38GVM / 40GVM
Multi–Split High–Wall Ductless Split System
38GVM – Size 18k, 24k, 30k, 36k and 42k
40GVM – Size 9k, 12k, and 18k

Carrier
turn to the experts

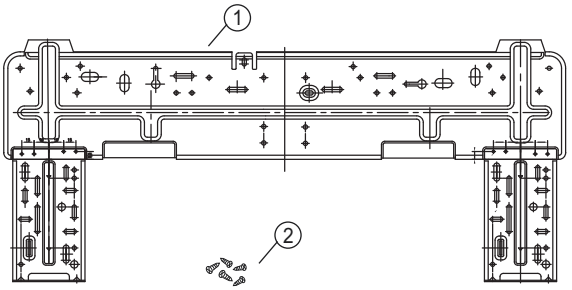
Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

TABLE OF CONTENTS

PARTS LIST

Part No.	Part Name	Qty
1	Mounting Plate	1
2	Mounting Screws	5
3	Remote Control	1
4	Remote Control Holder	1
5	Conversion Joint	Varies. See CJ Table



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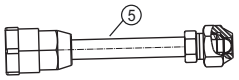

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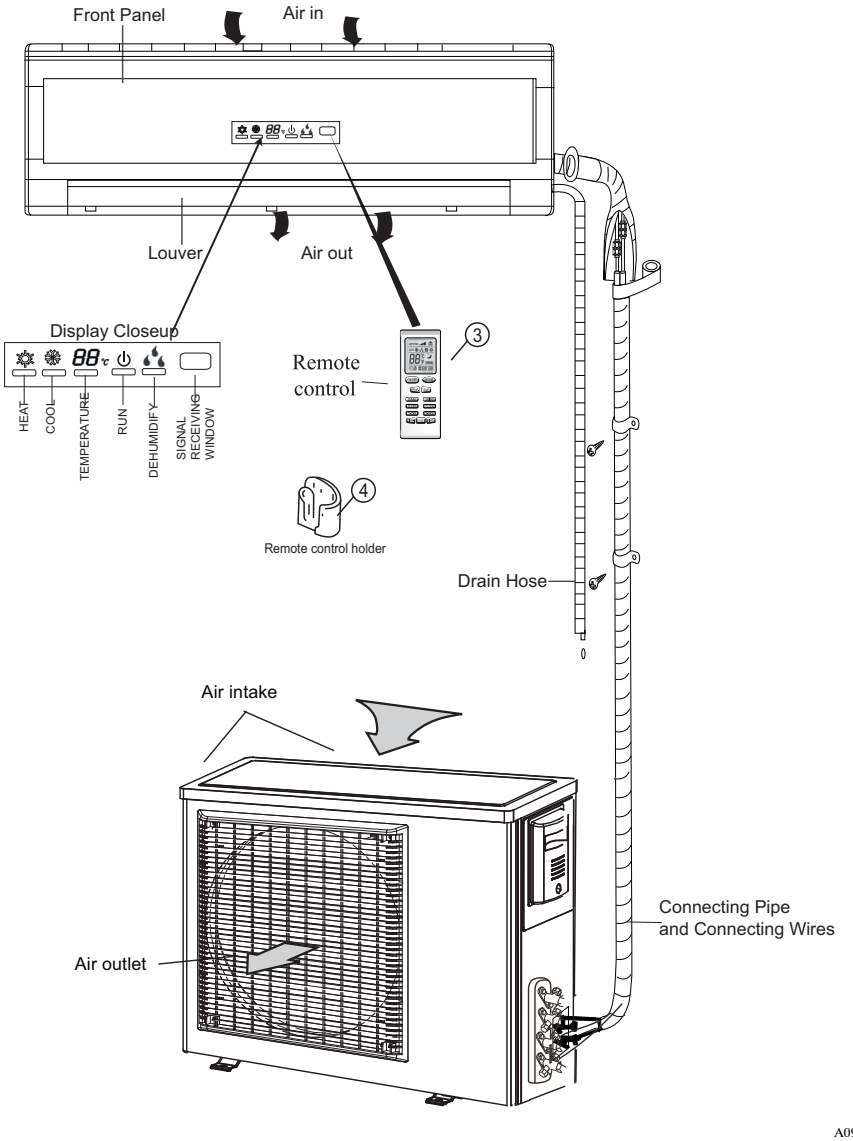

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Fig. 1 – 38GVM / 40GVM018 - 042 Parts List

SAFETY CONSIDERATIONS

Installing, starting up, and servicing air-conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location (roofs, elevated structures, etc.).

Only trained, qualified installers and service mechanics should install, start-up, and service this equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.

When working on the equipment, observe precautions in the literature and on tags, stickers, and labels attached to the equipment.

Follow all safety codes. Wear safety glasses and work gloves. Keep quenching cloth and fire extinguisher nearby when brazing. Use care in handling, rigging, and setting bulky equipment.

Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

Recognize safety information. This is the safety-alert symbol ⚠ . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.Understand these signal words: DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Do not bury more than 36 in. (914 mm) of refrigerant pipe in the ground. If any section of pipe is buried, there must be a 6 in. (152 mm) vertical rise to the valve connections on the outdoor units. If more than the recommended length is buried, refrigerant may migrate to the cooler buried section during extended periods of system shutdown. This causes refrigerant slugging and could possibly damage the compressor at start-up.

GENERAL

These instructions cover the installation, start-up and servicing of the 38GVM outdoor unit connected to up to four 40GVM indoor high wall units. For approved combinations, please refer to the Product Data.

SYSTEM REQUIREMENTS

Allow sufficient space for airflow and servicing unit. See Fig. 7 through 9 for minimum required clearances.

Piping

IMPORTANT: **Both refrigerant lines must be insulated separately.**

Minimum refrigerant line length between the indoor and outdoor units is 10 ft. (3 m).

The following maximum lengths are allowed:

Refrigerant Line lengths ft (m)					
Unit Size	**18 K**	**24 K**	**30 K**	**36 K**	**42 K**
Total Piping	**66 (20)**	**230 (70)**	**230 (70)**	**230 (70)**	**262 (80)**
Max Pipe Length to Any One FCU	33 (10)	66 (20)			82 (25)
Max Elevation (ID to ID)	16.4 (5)	33 (10)		25 (7.5)	
Max Elevation (ID over OD)	16.4 (5)	33 (10)		50 (15)	
Max Elevation (OD over ID)	16.4 (5)	33 (10)		50 (15)	

The following are the piping sizes:

Outdoor Unit Service Valve Sizes			
Unit Size	**Number of Valves**	**Mix Phase**	**Vapor**
18K	2	1/4”	3/8”
24K	3	1/4”	3/8”
30K	4	1/4”	3/8”
36K	2	1/4”	3/8”
	1	1/4”	1/2”
	1	3/8”	5/8”
42K	2	1/4”	3/8”
	2	1/4”	1/2”
	1	3/8”	5/8”

Indoor Unit Piping Connection Sizes		
Unit Size	**Mix Phase**	**Vapor**
9 & 12K	1/4”	3/8”
18 K	1/4”	1/2”

Refrigerant Piping:

Line sets to be sized based on the connection size of the indoor unit. Each pipe to be insulated individually.

Conversion Joints:

The 38GVM may include a package of conversion joints to facilitate installation of various sizes of fan coils. These joints are to be connected to the outdoor unit as needed to match the line set size.

Refrigerant Charge				
Unit Size	Charge oz. (kg.)	Additional Charge Required After ft. (m)	Additional Charge oz./ft. (g/m)	Metering Device
18 K	47.6 (1.35)	20 (6.1)	0.21 (20)	EXV
24 K	77.6 (2.2)	30 (9.1)	0.21 (20)	EXV
30 K	77.6 (2.2)	40 (12.2)	0.21 (20)	EXV
36 K	102.2 (2.9)	40 (12.2)	0.235 (22)	EXV
42 K	169.3 (4.8)	150 (45.7)	0.235 (22)	EXV

NOTES:
EXV = Electronic Expansion Device
Electronic expansion valves in the outdoor unit are used as metering devices.

Electrical Data				
Unit Size	System Voltage Volts–Ph–Freq	Operating Voltage (Min/Max)	MCA	Max Fuse/CB Amps (MOCP)
18K	208/230–1–60	187/253	13	20
24K	208/230–1–60	187/253	20	30
30K	208/230–1–60	187/253	26	45
36K	208/230–1–60	187/253	28	45
42K	208/230–1–60	187/253	29	50

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

- Wires should be sized based on NEC and local codes.
- Use copper conductors only with a minimum 300 volt . rating and 2/64 inch thick insulation.

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

- Be sure to comply with local codes while running wire from indoor unit to outdoor unit.
- Every wire must be connected firmly. Loose wiring may cause terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, be sure all wiring is tightly connected.
- No wire should be allowed to touch refrigerant tubing, compressor or any moving parts.
- Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner.
- Connecting cable with conduit shall be routed through hole in the conduit panel.

Recommended Connection Method for Power and Communication Wiring (To minimize communication wiring interference)

Power Wiring:

The main power is supplied to the outdoor unit. The field supplied connecting cable from the outdoor unit to indoor unit consists of three (3) wires and provides the power for the indoor unit. Two wires are high voltage AC power and one is a ground wire.

Consult your local building codes and the NEC (National Electrical Code) or CEC (Canadian Electrical Code) for special requirements.

All wires must be sized per NEC or CEC and local codes. Use Electrical Data table MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

Per caution note, only copper conductors with a minimum 300 volt rating and 2/64--inch thick insulation must be used.

Communication Wiring:

A separate shielded copper conductor only, with a minimum 300 volt rating and 2/64-inch thick insulation, must be used as the communication wire from from the outdoor unit to the indoor unit.

To minimize voltage drop of the control wire, use the following wire size and maximum lengths shown in the chart below:

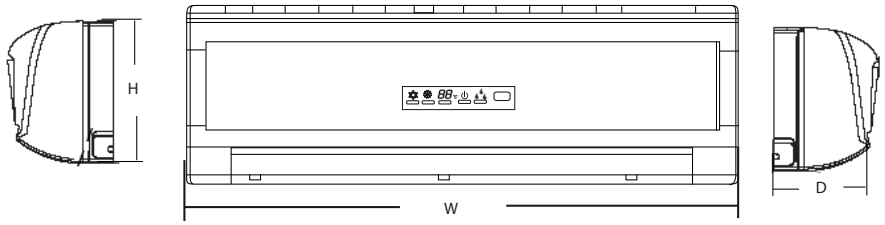
Wire Size	Length ft (m)
18 AWG	50 ft. (15 m)
16 AWG	50 ft (15) to 100 ft. (30 m)

Alternate Connection Method for Power and Communication Wiring (May not prevent communication wiring interference)

The main power is supplied to the outdoor unit. The field supplied connecting cable from the outdoor unit to indoor unit consists of four (4) wires and provides the power and communication signals for the indoor unit. Two wires are high voltage AC power (L1 and L2), one is a ground wire, and one is a DC communication wire.

Consult your local building codes and the NEC (National Electrical Code) or CEC (Canadian Electrical Code) for special requirements. All power wires must be sized per NEC or CEC and local codes. Use Electrical Data table MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

DIMENSIONS - INDOOR



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Unit Size	W In. (mm)	H In. (mm)	D In. (mm)	Net Operating Weight Lbs. (Kg)
9k	33.3 (846)	10.7 (272)	7.1 (180)	22.0 (10)
12k	33.3 (846)	10.7 (272)	7.1 (180)	22.0 (10)
18k	37.0 (940)	11.7 (297)	7.9 (201)	29.0 (13)

Fig. 2 – Indoor Unit Dimensions

DIMENSIONS - OUTDOOR

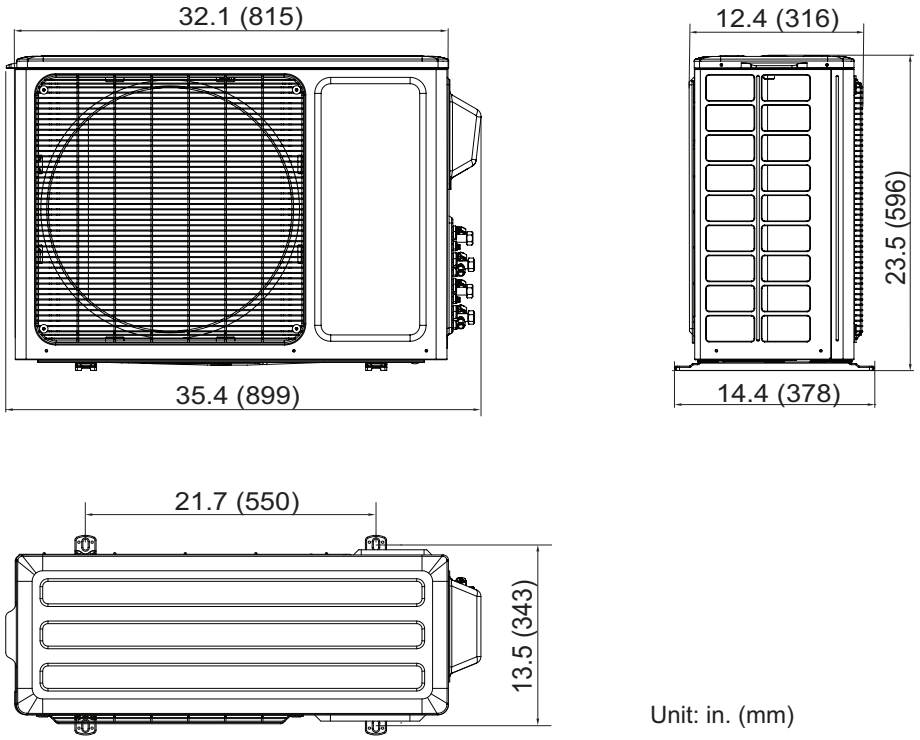

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Fig. 3 – 38GVM018
Weight, lb (kg): Gross - 106 (48) / Net - 95 (43)

DIMENSIONS - OUTDOOR (CONTINUED)

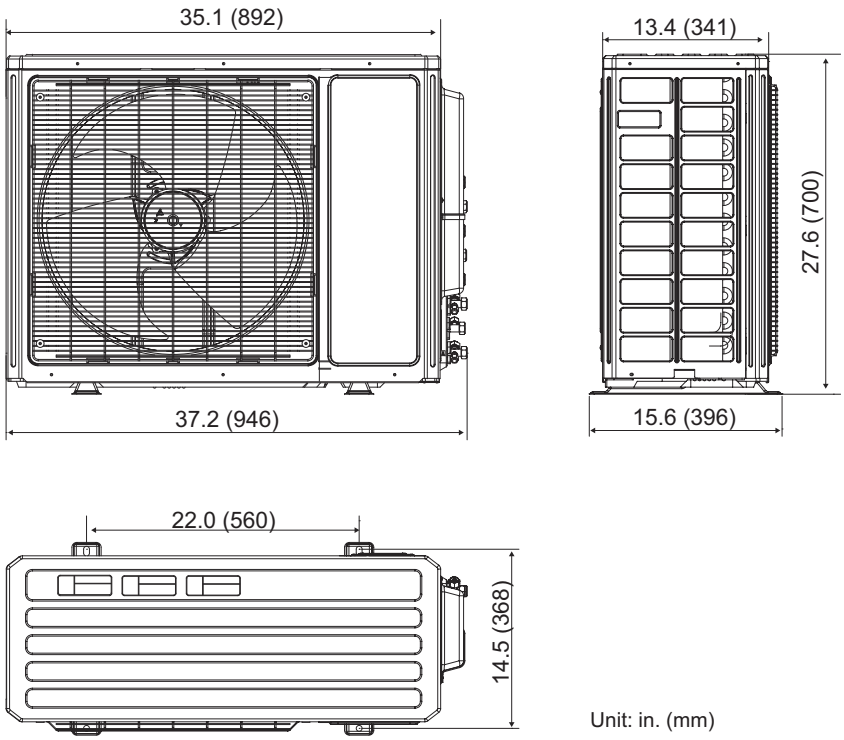

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Fig. 4 – 38GVM024/030
024 Weight, lb (kg): Gross - 146 (66.2) / Net - 135 (61.2)
030 Weight, lb (kg): Gross - 148 (67.1) / Net - 137 (62.1)

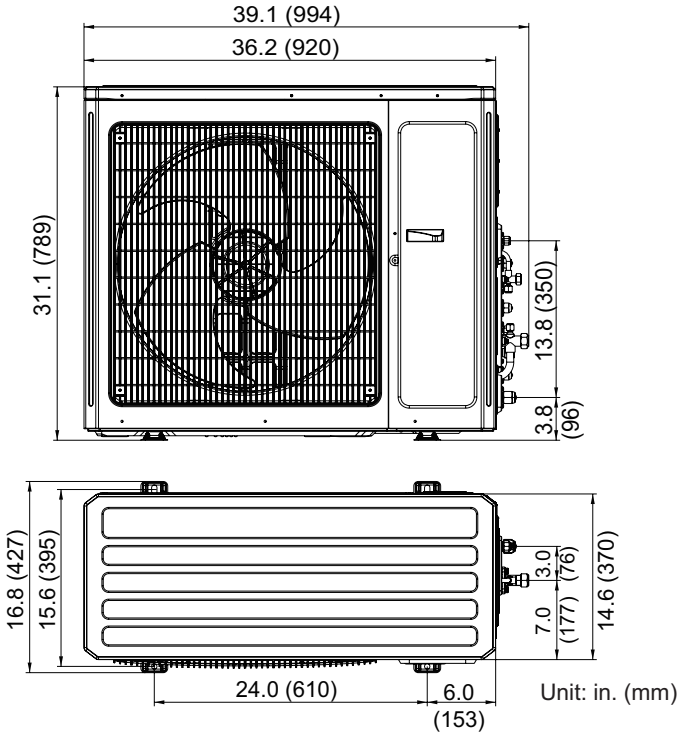

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Fig. 5 – 38GVM036
Weight, lb (kg): Gross - 172 (78) / Net - 161 (73)

DIMENSIONS - OUTDOOR (CONTINUED)

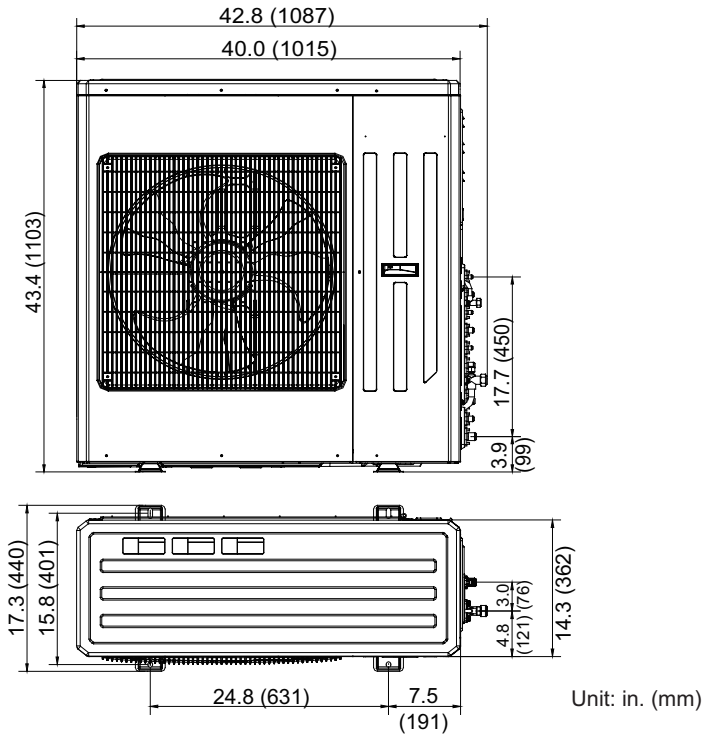

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Fig. 6 – 38GVM042
Weight, lb (kg): Gross - 247 (112.3) / Net - 225 (102.3)

CLEARANCES - INDOOR

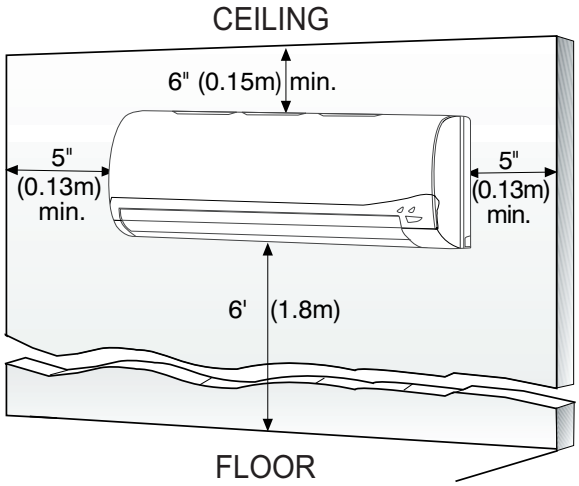

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Fig. 7 – Indoor unit clearance

CLEARANCES - OUTDOOR

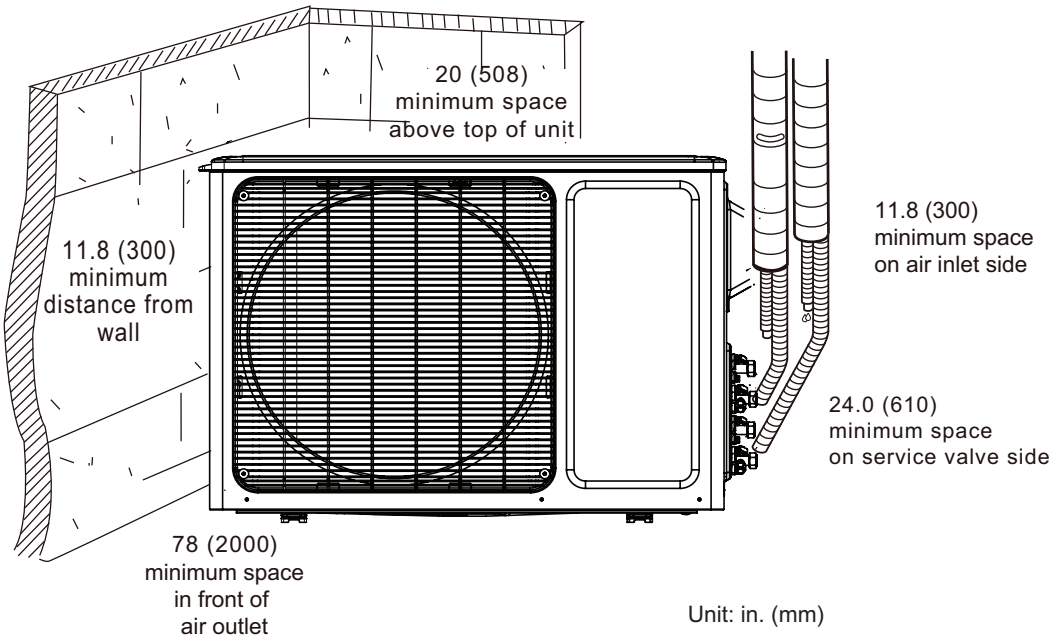

Fig. 8 – 38GVM018, 024, 030

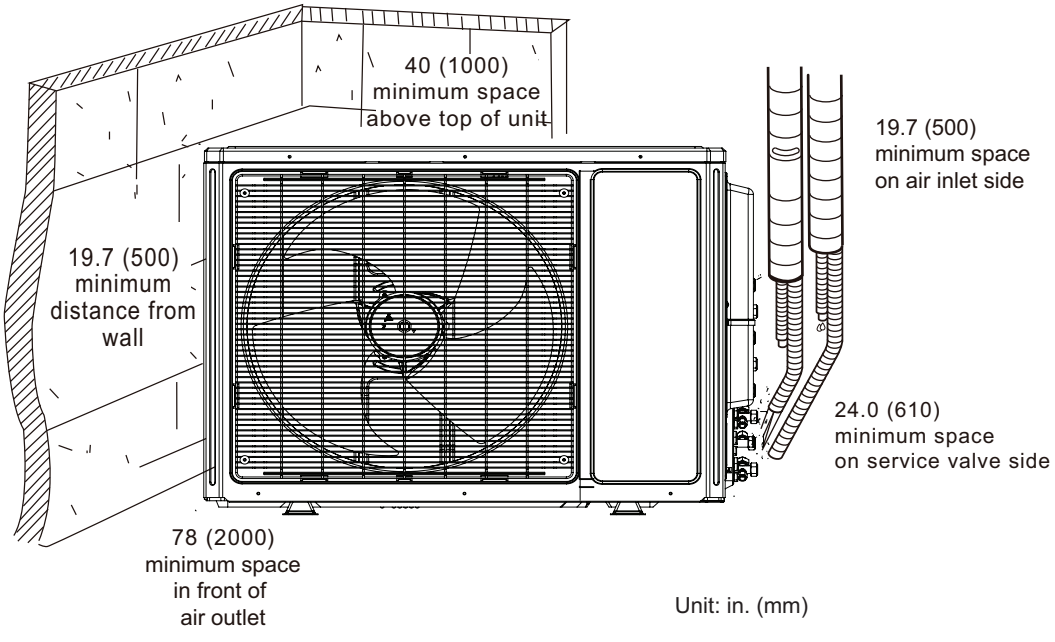

Fig. 9 – 38GVM036, 042

INSTALLATION GUIDE

Up to four fan coil units can be connected to one outdoor unit. Refer to the Product Data for approved combinations.

Ideal installation locations include:

Each Indoor Unit

- A location where there are no obstacles near inlet and outlet area.
- A location which can bear the weight of indoor unit.
- Do not install indoor units near a direct source of heat such as direct sunlight or a heating appliance.
- A location which provides appropriate clearances as outlined in Fig. 7.

Outdoor Unit

- A location which is convenient to installation and not exposed to strong wind. If unit is exposed to strong winds it is recommended that a field-fabricated wind baffle be used. (See Fig. 15)
- A location which can bear the weight of outdoor unit and where the outdoor unit can be mounted in a level position.
- A location which provides appropriate clearances as outlined in Fig. 8 and Fig. 9.
- Do not install the indoor or outdoor units in a location with special environmental conditions. For those applications, contact your Carrier Representative.

INDOOR UNIT INSTALLATION

INSTALL MOUNTING PLATE

For each fan coil:

1. Carefully remove the mounting plate, which is attached to the back of the indoor unit.
2. The mounting plate should be located horizontally and level on the wall.
3. If the wall is block, brick, concrete or similar material, drill .2" (5 mm) diameter holes and insert anchors for the appropriate mounting screws.
4. Attach the mounting plate to the wall.

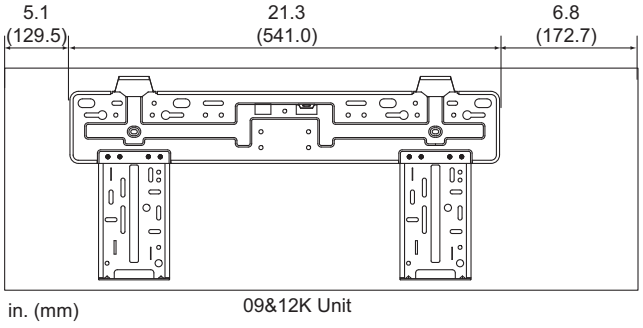

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Fig. 10 – 9k & 12k Mounting Plate Spacing

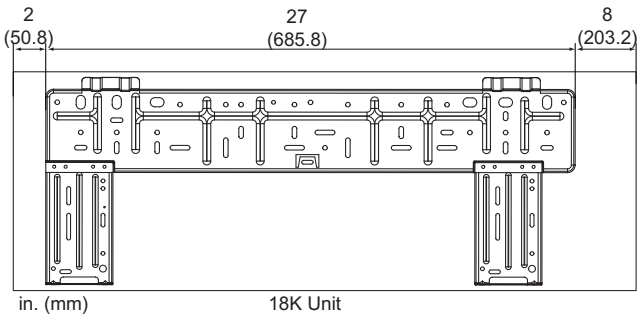

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Fig. 11 – 18k Mounting Plate Spacing

FOR EACH FAN COIL, DRILL HOLE IN WALL FOR INTERCONNECTING PIPING, DRAIN AND WIRING

Refrigerant Line Routing

The refrigerant lines may be routed in any of the four directions shown in Fig. 12 (a) and (b).

For maximum serviceability, it is recommended to have refrigerant line flare connections and the drain connection on the outside of the wall that the fan coil is mounted on.

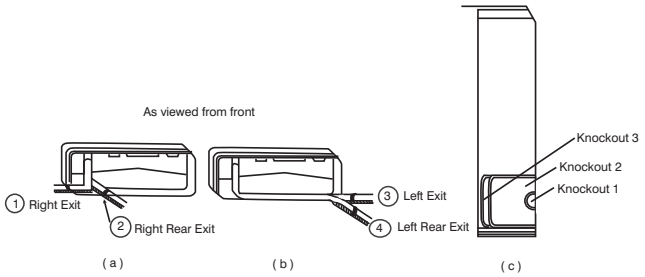

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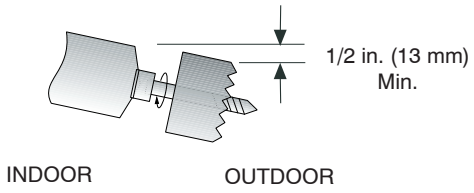
Fig. 12 – Refrigerant Line Routing

If piping is going through the back:

1. Determine pipe hole position using the mounting plate as a template. Drill pipe hole diameter per chart below. The outside pipe hole is 1/2-in. (13 mm) min. lower than inside pipe hole, so it slants slightly downward (see Fig. 13).
   If piping is going to exit from the left rear, it is recommended to field-fabricate piping extensions to get the flare connections to the outside of the wall.



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Unit Size	Hole Diameter in. (mm)
9k, 12k, and 18k	3.75 (95)

Fig. 13 – Drill Holes

If piping is going through the right or left side:

1. Use a small saw blade to carefully remove the corresponding plastic covering on side panel and drill the appropriate size hole where the pipe is going through the wall. See Fig. 12 (c).
2. Remove knockout 1 if you are running only the wiring. Remove knockout 1 and 2 or knockout 1, 2 and 3 if you are running both piping and wiring through the side of the unit.

OUTDOOR UNIT INSTALLATION

1. Use a rigid base to support unit in a level position.
2. Locate outdoor unit and connect piping and wiring.

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Excessive torque can break flare nut depending on installation conditions.

Piping Connections to Outdoor Unit

IMPORTANT: Use refrigeration grade tubing ONLY. No other type of tubing may be used. Use of other types of tubing will void manufacturer's warranty.
Make sure there is enough piping to cover the required length between the outdoor and indoor unit.
Only use piping suitable for high side pressure for both high side and low side connections.

Piping Guide:

- Do not open service valves or remove protective caps from tubing ends until all the connections are made.
- Bend tubing with bending tools to avoid kinks and flat spots.
- Keep the tubing free of dirt, sand, moisture, and other contaminants to avoid damaging the refrigerant system.
- Avoid sags in the suction line to prevent the formation of oil traps. Insulate each tube with minimum 3/8-in. (10 mm) wall thermal pipe insulation. Inserting the tubing into the insulation before making the connections will save time and improve installation quality.

1. The unit is equipped with multiple pairs of service valves. Each pair is clearly marked (color and letter) to identify the indoor unit circuits. In the outdoor unit wiring area, each indoor unit interconnecting terminal block is marked (letter) the same as the corresponding pair of service valves. The indoor units must be piped and wired in matched sets (A to A; B to B, etc)
2. It is not required to use all of the available fan coil connections if the application does not require them at the current time. The system can be expanded at any time.
3. Conversion joints are supplied with the outdoor unit. They are required for certain fan coil combinations. These joints are to be connected to the outdoor unit as needed to match the line set size.
4. Cut tubing with tubing cutter.
5. Install correct size flare nut onto tubing and make flare connection.
6. Apply a small amount of refrigerant oil to the flare connection on the tubing.
7. Properly align tubing in with service valve (conversion joint).
8. Tighten flare nut and finish installation using two wrenches as shown in Fig. 14.

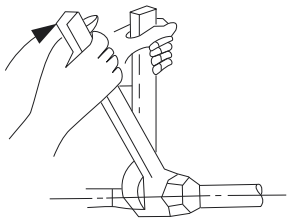

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Fig. 14 – Tighten Flare Nut

INSTALL ALL POWER AND INTERCONNECTING WIRING TO OUTDOOR UNIT

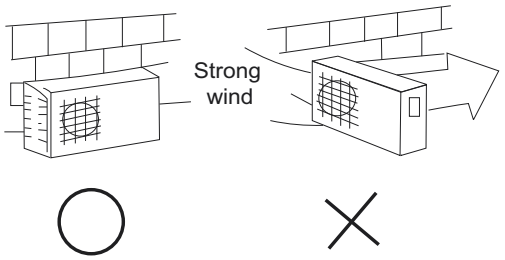

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Fig. 15 – High Wind Installation

Outdoor Unit Wiring Connections

1. Mount outdoor power disconnect.
2. Run power wiring from main box to disconnect per NEC and local codes.
3. Remove field wiring cover (if available) from unit by loosening screws.
4. Remove knockouts..
5. Connect conduit to conduit panel. (See Fig. 16)
6. Properly connect both power supply and control lines to terminal block per the connection diagram.
7. Ground unit in accordance with NEC and local electrical codes.
8. Use lock nuts to secure conduit.
9. Reinstall field wiring cover (size 18k only).

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

- Be sure to comply with local codes while running wire from indoor unit to outdoor unit.
- Every wire must be connected firmly. Loose wiring may cause terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, be sure all wiring is tightly connected.
- No wire should be allowed to touch refrigerant tubing, compressor or any moving parts.
- Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner.
- Connecting cable with conduit shall be routed through hole in the conduit panel.

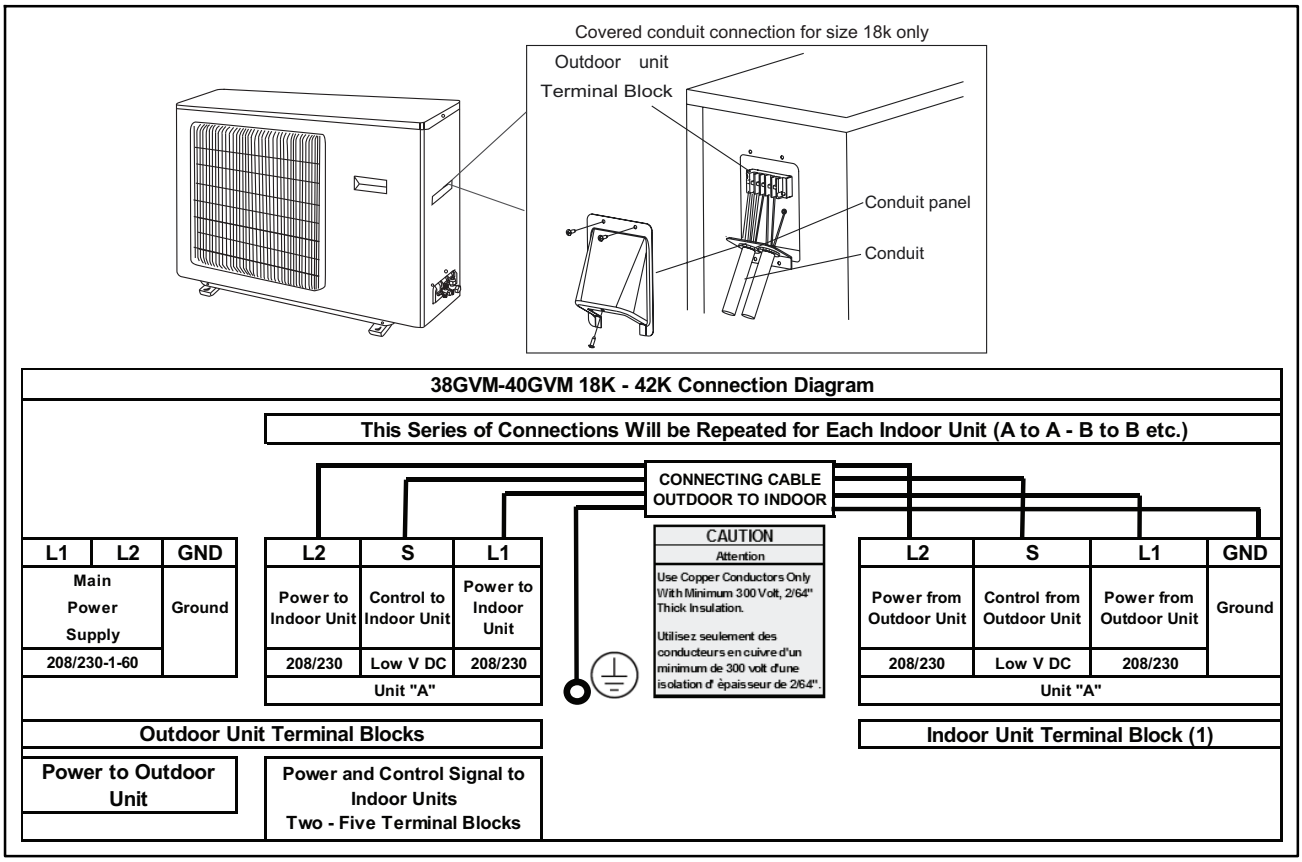

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Fig. 16 – Field Wiring

INSTALL ALL POWER, INTERCONNECTING WIRING, AND PIPING TO INDOOR UNIT.

1. Run interconnecting piping and wiring from outdoor unit to each indoor unit (in matched pairs).
2. Pass interconnecting cable through hole in wall (outside to inside).
3. Lift indoor unit into position and route piping and drain through hole in wall (inside to outside). Fit interconnecting wiring into back side of indoor unit.
4. Hang indoor unit on upper hooks of wall mounting plate (as shown in Fig. 17)

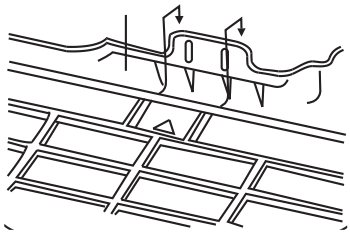

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Fig. 17 – Hanging Indoor Unit

5. Open front cover of indoor unit and remove field wiring terminal block cover (see Fig. 18)

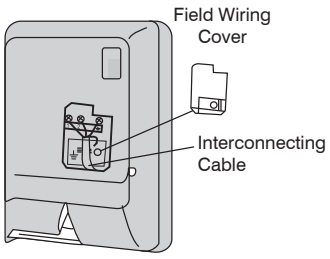

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Fig. 18 – Field Wiring Cover

6. Pull interconnecting wire up from back of indoor unit and position in close to the terminal block on indoor unit.
7. Push bottom of indoor unit onto mounting plate to complete wall mount.
8. Connect wiring from outdoor unit per connection diagram (see Fig. 16).

NOTE: **Polarity of power wires must match original connection on outdoor unit.**

9. Replace field wiring cover and close front cover of indoor unit.
10. Connect refrigerant piping and drain line outside of indoor unit. Refer to *Piping Connections to Outdoor Unit* section and Fig. 14 for proper installation of flare connections. Complete pipe insulation at flare connection then fasten piping and wiring to the wall as required. Completely seal the hole in the wall.
11. Repeat steps 1 through 10 for each indoor unit.

SYSTEM VACUUM AND CHARGE

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Never use the system compressor as a vacuum pump.

Refrigerant tubes and indoor coil should be evacuated using the recommended deep vacuum method of 500 microns. The alternate triple evacuation method may be used if the procedure outlined below is followed. Always break a vacuum with dry nitrogen.

Using Vacuum Pump

1. Completely tighten flare nuts A, B, C, D, (for all fan coils). Connect gage charge hose to one circuit or all circuits (if using a multiple connection manifold) at the low side service valve charge port(s). (See Fig. 19.)
2. Connect charge hose to vacuum pump.
3. Fully open the low side of manifold gage. (See Fig. 20)
4. Start vacuum pump
5. Evacuate using either deep vacuum or triple evacuation method.
6. After evacuation is complete, fully close the low side of manifold gage and stop operation of vacuum pump.
7. If multiple connection manifold is not used, repeat the procedure (1 through 6) until all indoor units and piping are completely vacuumed.
8. The factory charge contained in the outdoor unit is suitable for max pipe length as shown on page 3 of this document. If additional charge is required, it should be added to the system as liquid at this time.
9. Disconnect charge hose from charge connection of the low side service valve.
10. Fully open all service valves.
11. Securely tighten caps of service valves.

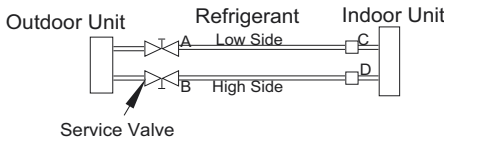

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Fig. 19 – Service Valve

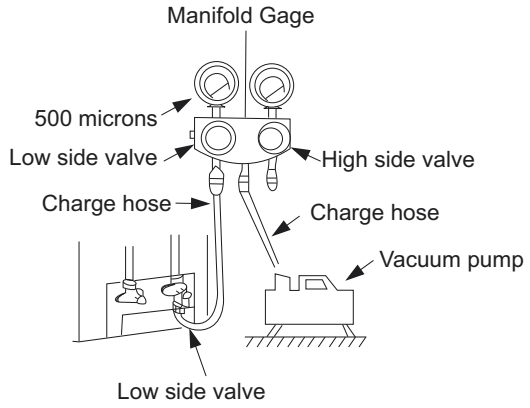

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Fig. 20 – Manifold

Deep Vacuum Method

The deep vacuum method requires a vacuum pump capable of pulling a vacuum of 500 microns and a vacuum gage capable of accurately measuring this vacuum depth. The deep vacuum method is the most positive way of assuring a system is free of air and liquid water. (See Fig. 21)

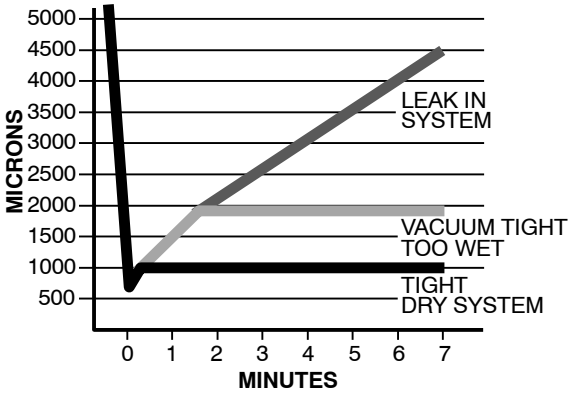

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Fig. 21 – Deep Vacuum Graph

Triple Evacuation Method

The triple evacuation method should only be used when vacuum pump is only capable of pumping down to 28 in. of mercury vacuum and system does not contain any liquid water.
Refer to Fig. 22 and proceed as follows:

1. Pump system down to 28 in. of mercury and allow pump to continue operating for an additional 15 minutes.
2. Close service valves and shut off vacuum pump.
3. Connect a nitrogen cylinder and regulator to system and open until system pressure is 2 psig.
4. Close service valve and allow system to stand for 1 hr. During this time, dry nitrogen will be able to diffuse throughout the system absorbing moisture.
5. Repeat this procedure as indicated in Fig. 22. System will then be free of any contaminants and water vapor.

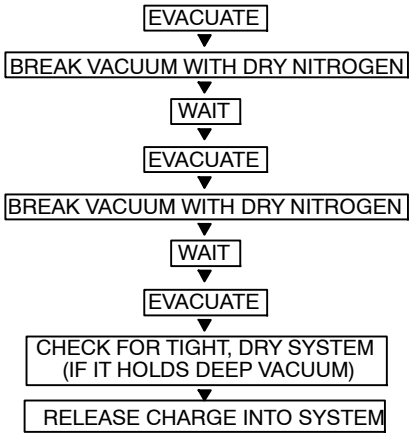

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Fig. 22 – Triple Evacuation Method

Final Tubing Check

IMPORTANT: Check to be certain factory tubing on both indoor and outdoor unit has not shifted during shipment. Ensure tubes are not rubbing against each other or any sheet metal. Pay close attention to feeder tubes, making sure wire ties on feeder tubes are secure and tight.

Test Operation

Perform test operation after completing gas leak and electrical safety check.

1. Push the “ON/OFF” button on Remote Control to begin testing.

NOTE: A protection feature prevents the air conditioner from being activated for approximately 3 minutes.

2. Push MODE button, select COOLING, HEATING, FAN mode to check if all functions work correctly.

SYSTEM CHECKS

1. Conceal the tubing where possible.
2. Make sure that the drain tube slopes downward along its entire length.
3. Ensure all tubing and connections are properly insulated.
4. Fasten tubes to the outside wall, when possible.
5. Seal the hole through which the cables and tubing pass.

INDOOR UNIT

1. Do all Remote Control buttons function properly?
2. Do the display panel lights work properly?
3. Does the air deflection louver function properly?
4. Does the drain work?

OUTDOOR UNIT

1. Are there unusual noises or vibrations during operation?

Explain Following Items To Customer With The Aid Of The Owner’s Manual:

1. How to turn air conditioner on and off; selecting COOLING, HEATING and other operating modes; setting a desired temperature; setting the timer to automatically start and stop air conditioner operation; and all other features of the Remote Control and display panel.
2. How to remove and clean the air filter.
3. How to set air deflection louver.
4. Explain care and maintenance.
5. Present the Owner’s Manual and installation instructions to customer.

TROUBLESHOOTING

38GVM Diagnostic Codes

18, 24, and 30K	36 and 42K	Indoor Unit Display	Wired Control	Indoor and/or Outdoor Unit Error
NA	Defrost Mode 1	08	NA	Outdoor
NA	Defrost Mode 2	0A	NA	Outdoor
Inlet tube temperature sensor malfunction	Inlet tube temperature sensor malfunction	See Error Code Table	B5	Indoor
Outlet tube temperature sensor malfunction	Outlet tube temperature sensor malfunction	See Error Code Table	B7	Indoor
Low charge or refrigeration system blockage	NA	F0	F0	Outdoor
Indoor return air temperature sensor malfunction	Indoor return air temperature sensor malfunction	See Error Code Table	F1	Indoor
Indoor tube temperature sensor malfunction	Indoor tube temperature sensor malfunction	See Error Code Table	F2	Indoor
Outdoor ambient temperature sensor malfunction	Outdoor ambient temperature sensor malfunction	F3	F3	Outdoor
NA	Outdoor mid−coil temperature sensor malfunction	F4	F4	Outdoor
Outdoor discharge air temperature sensor	Outdoor discharge air temperature sensor	F5	F5	Outdoor
Cooling oil return cycle	Cooling oil return cycle	F7	NA	Outdoor
System high pressure protection	System high pressure protection	E1	E1	Outdoor
Indoor freeze protection	Indoor freeze protection	E2	E2	Indoor
System low pressure protection	System low pressure protection	E3	E3	Outdoor
Compressor discharge high temperature protection	Compressor discharge high temperature protection	E4	E4	Outdoor
Communication error between indoor and outdoor	Communication error between indoor and outdoor	E6	E6	Indoor and outdoor
Mode conflict	Mode conflict	E7	E7	Indoor
System overload protection	System overload protection	E8	E8	Outdoor
Cold Blow Protection	NA	E9	NA	Indoor
Test mode	Test mode	dd	dd	Outdoor
Pump down mode	Pump down mode	Fo	Fo	Outdoor
IPM Rest	IPM Rest	P0	P0	Outdoor
Compressor current protection	Compressor current protection	P5	P5	Outdoor
NA	Communication error between the inverter drive and main board	P6	P6	Outdoor
Heat sink temperature sensor malfunction	Heat sink temperature sensor malfunction	P7	P7	Outdoor
IPM over temperature protection	IPM over temperature protection	P8	P8	Outdoor
NA	Open Contactor	P9	P9	Outdoor
Current sensor malfunction	Current sensor malfunction	Pc	Pc	Outdoor
NA	Current sensor mis−wiring protection	Pd	Pd	Outdoor
Input current protection	Input current protection	PA	PA	Outdoor
NA	Inverter board ambient temperature sensor malfunction	PF	PF	Outdoor
Low voltage protection	Low voltage protection	PL	PL	Outdoor
High voltage protection	High voltage protection	PH	PH	Outdoor
NA	Abnormal input AC voltage	PP	PP	Outdoor
Capacitor charging malfunction	Capacitor charging malfunction	PU	PU	Outdoor
Defrost or heating oil return cycle	Heating oil return cycle	H1	NA	Outdoor
NA	Forced defrost	H1	H1	Outdoor
Compressor overheat protection	Compressor overheat protection	H3	H3	Outdoor
IPM Protection	IPM Protection	H5		
Compressor speed reduction	Compressor speed reduction	H7	H7	Outdoor
PFC board protection	PFC board protection	Hc	Hc	Outdoor
Compressor high voltage protection	NA	L9	L9	Outdoor
Compressor start−up failure	Compressor start−up failure	Lc	Lc	Outdoor
Compressor phase loss protection	Compressor phase loss protection	Ld	Ld	Outdoor
NA	Compressor stalling	LE	LE	Outdoor
NA	Compressor over−speed protection	LF	LF	Outdoor
NA	Condenser coil inlet temp sensor malfunction	A5	A5	Outdoor
NA	Condenser outlet temperature sensor malfunction	A7	A7	Outdoor
Memory card error	NA	EE	NA	Outdoor
Frequency limitation for module circuit protection	NA	En	En	Outdoor
Frequency limitation for module temperature protection	NA	EU	EU	Outdoor
Frequency limitation for overload protection	NA	F6	F6	Outdoor
Frequency limitation for system circuit protection	NA	F8	F8	Outdoor
Frequency limitation for module circuit protection	NA	F9	F9	Outdoor
Frequency limitation for freeze protection	NA	FH	FH	Outdoor
Compressor demagnetizing protection	NA	HE	HE	Outdoor
Indoor and outdoor units mismatch	NA	LP	LP	Outdoor and Indoor
Compressor phase detection malfunction	NA	U1	U1	Outdoor
Low DC bus voltage	NA	U3	NA	Outdoor
Communication error between main board and EXV	Communication error between main board and EXV	dn	dn	Outdoor

TROUBLESHOOTING (CONTINUED)

Error Code Table

Error Code	Error Description	Error Code	Error Description	Error Code	Error Description
13	Unit A indoor pipe outlet temperature sensor malfunction	23	Unit B indoor pipe outlet temperature sensor malfunction	33	Unit C indoor unit pipe outlet temperature sensor malfunction
14	Unit A indoor pipe inlet temperature sensor malfunction	24	Unit B indoor pipe inlet temperature sensor malfunction	34	Unit C indoor unit pipe inlet temperature sensor malfunction
15	Unit A Indoor return air sensor malfunction	25	Unit B Indoor return air sensor malfunction	35	Unit C Indoor unit return air sensor malfunction
16	Unit A mode conflict	26	Unit B mode conflict	36	Unit C mode conflict
17	Unit A freeze protection	27	Unit B freeze protection	37	Unit C freeze protection
41	Unit D communication error	46	Unit D mode conflict	54	Unit E indoor pipe inlet temperature sensor malfunction
42	Indoor return air temperature sensor malfunction	47	Unit D freeze protection	55	Unit E Indoor return air temperature sensor malfunction
43	Unit D indoor pipe outlet temperature sensor malfunction	51	Unit E communication error	56	Unit E mode conflict
44	Unit D indoor pipe inlet temperature sensor malfunction	52	Unit E indoor pipe midway temperature sensor malfunction	57	Unit E freeze protection
45	Unit D Indoor return air temperature sensor malfunction	53	Unit E indoor pipe outlet temperature sensor malfunction	C5	Jumper missing on replacement indoor board

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