

**38GJ / 40GJ / 40GR**  
**Multi- Zone Ductless Split System**  
**Size 18K, 24K, 30K, 36K, 42K, 48K and 56k**



## Product Data



### **INDUSTRY LEADING FEATURES / BENEFITS**

#### **AN INEXPENSIVE AND CREATIVE SOLUTION TO DESIGN PROBLEMS.**

The 38GJ / 40GJ / 40GR ductless inverter driven multi-split system provides individual comfort control for up to 9 separate zones. Two, three, four, five, six, seven, eight or nine space-saving cassette, floor console, high wall, or ducted fan coils can be matched with one outdoor heat pump. The indoor fan coils are connected to the outdoor unit by refrigerant tubing and wires.

The different styles of indoor units can be mounted in several locations to accommodate the application. This selection of fan coils permits inexpensive and creative solutions to design problems such as:

- When adding air conditioning to spaces that are heated by hydronic or electric heat and have no ductwork.
- Historical renovations or any application where preserving the look of the original structure is essential.
- Commercial add-on jobs where the existing air conditioning system cannot be stretched.

These compact indoor fan coil units take up very little space in the room and do not obstruct windows. The fan coils are attractively styled to blend with most room decors.

Advanced system components incorporate innovative technology to provide reliable cooling and heating performance at low sound levels.

## INVERTER TECHNOLOGY

The inverter driven compressor is designed to run at various input power frequencies (Hz) which controls the motor speed of the compressor.

**Even Temperature** – The control package, including the inverter, monitors outdoor and indoor temperatures as they relate to the selected indoor set point and adjusts the speed of the compressor to match the load and keep the system operating continuously rather than cycling and creating temperature swings. This translates to higher comfort levels for the occupants.

**Rapid Pull Down/Warm-Up** – Comfort is increased by the ability to the inverter system to ramp up the compressor speed enabling the system to reach the user selected room temperature set point quicker.

**Humidity Control** – Running the system for longer periods and continuously varying the compressor speed will enhance the humidity control.

## INDIVIDUAL ROOM COMFORT

Maximum comfort is provided because each space can be controlled individually based on the usage pattern. The air sweep feature provided permits optimal room mixing to eliminate hot and cold spots for the occupant comfort.

## LOW SOUND LEVELS

When noise is a concern, ductless split systems are the answer. The indoor units are whisper quiet. There are no compressors indoors, either in the conditioned space or directly over it, and there is none of the noise usually generated by air being forced through ductwork.

When sound ordinances and proximity to neighbors demand quiet operation, the 38GJ unit is the right choice. With the inverter technology, these units run at lower speeds most of the time resulting in reduced sound levels.

## INVERTER TECHNOLOGY – ENHANCED ECONOMICAL OPERATION

Ductless systems are inherently economical to operate. Individual rooms are heated or cooled only when required, and since the air is delivered directly to the space, there is no need to use additional energy to move the air in the ductwork. This economical operation is enhanced further when the inverter system output matches the load resulting in a more efficient system.

## EASY-TO-USE CONTROLS

The multi-zone systems have microprocessor-based controls to provide the ultimate in comfort and efficiency. The user friendly wired and wireless remote controls provide the interface between the user and the unit.

## SECURE OPERATION

If security is an issue, outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork or wall openings. In addition, since the 38GJ can be installed close to an outside wall, coils are protected from vandals and severe weather.

## FAST INSTALLATION

This compact ductless split system is simple to install. A mounting bracket is included with the indoor units and only wires and piping need to be run between the indoor and outdoor units. These units are fast and easy to install ensuring minimal disruption to customers in homes or workplace. This makes the 38GJ / 40GJ / 40GR systems the equipment of choice for retrofit applications.

## SIMPLE SERVICING AND MAINTENANCE

Removing the top panel of the outdoor unit provides immediate access to the control compartment, providing the service technician access to the diagnostic LEDs to facilitate the troubleshooting process. In addition, the draw-thru design of the outdoor unit means that dirt accumulates on the outside surface of the coil. Coils can be cleaned quickly from the inside using a pressure hose and detergent.

On the indoor units, service and maintenance expense is reduced due to the permanent easy to clean filters. Also, error codes are displayed on the front panel to alert the user to certain system malfunctions

## BUILT-IN RELIABILITY

Ductless split system indoor and outdoor units are designed to provide years of trouble-free operation.

Both the indoor and outdoor units are well protected. Whenever the microprocessor detects abnormal conditions, the unit will stop and an error code is displayed.

Inverter systems provide additional reliability due to soft start. This refers to the ability of the inverter to start the compressor motor using reduced voltage and reduced current. This feature is beneficial from an electrical standpoint (eliminates current spikes) as well as an overall reliability standpoint due to reduced stress on all associated system components.

## CONDENSATE PUMP

A condensate pump accessory is available (High Wall and Floor Console) to provide installation flexibility for those applications where gravity cannot be used to dispose of the condensate.

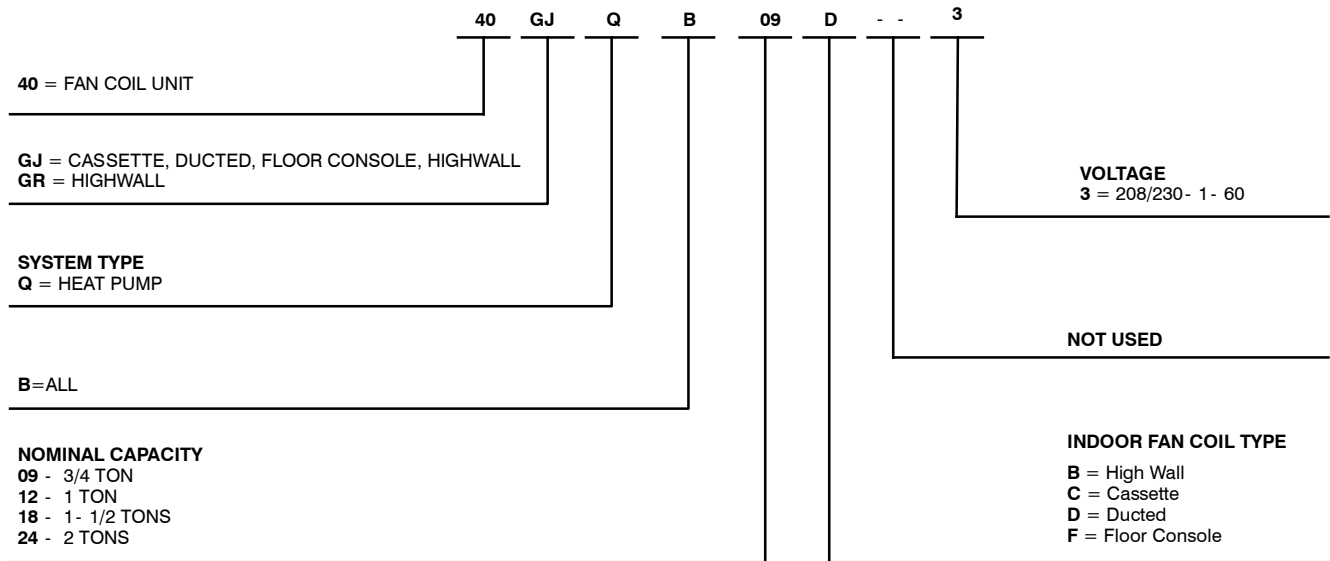
Factory installed condensate pump on the Ducted and Cassette fan coils provides installation flexibility.

## AGENCY LISTINGS

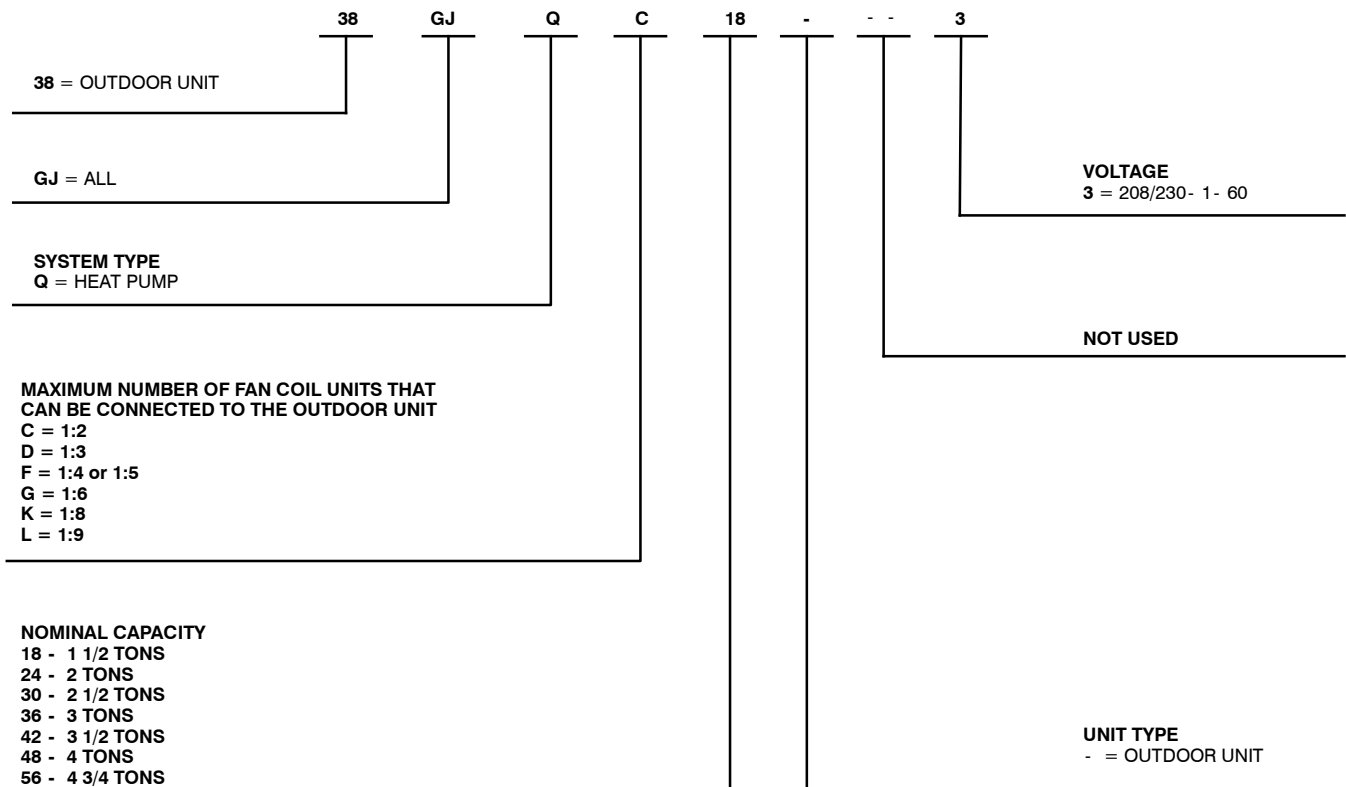
All systems are listed with AHRI (Air conditioning, Heating, and Refrigeration Institute) and are ETL certified per UL 1995 standard.

# MODEL NUMBER NOMENCLATURE

## INDOOR UNIT



## OUTDOOR UNIT



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to [www.ahridirectory.org](http://www.ahridirectory.org).



## STANDARD FEATURES AND ACCESSORIES

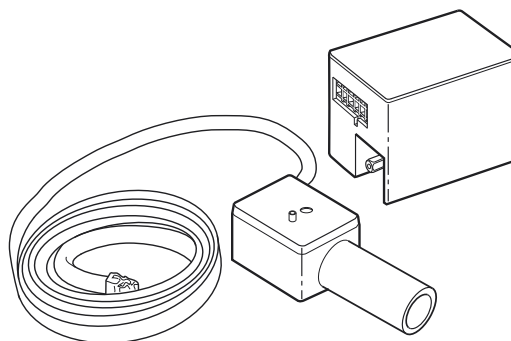
<b>Ease of Installation</b>	
Mounting Bracket	S
Low Voltage Controls	S
<b>Comfort Features</b>	
Microprocessor Control	S
Wired Remote Control for High Walls, Cassette and Floor Console	A
Wired Remote Control for Ducted	S
Wireless Remote Control	S
Rapid Cooling and Heating	S
Automatic Air Sweep	S
Cold Blow Prevention	S
Continuous Fan	S
Auto Restart Function	S
Auto Changeover	S
Follow Me	S
<b>Energy Saving Features</b>	
Inverter Driven Compressor	S
Sleep Mode	S
24 Hour Stop/Start Timer	S
46° F Heating Mode (Heating Setback)	S
<b>Safety And Reliability</b>	
Indoor Coil Freeze Protection	S
3 Minute Time Delay For Compressor	S
High Compressor Discharge Temperature	S
Low Voltage Protection	S
Compressor Overload Protection	S
Compressor Over Current Protection	S
IPM Module Protection	S
<b>Ease of Service</b>	
Cleanable Filters	S
Diagnostic	S
Error Messages Displayed On Front Panel	S
<b>Application Flexibility</b>	
Condensate Pumps For High Walls and Floor Console	A
Condensate Pump For Cassette and Ducted	S
Crankcase Heater	S

### Legend

**S** Standard

**A** Accessory

## INDOOR UNITS



**Fig. 1 – Condensate Pump Accessory**

On high wall and floor console fan coils, the condensate pump accessory is recommended when adequate drain line pitch cannot be provided, or when the condensate must move up to exit.

The pump has a lift capability of 12 ft (3.6 m) on the discharge side if the pump is mounted in the fan coil or 6 ft (1.8 m) on the suction side if the pump is remote mounted.

## OUTDOOR UNITS

### CRANKCASE HEATER

Standard on all unit sizes. Heater clamps around compressor oil stump.

# COMBINATION TABLE

Indoor Unit	Nominal Unit Btuh	Indoor Model Number	Outdoor Model Number
High Wall	9,000	40GRQB09B--3	38GJQC18---3 38GJQD24---3
	12,000	40GRQB12B--3	
	18,000	40GRQB18B--3	
	9,000	40GRQB09H--3	
	12,000	40GRQB12H--3	
	18,000	40GRQB18H--3	
High Wall	9,000	40GJQB09B--3	
	12,000	40GJQB12B--3	
	18,000	40GJQB18B--3	
Cassette	12,000	40GJQB12C--3	
	18,000	40GJQB18C--3	
	9,000	40GJQB09D--3	
Ducted	12,000	40GJQB12D--3	
	18,000	40GJQB18D--3	
	9,000	40GJQB09F--3	
Floor Console	12,000	40GJQB12F--3	
	18,000	40GJQB18F--3	

Indoor Unit	Nominal Unit Btuh	Indoor Model Number	Outdoor Model Number
High Wall	9,000	40GRQB09B--3	GJQF30---3 38GJQG36---3 38GJQG42---3
	12,000	40GRQB12B--3	
	18,000	40GRQB18B--3	
	9,000	40GRQB09H--3	
	12,000	40GRQB12H--3	
	18,000	40GRQB18H--3	
High Wall	9,000	40GJQB09B--3	
	12,000	40GJQB12B--3	
	18,000	40GJQB18B--3	
	24,000	40GJQB24B--3	
Cassette	12,000	40GJQB12C--3	
	18,000	40GJQB18C--3	
	24,000	40GJQB24C--3	
Ducted	9,000	40GJQB09D--3	
	12,000	40GJQB12D--3	
	18,000	40GJQB18D--3	
	21,000	40GJQB21D--3	
	24,000	40GJQB24D--3	
Floor Console	9,000	40GJQB09F--3	
	12,000	40GJQB12F--3	
	18,000	40GJQB18F--3	

Indoor Unit	Nominal Unit Btuh	Indoor Model Number	Outdoor Model Number
High Wall	9,000	40GRQB09B--3	GJQK48---3 38GJQL56---3
	12,000	40GRQB12B--3	
	18,000	40GRQB18B--3	
	9,000	40GRQB09H--3	
	12,000	40GRQB12H--3	
	18,000	40GRQB18H--3	
High Wall	9,000	40GJQB09B--3	
	12,000	40GJQB12B--3	
	18,000	40GJQB18B--3	
	24,000	40GJQB24B--3	
Cassette	12,000	40GJQB12C--3	
	18,000	40GJQB18C--3	
	24,000	40GJQB24C--3	
Ducted	9,000	40GJQB09D--3	
	12,000	40GJQB12D--3	
	18,000	40GJQB18D--3	
	21,000	40GJQB21D--3	
	24,000	40GJQB24D--3	
Floor Console	9,000	40GJQB09F--3	
	12,000	40GJQB12F--3	
	18,000	40GJQB18F--3	

DIMENSIONS - INDOOR

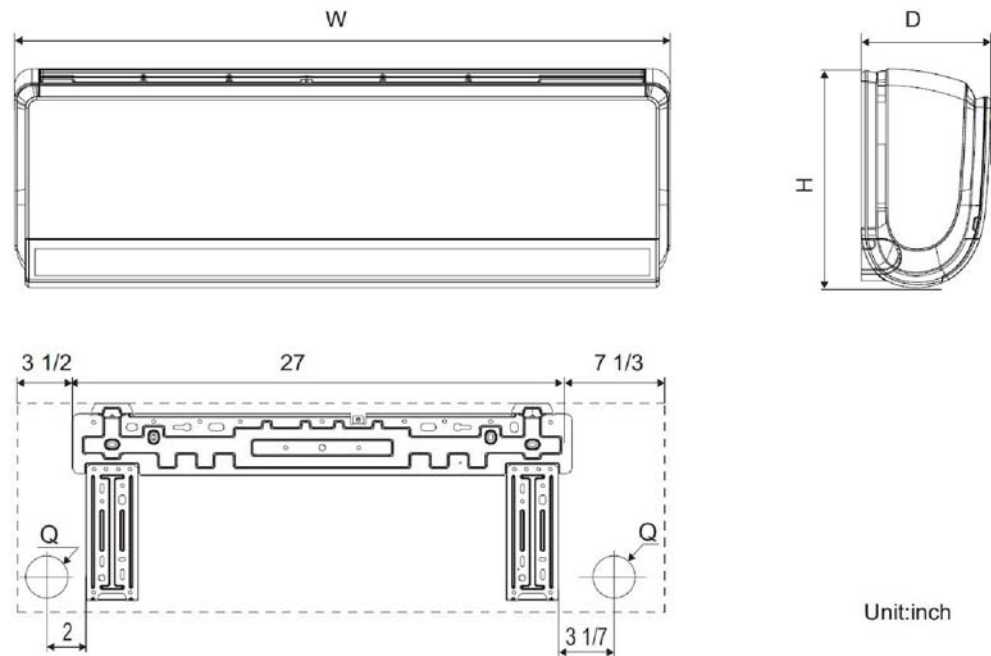


Fig. 2 – GR High Wall Dimensions

Unit Size	W In. (mm)	D In. (mm)	H In. (mm)	Q In. (mm)	Operating Weight Lbs. (kg)
9k	37.8 (960)	8.07 (205)	12.6 (320)	2.16 (55)	33.07 (15)
12k	37.8 (960)	8.07 (205)	12.6 (320)	2.16 (55)	33.07 (15)
18k	37.8 (960)	8.07 (205)	12.6 (320)	2.75 (70)	33.07 (15)

DIMENSIONS - INDOOR (CONTINUED)

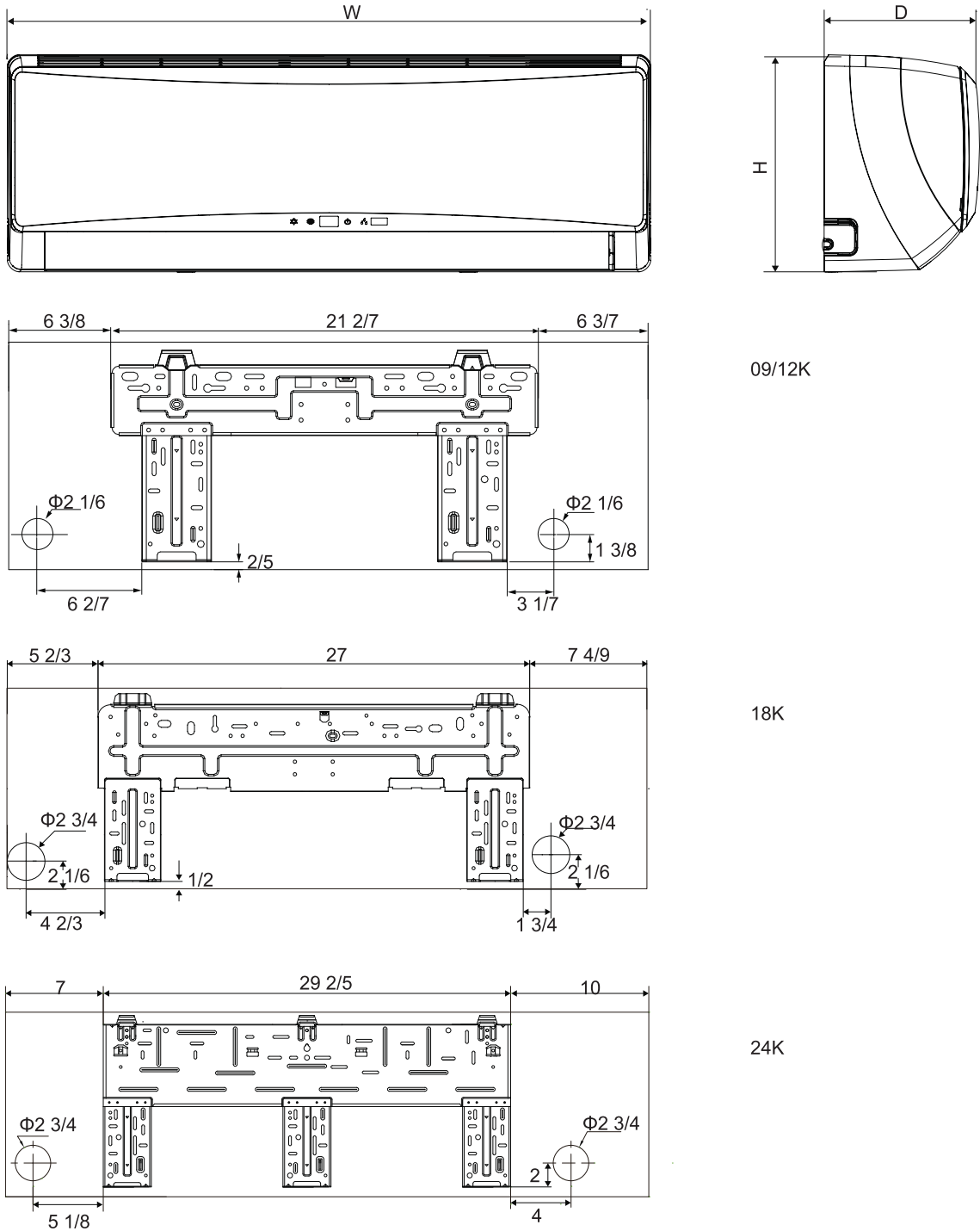


Fig. 3 – GJ\*B High Wall Dimensions

40JG*B High Wall				
Unit Size	W In. (mm)	D In. (mm)	H In. (mm)	Operating Weight
9k	34.09	8.23	11.5	24.3
12k	34.09	8.23	11.5	24.3
18k	40.079	9.055	12.6	30.9
24	46.378	10.394	12.8	38.6

DIMENSIONS - INDOOR (CONTINUED)

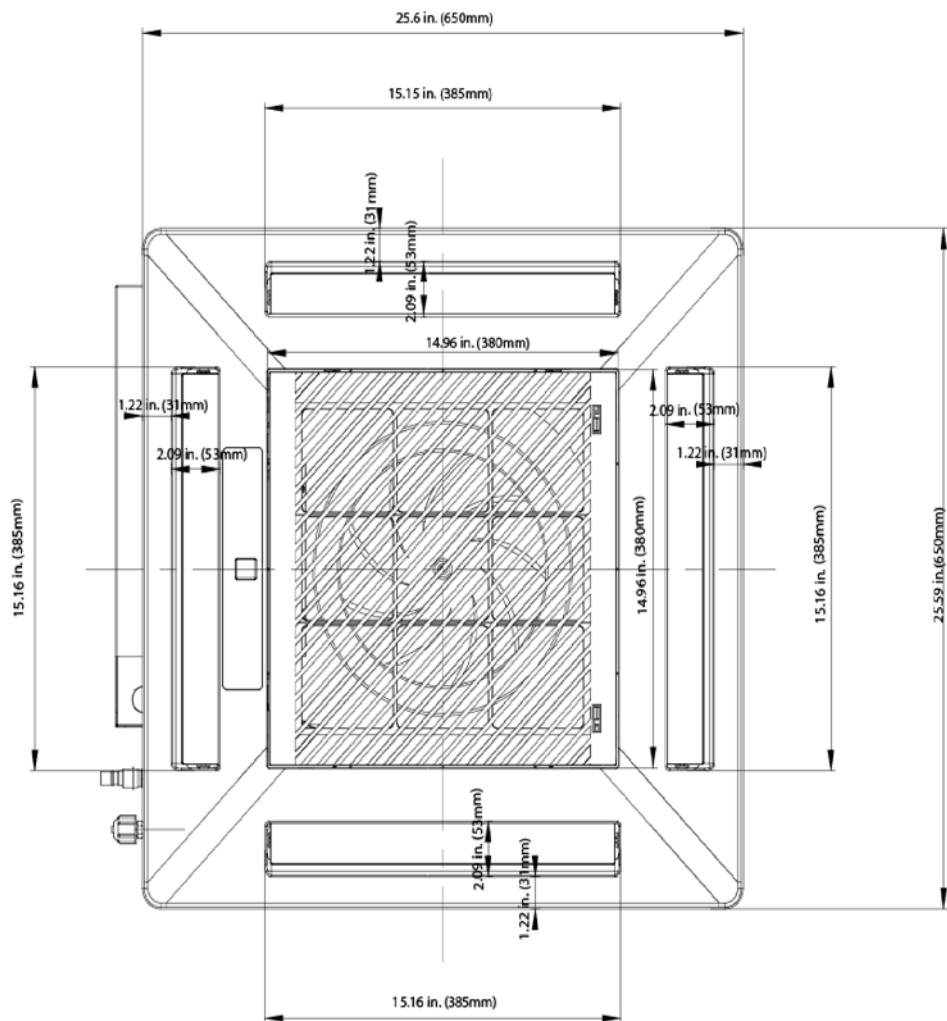


Fig. 4 – Cassette Grill Dimensions

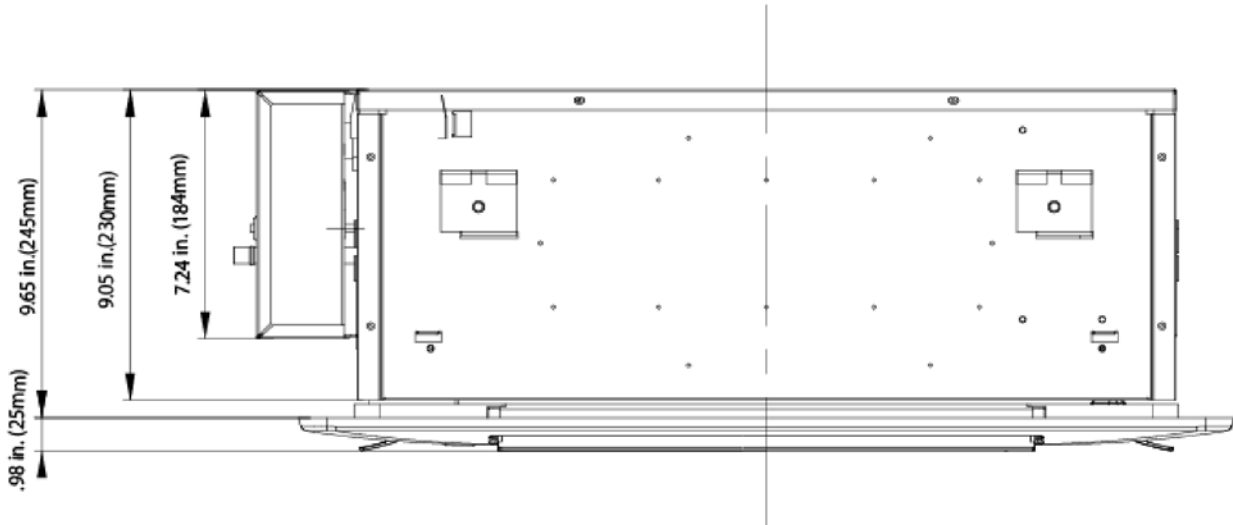
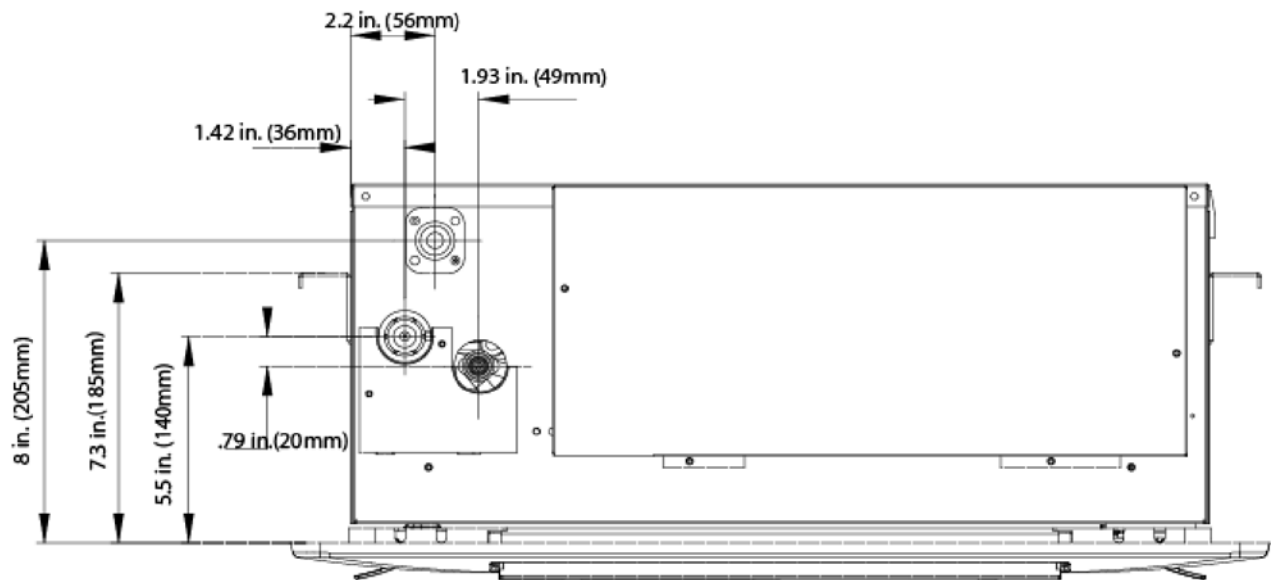


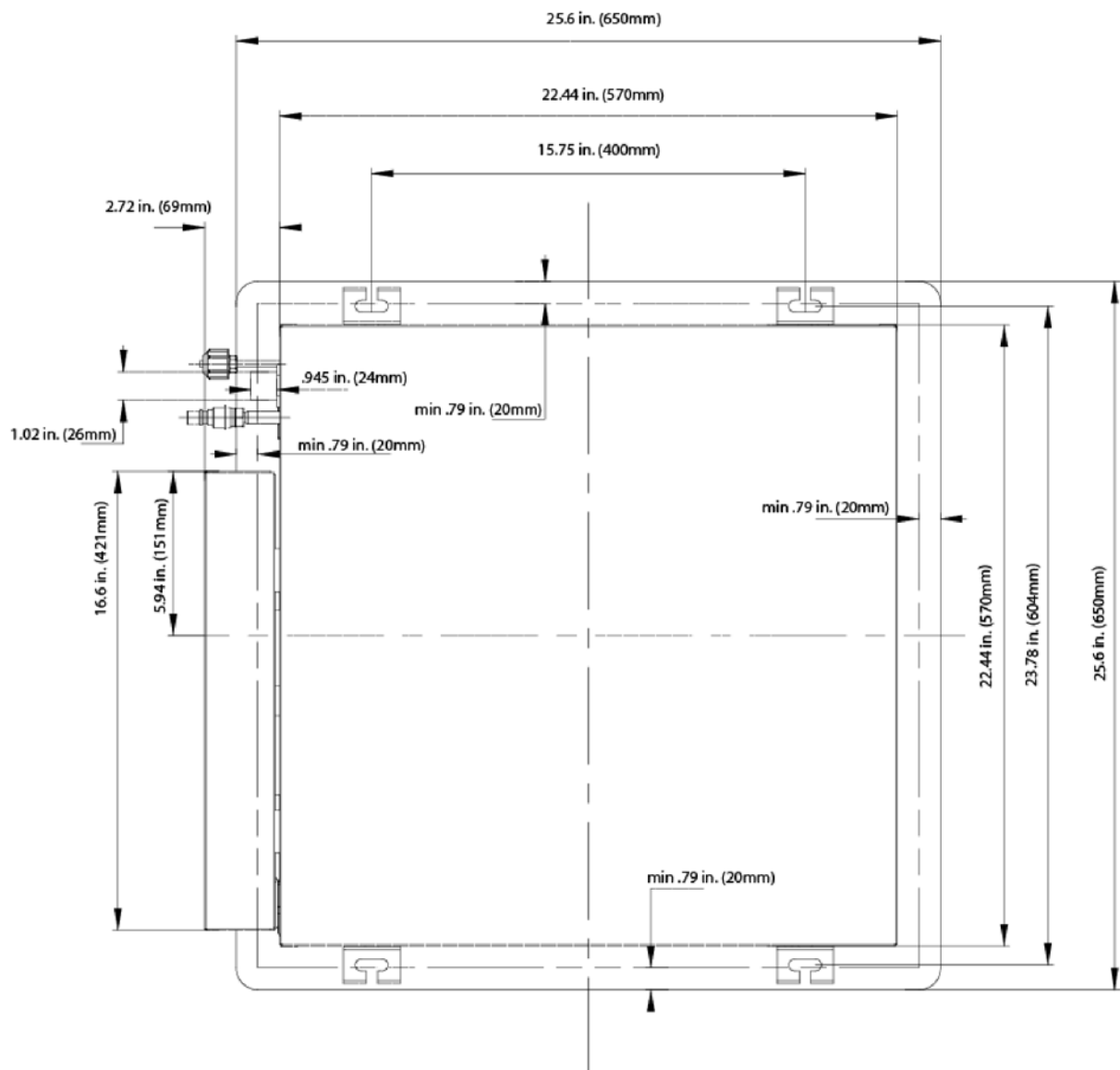
Fig. 5 – Cassette Side View Dimensions



**DIMENSIONS - INDOOR (CONTINUED)**



**Fig. 6 – Cassette Connection Side View Dimensions**



**Fig. 7 – Cassette Top View Dimensions**

DIMENSIONS - INDOOR (CONTINUED)

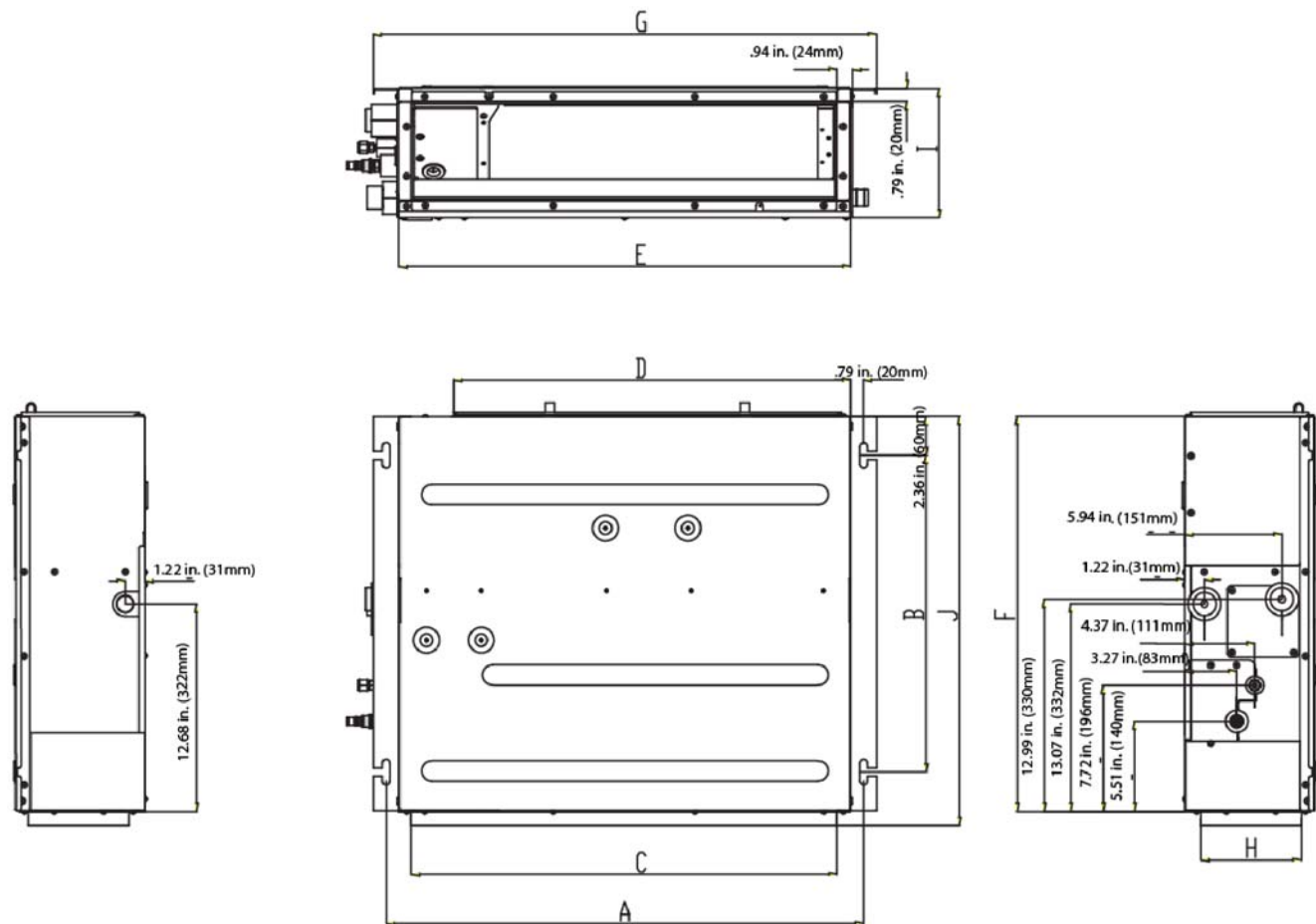


Fig. 8 – Ducted Dimensions

Unit Size	A	B	C	D	E	F	G	H	I	J
9k	742	491	662	620	700	615	782	156	200	635
12k										
18k	942	491	862	820	900	615	982	156	200	635
21k	1142	491	1062	1020	1100	615	1182	156	200	635
24k										

## DIMENSIONS - INDOOR (CONTINUED)

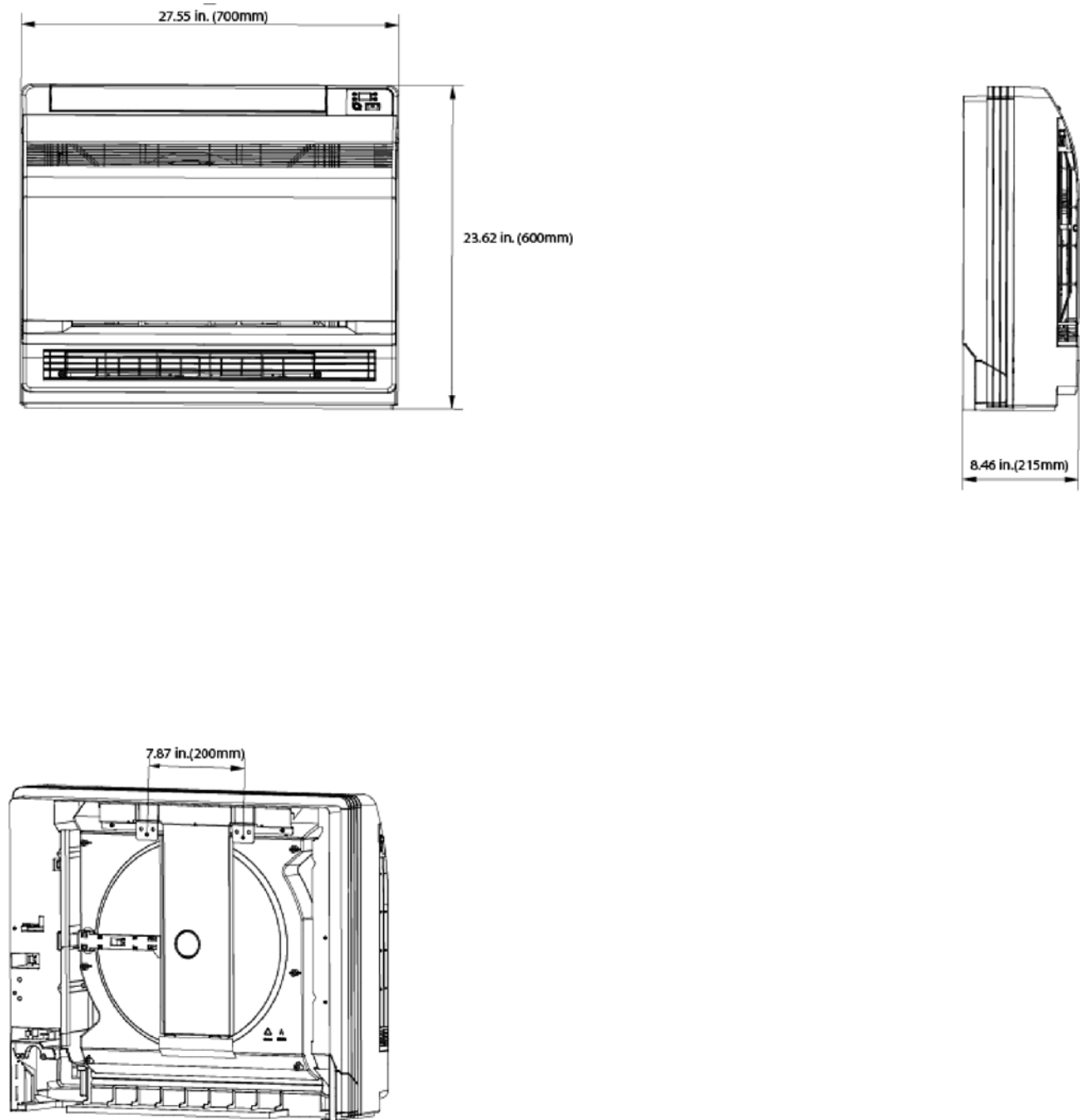
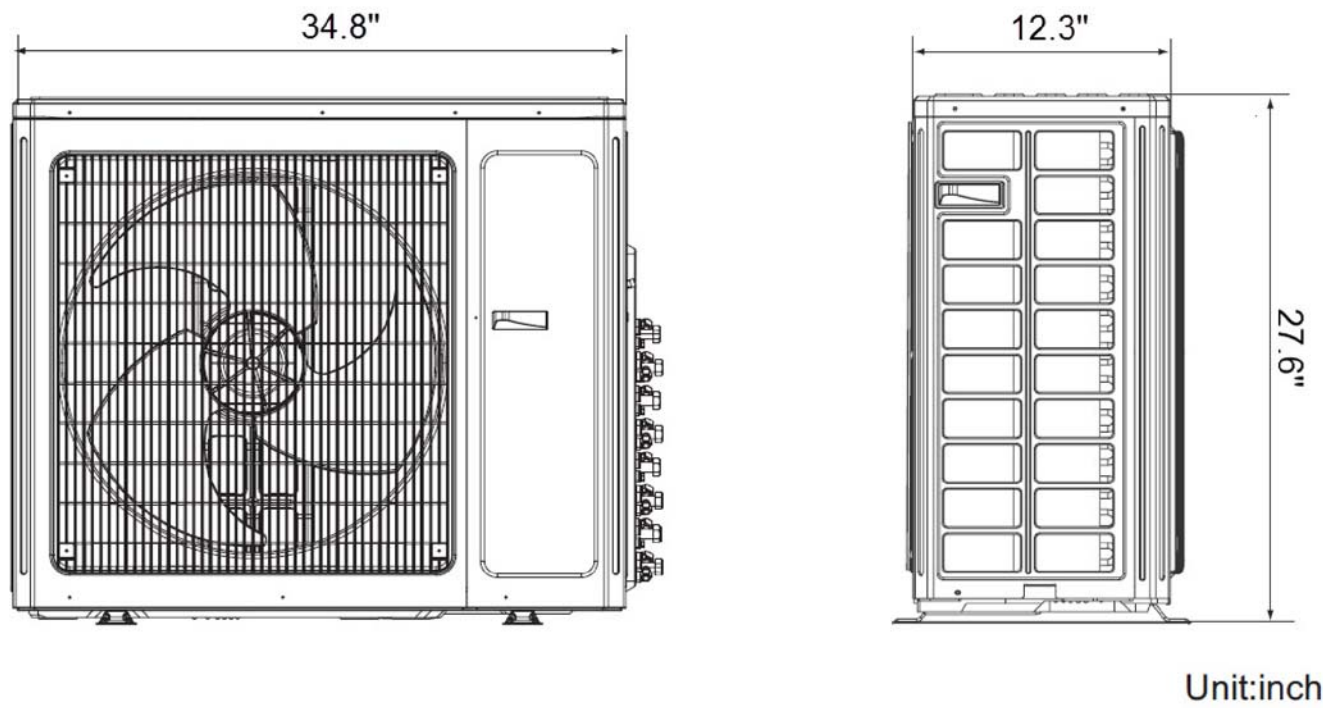
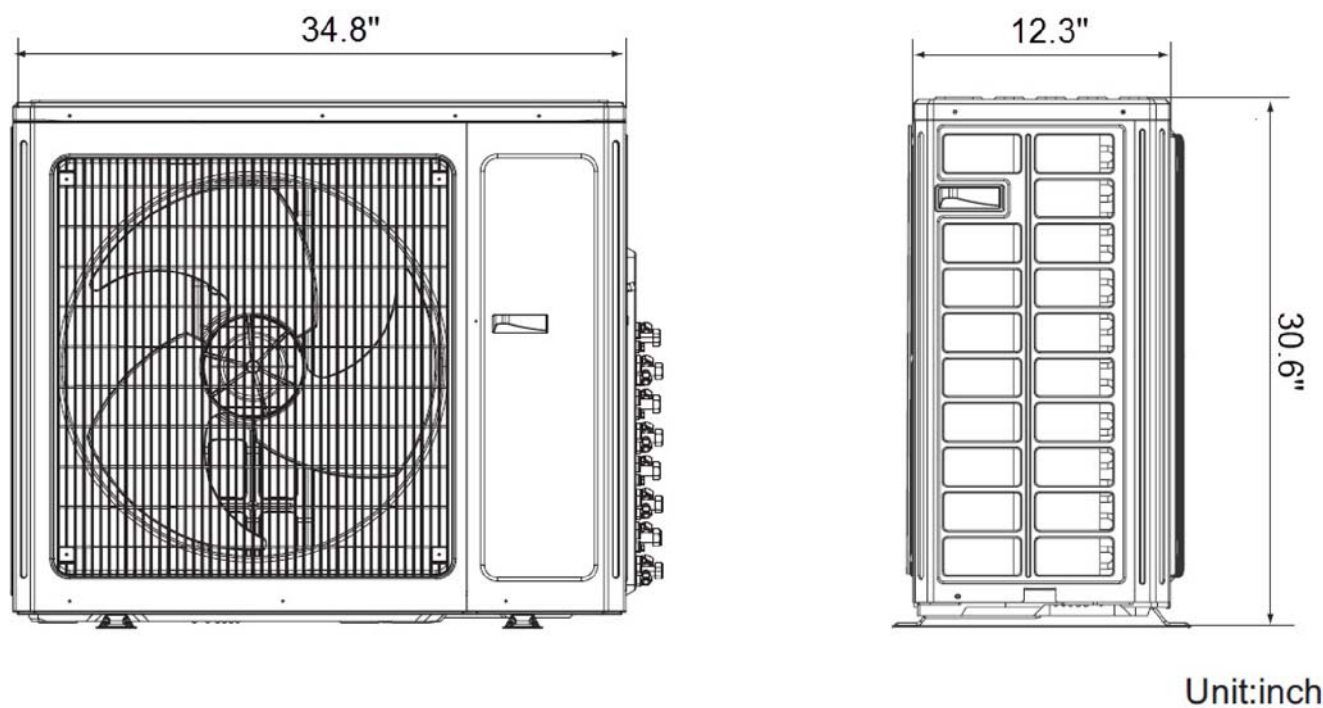


Fig. 9 – Floor Console Dimensions

**DIMENSIONS - OUTDOOR**

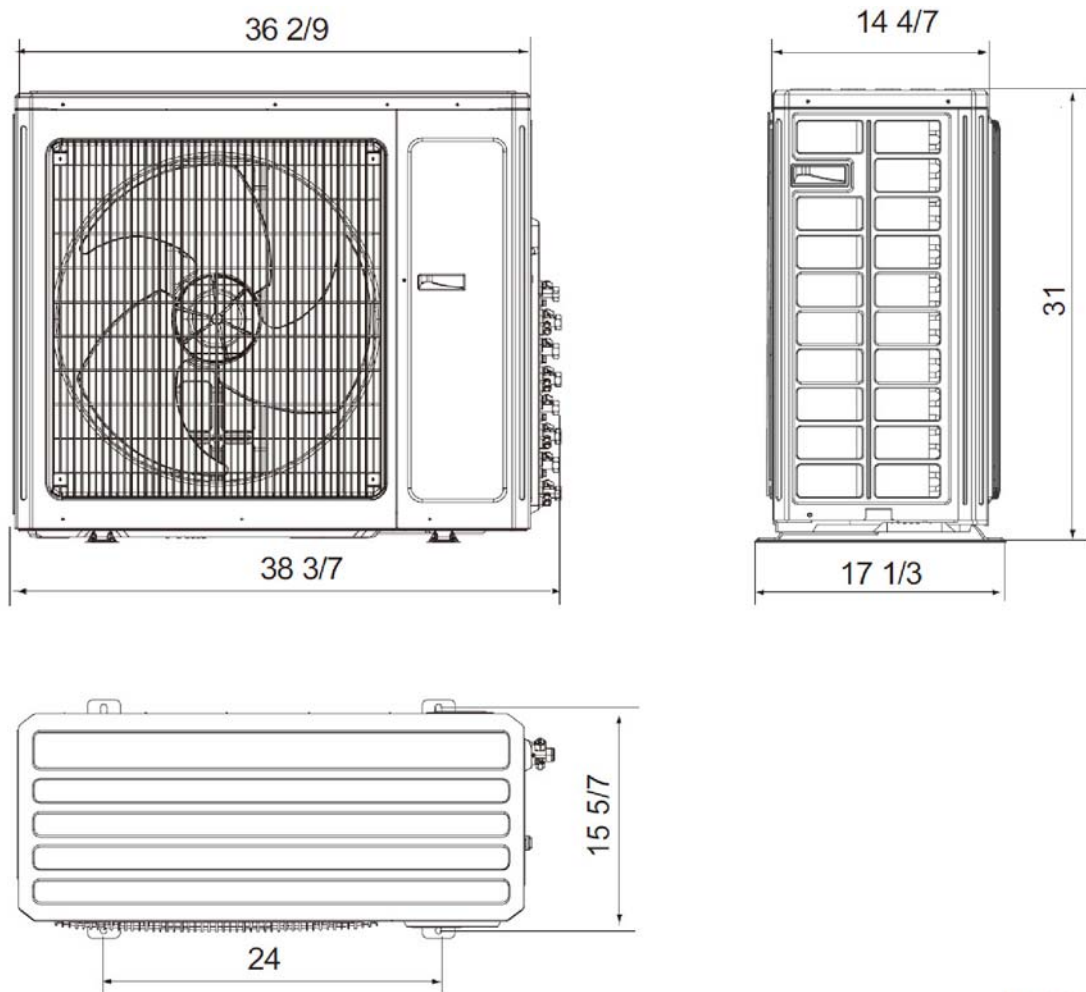


**Fig. 10 – Outdoor Dimensions Size 18**



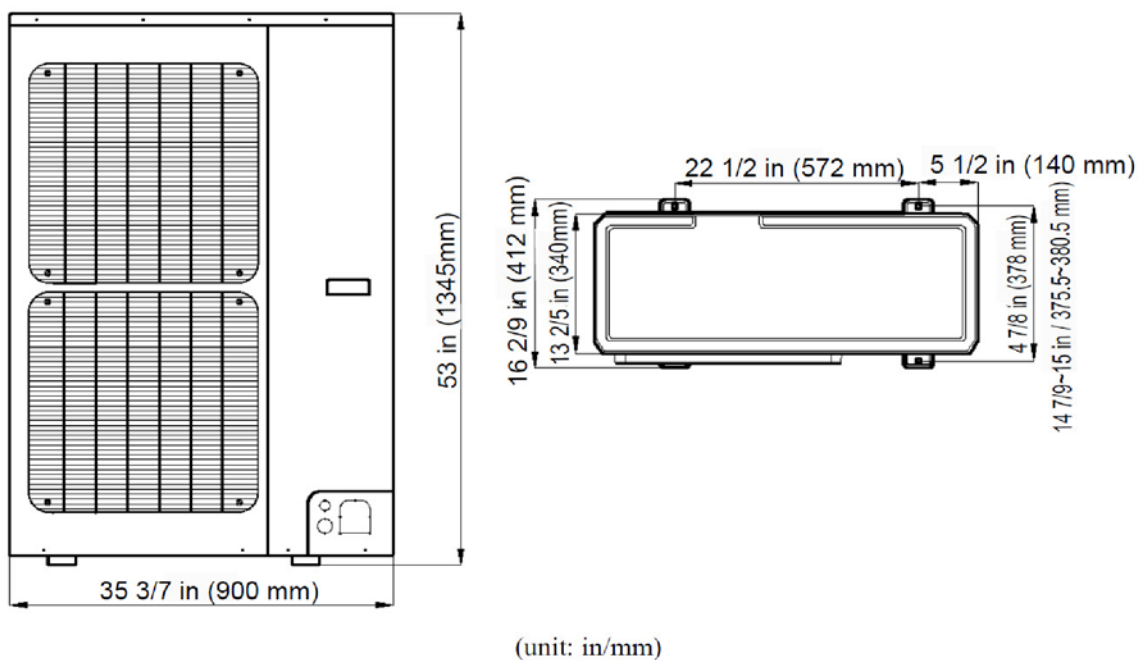
**Fig. 11 – Outdoor Dimensions Size 24**

## DIMENSIONS - OUTDOOR (CONTINUED)



Unit:inch

Fig. 12 – Outdoor Dimensions Size 30-42



(unit: in/mm)

Fig. 13 – Outdoor Dimensions Size 48-56

CLEARANCES - INDOOR

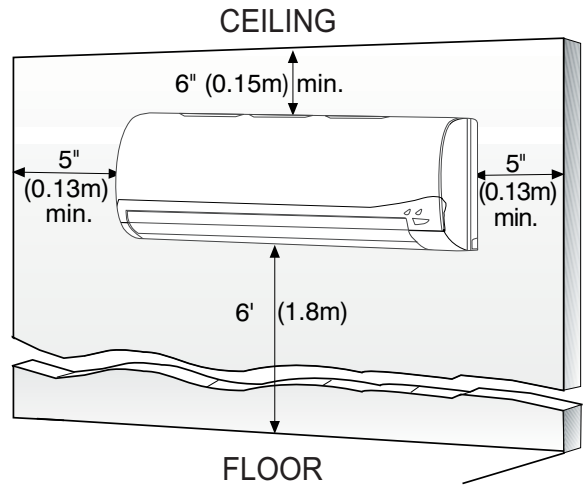


Fig. 14 – GR and GJ\*B High Wall Clearance

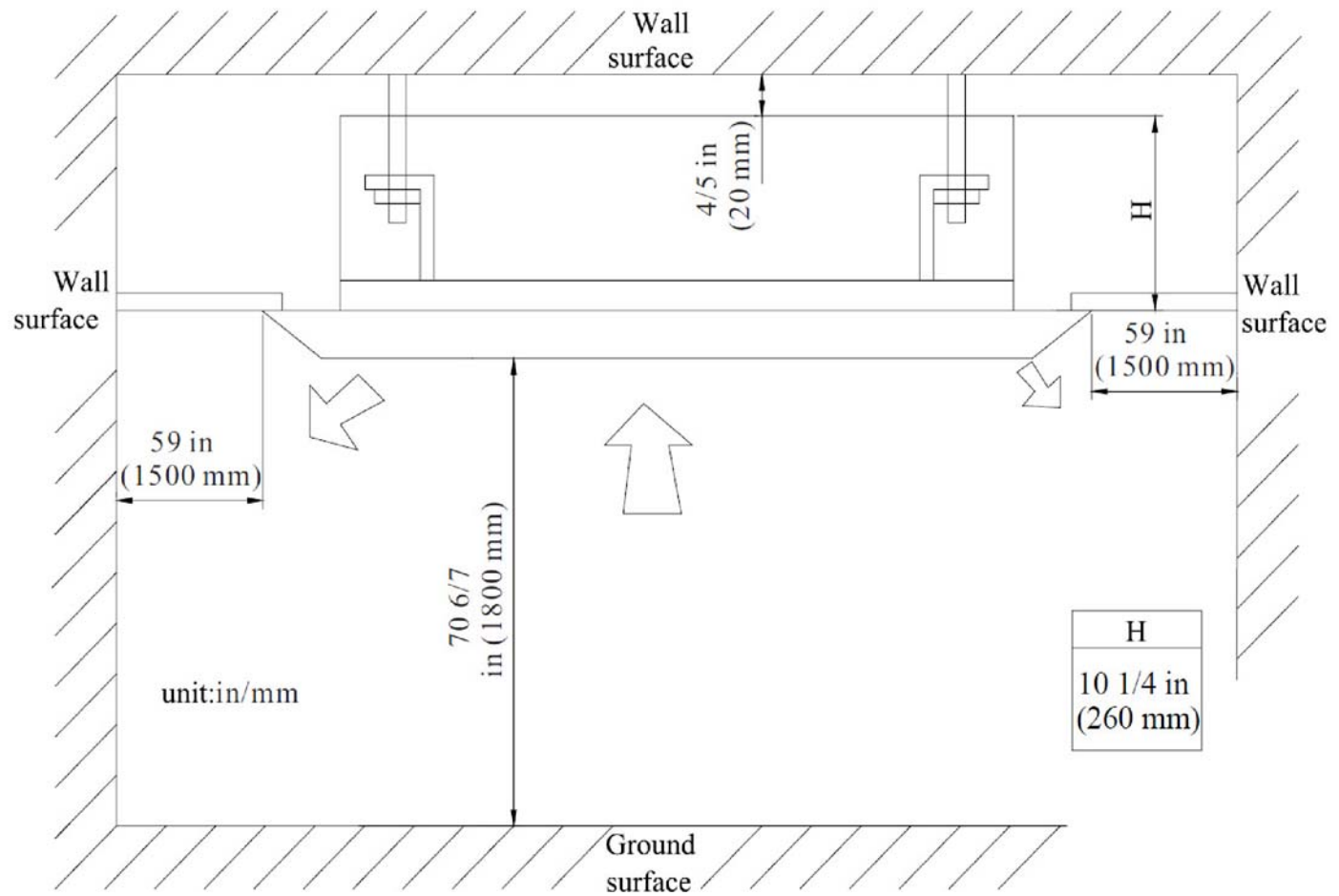
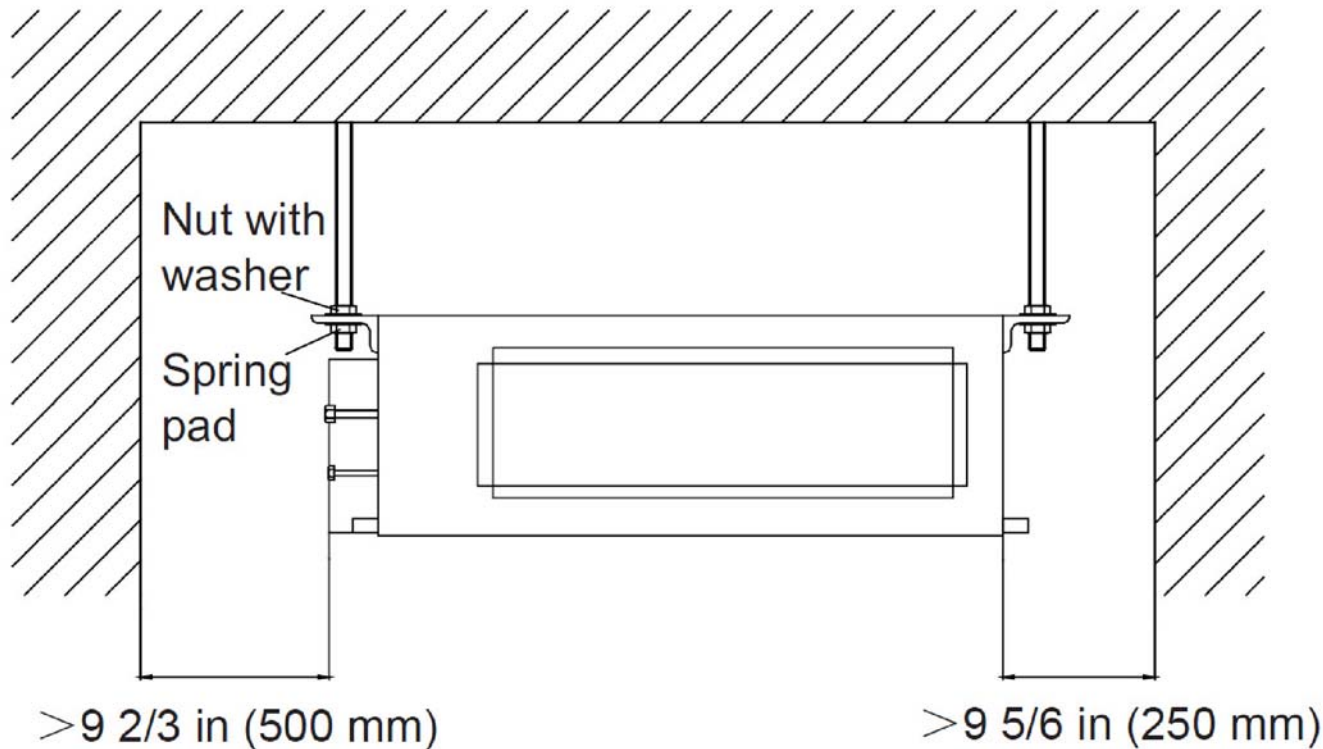
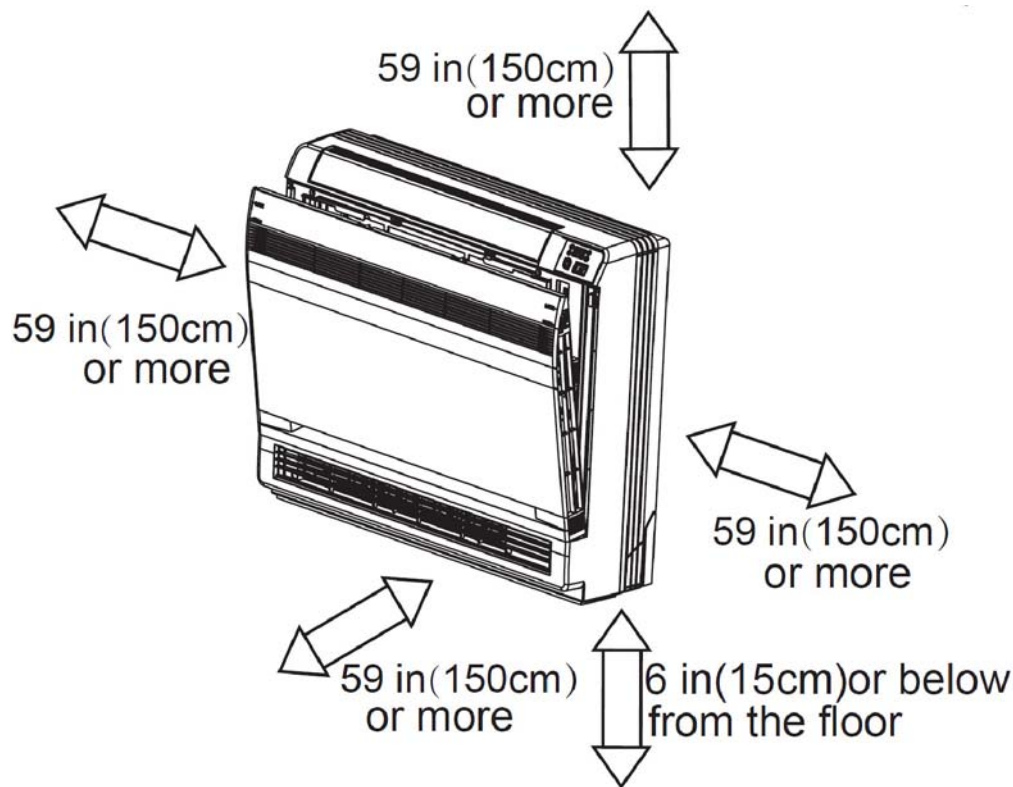


Fig. 15 – Cassette Clearance

**CLEARANCES - INDOOR (CONTINUED)**



**Fig. 16 – Ducted clearance**



**Fig. 17 – Floor console clearance**

CLEARANCES - OUTDOOR (CONTINUED)

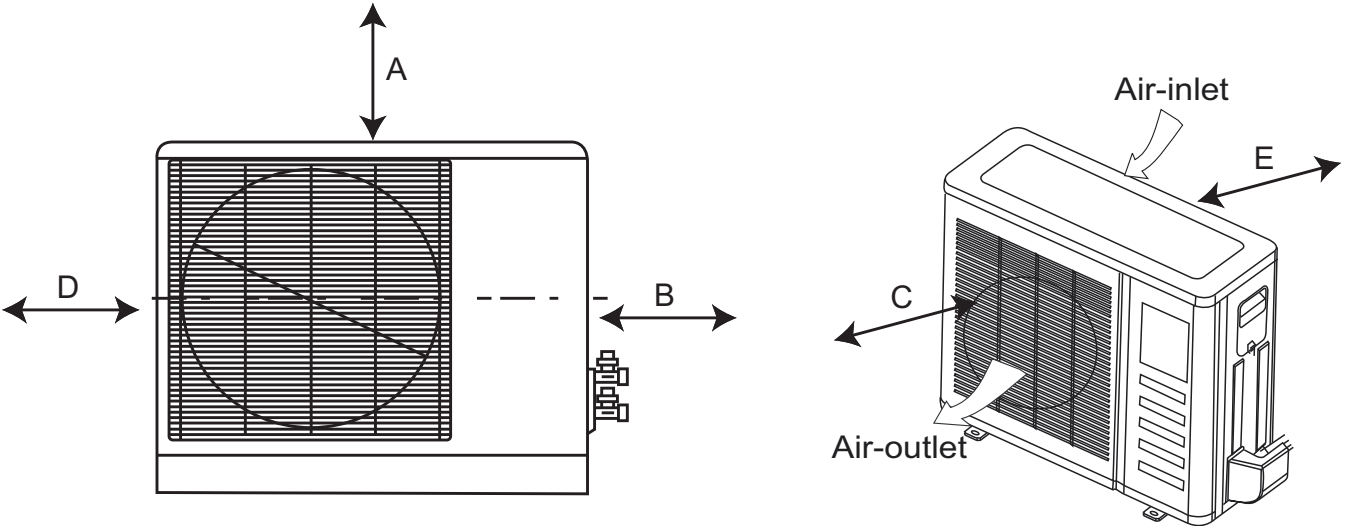


Fig. 18 – Clearances Outdoor 18 - 42

UNIT	Minimum Value in. (mm)
A	24 (609)
B	24 (609)
C	24 (609)
D	4 (101)
E	4 (101)

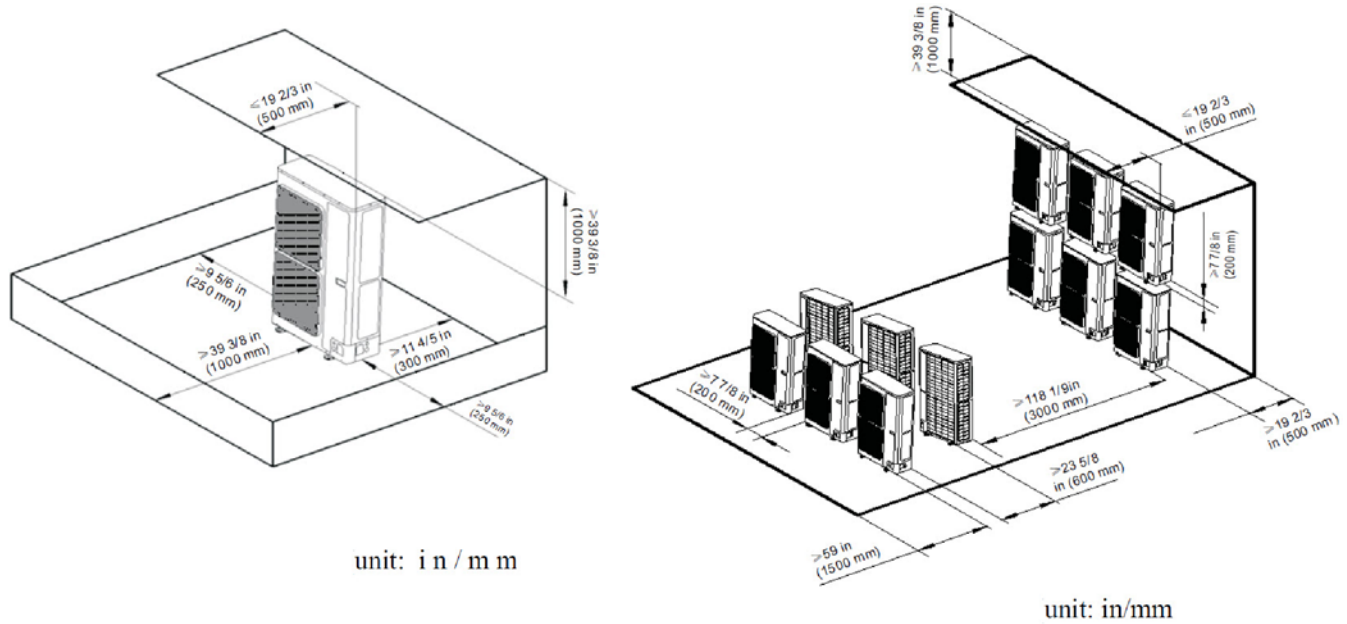


Fig. 19 – Clearances Outdoor 48-56



# PHYSICAL DATA - OUTDOOR

System	Size		18	24	30	36	42	48	56
	Outdoor Model		38GJQC18---3	38GJQD24---3	38GJQF30---3	38GJQG36---3	38GJQG42---3	38GJQK48---3	38GJQL56---3
	Max Number of Zones		2	3	4	5	5	8	9
	Energy Star®		YES	NO	YES	YES	NO	NO	NO
Performance Non-Ducted	Cooling Rated Capacity	Btu/h	18,000	26,000	29,000	34,000	39,000	48,000	53,000
	Cooling Cap. Range Min - Max	Btu/h	7000~21000	7500~33000	8189~33438	8871~35826	8871~40944	3412~54592	3412~61416
	SEER		22	20.5	21	21	21	16	16
	EER		12.5	9.5	12	12.4	10.43	9.56	9.45
	Heating Rated Capacity	Btu/h	19,000	29,000	31,600	42,500	45,000	54,500	61,500
	Heating Cap. Range Min - Max	Btu/h	8530~22600	7500~35000	8189~32414	8871~44356	8871~46062	4094~59368	4094~63122
	HSPF		9	10.2	10.2	10.2	10.2	8.2	8.2
Performance Combination Ducted and Non-Ducted	COP	W/W	3.47	3.67	3.75	3.72	3.61	3.64	3.46
	Cooling Rated Capacity	Btu/h	18,000	26,000	29,200	34,000	39,500	48,500	53000
	Cooling Cap. Range Min - Max	Btu/h	7000~21000	7500~33000	7195~32118	16511.5~36395.5	11335.5~41872	7706~53296	8456~58708
	SEER		18	17.25	17.75	17.9	17.85	15.75	15.75
	EER		11	8.75	10.55	11.25	10.1	9.2	9.1
	Heating Rated Capacity	Btu/h	19,000	29,000	31,800	43,000	46,000	54500	61000
	Heating Cap. Range Min - Max	Btu/h	8530~22600	7500~35000	7344.5~32457	8051~44550.5	8185.5~46531	10047~56934	10047~34611
Performance Ducted	HSPF		9	9.6	10	9.9	9.9	8.2	8.2
	COP	W/W	3.28	3.32	3.52	3.42	3.36	3.37	3.23
	Cooling Rated Capacity	Btu/h	18,000	26,000	29,200	34,000	39,500	48,500	52,500
	Cooling Cap. Range Min - Max	Btu/h	7000~21000	7500~33000	6200~30800	12706-36965	13800-42800	12000~52000	13500~56000
	SEER		14	14	14.5	14.8	14.7	15.5	15.5
	EER		9.5	8	9.1	10.1	9.8	8.8	8.7
	Heating Rated Capacity	Btu/h	19,000	29,000	32,000	43,500	46,500	54,500	60,500
Operating Range	Heating Cap. Range Min - Max	Btu/h	8530~22600	7500~35000	6500-32500	7231-44745	7500-47000	16000~54500	16000~61000
	HSPF		9	9	9.8	9.6	9.6	8.2	8.2
	COP	W/W	3.08	3	3.28	2.96	3.1	3.1	3
	Cooling Outdoor DB Min - Max	°F	0~119	0~119	0~119	0~119	0~119	5~119	5~119
	Heating Outdoor DB Min - Max	°F	-4~75	-4~75	-4~75	-4~75	-4~75	-4~75	-4~75
	Total Piping Length	Ft.	65	196	230	246	246	443	476
	Piping to furthest FCU	Ft.	33	65	82	82	82	229	229
Piping	Drop (OD above ID)	Ft.	32	32	49	49	49	98	98
	Lift (OD below ID)	Ft.	33	33	49	49	49	98	98
	Pipe Connection Size - Liquid	In.	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"
	Pipe Connection Size - Suction	In.	3/8"	3/8"	3/8"	3/8"	3/8"	5/8"	5/8"
Electrical	Voltage, Phase, Cycle	V/Ph/Hz	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
	Power Supply		Indoor unit powered from outdoor unit						
	MCA	A.	15	21	19	21	24	30	30
	MOCP - Fuse Rating	A.	25	35	30	35	40	50	50
Outdoor	Unit Width	In.	37.6	38.6	38.6	42.8	42.8	35.4	35.4
	Unit Height	In.	27.6	31.1	31.1	43.4	43.4	53	53
	Unit Depth	In.	15.6	16.8	17.3	17.3	17.3	13.4	13.4
	Net Weight	Lbs.	114.7	153.2	145.5	198.4	198.4	255.7	255.7
	Airflow	CFM	1883	2354	2330	4531	4531	3766	4119
Sound Pressure									

# PHYSICAL DATA - INDOOR

Indoor High Wall (GR)	Size		9		12		18	
	Model (White)		40GRQB09H--3		40GRQB12H--3		40GRQB18H--3	
	Model (Silver)		40GRQB09B--3		40GRQB12B--3		40GRQB18B--3	
	Unit Width	In.	37.8		37.8		37.8	
	Unit Height	In.	12.6		12.6		12.6	
	Unit Depth	In.	8.1		8.1		8.1	
	Net Weight	Lbs.	30.9		30.9		30.9	
	Pipe Connection Size - Liquid	In.	1/4"		1/4"		1/4"	
	Pipe Connection Size - Suction	In.	1/2"		1/2"		5/8"	
	Number of Fan Speeds		7		7		7	
	Airflow (lowest to highest)		CFM	206/235/294/324/353/383/412		265/294/353/383/412/441/471		324/353/412/441/471/500/530
Sound Pressure (lowest to highest)		dB(A)	22/24/26/30/34/38/41		23/25/27/31/35/39/42		26/28/31/35/39/43/48	
Wireless Remote Controller (°F/°C Convertible)			Standard					
Wired Remote Controller (°F/°C Convertible)			Not Available					

Indoor High Wall (GJ*B)	Size		9		12		18		24		
	Model		40GJQB09B--3		40GJQB12B--3		40GJQB18B--3		40GJQB24B--3		
	Unit Width	In.	34.1		34.1		40.1		46.4		
	Unit Height	In.	11.5		11.5		12.6		2.8		
	Unit Depth	In.	8.2		8.2		9.1		10.4		
	Net Weight	Lbs.	24.3		24.3		30.9		38.6		
	Pipe Connection Size - Liquid	In.	1/4"		1/4"		1/4"		1/4"		
	Pipe Connection Size - Suction	In.	1/2"		1/2"		5/8"		5/8"		
	Number of Fan Speeds		7		7		7		7		
	Airflow (lowest to highest)		CFM	224/241/271/312/359/394/430		224/241/271/312/659/394/453		282/330/371/418/465/512/589		294/353/412/471/530/588/647	
	Sound Pressure (lowest to highest)		dB(A)	23/26/30/34/36/38/42		24/26/30/34/36/38/44		33/36/38/41/44/47/51		38/41/43/45/47/49/52	
Wireless Remote Controller (°F/°C Convertible)			Standard								
Wired Remote Controller (°F/°C Convertible)			Optional								

Indoor Cassette (GJ*C)	Size		12		18		24		
	Model		40GJQB12C--3		40GJQB18C--3		40GJQB24C--3		
	Unit Width	In.	22.4		22.4		22.4		
	Unit Height	In.	9.1		9.1		9.4		
	Unit Depth	In.	22.4		22.4		33.1		
	Net Weight	Lbs.	39.7		39.7		61.7		
	Pipe Connection Size - Liquid	In.	1/4"		1/4"		3/8"		
	Pipe Connection Size - Suction	In.	3/8"		1/2"		5/8"		
	Number of Fan Speeds		3		3		3		
	Airflow		CFM	265/294/353		265/294/353		500/ 559/694	
	Sound Pressure (lowest to highest)		dB(A)	42/44/46		42/44/46		35/37/39	
Wireless Remote Controller (°F/°C Convertible)			Standard						
Wired Remote Controller (°F/°C Convertible)			Standard						

Indoor Ducted (GJ*D)	Size		9		12		18		21		24		
	Model		40GJQB09D--3		40GJQB12D--3		40GJQB18D--3		40GJQB21D--3		40GJQB24D--3		
	Unit Width	In.	24.2		24.2		24.2		24.2		24.2		
	Unit Height	In.	7.9		7.9		7.9		7.9		7.9		
	Unit Depth	In.	27.6		27.6		35.4		43.3		43.3		
	Net Weight	Lbs.	48.5		50.7		59.5		68.3		68.3		
	Pipe Connection Size - Liquid	In.	1/4"		1/4"		1/4"		3/8"		3/8"		
	Pipe Connection Size - Suction	In.	3/8"		3/8"		1/2"		5/8"		5/8"		
	Number of Fan Speeds		3		3		3		3		3		
	Airflow (lowest to highest)		CFM	147/176/264		176/235/323		294/353/411		323/441/588		323/441/588	
	Sound Pressure (lowest to highest)		dB(A)	31/34/37		32/35/39		33/37/41		34/38/42		34/38/42	
Max Static Pressure		In.W/G.	0.04		0.04		0.04		0.06		0.06		
Wireless Remote Controller (°F/°C Convertible)			Standard										
Wired Remote Controller (°F/°C Convertible)			Standard										

Indoor Floor Console (GJ*F)	Size		9		12		18		
	Model		40GJQB09F--3		40GJQB12F--3		40GJQB18F--3		
	Unit Width	In.	8.5		8.5		8.5		
	Unit Height	In.	23.6		23.6		23.6		
	Unit Depth	In.	27.6		27.6		27.6		
	Net Weight	Lbs.	33.1		33.1		33.1		
	Pipe Connection Size - Liquid	In.	1/4"		1/4"		1/4"		
	Pipe Connection Size - Suction	In.	3/8"		3/8"		1/2"		
	Number of Fan Speeds		7		7		7		
	Airflow (lowest to highest)		CFM	188/217/253/282/311/ 329/ 382		205/ 264/294/ 323/353/ 382/441		241/311/ 341/ 382/ 423/470/ 494	
	Sound Pressure (lowest to highest)		dB(A)	25/ 26/ 30/ 33/ 36/ 38/ 40		27/ 32/ 35/ 37/ 38/ 40/43		33/ 35/ 37/ 41/ 44/ 46/ 48	
Wireless Remote Controller (°F/°C Convertible)			Standard						
Wired Remote Controller (°F/°C Convertible)			Not Available						

# COOLING PERFORMANCE

Model	Cooling			Outdoor conditions (DB)						
	Indoor Conditions			68F(20C)	77F(25C)	86F(30C)	95F(35C)	104F(40C)	113F(45C)	118F(48C)
	DB	WB								
18	70F(21C)	59F(15C)	TC	17.28	17.08	16.24	15.37	14.62	13.87	13.50
			SC	13.55	13.40	12.73	12.05	11.47	10.88	10.59
			Input	1.22	1.25	1.40	1.51	1.56	1.59	1.61
	75F(24C)	63F(17C)	TC	18.36	18.16	17.32	16.44	15.69	14.94	14.40
			SC	14.40	14.25	13.58	12.89	12.31	11.72	11.29
			Input	1.26	1.29	1.45	1.55	1.61	1.64	1.66
	80F(27C)	67F(19C)	TC	19.62	19.44	18.90	18.00	17.53	16.79	16.20
			SC	15.39	15.25	14.82	14.12	13.75	13.16	12.71
			Input	1.34	1.38	1.53	1.65	1.71	1.74	1.76
	90F(32C)	73F(23C)	TC	22.50	22.32	21.63	20.72	19.97	19.22	18.54
			SC	17.65	17.50	16.96	16.25	15.66	15.08	14.54
			Input	1.43	1.47	1.64	1.77	1.83	1.86	1.88
24	70F(21C)	59F(15C)	TC	24.96	24.67	23.45	22.20	21.12	20.04	19.50
			SC	19.58	19.35	18.39	17.41	16.57	15.71	15.29
			Input	2.03	2.08	2.33	2.50	2.58	2.64	2.67
	75F(24C)	63F(17C)	TC	26.52	26.24	25.01	23.75	22.66	21.58	20.80
			SC	20.80	20.58	19.62	18.62	17.78	16.93	16.31
			Input	2.09	2.15	2.40	2.58	2.67	2.72	2.75
	80F(27C)	67F(19C)	TC	28.34	28.08	27.30	26.00	25.33	24.25	23.40
			SC	22.23	22.03	21.41	20.39	19.87	19.02	18.36
			Input	2.22	2.28	2.55	2.74	2.83	2.90	2.92
	90F(32C)	73F(23C)	TC	32.50	32.24	31.24	29.93	28.85	27.77	26.78
			SC	25.49	25.28	24.50	23.47	22.62	21.78	21.01
			Input	2.37	2.45	2.73	2.93	3.03	3.10	3.12
30	70F(21C)	59F(15C)	TC	24.52	28.63	30.86	28.91	22.85	17.84	13.70
			SC	21.13	23.26	24.17	23.13	20.91	17.66	13.63
			Input	1.74	2.11	2.83	3.10	2.57	2.17	1.71
	75F(24C)	63F(17C)	TC	27.55	31.07	33.08	31.22	24.55	19.21	15.03
			SC	23.71	25.50	26.13	25.30	22.87	19.06	14.91
			Input	1.76	2.11	2.85	3.12	2.58	2.21	1.76
	80F(27C)	67F(19C)	TC	30.31	33.85	35.18	33.65	26.05	25.74	16.63
			SC	25.70	27.39	32.71	26.15	24.46	25.11	16.38
			Input	2.01	2.37	2.91	3.21	2.77	2.84	1.90
	90F(32C)	73F(23C)	TC	31.23	37.37	39.60	37.01	28.32	21.80	17.77
			SC	29.20	28.57	29.29	28.52	25.17	21.39	17.43
			Input	2.03	2.40	2.96	3.27	2.67	2.24	1.87
36	70F(21C)	59F(15C)	TC	32.62	35.15	35.49	32.18	27.45	23.54	16.38
			SC	29.56	30.30	30.37	28.78	26.44	23.20	16.23
			Input	2.01	2.45	3.12	3.30	3.08	2.77	1.86
	75F(24C)	63F(17C)	TC	33.42	39.24	38.44	35.83	30.10	25.64	17.50
			SC	30.04	31.41	32.36	31.26	28.54	24.93	17.24
			Input	2.00	2.44	3.13	3.40	3.09	2.79	1.91
	80F(27C)	67F(19C)	TC	34.58	38.80	38.98	36.08	30.79	26.96	19.04
			SC	31.73	32.79	33.01	31.92	29.86	25.78	18.35
			Input	2.01	2.44	3.16	3.34	3.12	2.80	1.99
	90F(32C)	73F(23C)	TC	41.53	45.04	45.21	41.01	35.45	29.69	20.19
			SC	33.69	34.87	34.65	34.27	32.67	28.83	19.92
			Input	2.03	2.43	3.19	3.41	3.15	2.83	2.02
42	70F(21C)	59F(15C)	TC	33.01	35.21	36.51	33.78	29.48	23.20	16.79
			SC	29.75	29.17	29.04	29.34	27.30	22.49	16.51
			Input	1.98	2.48	3.65	3.64	3.60	2.75	1.99
	75F(24C)	63F(17C)	TC	33.58	37.98	38.54	36.61	33.83	25.78	18.25
			SC	29.40	30.97	31.24	31.80	30.93	24.57	17.67
			Input	1.99	2.69	3.56	3.49	3.65	2.78	2.10
	80F(27C)	67F(19C)	TC	37.50	41.39	43.33	40.81	34.97	28.66	19.38
			SC	32.13	33.54	34.12	33.78	32.59	26.68	18.53
			Input	2.00	2.82	3.60	3.59	3.67	2.80	2.16
	90F(32C)	73F(23C)	TC	44.87	47.80	48.57	41.41	37.87	29.86	20.53
			SC	34.14	34.46	35.33	33.81	32.72	28.03	19.75
			Input	2.21	2.52	3.28	3.56	3.74	2.83	2.20
48	70F(21C)	59F(15C)	TC	44.21	47.63	48.09	43.61	37.20	31.91	23.72
			SC	39.83	39.10	38.71	37.20	34.34	30.76	22.87
			Input	3.23	3.94	5.01	5.30	4.94	4.44	3.30
	75F(24C)	63F(17C)	TC	45.29	53.18	52.09	48.55	40.79	34.75	24.97
			SC	39.18	42.57	42.25	41.32	37.56	33.40	23.92
			Input	3.20	3.91	5.02	5.46	4.96	4.48	3.31
	80F(27C)	67F(19C)	TC	46.87	52.58	52.83	48.90	41.73	36.53	25.96
			SC	39.51	41.85	42.32	40.64	38.52	34.94	24.69
			Input	3.23	3.92	5.08	5.36	5.00	4.50	3.36
	90F(32C)	73F(23C)	TC	56.28	61.04	61.27	55.58	48.05	40.23	26.61
			SC	44.74	47.12	46.96	45.86	41.56	38.38	25.50
			Input	3.25	3.90	5.12	5.47	5.05	4.54	3.41
56	70F(21C)	59F(15C)	TC	41.40	44.16	45.79	42.37	36.97	29.10	24.57
			SC	37.06	35.86	36.13	36.27	33.35	27.88	23.68
			Input	3.19	4.00	5.88	5.86	5.80	4.43	3.32
	75F(24C)	63F(17C)	TC	42.11	47.63	48.34	45.92	42.43	32.33	26.33
			SC	36.05	38.39	39.18	39.31	38.48	30.65	25.14
			Input	3.21	4.33	5.73	5.61	5.87	4.47	3.41
	80F(27C)	67F(19C)	TC	47.03	51.91	54.35	51.18	43.86	35.95	27.55
			SC	39.93	42.07	42.72	41.92	40.66	33.36	26.26
			Input	3.22	4.54	5.80	5.78	5.91	4.51	3.48
	90F(32C)	73F(23C)	TC	56.27	59.95	60.92	51.93	47.50	37.45	29.00
			SC	43.22	43.65	43.80	42.84	40.80	34.86	27.50
			Input	3.56	4.05	5.28	5.73	6.02	4.56	3.64

## LEGEND

DB --- Dry Bulb  
WB --- Wet Bulb  
TC --- Total Net Cooling Capacity (1000 Btu/hour)  
SC --- Sensible Capacity (1000 Btu/hour)  
Input --- Total Power (kW)

# HEATING PERFORMANCE

Model	Heating			Outdoor conditions (DB)/(WB)							
	Indoor Conditions			0F(-18C) / 3.2F(-16C)	5F(-15C) / 3.2F(-16C)	7F(-13.88C) / 5F(-15C)	17F(-8.33C) / 15F(-9.4C)	28F(-2.2C) / 25F(-3.9C)	F(3.3C) / 35F(1.7C)	47F(8.3C) / 43F(6.1C)	57F(13.9C) / 55F(12.7C)
	DB	WB									
18	59F(15C)	F(10C)	TH	11.12	11.43	11.74	12.60	14.23	17.69	20.00	20.66
			SC	11.12	11.43	11.74	12.60	14.23	17.69	20.00	20.66
			Input	1.09	1.12	1.14	1.19	1.27	1.46	1.52	1.55
	F(18C)	54F(12C)	TH	10.80	11.10	11.40	12.23	13.86	17.32	19.39	20.03
			SC	10.80	11.10	11.40	12.23	13.86	17.32	19.39	20.03
			Input	1.12	1.14	1.17	1.22	1.30	1.49	1.55	1.58
	70F(21C)	59F(15C)	TH	10.60	10.89	11.18	12.00	13.46	16.93	19.01	19.64
			SC	10.60	10.89	11.18	12.00	13.46	16.93	19.01	19.64
			Input	1.16	1.18	1.21	1.26	1.35	1.55	1.61	1.64
	75F(24C)	63F(17C)	TH	10.32	10.61	10.89	11.68	13.30	16.76	18.48	19.09
			SC	10.32	10.61	10.89	11.68	13.30	16.76	18.48	19.09
			Input	1.18	1.21	1.24	1.29	1.38	1.58	1.65	1.68
24	59F(15C)	F(10C)	TH	16.97	17.44	17.91	19.22	21.72	27.00	30.52	31.52
			SC	16.97	17.44	17.91	19.22	21.72	27.00	30.52	31.52
			Input	1.58	1.61	1.65	1.72	1.83	2.11	2.19	2.23
	F(18C)	54F(12C)	TH	16.48	16.94	17.39	18.66	21.15	26.43	29.59	30.57
			SC	16.48	16.94	17.39	18.66	21.15	26.43	29.59	30.57
			Input	1.61	1.65	1.68	1.75	1.87	2.15	2.24	2.28
	70F(21C)	59F(15C)	TH	16.18	16.62	17.07	18.31	20.54	25.83	29.00	29.96
			SC	16.18	16.62	17.07	18.31	20.54	25.83	29.00	29.96
			Input	1.67	1.71	1.74	1.82	1.94	2.23	2.32	2.36
	75F(24C)	63F(17C)	TH	15.75	16.19	16.62	17.83	20.29	25.58	28.21	29.13
			SC	15.75	16.19	16.62	17.83	20.29	25.58	28.21	29.13
			Input	1.71	1.75	1.78	1.86	1.98	2.28	2.37	2.42
30	59F(15C)	F(10C)	TH	17.35	20.43	22.38	22.45	27.47	37.12	38.56	40.26
			SC	17.35	20.43	22.38	22.45	27.47	37.12	38.56	40.26
			Input	2.69	2.94	2.82	2.15	2.75	2.85	2.95	2.48
	F(18C)	54F(12C)	TH	16.68	19.72	21.84	22.28	27.98	30.71	37.70	39.58
			SC	16.68	19.72	21.84	22.28	27.98	30.71	37.70	39.58
			Input	2.77	3.06	2.95	2.28	2.98	2.95	3.10	2.63
	70F(21C)	59F(15C)	TH	16.12	19.25	22.01	22.01	26.96	30.20	36.68	39.07
			SC	16.12	19.25	22.01	22.01	26.96	30.20	36.68	39.07
			Input	2.84	3.12	3.10	2.40	3.08	3.10	3.22	2.75
	75F(24C)	63F(17C)	TH	15.79	18.92	21.84	21.77	27.13	29.17	36.34	37.81
			SC	15.79	18.92	21.84	21.77	27.13	29.17	36.34	37.81
			Input	2.96	3.19	3.15	2.50	3.13	3.20	3.40	2.93
36	59F(15C)	F(10C)	TH	21.45	23.37	25.52	30.30	33.17	41.12	38.90	40.95
			SC	21.45	23.37	25.52	30.30	33.17	41.12	38.90	40.95
			Input	3.37	3.59	3.45	3.20	2.96	3.28	2.37	2.00
	F(18C)	54F(12C)	TH	20.99	22.78	26.21	29.86	32.55	39.92	38.39	40.26
			SC	20.99	22.78	26.21	29.86	32.55	39.92	38.39	40.26
			Input	3.44	3.63	3.44	3.36	3.10	3.30	2.52	2.14
	70F(21C)	59F(15C)	TH	20.63	22.47	28.24	29.75	32.42	39.24	37.53	39.24
			SC	20.63	22.47	28.24	29.75	32.42	39.24	37.53	39.24
			Input	3.51	3.78	3.69	3.49	3.24	3.58	2.66	2.25
	75F(24C)	63F(17C)	TH	20.35	22.03	28.87	30.03	31.94	36.48	36.10	38.56
			SC	20.35	22.03	28.87	30.03	31.94	36.48	36.10	38.56
			Input	3.62	3.85	3.79	3.60	3.41	3.58	2.78	2.42
42	59F(15C)	F(10C)	TH	21.85	24.74	27.26	31.13	31.56	43.27	39.14	40.26
			SC	21.85	24.74	27.26	31.13	31.56	43.27	39.14	40.26
			Input	3.57	3.69	3.58	3.38	3.32	3.58	2.38	2.02
	F(18C)	54F(12C)	TH	21.74	23.61	27.64	30.98	32.07	43.33	38.39	39.92
			SC	21.74	23.61	27.64	30.98	32.07	43.33	38.39	39.92
			Input	3.65	3.76	3.55	3.40	3.30	3.63	2.53	2.15
	70F(21C)	59F(15C)	TH	21.62	23.49	28.42	30.89	31.89	41.63	37.53	38.97
			SC	21.62	23.49	28.42	30.89	31.89	41.63	37.53	38.97
			Input	3.73	3.82	3.66	3.57	3.40	3.76	2.65	2.30
	75F(24C)	63F(17C)	TH	21.55	23.15	28.08	30.57	29.86	41.29	36.92	38.90
			SC	21.55	23.15	28.08	30.57	29.86	41.29	36.92	38.90
			Input	3.82	3.90	3.76	3.69	3.40	3.91	2.82	2.42
48	59F(15C)	F(10C)	TH	26.65	32.18	37.12	44.07	48.24	52.98	56.58	59.56
			SC	26.65	32.18	37.12	44.07	48.24	52.98	56.58	59.56
			Input	5.17	5.29	5.18	4.80	4.44	4.92	4.94	4.30
	F(18C)	54F(12C)	TH	25.82	30.48	38.12	43.43	47.35	51.24	55.84	58.56
			SC	25.82	30.48	38.12	43.43	47.35	51.24	55.84	58.56
			Input	5.22	5.36	5.16	5.04	4.65	4.95	5.01	4.42
	70F(21C)	59F(15C)	TH	24.13	29.16	41.07	43.28	47.15	50.25	54.72	57.08
			SC	24.13	29.16	41.07	43.28	47.15	50.25	54.72	57.08
			Input	5.27	5.45	5.34	5.14	4.86	5.07	5.16	4.58
	75F(24C)	63F(17C)	TH	22.58	27.77	41.99	43.68	46.45	49.64	52.51	56.08
			SC	22.58	27.77	41.99	43.68	46.45	49.64	52.51	56.08
			Input	5.45	5.51	5.48	5.30	5.12	5.17	5.20	4.63
56	59F(15C)	F(10C)	TH	28.15	36.85	40.89	46.69	47.34	58.07	61.78	63.12
			SC	28.15	36.85	40.89	46.69	47.34	58.07	61.78	63.12
			Input	5.42	5.61	5.45	5.15	5.06	5.45	5.62	5.08
	F(18C)	54F(12C)	TH	27.14	35.62	41.46	46.47	48.11	54.76	61.33	62.27
			SC	27.14	35.62	41.46	46.47	48.11	54.76	61.33	62.27
			Input	5.55	5.66	5.41	5.18	5.02	5.52	5.85	5.27
	70F(21C)	59F(15C)	TH	26.85	33.44	42.62	46.34	47.83	54.25	60.74	61.86
			SC	26.85	33.44	42.62	46.34	47.83	54.25	60.74	61.86
			Input	5.60	5.75	5.57	5.44	5.18	5.73	5.94	5.50
	75F(24C)	63F(17C)	TH	23.64	29.48	42.12	45.86	44.78	54.08	58.79	60.74
			SC	23.64	29.48	42.12	45.86	44.78	54.08	58.79	60.74
			Input	5.72	5.81	5.73	5.62	5.18	5.95	6.19	5.68

LEGEND  
 DB --- Dry Bulb  
 WB --- Wet Bulb  
 TH --- Total Net Heating Capacity (1000 Btu/hour)  
 SC --- Sensible Capacity (1000 Btu/hour)  
 Input --- Total Power (kW)

# PIPING REQUIREMENTS

System size			18	24	30	36	42	48	56
Piping	Min. Piping Length	ft	9.84	9.84	9.84	9.84	9.84	9.84	9.84
	Standard Piping Length	ft	32	98	131.2	131.2	131.2	98.42	98.42
	Max. outdoor-indoor height difference	ft	33	33	49.2	49.2	49.2	98.42	98.42
	Max. height distance between indoor and indoor	ft	33	33	24.6	24.6	24.6	49.21	49.21
	Max. height distance between indoor and outdoor and indoor	ft	32	32	49.2	49.2	49.2	98.42	98.42
	Max. height distance between indoor and outdoor and outdoor up	ft	33	33	49.2	49.2	49.2	98.42	98.42
	Max. equivalent piping outdoor to last indoor	ft	33	65	82	82	82	229	229
	Max. Piping Length with no additional refrigerant charge	ft	32	98	131.2	131.2	131.2	98.42	98.42
	Max. Piping Length	ft	65	196	229.7	246	246	442.9	475.7
	Additional refrigerant charge (between Standard – Max piping length)	Oz/ft	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Gas Pipe (size - connection type)	in	3/8	3/8	3/8	3/8	3/8	5/8	5/8
	Liquid Pipe (size - connection type)	in	1/4	1/4	1/4	1/4	1/8	3/8	3/8
Refrigerant	Refrigerant Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Heat Pump Models Charge Amount	Lbs	3.53	4.85	6.17	8.05	8.05	10.91	10.91

## APPLICATION DATA

### UNIT SELECTION

When selecting a variable speed system match the system capacity range to the anticipated load range. Since a variable speed system can accommodate a wide range of loads it is important to understand the percentage of time that the system will be required to run at the both the maximum and the minimum load points. This differential is most evident when a residential application is compared with a commercial application.

Generally there will be more load diversification in the residential application (shifting from low load to high load).

The commercial application will tend to be more steady during the normal day time hours, and will go to low load levels after normal business hours. If it is anticipated that the system will be required to run at the maximum load point for the majority of the time, the next larger system capacity should be selected.

The Application Table is a guideline for selecting the proper size for the application.

## APPLICATION DATA

Outdoor Unit Model	2-Zone	3-Zone	4-Zone	5-Zone	6-Zone	7-Zone	8-Zone	9-Zone
38GJQC18---3	9+9							
	9+12							
38GJQD24---3	9+9	9+9+9						
	9+12	9+9+12						
	9+18	9+9+18						
	12+12	9+12+12						
	12+18	12+12+12						
	18+18							
38GJQF30---3	9+9	9+9+9	9+9+9+9					
	9+12	9+9+12	9+9+9+12					
	9+18	9+9+18	9+9+12+12					
	9+21	9+9+21						
	9+24	9+9+24						
	12+12	9+12+12						
	12+18	9+12+18						
	12+21	9+12+21						
	12+24	12+12+12						
	18+18	12+12+18						
	18+21							
	18+24							
	21+21							
38GJQG36---3	9+9	9+9+9	9+9+9+9	9+9+9+9+9				
	9+12	9+9+12	9+9+9+12	9+9+9+9+12				
	9+18	9+9+18	9+9+9+18					
	9+21	9+9+21	9+9+9+21					
	9+24	9+9+24	9+9+12+12					
	12+12	9+12+12	9+9+12+18					
	12+18	9+12+18	9+12+12+12					
	12+21	9+12+21	12+12+12+12					
	12+24	9+12+24						
	18+18	9+18+18						
	18+21	9+18+21						
	18+24	12+12+12						
	21+21	12+12+18						
	21+24	12+12+21						
	24+24	12+12+24						
		12+18+18						
38GJQG42---3	9+9	9+9+9	9+9+9+9	9+9+9+9+9				
	9+12	9+9+12	9+9+9+12	9+9+9+9+12				
	9+18	9+9+18	9+9+9+18					
	9+21	9+9+21	9+9+9+21					
	9+24	9+9+24	9+9+12+12					
	12+12	9+12+12	9+9+12+18					
	12+18	9+12+18	9+12+12+12					
	12+21	9+12+21	9+12+12+18					
	12+24	9+12+24	12+12+12+12					
	18+18	9+18+18						
	18+21	9+18+21						
	18+24	9+21+21						
	21+21	12+12+12						
	21+24	12+12+18						
	24+24	12+12+21						
		12+12+24						
		12+18+18						
		12+18+21						

Outdoor Unit Model	2-Zone	3-Zone		4 Zone			5 Zone			6 Zone		7 Zone	8 Zone	9 Zone		
38GJQK48---3	9+18	9+9+9	12+12+21	9+9+9+9	9+12+12+2 4	12+12+18+ 21	9+9+9+9+9	9+9+9+18+ 24	9+12+12+1 2+12	9+9+9+9+9+9		9+9+9+9+9 +9+9	9+9+9+9+9 +9+9+9			
	9+21	9+9+12	12+12+24	9+9+9+12	9+12+18+1 8	12+12+18+ 24	9+9+9+9+1 2	9+9+9+21+ 21	9+12+12+1 2+18	9+9+9+9+9+12		9+9+9+9+9 +9+12				
	9+24	9+9+18	12+18+18	9+9+9+18	9+12+18+2 1	12+12+21+ 21	9+9+9+9+1 8	9+9+9+21+ 24	9+12+12+1 2+21	9+9+9+9+9+18		9+9+9+9+9 +9+18				
	12+12	9+9+21	12+18+21	9+9+9+21	9+12+18+2 4	12+12+24+ 24	9+9+9+9+2 1	9+9+12+12 +12	9+12+12+1 2+24	9+9+9+9+9+21		9+9+9+9+9 +12+12				
	12+18	9+9+24	12+18+24	9+9+9+24	9+12+21+2 1	12+18+18+ 18	9+9+9+9+2 4	9+9+12+12 +18	9+12+12+1 8+18	9+9+9+9+9+24		9+9+9+9+1 2+12+12				
	12+21	9+12+12	12+21+21	9+9+12+12	9+12+21+2 4	12+18+18+ 21	9+9+9+12+ 12	9+9+12+12 +21	9+12+12+1 8+21	9+9+9+9+12+12						
	12+24	9+12+18	12+21+24	9+9+12+18	9+12+24+2 4	12+18+18+ 24	9+9+9+12+ 18	9+9+12+12 +24	12+12+12+ 12+12	9+9+9+9+12+18						
	18+18	9+12+21	12+24+24	9+9+12+21	9+18+18+1 8	12+18+21+ 21	9+9+9+12+ 21	9+9+12+18 +18	12+12+12+ 12+18	9+9+9+9+12+21						
	18+21	9+12+24	18+18+18	9+9+12+24	9+18+18+2 1		9+9+9+12+ 24	9+9+12+18 +21	12+12+12+ 12+21	9+9+9+9+12+24						
	18+24	9+18+18	18+18+21	9+9+18+18	9+18+18+2 4		9+9+9+18+ 18	9+9+12+18 +24	12+12+12+ 12+24	9+9+9+12+12+12						
	21+21	9+18+21	18+18+24	9+9+18+21	9+18+21+2 1		9+9+9+18+ 21	9+9+12+21 +21	12+12+12+ 18+18	9+9+9+12+12+18						
	21+24	9+18+24	18+21+21	9+9+18+24	9+18+21+2 4					9+9+9+12+12+21						
	24+24	9+21+21	18+21+24	9+9+21+21	12+12+12+ 12				9+9+9+12+12+12							
			9+21+24	21+21+21	9+9+21+24	12+12+12+ 18				9+9+12+12+12+18						
			9+24+24	21+21+24	9+12+12+1 2	12+12+12+ 21										
			12+12+12	21+24+24	9+12+12+1 8	12+12+12+ 24										
			12+12+18	24+24+24	9+12+12+2 1	12+12+18+ 18										
38GJQL56---3			9+18	9+9+12	12+12+24	9+9+9+9	9+12+18+2 1	12+12+18+ 21	9+9+9+9+9	9+9+12+12 +24	9+12+12+1 8+21	9+9+9+9+9 +9	9+9+9+9+2 1+21	9+9+12+12 +12+21	9+9+9+9+9 +9+9	9+9+9+9+9 +9+9+9
	9+21	9+9+18	12+18+18	9+9+9+12	9+12+18+2 4	12+12+18+ 24	9+9+9+9+1 2	9+9+12+18 +18	9+12+12+1 8+24	9+9+9+9+9 +12	9+9+9+9+2 1+24	9+9+12+12 +12+24	9+9+9+9+9 +9+12	9+9+9+9+9 +9+9+12		
	9+24	9+9+21	12+18+21	9+9+9+18	9+12+21+2 1	12+12+21+ 21	9+9+9+9+1 8	9+9+12+18 +21	9+12+12+2 1+21	9+9+9+9+9 +18	9+9+9+12+ 12+12	9+9+12+12 +18+18	9+9+9+9+9 +9+18			
	12+18	9+9+24	12+18+24	9+9+9+24	9+12+21+2 4	12+12+21+ 24	9+9+9+9+2 1	9+9+12+18 +24	9+12+12+2 1+24	9+9+9+9+9 +21	9+9+9+12+ 12+18	9+9+12+12 +18+21	9+9+9+9+9 +9+21	9+9+9+9+9 +9+12+12		
	12+21	9+12+12	12+21+21	9+9+9+24	9+12+24+2 4	12+12+24+ 24	9+9+9+9+2 4	9+9+12+21 +21	9+12+12+2 4+24	9+9+9+9+9 +24	9+9+9+12+ 12+21	9+12+12+1 2+12+12	9+9+9+9+9 +9+24	9+9+9+9+9 +12+12+12		
	12+24	9+12+18	12+21+24	9+9+12+12	9+18+18+1 8	12+18+18+ 18	9+9+9+12+ 12	9+9+12+21 +24	12+12+12+ 12+12	9+9+9+9+1 2+12	9+9+9+12+ 12+24	9+12+12+1 2+12+18	9+9+9+9+9 +12+12			
	18+18	9+12+21	12+24+24	9+9+12+18	9+18+18+2 1	12+18+18+ 21	9+9+9+12+ 18	9+9+12+24 +24	12+12+12+ 12+18	9+9+9+9+1 2+18	9+9+9+12+ 18+18	9+12+12+1 2+12+21	9+9+9+9+9 +12+18			
	18+21	9+12+24	18+18+18	9+9+12+21	9+18+18+2 4	12+18+18+ 24	9+9+9+12+ 21	9+9+18+18 +18	12+12+12+ 12+21	9+9+9+9+1 2+21	9+9+9+12+ 18+21	9+12+12+1 2+12+24	9+9+9+9+9 +12+21			
	18+24	9+18+18	18+18+21	9+9+12+24	9+18+21+2 1	12+18+21+ 21	9+9+9+12+ 24	9+9+18+18 +21	12+12+12+ 12+24	9+9+9+9+1 2+24	9+9+9+12+ 18+24	9+12+12+1 2+18+18	9+9+9+9+9 +12+24			
	21+21	9+18+21	18+18+24	9+9+18+18	9+18+21+2 4	12+18+21+ 24	9+9+9+18+ 18	9+9+18+18 +24	12+12+12+ 18+18	9+9+9+9+1 8+18	9+9+9+12+ 21+21	12+12+12+ 12+12+12	9+9+9+9+9 +18+18			
	21+24	9+18+24	18+21+21	9+9+18+21	9+18+24+2 4	12+18+24+ 24	9+9+9+18+ 21	9+9+18+21 +21	12+12+12+ 18+21	9+9+9+9+1 8+21	9+9+12+12 +12+12	12+12+12+ 12+12+18	9+9+9+9+9 +12+12+12			
	24+24	9+21+21	18+21+24	9+9+18+24	9+21+21+2 1	12+21+21+ 21	9+9+9+18+ 24	9+9+18+21 +24	12+12+12+ 18+24	9+9+9+9+1 8+24	9+9+12+12 +12+18	12+12+12+ 12+12+21	9+9+9+9+9 +12+18			
			9+21+24	18+24+24	9+9+21+21	9+21+21+2 4	12+21+21+ 24	9+9+9+21+ 21	9+12+12+1 2+12	12+12+12+ 21+21			9+9+9+9+9+1 2+12+21			
			9+24+24	21+21+21	9+9+21+24	9+21+24+2 4	12+21+24+ 24	9+9+9+21+ 24	9+12+12+1 2+18	12+12+12+ 21+24			9+9+9+9+12+ 12+12+12			
			12+12+12	21+21+24	9+9+24+24	9+24+24+2 4	18+18+18+ 18	9+9+12+12 +12	9+12+12+1 2+21	12+12+18+ 18+18			9+9+9+12+ 12+12+18			
			12+12+18	21+24+24	9+12+12+1 2	12+12+12+ 12	18+18+18+ 21	9+9+12+12 +18	9+12+12+1 2+24	12+12+18+ 18+21			9+9+9+12+1 +12+12+12			
			12+12+21	24+24+24	9+12+12+ 18	12+12+12+ +18	18+18+18 +24	9+9+12+1 2+21	9+12+12+ 18+18			9+12+12+ 12+12+12 +12				
38GJQL56---3				9+12+12+2 1	12+12+12+ 21	18+18+21+ 21										
				9+12+12+2 4	12+12+12+ 24	18+18+21+ 24										
				9+12+18+1 8	12+12+18+ 18	18+21+21+ 21										

## UNIT MOUNTING (INDOOR)

**Mounting Bracket** – The fan coil units are furnished with mounting brackets or dedicated mounting holes to hang the unit.

**Support** – Adequate support must be provided to handle the weight of all fan coils. Refer to the Physical Data section for weights, and the base unit dimensional drawings.

**Unit Leveling** – For reliable operation, units should be level in all planes.

**Clearances** – Minimum clearance as shown in Fig. 14- 18.

**Unit location** – Select a location which will provide the best air circulation for the room. These units should be positioned as high to have adequate air circulation. The unit return and discharge should not be obstructed by furniture, curtains, or anything which may cause the unit to short cycle or air to recycle.

## UNIT MOUNTING (OUTDOOR)

**Support** – A location which can bear the weight of outdoor unit. Refer to the Physical Data section for weights, and base dimensional drawings.

**Unit Leveling** – For reliable operation, units should be level in all planes.

**Clearances** – Minimum clearances, as shown in Fig. 18, must be provided for airflow. The outdoor units are designed for free-blow applications. Air inlets and outlets should not be restricted.

**Unit location** – A location which is convenient to installation and not exposed to strong wind.

## SYSTEM OPERATING CONDITIONS

### Operating range:

Operating Range Min / Max °F (°C)		
	Cooling	Heating
Outdoor DB	18K-42K: 0 / 118 (-18 / 48) 48K-56K: 5 / 118 (-15 / 48)	18K-42K: 0 / 118 (-18 / 48) 48K-56K: 5 / 118 (-15 / 48)
Indoor DB	64 / 95 (18 / 35)	32 / 86 (0 / 30)
Indoor WB	55 (13)	

## METERING DEVICES

The outdoor unit has multiple electronic expansion valves to manage the refrigerant flow to the different indoor fan coils connected to that unit.

## REFRIGERANT LINES

### General Guidelines:

1. The outdoor units are shipped with full charge of R-410A refrigerant. All charges, line sizing, and capacities are based on runs of 25 ft (7.6 m). For runs over 25 ft (7.6m), consult long- line section on this page for proper charge adjustments.
2. Refrigerant lines should not be buried in the ground. If it is necessary to bury the lines, not more than 36 inches (914 mm) should be buried. Provide a minimum of 6 inch (152 mm) vertical rise to service valves to prevent refrigerant migration.
3. Both lines must be insulated. Use a minimum of ½-inch (12.7 mm) thick insulation. Closed-cell insulation is recommended in all long-line applications.
4. Special consideration should be given to isolating interconnecting tubing from the building structure. Isolate the tubing so that vibration or noise is not transmitted into the structure.

## Long Line Applications:

- No change in line sizing is required.  
See piping requirements for additional charge.

## DRAIN CONNECTIONS

Install drains to meet the local sanitation codes. If adequate gravity drainage cannot be provided, a field installed condensate pump accessory should be used. Refer to the Installation Instructions of the condensate pump for detailed specifications. (Condensate Pump built-in on Ducted and Cassette indoor units).

**NOTE: The high wall fan coils have internal condensate trap. An external trap is not required.**

## WIRING

The main power is supplied to the outdoor unit. Four field supplied connecting cables from the outdoor unit to each of the indoor units are: L1, L2, Ground, and S for communication between the outdoor unit and each indoor unit.

## CONTROL SYSTEM

The 38GJ / 40GJ / 40GR unit is equipped with a microprocessor control to operate the system and give optimum levels of comfort and operating efficiency.

There are microprocessor boards and thermistors located in both the indoor and outdoor units. The thermistors monitor the system operation and control the operating mode. The change in the settings or the modes of operation, use the factory supplied wireless remote control.

The 38GJ / 40GJ / 40GR unit has the following operating modes:

- Fan Only
- Auto
- Heating (on Heat Pumps only)
- Cooling
- Dehumidification (Dry)

**FAN ONLY** - In Fan Only mode, the system filters and circulates the room air without changing the room air temperature.

**AUTO** - In Auto mode, the system will automatically select one of the following operating modes: cooling, heating or fan only based on the difference between the room temperature and the set point temperature.

**HEATING** - In the Heating mode, the system heats and filters room air.

**COOLING** - When in Cooling mode, the fan runs all the time and the system cools, dries and filters room air.

**DEHUMIDIFICATION (DRY)** - in Dehumidification (Dry) mode, the system dries, filters and slightly cools room temperature. This mode does not take place of a dehumidifier.

In addition to the above modes that are selected by using the remote control, the unit can run in emergency mode by using a manual button. This mode is used when the remote is misplaced or the batteries in the remote have died. In this mode, the unit will run in AUTO mode with a predetermined set point (76°F/24.4°C).

## WIRELESS REMOTE CONTROL

1. A wireless remote control is supplied for system operation.
2. Each battery-operated wireless remote control may be used to control more than one unit.
3. The wireless remote control has a range of 25 ft. (7.6 m).



**Fig. 20 – Wireless remote control**

## WIRED REMOTE CONTROL (STANDARD ON DUCTED AND CASSETTE UNITS)

1. Optional wired remote controller used for system operation of all high-wall, cassette and floor console units.
2. Kit includes a wired remote controller and a connecting cable.
3. Connect with wire terminal between remote controller and indoor unit.
4. Display in °F or °C and temperature increments every 1°F or every 1°C.



**Fig. 21 – Wired remote control**

## SEQUENCE OF OPERATION

Simultaneous heating and cooling is not allowed. At start-up, the first indoor unit to call for operation (heating or cooling) will control from the preset position, the mode of operation for the rest of the indoor units connected to the same outdoor unit. If the other units conflict in mode with the first unit an error message will be displayed on those units.

When a unit is set to COOL, HEAT or DRY mode, the electronic expansion valve is first initialized (closed) and then is opened to a preset position.

Superheat heat for each fan coil (the ones that are energized) is monitored and the position of the electronic expansion valve is adjusted to ensure that each fan coil gets the appropriate amount of refrigerant to maintain the required superheat. After the set point is satisfied and the fan coil shuts off, the electronic expansion valve stays open for a specified time to ensure that system pressures equalize.

When the system is set for COOL, HEAT or DRY mode, the compressor speed is varied by comparing the indoor air temperature with the set point and continuously adjusting the compressor speed (to keep the compressor running as long as possible) in an effort to maintain the greatest comfort possible.

The indoor fan can be running in MANUAL or AUTO mode. When the fan is running in AUTO mode, the speed is determined by comparing the room temperature to the set point.

When the unit goes through the defrost cycle, the indoor fans are de-energized and the refrigerant is circulated through all the fan coils (even if they were off or on standby before the defrost cycle) to maximize the heat transfer surface area available for defrost operation.



# AIR FLOW DATA

GR High Wall				
System size		9	12	18
SS	CFM	470	480	530
H	CFM	440	450	500
MH	CFM	410	425	470
M	CFM	380	395	440
ML	CFM	355	365	40
L	CFM	295	310	355
SL	CFM	265	275	325

GJ*B High Wall					
System size		9	12	18	24
SS	CFM	430	453	589	647
H	CFM	394	394	512	588
MH	CFM	359	659	465	530
M	CFM	312	312	418	471
ML	CFM	271	271	371	412
L	CFM	241	241	330	353
SL	CFM	224	224	282	294

Cassette				
System size		12	18	24
H	CFM	353	353	694
M	CFM	294	294	559
L	CFM	265	265	500

Console				
System size		9	12	18
SS	CFM	382	441	494
H	CFM	329	382	470
MH	CFM	311	353	423
M	CFM	282	323	382
ML	CFM	253	294	341
L	CFM	217	264	311
SL	CFM	188	205	241

Ducted						
System size		9	12	18	21	24
H	CFM	264	323	411	588	588
M	CFM	176	235	353	441	441
L	CFM	147	176	294	323	323

Multi Zone Outdoor Unit								
System size		18	24	30	36	42	48	56
Voltage		208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60
H	CFM	1883	2354	2330	4531	4531	3766	4119

# SOUND PRESSURE

GR High Wall					
System size			9	12	18
Indoor Sound Pressure HP Cooling mode	SH	dBa	41	42	49
	H	dBa	38	39	43
	MH	dBa	34	35	40
	M	dBa	32	33	35
	ML	dBa	30	31	33
	L	dBa	28	29	31
	SL	dBa	26	27	29
Indoor Sound Pressure HP Heating mode	SH	dBa	42	41	47
	H	dBa	41	38	41
	MH	dBa	38	33	39
	M	dBa	36	30	34
	ML	dBa	34	27	30
	L	dBa	25	25	27
	SL	dBa	24	23	25

GJ*B High Wall						
System size			9	12	18	24
Indoor Sound Pressure HP Cooling mode	SS	dBa	42	44	51	52
	H	dBa	38	38	47	49
	MH	dBa	36	36	44	47
	M	dBa	34	34	41	45
	ML	dBa	30	30	38	43
	L	dBa	26	26	36	41
	SL	dBa	23	24	33	38
Indoor Sound Pressure HP Heating mode	SS	dBa	44	45.7	51	50
	H	dBa	37.2	37.5	48	50
	MH	dBa	35	35.3	45	47
	M	dBa	33	33.9	42	45
	ML	dBa	31.7	32.3	40	42
	L	dBa	28.9	29.8	35	37
	SL	dBa	27.2	28.5	31	34

Cassette					
System size			12	18	24
Indoor Sound Pressure HP Cooling mode	SS	dBa	46	46	39
	H	dBa	44	44	37
	M	dBa	42	42	35
Indoor Sound Pressure HP Heating mode	SS	dBa	53	46	49
	H	dBa	54	41	47
	M	dBa	52	38	45

Ducted							
System size			9	12	18	21	24
Indoor Sound Pressure HP Cooling mode	H	dBa	37	39	41	42	42
	M	dBa	34	35	37	38	38
	L	dBa	31	32	33	34	34
Indoor Sound Pressure HP Heating mode	H	dBa	47	49	51	52	52
	M	dBa	44	45	47	48	48
	L	dBa	41	42	43	44	44

Floor Console					
System size			9	12	18
Indoor Sound Pressure HP Cooling mode	SS	dBa	40	43	48
	H	dBa	38	40	46
	MH	dBa	36	38	44
	M	dBa	33	37	41
	ML	dBa	30	35	37
	L	dBa	26	32	35
	SL	dBa	25	27	33
Indoor Sound Pressure HP Heating mode	SS	dBa	50	53	58
	H	dBa	48	50	56
	MH	dBa	46	48	54
	M	dBa	43	47	51
	ML	dBa	40	45	47
	L	dBa	36	42	45
	SL	dBa	35	37	43

Multi Zone Outdoor Unit								
System size		18	24	30	36	42	48	56
H	dBa	56	59	59	61	61	55	57

## ELECTRICAL DATA

GR High Wall						
UNIT SIZE	SYSTEM VOLTAGE	OPERATING VOLTAGE	INDOOR FAN			
	VOLT / PHASE / HZ	MAX / MIN	V-PH-HZ	FLA	HP	W
9	208-230/1/60	253 / 187	208-230/1/60	0.1	0.0268	20
12				0.1	0.0268	20
18				0.1	0.0268	20

GJ*B High Wall						
UNIT SIZE	System Voltage	OPERATING VOLTAGE	INDOOR FAN			
	VOLT / PHASE / HZ	MAX / MIN	V-PH-HZ	FLA	HP	W
9	208-230/1/60	253 / 187	208-230/1/60	0.17	1/72	10
12				0.17	1/72	10
18				0.3	1/29	25
24				0.38	1/10	70

Cassette						
UNIT SIZE	System Voltage	OPERATING VOLTAGE	INDOOR FAN			
	VOLT / PHASE / HZ	MAX / MIN	V-PH-HZ	FLA	HP	W
12	208-230/1/60	253 / 187	208-230/1/60	0.18	1/72	46
18				0.18	1/72	46
24				0.43	1/20	46

Ducted						
UNIT SIZE	System Voltage	OPERATING VOLTAGE	INDOOR FAN			
	VOLT / PHASE / HZ	MAX / MIN	V-PH-HZ	FLA	HP	W
9	208-230/1/60	253 / 187	208-230/1/60	0.28	1/24	80
12				0.31	1/18	80
18				0.41	1/12	100
21				0.5	1/36'	124
24				0.5	1/36'	124

Floor Console						
UNIT SIZE	System Voltage	OPERATING VOLTAGE	INDOOR FAN			
	VOLT / PHASE / HZ	MAX / MIN	V-PH-HZ	FLA	HP	W
9	208-230/1/60	253 / 187	208-230/1/60	0.14	1/24	30
12				0.14	1/24	30
18				0.14	1/24	30

MULTI ZONE OUTDOOR UNIT								
UNIT SIZE	System Voltage	OPERATING VOLTAGE	COMPRESSOR	OUTDOOR FAN			MCA	MAX FUSE/CB AMP
	VOLT / PHASE / HZ	MAX / MIN	RLA	FLA	HP	W		
18	208-230/1/60	253 / 187	7.32	0.62	1/12	60	15	25
24			12.16	0.59	1/8	90	21	35
30			10.5	0.68	1/6	150	19	30
36			12.5	0.82	2/9	240	21	30
42			16.5	0.82	2/9	240	24	30
48			22	1	1/6	150	30	40
56			24	1	1/6	150	30	40

\*Permissible limits of the voltage range at which the unit will operate satisfactorily.

### LEGEND

FLA - Full Load Amps

LRA - Locked Rotor Amps

MCA - Minimum Circuit Amps

RLA - Rated Load Amps

## MAX STATIC PRESSURE - DUCTED

System size		9	12	18	21	24
Max static pressure	Pa	10	10	10	15	15
	In.WG	0.04	0.04	0.04	0.06	0.06

# FAN PERFORMANCES (DUCTED UNITS)

Static pressure curve (static pressure deducted)

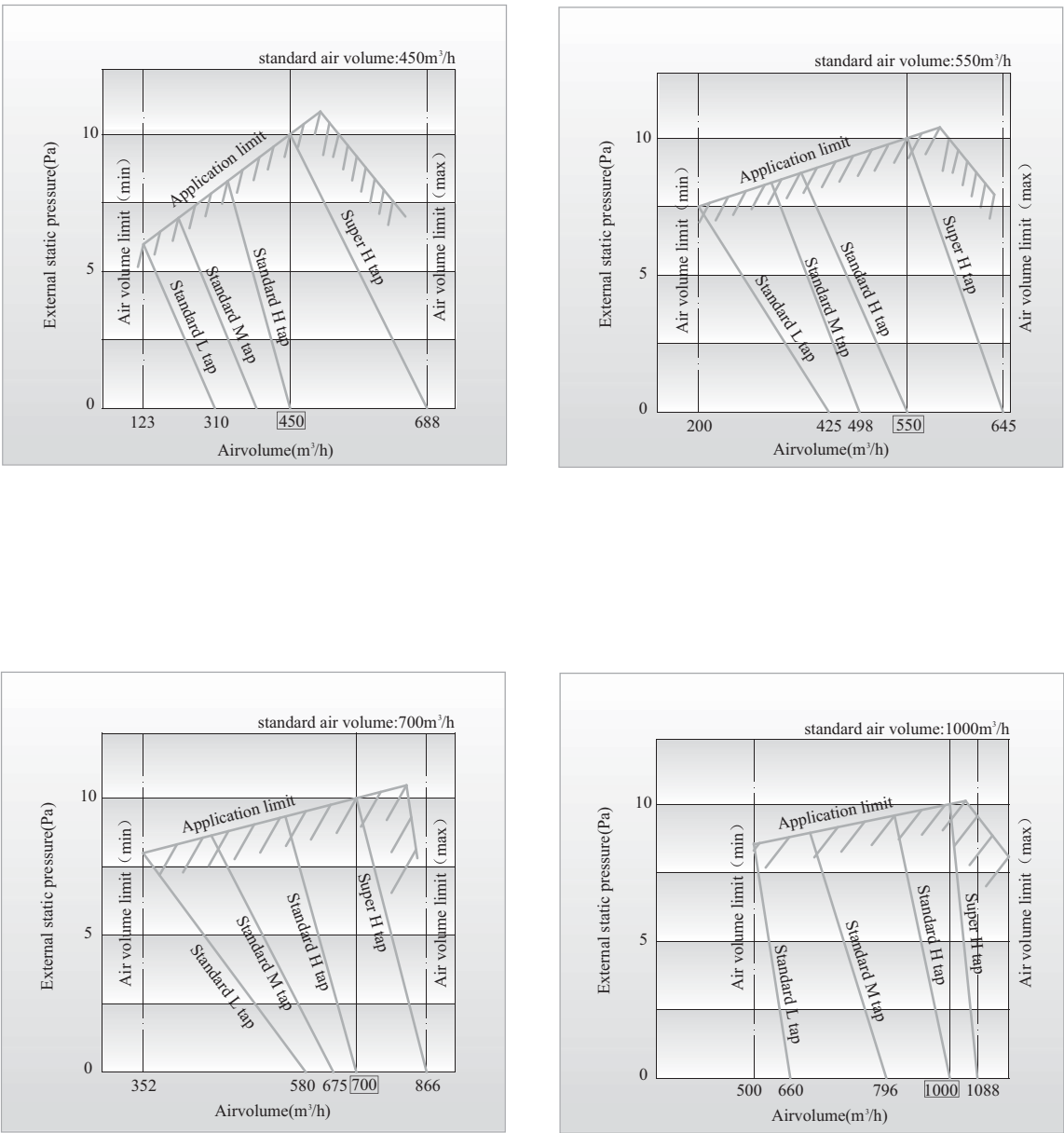
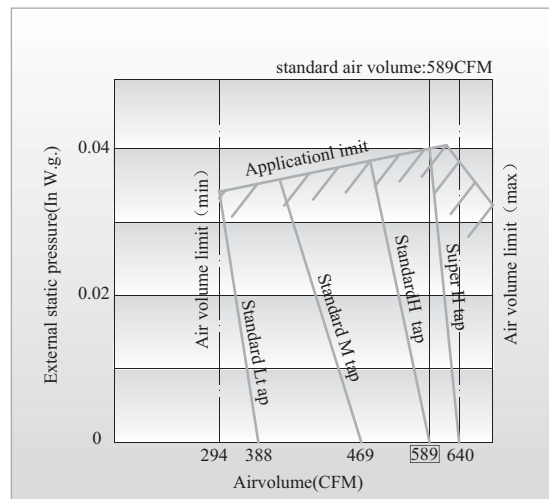
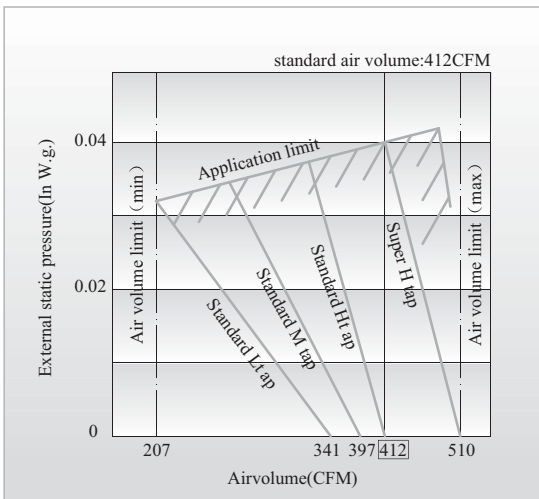
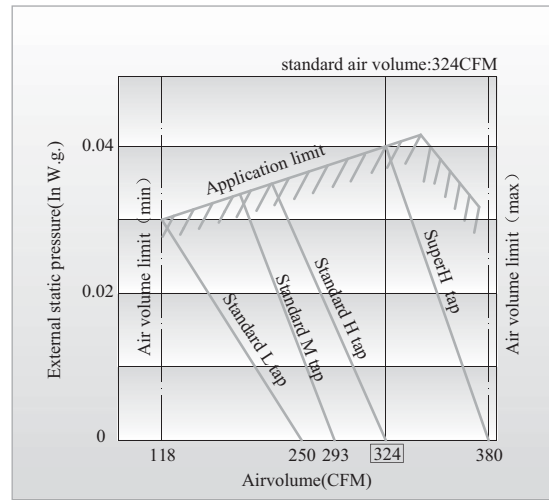
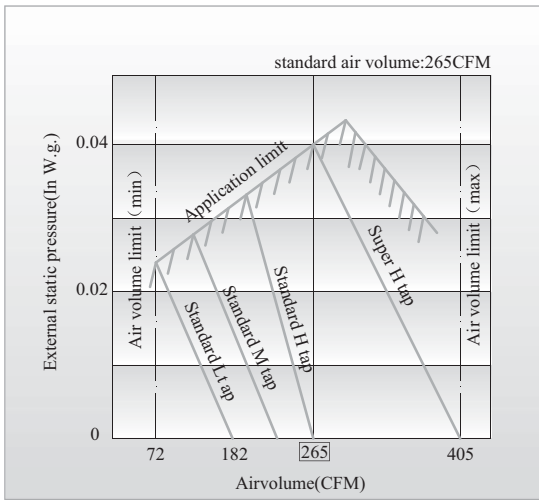


Fig. 17 – Fan performances



**Fig. 23 – Fan performances**

## WIRING DIAGRAMS

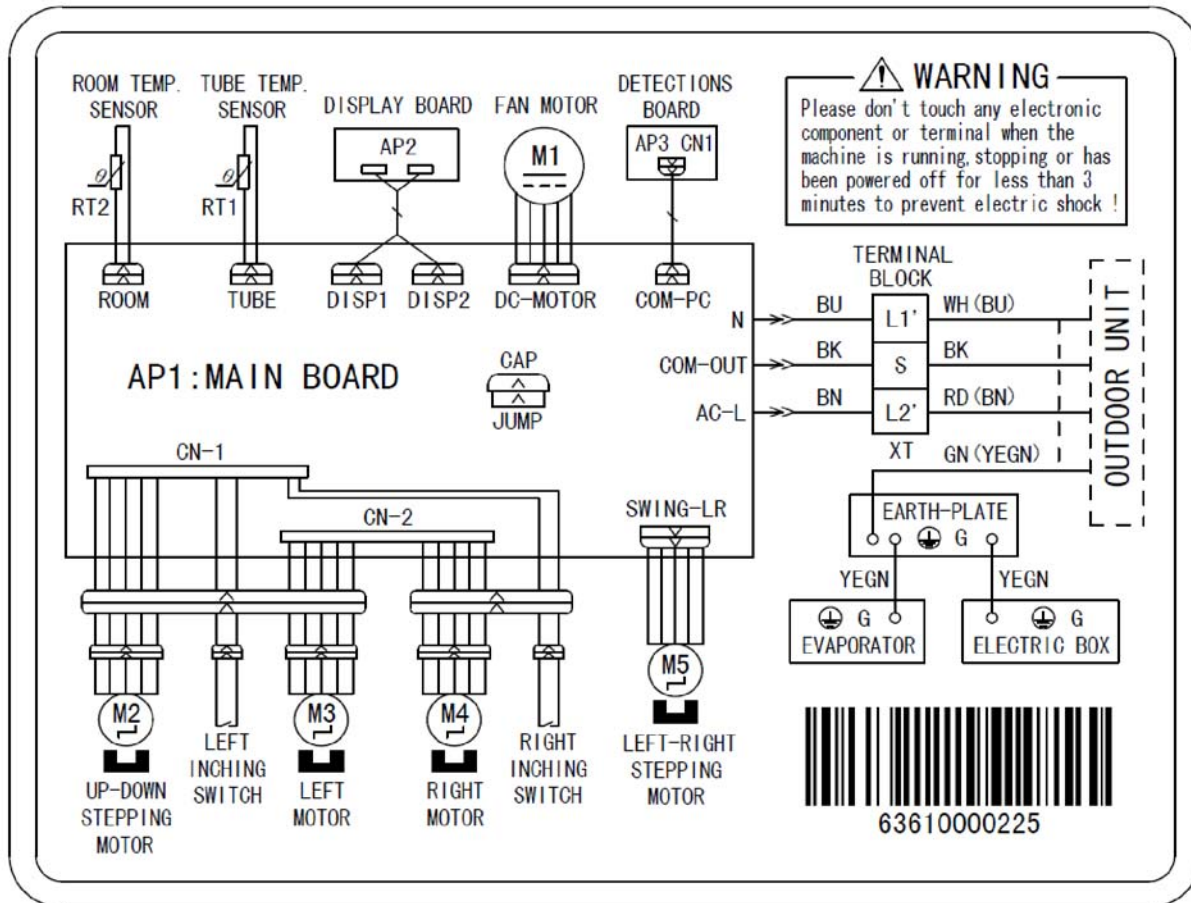


Fig. 17 – Wiring Diagrams GR High Wall 9k, 12k and 18k

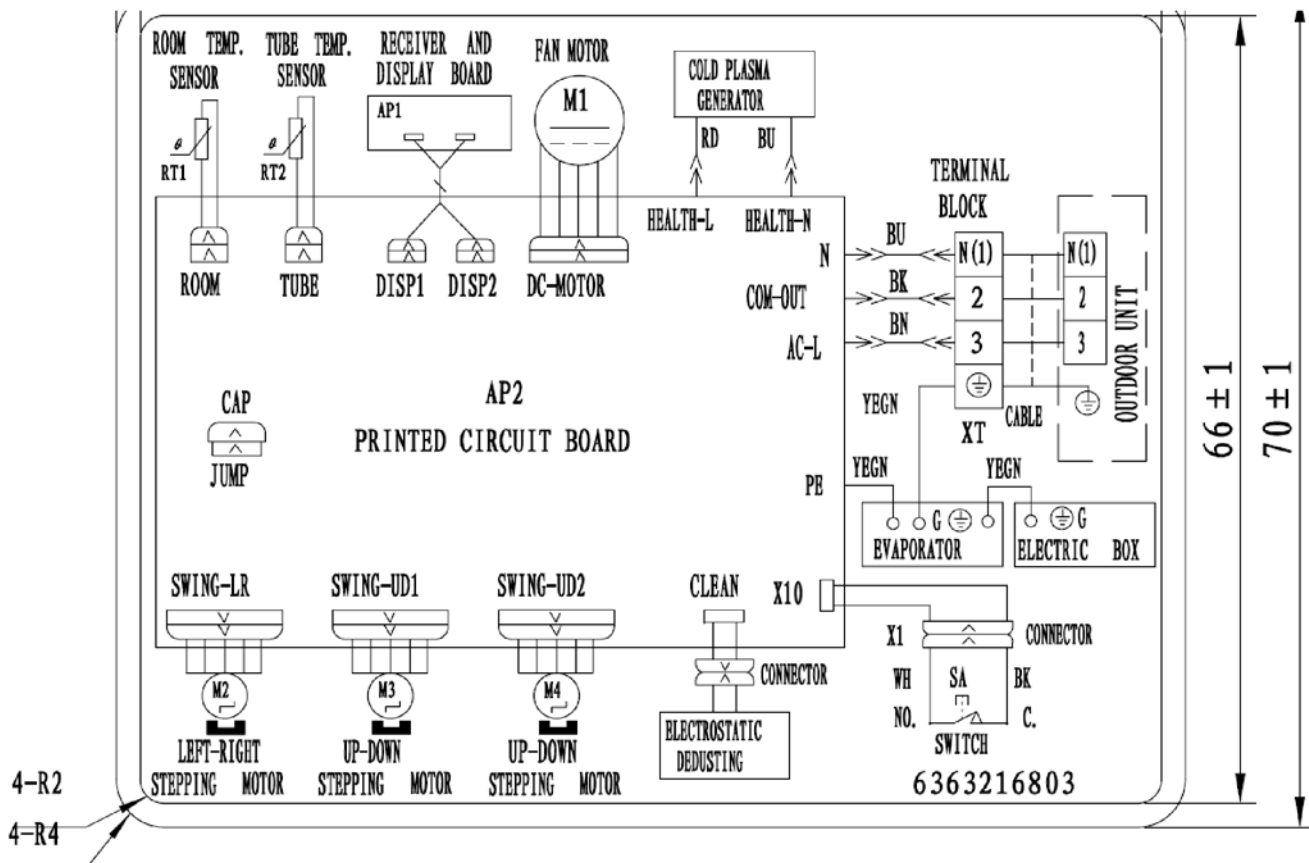


Fig. 18 – Wiring Diagrams GJ\*B High Wall 9k, 12k, 18k and 24k

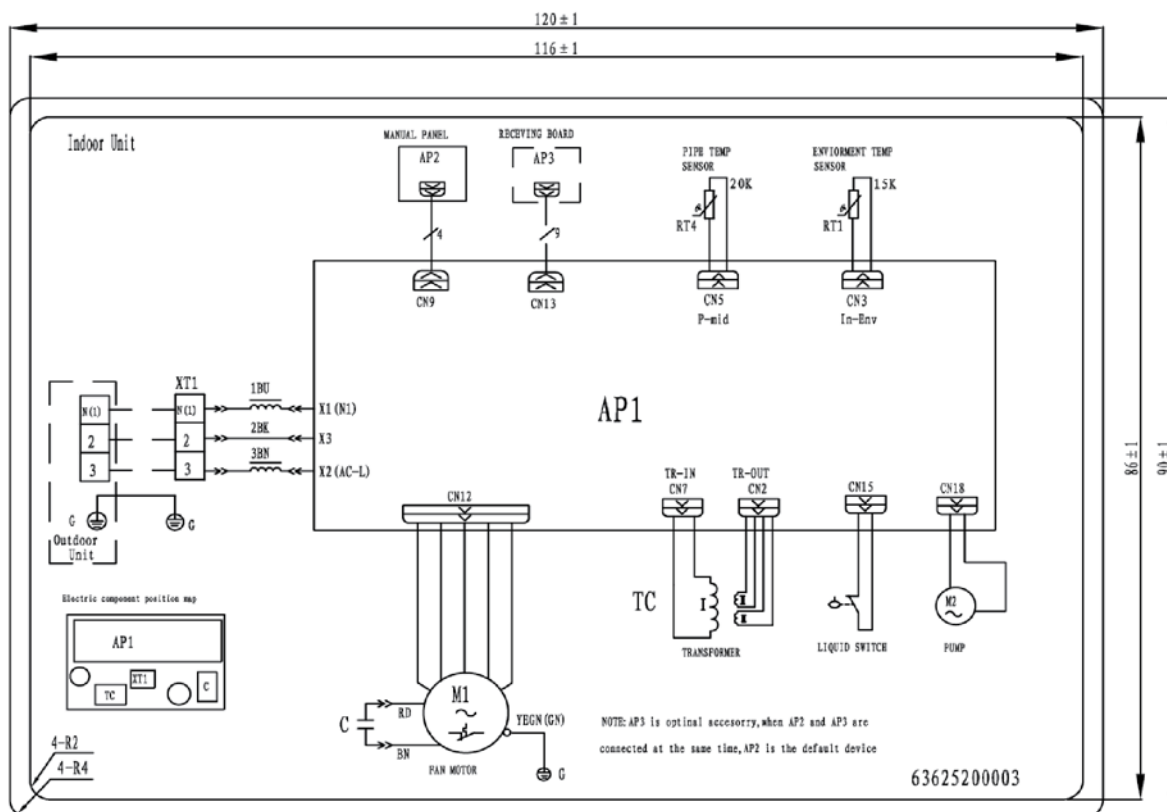


Fig. 19 – Wiring Diagram GJ\*D Ducted 9k, 12k, 18, 21k and 24k

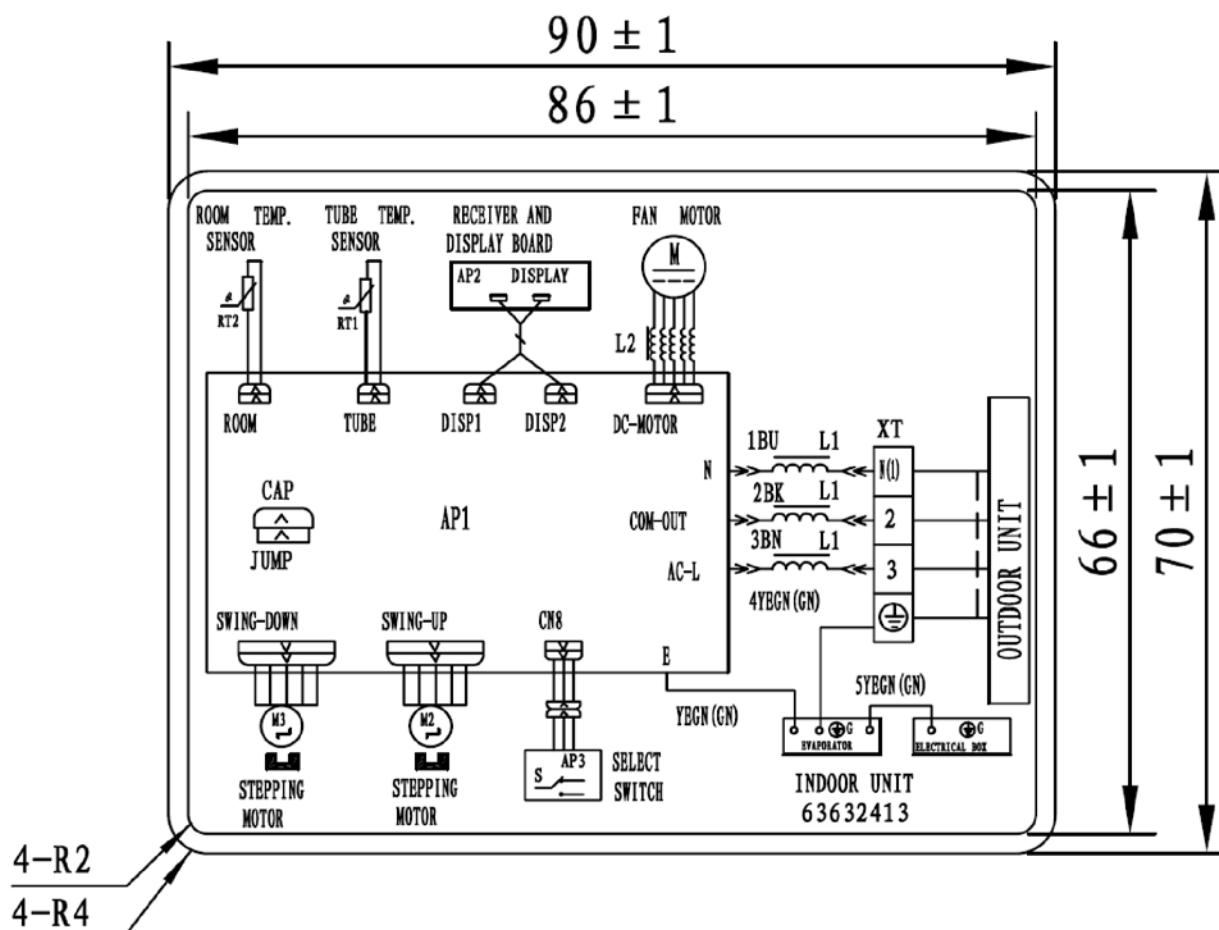


Fig. 20 – Wiring Diagrams GJ\*F Floor Console 9k, 12k and 18k

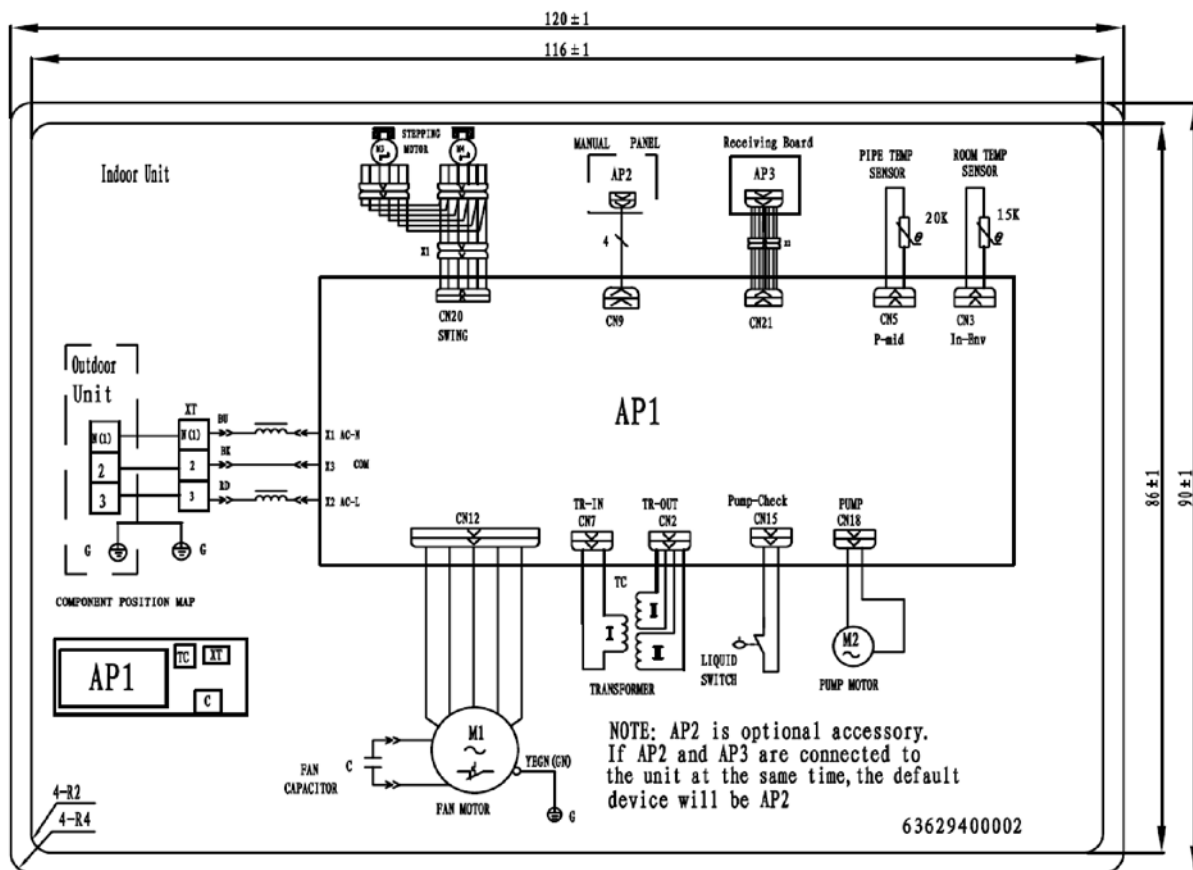


Fig. 23 – Wiring Diagram GJ\*C Cassette 12k, 18k

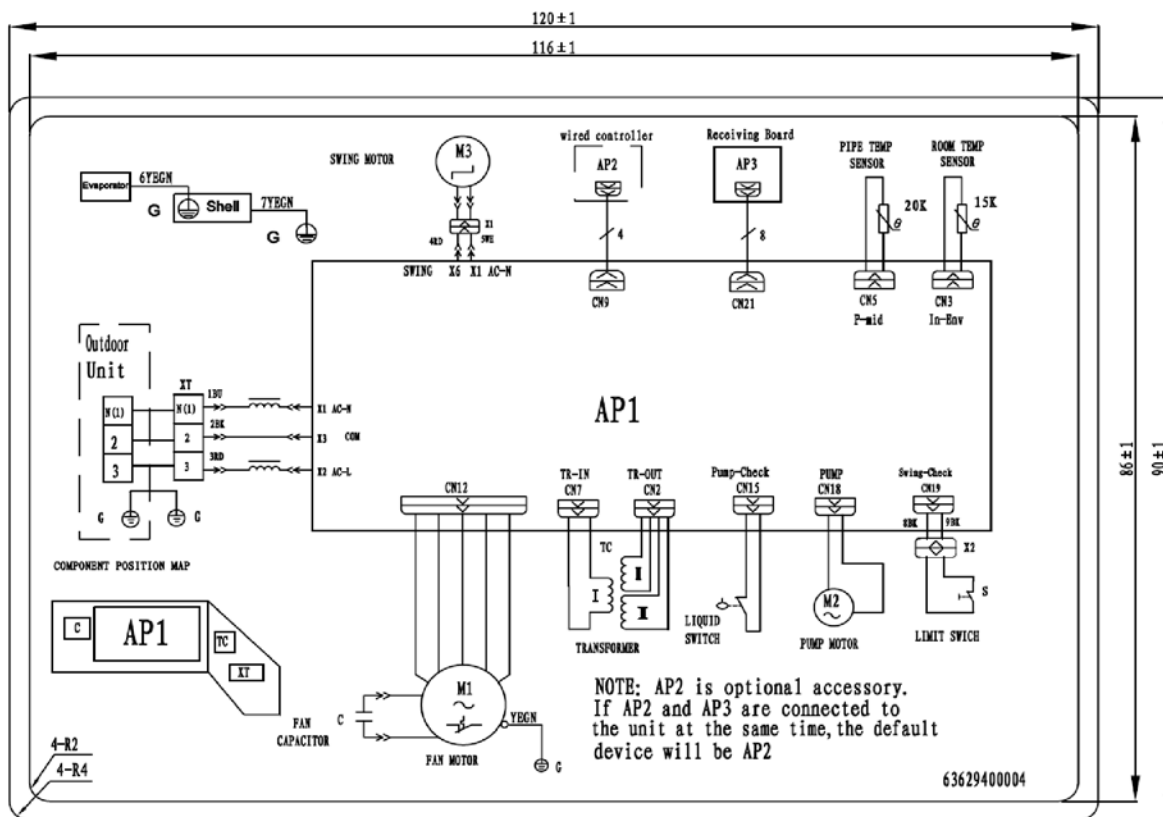


Fig. 24 – Wiring Diagram GJ\*C Cassette 24k



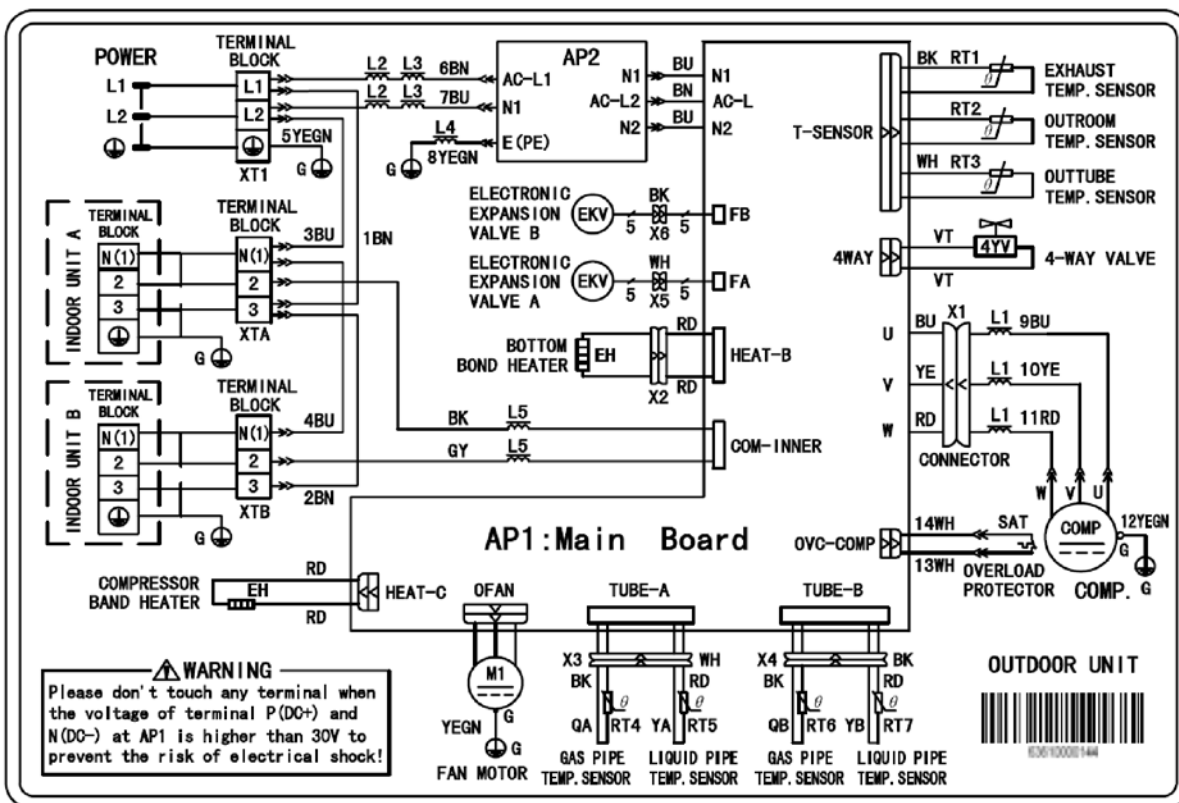


Fig. 25 – Wiring Diagram GJ Outdoor 18k

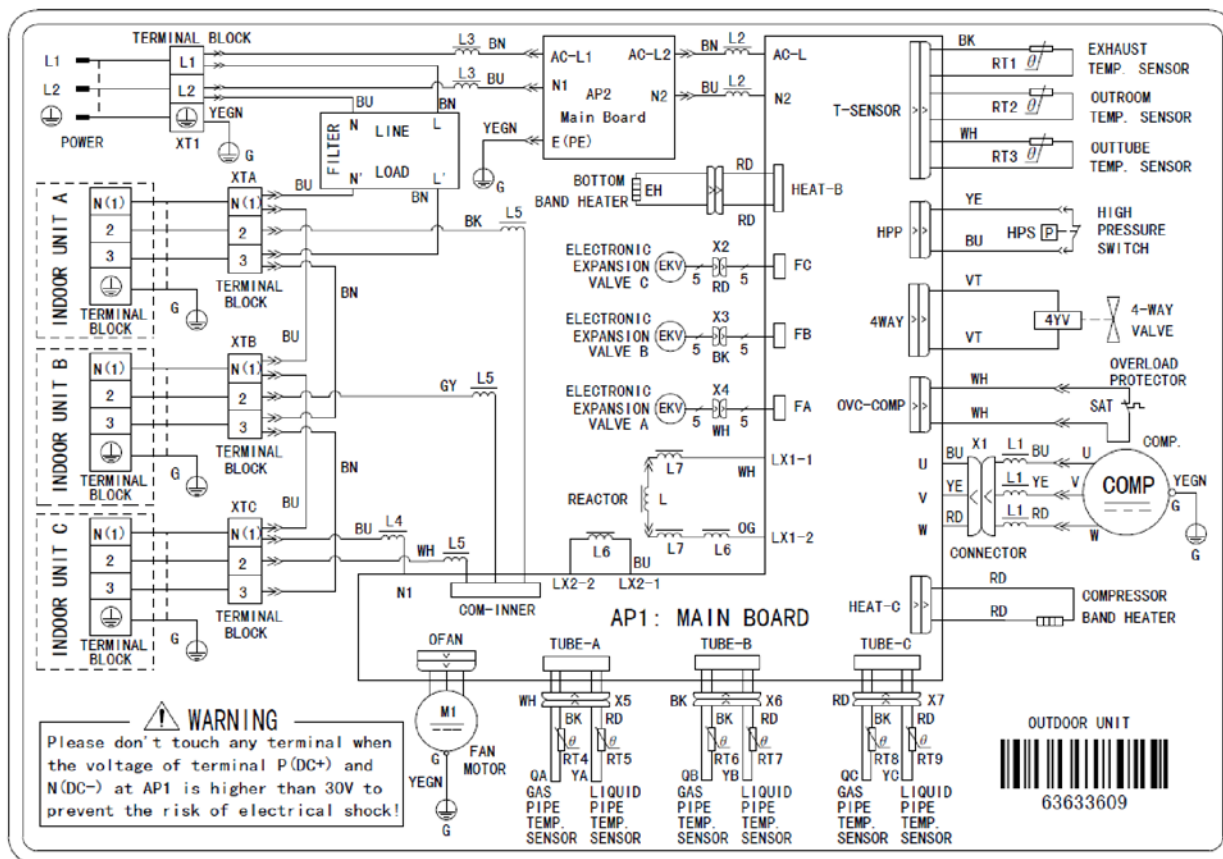


Fig. 25 – Wiring Diagram GJ Outdoor 24k

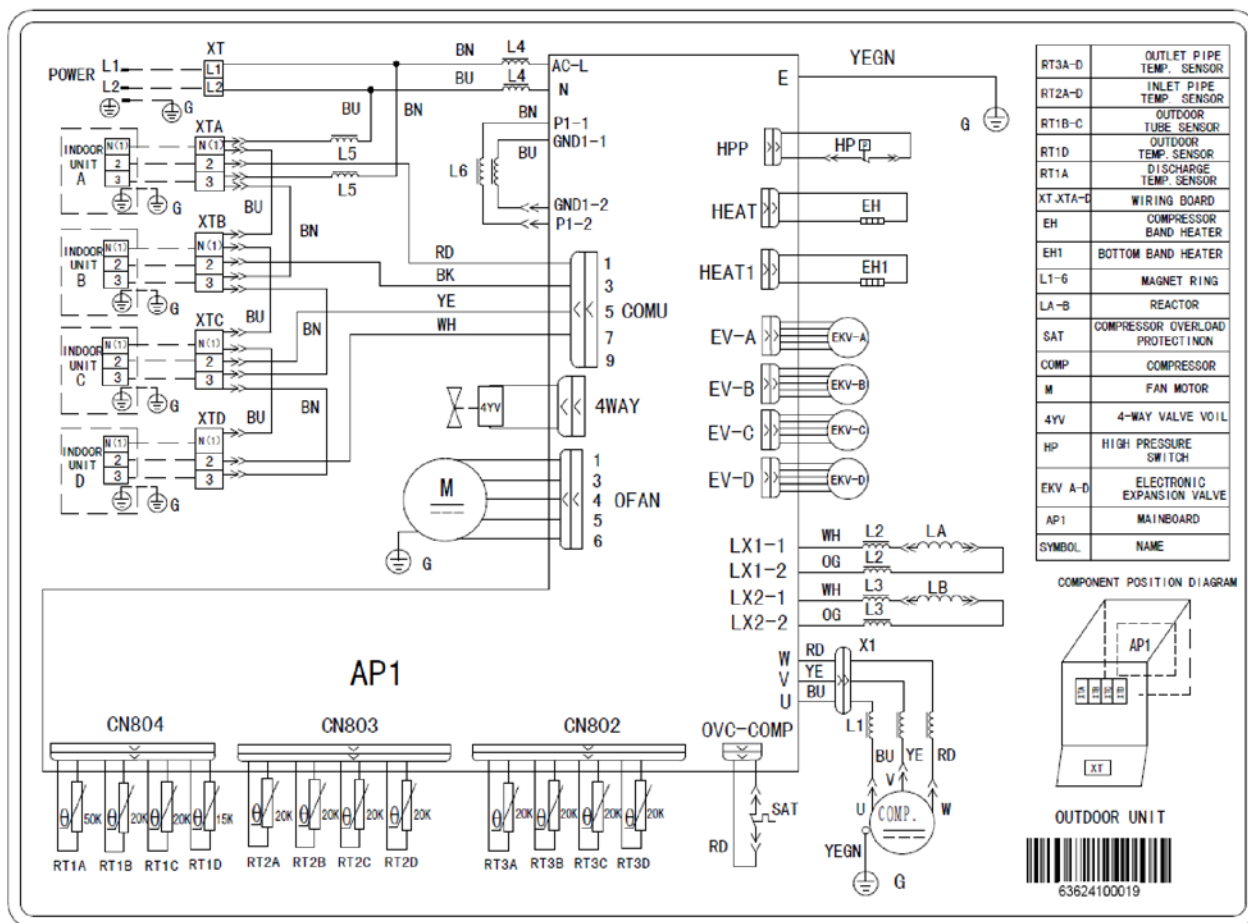


Fig. 28 – Wiring Diagram GJ Outdoor 30k

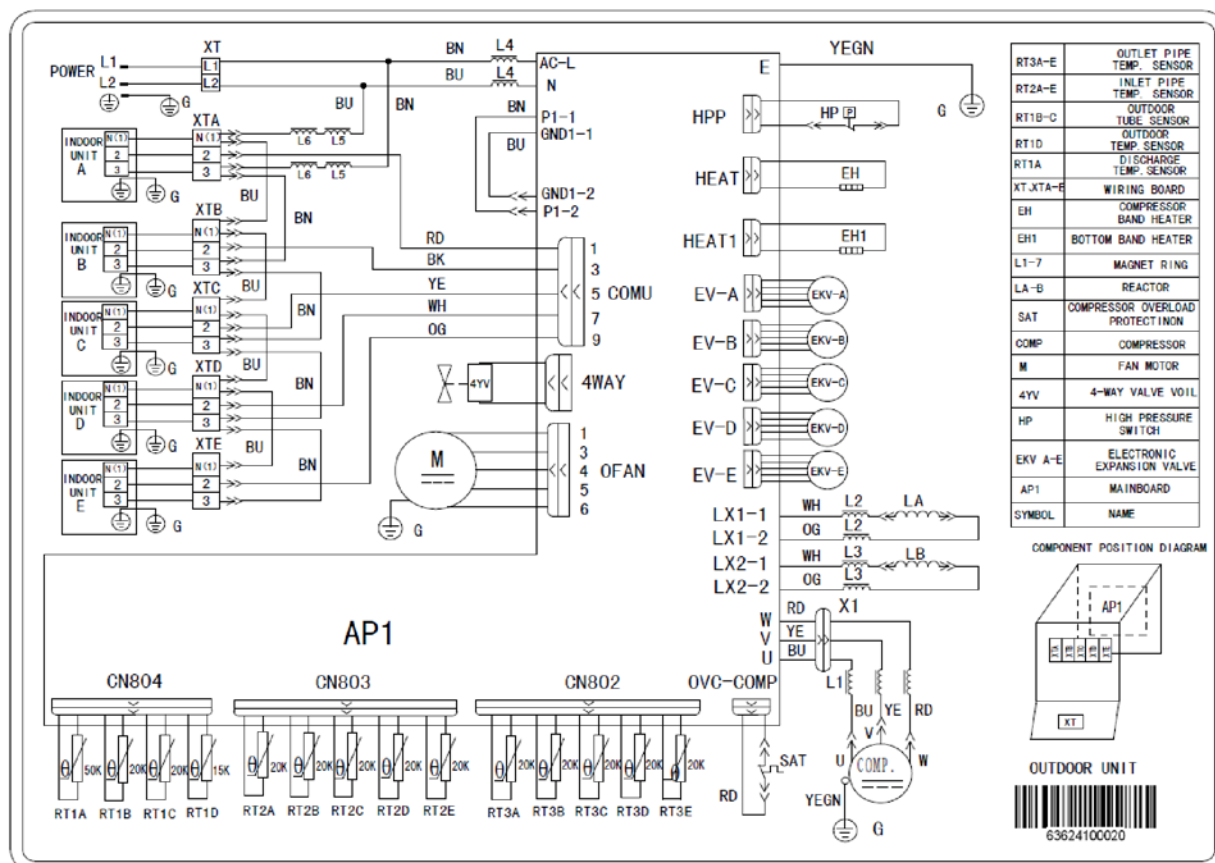
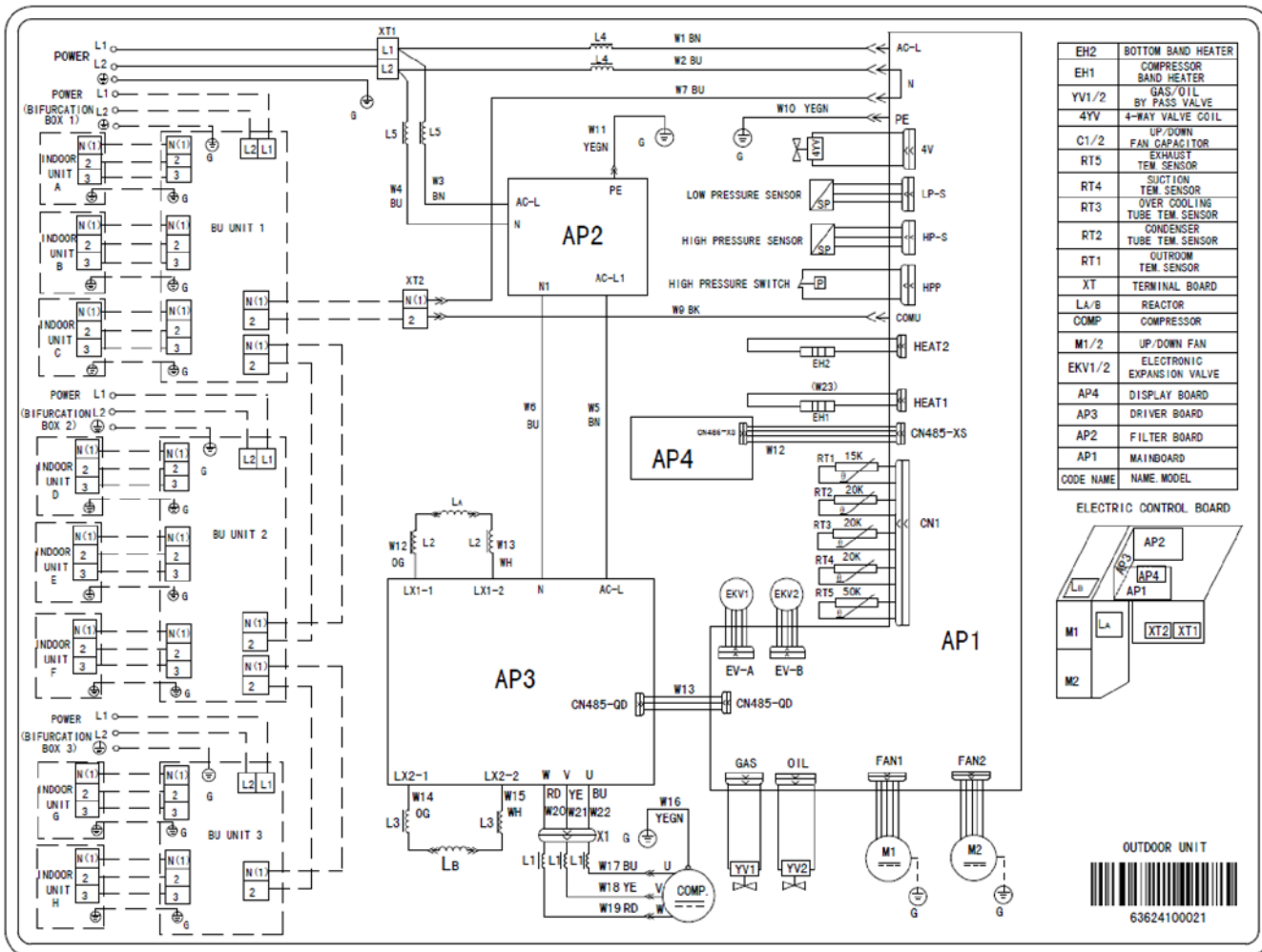


Fig. 29 – Wiring Diagram GJ Outdoor 36k and 42k



# GUIDE SPECIFICATIONS

## HORIZONTAL DISCHARGE OUTDOOR UNITS

Size Range: 1 1/2, 2 1/4, 3 and 4 Ton Nominal Cooling and Heating Capacity  
Carrier Model Number: 38GJ

### PART 1 – GENERAL

#### 1.01 System Description

- A. Outdoor air-cooled split system compressor sections suitable for on-the-ground, rooftop, wall hung or balcony mounting. Units shall consist of a variable speed rotary compressor, an air-cooled coil, propeller-type draw-through outdoor fan, reversing valve, accumulator, electronic expansion valves, multiple service valves, and controls that allows multiple indoor units to be connected to the outdoor unit. Units shall discharge horizontally as shown on the contract drawings. Units shall function as the outdoor component of an air-to-air heat pump system.
- B. Units shall be used in a refrigeration circuit matched to two, three, four, five, six, seven, eight or 9 multi style heat pump fan coil units.

#### 1.02 Agency Listings

- A. Unit construction shall comply with ANSI/ASHRAE 15, latest revision, and with NEC.
- B. Units shall be evaluated in accordance with UL standard 1995.
- C. Units shall be listed in CEC directory.
- D. Unit cabinet shall be capable of withstanding 500-hour salt spray test per Federal Test Standard no. 141 (method 6061).
- E. Air-cooled condenser coils shall be leak tested at 550 psig.

#### 1.03 Delivery, Storage, And Handling

Units shall be shipped in one piece and shall be stored and handled per manufacturer's recommendations.

#### 1.04 Warranty (For Inclusion By Specifying Engineer)

### PART 2 – PRODUCTS

#### 2.01 Equipment

##### **A. General:**

Factory assembled, single piece, air-cooled outdoor unit. Contained within the enclosure shall be all factory wiring, piping, controls, and compressor.

##### **B. Unit Cabinet:**

- 1. Unit cabinet shall be constructed of galvanized steel, bonderized and coated with baked-enamel finish on inside and outside.
- 2. Unit access panel should be removable with minimal screws and shall provide full access to the compressor, fan, and control components.
- 3. Outdoor compartment shall be isolated and have an acoustic lining to assure quiet operation.

##### **C. Fans:**

- 1. Outdoor fans shall be direct-drive propeller type, and shall discharge air horizontally. Fan shall draw air through the outdoor coil.
- 2. Outdoor fan motors shall be multi-speed, totally-enclosed, single phase motors with permanently lubricated ball bearings. Motor shall be protected by internal thermal overload protection.
- 3. Shaft shall have inherent corrosion resistance.
- 4. Outdoor fan openings shall be equipped with metal/mesh PVC coated protection grille over fan.

##### **D. Compressor**

- 1. Compressor shall be fully hermetic variable speed rotary type.
- 2. Compressor shall be single phase, inverter driven.
- 3. Compressor shall be equipped with oil system, operating oil charge, and motor.
- 4. Motor shall be suitable for operation in refrigerant and oil atmosphere.
- 5. Compressor assembly shall be installed on rubber vibration isolators.
- 6. The inverter and compressor shall be protected against over temperature and over current.

##### **E. Outdoor Coil:**

Coil shall be constructed of Aluminum fins mechanically bonded to seamless copper tubes, which are cleaned, dehydrated and sealed.

##### **F. Refrigerant Components:**

Refrigerant circuit components shall include multiple brass external liquid line service valves with service gauge connection port, multiple suction line service valves with service gauge connection port, accumulator, reversing valve, electronic expansion valves.

##### **G. Safeties:**

Operating safeties shall be factory selected, assembled, and tested. The minimum functions shall include the following:

- 1. Compressor discharge over temperature protection.
- 2. System low voltage protection.
- 3. Compressor overload protection.
- 4. Compressor over current protection.
- 5. IPM module protection.

##### **H. Electrical Requirements:**

- 1. Units shall operate on single-phase, 60 Hz power at 208/230 v.
- 2. Unit electrical power shall be a single point connection.
- 3. All power and control wiring must be installed per NEC and all local electrical codes.
- 4. Units shall have multiple terminal blocks to connect to multiple indoor units.

# GUIDE SPECIFICATIONS

## INDOOR WALL-MOUNTED DUCTLESS UNITS

Size Range: ¾ to 1 ½ Ton Nominal Cooling and Heating Capacity  
Carrier Model Number: 40GRQ

### PART 1 – GENERAL

#### 1.01 System Description

Indoor, wall-mounted, direct expansion fan coils are matched with heat pump outdoor units.

#### 1.02 Agency Listings

Unit shall be rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

#### 1.03 Delivery, Storage, And Handling

Units shall be shipped in one piece and shall be stored and handled per manufacturer's recommendations.

#### 1.04 Warranty (For Inclusion By Specifying Engineer)

### PART 2 – PRODUCTS

#### 2.01 Equipment

##### **A. General:**

Indoor, direct-expansion, wall-mounted fan coil. Unit shall be complete with cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing. Unit shall be furnished with integral wall mounting bracket and mounting hardware.

##### **B. Unit Cabinet:**

Cabinet discharge and inlet grilles shall be attractively styled, high-impact polystyrene. Cabinet shall be fully insulated for improved thermal / acoustic performance.

##### **C. Fans:**

1. Fan shall be tangential direct-drive blower type with air intake at the top of the unit and discharge at the bottom front. Automatic, motor-driven vertical air sweep shall be provided standard.
2. Air sweep operation shall be useable selectable. The vertical sweep may be adjusted (using the remote control) and the horizontal air direction may be set manually.

##### **D. Coil:**

Coil shall be copper tube with aluminum fins and galvanized steel tube sheets. Fins shall be bonded to the tubes by mechanical expansion. A drip pan under the coil shall have a drain connection for hose attachment to remove condensate. Condensate pan shall have internal trap.

##### **E. Motors:**

Motors shall be totally enclosed, permanently lubricated ball bearing with inherent overload protection. Fan motors shall be 7-speed.

##### **F. Controls:**

Controls shall consist of a microprocessor-based control system which shall control space temperature, determine optimum fan speed, and run self diagnostics. The temperature control range shall be from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller shall have the ability to act as the temperature sensing location for room comfort.

##### **The unit shall have the following functions as a minimum:**

- An automatic restart after power failure at the same operating conditions as at failure.
- A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
- Temperature-sensing controls shall sense return air temperature.
- Indoor coil freeze protection.
- Wireless infrared remote control to enter set points and operating conditions.
- Automatic air sweep control to provide on or off activation of air sweep louvers.
- Dehumidification mode shall provide increased latent removal capability by modulating system operation and set point temperature.
- Fan-only operation to provide room air circulation when no cooling is required.
- Diagnostics shall provide continuous checks of unit operation and warn of possible malfunctions. Error messages shall be displayed at the unit.
- Fan speed control shall be user-selectable: Super High to Super Low, or microprocessor controlled automatic operation during all operating modes.
- Automatic heating-to-cooling changeover in heat pump mode. Control shall include deadband to prevent rapid mode cycling between heating and cooling.
- Indoor coil high temperature protection shall be provided to detect excessive indoor discharge temperature when unit is in heat pump mode.

##### **G. Filters:**

Units shall have filter track with factory-supplied cleanable filters.

##### **H. Electrical Requirements:**

Indoor fan motor to operate on 208-230V. Power is supplied from the outdoor unit on sizes 18 through 42 and from the branch box on sizes 48 and 56.

##### **I. Operating Characteristics:**

The system shall have a minimum SEER (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on the specifications table.

##### **J. Refrigerant Lines:**

All units should have refrigerant lines that can be oriented to connect from the left, right or back of unit. Both refrigerant lines need to be insulated.

##### **K. Special Features (Field Installed):**

- **Condensate Pump:**  
The condensate pump shall remove condensate from the drain pan when gravity drainage cannot be used. Pump shall be designed for quiet operation. Pump shall consist of two parts: an internal reservoir/sensor assembly, and a remote sound-shielded pump assembly. A liquid level sensor in the reservoir shall stop cooling operation if the liquid level in the reservoir is unacceptable.

## INDOOR WALL-MOUNTED DUCTLESS UNITS

Size Range: ¾ to 2 Ton Nominal Cooling and Heating Capacity

Carrier Model Number: 40GJ\*B

### PART 1 – GENERAL

#### 1.01 System Description

Indoor, wall-mounted, direct expansion fan coils are matched with heat pump outdoor units.

#### 1.02 Agency Listings

Unit shall be rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

#### 1.03 Delivery, Storage, And Handling

Units shall be shipped in one piece and shall be stored and handled per manufacturer's recommendations.

#### 1.04 Warranty (For Inclusion By Specifying Engineer)

### PART 2 – PRODUCTS

#### 2.01 Equipment

##### **A. General:**

Indoor, direct-expansion, wall-mounted fan coil. Unit shall be complete with cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing. Unit shall be furnished with integral wall mounting bracket and mounting hardware.

##### **B. Unit Cabinet:**

Cabinet discharge and inlet grilles shall be attractively styled, high-impact polystyrene. Cabinet shall be fully insulated for improved thermal / acoustic performance.

##### **C. Fans:**

1. Fan shall be tangential direct-drive blower type with air intake at the top of the unit and discharge at the bottom front. Automatic, motor-driven vertical air sweep shall be provided standard.
2. Air sweep operation shall be useable selectable. The vertical sweep may be adjusted (using the remote control) and the horizontal air direction may be set manually.

##### **D. Coil:**

Coil shall be copper tube with aluminum fins and galvanized steel tube sheets. Fins shall be bonded to the tubes by mechanical expansion. A drip pan under the coil shall have a drain connection for hose attachment to remove condensate. Condensate pan shall have internal trap.

##### **E. Motors:**

Motors shall be totally enclosed, permanently lubricated ball bearing with inherent overload protection. Fan motors shall be 7-speed.

##### **F. Controls:**

Controls shall consist of a microprocessor-based control system which shall control space temperature, determine optimum fan speed, and run self diagnostics. The temperature control range shall be from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller shall have the ability to act as the temperature sensing location for room comfort.

#### **The unit shall have the following functions as a minimum:**

- An automatic restart after power failure at the same operating conditions as at failure.
- A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
- Temperature-sensing controls shall sense return air temperature.
- Indoor coil freeze protection.
- Wireless infrared remote control to enter set points and operating conditions.
- Automatic air sweep control to provide on or off activation of air sweep louvers.
- Dehumidification mode shall provide increased latent removal capability by modulating system operation and set point temperature.
- Fan-only operation to provide room air circulation when no cooling is required.
- Diagnostics shall provide continuous checks of unit operation and warn of possible malfunctions. Error messages shall be displayed at the unit.
- Fan speed control shall be user-selectable: Super High to Super Low, or microprocessor controlled automatic operation during all operating modes.
- Automatic heating-to-cooling changeover in heat pump mode. Control shall include deadband to prevent rapid mode cycling between heating and cooling.
- Indoor coil high temperature protection shall be provided to detect excessive indoor discharge temperature when unit is in heat pump mode.

##### **G. Filters:**

Units shall have filter track with factory-supplied cleanable filters.

##### **H. Electrical Requirements:**

Indoor fan motor to operate on 208-230V. Power is supplied from the outdoor unit on sizes 18 through 42 and from the branch box on sizes 48 and 56.

##### **I. Operating Characteristics:**

The system shall have a minimum SEER (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on the specifications table.

##### **J. Refrigerant Lines:**

All units should have refrigerant lines that can be oriented to connect from the left, right or back of unit. Both refrigerant lines need to be insulated.

##### **K. Special Features (Field Installed):**

###### **1. Condensate Pump:**

The condensate pump shall remove condensate from the drain pan when gravity drainage cannot be used. Pump shall be designed for quiet operation. Pump shall consist of two parts: an internal reservoir/sensor assembly, and a remote sound-shielded pump assembly. A liquid level sensor in the reservoir shall stop cooling operation if the liquid level in the reservoir is unacceptable.

# GUIDE SPECIFICATIONS

## INDOOR CASSETTE DUCTLESS UNITS

Size Range: 1 to 2 Ton Nominal Cooling and Heating Capacity

Carrier Model Number: 40GJ\*C

### PART 1 - GENERAL

#### 1.01 System Description

Indoor, in-ceiling cassette, direct-expansion fan coils are matched with heat pump outdoor unit.

#### 1.02 Agency Listings

Unit shall be rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

#### 1.03 Delivery, Storage, And Handling

Units shall be stored and handled per unit manufacturer's recommendations.

#### 1.04 Warranty (For Inclusion By Specifying Engineer)

### PART 2 - PRODUCTS

#### 2.01 Equipment

##### General:

Indoor, direct-expansion, in-ceiling cassette fan coil. Unit shall be complete with cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing.

##### Unit Cabinet:

Cabinet shall be constructed of zinc-coated steel. Fully insulated discharge and inlet grilles shall be attractively styled, high-impact polystyrene. Grille shall have hinges and can be opened to obtain access to the cleanable filters, indoor fan motor and control box.

##### Fans:

- Fan shall be centrifugal direct-drive blower type with air intake in the center of the unit and discharge at the perimeter. Automatic, motor-driven vertical air sweep shall be provided standard. Automatic motor-driven louvers shall be provided standard and shall be adjustable for 2, 3 or 4-way discharge.
- Air sweep operation shall be user selectable.

##### Coil:

Coil shall be copper tube with aluminum fins and galvanized steel tube sheets. Fins shall be bonded to the tubes by mechanical expansion and specially coated for enhanced wet-ability. A drip pan under the coil shall have a factory installed condensate pump and drain connection for hose attachment to remove condensate.

##### Motors:

Motors shall be open drip-proof, permanently lubricated ball bearing with inherent overload protection. Fan motors shall be 3-speed.

##### Controls:

Controls shall consist of a microprocessor-based control system which shall control space temperature, determine optimum fan speed, and run self diagnostics. The temperature control range shall be from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller, shall have the ability to act as the temperature sensing location for room comfort.

The unit shall have the following functions as a minimum:

- An automatic restart after power failure at the same operating conditions as at failure.
- A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
- Temperature-sensing controls shall sense return air temperature.
- Indoor coil freeze protection.
- Wireless infrared remote control and/or Wired remote control to enter set points and operating conditions.
- Automatic air sweep control to provide on or off activation of air sweep louvers.
- Dehumidification mode shall provide increased latent removal capability by modulating system operation and set point temperature.
- Fan-only operation to provide room air circulation when no cooling is required.
- Diagnostics shall provide continuous checks of unit operation and warn of possible malfunctions. Error messages shall be displayed at the unit.
- Fan speed control shall be user-selectable: high, medium, low, or microprocessor controlled automatic operation during all operating modes.
- Automatic heating-to-cooling changeover in heat pump mode. Control shall include deadband to prevent rapid mode cycling between heating and cooling.
- Indoor coil high temperature protection shall be provided to detect excessive indoor discharge temperature when unit is in heat pump mode.

##### Filters:

Unit shall have filter track with factory-supplied cleanable filters.

##### Electrical Requirements:

Indoor fan motor to operate on 208-230V. Power is supplied from the outdoor unit on sizes 18 through 42 and from the branch box on sizes 48 and 56.

##### Operating Characteristics:

The system shall have a minimum SEER (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on the specifications table.

##### Refrigerant Lines:

All units should have refrigerant lines that can be oriented to connect from the side of unit. Both refrigerant lines need to be insulated.

# GUIDE SPECIFICATIONS

## INDOOR DUCTED UNITS

Size Range: ¼ to 2 Ton Nominal Cooling and Heating Capacity

Carrier Model Number: 40GJ\*D

### PART 1 - GENERAL

#### **1.01 System Description**

Indoor, ceiling-mounted, direct-expansion fan coils are matched with a heat pump outdoor unit.

#### **1.02 Agency Listings**

Unit shall be rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

#### **1.03 Delivery, Storage, And Handling**

Units shall be stored and handled per unit manufacturer's recommendations.

#### **1.04 Warranty (For Inclusion By Specifying Engineer)**

### PART 2 - PRODUCTS

#### **2.01 Equipment**

##### **A. General:**

Indoor, direct-expansion, ceiling-mounted fan coil. Unit shall be complete with cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing.

##### **B. Unit Cabinet:**

Unit cabinet shall be constructed of galvanized steel. Cabinet shall be fully insulated for improved thermal and acoustic performance.

##### **C. Fans:**

Fan shall be tangential direct-drive blower type with air intake at the rear or bottom of the unit and discharge at the front.

##### **D. Coil:**

Coil shall be copper tube with aluminum fins and galvanized steel tube sheets. Fins shall be bonded to the tubes by mechanical expansion. A drip pan under the coil shall have a factory installed condensate pump and drain connection for hose attachment to remove condensate.

##### **E. Motors:**

Motors shall be open drip-proof, permanently lubricated ball bearing with inherent overload protection. Fan motors shall be 3-speed.

##### **F. Controls:**

Controls shall consist of a microprocessor-based control system which shall control space temperature, determine optimum fan speed, and run self diagnostics. The temperature control range shall be from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller shall have the ability to act as the temperature sensing location for room comfort.

**The unit shall have the following functions as a minimum:**

1. An automatic restart after power failure at the same operating conditions as at failure.
2. A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
3. Temperature-sensing controls shall sense return air temperature.
4. Indoor coil freeze protection.
5. Wireless infrared remote control and/or Wired remote control to enter set points and operating conditions.
6. De-humidification mode shall provide increased latent removal capability by modulating system operation and set point temperature.
7. Fan-only operation to provide room air circulation when no cooling is required.
8. Diagnostics shall provide continuous checks of unit operation and warn of possible malfunctions. Error messages shall be displayed at the unit.
9. Fan speed control shall be user-selectable: high, medium, low, or microprocessor controlled automatic operation during all operating modes.
10. Automatic heating-to-cooling changeover in heat pump mode. Control shall include deadband to prevent rapid mode cycling between heating and cooling.
11. Indoor coil high temperature protection shall be provided to detect excessive indoor discharge temperature when unit is in heat pump mode.

##### **G. Electrical Requirements:**

Indoor fan motor to operate on 208-230V. Power is supplied from the outdoor unit on sizes 18 through 42 and from the branch box on sizes 48 and 56.

##### **H. Operating Characteristics:**

The system shall have a minimum SEER (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on the specifications table.

##### **I. Refrigerant Lines:**

All units should have refrigerant lines that can be oriented to connect from the side of the unit. Both refrigerant lines need to be insulated.



# GUIDE SPECIFICATIONS

## INDOOR FLOOR CONSOLE DUCTLESS UNITS

Size Range: ¾ to 1 ½ Ton Nominal Cooling and Heating Capacity

Carrier Model Number: 40GJ\*F

### PART 1 - GENERAL

#### 1.01 System Description

Indoor, wall-mounted, direct-expansion fan coils are matched with a heat pump outdoor unit.

#### 1.02 Agency Listings

Unit shall be rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

#### 1.03 Delivery, Storage, And Handling

Units shall be stored and handled per unit manufacturer's recommendations.

#### 1.04 Warranty (For Inclusion By Specifying Engineer)

### PART 2 - PRODUCTS

#### 2.01 Equipment

##### **A. General:**

Indoor, direct-expansion, floor-mounted fan coil. Unit shall be complete with cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing. Unit shall be furnished with integral mounting bracket and mounting hardware.

##### **B. Unit Cabinet:**

Cabinet discharge and inlet grilles shall be attractively styled, high-impact polystyrene. Cabinet shall be fully insulated for improved thermal and acoustic performance.

##### **C Fans:**

1. Fan shall be tangential direct-drive blower type with air intake in the center of the unit and discharge at the top and bottom front. Automatic, motor-driven vertical air sweep shall be provided standard.
2. Air sweep operation shall be user selectable. The vertical sweep may be adjusted (using the remote control) and the horizontal air direction may be set manually.

##### **D. Coil:**

Coil shall be copper tube with aluminum fins and galvanized steel tube sheets. Fins shall be bonded to the tubes by mechanical expansion. A drip pan under the coil shall have a drain connection for hose attachment to remove condensate. Condensate pan shall have internal trap.

##### **E. Motors:**

Motors shall be open drip-proof, permanently lubricated ball bearing with inherent overload protection. Fan motors shall be 7-speed.

##### **F Controls:**

Controls shall consist of a microprocessor-based control system which shall control space temperature, determine optimum fan speed, and run self diagnostics. The temperature control range shall be from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller shall have the ability to act as the temperature sensing location for room comfort.

##### **The unit shall have the following functions as a minimum:**

1. An automatic restart after power failure at the same operating conditions as at failure.
2. A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
3. Temperature-sensing controls shall sense return air temperature.
4. Indoor coil freeze protection.
5. Wireless infrared remote control to enter set points and operating conditions.
6. Automatic air sweep control to provide on or off activation of air sweep louvers.
7. Dehumidification mode shall provide increased latent removal capability by modulating system operation and set point temperature.
8. Fan-only operation to provide room air circulation when no cooling is required.
9. Diagnostics shall provide continuous checks of unit operation and warn of possible malfunctions. Error messages shall be displayed at the unit.
10. Fan speed control shall be user-selectable: Super high to super low, or microprocessor controlled automatic operation during all operating modes.
11. Automatic heating-to-cooling changeover in heat pump mode. Control shall include deadband to prevent rapid mode cycling between heating and cooling.
12. Indoor coil high temperature protection shall be provided to detect excessive indoor discharge temperature when unit is in heat pump mode.

**G. Filters:** Unit shall have filter track with factory-supplied cleanable filters.

**H. Electrical Requirements:** Indoor fan motor to operate on 208-230V as specified. Power is supplied from the outdoor unit on sizes 18 through 42 and from the branch box on sizes 48 and 56.

**I. Operating Characteristics:** The system shall have a minimum SEER (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on the specifications table.

##### **J. Refrigerant Lines:**

All units should have refrigerant lines that can be oriented to connect from the left, right or back of unit. Both refrigerant lines need to be insulated.

##### **K. Special Features (Field Installed):**

1. Condensate Pump: The condensate pump shall remove condensate from the drain pan when gravity drainage cannot be used. Pump shall be designed for quiet operation. Pump shall consist of two parts: an internal reservoir/sensor assembly, and a remote sound-shielded pump assembly. A liquid level sensor in the reservoir shall stop cooling operation if the liquid level in the reservoir is unacceptable.

