm			

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Safety Devices- Heatpump (R410a)

MODEL				M5RT90BR	M5RT120BR	
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC, Auto Reset		
		OPEN	kPa/psi	4137 / 600		
		CLOSE	kPa/psi	3309 / 480		
	LOW PRESSURE SWITCH	TYPE		NC, Auto Reset		
		OPEN	kPa/psi	124 / 18		
		CLOSE	kPa/psi	193 / 28		
	PHASE SEQUENCER				YES	
	DISCHARGE THERMOSTAT SETTING			°C / °F	120 / 248	

MODEL				M5RT150BR	M5RT180BR	
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC, Auto Reset		
		OPEN	kPa/psi	4137 / 600		
		CLOSE	kPa/psi	3309 / 480		
	LOW PRESSURE SWITCH	TYPE		NC, Auto Reset		
		OPEN	kPa/psi	124 / 18		
		CLOSE	kPa/psi	193 / 28		
	PHASE SEQUENCER				YES	
	DISCHARGE THERMOSTAT SETTING			°C / °F	120 / 248	

Performance Data

Calculation Steps

Interpolation method can be used to get the total capacity, TC and sensible capacity, SC and power input, PI at those temperatures which are not stated out in the table. Extrapolation method are not allowed to be used to get the TC, SC and PI.

Example:

Model: M5RT150BR

Indoor Condition: 25°C DB, 17°C WB

Outdoor Condition: 37°C DB

Fan Speed: High (5650CFM)

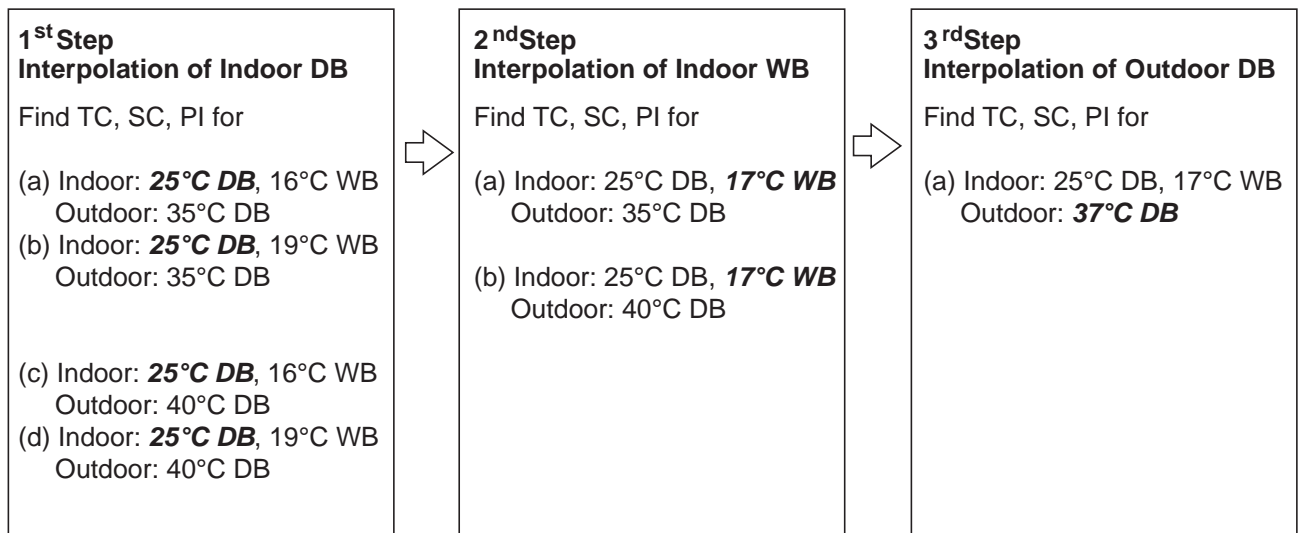
Solution:

Overall

Based on the Performance Table

1. Refer to the Indoor DB column,
 - **25°C** is located between 24°C and 27°C for 16°CWB (Thus, Interpolation need to be applied)
 - **25°C** is located between 24°C and 27°C for 19°CWB (Thus, Interpolation need to be applied)
2. Refer to the Indoor WB column,
 - **17°C** is located between 16°CWB and 19°CWB for 25°CDB (Thus, Interpolation need to be applied)
3. Refer to the Outdoor DB column,
 - **37°C** is located between 35°C and 40°C. (Thus, Interpolation need to be applied)

Please follow the steps below in order to get the required capacity.



Details:

1st Step:

To obtain the Total capacity and Sensible capacity and Power input for

(a) Indoor Condition: 25°C DB, 16°C WB

Outdoor Condition: 35°C DB

Indoor WB °C	Indoor DB °C	Outdoor DB, °C		
		35		
		TC (kW)	SHC (kW)	PI (kW)
16	24	41.41	35.59	12.81
	25	x_1	y_1	z_1
	27	43.48	41.63	12.94

Total capacity, TC

Interpolation Method:

$$\Rightarrow \frac{27^\circ \text{C} - 24^\circ \text{C}}{27^\circ \text{C} - 25^\circ \text{C}} = \frac{43.48\text{kW} - 41.41\text{kW}}{43.48\text{kW} - x_1\text{kW}}$$

$$\Rightarrow x_1 = 42.10\text{kW}$$

Sensible capacity, SHC

Interpolation Method:

$$\Rightarrow \frac{27^\circ \text{C} - 24^\circ \text{C}}{27^\circ \text{C} - 25^\circ \text{C}} = \frac{41.63\text{kW} - 35.59\text{kW}}{41.63\text{kW} - y_1\text{kW}}$$

$$\Rightarrow y_1 = 37.60\text{kW}$$

Power Input, PI

Interpolation Method:

$$\Rightarrow \frac{27^\circ \text{C} - 24^\circ \text{C}}{27^\circ \text{C} - 25^\circ \text{C}} = \frac{12.94\text{kW} - 12.81\text{kW}}{12.94\text{kW} - z_1\text{kW}}$$

$$\Rightarrow z_1 = 12.85\text{kW}$$

(b) Indoor Condition: 25°C DB, 16°C WB
Outdoor Condition: 40°C DB

Indoor WB °C	Indoor DB °C	Outdoor DB, °C			
		40			
		TC (kW)	SHC (kW)	PI (kW)	
16	24	38.59	33.52	13.91	
	25	x_2	y_2	z_2	
	27	40.74	39.20	14.06	

Total capacity, TC

Interpolation Method:

$$\Rightarrow \frac{27^\circ \text{C} - 24^\circ \text{C}}{27^\circ \text{C} - 25^\circ \text{C}} = \frac{40.74\text{kW} - 38.59\text{kW}}{40.74\text{kW} - x_2\text{kW}}$$

$$\Rightarrow x_2 = 39.31\text{kW}$$

Sensible capacity, SHC

Interpolation Method:

$$\Rightarrow \frac{27^\circ \text{C} - 24^\circ \text{C}}{27^\circ \text{C} - 25^\circ \text{C}} = \frac{39.20\text{kW} - 33.52\text{kW}}{39.20\text{kW} - y_2\text{kW}}$$

$$\Rightarrow y_2 = 35.41\text{kW}$$

2

Power Input, PI

Interpolation Method:

$$\Rightarrow \frac{27^\circ \text{C} - 24^\circ \text{C}}{27^\circ \text{C} - 25^\circ \text{C}} = \frac{14.06\text{kW} - 13.91\text{kW}}{14.06\text{kW} - z_2\text{kW}}$$

$$\Rightarrow z_2 = 13.96\text{kW}$$

*** Repeat process (a) and (b) in 1st step for the condition below:**

(c) Indoor Condition: 25°C DB, 19°C WB
Outdoor Condition: 35°C DB

$$\Rightarrow x_3 = 44.55\text{kW}$$

$$\Rightarrow y_3 = 31.63\text{kW}$$

$$\Rightarrow z_3 = 13.03\text{kW}$$

(d) Indoor Condition: 25°C DB, 19°C WB
Outdoor Condition: 40°C DB

$$\Rightarrow x_4 = 41.46\text{kW}$$

$$\Rightarrow y_4 = 29.99\text{kW}$$

$$\Rightarrow z_4 = 14.13\text{kW}$$

2nd Step:

To obtain the Total capacity, Sensible capacity and Power Input for

(a) Indoor Condition: 25°C DB, 17°C WB

Outdoor Condition: 35°C DB

Indoor WB °C	Indoor DB °C	Outdoor DB, °C			
			35		
			TC (kW)	SHC (kW)	PI (kW)
			⋮	⋮	
16	25		42.10	37.60	12.85
17		x_5	y_5	z_5
19			44.55	31.63	13.03

Total capacity, TC

Interpolation Method:

$$\Rightarrow \frac{19^\circ\text{C} - 16^\circ\text{C}}{19^\circ\text{C} - 17^\circ\text{C}} = \frac{44.55\text{kW} - 42.10\text{kW}}{44.55\text{kW} - x_5\text{kW}}$$

$$\Rightarrow x_5 = 42.92\text{kW}$$

Sensible capacity, SHC

Interpolation Method:

$$\Rightarrow \frac{19^\circ\text{C} - 16^\circ\text{C}}{19^\circ\text{C} - 17^\circ\text{C}} = \frac{31.63\text{kW} - 37.60\text{kW}}{31.63\text{kW} - y_5\text{kW}}$$

$$\Rightarrow y_5 = 35.61\text{kW}$$

Power Input, PI

Interpolation Method:

$$\Rightarrow \frac{19^\circ\text{C} - 16^\circ\text{C}}{19^\circ\text{C} - 17^\circ\text{C}} = \frac{13.03\text{kW} - 12.85\text{kW}}{13.03\text{kW} - z_5\text{kW}}$$

$$\Rightarrow z_5 = 12.91\text{kW}$$

(b) Indoor Condition: 25°C DB, 17°C WB
Outdoor Condition: 40°C DB

Indoor WB °C	Indoor DB °C	Outdoor DB, °C			
		40			
		TC (kW)	SHC (kW)	PI (kW)	
		⋮	⋮		
16	25	39.31	35.41	13.96	
17		⋮ ₆	⋮ ₆	⋮ ₆	
19		41.46	29.99	14.13	

Total capacity, TC

Interpolation Method:

$$\Rightarrow \frac{19^\circ\text{C} - 16^\circ\text{C}}{19^\circ\text{C} - 17^\circ\text{C}} = \frac{41.46\text{kW} - 39.31\text{kW}}{41.46\text{kW} - x_6\text{kW}}$$

$$\Rightarrow x_6 = 40.03\text{kW}$$

Sensible capacity, SHC

Interpolation Method:

$$\Rightarrow \frac{19^\circ\text{C} - 16^\circ\text{C}}{19^\circ\text{C} - 17^\circ\text{C}} = \frac{29.99\text{kW} - 35.41\text{kW}}{29.99\text{kW} - y_6\text{kW}}$$

$$\Rightarrow y_6 = 33.60\text{kW}$$

Power Input, PI

Interpolation Method:

$$\Rightarrow \frac{19^\circ\text{C} - 16^\circ\text{C}}{19^\circ\text{C} - 17^\circ\text{C}} = \frac{14.13\text{kW} - 13.96\text{kW}}{14.13\text{kW} - z_6\text{kW}}$$

$$\Rightarrow z_6 = 14.02\text{kW}$$

3rd Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 25°C DB, 17°C WB

Outdoor Condition: 37°C DB

Indoor WB °C	Indoor DB °C	Outdoor DB, °C									
			35			37			40		
			TC (kW)	SHC (kW)	PI (kW)	TC (kW)	SHC (kW)	PI (kW)	TC (kW)	SHC (kW)	PI (kW)
25	17	42.92	35.61	12.91	x	y	z	40.03	33.60	14.02

Total capacity, TC

Interpolation Method:

$$\Rightarrow \frac{40^\circ \text{C} - 35^\circ \text{C}}{40^\circ \text{C} - 37^\circ \text{C}} = \frac{40.03\text{kW} - 42.92\text{kW}}{40.03\text{kW} - x\text{kW}}$$

$$\Rightarrow x = 41.76\text{kW}$$

Sensible capacity, SHC

Interpolation Method:

$$\Rightarrow \frac{40^\circ \text{C} - 35^\circ \text{C}}{40^\circ \text{C} - 37^\circ \text{C}} = \frac{33.60\text{kW} - 35.61\text{kW}}{33.60\text{kW} - y\text{kW}}$$

$$\Rightarrow y = 34.81\text{kW}$$

Power Input, PI

Interpolation Method:

$$\Rightarrow \frac{40^\circ \text{C} - 35^\circ \text{C}}{40^\circ \text{C} - 37^\circ \text{C}} = \frac{14.02\text{kW} - 12.91\text{kW}}{14.02\text{kW} - z\text{kW}}$$

$$\Rightarrow z = 13.35\text{kW}$$

Performance Table

R410A Model
Cooling Mode

Model: M5RT90BR

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
2640	16°C	21°C	26.92	17.79	6.55	25.90	17.33	6.93	25.31	17.19	7.46	24.12	16.64	7.91	22.42	15.75	8.60	20.86	15.04	9.52
		24°C	27.02	20.73	6.56	26.00	20.27	6.94	25.41	20.17	7.47	24.23	19.64	7.92	22.60	18.55	8.61	21.16	17.59	9.54
		27°C	27.60	25.41	6.58	26.65	24.72	6.97	26.15	24.48	7.51	25.07	23.64	7.97	23.52	22.40	8.67	22.18	21.23	9.62
		30°C	28.31	28.31	6.65	27.43	27.43	7.05	26.49	26.49	7.60	25.49	25.49	8.08	23.92	23.92	8.78	22.61	22.61	9.72
	19°C	24°C	29.44	16.79	6.69	28.30	16.35	7.08	27.67	16.22	7.61	26.39	15.74	8.07	24.56	14.94	8.76	22.90	14.29	9.68
		27°C	29.52	20.66	6.70	28.39	20.20	7.09	27.75	20.12	7.62	26.48	19.60	8.08	24.65	18.68	8.76	23.00	18.02	9.69
		30°C	29.67	24.23	6.71	28.66	23.57	7.10	28.13	23.34	7.64	26.94	22.58	8.11	25.20	21.36	8.80	23.69	20.39	9.74
		33°C	30.23	30.23	6.75	28.93	28.93	7.15	29.12	29.12	7.71	28.05	28.05	8.18	25.58	25.58	8.89	24.48	24.48	9.84
	22°C	27°C	31.94	16.47	6.85	30.87	16.13	7.25	30.19	16.01	7.79	28.81	15.54	8.25	26.84	14.76	8.93	25.10	14.19	9.86
		30°C	32.17	20.48	6.86	30.94	20.03	7.25	30.25	19.95	7.79	28.89	19.46	8.25	26.91	18.57	8.94	25.16	17.95	9.86
		33°C	32.25	24.19	6.86	31.02	23.73	7.26	30.32	23.72	7.80	28.97	23.22	8.26	27.10	21.99	8.96	25.53	21.02	9.89
		36°C	32.40	26.87	6.89	31.28	26.17	7.29	30.91	26.12	7.84	29.66	25.35	8.31	27.94	24.19	9.02	26.43	23.19	9.96
3300	16°C	21°C	27.89	18.62	6.60	26.78	18.12	6.98	26.14	17.97	7.51	24.90	17.42	7.97	23.11	16.51	8.65	21.47	15.80	9.57
		24°C	28.06	22.96	6.62	27.05	22.29	7.00	26.49	22.00	7.54	25.32	21.22	7.99	23.59	19.99	8.68	22.07	18.98	9.61
		27°C	29.12	26.80	6.67	28.17	26.05	7.07	27.69	25.74	7.61	26.58	24.83	8.08	24.90	23.38	8.78	23.45	22.13	9.72
		30°C	30.19	30.19	6.77	29.19	29.19	7.17	28.15	28.15	7.72	27.06	27.06	8.20	25.10	25.10	8.90	23.69	23.69	9.84
	19°C	24°C	30.42	18.53	6.75	29.22	18.04	7.14	28.53	17.90	7.67	27.19	17.36	8.13	25.27	16.47	8.81	23.53	16.79	9.73
		27°C	30.57	22.98	6.76	29.37	22.49	7.15	28.69	22.42	7.68	27.34	21.87	8.14	25.50	20.72	8.83	23.88	19.68	9.76
		30°C	31.20	26.32	6.79	30.07	25.60	7.19	29.48	25.35	7.74	28.23	24.56	8.20	26.44	23.20	8.90	24.97	22.02	9.84
		33°C	31.86	31.86	6.87	30.85	30.85	7.28	29.77	29.77	7.84	28.63	28.63	8.32	26.87	26.87	9.03	25.43	25.43	9.97
	22°C	27°C	33.11	18.28	6.91	31.80	17.84	7.31	31.07	17.74	7.85	29.63	17.22	8.31	27.56	16.35	9.00	25.73	15.70	9.91
		30°C	33.22	22.84	6.92	31.92	22.36	7.32	31.19	22.30	7.86	29.75	21.77	8.32	27.69	20.80	9.01	25.88	20.15	9.92
		33°C	33.46	27.07	6.94	32.26	26.33	7.34	31.64	26.07	7.89	30.30	25.24	8.36	28.32	23.90	9.06	26.66	22.87	9.99
		36°C	34.08	29.22	6.99	32.88	28.63	7.39	32.05	28.12	7.96	30.87	27.22	8.44	28.71	25.44	9.16	26.93	23.98	10.11
3960	16°C	21°C	28.55	20.03	6.64	27.41	19.53	7.02	26.74	19.37	7.55	25.45	18.80	8.01	23.61	17.83	8.69	21.92	17.08	9.60
		24°C	29.05	24.35	6.67	27.95	23.62	7.06	27.35	23.32	7.59	26.12	22.50	8.05	24.34	21.22	8.74	22.83	20.03	9.67
		27°C	30.46	28.03	6.75	29.39	27.18	7.14	28.90	26.86	7.69	27.71	25.88	8.16	25.94	24.35	8.86	24.39	23.02	9.80
		30°C	31.28	31.28	6.85	30.22	30.22	7.26	29.11	29.11	7.82	27.95	27.95	8.29	26.31	26.31	8.99	24.55	24.55	9.93
	19°C	24°C	31.12	19.98	6.79	29.87	19.47	7.18	29.13	19.32	7.72	27.73	18.76	8.17	25.77	17.83	8.85	24.00	17.13	9.77
		27°C	31.33	25.03	6.81	30.11	24.43	7.20	29.49	24.14	7.74	28.17	23.28	8.20	26.26	21.96	8.89	24.60	20.89	9.81
		30°C	32.28	27.64	6.86	31.18	26.95	7.26	30.65	26.63	7.82	29.43	25.69	8.29	27.58	24.20	8.99	26.01	22.94	9.93
		33°C	33.03	33.03	6.97	31.95	31.95	7.38	31.12	31.12	7.94	29.92	29.92	8.42	28.06	28.06	9.13	26.23	26.23	10.07
	22°C	27°C	33.81	19.81	6.96	32.47	19.31	7.35	31.68	19.18	7.90	30.17	18.63	8.35	28.08	17.73	9.04	26.22	17.07	9.95
		30°C	34.00	24.92	6.97	32.65	24.41	7.37	31.86	24.37	7.91	30.36	23.82	8.37	28.30	22.72	9.05	26.55	21.64	9.98
		33°C	34.64	28.87	7.01	33.36	28.08	7.41	32.68	27.82	7.96	31.30	26.96	8.43	29.24	25.53	9.13	27.65	24.26	10.07
		36°C	35.21	30.28	7.08	33.71	29.13	7.50	33.22	28.86	8.08	31.96	27.90	8.56	29.70	26.06	9.27	28.12	24.80	10.22

Model: M5RT120BR

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
3440	16°C	21°C	35.03	23.44	8.48	33.71	22.84	8.97	32.94	22.65	9.66	31.40	21.92	10.25	29.18	20.75	11.13	27.15	19.82	12.33
		24°C	35.17	27.32	8.49	33.84	26.70	8.98	33.07	26.58	9.67	31.54	25.88	10.26	29.41	24.44	11.15	27.53	23.17	12.35
		27°C	35.91	33.48	8.52	34.68	32.58	9.03	34.04	32.25	9.72	32.62	31.14	10.33	30.61	29.52	11.23	28.86	27.97	12.45
		30°C	36.85	36.85	8.62	35.70	35.70	9.13	34.47	34.47	9.84	33.17	33.17	10.46	31.13	31.13	11.37	29.42	29.42	12.59
	19°C	24°C	38.31	22.12	8.67	36.83	21.54	9.17	36.02	21.38	9.86	34.34	20.74	10.45	31.97	19.68	11.34	29.80	18.83	12.53
		27°C	38.41	27.23	8.67	36.95	26.62	9.17	36.12	26.51	9.87	34.46	25.83	10.46	32.08	24.62	11.35	29.93	23.75	12.54
		30°C	38.61	31.92	8.68	37.30	31.06	9.19	36.60	30.75	9.90	35.06	29.75	10.50	32.80	28.14	11.40	30.84	26.87	12.61
		33°C	39.34	39.34	8.74	37.65	37.65	9.26	37.89	37.89	9.98	36.50	36.50	10.60	33.28	33.28	11.51	31.86	31.86	12.74
	22°C	27°C	41.56	21.70	8.87	40.17	21.25	9.38	39.29	21.10	10.08	37.49	20.48	10.68	34.93	19.45	11.57	32.66	18.70	12.76
		30°C	41.87	26.99	8.88	40.27	26.39	9.39	39.36	26.29	10.09	37.59	25.64	10.69	35.02	24.47	11.58	32.75	23.65	12.77
		33°C	41.97	31.88	8.88	40.37	31.27	9.39	39.46	31.25	10.10	37.71	30.59	10.69	35.27	28.97	11.60	33.22	27.70	12.81
		36°C	42.16	35.40	8.92	40.71	34.49	9.44	40.22	34.41	10.16	38.60	33.40	10.77	36.36	31.87	11.68	34.39	30.55	12.90
4300	16°C	21°C	36.29	24.53	8.55	34.85	23.88	9.04	34.02	23.68	9.73	32.40	22.96	10.32	30.07	21.76	11.20	27.95	20.82	12.39
		24°C	36.52	30.25	8.57	35.20	29.37	9.06	34.48	28.99	9.76	32.95	27.97	10.35	30.70	26.34	11.24	28.72	25.01	12.44
		27°C	37.90	35.31	8.63	36.66	34.33	9.15	36.04	33.91	9.85	34.59	32.72	10.46	32.41	30.81	11.37	30.52	29.16	12.58
		30°C	39.29	39.29	8.76	37.99	37.99	9.28	36.64	36.64	10.00	35.22	35.22	10.61	32.66	32.66	11.52	30.84	30.84	12.74
	19°C	24°C	39.59	24.42	8.74	38.02	23.77	9.24	37.13	23.58	9.94	35.38	22.87	10.53	32.88	21.70	11.41	30.63	20.80	12.60
		27°C	39.78	30.28	8.75	38.22	29.63	9.26	37.33	29.54	9.95	35.58	28.82	10.54	33.19	27.31	11.43	31.08	25.94	12.63
		30°C	40.60	34.68	8.80	39.13	33.73	9.31	38.36	33.40	10.02	36.74	32.36	10.62	34.41	30.57	11.52	32.50	29.01	12.74
		33°C	41.47	41.47	8.89	40.14	40.14	9.42	38.74	38.74	10.15	37.25	37.25	10.77	34.97	34.97	11.69	33.09	33.09	12.91
	22°C	27°C	43.08	24.09	8.95	41.39	23.51	9.46	40.44	23.37	10.17	38.56	22.69	10.76	35.87	21.54	11.65	33.48	20.68	12.84
		30°C	43.24	30.09	8.96	41.54	29.46	9.47	40.59	29.39	10.18	38.72	28.69	10.77	36.04	27.41	11.66	33.68	26.54	12.85
		33°C	43.54	35.67	8.98	41.98	34.70	9.50	41.17	34.36	10.22	39.43	33.26	10.82	36.85	31.49	11.73	34.69	30.14	12.93
		36°C	44.35																	

Model: M5RT150BR

AFR (CFM)	EWB	EDB	Outdoor temperature																			
			19°C			25°C			30°C			35°C			40°C			46°C				
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI		
4520	16°C	21°C	44.03	29.82	10.49	42.37	29.06	11.10	41.41	28.82	11.95	39.46	27.89	12.68	36.67	26.40	13.77	34.12	25.22	15.25		
		24°C	44.20	34.76	10.50	42.53	33.98	11.11	41.57	33.82	11.96	39.64	32.93	12.69	36.97	31.10	13.79	34.60	29.48	15.28		
		27°C	45.14	42.60	10.55	43.59	41.45	11.17	42.78	41.04	12.03	41.00	39.63	12.77	38.48	37.56	13.89	36.28	35.59	15.40		
	19°C	30°C	46.31	46.31	10.66	44.87	44.87	11.30	43.33	43.33	12.18	41.69	41.69	12.94	39.13	39.13	14.06	36.98	36.98	15.58		
		24°C	48.15	28.14	10.72	46.29	27.41	11.34	45.27	27.20	12.20	43.16	26.39	12.93	40.18	26.04	14.03	37.46	23.96	15.50		
		27°C	48.28	34.64	10.73	46.44	33.87	11.35	45.40	33.74	12.21	43.31	32.87	12.94	40.32	31.33	14.04	37.62	30.22	15.52		
	22°C	30°C	48.53	40.62	10.74	46.88	39.53	11.37	46.01	39.13	12.24	44.06	37.85	12.99	41.23	35.81	14.10	38.76	34.19	15.60		
		33°C	49.45	49.45	10.81	47.32	47.32	11.45	47.63	47.63	12.35	45.88	45.88	13.11	41.83	41.83	14.24	40.04	40.04	15.76		
		27°C	52.24	27.61	10.98	50.49	27.04	11.61	49.38	26.84	12.48	47.12	26.05	13.21	43.90	24.75	14.31	41.05	23.79	15.79		
	5650	16°C	30°C	52.63	34.34	10.98	50.61	33.58	11.61	49.48	33.46	12.49	47.25	32.63	13.22	44.01	31.13	14.32	41.16	30.10	15.80	
			33°C	52.76	40.56	10.99	50.74	39.79	11.62	49.60	39.76	12.49	47.39	38.93	13.23	44.33	36.87	14.35	41.76	35.24	15.84	
			36°C	52.99	45.05	11.03	51.17	43.88	11.68	50.55	43.79	12.57	48.52	42.50	13.32	45.70	40.55	14.44	43.22	38.87	15.96	
6780	16°C	21°C	45.61	31.21	10.58	43.80	30.39	11.19	42.77	30.13	12.04	40.72	29.21	12.76	37.80	27.69	13.86	35.12	26.50	15.33		
		24°C	45.90	38.49	10.60	44.24	37.37	11.21	43.33	36.89	12.07	41.41	35.59	12.81	38.59	33.52	13.91	36.09	31.82	15.39		
		27°C	47.64	44.93	10.68	46.08	43.68	11.32	45.29	43.15	12.19	43.48	41.63	12.94	40.74	39.20	14.06	38.36	37.10	15.57		
	19°C	30°C	49.38	49.38	10.84	47.75	47.75	11.48	46.05	46.05	12.37	44.27	44.27	13.13	41.05	41.05	14.26	38.76	38.76	15.76		
		24°C	49.76	31.07	10.82	47.79	30.25	11.44	46.67	30.00	12.29	44.47	29.11	13.02	41.33	27.61	14.12	38.49	26.47	15.59		
		27°C	50.00	38.53	10.83	48.04	37.70	11.45	46.92	37.59	12.31	44.72	36.67	13.04	41.71	34.75	14.14	39.07	33.00	15.63		
	22°C	30°C	51.03	44.13	10.88	49.19	42.92	11.52	48.22	42.50	12.39	46.18	41.17	13.13	43.26	38.90	14.26	40.85	36.92	15.76		
		33°C	52.12	52.12	11.00	50.46	50.46	11.66	48.70	48.70	12.56	46.82	46.82	13.32	43.95	43.95	14.46	41.59	41.59	15.97		
		27°C	54.15	30.65	11.08	52.02	29.91	11.71	50.82	29.74	12.58	48.46	28.87	13.31	45.08	27.41	14.41	42.08	26.32	15.88		
	6780	16°C	30°C	54.34	38.29	11.09	52.22	37.49	11.72	51.02	37.40	12.59	48.67	36.51	13.33	45.29	34.88	14.43	42.33	33.78	15.90	
			33°C	54.72	45.39	11.11	52.77	44.15	11.75	51.75	43.71	12.64	49.56	42.32	13.39	46.32	40.07	14.51	43.60	38.35	16.00	
			36°C	55.74	48.99	11.19	53.78	48.01	11.84	52.42	47.14	12.75	50.49	45.64	13.52	46.96	42.65	14.67	44.05	40.21	16.20	
6780		19°C	21°C	46.70	33.59	10.64	44.83	32.74	11.25	43.73	32.48	12.10	41.63	31.51	12.82	38.61	29.89	13.91	35.86	28.64	15.39	
			24°C	47.52	40.82	10.69	45.72	39.59	11.30	44.74	39.10	12.16	42.73	37.73	12.90	39.81	35.57	13.99	37.35	33.59	15.49	
			27°C	49.82	46.99	10.81	48.08	45.57	11.44	47.27	45.04	12.33	45.32	43.40	13.07	42.42	40.82	14.19	39.90	38.59	15.70	
		22°C	30°C	51.16	51.16	10.98	49.43	49.43	11.63	47.62	47.62	12.52	45.72	45.72	13.28	43.03	43.03	14.40	40.15	40.15	15.91	
			24°C	50.91	33.49	10.88	48.86	32.64	11.50	47.65	32.40	12.36	45.35	31.45	13.09	42.15	29.89	14.18	39.25	28.72	15.65	
			27°C	51.25	41.96	10.90	49.26	40.97	11.53	48.24	40.47	12.40	46.07	39.04	13.14	42.96	36.82	14.24	40.24	35.02	15.72	
		6780	19°C	30°C	52.80	46.35	10.99	51.00	45.18	11.63	50.14	44.64	12.52	48.13	43.07	13.28	45.11	40.57	14.40	42.55	38.45	15.91
				33°C	54.03	54.03	11.16	52.27	52.27	11.82	50.90	50.90	12.72	48.94	48.94	13.49	45.90	45.90	14.62	42.91	42.91	16.14
				27°C	55.30	33.21	11.15	53.11	32.38	11.78	51.83	32.16	12.65	49.35	31.24	13.38	45.93	29.72	14.48	42.88	28.61	15.95
	22°C		30°C	55.62	41.78	11.17	53.40	40.93	11.80	52.12	40.86	12.67	49.67	39.93	13.41	46.29	38.09	14.51	43.44	36.28	15.99	
			33°C	56.66	48.41	11.22	54.57	47.07	11.87	53.46	46.64	12.76	51.20	45.21	13.51	47.83	42.80	14.63	45.22	40.67	16.14	
			36°C	57.59	50.76	11.35	55.14	48.85	12.02	54.34	48.38	12.94	52.28	46.78	13.71	48.58	43.69	14.85	46.00	41.58	16.38	

Model: M5RT180BR

AFR (CFM)	EWB	EDB	Outdoor temperature																		
			19°C			25°C			30°C			35°C			40°C			46°C			
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	
5360	16°C	21°C	54.83	38.04	13.47	52.77	37.07	14.25	51.56	36.77	15.34	49.14	35.58	16.28	45.67	33.68	17.68	42.49	32.17	19.58	
		24°C	55.05	44.34	13.48	52.96	43.34	14.26	51.76	43.15	15.35	49.36	42.01	16.29	46.04	39.67	17.71	43.09	37.61	19.62	
		27°C	56.21	54.34	13.54	54.29	52.88	14.34	53.27	52.35	15.44	51.06	50.55	16.40	47.92	47.91	17.83	45.18	45.18	19.78	
	19°C	30°C	57.67	57.67	13.68	55.88	55.88	14.50	53.95	53.95	15.63	51.92	51.92	16.61	48.73	48.73	18.05	46.05	46.05	20.00	
		24°C	59.96	35.90	13.76	57.64	34.96	14.56	56.37	34.70	15.66	53.75	33.66	16.60	50.04	31.95	18.01	46.65	30.56	19.90	
		27°C	60.12	44.19	13.77	57.83	43.21	14.57	56.53	43.04	15.67	53.94	41.93	16.61	50.21	39.96	18.02	46.85	38.55	19.92	
	22°C	30°C	60.43	51.81	13.79	58.38	50.42	14.60	57.29	49.91	15.72	54.87	48.29	16.68	51.34	45.68	18.10	48.26	43.62	20.02	
		33°C	61.57	61.57	13.88	58.92	58.92	14.70	59.31	59.31	15.85	57.14	57.14	16.83	52.10	52.10	18.29	49.86	49.86	20.24	
		27°C	65.06	35.23	14.09	62.88	34.50	14.90	61.49	34.24	16.02	58.67	33.24	16.96	54.67	31.57	18.37	51.12	30.35	20.27	
	6700	16°C	30°C	65.54	43.81	14.10	63.03	42.84	14.91	61.61	42.68	16.03	58.84	41.62	16.97	54.81	39.72	18.39	51.25	38.39	20.28
			33°C	65.70	51.74	14.11	63.19	50.75	14.92	61.77	50.72	16.04	59.02	49.66	16.98	55.21	47.03	18.42	52.00	44.95	20.34
			36°C	65.99	57.46	14.16	63.72	55.98	14.99	62.96	55.86	16.13	60.42	54.22	17.10	56.91	51.73	18.54	53.83	49.59	20.49
19°C		21°C	56.80	39.81	13.58	54.55	38.76	14.36	53.26	38.44	15.45	50.71	37.27	16.38	47.07	35.32	17.79	43.74	33.80	19.67	
		24°C	57.15	49.10	13.60	55.10	47.67	14.40	53.96	47.06	15.50	51.57	45.40	16.44	48.05	42.76	17.85	44.95	40.60	19.76	
		27°C	59.32	57.31	13.71	57.38	55.72	14.53	56.40	55.05	15.65	54.14	53.11	16.62	50.73	50.01	18.05	47.78	47.33	19.98	
22°C		30°C	61.50	61.50	13.92	59.47	59.47	14.74	57.35	57.35	15.88	55.13	55.13	16.85	51.13	51.13	18.30	48.26	48.26	20.23	
		24°C	61.97	39.63	13.88	59.52	38.59	14.68	58.12	38.28	15.78	55.38	37.13	16.72	51.47	35.22	18.12	47.93			

Heating Mode

Model: M5RT90BR

Indoor DB, °C	Outdoor WB, °C									
	-5		6		12		15		18	
	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15	17.71	5.41	24.99	6.49	28.96	7.08	30.95	7.38	32.93	7.67
17	17.23	5.64	24.96	6.77	28.12	7.39	30.04	7.70	31.96	8.01
19	16.75	5.87	24.93	7.05	27.27	7.70	29.12	8.02	30.98	8.34
21	16.27	6.09	24.31	7.33	26.42	8.00	28.21	8.34	30.00	8.68
23	15.79	6.32	23.10	7.61	25.57	8.31	27.30	8.66	29.03	9.01
25	15.31	6.55	21.89	7.89	24.73	8.62	26.39	8.98	28.05	9.35
27	14.83	6.78	20.69	8.17	23.88	8.92	25.48	9.30	27.08	9.68

Model: M5RT120BR

Indoor DB, °C	Outdoor WB, °C									
	-5		6		12		15		18	
	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15	24.73	7.83	34.90	9.40	40.44	10.25	43.21	10.68	45.99	11.11
17	24.23	8.18	34.86	9.88	40.18	10.80	42.99	11.27	45.80	11.73
19	23.74	8.53	34.81	10.36	39.91	11.36	42.76	11.86	45.61	12.35
21	23.24	8.88	34.51	10.84	39.64	11.91	42.53	12.44	45.43	12.98
23	22.74	9.23	33.94	11.32	39.37	12.46	42.31	13.03	45.24	13.60
25	22.25	9.58	33.37	11.80	39.11	13.01	42.08	13.62	45.06	14.22
27	21.75	9.93	32.81	12.28	38.84	13.57	41.85	14.21	44.87	14.85

Model: M5RT150BR

Indoor DB, °C	Outdoor WB, °C									
	-5		6		12		15		18	
	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15	29.71	9.55	41.92	11.46	48.58	12.50	51.92	13.02	55.25	13.54
17	29.15	9.94	41.87	11.92	48.43	13.00	51.83	13.55	55.24	14.09
19	28.58	10.34	41.82	12.39	48.28	13.51	51.75	14.07	55.23	14.63
21	28.01	10.73	41.56	12.86	48.12	14.02	51.67	14.60	55.22	15.18
23	27.45	11.13	41.08	13.33	47.97	14.53	51.59	15.13	55.21	15.73
25	26.88	11.52	40.61	13.80	47.82	15.04	51.51	15.66	55.21	16.28
27	26.32	11.92	40.13	14.26	47.67	15.54	51.43	16.18	55.20	16.82

Model: M5RT180BR

Indoor DB, °C	Outdoor WB, °C									
	-5		6		12		15		18	
	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15	38.34	11.76	54.09	14.11	62.69	15.39	66.99	16.03	71.28	16.67
17	37.53	12.22	54.03	14.58	62.09	15.88	66.42	16.52	70.76	17.17
19	36.72	12.68	53.96	15.06	61.49	16.36	65.86	17.01	70.23	17.66
21	35.92	13.14	53.38	15.54	60.89	16.85	65.29	17.51	69.70	18.16
23	35.11	13.60	52.27	16.02	60.29	17.34	64.73	18.00	69.17	18.66
25	34.30	14.06	51.16	16.49	59.69	17.82	64.17	18.49	68.64	19.15
27	33.50	14.52	50.05	16.97	59.09	18.31	63.60	18.98	68.12	19.65

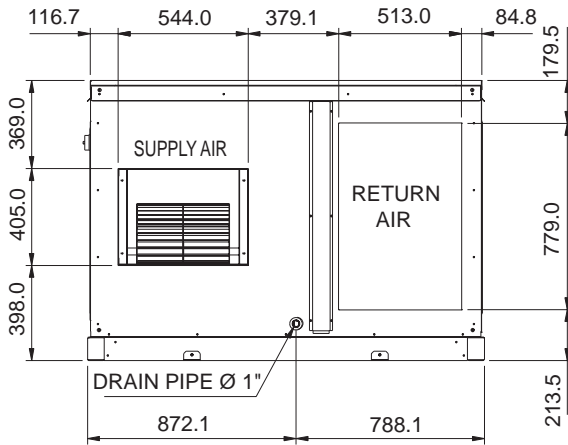
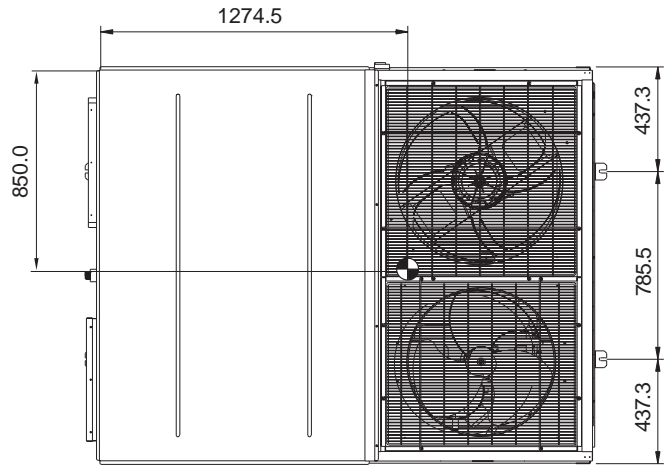
Remarks:

TC = Total Cooling Capacity (kW)

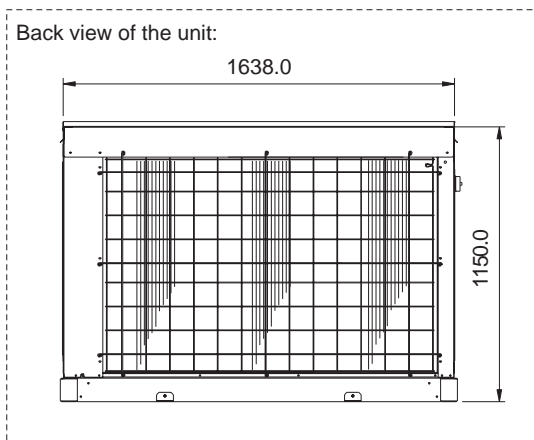
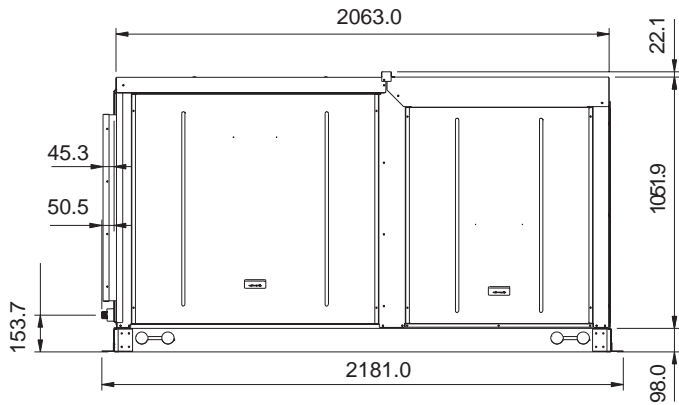
PI = Power Input (kW)

Dimensional Data

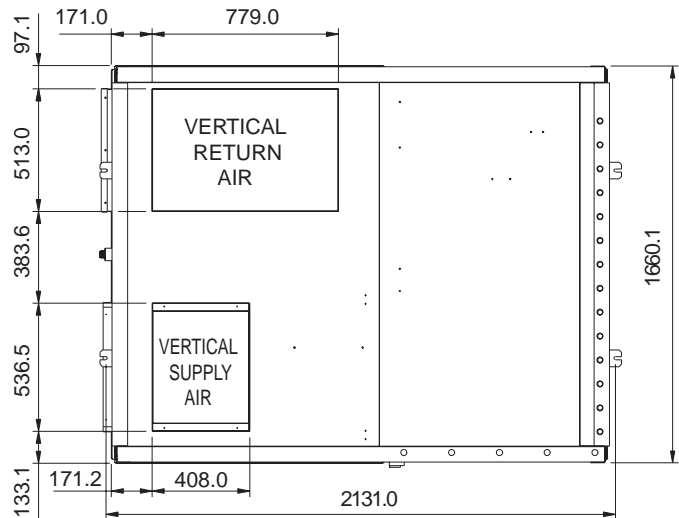
Model: M5RT90BR



FOR HORIZONTAL DISCHARGE

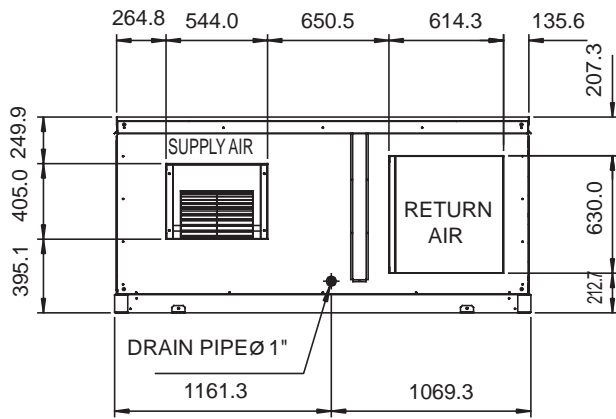
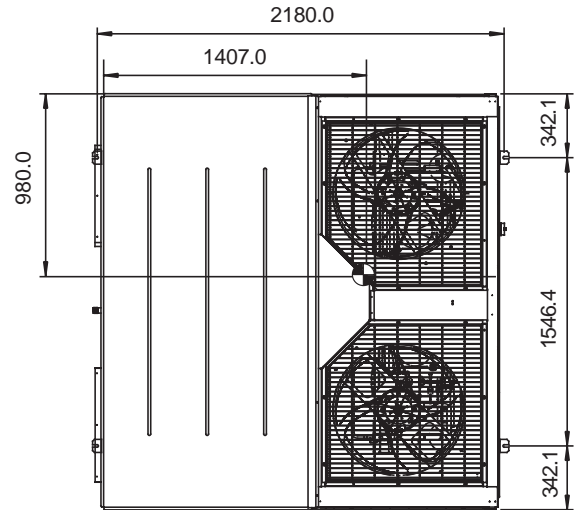


BACK VIEW OF THE UNIT

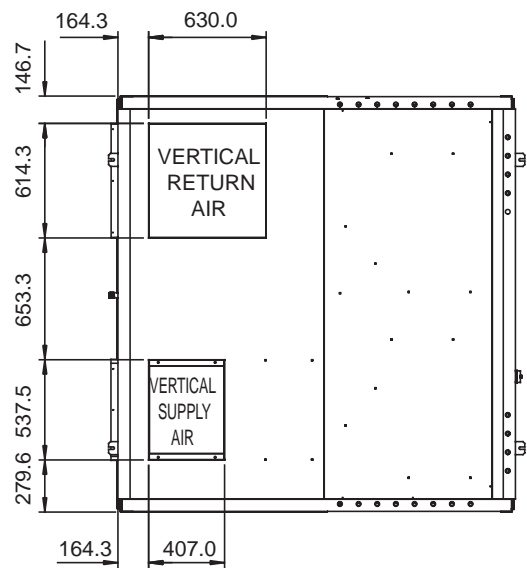
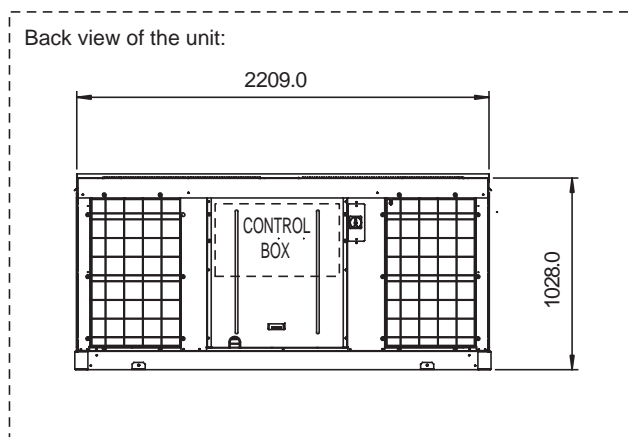
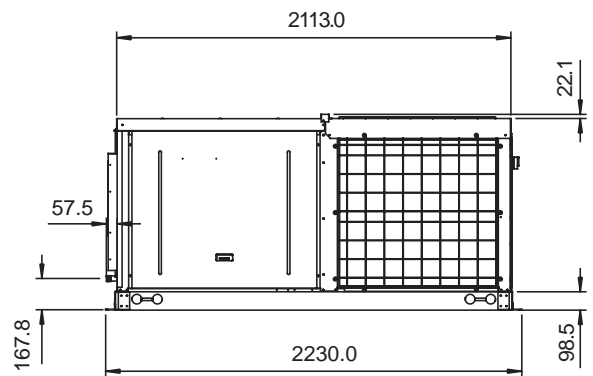


FOR VERTICAL DISCHARGE

Model: M5RT120BR

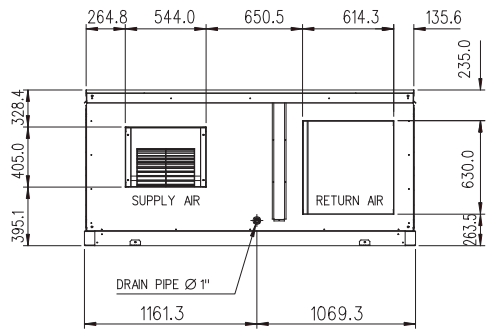
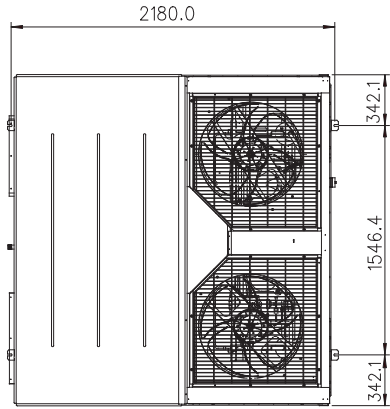


FOR HORIZONTAL DISCHARGE

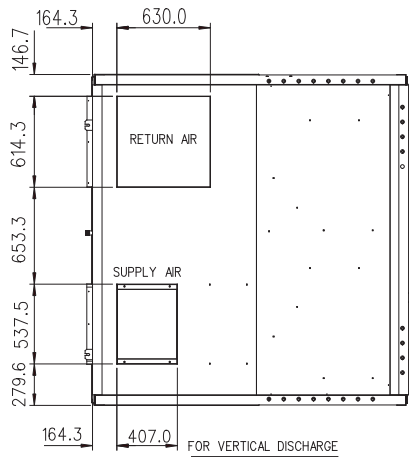
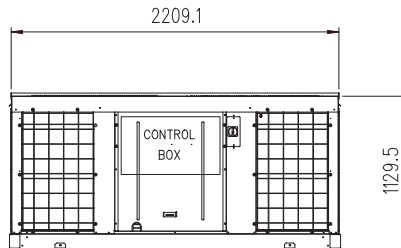
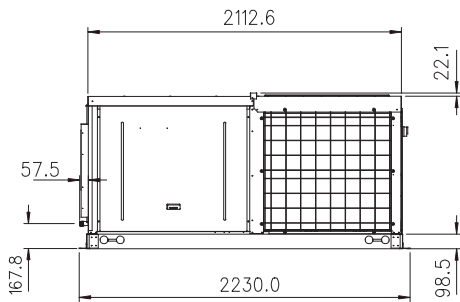


FOR VERTICAL DISCHARGE

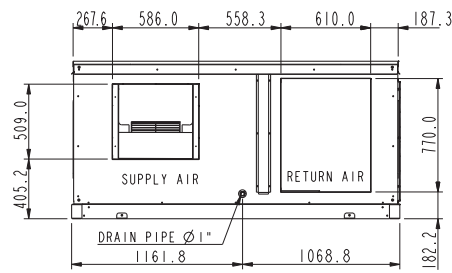
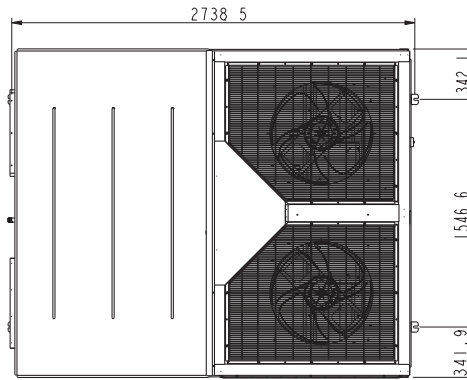
Model: M5RT150BR



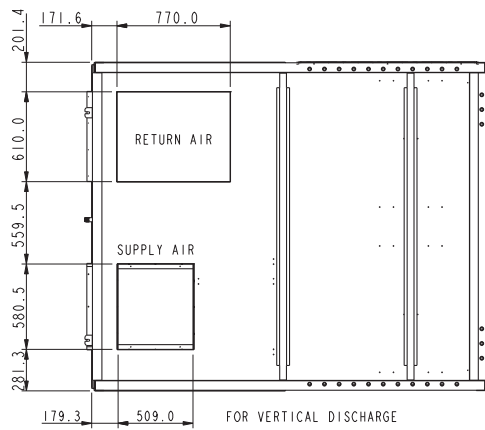
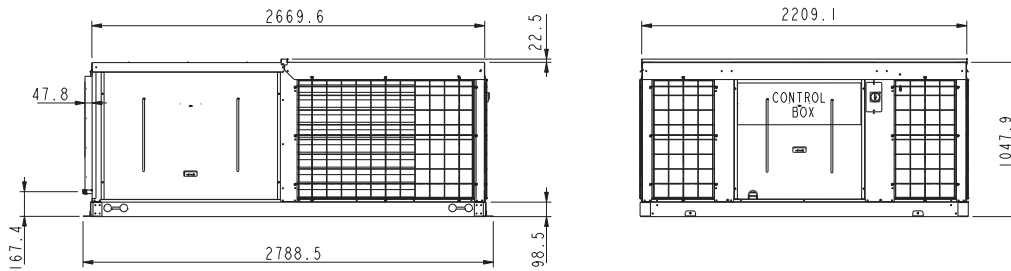
FOR HORIZONTAL DISCHARGE



Model: M5RT180BR

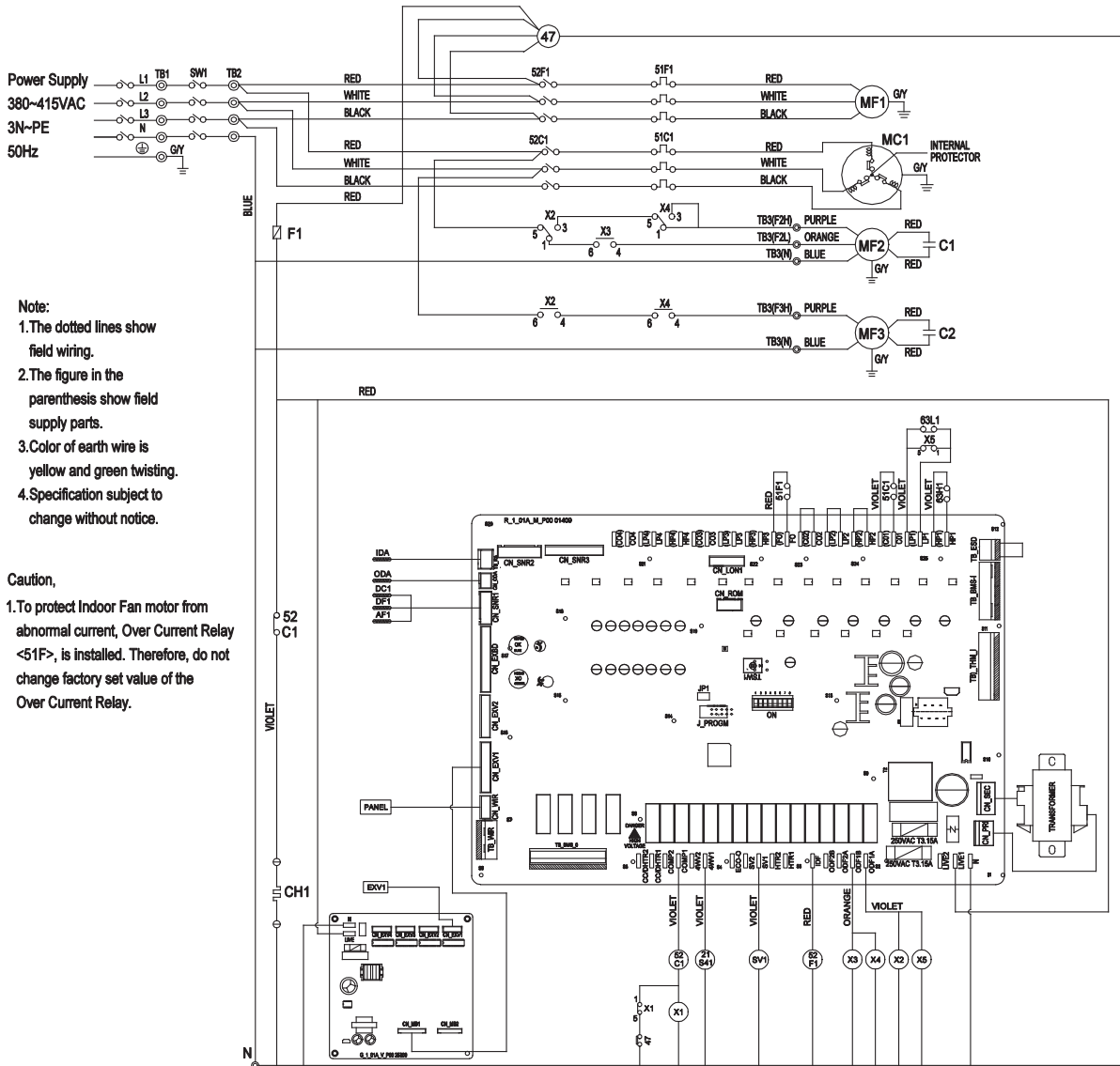


FOR HORIZONTAL DISCHARGE



Wiring Diagrams

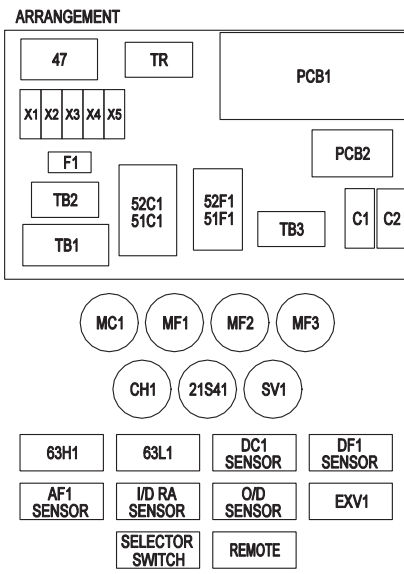
Model: M5RT90BR



- Note:
- 1.The dotted lines show field wiring.
 - 2.The figure in the parenthesis show field supply parts.
 - 3.Color of earth wire is yellow and green twisting.
 - 4.Specification subject to change without notice.

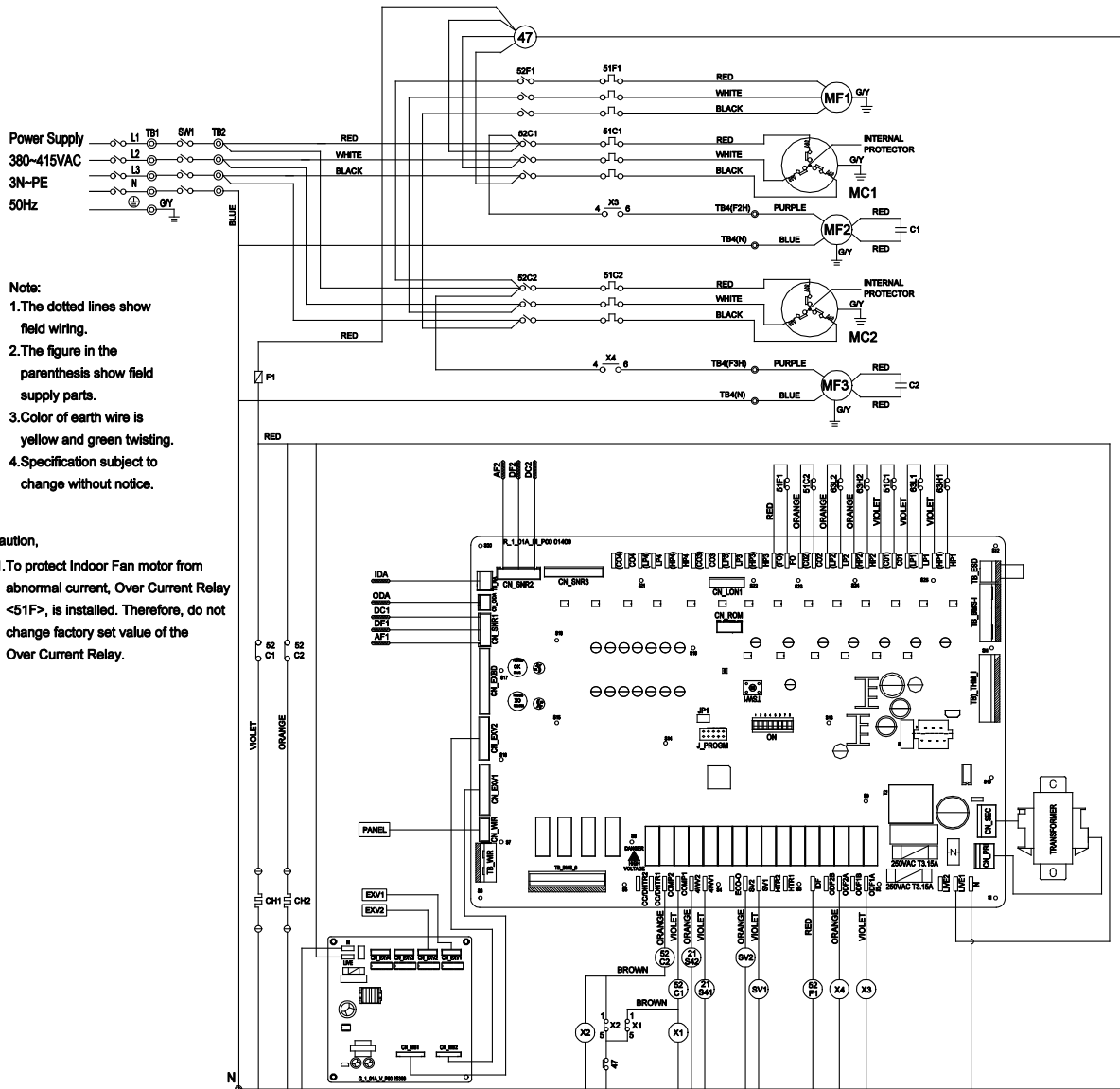
Caution,

- 1.To protect Indoor Fan motor from abnormal current, Over Current Relay <51F>, is installed. Therefore, do not change factory set value of the Over Current Relay.



SYMBOL	NAME
MC1	Compressor Motor
MF1	Fan Motor (Indoor)
MF2,3	Fan Motor (Outdoor)
52C1	Contactor (Compressor)
52F1	Contactor (Fan I/D)
51C1	Over Current Relay (Compressor)
TB1,2,3	Terminal Block
F1	Fuse
51F1	Over Current Relay (Fan I/D)
CH1	Crankcase Heater
47	Phase Protector
63H1	High Pressure Switch
63L1	Low Pressure Switch
C1,C2	Capacitor (O/D Fan Motor)
SV1	Solenoid Coil
21S41	4-Way Valve
X1,X2,X3,X4,X5	Auxiliary Relays
SW1	Selector Switch
TR	Transformer 230V~24V
TB_RA	I/D Return Air Sensor
CN_ODA	O/D Air Sensor
CN_SNR1	Sensor DC1, DF1 & AF1
CN_EXV1	Expansion Valve
CN_WIR	Panel Remote Controller

Model: M5RT120BR

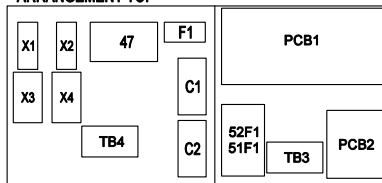


- Note:**
- 1.The dotted lines show field wiring.
 - 2.The figure in the parenthesis show field supply parts.
 - 3.Color of earth wire is yellow and green twisting.
 - 4.Specification subject to change without notice.

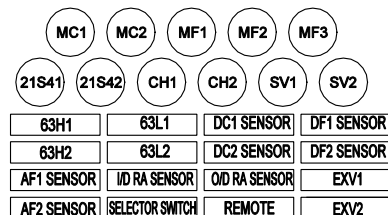
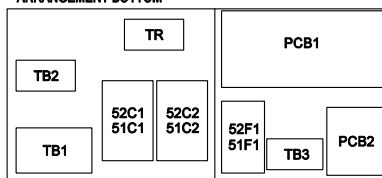
Caution,

- 1.To protect Indoor Fan motor from abnormal current, Over Current Relay <51F>, is installed. Therefore, do not change factory set value of the Over Current Relay.

ARRANGEMENT TOP

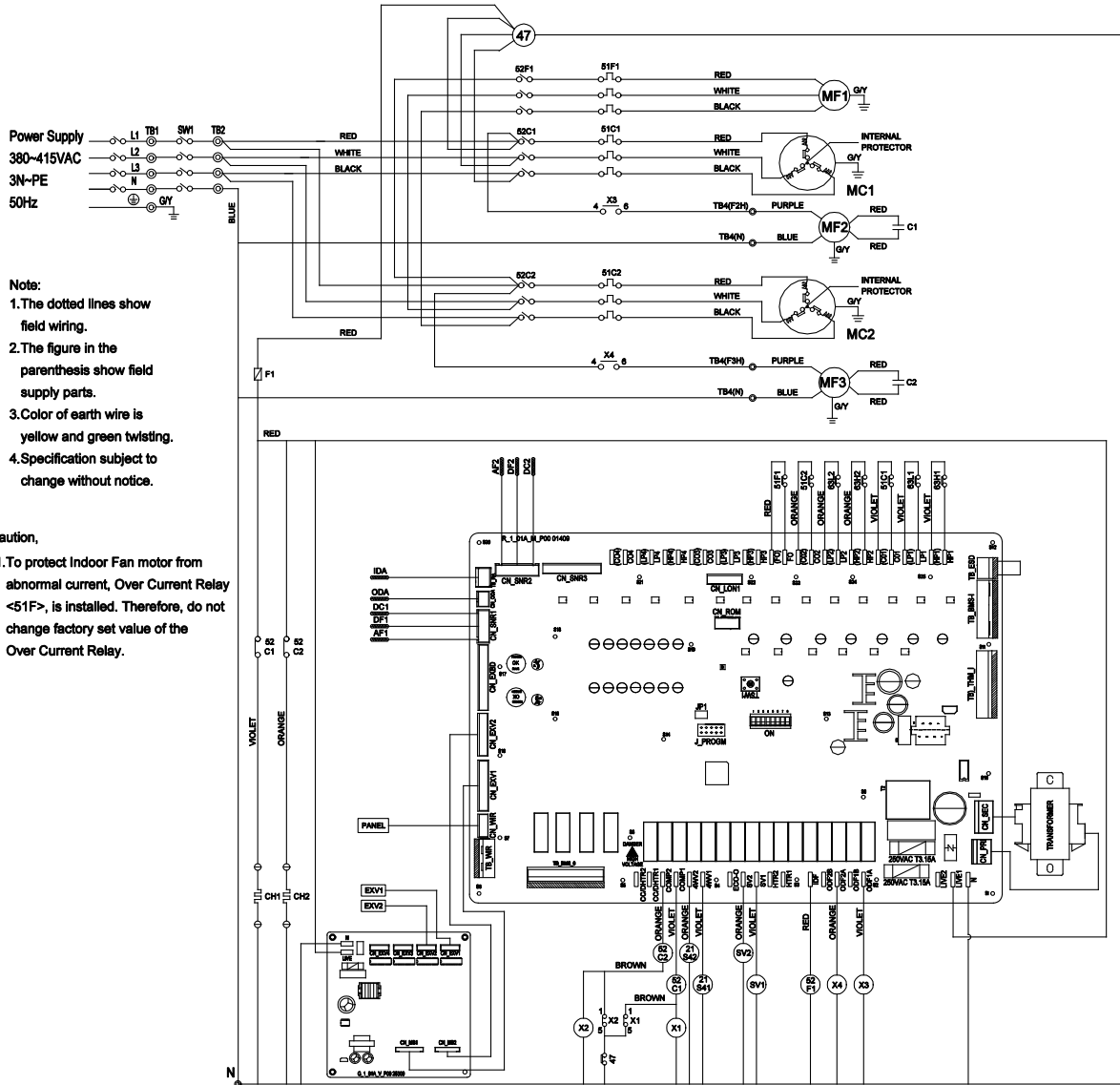


ARRANGEMENT BOTTOM



SYMBOL	NAME
MC1/MC2	Compressor Motor
MF1	Fan Motor (Indoor)
MF2,3	Fan Motor (Outdoor)
52C1/52C2	Contactors (Compressor)
52F1	Contactors (Fan I/D)
51C1/51C2	Over Current Relay (Compressor)
TB1,2,3,4	Terminal Block
F1	Fuse
51F1	Over Current Relay (Fan I/D)
CH1/CH2	Crankcase Heater
47	Phase Protector
63H1/63H2	High Pressure Switch
63L1/63L2	Low Pressure Switch
C1,C2	Capacitor (O/D Fan Motor)
SV1/SV2	Solenoid Coil
21S41/21S42	4-Way Valve
X1,X2,X3,X4	Auxiliary Relays
SV1	Selector Switch
TR	Transformer 230V-24V
TB_RA	I/D Return Air Sensor
CN_ODA	O/D Air Sensor
CN_SNR1	Sensor DC1, DF1 & AF1
CN_SNR2	Sensor DC2, DF2 & AF2
CN_EXV1/CN_EXV2	Expansion Valve
CN_WIR	Panel Remote Controller

Model: M5RT150BR

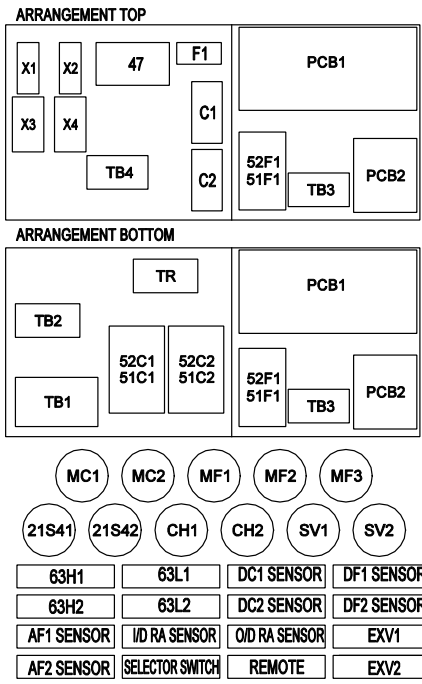


Note:

- The dotted lines show field wiring.
- The figure in the parenthesis show field supply parts.
- Color of earth wire is yellow and green twisting.
- Specification subject to change without notice.

Caution,

- To protect Indoor Fan motor from abnormal current, Over Current Relay <S1F>, is installed. Therefore, do not change factory set value of the Over Current Relay.



SYMBOL	NAME
MC1/MC2	Compressor Motor
MF1	Fan Motor (Indoor)
MF2,3	Fan Motor (Outdoor)
52C1/52C2	Contact (Compressor)
52F1	Contact (Fan I/D)
51C1/51C2	Over Current Relay (Compressor)
TB1,2,3,4	Terminal Block
F1	Fuse
51F1	Over Current Relay (Fan I/D)
CH1/CH2	Crankcase Heater
47	Phase Protector
63H1/63H2	High Pressure Switch
63L1/63L2	Low Pressure Switch
C1, C2	Capacitor (O/D Fan Motor)
SV1/SV2	Solenoid Coil
21S41/21S42	4-Way Valve
X1,X2,X3,X4	Auxiliary Relays
SW1	Selector Switch
TR	Transformer 230V~24V
TB_RA	I/D Return Air Sensor
CN_ODA	O/D Air Sensor
CN_SNR1	Sensor DC1, DF1 & AF1
CN_SNR2	Sensor DC2, DF2 & AF2
CN_EXV1/CN_EXV2	Expansion Valve
CN_WIR	Panel Remote Controller

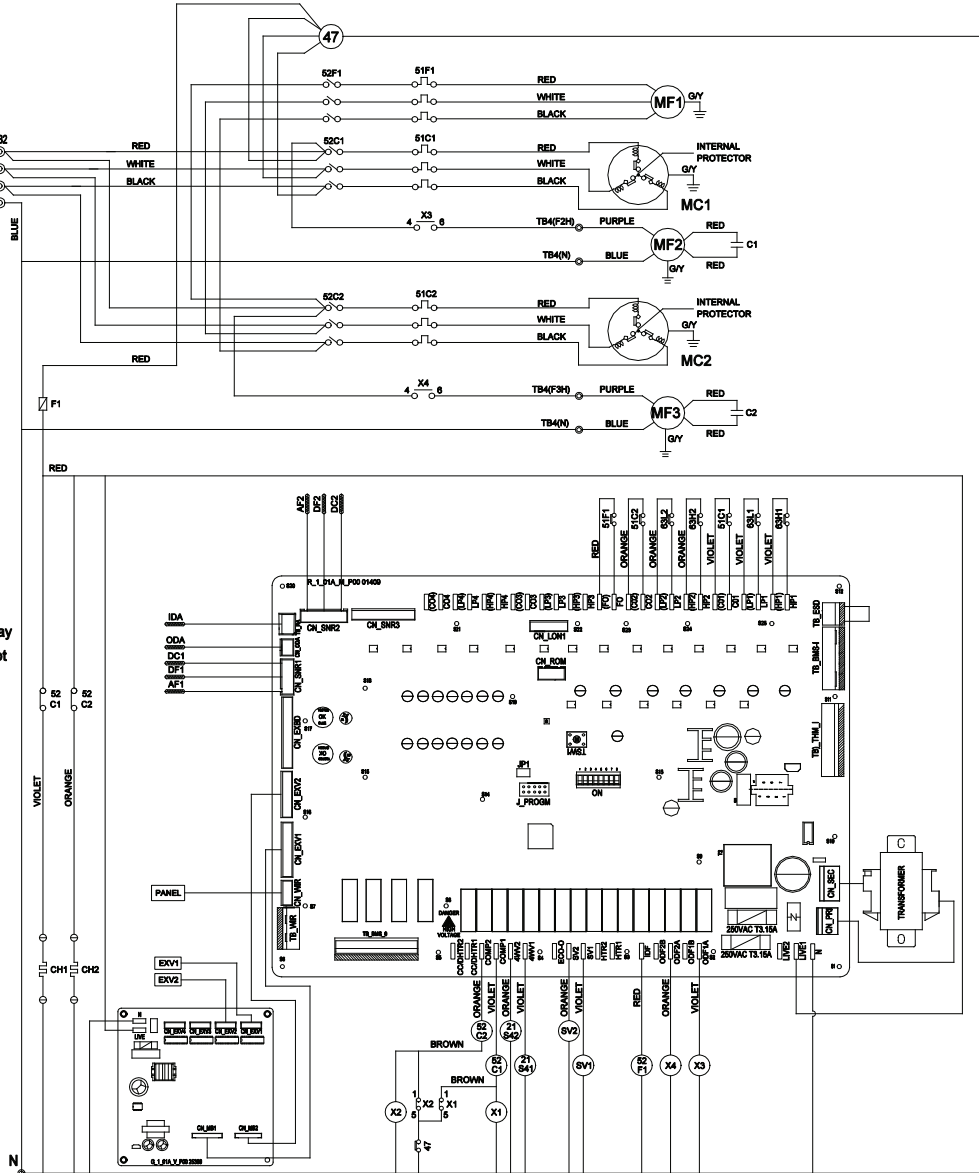
Model: M5RT180BR

Power Supply
380~415VAC
3N-PE
50Hz

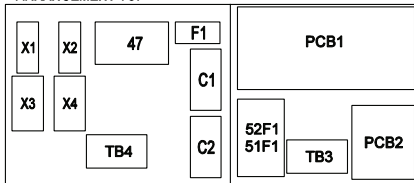
- Note:
- The dotted lines show field wiring.
 - The figure in the parenthesis show field supply parts.
 - Color of earth wire is yellow and green twisting.
 - Specification subject to change without notice.

Caution,

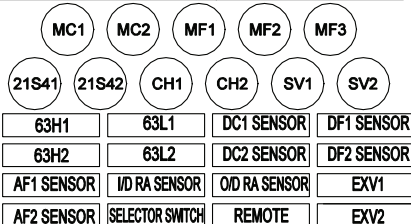
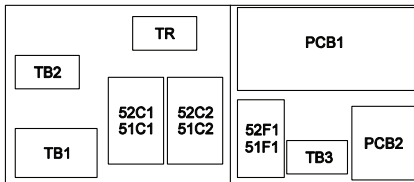
- To protect Indoor Fan motor from abnormal current, Over Current Relay <51F>, is installed. Therefore, do not change factory set value of the Over Current Relay.



ARRANGEMENT TOP



ARRANGEMENT BOTTOM



SYMBOL	NAME
MC1/MC2	Compressor Motor
MF1	Fan Motor (Indoor)
MF2,3	Fan Motor (Outdoor)
52C1/52C2	Contactor (Compressor)
52F1	Contactor (Fan I/D)
51C1/51C2	Over Current Relay (Compressor)
TB1,2,3,4	Terminal Block
F1	Fuse
51F1	Over Current Relay (Fan I/D)
CH1/CH2	Crankcase Heater
47	Phase Protector
63H1/63H2	High Pressure Switch
63L1/63L2	Low Pressure Switch
C1, C2	Capacitor (O/D Fan Motor)
SV1/SV2	Solenoid Coil
21S41/21S42	4-Way Valve
X1, X2, X3, X4	Auxiliary Relays
SW1	Selector Switch
TR	Transformer 230V~24V
TB_RA	I/D Return Air Sensor
CN_ODA	O/D Air Sensor
CN_SNR1	Sensor DC1, DF1 & AF1
CN_SNR2	Sensor DC2, DF2 & AF2
CN_EXV1/CN_EXV2	Expansion Valve
CN_WIR	Panel Remote Controller

Servicing & Maintenance

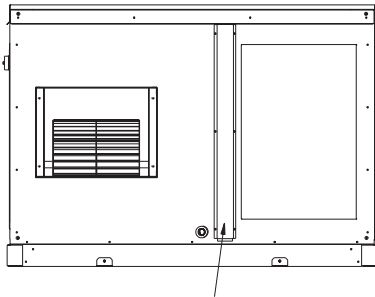
Service Of The Filter

- Remove any dust adhering to the filter by using a vacuum cleaner or wash in lukewarm water (below 40°C) with neutral cleaning detergent.
- Rinse the filter well and dry before placing it back onto the unit.
- Do not use gasoline, volatile substances or chemicals to clean the filter.
- Clean the filter at least once every 2 weeks. Or more frequently if necessary.

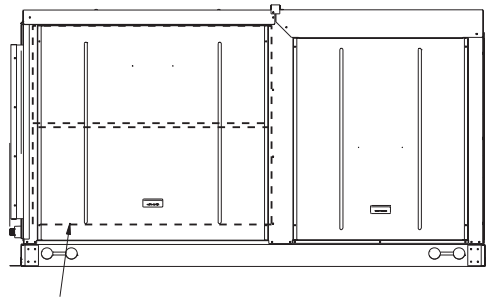
Filter Position

The filters are mounted in front of the indoor heat exchanger.

Unit shown in the diagram is M5RT90BR. Other models shall follow the same method.



Remove filter cover for filter service.

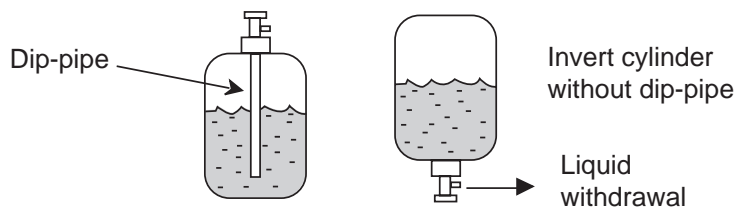


Alternatively, remove service panel for filter service.

Vacuumping And Charging

The rooftop package units are factory pre-charged with sufficient refrigerant. However, there may be a need for charge recovery during service and maintenance works. Therefore, some precautions must be taken to ensure optimum and trouble-free system operation:

- (i) The system should be thoroughly vacuumed to ensure no incompressible gas and moisture in the system.
- (ii) Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.
- (iii) The refrigerant should never be released directly into the environment.
- (iv) When charging R410A, ensure that only liquid is being withdrawn from the cylinder or can.



Normally, the R410A cylinder or can is being equipped with a dip-pipe for liquid withdrawal. However, if the dip-pipe is not available, invert the cylinder or can so as to withdraw liquid from the valve at the bottom.

CAUTION

- R410A must be charged as liquid. Usually R410A cylinder is equipped with a dip-pipe for liquid withdrawal. If there is no dip-pipe, the cylinder should be inverted so as to withdraw liquid R410A from the valve.
- Do not top-up when servicing leak, as this will reduce the unit performance. Vacuum the unit thoroughly and then charge the unit with fresh R410A according to the amount recommended in the specification.

Troubleshooting

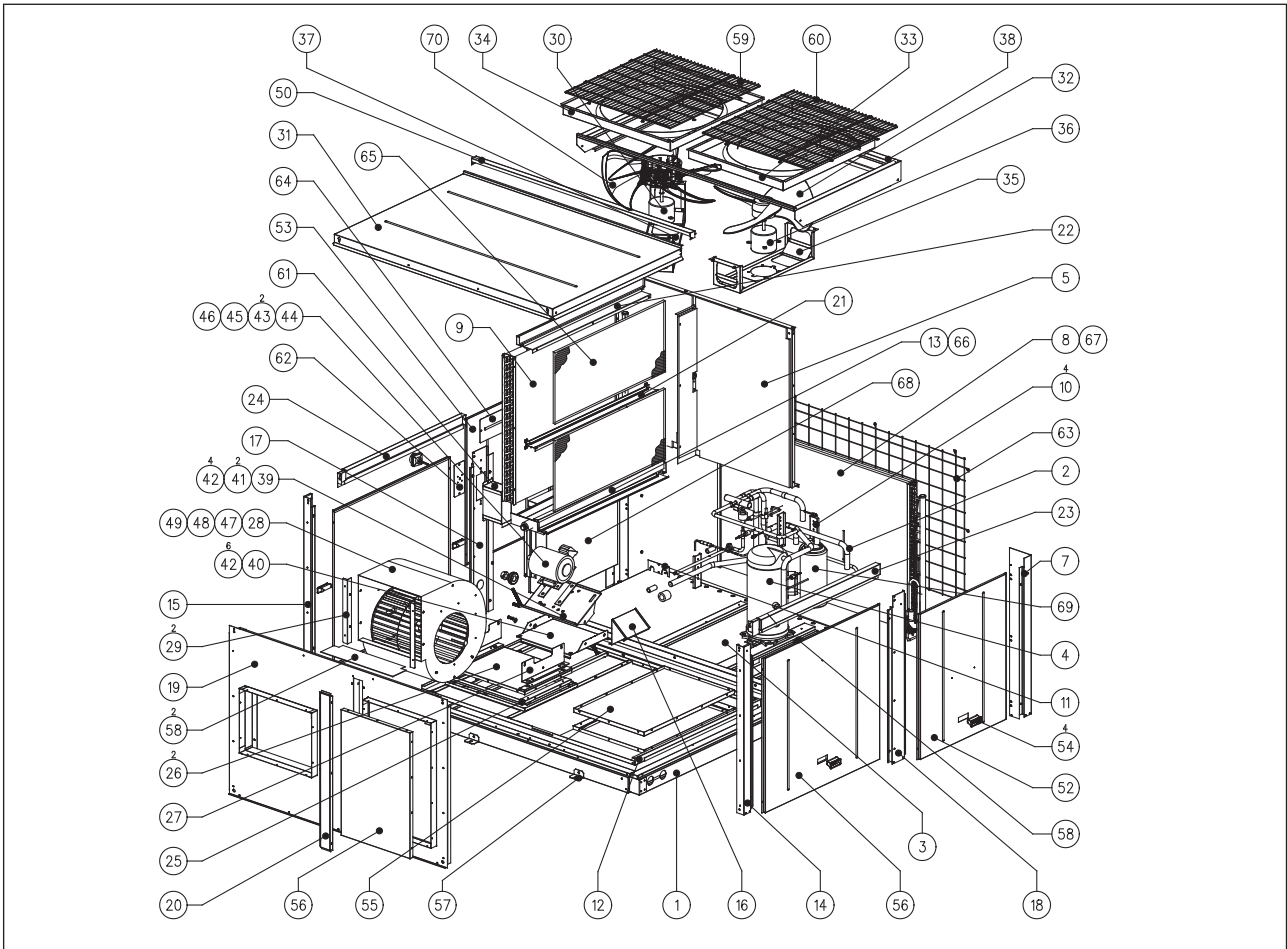
For any enquiries on spare part please contact your authorized dealer. If any malfunction of the air conditioner unit is noted, check the following fault conditions and causes for some simple troubleshooting tips.

Problem	Causes	Action
Unit does not run.	Power failure.	Press the [ON/OFF] after power restore.
	Fuse blown or circuit breaker tripped.	Replace fuse or reset circuit breaker.
	Power supply wiring phase incorrect.	Modify the wiring phase.
Compressor does not operate in 3 min after unit has started.	Protection against frequent starting.	Wait for 3 min for the compressor to start.
Air flow is low.	Filter is filled with dust and dirt.	Clean the filter.
	There are some obstacles at the air inlet or outlet of the units.	Remove obstacles.
Compressor operate continuously.	Dirty air filter.	Clean the air filter.
	Temperature setting is too low (for cooling). Temperature setting is too high (for heating).	Reset the temperature.
No cool air delivered during cooling cycle, or no hot air delivered during heating cycle.	Temperature setting is too high (for cooling). Temperature setting is too low (for heating).	Set the temperature lower. Set the temperature higher.
On heating cycle, no air delivered (M5RT90BR). Or, the delivered air is not warm enough (M5RT120BR).	Unit is in defrosting cycle.	Wait for a while. (It will be resumed after defrosting.)

If the fault persists, please call your authorized local dealer/serviceman.

Exploded View And Parts List

MODEL : M5RT90BR



No	Description	Part Number
1	Structure, Base Right Support, Structure, Base Assy, Structure Base Back Assy, Structure Base Front Structure, Base Left Structure, Center	R01014087427 R01014087430 R50014088634 R50014094739 R01014087428 R01014087432
2	Assy Tubing	
3	Assy, Outdoor Base Panel	R50014102424
4	Comp, Assy. ZP103KCE-TFD-522 Copeland	R50049024296
5	Assy, Separator 5RT90BR Ins., Separator 1 (T10.0x986.0x700.0) Ins, Separator 2 (T10.0x986.0x894.5) Ins, Separator 3 (T10.0x878.6x157.0)	R50014102162 R06014104788 R06014102165 R06014102164
6	Assy, Pillar Left Back	R50014101430
7	Assy, Pillar Right Back	R50014104438
8	Assy, Outdoor Coil	R50024101115
9	Assy, Indoor Coil	R50024101220
10	Support, Pipe	R01014087489
11	Cover, Separator	R01014107277
12	Assy, Indoor Base Panel Ins, Base Panel ID 1 (T10x1065.4x345.1) Ins, Base Panel ID 2 (T10.0x530.4x136.0) Ins, Base Panel ID 3 (T10.0x530.4x142.8) Ins, Base Panel ID 4 (T10.0x1056.4x51.0) Ins, Panel, Base ID 5 T10x505x375 (87523) Ins, Panel, Base ID 6 (T10x538x147.3) Ins, Panel, Base ID 7 (T10x1065.4x66) Ins, Panel, Base ID 8 T10x505x155 (87523) Insulation, Base/top (T3x20x990)	R50014105676 R06014105683 R06014105680 R06014105681 R06014105682 R06014087526 R06014087527 R06014087528 R06014087529 R06014096637
13	Assy, Drain Pan Ins, Drain Pan 1 (T10x1091x45)	R50014106579 R06014087577

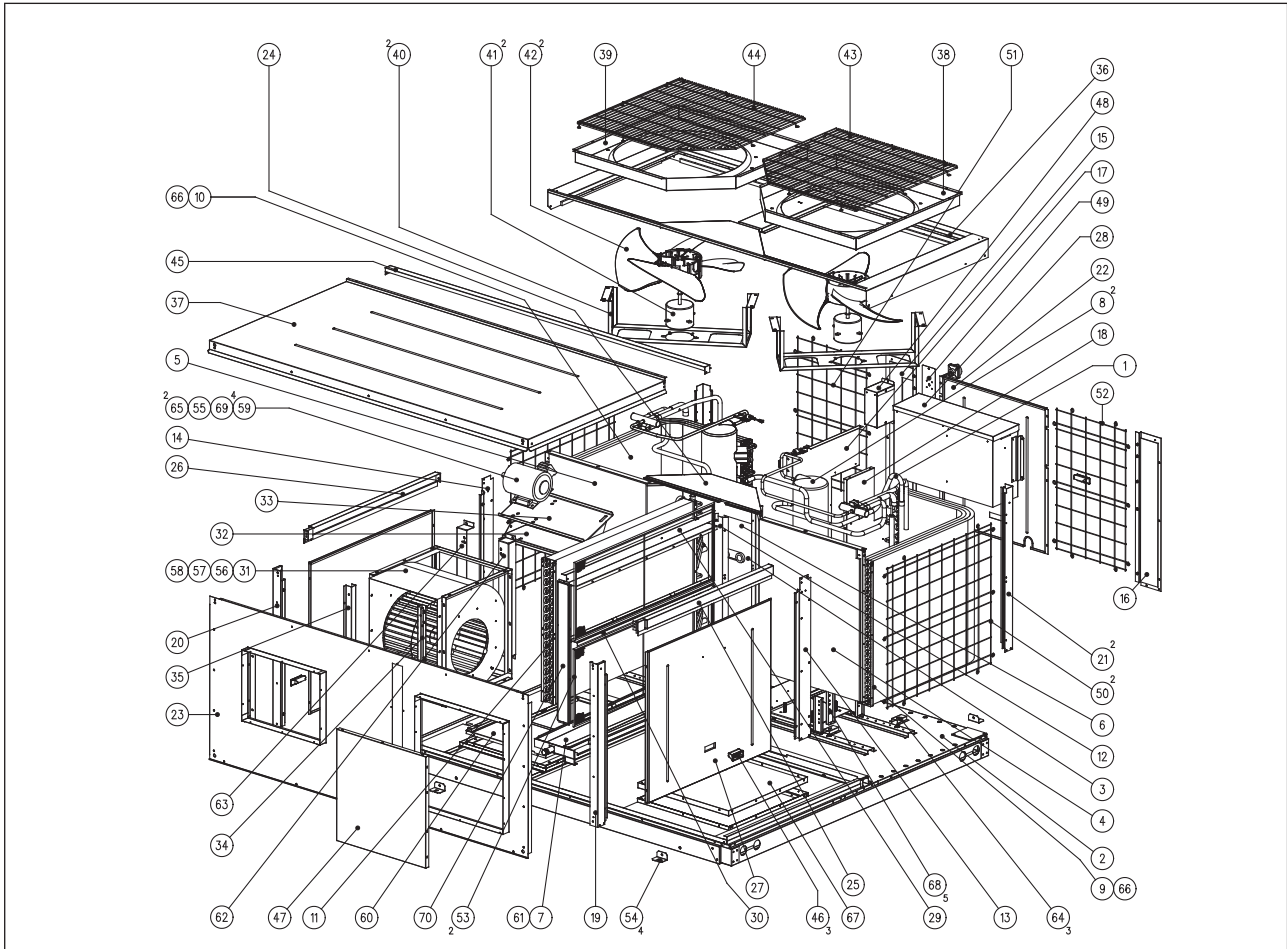
No	Description	Part Number
	Ins, Drain Pan 2 T10x1091x52 (87577) Ins, Drain Pan 3 T10x1091x155 (87577) Ins, Drain Pan 4 T3x175x40 (87577) Ins, Drain Pan 5 (T3.0x243.5x65.0)	R06014087578 R06014087579 R06014087580 R06014106581
14	Assy, Left Front Pillar Ins, Pillar Front 1 L/R (T10x1030x57) Ins, Pillar Front 2 Left (T10x1004x42) Ins., Centre Pillar L/R (T3.0x946x20)	R50014102070 R06014102172 R06014102173 R06014102664
15	Assy, Right Front Pillar Ins, Pillar Front 1 L/R (T10x1030x57) Ins, Pillar Front 2 Right (T10x1004x42) Ins., Centre Pillar L/r (T3.0x946x20)	R50014102175 R06014102172 R06014102177 R06014102664
16	Drain Pan, Secondary	R01014094198
17	Assy, Pillar Right Center Ins., Centre Pillar L/R (T3.0x946x20)	R50014101442 R06014102664
18	Assy, Pillar Left Center Ins., Centre Pillar L/R (T3.0x946x20)	R50014102167 R06014102664
19	Assy, Front Panel Ins., Front Panel 1 (T10.0x1000.0x255.0) Ins., Front Panel 2 (T10.0x545.0x342.0) Ins., Front Panel 3 (T10.0x545.0x251.0) Ins., Front Panel 4 (T10.0x1000.0x25.0) Ins., Front Panel 5 (T10.0x1000.0x45.0) Ins., Front Panel 6 (T10.0x510.0x148.0) Ins., Front Panel 7 (T10.0x510.0x70.0) Ins., Front Panel 8 (T10.0x937.0x42.0) Ins., Front Panel 9 (T10.0x887.0x54.0) Ins., Front Panel 10 (T10.0x548.0x55.0) Ins., Front Panel 11 (T10.0x426.0x55.0) Ins., Front Panel 12 (T10.0x127.0x62.5)	R50014102232 R06014102234 R06014102235 R06014105697 R06014102236 R06014105557 R06014105558 R06014105698 R06014102239 R06014105699 R06014105700 R06014105701 R06014102237

No	Description	Part Number
20	Cover, Filter Ins., Cover Filter (T10.0x958.0x72.0)	R01014105076 R06014105077
21	Assy, Filter Rail Center	R50014087510
22	Assy, Return Supply Separator Ins,s'rator,rtn Sply1 T10.0x1095x49 Ins,s'rator,rtn Sply2 T10x900x20 (87535) Ins,s'rator,rtn Sply3 T10x1035x15(87535) Ins,s'rator,rtn Sply4 T3x1095x12 Ins,s'rator,rtn Sply4 T3x1095x12	R50014102241 R06014102243 R06014087536 R06014087537 R06014107118 R06014107118
23	Channel, Indoor Top Left (P087554) Ins, Channel, ID Top 1 (T10x1040.5x62) Ins, ID Top Channel2 T10x59x62mm (92635)	R01014087454 R06014087556 R06014087557
24	Channel, Indoor Top Right (P087559) Ins, Channel, ID Top 1 (T10x1040.5x62) Ins, ID Top Channel2 T10x59x62mm (92635)	R01014087455 R06014087556 R06014087557
25	Assy, Support Blower B	R50014087519
26	Assy, Support, Blower A (P087561) Ins, Blower Support T10.0x468.0x400.0mm	R50014087517 R06014087562
27	Support, Blower Plate	R01014087480
28	Blower, AT15/15 Nicotra NA-DX1501.02	R50034023308
29	Assy, Fan Frame	R50014093277
30	Motor,M5RR90BR-501	R03039033224
31	Panel, Top Indoor (P087568) Ins., ID Top Panel 1 (T10x1085x850) Ins., ID Top Panel2 T10x1085x685 (87575)	R01014087461 R06014087575 R06014087576
32	Assy, OD Top Panel Ins., OD Top Panel 1 (T10.0x1395.0x20.0) Ins., OD Top Panel 2 (T3.0x1625.5x27.0)	R50014102436 R06014102443 R06014106602
33	Orifice, Right	R01014102430
34	Orifice, Left (681mm Fan)	R01014102431
35	Assy, Motor Bracket OD Right	R50014103202
36	Motor,M5RT90BR-502	R03039033225
37	Assy, Motor Bracket OD (681mm Fan)	R50014105294
38	Fan Propeller, 24" Oyl SL35/40/50C	R03013028160
39	Base, Motor Lower	R01014094100
40	Base, Motor Upper	R01014094101
41	Screw	
42	Washer	
43	Sheet, Rubber 38x165mm	R11024027389
44	Motor, 11KTML 1.1kW P714958x01	R03039021694
45	Pulley, 1 SPZ 71/1108 Reptech	R03049030767
46	Pulley, Bush 1108/24	R03044039695

No	Description	Part Number
47	Pulley, 1 SPZ 160/1610	R03044039709
48	Pulley, Bush 1610/25	R03044039698
49	Belt, V SPZ 1450	R03059029411
50	Cover Top Panel Ins, Cover Top Panel (T3x1636x40)	R01014105555 R06014098833
51	Panel, Service L/R Ins., Side Panel (T10.0x1000.0x959.0)	R01014102661 R06014102662
52	Assy, Panel Service Comp.	R50014103181
53	Panel Service Control Box	R01014106567
54	Handling Handle SL/MSS	R12014015328
55	Panel Return Cover Ins., Side Panel (T10.0x1000.0x959.0)	R01014105691 R06014102662
56	Panel Return Cover 2 Ins., Side Panel (T10.0x1000.0x959.0)	R01014106574 R06014102662
57	Fixture	R01014009584
58	Support, ACC	R01014105655
59	Fan, Guard Right	R01024102432
60	Fan, Guard Left	R01024102433
61	Assy, Main Isolator	R50014105228
62	Plate, Cover Isolator	R01014105311
63	Coil Guard Back, 5RT90B(R)	R01024105109
64	Plate, Cover	R01014105561
65	Air Filter,saranet 880x467 5RT90BR	R03084106589
66	CAP S655002H03	R02049007584
67	Refrigerant	
68	Assy, Control Box UY09 (5RT90BR) Assy Control Module UQ250 (5RT90BR) Cont, PAK-26JT-FC,2N0,2NC,AC240V,31A TOGA Cont,PAK-6JT-S628,1NO,AC240V,2.8A,TOGAMI Ter. Block, T3011-5P-P1.4 60A W865569G05 Ter. Block, T3011-4P-C1.1 60A Terminal Block, T3020A-1-7P-C1.0 20A Phase Protector, PP1.03 No Sensor Export Capacitor, CMPSR 15UF/450VAC Shizuki Relay, LY2F AC220/240V Omron P421132x01	R50044106876 R50049033075 R04039013412 R04039014969 R04119001486 R04114015056 R04114019821 R04089018834 R04029026770 R04059000668
69	Accumulator,4.5l R410A AC-PA153025	R02119032872
70	Fan Propeller,681mm P68111S Kohbunshi	R03019033202
Part Not in Diagram		
	Handset, Wired Rooftop Panel Daikin Press Switch, 18psi N/C Export Nantong Press Switch,600psi N/C Exp ACB4UB70W SG Filter Drier, Bfk 305S Alco	R04084107460 R04109015125 R04109031316 R02164034985

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MODEL : M5RT120BR



No	Description	Part Number
1	Assy Tubing	
2	Assy, Base Pan Main	R50084107170
3	Assy, Separator Ins, Separator 3 Ins, Separator 3b Ins, Separator 3c Ins, Separator 3d Ins, Separator 3e Ins, Separator 3f	R50014101962 R06014101995 R06014101996 R06014101997 R06014101998 R06014101999 R06014102000
4	Separator 1 Ins, Separator 1 Ins, Separator 4	R01014101973 R06014102001 R06014102002
5	Assy, Separator 2 Ins, Separator 2 Ins, Separator 4	R50014101963 R06014102003 R06014102002
6	Cover, Separator Big Ins, Cover Separator	R01014105835 R06014105905
7	Assy, Drain Pan Ins, Drain Pan 1a T3.0x1233.0x45.0mm Ins, Drain Pan 1b Ins, Drain Pan 2 T3.0x1308.0x71.0mm Ins, Drain Pan 3 T3.0x1308.0x220.0mm Ins, Drain Pan 4 T3.0x271.0x40.0mm Ins, Drain Pan 5 T3.0x275.0x45.0mm	R50014105778 R06014092639 R06014105874 R06014092640 R06014092641 R06014092642 R06014092643
8	Compressor, Assy ZP67KCE-TFD-522 Copeland	R50049025385
9	Assy, Outdoor Coil R (5RT120BR)	R50024101355
10	Assy, Outdoor Coil L (5RT120BR)	R50024101356
11	Assy, Indoor Coil (5RT120BR)	R50024101357
12	Attachment 1, Separator	R01014105831
13	Assy, Pillar Centre Left Ins, Center Pillar L/R	R50014103321 R06014102837
14	Assy, Pillar Centre Right Ins, Center Pillar L/R	R50014103320 R06014102837

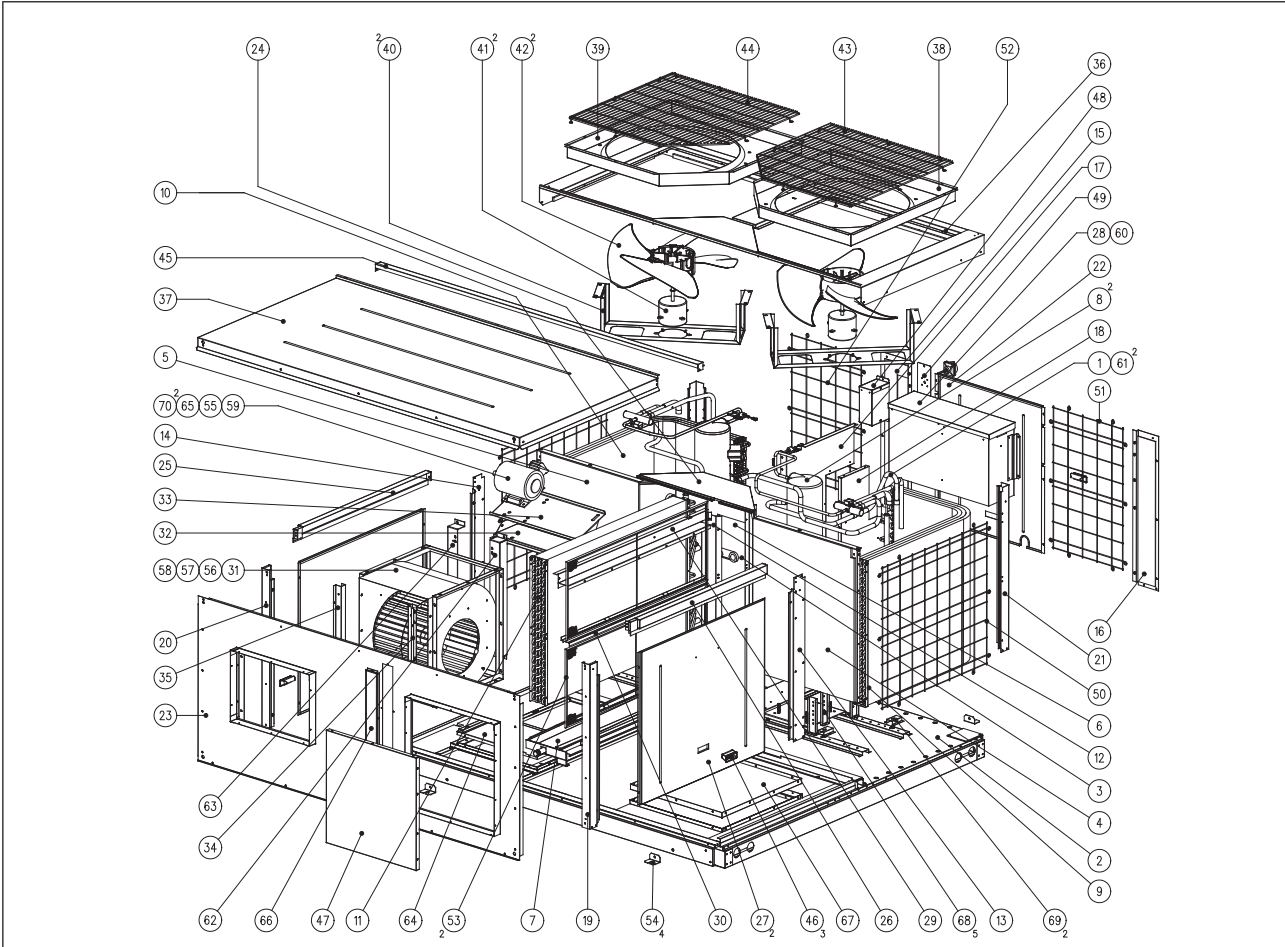
No	Description	Part Number
15	Assy, Pillar Rear Centre Right Ins, Rear Center Right	R50014102263 R06014106775
16	Assy, Pillar Rear Centre Left Ins, Pillar Rear Center L	R50014102262 R06014105885
17	Assy, Separator OD	R50014107154
18	Assy, Separator OD. Small	R50014103192
19	Assy., Left Front Pillar Ins., Front Pillar 1 Ins., Front Pillar 2 Ins, Center Pillar L/R	R50014101968 R06014102006 R06014102007 R06014102837
20	Assy., Right Front Pillar Ins., Front Pillar 1 Ins., Front Pillar Right Ins, Center Pillar L/R	R50014101969 R06014102006 R06014102009 R06014102837
21	Pillar, Back L/R	R01014101983
22	Panel, Service Compressor	R01014105828
23	Assy, Front Panel Ins, Front Panel 1 Ins, Front Panel 2 Ins, Front Panel 3 Ins, Front Panel 4 Ins, Front Panel 5 Ins, Front Panel 6 Ins, Front Panel 7 Ins, Front Panel 8 Ins, Front Panel 9	R50014105789 R06014105893 R06014105895 R06014092632 R06014105900 R06014105897 R06014105888 R06014105889 R06014105901 R06014105892
24	Assy, Partition Top Ins, Partition Cover Top	R50014105788 R06014105881
25	ID Channel, Top Left Ins, ID Top Channel 1 Ins, ID Top Channel 2 Ins, ID Top Channel 3 Ins, ID Top Channel 4	R01014105811 R06014105880 R06014105877 R06014105875 R06014105876

No	Description	Part Number
26	ID Channel, Top Right Ins, ID Top Channel 1 Ins, ID Top Channel 2 Ins, ID Top Channel 3 Ins, ID Top Channel 4	R01014105812 R06014105880 R06014105877 R06014105875 R06014105876
27	Panel, Side Front L/R Ins, Side Panel L/R	R01014105844 R06014105921
28	Assy, Control Box UY12 (5RT120BR)	R50044106879
29	Assy, Filter Rail Top	R50014102014
30	Assy, Filter Rail Center	R50014105779
31	Blower, Sirocco At 15-15SC Nicotra	R03029030445
32	Base, Motor Lower	R01014103057
33	Base, Motor Upper	R01014103058
34	Assy, Fan Frame Attachment L (97563)	R50014100296
35	Assy, Fan Frame Attachment R	R50014097563
36	Assy, Rear Top Panel Ins, OD Top Panel 2 Ins, OD Top Panel 5 T10.0x610x20.0mm	R50014101970 R06014105883 R06014101119
37	Top Panel, Indoor Ins, ID Top Panel 1 Ins, ID Top Panel 2	R01014105809 R06014105882 R06014107332
38	Orifice, Left	R01014101778
39	Orifice Right	R01014101779
40	Assy, Motor Bracket OD (681mm Fan)	R50014105294
41	Motor, M5RT120BR-501	R03039033223
42	Fan Propeller, 681mm P68111S Kohbunshi	R03019033202
43	Fan Guard Left	R01024102016
44	Fan Guard Right	R01024102017
45	Cover, Top Panel Ins, Cover Top Panel	R01014106139 R06014106852
46	Handling Handle SI/mss	R12014015328
47	Panel, Return Cover 2 Ins, Panel Cover 2	R01014105819 R06014105884

No	Description	Part Number
48	Assy, Main Isolator	R50014105228
49	Plate, Cover Isolator	R01014105311
50	Coil Guard, Side	R01024105468
51	Coil Guard, Back (Right)	R01024105467
52	Coil Guard, Back (Left)	R01024107295
53	Air Filter, saranet 1126x385 5RT120BR	R03084106592
54	Fixture	R01014009584
55	Pulley, Bush 1108/24	R03044039695
56	Pulley, Bush 1610/25	R03044039698
57	Pulley, 1 Spz 160/1610	R03044039709
58	Belt, V SPZ 1600	R03059013758
59	Motor, 15ktml 1.5kw P714959x01	R03039021696
60	Assy, Blower Support Bottom (U092563) Ins, Blower Support T10.0x468.0x400.0mm	R50014092795 R06014087562
61	Cap S655002h03	R02049007584
62	Assy, Support Down Flow L	R50014098461
63	Assy, Support Down Flow R	R50014098462
64	Assy, Support Accumulator	R50014107129
65	Sheet, Rubber 38x165mm	R11024027389
66	Refrigerant	
67	Panel, Return Cover Ins, Panel Cover 1	R01014105818 R06014107396
68	Support, Pipe	R01014087489
69	Pulley, 1 SPZ 71/1108 Reptech	R03049030767
70	Cover, Filter Ins, Cover Filter	R01014105845 R06014105920
Part Not In Diagram		
	Accumulator, 4.5l R410a Ac-pa153025 Filter Drier, Dmb 084s Biflow Danfoss Handset, Wired Rooftop Panel Daikin Press Switch, 18psi N/c Export Nantong Press Switch, 600psi N/c Exp Acb4ub70w Sg	R02119032872 R02169018760 R04084107460 R04109015125 R04109031316

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MODEL : M5RT150BR



No	Description	Part Number
1	Assy Tubing	
2	Assy, Base Pan Main	R50084107170
3	Assy, Separator Ins, Separator 3 T10.0 X 924.2 X 299.0 Ins, Separator 3b T10.0x 924.2 X 34.0 Ins, Separator 3c T10.0 X 924.2 X 111.0 Ins, Separator 3d T10.0 X 924.2 X 146.0 Ins, Separator 3e T3.0 X 961.2 X 23.0 Ins, Separator 3f T3.0 X 961.2 X 23.0	R50014105793 R06014105909 R06014105910 R06014105911 R06014105912 R06014105906 R06014105907
4	Separator 1 Ins, Separator 1 T10.0x949.2x689.0 Ins, Separator 4 T10.0x919.2x188.4	R01014105838 R06014105913 R06014105914
5	Separator 1 Ins, Separator 2 T10.0x949.2x692.0 Ins, Separator 4 T10.0x919.2x188.4	R01014105838 R06014105915 R06014105914
6	Cover, Separator Big Ins,cover Separator T10.0x739.2x 271.2	R01014105834 R06014105904
7	Assy, Drain Pan Ins, Drain Pan 1a T3.0x1233.0x45.0mm Ins, Drain Pan 1b T3.0x1188x54.2 Ins, Drain Pan 2 T3.0x1308.0x71.0mm Ins, Drain Pan 3 T3.0x1308.0x220.0mm Ins, Drain Pan 4 T3.0x271.0x40.0mm Ins, Drain Pan 5 T3.0x275.0x45.0mm	R50014105778 R06014092639 R06014105874 R06014092640 R06014092641 R06014092642 R06014092643
8	Compressor,assy,zp83kce-1fd,copeland	R50049031656
9	Assy, Outdoor Coil R (5RT150BR)	R50024101781
10	Assy, Outdoor Coil L (5RT150BR)	R50024101792
11	Assy, Indoor Coil 5RT150BR	R50024101793
12	Attachment 1, Separator	R01014105830
13	Assy., Pillar Center Left Ins, Centre Pillar L/R T3.0x926.2x20.0	R50014108101 R06014108018
14	Assy., Pillar Centre Right Ins, Centre Pillar L/R T3.0x926.2x20.0	R50014101965 R06014108018

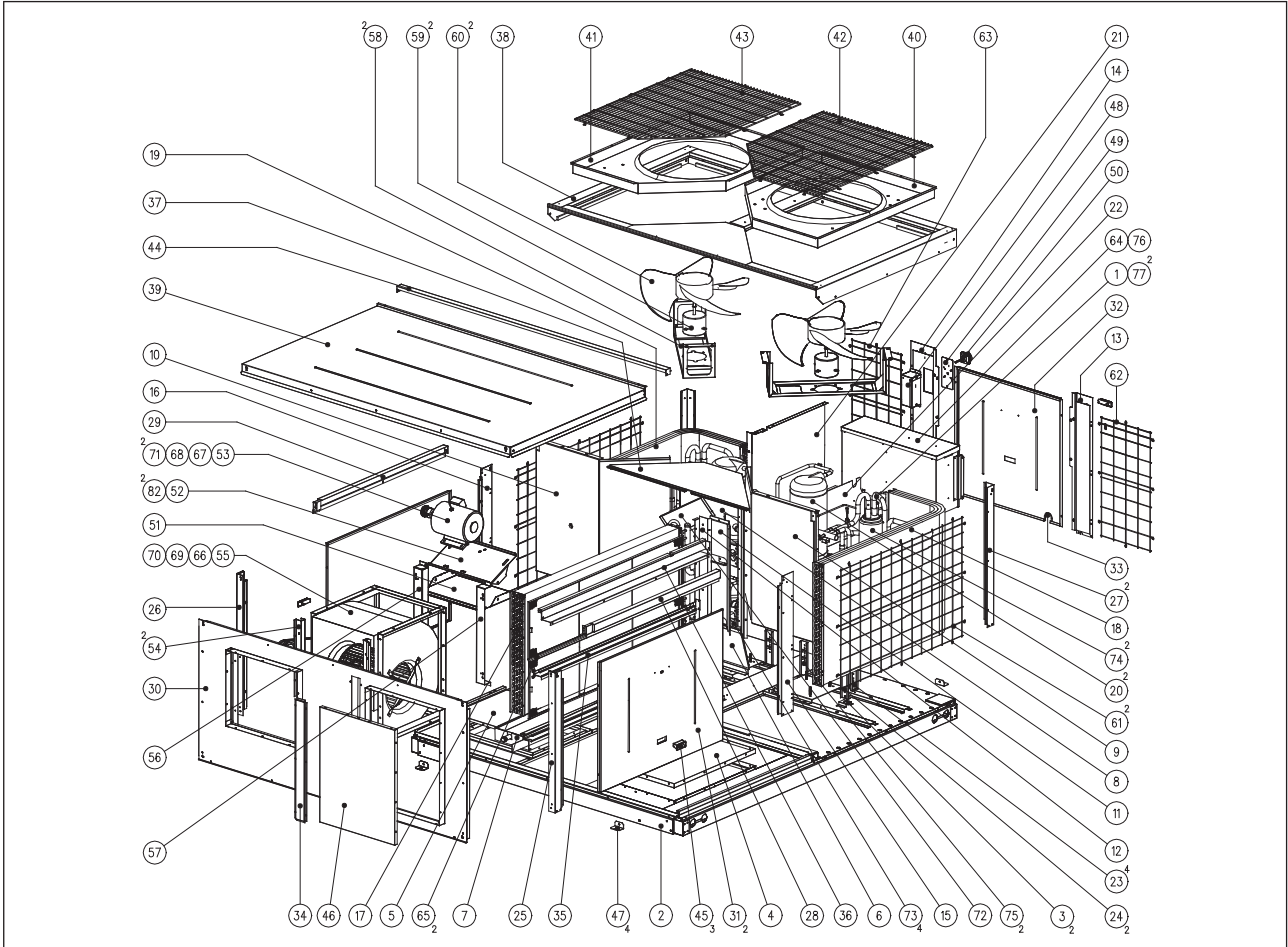
No	Description	Part Number
15	Assy, Pillar Rear Centre Right Ins.pillar Rear CTR R (T3.0x916.2x168.8)	R50014101966 R06014105886
16	Assy, Pillar Rear Centre Left Ins., Pillar Rear CTR L T3.0x916.2x118.8	R50014101967 R06014107699
17	Assy, Od Separator	R50014101993
18	Assy, Separator Outdoor Small	R50014107246
19	Assy, Left Front Pillar Ins,front Pillar 1 T10.0 X 1010.2 X 57.0 Ins, Front Pillar L T10.0 X 984.2 X 42.0 Ins, Centre Pillar L/R T3.0x926.2x20.0	R50014105795 R06014105916 R06014105917 R06014108018
20	Assy, Right Front Pillar Ins,front Pillar 1 T10.0 X 1010.2 X 57.0 Ins, Front Pillar R T10.0 X 984.2 X 42.0 Ins, Centre Pillar L/R T3.0x926.2x20.0	R50014105796 R06014105916 R06014105918 R06014108018
21	Pillar, Back L/R	R01014105843
22	Panel, Service Compressor	R01014105829
23	Assy, Front Panel Ins, Front Panel 1 T10x980.1x446.4 Ins, Front Panel 2 T10.0x548.0x328.2 Ins, Front Panel 3 T10.0x548x239.8 Ins, Front Panel 4 T10.0x980.1x92.0 Ins, Front Panel 5 T10.0x980.1x196.0 Ins, Front Panel 6 T10.0 X 609.1 X 233.3 Ins, Front Panel 7 T10x609.1x120.8 Ins, Front Panel 8 T10.0 X 980.1 X 205.7 Ins, Front Panel 9 T10.0 X 865.3 X 61.0	R50014105790 R06014105894 R06014105895 R06014092632 R06014105898 R06014105899 R06014105887 R06014105890 R06014105902 R06014105891
24	Assy, Partition Top Ins, Partition Cover Top	R50014105788 R06014105881
25	ID Channel, Top Right Ins, ID Top Channel 1 Ins, ID Top Channel 2 Ins, ID Top Channel 3 Ins, ID Top Channel 4	R01014105812 R06014105880 R06014105877 R06014105875 R06014105876

No	Description	Part Number
26	ID Channel, Top Left Ins, ID Top Channel 1 Ins, ID Top Channel 2 Ins, ID Top Channel 3 Ins, ID Top Channel 4	R01014105811 R06014105880 R06014105877 R06014105875 R06014105876
27	Panel, Side Front L/R Ins, Side Panel L/R T10.0 X 954.2 X 988	R01014102724 R06014102836
28	Assy, Control Box UQ450 (5RT150BR) Assy Control Module UQ400 (5RT150BR) Contactor,PAK-21JT-FC 1no 1nc 18a Togami Cont,PAK6JTH-S628,1no,240v,4.0~.6.0a Ter Block, T3011-5p-c1.4 60a W865569g05 Ter Block, T3011-4p-c1.1 60a Terminal Block, T3020a-1-4p-c1.0 20a Phase Protector, Pp1.03 No Sensor Export Capacitor, Cmpsr 15uf/450vac Shizuki Relay, G7I-1a-tub 200-240v Omron Relay, LY2F AC220/240v Omron P421132x01	R50044106880 R50049033077 R04039033800 R04039020303 R04119001486 R04114015056 R04114013586 R04089018834 R04029026770 R04059029497 R04059000668
29	Assy, Filter Rail Top	R50014102014
30	Assy, Filter Rail Center	R50014105779
31	Blower, Sirocco At 15-15sc Nicotra	R03029030445
32	Base, Motor Lower	R01014103057
33	Base, Motor Upper	R01014103058
34	Assy, Fan Frame Attachment L (97563)	R50014100296
35	Assy, Fan Frame Attachment R	R50014097563
36	Assy, Rear Top Panel Ins, OD Top Panel 2 T10.0x810.0x20.0 Ins, OD Top Panel 3 Ins, OD Top Panel 5	R50014101970 R06014105883 R06014107946 R06014108600
37	Top Panel, Indoor Ins, OD Top Panel 2 T10.0x810.0x20.0 Ins, OD Top Panel 3 Ins, OD Top Panel 5	R01014105809 R06014105883 R06014107946 R06014108600
38	Orifice, Left	R01014101778
39	Orifice Right	R01014101779
40	Assy, Motor Bracket Od (681mm Fan)	R50014105294
41	Motor,M5RT150BR-501 510w	R03039033866
42	Fan Propeller,681mm P68l11s Kohbunshi	R03019033202

No	Description	Part Number
43	Fan Guard Left	R01024102016
44	Fan Guard Right	R01024102017
45	Cover, Top Panel Ins, Cover Top Panel	R01014106139 R06014106852
46	Handling Handle SI/MSS	R12014015328
47	Panel, Return Cover 2 Ins, Panel Cover 2	R01014105819 R06014105884
48	Assy, Main Isolator	R50014105228
49	Plate, Cover Isolator	R01014105311
50	Coil Guard, Side	R01024105465
51	Coil Guard, Back Right	R01024105466
52	Coil Guard, Back Left	R01024107867
53	Air Filter,saranet 1126x435 5RT150BR	R03084106593
54	Fixture	R01014009584
55	Pulley Bush	
56	Pulley Bush	
57	Pulley, 2 Spz 160/2012	R03044039719
58	Belt, V Spz 1500	R03059013756
59	Motor, 2.2kw 50hz L P714607x01	R03039004618
60	Handset, Wired Rooftop Panel Daikin	R04084107460
61	Filter Drier, Bfk 165s Alco	R02164034987
62	Assy, Support Down Flow L	R50014098461
63	Assy, Support Down Flow R	R50014098462
64	Assy, Blower Suport Bottom (U092563) Ins, Blower Support T10.0x468.0x400.0mm	R50014092795 R06014087562
65	Sheet, Rubber MTGT5x38x180mm R331F133H02	R11024002528
66	Cover, Filter Ins, Cover Filter T10.0 X 66.6 X 784.0	R01014105846 R06014105920
67	Panel, Return Cover Ins, Panel Cover 1	R01014105818 R06014107396
68	Support, Pipe	R01014087489
69	Assy, Support Accumulator	R50014107129
70	Pulley, 2 Spz 80/1210	R03044039713
Part Not In Diagram		
	Accumulator,4.5l R410a Ac-pa153025 Press Switch, 18psi N/C Export Nantong Press Switch,600psi N/C	R02119032872 R04109015125 R04109031316

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MODEL : M5RT180BR



No	Description	Part Number
1	Assy Tubing	
2	Assy Base Pan Main	R50084107170
3	Plate, Support Solenoid Valve	R01014105529
4	Panel Return Cover Ins, Panel Cover Ins, Panel Cover	R01014105872 R06014105873 R06014105873
5	Assy, Blower Support Bottom Ins, Blower Support	R50014102989 R06014102994
6	Separator Cover Bottom Ins, Separator Cover 1 Ins, Separator Cover 2	R01014105456 R06014105457 R06014105458
7	Assy, Drain Pan Ins, Drain Pan 1a Ins, Drain Pan 1b Ins, Drain Pan 2 Ins, Drain Pan 3 Ins, Drain Pan 4 Ins, Drain Pan 5	R50014105167 R06014105176 R06014105179 R06014105177 R06014105178 R06014105359 R06014105360
8	Assy., Separator 5RT180B(R) Ins., Separator 3a Ins., Separator 3b Ins., Separator 3c Ins., Separator 3d Ins., Separator 3e Ins., Separator 3f	R50014102079 R06014102080 R06014102081 R06014102082 R06014102083 R06014102084 R06014102085
9	Separator 1 Ins., Separator 1a Ins., Separator 1&2	R01014102089 R06014102090 R06014102091
10	Separator 1	R01014102089
11	Cover, Separator Big Ins, Cover Separator Big	R01014103413 R06014103412
12	Attachment Separator	R01014102061
13	Assy, Pillar Rear L Ins, Pillar Rear Left	R50014103295 R06014103301

No	Description	Part Number
14	Assy, Pillar Rear R Ins Pillar Rear Right	R50014103296 R06014105531
15	Assy, Pillar Center L Ins, Pillar Center	R50014103293 R06014102117
16	Assy, Pillar Center R Ins, Pillar Center	R50014103294 R06014102117
17	Assy, Indoor Coil (5RT180BR)	R50024102634
18	Assy, Outdoor Coil Left (5RT180BR)	R50024102630
19	Assy, Outdoor Coil Right (5RT180BR)	R50024102631
20	Comp. Assy. ZP103KCE-TFD-522 Copeland	R50049024296
21	Assy., Partition	R50014102069
22	Assy, Partition OD Small	R50024102630
23	Support, Pipe	R01014087489
24	Pipe, Support Solenoid Valve	R01014105530
25	Assy., Pillar Front Left	R50014102114
	Ins., Pillar Front 1	R06014102115
	Ins., Pillar Front 2	R06014102116
	Ins, Pillar Center	R06014102117
26	Assy., Pillar Front Right Ins., Pillar Front 1 Ins, Pillar Front 3 Ins, Pillar Center	R50014102120 R06014102115 R06014102118 R06014102117
27	Pillar, Back L/R	R01014102045
28	Panel, Indoor Top Channel Right Ins, ID Top Channel 1 Ins, ID Top Channel2 T10x59x62mm (92635) Ins, ID Top Channel 3 Ins, ID Top Channel 4 T3.0x48.0x20.0mm	R01014105241 R06014105242 R06014087557 R06014105243 R06014099459
29	Panel, Indoor Top Channel Left Ins, ID Top Channel 1 Ins, ID Top Channel2 T10x59x62mm (92635) Ins, ID Top Channel 3 Ins, ID Top Channel 4 T3.0x48.0x20.0mm	R01014105246 R06014105242 R06014087557 R06014105243 R06014099459

No	Description	Part Number
30	Assy., Panel Front Ins., Panel Front 1 Ins., Panel Front 2 Ins, Front Panel 3 Ins., Panel Front 4 Ins, Front Panel 5 Ins., Panel Front 6 Ins, Front Panel 7 Ins., Panel Front 8 Ins., Panel Front 9	R50014102124 R06014102125 R06014102126 R06014103000 R06014102127 R06014105266 R06014102129 R06014105265 R06014102128 R06014102130
31	Panel, Side Front L/R (P096571) Ins., Panel Side	R01014102122 R06014102123
32	Panel, Service Comp.	R01014102138
33	PVC Lining (138.0mm)	R12029030872
34	Cover Filter Ins, Cover Filter	R01014105351 R06014105352
35	Assy, Filter Rail Centre	R50014105340
36	Assy, Filter Rail Top Ins. Filter Rail Top 3 Ins. Filter Rail Top 2 Ins, Filter Rail Top	R50014105338 R06014107695 R06014107694 R06014105578
37	Assy, Separator Cover Top Ins, Separator Cover Top	R50014105460 R06014105464
38	Assy, Panel OD Top Ins, OD Top Panel 1 Ins, OD Top Panel 2 Ins, OD Top Panel 3	R50014106315 R06014102140 R06014102141 R06014108275
39	Panel, Indoor Top Ins, Indoor Top Panel 1 Ins, Indoor Top Panel 2 Ins, OD Top Panel 3	R01014105237 R06014105238 R06014105239 R06014108275
40	Orifice Left	R01014102051
41	Orifice Right	R01014102052
42	Fan Guard Left 5RT180B(R)	R01024106324
43	Fan Guard Right 5RT180B(R)	R01024106325
44	Cover, Top Panel Ins, Cover Top Panel	R01014106139 R06014106852
45	Handling Handle SI/MSS	R12014015328
46	Panel, Return Cover 2 Ins, Panel Return Cover 2	R01014105261 R06014105262
47	Fixture	R01014009584
48	Assy, Main Isolator	R50014105228

No	Description	Part Number
49	Plate, Cover Isolator	R01014105311
50	Switch, Isolator 63a 3ID2504-1TL53 Siemen	R04069033879
51	Base, Motor Lower	R01014108550
52	Base, Motor Upper	R01014107747
53	Motor, 3.0kw 50Hz L 4HTD00885	R03039031188
54	Assy, Fan Frame Attachment	R50014102995
55	Blower, sirocco SYD 400 Yilida	R03029034139
56	Assy, Support Down Flow L	R50014098461
57	Assy, Support Down Flow R	R50014098462
58	Assy, Motor Bracket OD (681mm Fan)	R50014105294
59	Motor, M5RT180BR-501 585W	R03039034171
60	Fan Propeller, 681mm P68111s Kohbunshi	R03019033202
61	Coil Guard, Side (R) 5RT180B(R)	R01024105283
62	Coil Guard, Back (L) 5RT180B(R)	R01024107106
63	Coil Guard, Back (R) 5RT180B(R)	R01024105284
64	Assy, Control Box UQ550 (5RT180BR) Assy Control Module UQ500 (5RT180BR) Cont, Pak26JT-FC, 2no, 2nc, AC240V, 27.5a TOG Cont, Pak-11JT-3c 1no AC230V 50/60 7.5a Terminal, Block 100amp T3015-5P W65569G12 Terminal Block, HP-T3015-4P-100a Terminal Block, T3020a-1-4P-C1.0 20a Phase Protector, PP1.03 No Sensor Export Capacitor, Cmpsr 15UF/450VAC Shizuki Relay, G7I-1a-TUB 200-240V Omron Relay, LY2F AC220/240V Omron P421132x01	R50044106882 R50049033078 R04039014252 R04039020834 R04119001483 R04114015053 R04114013586 R04089018834 R04029026770 R04059029497 R04059000668
65	Air Filter, Saranet 1497x392 5RT180BR	R03084106595
66	Bush Pulley, 2012, 30, 8/3.3	R03044108705
67	Pulley, Bush 1610/28	R03044039699
68	Pulley, 2 SPZ 95/1610	R03044039716
69	Pulley, 2 SPZ 180/2012	R03044039720
70	Belt, v SPZ 1862	R03054108702
71	Sheet, Rubber MTGT5x38x180mm R331F133H02	R11024002528
72	Drain Pan 2nd	R01014107960
73	Cover, Separator Small B	R01014105319
74	Accumulator, 4.5l R410a AC-PA153025	R02119032872
75	Support, Pipe And Access Valve	R01014108433
76	Handset, Wired Rooftop Panel Daikin	R04084107460
77	Filter Drier, BFK 305S AICO	R02164034985
Part Not In Diagram		
	Press Switch, 18psi N/C Export Nantong	R04109015125
	Press Switch, 600psi N/C	R04109031316

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