

DAIKIN

INSTALLATION MANUAL

R22 SPLIT SERIES



Installation Manual
R22 Split Series

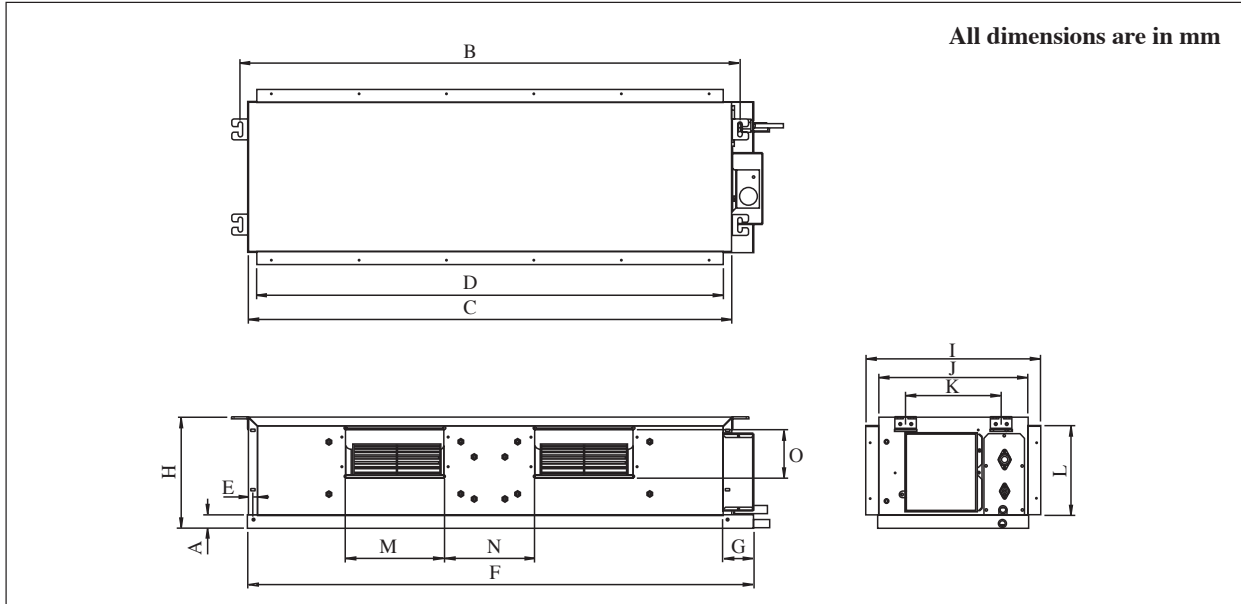
English

MODELS

| | |
|--------------------|-------------------|
| FDM20JEVLK | RD20JEVLK |
| FDM25JEVLK | RD25JEVLK |
| FDM30JEVLK | RD30JEVLK |
| FDM40JEVLK | RD40JEVLK |
| FDM50JEVLK | RD50JETLK |
| FDM60JEVLK | RD60JETLK |
| FDYM20JEVLK | RYD20JEVLK |
| FDYM25JEVLK | RYD25JEVLK |
| FDYM30JEVLK | RYD30JEVLK |
| FDYM40JEVLK | RYD40JEVLK |
| FDYM50JEVLK | RYD50JETLK |
| FDYM60JEVLK | RYD60JETLK |

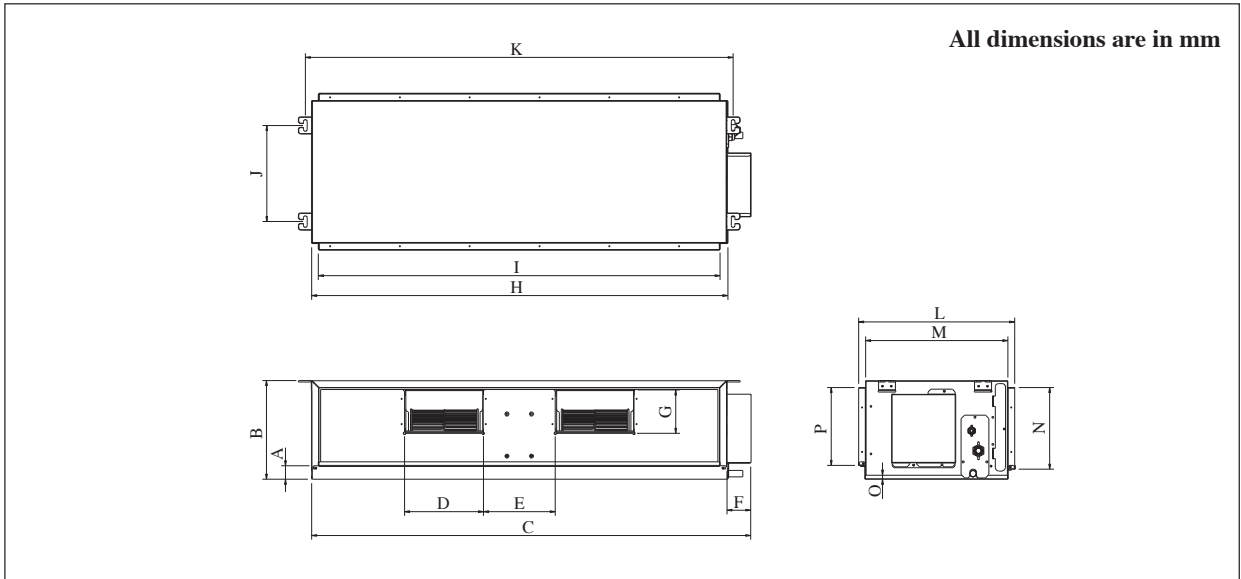
OUTLINE AND DIMENSIONS

Indoor Unit



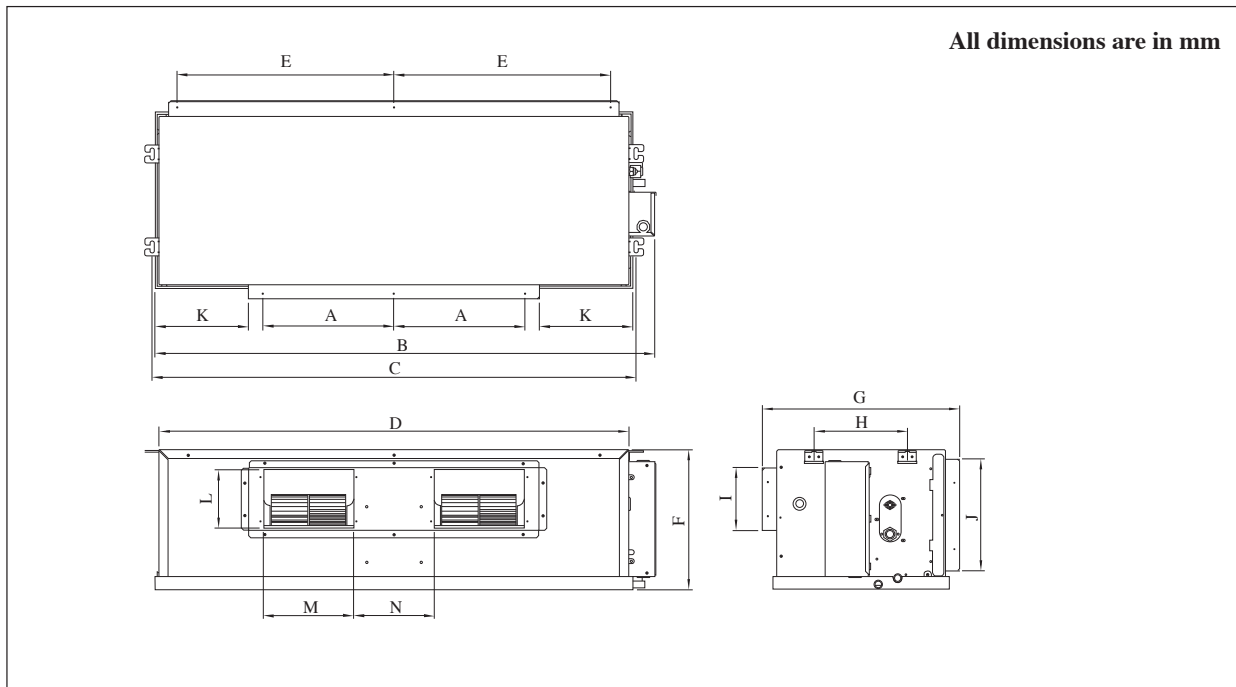
| Dimension / Model | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|-------------------|----|------|------|------|----|------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| FD(Y)M20JEVLK | 31 | 1041 | 1002 | 962 | 10 | 1065 | 72 | 261 | 411 | 351 | 225 | 211 | 232 | 213 | 114 |
| FD(Y)M25JEVLK | 31 | 1176 | 1137 | 1097 | 10 | 1200 | 72 | 261 | 411 | 351 | 225 | 211 | 232 | 213 | 114 |

Indoor Unit



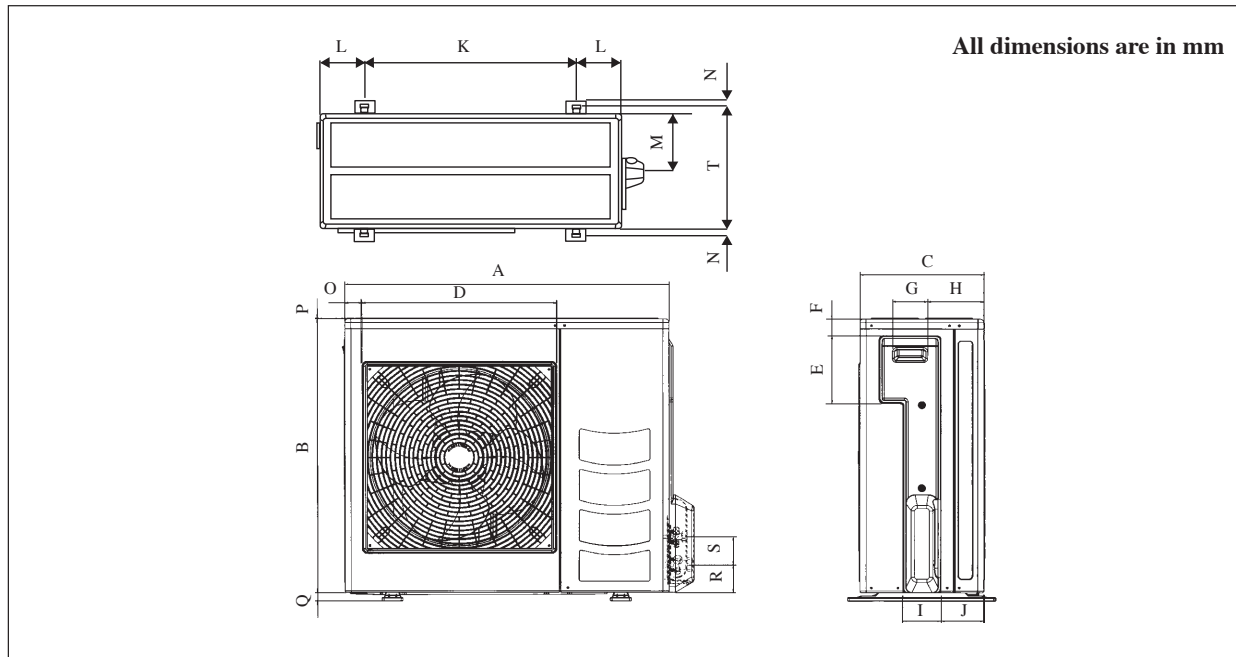
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|-------------------|----|-----|------|-----|-----|----|-----|------|------|-----|------|-----|-----|-----|----|-----|
| FD(Y)M30JEVLK | 40 | 292 | 1295 | 232 | 213 | 70 | 128 | 1228 | 1185 | 284 | 1262 | 460 | 420 | 241 | 12 | 230 |
| FD(Y)M40JEVLK | | | | | | | | | | | | | | | | |

Indoor Unit



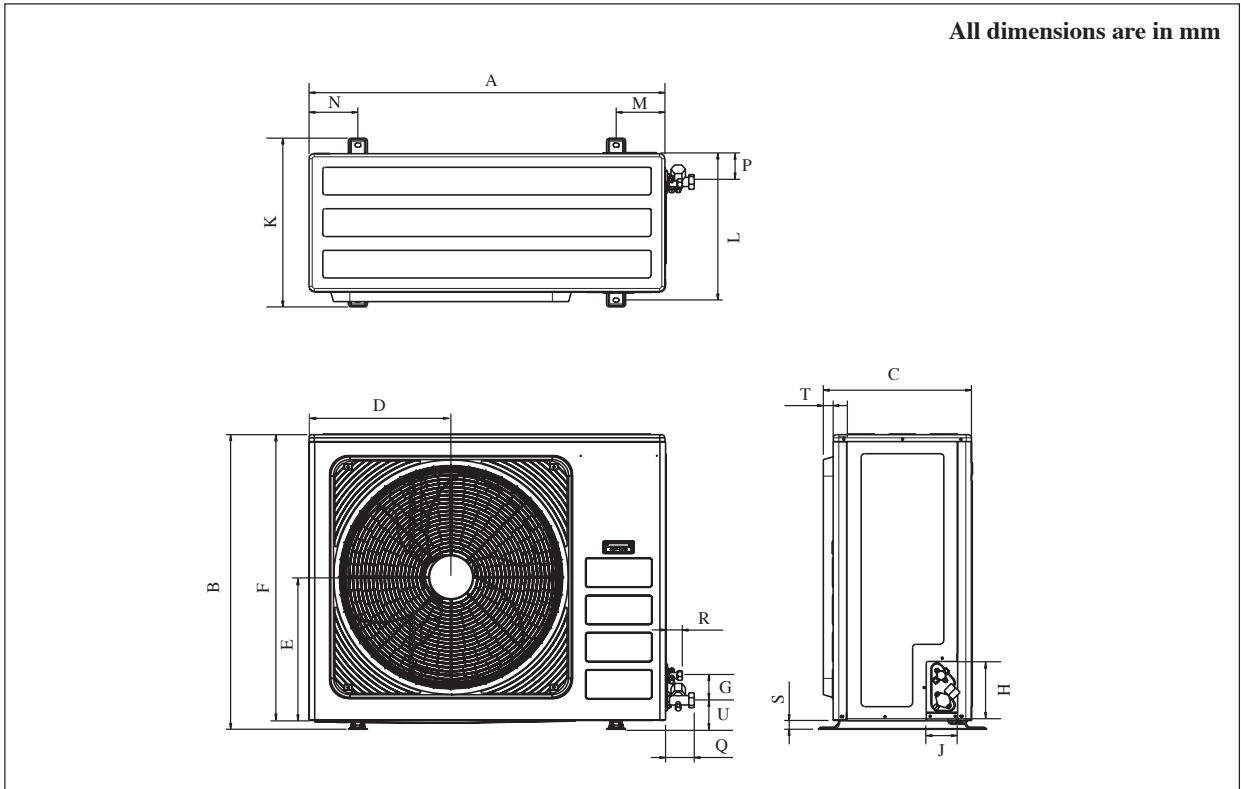
| Dimension | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---------------|-----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Model | | | | | | | | | | | | | | |
| FD(Y)M50JEVLK | 359 | 1369 | 1326 | 1287 | 594 | 384 | 541 | 256 | 173 | 306 | 256 | 161 | 248 | 220 |
| FD(Y)M60JEVLK | 359 | 1569 | 1526 | 1487 | 694 | 378 | 541 | 256 | 173 | 306 | 356 | 161 | 248 | 220 |

Outdoor Unit



| Dimension | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T |
|--------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|----|----|---|----|----|----|-----|
| Model | | | | | | | | | | | | | | | | | | | | |
| R(Y)D20JEVLK | 855 | 628 | 328 | 508 | 181 | 44 | 93 | 149 | 101 | 113 | 603 | 126 | 164 | 15 | 49 | 3 | 23 | 73 | 75 | 362 |
| R(Y)D25JEVLK | 855 | 730 | 328 | 520 | 182 | 44 | 93 | 149 | 101 | 113 | 603 | 126 | 164 | 15 | 34 | 3 | 23 | 73 | 75 | 362 |
| R(Y)D30JEVLK | 855 | 730 | 328 | 513 | 182 | 44 | 93 | 149 | 101 | 113 | 603 | 126 | 164 | 15 | 47 | 3 | 23 | 73 | 75 | 362 |

Outdoor Unit



| Dimension Model | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | U |
|---------------------|------|-----|-----|-----|-----|-----|----|-----|----|-----|-----|-----|-----|----|----|----|----|----|----|
| R(Y)D40JEVLK | | | | | | | | | | | | | | | | | | | |
| R(Y)D50JETLK | 1030 | 852 | 428 | 410 | 412 | 827 | 72 | 196 | 91 | 488 | 448 | 142 | 141 | 83 | 23 | 49 | 26 | 28 | 80 |
| R(Y)D60JETLK | | | | | | | | | | | | | | | | | | | |

INSTALLATION MANUAL

This manual provides the procedures of installation to ensure a safe and good standard of operation for the air conditioner unit.

Special adjustment may be necessary to suit local requirements.

Before using your air conditioner, please read this instruction manual carefully and keep it for future reference.

This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

SAFETY PRECAUTIONS

⚠ WARNING

- Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.
- All field wiring must be installed in accordance with the national wiring regulation.
- Ensure that the rated voltage of the unit corresponds to that of the name plate before commencing wiring work according to the wiring diagram.
- The unit must be GROUNDED to prevent possible hazard due to insulation failure.
- All electrical wiring must not touch the refrigerant piping, or any moving parts of the fan motors.
- Confirm that the unit has been switched OFF before installing or servicing the unit.
- Disconnect from the main power supply before servicing the air conditioner unit.
- DO NOT pull out the power cord when the power is ON. This may cause serious electrical shocks which may result in fire hazards.
- Keep the indoor and outdoor units, power cable and transmission wiring, at least 1m from TVs and radios, to prevent distorted pictures and static. (Depending on the type and source of the electrical waves, static may be heard even when more than 1m away).

⚠ CAUTION

Please take note of the following important points when installing.

- **Do not install the unit where leakage of flammable gas may occur.**

⊘ If gas leaks and accumulates around the unit, it may cause fire ignition.

- **Ensure that drainage piping is connected properly.**

ⓘ If the drainage piping is not connected properly, it may cause water leakage which will dampen the furniture.

- **Do not overcharge the unit.**

This unit is factory pre-charged.

⊘ Overcharge will cause over-current or damage to the compressor.

- **Ensure that the unit's panel is closed after service or installation.**

ⓘ Unsecured panels will cause the unit to operate noisily.

- **Sharp edges and coil surfaces are potential locations which may cause injury hazards.**

Avoid from being in contact with these places.

- **Before turning off the power supply, set the remote controller's ON/OFF switch to the "OFF" position to prevent the nuisance tripping of the unit.** If this is not done, the unit's fans will start turning automatically when power resumes, posing a hazard to service personnel or the user.

- **Do not install the units at or near doorway.**

- **Do not operate any heating apparatus too close to the air conditioner unit or use in room where mineral oil, oil vapour or oil steam exist, this may cause plastic part to melt or deform as a result of excessive heat or chemical reaction.**

- **When the unit is used in kitchen, keep flour away from going into suction of the unit.**

- **This unit is not suitable for factory used where cutting oil mist or iron powder exist or voltage fluctuates greatly.**

- **Do not install the units at area like hot spring or oil refinery plant where sulphide gas exists.**

- **Ensure the color of wires of the outdoor unit and the terminal markings are same to the indoors respectively.**

- **IMPORTANT: DO NOT INSTALL OR USE THE AIR CONDITIONER UNIT IN A LAUNDRY ROOM.**

- **Don't use joined and twisted wires for incoming power supply.**

- **The equipment is not intended for use in a potentially explosive atmosphere.**

NOTICE

Disposal requirements

Your air conditioning product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by a qualified installer in accordance with relevant local and national legislation.

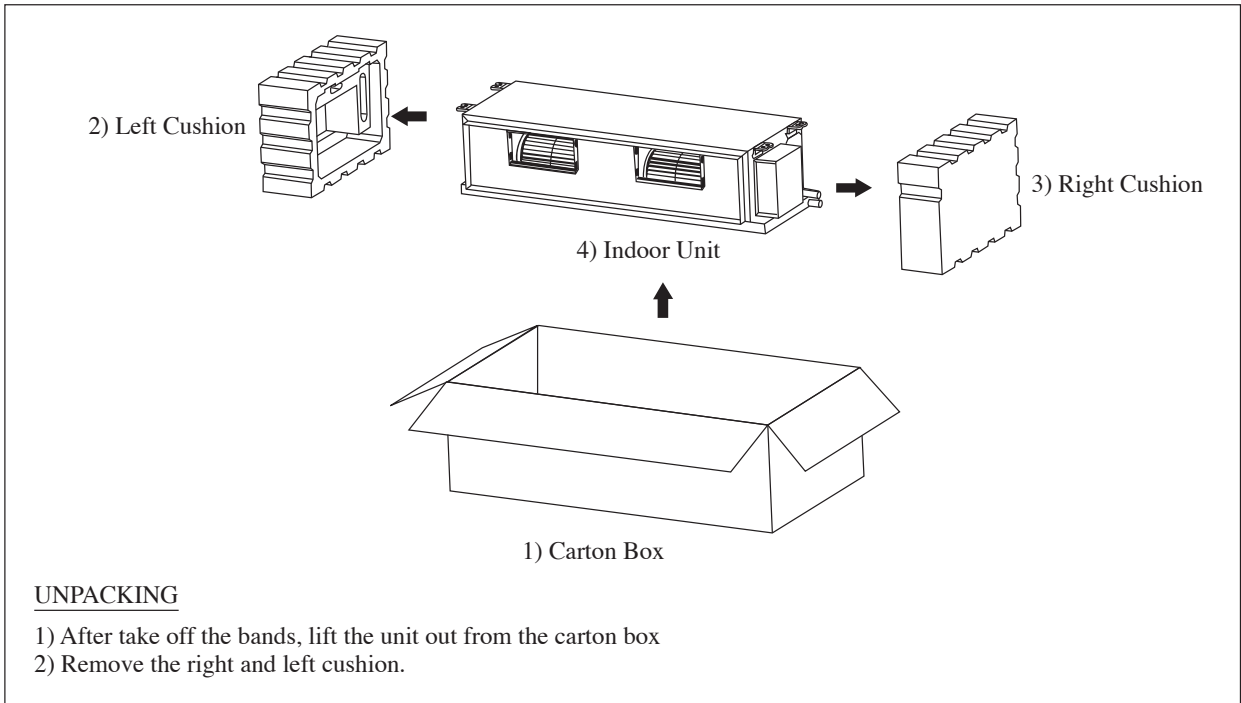
Air conditioners must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

Batteries must be removed from the remote controller and disposed of separately in accordance with relevant local and national legislation.

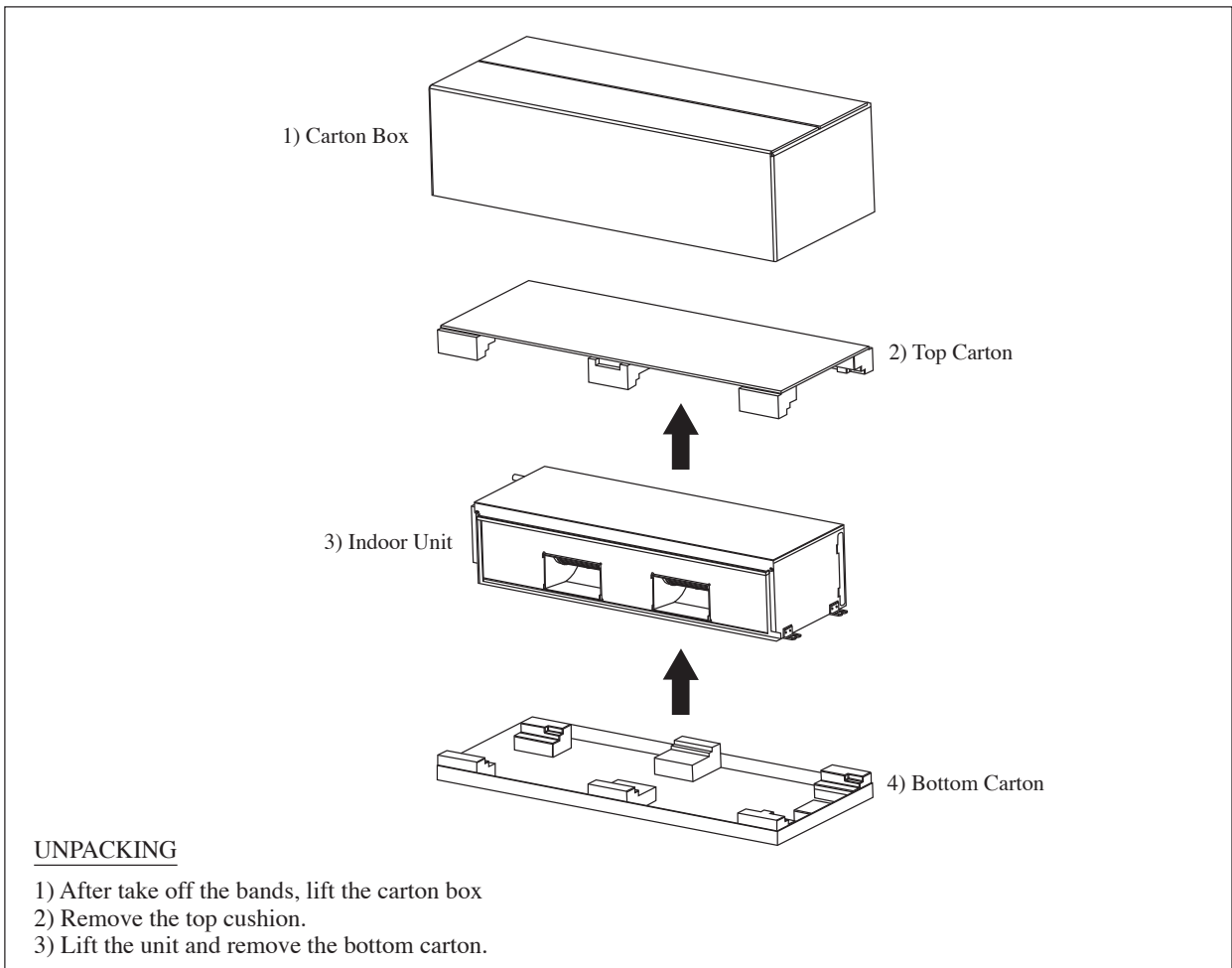


IMPORTANT & SEQUENCE AS FOLLOW:

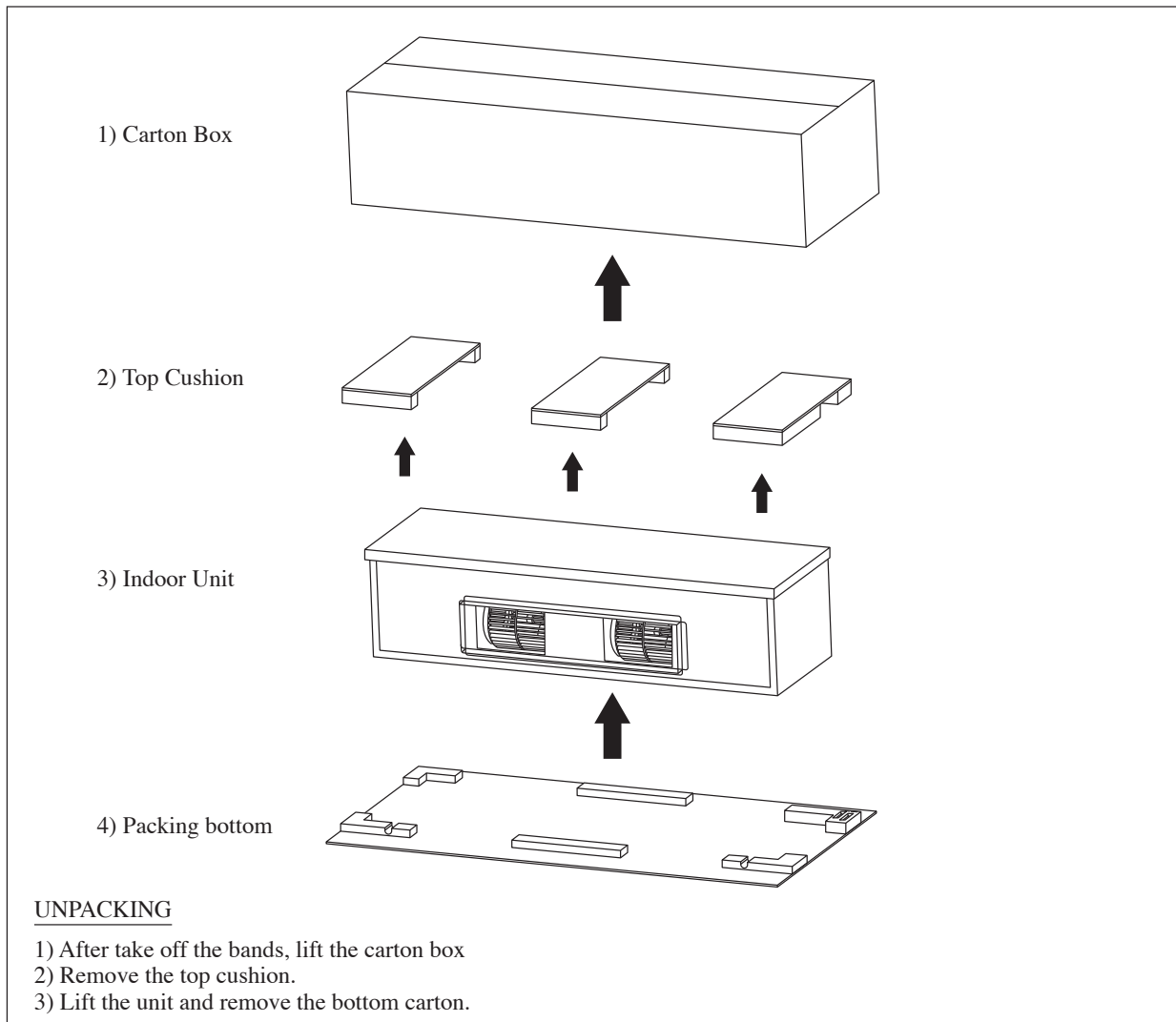
For model FD(Y)M20JEVLK & FD(Y)M25JEVLK:



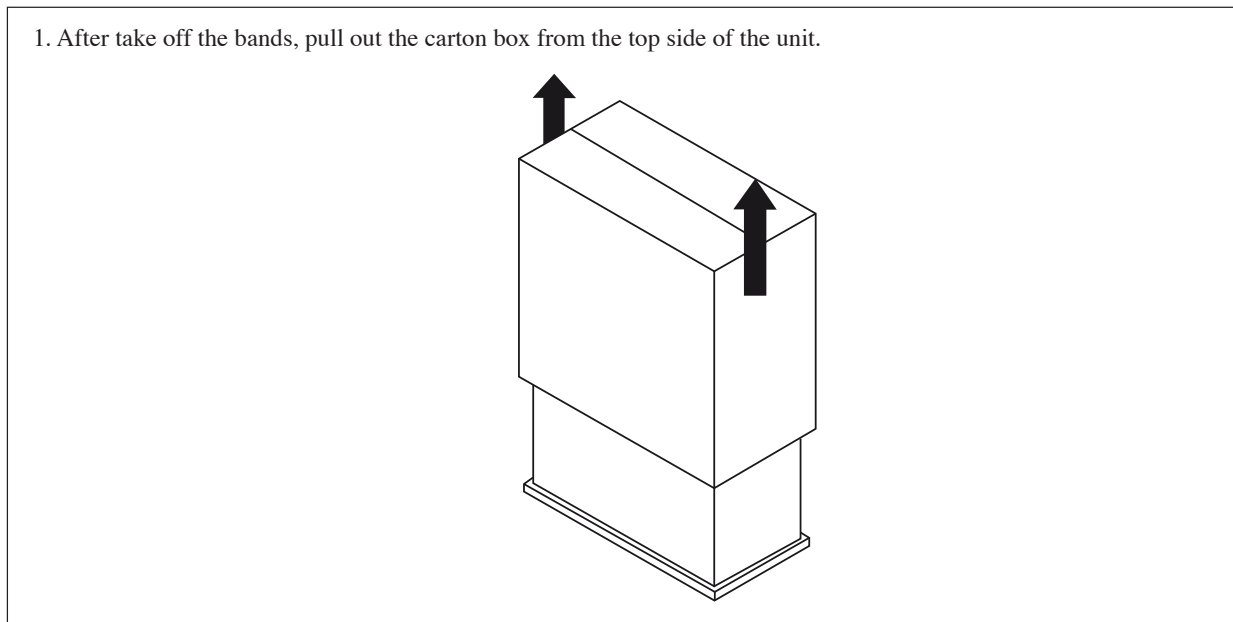
For model FD(Y)M30JEVLK & FD(Y)M40JEVLK:



For model FR(Y)M50JEVLK & FD(Y)M60JEVLK:

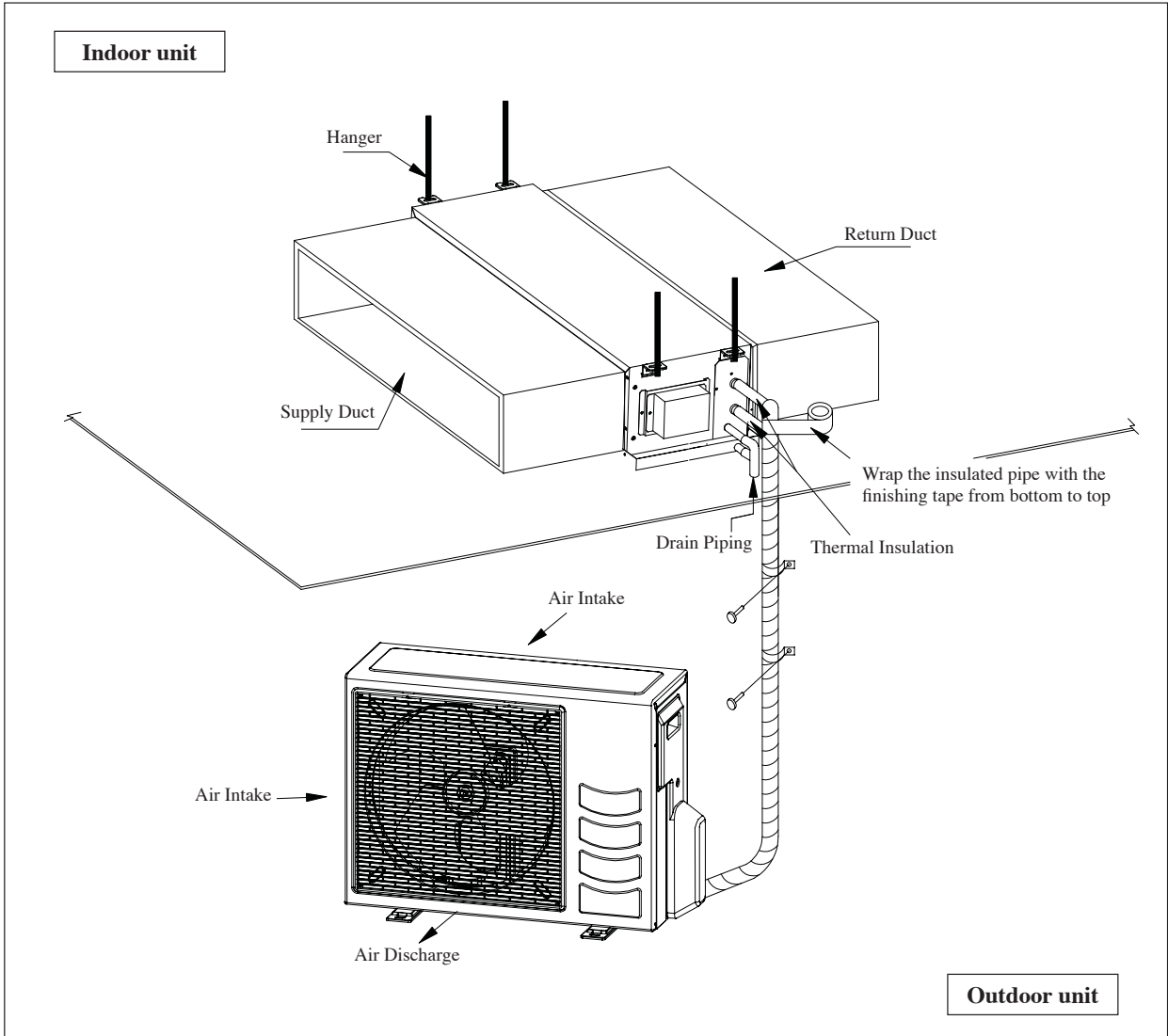


For model R(Y)D20JEVLK, R(Y)D25JEVLK, R(Y)D30JEVLK, R(Y)D40JEVLK, R(Y)D50JETLK & R(Y)D60JETLK:



* This product is not designed for re-packing. In case of re-packing, contact to Daikin Dealer.

INSTALLATION DIAGRAM

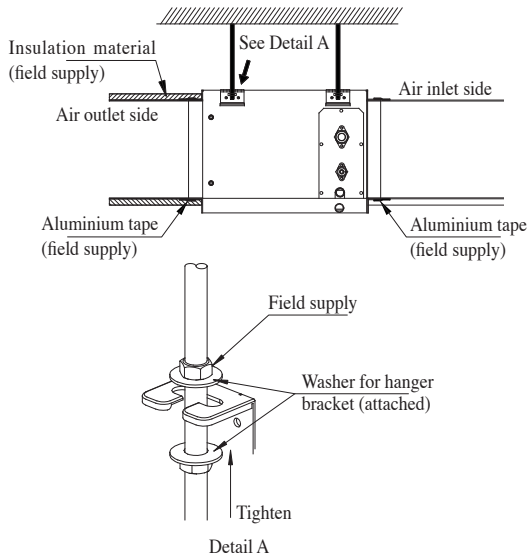


INSTALLATION OF THE INDOOR UNIT

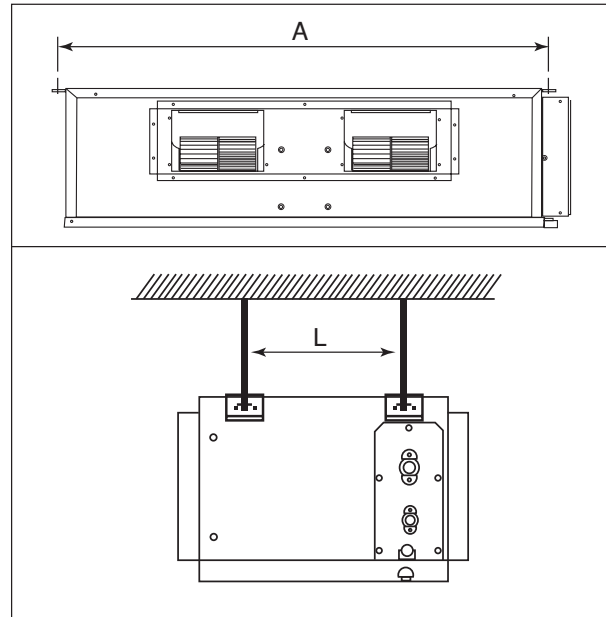
The indoor unit must be installed such that there is no short circuit of the cool discharge. Respect the installation clearance. Do not put the indoor unit where there is direct sunlight on unit. The location is suitable for piping and drainage and it must have a large distance between a door and unit.

Ceiling Concealed Mounting

- Use the hanger supplied with the unit.
- Make sure that the ceiling is sufficiently strong to withstand the weight.

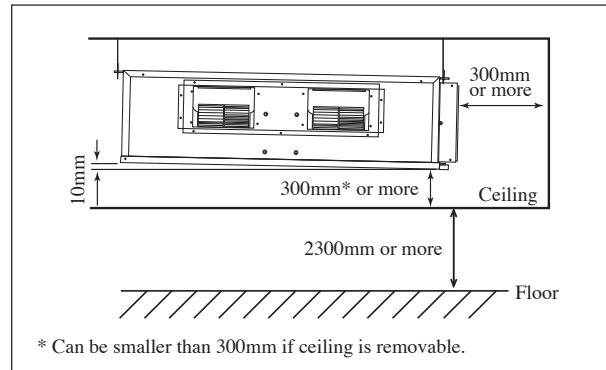


Center distance of axle (see drawing below)

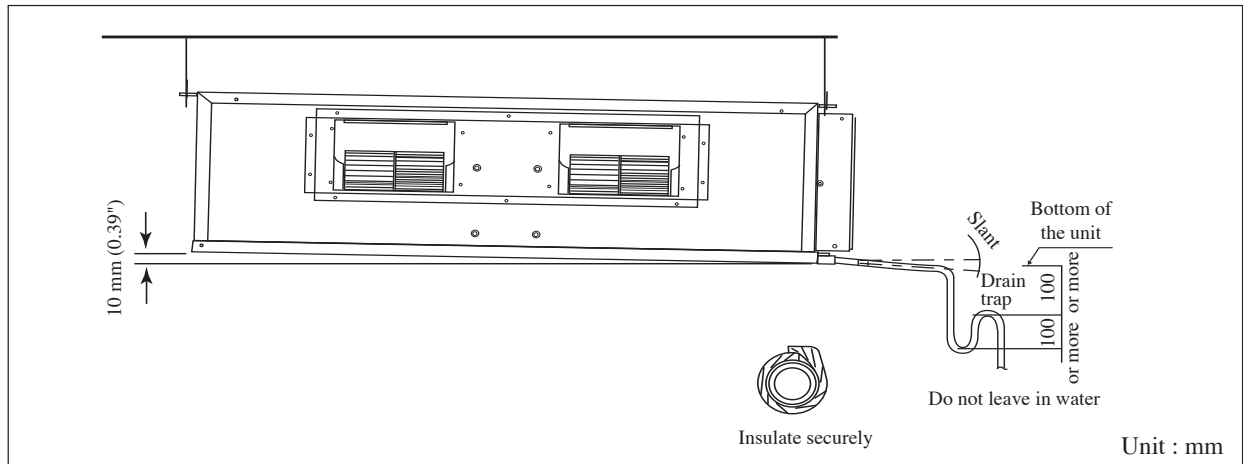


| Model | A mm (inch) | L mm (inch) |
|----------------------|-------------|-------------|
| FD(Y)M20JEVLK | 1041 (41.0) | 225 (8.9) |
| FD(Y)M25JEVLK | 1176 (46.3) | 225 (8.9) |
| FD(Y)M30JEVLK | 1262 (49.7) | 284 (11.2) |
| FD(Y)M40JEVLK | 1262 (49.7) | 284 (11.2) |
| FD(Y)M50JEVLK | 1326 (52.2) | 256 (10.1) |
| FD(Y)M60JEVLK | 1526 (60.1) | 256 (10.1) |

Provide clearance for servicing ease and optimal air flow as shown in the diagram.



Ceiling Concealed Drain Piping Work

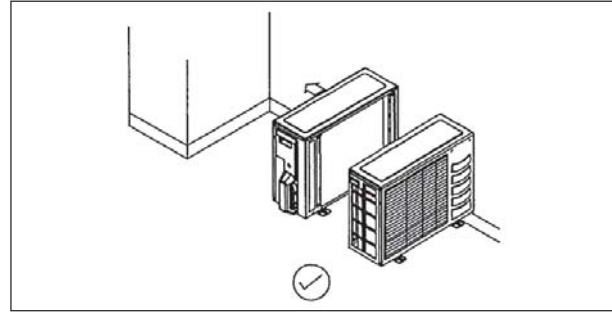
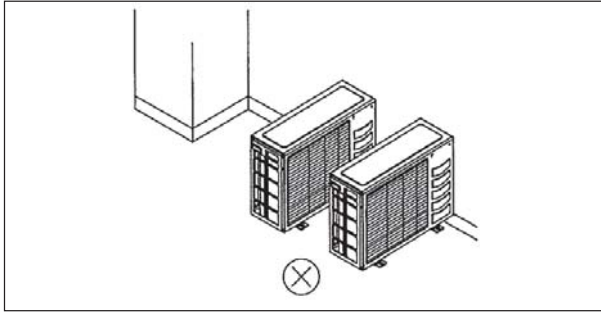


- The drain pipe must be installed as shown in the diagram (see diagram above) to avoid damage caused by leaks and condensation.
- For the best result, keep the piping as short as possible. Slant the piping at an angle to improve the flow.
- Ensure the drain pipe is securely insulated.
- It is necessary to provide a drain trap in the drain outlet to relieve pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating. The drain trap is to avoid possibility of splashes or an odor.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- Conduct a water drainage test after the installation is completed. Make sure that the drainage flow is smooth.
- In humid environments, use an extra drain pan to cover the entire area of the indoor unit.

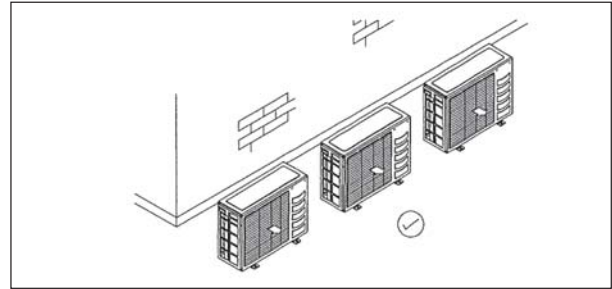
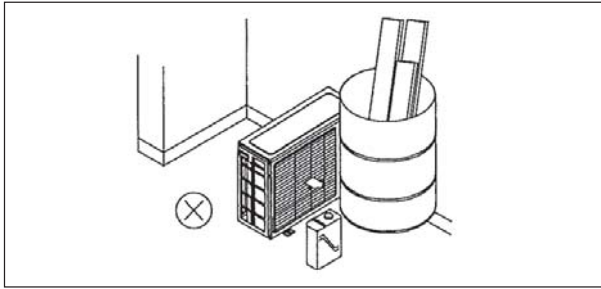
INSTALLATION OF THE OUTDOOR UNIT

As condensing temperature rises, evaporating temperature rises and cooling capacity drops. In order to achieve maximum cooling capacity, the location selected for outdoor unit should fulfill the following requirements:

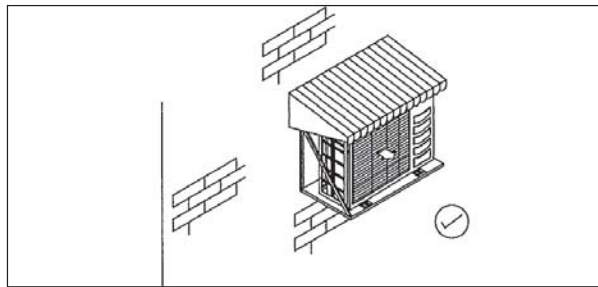
- Install the condensing (outdoor) unit in a way such that the hot air distributed by the outdoor unit cannot be drawn in again (as in the case of short circuit of hot discharge air). Allow sufficient space for maintenance around the unit.



- Ensure that there is no obstruction of air flow into or out of the unit. Remove obstacles which block air intake or discharge.
- The location must be well ventilated, so that the unit can draw in and distribute plenty of air thus lowering the condensing temperature.



- A place capable of bearing the weight of the outdoor unit and isolating noise and vibration.
- A place protected from the direct sunlight. Otherwise use an awning for protection, if necessary.



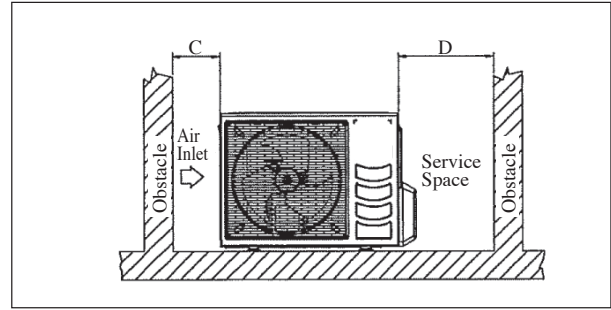
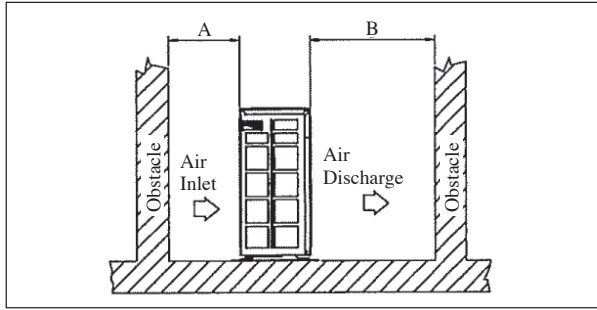
- The location must not be susceptible to dust or oil mist.

CAUTION

- Do not install the unit at altitude over 2000m for both indoor and outdoor

INSTALLATION CLEARANCE

- Outdoor units must be installed such that there is no short circuit of the hot discharge air or obstruction to smooth air flow. Select the coolest possible place where intake air should not be hotter than the outside temperature (refer to operating range).



| All Model | A | B | C | D |
|-----------------------|-----|------|-----|-----|
| Minimum Distance (mm) | 300 | 1000 | 300 | 500 |

REFRIGERANT PIPING

Maximum Pipe Length

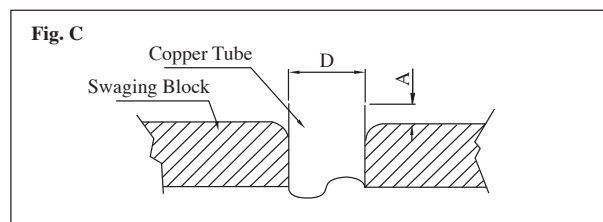
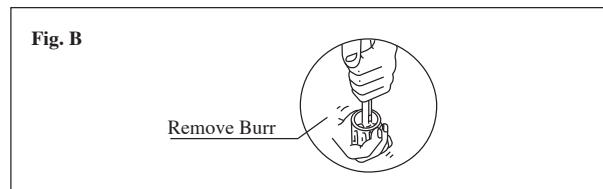
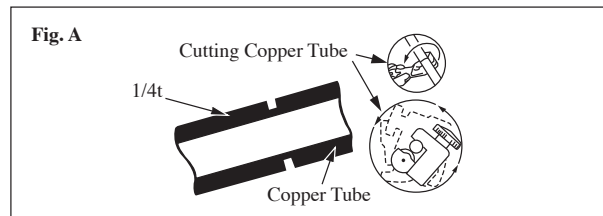
When the pipe length becomes too long, both the capacity and reliability drop. As the number of bends increases, system piping resistance to the refrigerant flow increases, thus lowering the cooling capacity. As a result, compressor reliability will be affected. Always choose the shortest path and follow the recommendation as tabulated below:

| Model | Indoor | FD(Y)M20JEVLK | FD(Y)M25JEVLK | FD(Y)M30JEVLK | FD(Y)M40JEVLK | FD(Y)M50JEVLK | FD(Y)M60JEVLK |
|-----------------------------|---------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Outdoor | R(Y)D20JEVLK | R(Y)D25JEVLK | R(Y)D30JEVLK | R(Y)D40JEVLK | R(Y)D50JETLK | R(Y)D60JETLK |
| Max. allowable length, m | | 30 | 30 | 40 | 40 | 45 | 45 |
| Max. allowable elevation, m | | 15 | 15 | 25 | 25 | 25 | 25 |
| Liquid pipe size, mm/(in) | | 6.35 (1/4") | 9.52 (3/8") | 9.52 (3/8") | 9.52 (3/8") | 9.52 (3/8") | 12.7 (1/2") |
| Gas pipe size, mm/(in) | | 15.88 (5/8") | 15.88 (5/8") | 15.88 (5/8") | 19.05 (3/4") | 19.05 (3/4") | 19.05 (3/4") |

Remark : For FDM60JEVLK cooling unit, recommended to add 6 kg external accumulator

Piping Works And Flaring Technique

- Do not use contaminated or damaged copper tubing. If any piping, evaporator or condenser had been exposed or had been opened for 15 seconds or more, the system must be vacuumed. Generally, do not remove plastic, rubber plugs and brass nuts from the valves, fittings, tubings and coils until it is ready for connection.
- If any brazing work is required, ensure that the nitrogen gas is passed through piping and joints while the brazing work is being done. This will eliminate soot formation on the inside walls of the copper tubings.
- Cut the pipe stage by stage, advancing the blade of pipe cutter slowly. Extra force and deep cut will cause more distortion of pipe and therefore extra burr. See Fig. A
- Remove burrs from cut edges of pipes with a remover as shown in Fig. B. This will avoid unevenness on the flare faces which will cause gas leak. Hold the pipe on top position and burr remover at lower position to prevent metal chips from entering the pipe.
- Insert the flare nuts mounted on the connection parts of both indoor and outdoor unit, into the copper pipes.
- The exact length of pipe protruding from the face of the swaging block is determined by the flaring tool. See Fig. C
- Fix the pipe firmly on the swaging block. Match the centers of both the flare die and the flaring punch, and tighten flaring punch fully.

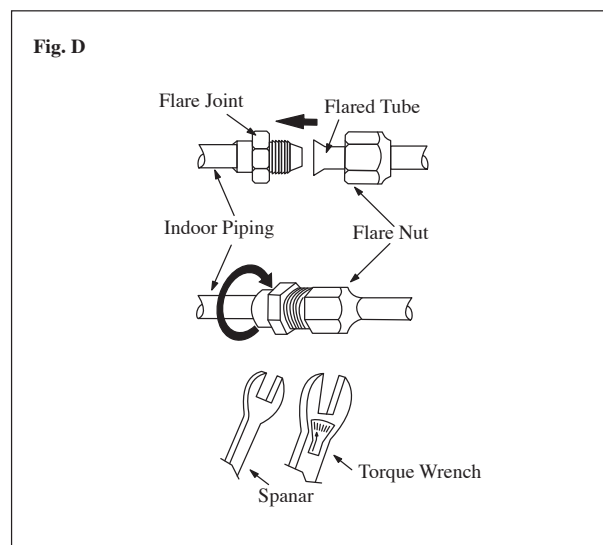


Piping Connection To The Units

- Align the center of the piping and sufficiently tighten the flare nut with fingers. See Fig. D
- Finally, tighten the flare nut with torque wrench until the wrench clicks.
- When tightening the flare nut with the torque wrench, ensure that the direction for tightening follows the arrow on the wrench.
- The refrigerant pipe connection are insulated by closed cell polyurethane.

| Ø Tube, D | | A (mm) | |
|-----------|-------|--------------------------|---------------------|
| Inch | mm | Imperial (Wing-nut Type) | Rigid (Clutch Type) |
| 1/4" | 6.35 | 1.3 | 0.7 |
| 3/8" | 9.52 | 1.6 | 1.0 |
| 1/2" | 12.70 | 1.9 | 1.3 |
| 5/8" | 15.88 | 2.2 | 1.7 |
| 3/4" | 19.05 | 2.5 | 2.0 |

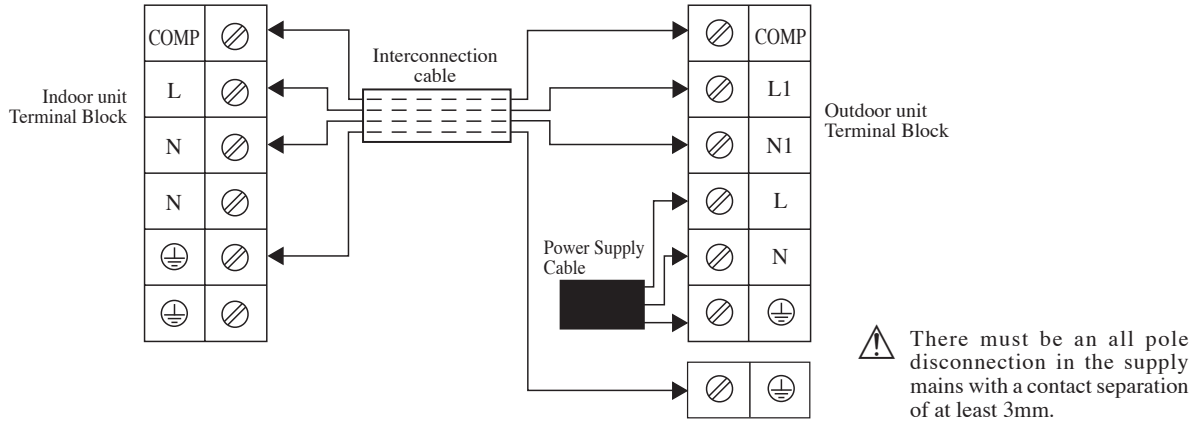
| Pipe Size, mm (in) | Torque, Nm / (ft-Ib) |
|--------------------|----------------------|
| 6.35 (1/4") | 18 (13.3) |
| 9.52 (3/8") | 42 (31.0) |
| 12.70 (1/2") | 55 (40.6) |
| 15.88 (5/8") | 65 (48.0) |
| 19.05 (3/4") | 78 (57.6) |



ELECTRICAL CONNECTION

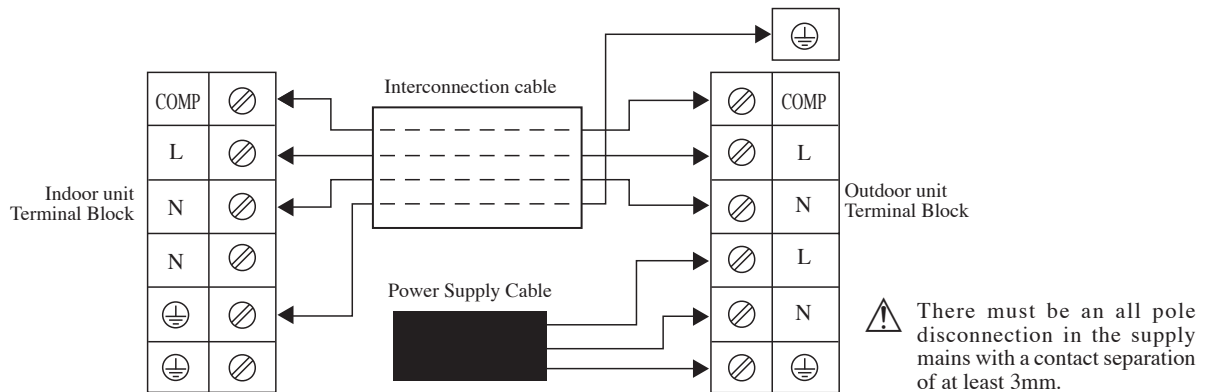
IMPORTANT: * These values are for information only, they should be checked and selected to comply with the local and/or national codes and regulations. They are also subjected to the type of installation and size of conductors.
 ** The appropriate voltage range should be checked with data label on the unit.

FDM20JEVLK - RD20JEVLK FDM25JEVLK - RD25JEVLK



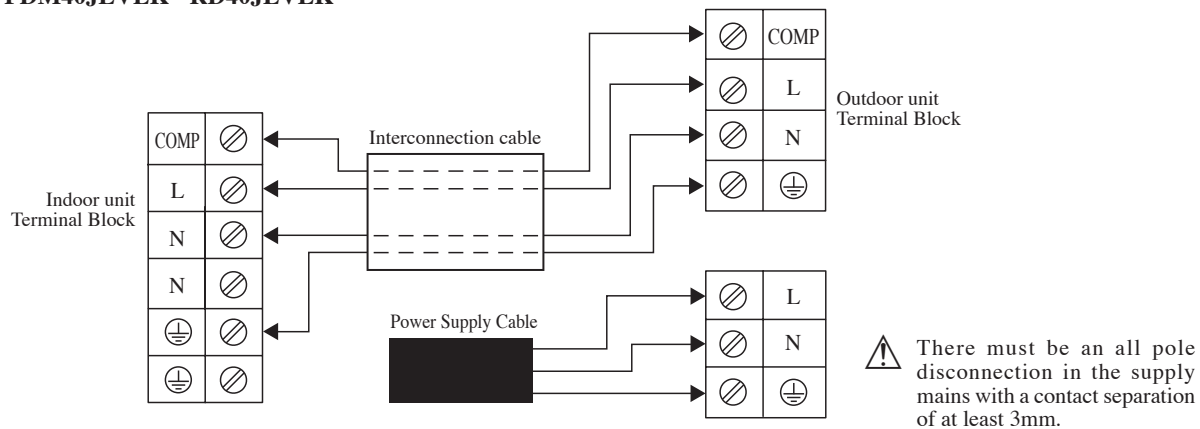
| Model | Indoor | FDM20JEVLK | FDM25JEVLK |
|------------------------------|-----------------|-----------------|------------|
| | Outdoor | RD20JEVLK | RD25JEVLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ | |
| | Outdoor | 220V/1Ph/60Hz+⊕ | |
| Power supply cable size* | mm ² | 2.5 | 2.5 |
| Number of conductors | | 3 | 3 |
| Interconnection cable size* | mm ² | 1.0 | 1.0 |
| Number of conductors | | 4 | 4 |
| Recommended time delay fuse* | A | 20 | 25 |

FDM30JEVLK - RD30JEVLK



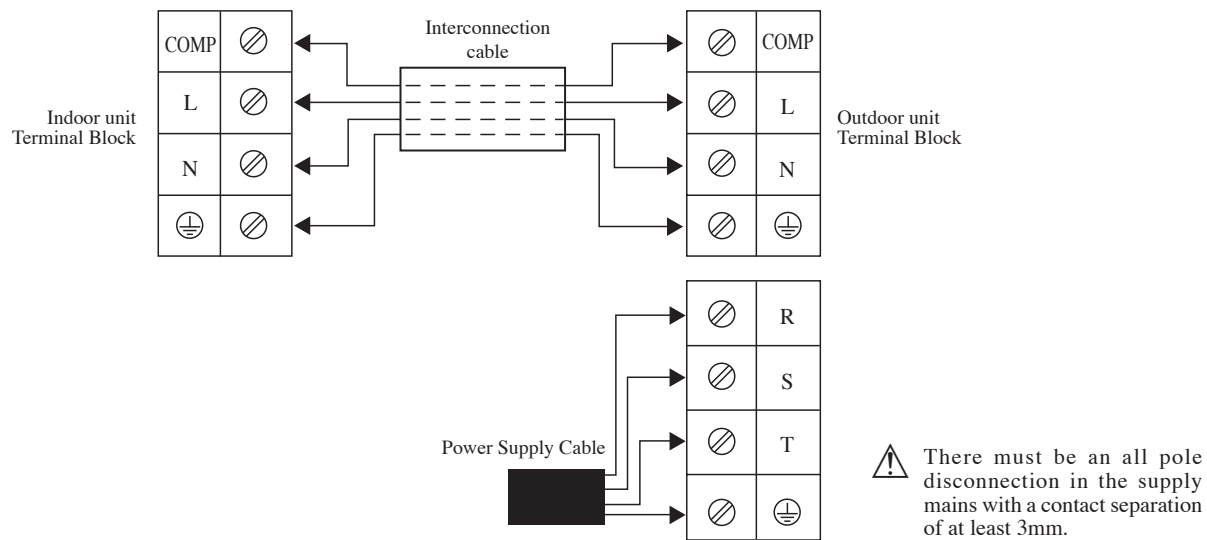
| Model | Indoor | FDM30JEVLK |
|------------------------------|-----------------|-----------------|
| | Outdoor | RD30JEVLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ |
| | Outdoor | 220V/1Ph/60Hz+⊕ |
| Power supply cable size* | mm ² | 4.0 |
| Number of conductors | | 3 |
| Interconnection cable size* | mm ² | 2.5 |
| Number of conductors | | 4 |
| Recommended time delay fuse* | A | 30 |

FDM40JEVLK - RD40JEVLK



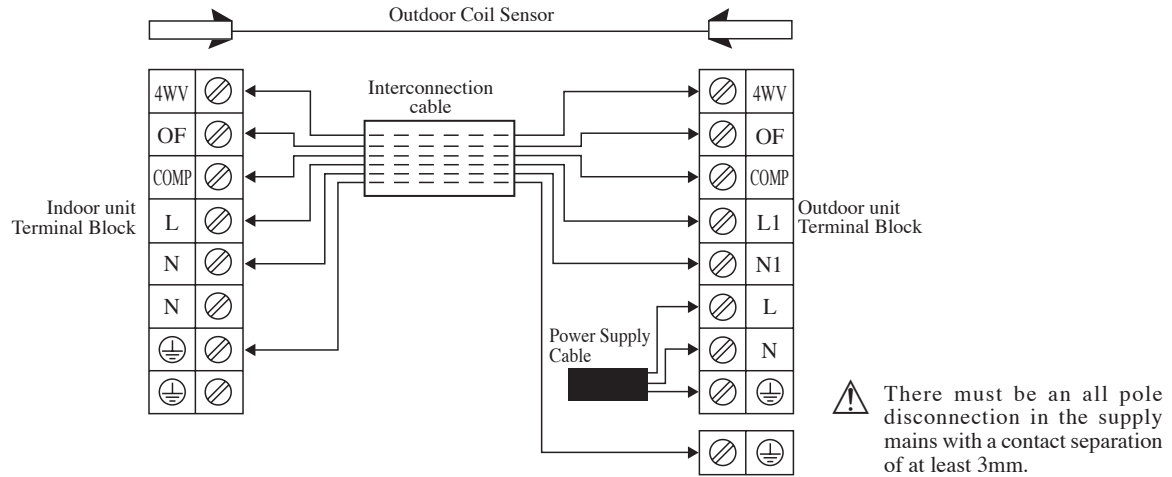
| | | |
|-------------------------------------|-----------------------|-------------------|
| Model | Indoor | FDM40JEVLK |
| | Outdoor | RD40JEVLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ |
| | Outdoor | 220V/1Ph/60Hz+⊕ |
| Power supply cable size* | mm² | 6.0 |
| Number of conductors | | 3 |
| Interconnection cable size* | mm² | 2.5 |
| Number of conductors | | 4 |
| Recommended time delay fuse* | A | 35 |

FDM50JEVLK - RD50JETLK
FDM60JEVLK - RD60JETLK



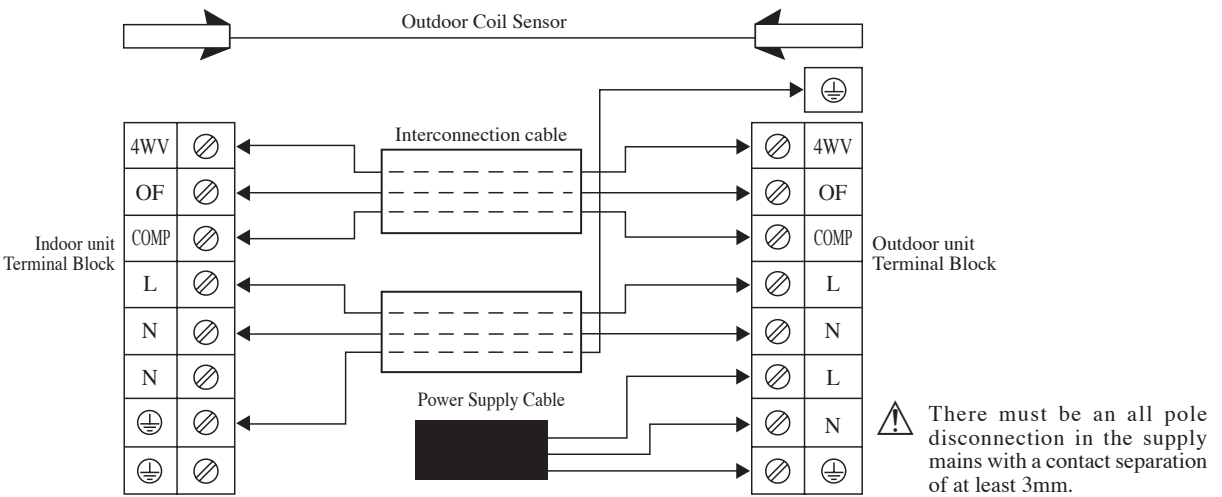
| | | | |
|-------------------------------------|-----------------------|-------------------|-------------------|
| Model | Indoor | FDM50JEVLK | FDM60JEVLK |
| | Outdoor | RD50JETLK | RD60JETLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ | |
| | Outdoor | 220V/3N~/60Hz+⊕ | |
| Power supply cable size* | mm² | 6.0 | 6.0 |
| Number of conductors | | 4 | 4 |
| Interconnection cable size* | mm² | 2.5 | 2.5 |
| Number of conductors | | 4 | 4 |
| Recommended time delay fuse* | A | 35 | 35 |

FDYM20JEVLK - RYD20JEVLK
FDYM25JEVLK - RYD25JEVLK



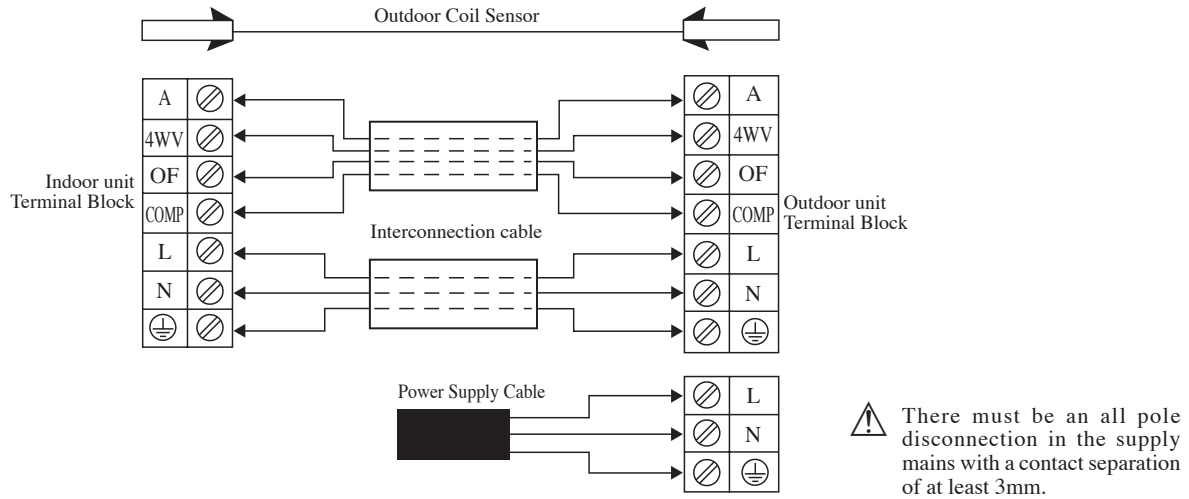
| Model | Indoor | FDYM20JEVLK | FDYM25JEVLK |
|------------------------------|-----------------|-----------------|-------------|
| | Outdoor | RYD20JEVLK | RYD25JEVLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ | |
| | Outdoor | 220V/1Ph/60Hz+⊕ | |
| Power supply cable size* | mm ² | 2.5 | 2.5 |
| Number of conductors | | 3 | 3 |
| Interconnection cable size* | mm ² | 1.0 | 1.0 |
| Number of conductors | | 6 | 6 |
| Recommended time delay fuse* | A | 20 | 25 |

FDYM30JEVLK - RYD30JEVLK



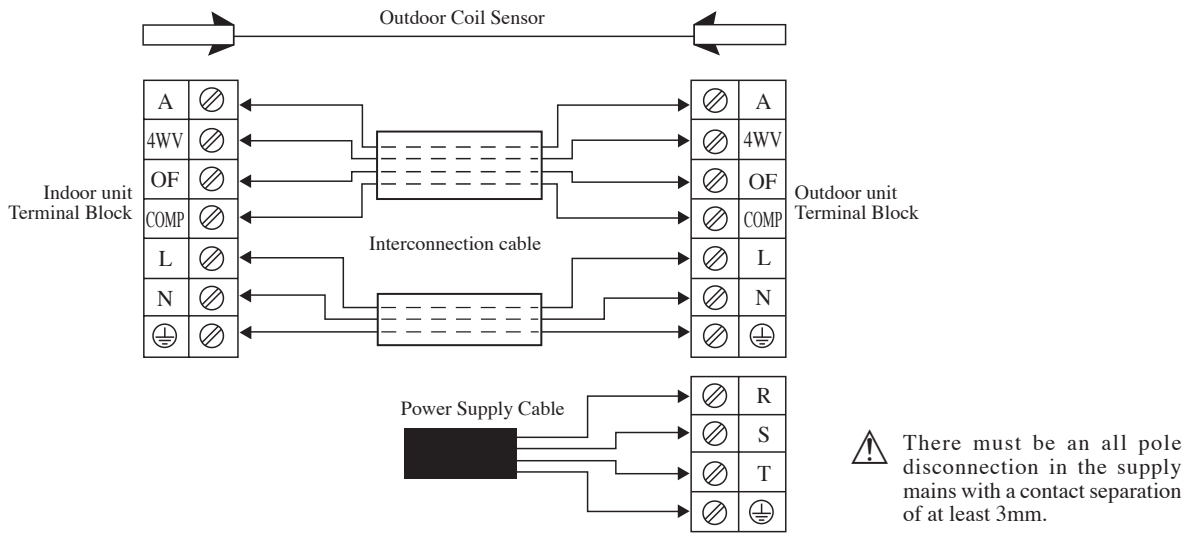
| Model | Indoor | FDYM30JEVLK |
|------------------------------|-----------------|-----------------|
| | Outdoor | RYD30JEVLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ |
| | Outdoor | 220V/1Ph/60Hz+⊕ |
| Power supply cable size* | mm ² | 4.0 |
| Number of conductors | | 3 |
| Interconnection cable size* | mm ² | 2.5 |
| Number of conductors | | 3 & 3 |
| Recommended time delay fuse* | A | 30 |

FDYM40JEVLK - RYD40JEVLK



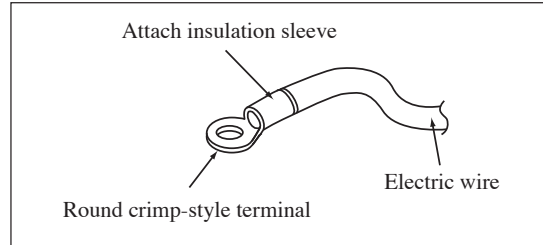
| | | |
|-------------------------------------|-----------------------|--------------------|
| Model | Indoor | FDYM40JEVLK |
| | Outdoor | RYD40JEVLK |
| Voltage range** | Indoor | 220V/1Ph/60Hz+⊕ |
| | Outdoor | 220V/1Ph//60Hz+⊕ |
| Power supply cable size* | mm² | 6.0 |
| Number of conductors | | 3 |
| Interconnection cable size* | mm² | 2.5 |
| Number of conductors | | 4 & 3 |
| Recommended time delay fuse* | A | 35 |

FDYM50JEVLK - RYD50JETLK
FDYM60JEVLK - RYD60JETLK

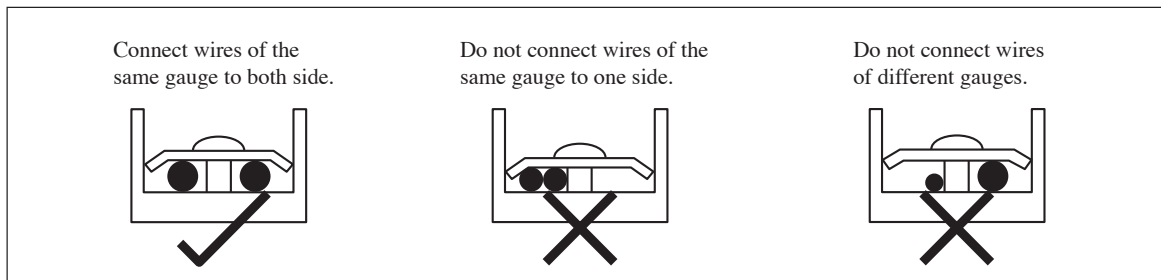


| | | | |
|-------------------------------------|-----------------------|--------------------|--------------------|
| Model | Indoor | FDYM50JEVLK | FDYM60JEVLK |
| | Outdoor | RYD50JETLK | RYD60JETLK |
| Voltage range ** | Indoor | 220V/1Ph/60Hz+⊕ | |
| | Outdoor | 220V/3N~/60Hz+⊕ | |
| Power supply cable size * | mm² | 6.0 | 6.0 |
| Number of conductors | | 4 | 4 |
| Interconnection cable size * | mm² | 2.5 | 2.5 |
| Number of conductors | | 4 & 3 | 4 & 3 |
| Recommended time delay fuse* | A | 35 | 35 |

- All wires must be firmly connected.
- Make sure all the wire do not touch the refrigerant pipings, compressor or any moving parts.
- The connecting wire between the indoor unit and the outdoor unit must be clamped by using provided cord anchorage.
- The power supply cord must be equivalent to H07RN-F which is the minimum requirement.
- Make sure no external pressure is applied to the terminal connectors and wires.
- Make sure all the covers are properly fixed to avoid any gap.
- Use round crimp-style terminal for connecting wires to the power supply terminal block. Connect the wires by matching to the indication on terminal block. (Refer to the wiring diagram attached on the unit).



- Used the correct screwdriver for terminal screws tightening. Unsuitable screwdrivers can damage the screw head.
- Over tightening can damage the terminal screws.
- Do not connect wire of different gauge to same terminal.
- Keep wiring in an orderly manner. Prevent the wiring from obstructing other parts and the terminal box cover.



VACUUMING AND CHARGING

Vacuumping is necessary to eliminate all moisture and air from the system. The series II Outdoor Unit is provided with flare valve fittings.

Vacuumping The Piping And The Indoor Unit

Except for the outdoor unit which is pre-charged with refrigerant, the indoor unit and the refrigerant connection pipes must be air-purged because the air containing moisture that remains in the refrigerant cycle may cause malfunction of the compressor.

- Remove the caps from the valve and the service port.
- Connect the center of the charging gauge to the vacuum pump.
- Connect the charging gauge to the service port of the 3-way valve.
- Start the vacuum pump. Evacuate for approximately 30 minutes. The evacuation time varies with different vacuum pump capacity. Confirm that the charging gauge needle has moved towards -760mmHg.

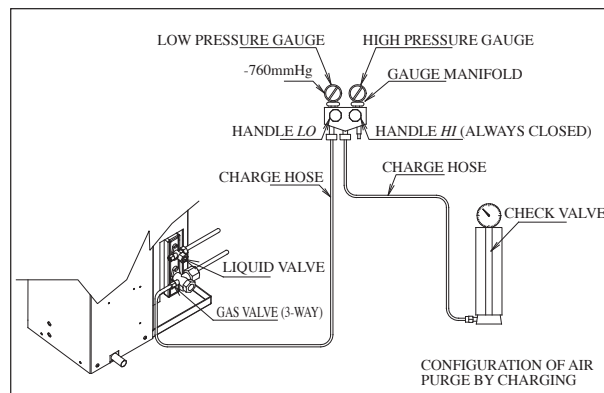
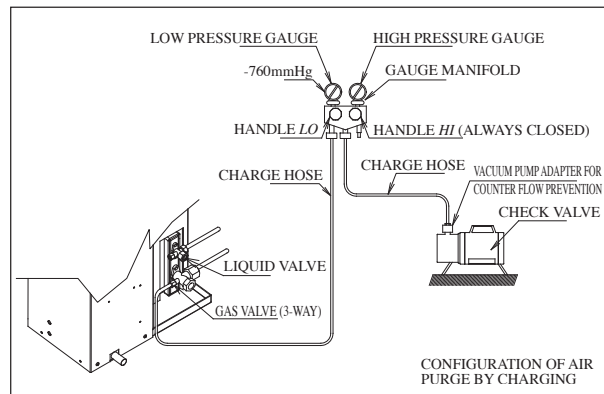
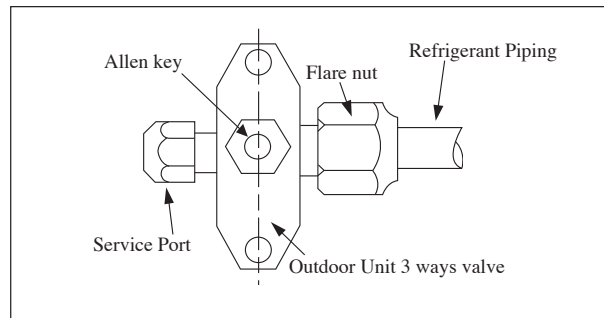
Caution

- If the gauge needle does not move to -760mmHg, be sure to check for gas leaks (using the refrigerant detector) at flare type connection of the indoor and outdoor unit and repair the leak before proceeding to the next step.
- Close the valve of the charging gauge and stop the vacuum pump.
- On the outdoor unit, open the suction valve (3 way) and liquid valve (2 way) (in anti-clockwise direction) with 4mm key for hexagon sacked screw.

Charge Operation

This operation must be done by using a gas cylinder and a precise weighing machine. The additional charge is topped-up into the outdoor unit using the suction valve via the service port.

- Remove the service port cap.
- Connect the low pressure side of the charging gauge to the suction service port center of the cylinder tank and close the high pressure side of the gauge. Purge the air from the service hose.
- Start the air conditioner unit.
- Open the gas cylinder and low pressure charging valve.
- When the required refrigerant quantity is pumped into the unit, close the low pressure side and the gas cylinder valve.
- Disconnect the service hose from service port. Put back the service port cap.



ADDITIONAL CHARGE

The refrigerant is pre-charge in the outdoor unit. If the piping length is less than 7.5m, then additional charge after vacuuming is not necessary. When the piping length is more than 7.5m, use the table below.

Cooling only

| Model | Indoor | FDM20JEVLK | FDM25JEVLK |
|-------------------------|---------|------------|------------|
| | Outdoor | RD20JEVLK | RD25JEVLK* |
| Additional charge [g/m] | | 22 | 55 |

| Model | Indoor | FDM30JEVLK | FDM40JEVLK |
|-------------------------|---------|------------|------------|
| | Outdoor | RD30JEVLK | RD30JEVLK |
| Additional charge [g/m] | | 57 | 40 |

| Model | Indoor | FDM50JEVLK | FDM60JEVLK |
|-------------------------|---------|------------|------------|
| | Outdoor | RD50JETLK | RD60JETLK |
| Additional charge [g/m] | | 58 | 107 |

Heat Pump

| Model | Indoor | FDYM20JEVLK | FDYM25JEVLK |
|-------------------------|---------|-------------|-------------|
| | Outdoor | RYD20JEVLK | RYD25JEVLK* |
| Additional charge [g/m] | | 22 | 55 |

| Model | Indoor | FDYM30JEVLK | FDYM40JEVLK |
|-------------------------|---------|-------------|-------------|
| | Outdoor | RYD30JEVLK | RYD30JEVLK |
| Additional charge [g/m] | | 57 | 40 |

| Model | Indoor | FDYM50JEVLK | FDYM60JEVLK |
|-------------------------|---------|-------------|-------------|
| | Outdoor | RYD50JETLK | RYD60JETLK |
| Additional charge [g/m] | | 58 | 107 |

Example:

FDM20JEVLK & RD20JEVLK with 13m piping length, additional piping length is 5.5m. Thus,

$$\begin{aligned} \text{Additional charge} &= 5.5[\text{m}] \times 22[\text{g/m}] \\ &= 121[\text{g}] \end{aligned}$$

CAUTION

* When connect with FDM25JEVLK and FDM25JEVLK, additional 0.2kg refrigerant charge is needed for 3.0m to 7.5m piping length.

SPECIAL PRECAUTIONS WHEN CHARGING UNIT WITH SCROLL COMPRESSORS

These precautions are intended for use with Scroll compressors only with R22 and R410A refrigerants but are not applied to others competitive Scroll compressors.

Scroll compressors have a very high volumetric efficiency and quickly pump a deep vacuum if there is insufficient refrigerant in the system or if refrigerant is added too slowly. Operation with low suction pressure will quickly lead to very high discharge temperatures. While this process is happening, the scrolls are not being well lubricated – scrolls depend on the oil mist in the refrigerant for lubrication. A lack of lubrication leads to high friction between the scroll flanks and tips and generates additional heat. The combination of heat of compression and heat from increased friction is concentrated in a small localized discharge area where temperatures can quickly rise to more than 300°C. These extreme temperatures damage the Scroll spirals and the orbiting Scroll bearing. This damage can occur in less than one minute especially on larger compressors. Failure may occur in the first few hours or the damage done during field charging may show up some time later. Other typical field charging problems include undercharging, overcharging, moisture or air in the system etc. In time each one of these problems can cause compressor failure.

Minimal equipment is required for field charging. The minimum equipment required to do a satisfactory job is:-

1. Set of service gauges
2. Hoses
3. Vacuum pump
4. Vacuum gauge
5. Scales
6. Thermometer

The proper refrigerant charge should follow the volume as recommended by manufacturer and recommendation should be followed by the installer.

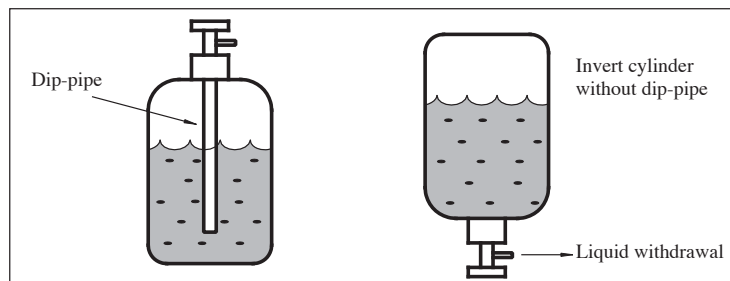
1. Charging procedures – Single phase compressors

Evacuate the system to -760mmHg. To reduce evacuation time, use short, large diameter hoses and connect to unrestricted service ports on the system. Quality of vacuum cannot be determined by time – a reliable vacuum gauge must be used. (etc. electronic vacuum gauge)

Turn the refrigerant cylinder upside down, purge the charging hose and charge liquid through the liquid line charging port until refrigerant no longer flows or until the correct charge has been weighed in. If additional charge is required start the system and slowly bleed liquid into the suction side until the system is full.

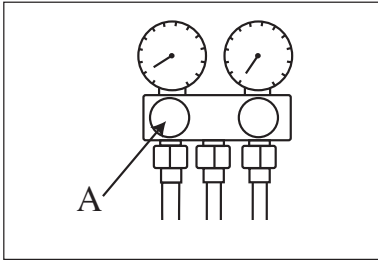
It recommends charging liquid in a CONTROLLED manner into the suction side until the system is full. This recommendation does not hold true for reciprocating compressors where liquid charging into the suction side could cause severe damage.

Carefully monitor the suction and discharge pressures – ensure that the suction pressure does not fall below 25 psig (1.7 bar) at any time during the charging process.



⚠ CAUTION

- Manifold Gauge will show cylinder pressure rather than suction pressure if the cylinder valve and Manifold valve “A” are both open.



There are many ways of charging liquid in a “controlled manner” into the suction side:-

1. Use valve A on the manifold gauge set
2. Use the valve on the refrigerant cylinder
3. Charge through a Shredder valve
4. Use a hose with a Shredder valve depressor
5. Charge into the suction side at some distance from the compressor
6. All of the above

2. Charging procedures – Three phase compressors

The fundamental procedure is the same as for single phase models but the compressor can run in the wrong direction on starting. If this happens reverse any two phases and start again. Short term reverse rotation will not damage the compressor. All Specter compressors have internal discharge temperature protectors which are very effective in preventing dangerously high discharge temperatures during charging. The protection module will trip and lock the compressor out for 30 minutes. It is not normally necessary to wait 30 minutes for the module to reset. When the compressor has cooled down the module can be reset by breaking the power supply to the control circuit. Very often the serviceman does not understand why the module tripped and uses a jumper wire to bypass it. He continues to charge the system and removes the jumper when charging is complete. The compressor may or may not run with the protector back in the circuit but it is certain that the compressor has been damaged and premature failure is inevitable.

INDICATOR LIGHTS

Fault Diagnosis

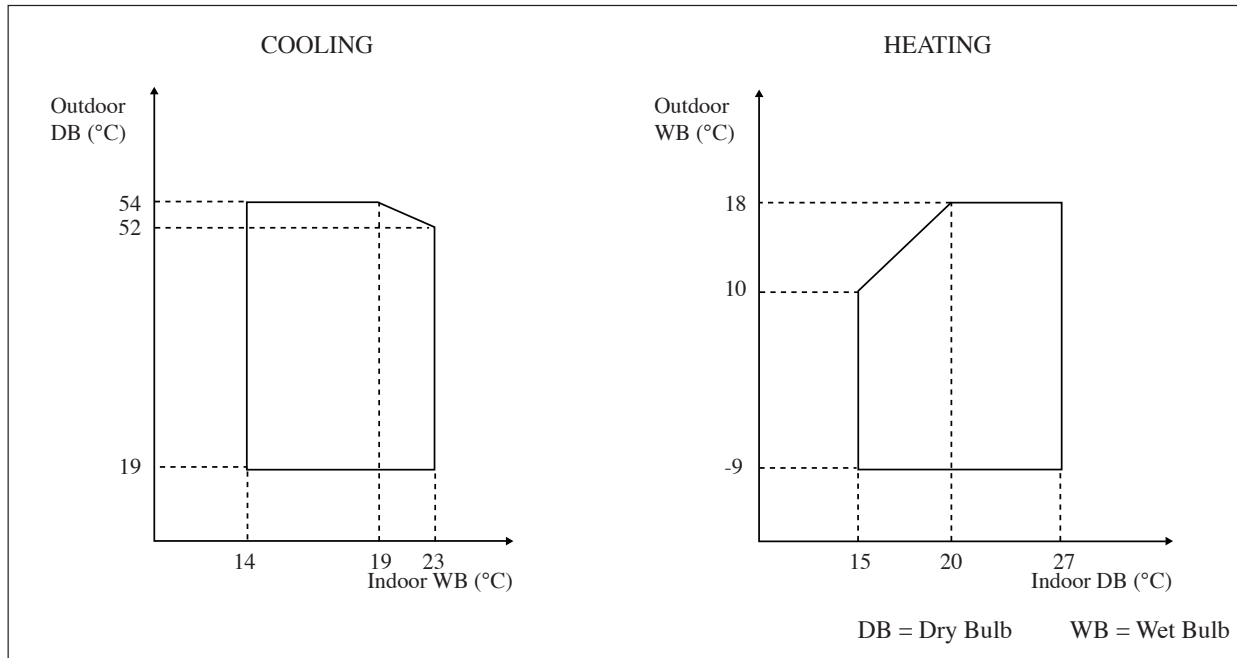
If there is any abnormal condition detected, controller will blink the error code.

| | Event | Error Code |
|----|--|------------|
| 1. | Room Sensor Open or Short | Blink E1 |
| 2. | Indoor Coil Sensor Open | Blink E2 |
| 3. | Outdoor Coil Sensor Open | Blink E3 |
| 4. | Compressor Overload / Indoor Coil Sensor Short / Outdoor Coil Sensor Short | Blink E4 |
| 5. | Gas Leak | Blink E5 |
| 6. | Water Pump Fault | Blink E6 |
| 7. | Outdoor Coil Sensor Exist (MS model) | Blink E7 |
| 8. | Hardware Error (tact switch pin short) | Blink E8 |

NOTE

The unit will not detect sensor missing when the compressor is ON.
Call your dealer immediately when this error happen.

OPERATING RANGE



OVERALL CHECKING

Ensure the following, in particular:-

- 1) The unit is mounted solidly and rigid in position.
- 2) Piping and connections are leak proof after charging.
- 3) Proper wiring has been done.

Drainage check:- Pour some water into left side of drain pan (drainage are in right side of unit).

• Test run:

- 1) Conduct a test run after water drainage test and gas leakage test.

2) Watch out for the following:-

- a) Is the electric plug firmly inserted into the socket?
- b) Is there any abnormal sound from unit?
- c) Is there smooth drainage of water?

• Check that:

- 1) Condenser fan is running, with warm air blowing off the condensing unit.
- 2) Evaporator blower is running and discharge cool air.
- 3) The remote controller incorporates a 3 minute delay in the circuit. Thus, it requires about 3 minutes before the outdoor condensing unit can start up.

PHASE PROTECTOR (OPTIONAL)

The unit with Scroll Compressor can only rotate in one direction. For this reason, a protective device (phase protector) is fitted to prevent incorrect wiring of the electrical phases. When the three phases are not connected correctly, the phase sequencer operates, and the unit will not start. This device is located in the control box of the outdoor unit.

The following table shows the LED indicator light for phase protector under normal operation and fault conditions.

| Description \ LED | PW (Red) | P_R (Yellow) | P_S (Yellow) | P_T (Yellow) | Actions |
|----------------------------------|----------|--------------|--------------|--------------|---|
| Normal operation | ○ | ● | ● | ● | - |
| Reverse phase | ◐ | ◐ | ◐ | ◐ | Switch off the unit. Check the 3 phase wiring. |
| T phase missing | ◐ | ● | ● | ◐ | Switch off the unit. Check the 3 phase wiring. |
| S phase missing | ◐ | ● | ◐ | ● | Switch off the unit. Check the 3 phase wiring. |
| R phase missing | ● | ● | ● | ● | Switch off the unit. Check the 3 phase wiring. |
| S & T phase missing ⁺ | ◐ | ● | ◐ | ◐ | Switch off the unit. Check the 3 phase wiring. |
| Overload ⁺ | ◐ | ● | ● | ● | High discharge temperature. Check the refrigerant system. |
| Sensor missing ⁺ | ◐ | ○ | ○ | ○ | Switch off the unit. Plug in sensor. |

○ ON

● OFF

◐ Fast Blink

NOTE

1. “+” indicates additional functions for PP01 phase protector.
2. When R phase missing, no LED or buzzer will indicate the error, but relay 71 and relay 81 will cut off.

SERVICE AND MAINTENANCE

| Service Parts | Maintenance Procedures | Period |
|--------------------------|--|---|
| Indoor Air Filter | <ol style="list-style-type: none"> 1. Remove any dust adhered on the filter by using a vacuum cleaner or wash in lukewarm water (below 40°C) with neutral cleaning detergent. 2. Rinse well and dry the filter before placing it back onto the unit. 3. Do not use gasoline, volatile substances or chemical to clean the filter. | At least once every 2 weeks. More frequently when necessary. |
| Indoor Unit | <ol style="list-style-type: none"> 1. Clean any dirt or dust on the grille or panel by wiping it using soft cloth soaked in lukewarm water (below 40°C) with neutral detergent solution. 2. Do not use gasoline, volatile substances or chemical to clean the indoor unit. | At least once every 2 weeks. More frequently when necessary. |
| Indoor Fan | <ol style="list-style-type: none"> 1. Check for any abnormal noise. | When necessary. |

⚠ CAUTION

Avoid direct contact of any coil treatment cleaners on plastic part. This may cause plastic part to deform as a result of chemical reaction.

TROUBLESHOOTING

For any enquiries on spare part please contact your authorized dealer. When any malfunction of the air conditioner unit is noted, immediately switch off the power supply to the unit. Check the following fault conditions and causes for some simple troubleshooting tips.

| Fault | Causes/Action |
|--|--|
| 1. The compressor does not start operate after 3 minutes from starting the air conditioner unit. | - Protection against frequent starting. Wait for 3 to 4 minutes for the compressor to start operate. |
| 2. The air conditioner unit does not operate. | <ul style="list-style-type: none"> - Power failure, or the fuse need to be replaced. - The power plug is disconnected. - It is possible that your delay timer has been set incorrectly. |
| 3. The air flow is too low. | <ul style="list-style-type: none"> - The air filter is dirty. - The air suction and discharge are clogged. - The regulated temperature is not high enough. (applicable for auto-fan mode only) |
| 4. Discharge air flow has bad odor. | - Odors may be caused by cigarettes, smoke particles, perfume etc. which might have adhered onto the coil. |
| 5. Condensation on the front air grille of the indoor unit. | <ul style="list-style-type: none"> - This is caused by air humidity after an extended long period of operation. - The set temperature is too low, increase the temperature setting and operate the unit at high fan speed. |
| 6. Water flowing out from the air conditioner unit. | - Switch off unit and call local dealer / serviceman. |

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

SPECIFICATIONS

| MODEL | INDOOR UNIT | | FDM20JEVLK | FDM25JEVLK |
|---|-------------------|-------|-------------------|-------------------|
| | OUTDOOR UNIT | | RD20JEVLK | RD25JEVLK |
| RATED VOLTAGE | | V | 220 | 220 |
| RATED FREQUENCY | | Hz | 60 | 60 |
| COOLING (T1) [INDOOR 27DB°C/19WB°C OUTDOOR 35DB°C/24WB°C] | RATED CURRENT | A | 9.45 | 12.2 |
| | RATED POWER INPUT | kW | 2.01 | 2.61 |
| | CAPACITY | Btu/h | 19000 | 23300 |
| | | kW | 5.57 | 6.83 |
| EER | (Btu/h)/W | 9.45 | 8.92 | |
| COOLING (T3) [INDOOR 29DB°C/19WB°C OUTDOOR 46DB°C/24WB°C] | RATED CURRENT | A | 11.3 | 13.8 |
| | RATED POWER INPUT | kW | 2.41 | 2.97 |
| | CAPACITY | Btu/h | 16300 | 20000 |
| | | kW | 4.78 | 5.86 |
| EER | (Btu/h)/W | 6.76 | 6.73 | |
| NET WEIGHT | INDOOR UNIT | kg | 25 | 28 |
| | OUTDOOR UNIT | kg | 49 | 57 |
| REFRIGERANT | R22 | kg | 1.60 | 1.80** |
| COUNTRY OF ORIGIN | INDOOR UNIT | | Malaysia | |
| | OUTDOOR UNIT | | Malaysia | |

| MODEL | INDOOR UNIT | | FDMY20JEVLK | FDMY25JEVLK |
|---|-------------------|-------|--------------------|--------------------|
| | OUTDOOR UNIT | | RYD20JEVLK | RYD25JEVLK |
| RATED VOLTAGE | | V | 220 | 220 |
| RATED FREQUENCY | | Hz | 60 | 60 |
| COOLING (T1) [INDOOR 27DB°C/19WB°C OUTDOOR 35DB°C/24WB°C] | RATED CURRENT | A | 9.45 | 12.2 |
| | RATED POWER INPUT | kW | 2.01 | 2.61 |
| | CAPACITY | Btu/h | 19000 | 23300 |
| | | kW | 5.57 | 6.83 |
| EER | (Btu/h)/W | 9.45 | 8.92 | |
| COOLING (T3) [INDOOR 29DB°C/19WB°C OUTDOOR 46DB°C/24WB°C] | RATED CURRENT | A | 11.3 | 13.8 |
| | RATED POWER INPUT | kW | 2.41 | 2.97 |
| | CAPACITY | Btu/h | 16300 | 20000 |
| | | kW | 4.78 | 5.86 |
| EER | (Btu/h)/W | 6.76 | 6.73 | |
| HEATING [INDOOR 20DB°C/--WB°C OUTDOOR 7DB°C/6WB°C] | RATED CURRENT | A | 8.83 | 10.3 |
| | RATED POWER INPUT | kW | 1.88 | 2.20 |
| | CAPACITY | Btu/h | 21000 | 24500 |
| | | W | 6150 | 7180 |
| COP | W/W | 3.27 | 3.26 | |
| NET WEIGHT | INDOOR UNIT | kg | 25 | 28 |
| | OUTDOOR UNIT | kg | 49 | 57 |
| REFRIGERANT | R22 | kg | 1.60 | 1.80** |
| COUNTRY OF ORIGIN | INDOOR UNIT | | Malaysia | |
| | OUTDOOR UNIT | | Malaysia | |

NOTE:

This product is not designed for repacking. In case of re-packing, contact to Daikin Dealer.

**** Additional refrigerant charge of 0.2kg is needed in order to achieve the stated performance data.**

SPECIFICATIONS

| MODEL | INDOOR UNIT | | FDM30JEVLK | FDM40JEVLK |
|---|-------------------|----------|------------|------------|
| | OUTDOOR UNIT | | RD30JEVLK | RD40JEVLK |
| RATED VOLTAGE | | | V | 220 |
| RATED FREQUENCY | | | Hz | 60 |
| COOLING (T1) INDOOR 27DB°C/19WB°C OUTDOOR 35DB°C/24WB°C | RATED CURRENT | A | 15.49 | 18.66 |
| | RATED POWER INPUT | kW | 3.20 | 3.90 |
| | CAPACITY | Btu/h | 28500 | 36000 |
| | | kW | 8.21 | 10.55 |
| EER | (Btu/h)/W | 8.91 | 9.23 | |
| COOLING (T3) INDOOR 29DB°C/19WB°C OUTDOOR 46DB°C/24WB°C | RATED CURRENT | A | 17.86 | 21.61 |
| | RATED POWER INPUT | kW | 3.73 | 4.57 |
| | CAPACITY | Btu/h | 24640 | 31680 |
| | | kW | 7.22 | 9.28 |
| EER | (Btu/h)/W | 6.60 | 6.93 | |
| NET WEIGHT | INDOOR UNIT | kg | 32 | 32 |
| | OUTDOOR UNIT | kg | 61 | 81 |
| REFRIGERANT | R22 | kg | 1.75 | 2.20 |
| COUNTRY OF ORIGIN | INDOOR UNIT | Malaysia | | |
| | OUTDOOR UNIT | Malaysia | | |

| MODEL | INDOOR UNIT | | FDYM30JEVLK | FDYM40JEVLK |
|---|-------------------|----------|-------------|-------------|
| | OUTDOOR UNIT | | RYD30JEVLK | RYD40JEVLK |
| RATED VOLTAGE | | | V | 220 |
| RATED FREQUENCY | | | Hz | 60 |
| COOLING (T1) INDOOR 27DB°C/19WB°C OUTDOOR 35DB°C/24WB°C | RATED CURRENT | A | 15.49 | 18.66 |
| | RATED POWER INPUT | kW | 3.20 | 3.90 |
| | CAPACITY | Btu/h | 28500 | 36000 |
| | | kW | 8.21 | 10.55 |
| EER | (Btu/h)/W | 8.91 | 9.23 | |
| COOLING (T3) INDOOR 29DB°C/19WB°C OUTDOOR 46DB°C/24WB°C | RATED CURRENT | A | 17.86 | 21.61 |
| | RATED POWER INPUT | kW | 3.73 | 4.57 |
| | CAPACITY | Btu/h | 24640 | 31680 |
| | | kW | 7.22 | 9.28 |
| EER | (Btu/h)/W | 6.60 | 6.93 | |
| HEATING INDOOR 20DB°C/--WB°C OUTDOOR 7DB°C/6WB°C | RATED CURRENT | A | 13.11 | 18.46 |
| | RATED POWER INPUT | kW | 2.64 | 3.80 |
| | CAPACITY | Btu/h | 30000 | 40000 |
| | | W | 8.79 | 11.72 |
| COP | W/W | 3.33 | 3.08 | |
| NET WEIGHT | INDOOR UNIT | kg | 32 | 32 |
| | OUTDOOR UNIT | kg | 61 | 81 |
| REFRIGERANT | R22 | kg | 1.75 | 2.20 |
| COUNTRY OF ORIGIN | INDOOR UNIT | Malaysia | | |
| | OUTDOOR UNIT | Malaysia | | |

NOTE:

This product is not designed for repacking. In case of re-packing, contact to Daikin Dealer.

SPECIFICATIONS

| MODEL | INDOOR UNIT | | FDM50JEVLK | FDM60JEVLK |
|---|-------------------|----------|------------|------------|
| | OUTDOOR UNIT | | RD50JETLK | RD60JETLK |
| RATED VOLTAGE | | | V | 220 |
| RATED FREQUENCY | | | Hz | 60 |
| COOLING (T1) [INDOOR 27DB°C/19WB°C OUTDOOR 35DB°C/24WB°C] | RATED CURRENT | A | 16.55 | 19.10 |
| | RATED POWER INPUT | kW | 5.36 | 6.20 |
| | CAPACITY | Btu/h | 48000 | 55000 |
| | | kW | 14.07 | 16.12 |
| EER | (Btu/h)/W | 8.95 | 8.87 | |
| COOLING (T3) [INDOOR 29DB°C/19WB°C OUTDOOR 46DB°C/24WB°C] | RATED CURRENT | A | 18.50 | 22.81 |
| | RATED POWER INPUT | kW | 6.30 | 7.54 |
| | CAPACITY | Btu/h | 42240 | 47960 |
| | | kW | 12.38 | 14.06 |
| EER | (Btu/h)/W | 6.70 | 6.36 | |
| NET WEIGHT | INDOOR UNIT | kg | 50 | 56 |
| | OUTDOOR UNIT | kg | 95 | 104 |
| REFRIGERANT | R22 | kg | 2.60 | 5.00 |
| COUNTRY OF ORIGIN | INDOOR UNIT | Malaysia | | |
| | OUTDOOR UNIT | Malaysia | | |

| MODEL | INDOOR UNIT | | FDM50JEVLK | FDM60JEVLK |
|---|-------------------|----------|------------|------------|
| | OUTDOOR UNIT | | RD50JETLK | RD60JETLK |
| RATED VOLTAGE | | | V | 220 |
| RATED FREQUENCY | | | Hz | 60 |
| COOLING (T1) [INDOOR 27DB°C/19WB°C OUTDOOR 35DB°C/24WB°C] | RATED CURRENT | A | 16.55 | 19.10 |
| | RATED POWER INPUT | kW | 5.36 | 6.20 |
| | CAPACITY | Btu/h | 48000 | 55000 |
| | | kW | 14.07 | 16.12 |
| EER | (Btu/h)/W | 8.95 | 8.87 | |
| COOLING (T3) [INDOOR 29DB°C/19WB°C OUTDOOR 46DB°C/24WB°C] | RATED CURRENT | A | 18.50 | 22.81 |
| | RATED POWER INPUT | kW | 6.30 | 7.54 |
| | CAPACITY | Btu/h | 42240 | 47960 |
| | | kW | 12.38 | 14.06 |
| EER | (Btu/h)/W | 6.70 | 6.36 | |
| HEATING [INDOOR 20DB°C/--WB°C OUTDOOR 7DB°C/6WB°C] | RATED CURRENT | A | 14.55 | 17.51 |
| | RATED POWER INPUT | kW | 4.53 | 5.51 |
| | CAPACITY | Btu/h | 50000 | 60000 |
| | | W | 14.65 | 17.58 |
| COP | W/W | 3.23 | 3.19 | |
| NET WEIGHT | INDOOR UNIT | kg | 50 | 56 |
| | OUTDOOR UNIT | kg | 95 | 104 |
| REFRIGERANT | R22 | kg | 2.60 | 5.00 |
| COUNTRY OF ORIGIN | INDOOR UNIT | Malaysia | | |
| | OUTDOOR UNIT | Malaysia | | |

NOTE:

This product is not designed for repacking. In case of re-packing, contact to Daikin Dealer.

- In the event that there is any conflict in the interpretation of this manual and any translation of the same in any language, the English version of this manual shall prevail.
- The manufacturer reserves the right to revise any of the specification and design contain herein at any time without prior notification.

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