

**38GJQ
MULTI-ZONE DUCTLESS SYSTEM MATCHED WITH
40GRQ / 40GJB / 40GJC / 40GJD / 40GJF Indoor Units
Sizes 18, 24, 30, 36, 42, 48 and 56**



Product Data



INDUSTRY LEADING FEATURES / BENEFITS

AN INEXPENSIVE AND CREATIVE SOLUTION TO DESIGN PROBLEMS.

The 38GJQ ductless inverter driven multi-zone 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 enhances 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 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 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 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

40 GJ Q B 09 D -- 3

40 = FAN COIL UNIT

GJ = CASSETTE, DUCTED, FLOOR CONSOLE, HIGHWALL
GR = HIGHWALL

SYSTEM TYPE
Q = HEAT PUMP

B=ALL

NOMINAL CAPACITY
09 - 3/4TON
12 - 1TON
18 - 1- 1/2TONS
21 - 1- 3/4TONS
24 - 2TONS

VOLTAGE
3 = 208/230-1-60

NOT USED

INDOOR FAN COIL TYPE
B= HIGHWALL (GRAY COLOR)
H = HIGH WALL (WHITE COLOR)
C = CASSETTE
D = DUCTED
F = FLOOR CONSOLE

OUTDOOR UNIT

38 GJ Q C 18 - -- 3

38 = OUTDOOR UNIT

GJ = ALL

SYSTEM TYPE
Q = HEAT PUMP

MAXIMUM NUMBER OF FAN COIL UNITS THAT
CAN BE CONNECTED TO THE OUTDOOR UNIT
C = 1:2
D = 1:3
F = 1:4 or 1:5
G = 1:6
K = 1:8
L = 1:9

NOMINAL CAPACITY
18 - 1 1/2 TONS
24 - 2 TONS
30 - 2 1/2 TONS
36 - 3 TONS
42 - 3 1/2 TONS
48 - 4 TONS
56 - 4 3/4 TONS

VOLTAGE
3 = 208/230-1-60

NOT USED

UNIT TYPE
- = 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.



STANDARD FEATURES AND ACCESSORIES

Ease of Installation	
Mounting Bracket	S
Low Voltage Controls	S
Comfort Features	
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
Energy Saving Features	
Inverter Driven Compressor	S
Sleep Mode	S
24 Hour Stop/Start Timer	S
46° F Heating Mode (Heating Setback)	S
Safety And Reliability	
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
Ease of Service	
Cleanable Filters	S
Diagnostic	S
Error Messages Displayed On Front Panel	S
Application Flexibility	
Condensate Pumps For High Walls and Floor Console	A
Condensate Pump For Cassette and Ducted	S
Crankcase Heater	S
Base pan Heater	S

Legend

S Standard
A Accessory

INDOOR UNITS

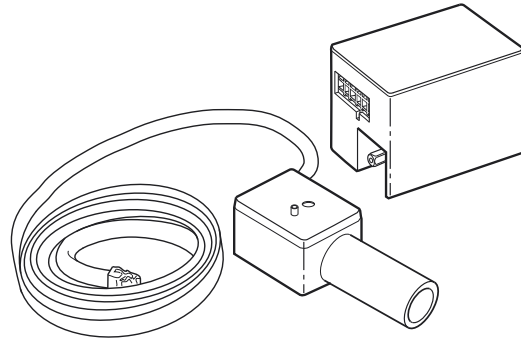


Fig. 1 – Condensate Pump Accessory

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.

Base Pan Heater

The base pan heater is standard on all unit sizes.

ACCESSORIES

Ordering No.	Description	For Models
53DS-900---118	Condensate Pump (230v)	High Walls and Floor Console Indoor units
KSACN0201AAA	Wired Remote Control	GJ*B High Wall Systems
40GJQB01C---	Grille/Ceiling panel	Cassette Indoor units 12, 18
40GJQB02C---	Grille/Ceiling panel	Cassette Indoor units 24
KSAUI0201AAA	Multi 2 Port Branch Box	Multi-zone 48, 56 (230V)
KSAUI0401AAA	Multi 3 Port Branch Box	Multi-zone 48, 56 (230V)
KSAUI0501AAA	Y-type Branch Tube	Multi-zone 48, 56
53DS-900---089	Insulated 25' Line Set - 1/4" x 3/8"	See Product Data for sizes
53DS-900---008	Insulated 25' Line Set - 1/4" x 1/2"	See Product Data for sizes

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	38GJQF30---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	38GJQK48---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

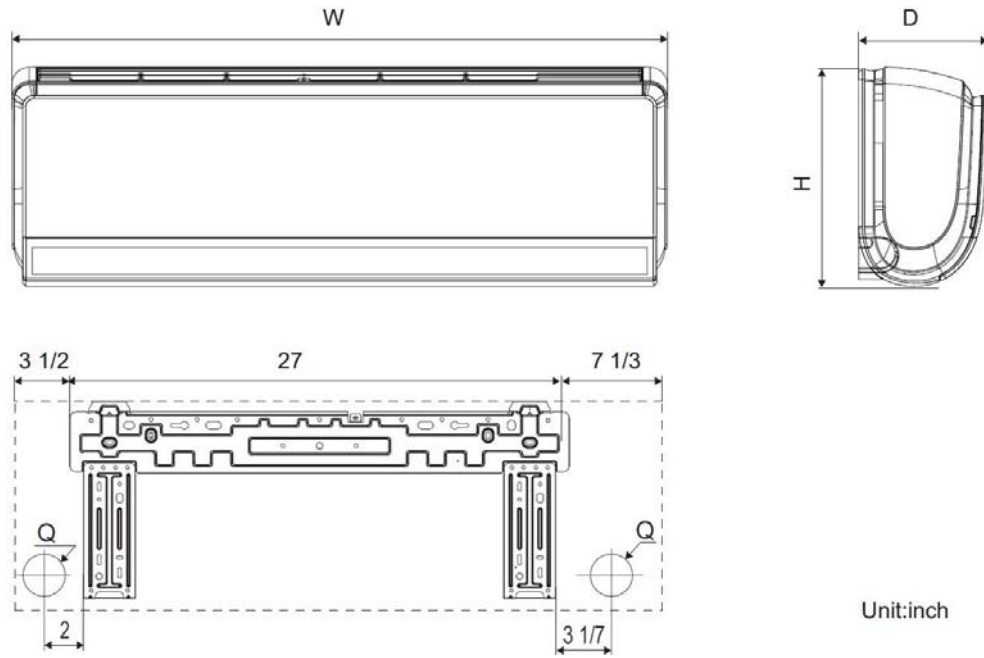
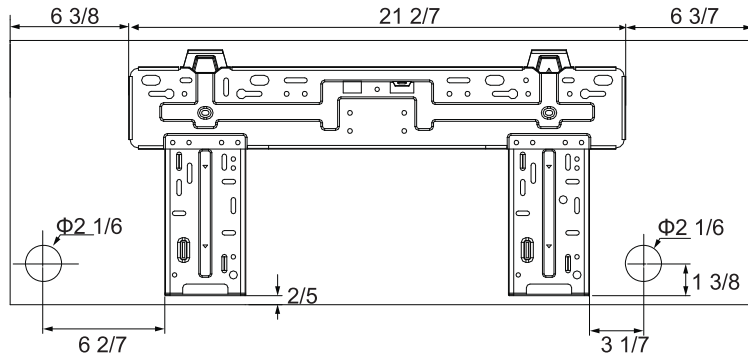
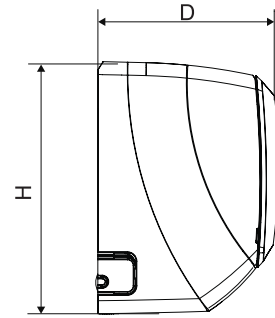
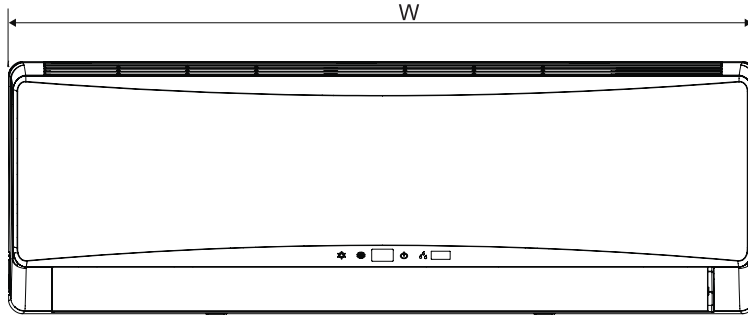


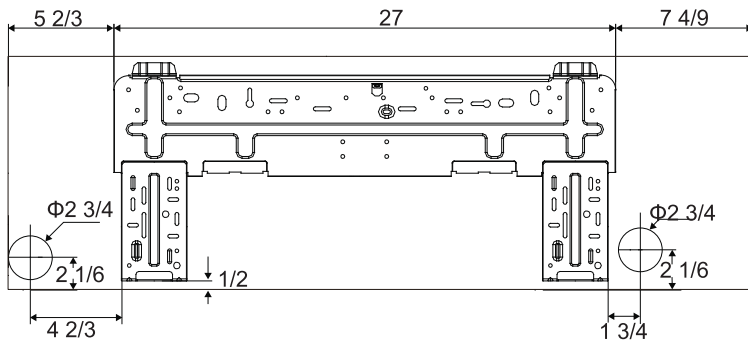
Fig. 2 – GR High Wall Dimensions

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)

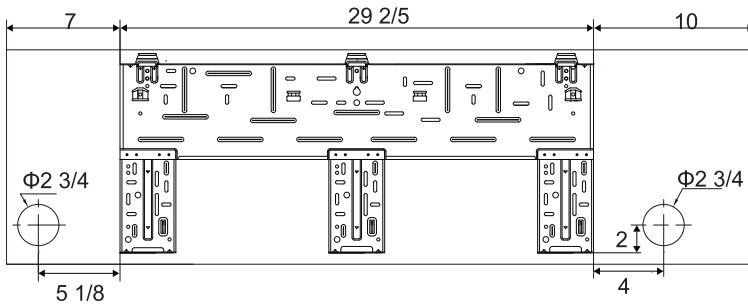
DIMENSIONS - INDOOR (CONTINUED)



09/12K



18K



24K

Fig. 3 – GJ*B High Wall Dimensions

40GJ*B High Wall				
Unit Size	DIMENSIONS In. (mm)			OPERATING WEIGHT Lbs. (kg)
	W	D	H	
9K	34.1 (866)	8.2 (209)	11.5 (292)	24.3 (11)
12K	34.1 (866)	8.2 (209)	11.5 (292)	24.3 (11)
18K	40.1 (1018)	9.1 (230)	12.6 (320)	30.9 (14)
24K	46.4 (1178)	10.4 (264)	12.8 (325)	38.6 (17.5)

DIMENSIONS - INDOOR (CONTINUED)

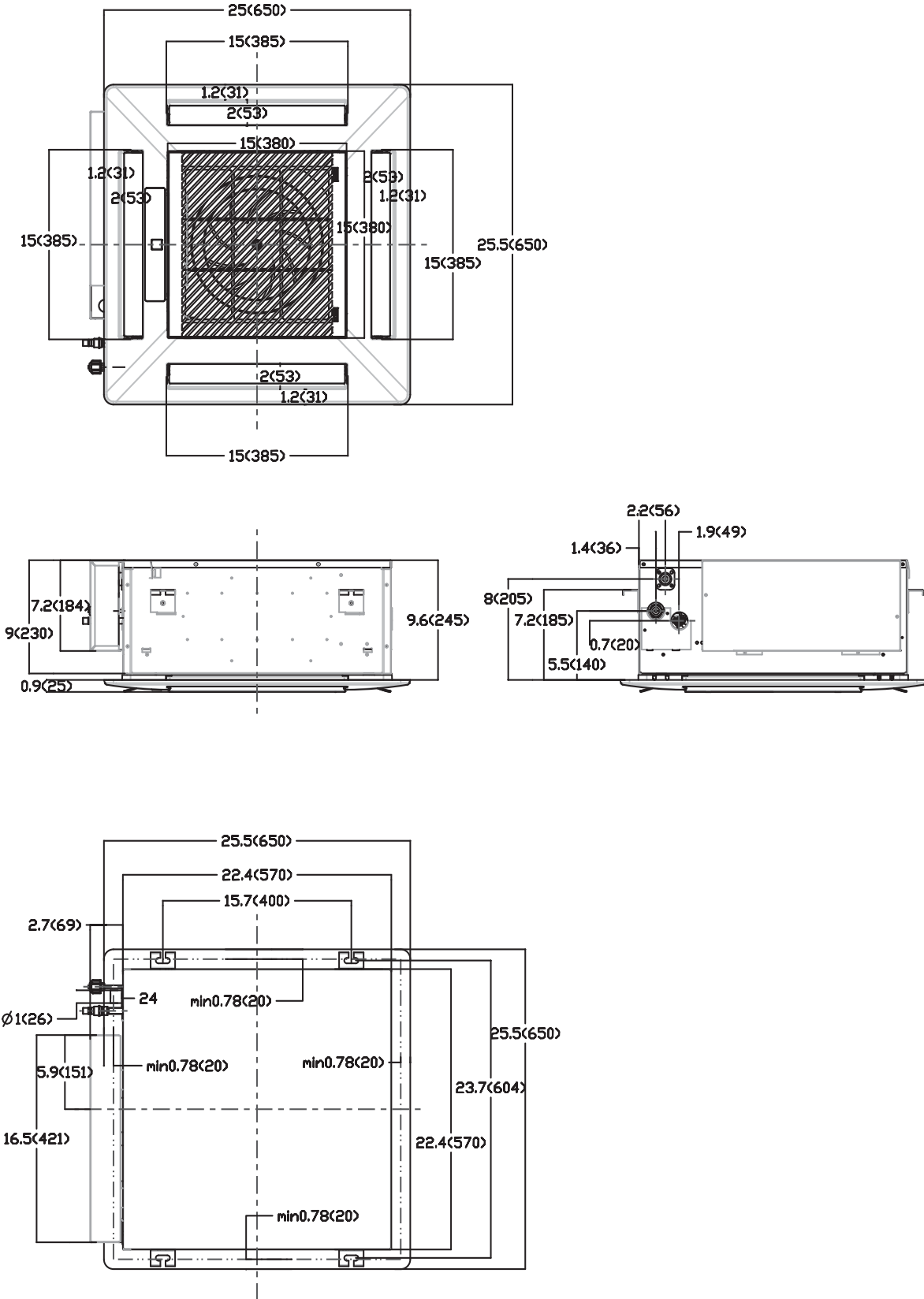


Fig. 4 – Size 12 and 18 Cassette Dimensions

SYSTEM SIZE		12	18
Height (H)	in (cm)	9.1 (23.1)	9.1 (23.1)
Width (W)	in (cm)	22.4 (56.9)	22.4 (56.9)
Depth (D)	in (cm)	22.4 (56.9)	22.4 (56.9)
Weight-Net	lbs(kgs)	39.7 (18)	39.7 (18)

DIMENSIONS - INDOOR (CONTINUED)

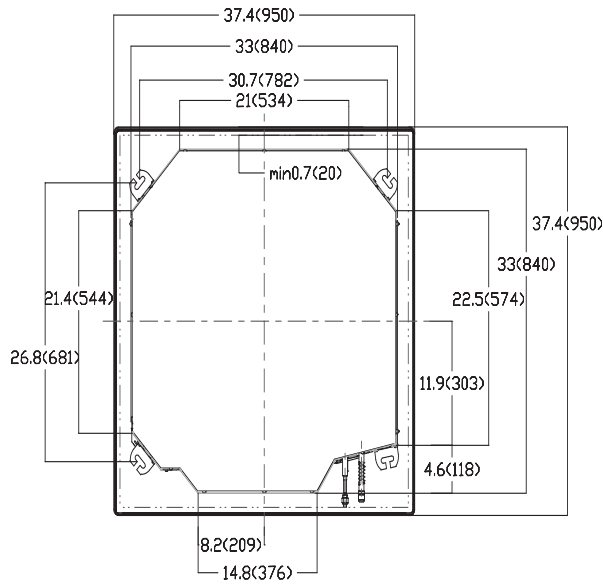
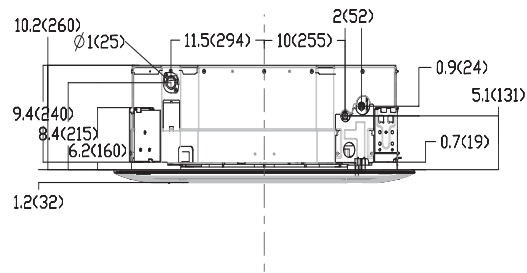
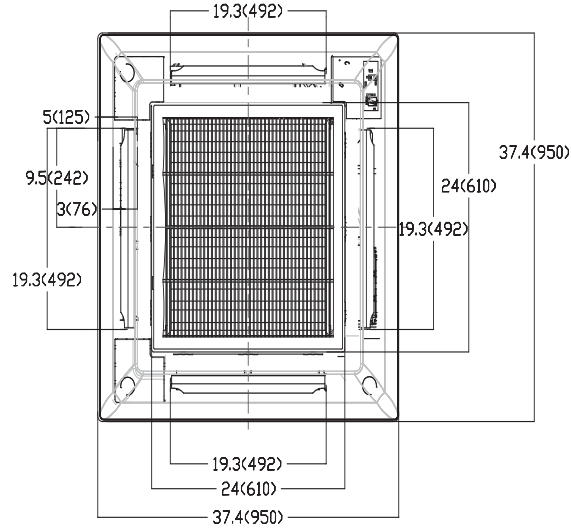


Fig. 5 – Size 24 Cassette Dimensions

SYSTEM SIZE		24
Height (H)	In (CM)	9.4 (23.9)
Width (W)	In (CM)	33.1 (84.1)
Depth (D)	In (CM)	33.1 (84.1)
Weight-Net	Lbs (Kgs)	61.7 (28)

DIMENSIONS - INDOOR (CONTINUED)

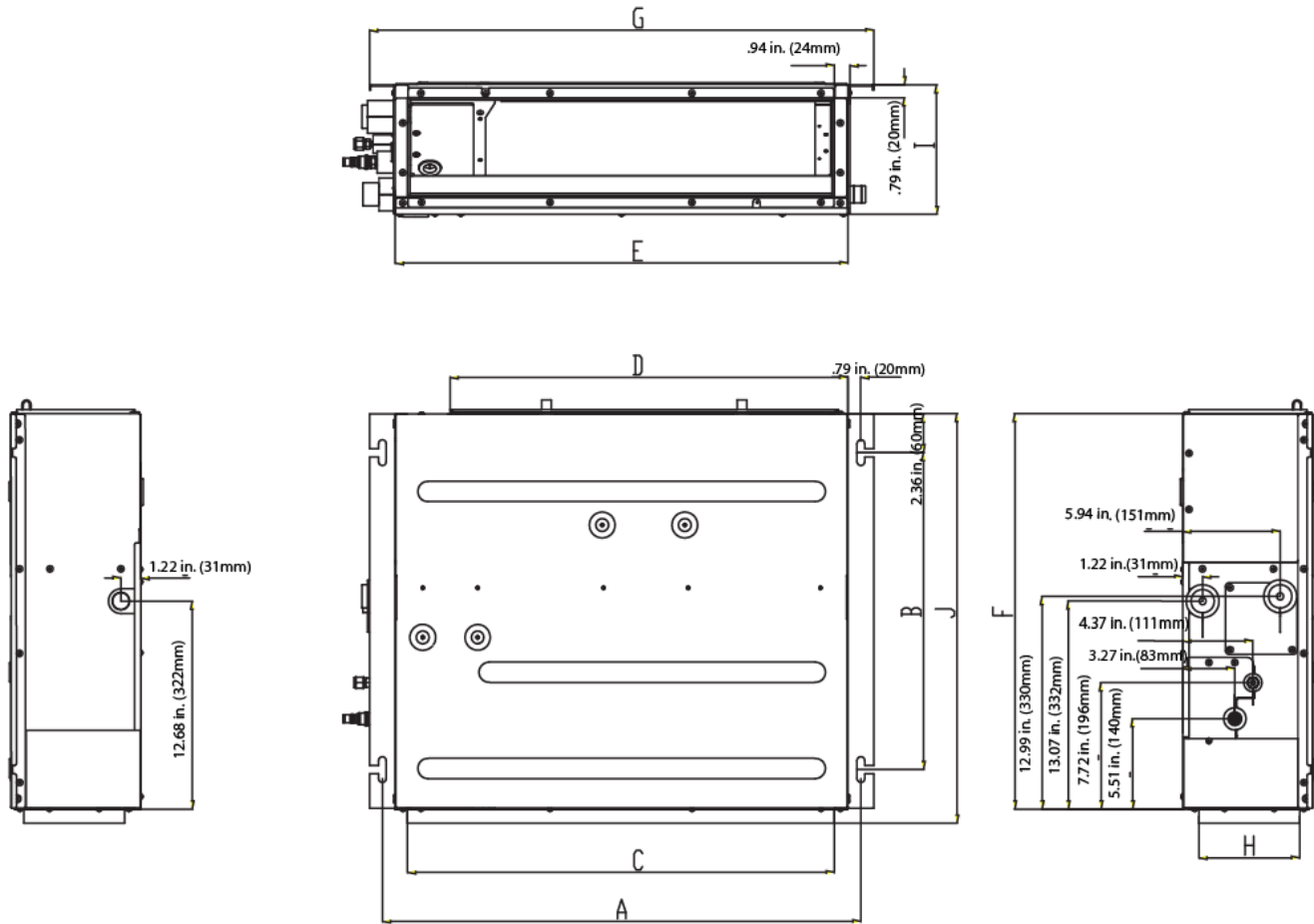


Fig. 6 – Ducted Dimensions

UNIT SIZE	DIMENSIONS In. (mm)										OPERATING WEIGHT Lbs. (kg)
	A	B	C	D	E	F	G	H	I	J	
9K	29.2 (742)	19.3 (491)	26.1 (662)	24.4 (620)	27.6 (700)	24.2 (615)	30.8 (782)	6.1 (156)	7.9 (200)	25 (635)	48.5 (22)
12K	29.2 (742)	19.3 (491)	26.1 (662)	24.4 (620)	27.6 (700)	24.2 (615)	30.8 (782)	6.1 (156)	7.9 (200)	25 (635)	50.7 (23)
18K	37.1 (942)	19.3 (491)	33.9 (862)	32.3 (820)	35.4 (900)	24.2 (615)	38.7 (982)	6.1 (156)	7.9 (200)	25 (635)	59.5 (27)
21K	45 (1142)	19.3 (491)	41.8 (1062)	40.2 (1020)	43.3 (1100)	24.2 (615)	46.5 (1182)	6.1 (156)	7.9 (200)	25 (635)	68.3 (31)
24K	45 (1142)	19.3 (491)	41.8 (1062)	40.2 (1020)	43.3 (1100)	24.2 (615)	46.5 (1182)	6.1 (156)	7.9 (200)	25 (635)	68.3 (31)

DIMENSIONS - INDOOR (CONTINUED)

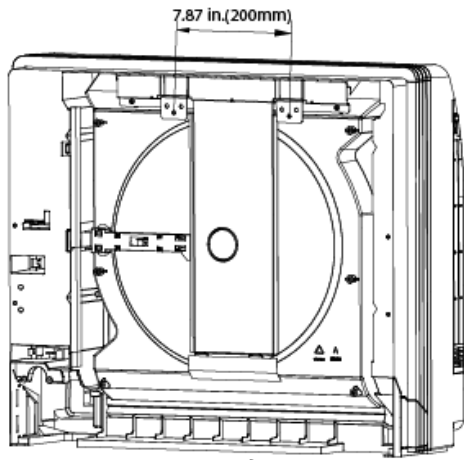
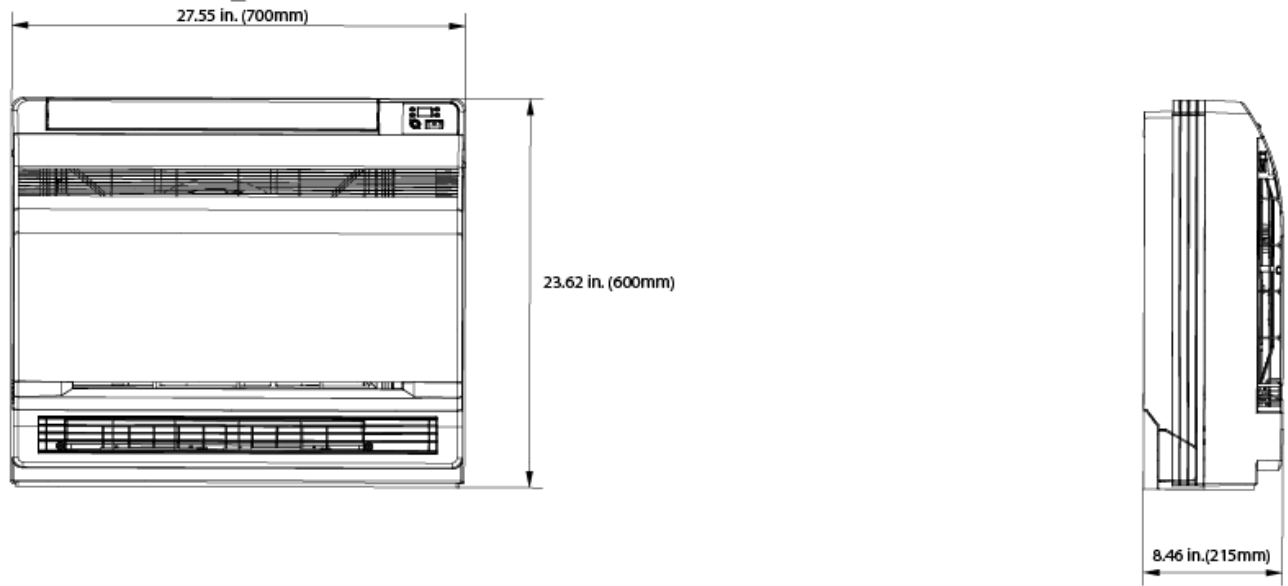
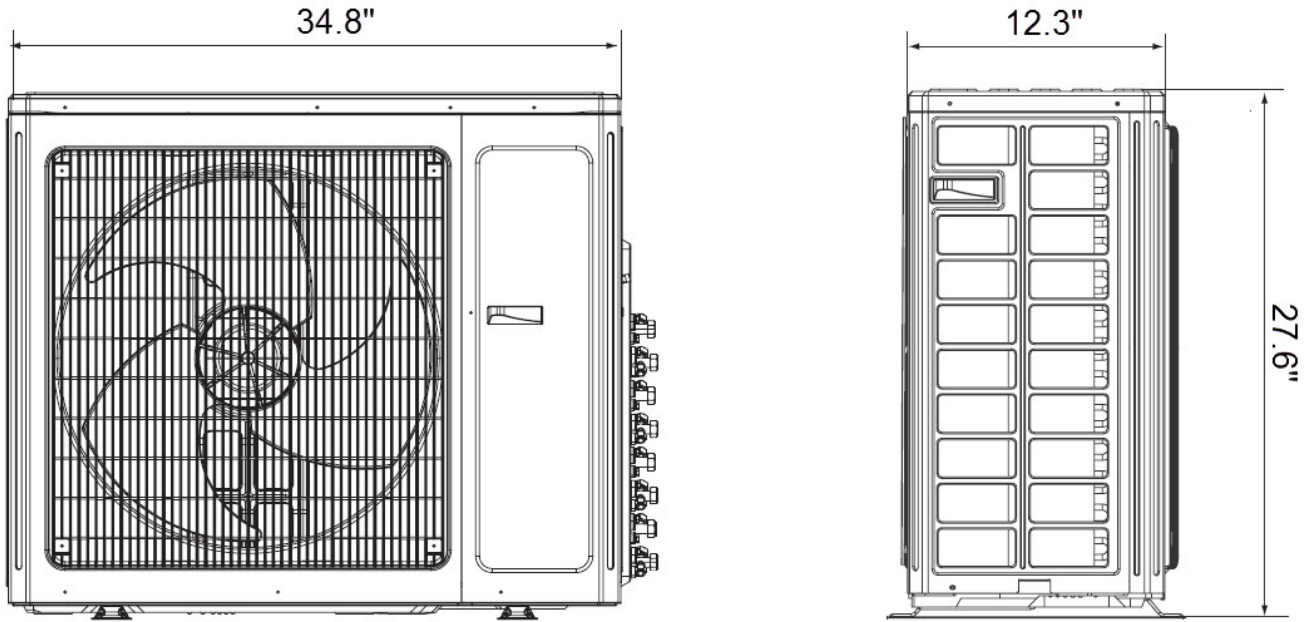


Fig. 7 – Floor Console Dimensions

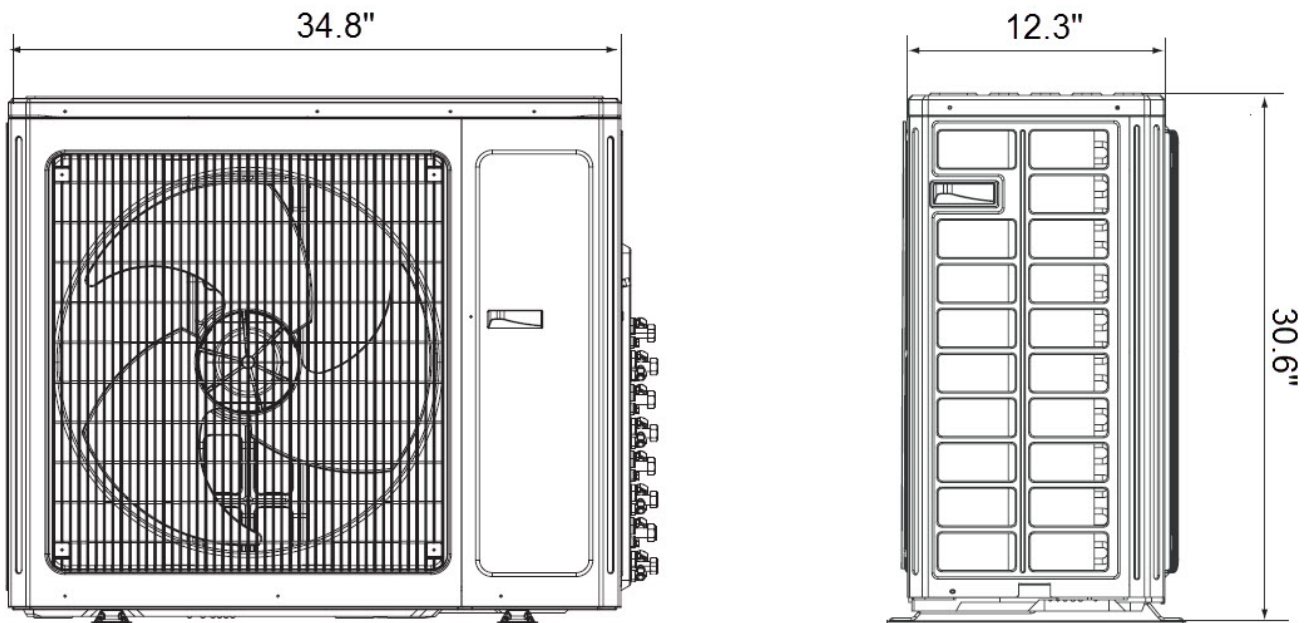
SYSTEM SIZE		9	12	18
Height (H)	in (cm)	27.5 (69.9)	27.5 (69.9)	27.5 (69.9)
Width (W)	in (cm)	23.6 (59.9)	23.6 (59.9)	23.6 (59.9)
Depth (D)	in (cm)	8.5 (21.6)	8.5 (21.6)	8.5 (21.6)
Weight-Net	lbs(kgs)	33.1 (15)	33.1 (15)	33.1 (15)

DIMENSIONS - OUTDOOR



Unit:inch

Fig. 8 – Outdoor Dimensions Size 18

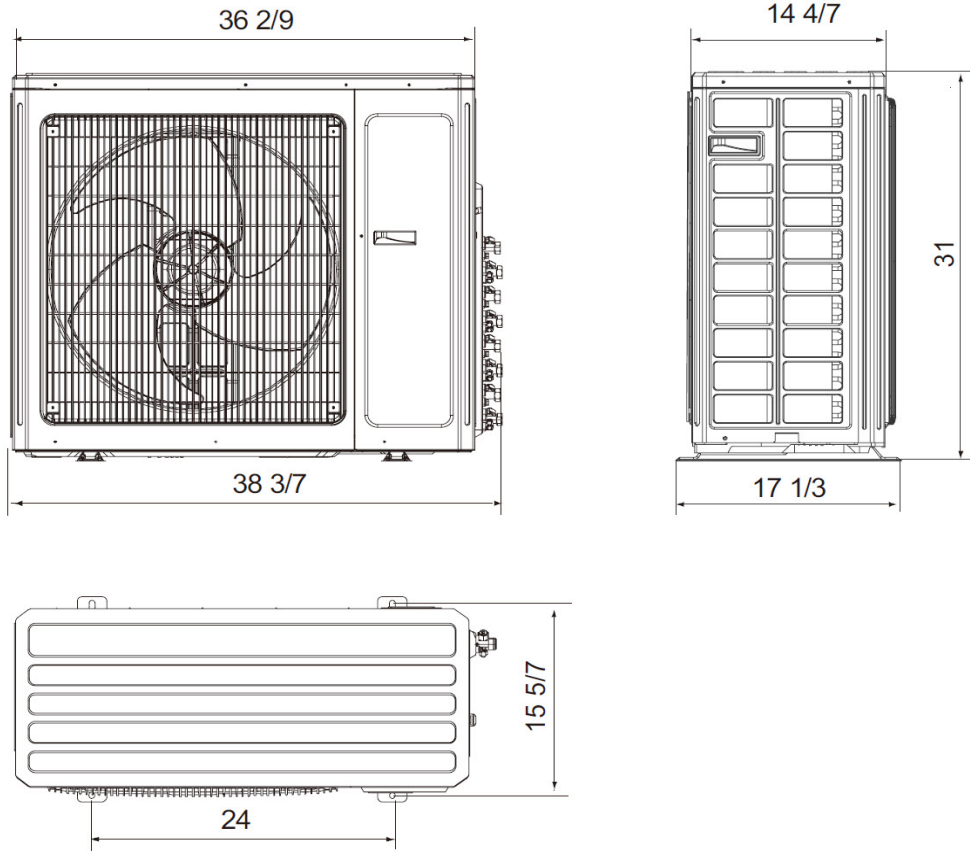


Unit:inch

Fig. 9 – Outdoor Dimensions Size 24

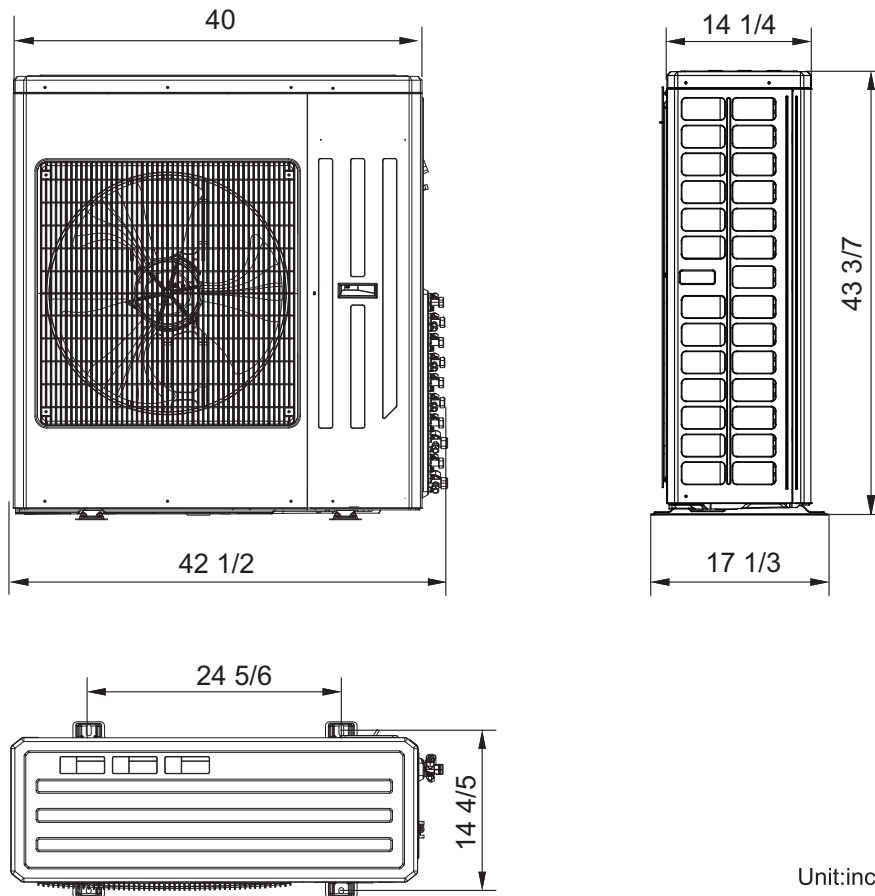
SYSTEM SIZE		18	24	30	36	42	48	56
Height (H)	in (cm)	27.6 (70.1)	31.1 (79)	31.1 (79)	43.4 (110.2)	43.4 (110.2)	53 (134.6)	53 (134.6)
Width (W)	in (cm)	37.6 (95.5)	38.6 (98)	38.6 (98)	42.8 (108.7)	42.8 (108.7)	35.4 (89.9)	35.4 (89.9)
Depth (D)	in (cm)	15.6 (39.6)	16.8 (42.7)	17.3 (43.9)	17.3 (43.9)	17.3 (43.9)	13.4 (34)	13.4 (34)
Weight-Net	lbs(kgs)	114.7 (52)	153.2 (69.5)	145.5 (66)	198.4 (90)	198.4 (90)	255.7 (116)	255.7 (116)

DIMENSIONS - OUTDOOR (CONTINUED)



Unit:inch

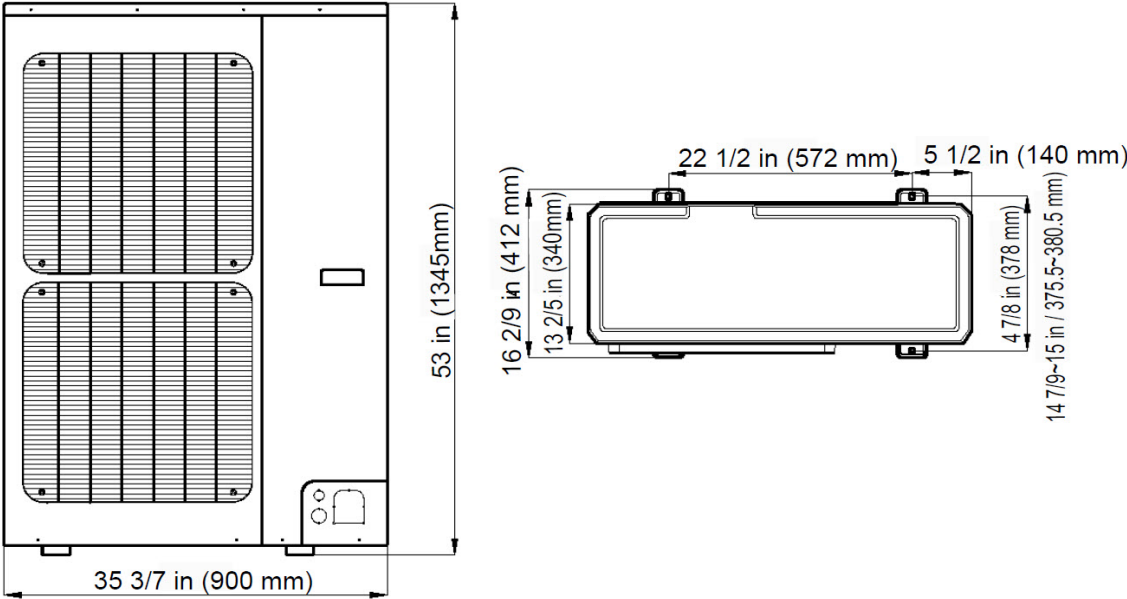
Fig. 10 – Outdoor Dimensions Size 30



Unit:inch

Fig. 11 – Outdoor Dimensions Size 36-42

DIMENSIONS - OUTDOOR (CONTINUED)



(unit: in/mm)

Fig. 12 – Outdoor Dimensions Size 48-56

DIMENSIONS - BRANCH BOXES (REQUIRED ON SIZES 48 AND 56)

OUTLINE DIMENSION AND SERVICING SPACE OF KSAUI0201AAA

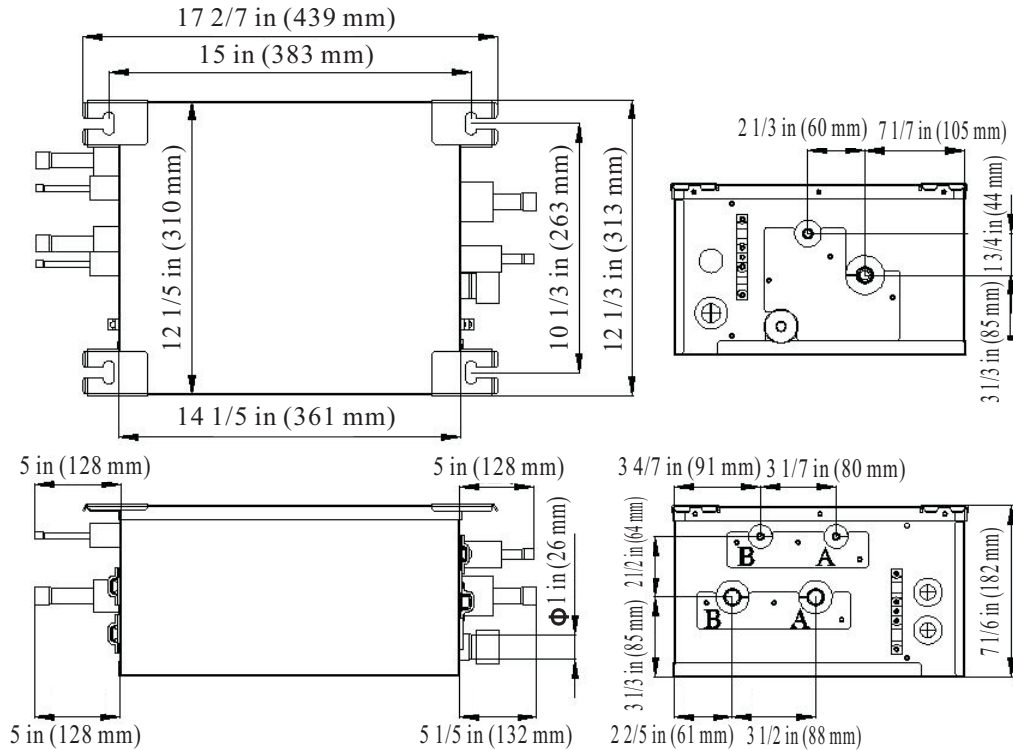


Fig. 13 – Outline Dimensions

SORTS	INDOOR UNIT SIDE (inch/mm)		OUTDOOR UNIT SIDE (inch/mm)
	Port A	Port B	
Liquid Pipe	Φ 1/4 (6.5)	Φ 1/4 (6.5)	Φ 3/8 (9.7)
Gas Pipe	Φ 5/8 (16.3)	Φ 5/8 (16.3)	Φ 5/8 (16.3)

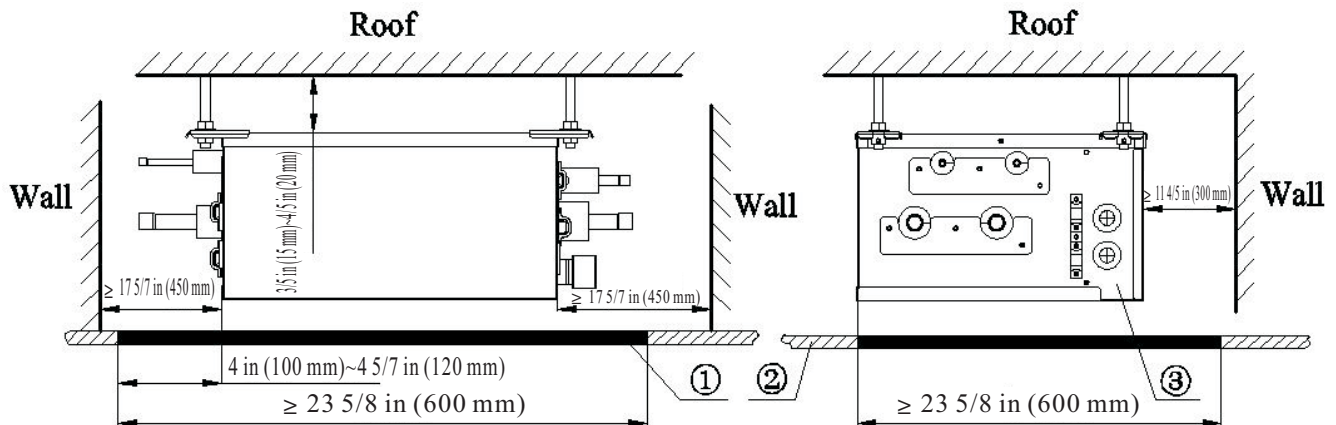


Fig. 14 – Installation and Service Space

No.	1	2	3
Name	Service space	Ceiling	Electrical box side

OUTLINE DIMENSION AND SERVICING SPACE OF KSAUI0401AAA

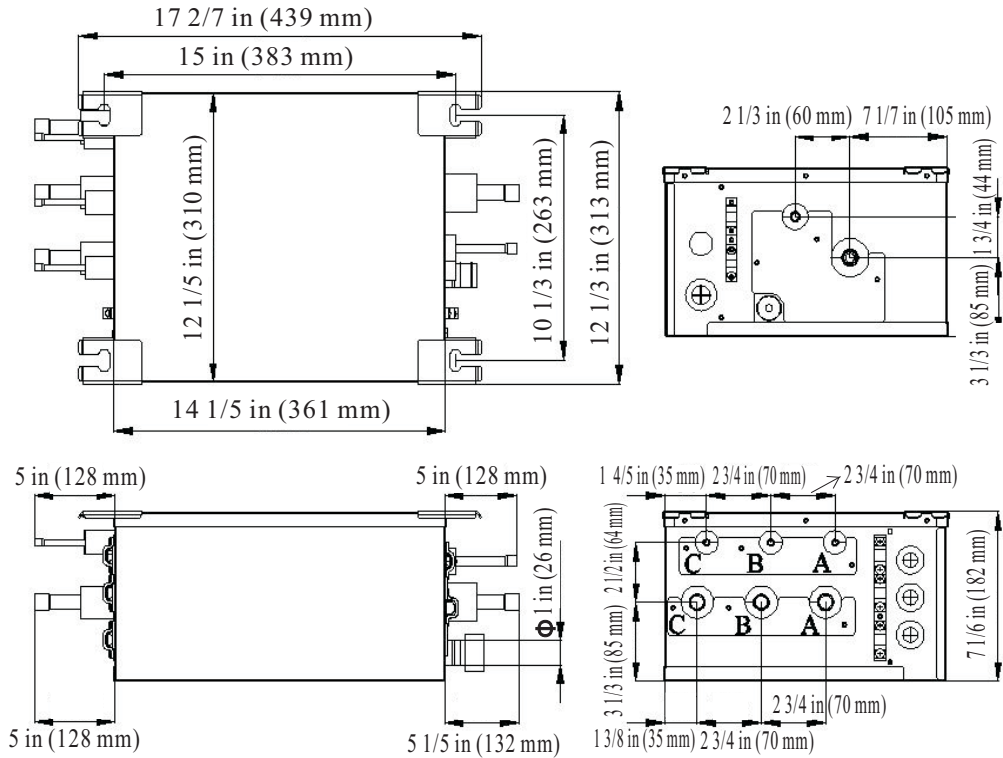


Fig. 15 – Outline Dimensions

SORTS	INDOOR UNIT SIDE (inch/mm)			OUTDOOR UNIT SIDE (inch/mm)
	Port A	Port B	Port C	
Liquid pipe	Φ1/4 (6.5)	Φ1/4 (6.5)	Φ1/4 (6.5)	Φ3/8 (9.7)
Gas liquid	Φ5/8 (16.3)	Φ5/8 (16.3)	Φ5/8 (16.3)	Φ5/8 (16.3)

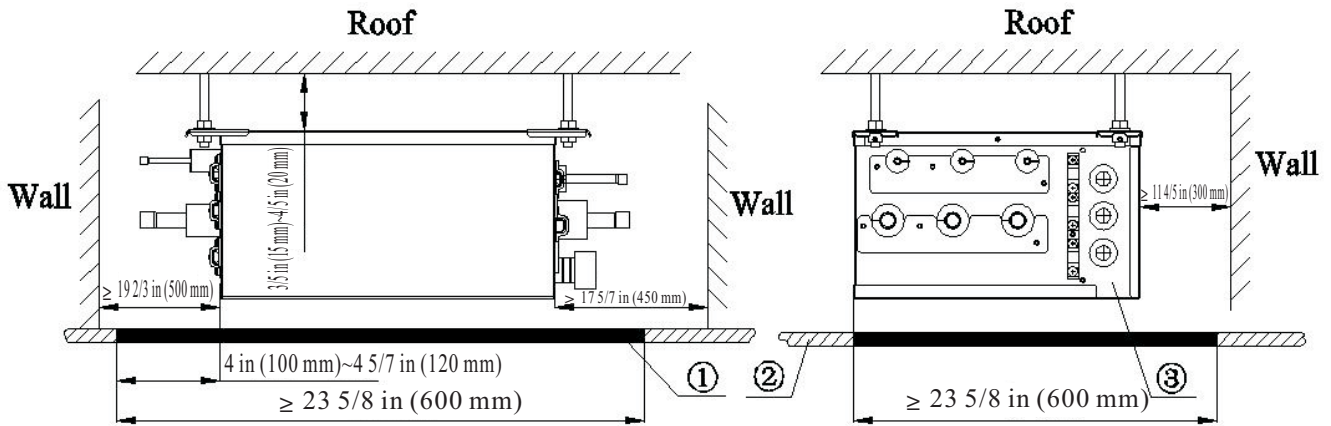


Fig. 16 – Installation and Service Space

No.	1	2	3
Name	Servicing Space	Ceiling	Electrical box side

CLEARANCES - INDOOR

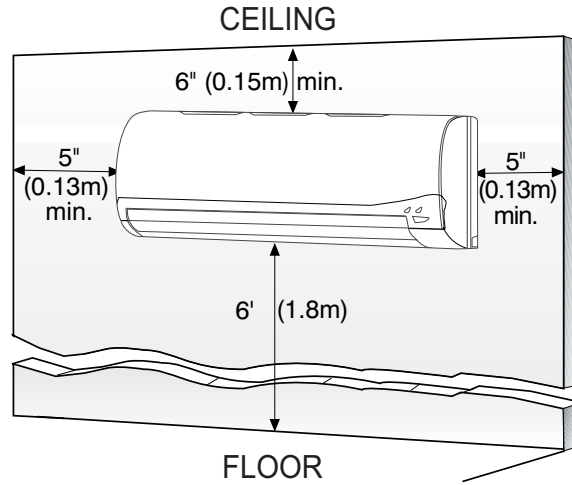


Fig. 17 – GR and GJ*B High Wall Clearance

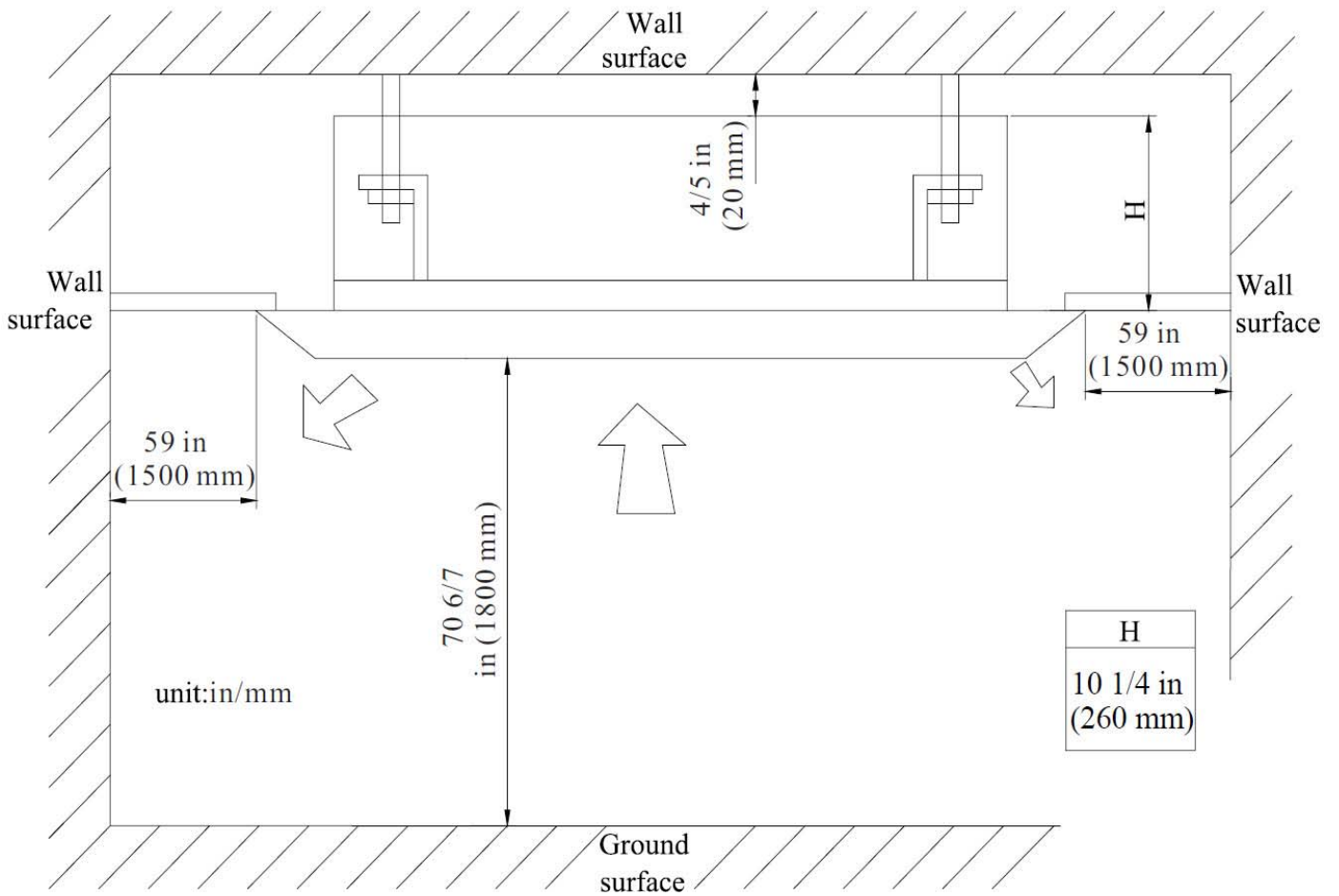


Fig. 18 – Cassette Clearance

CLEARANCES - INDOOR (CONTINUED)

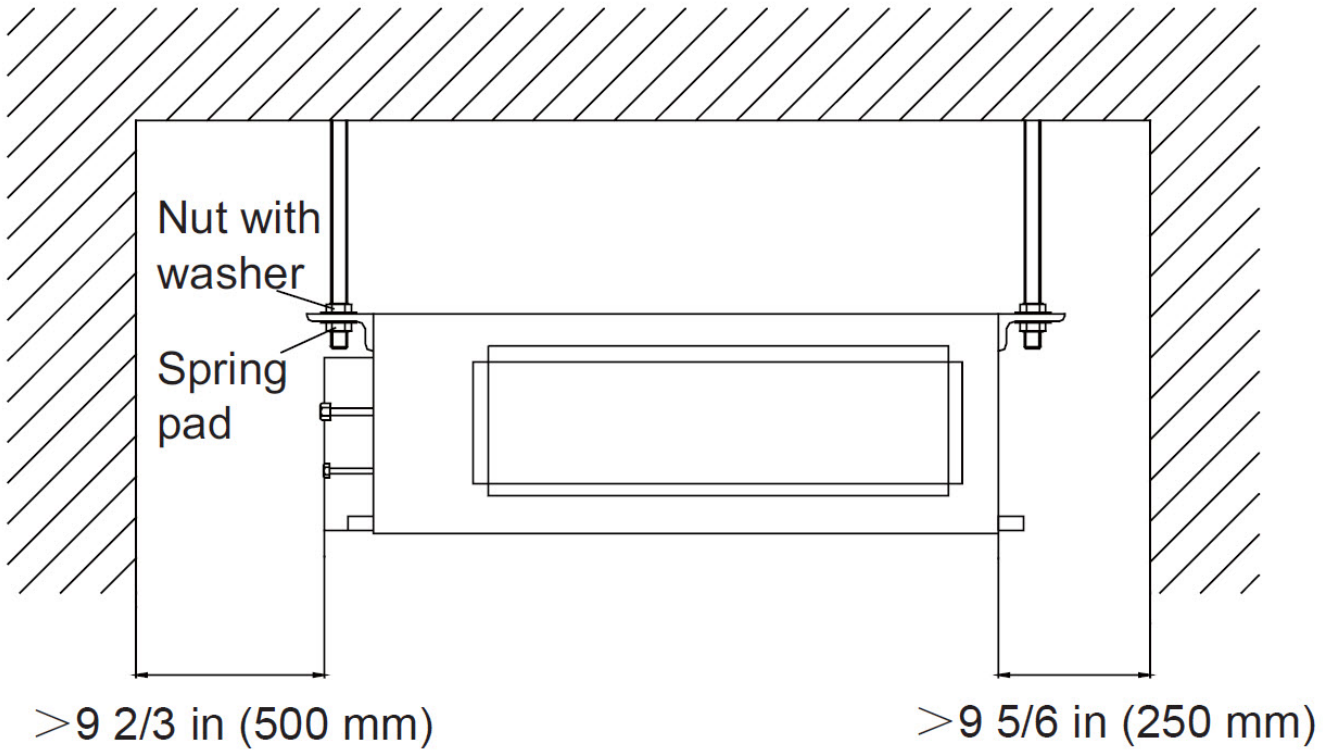


Fig. 19 – Ducted clearance

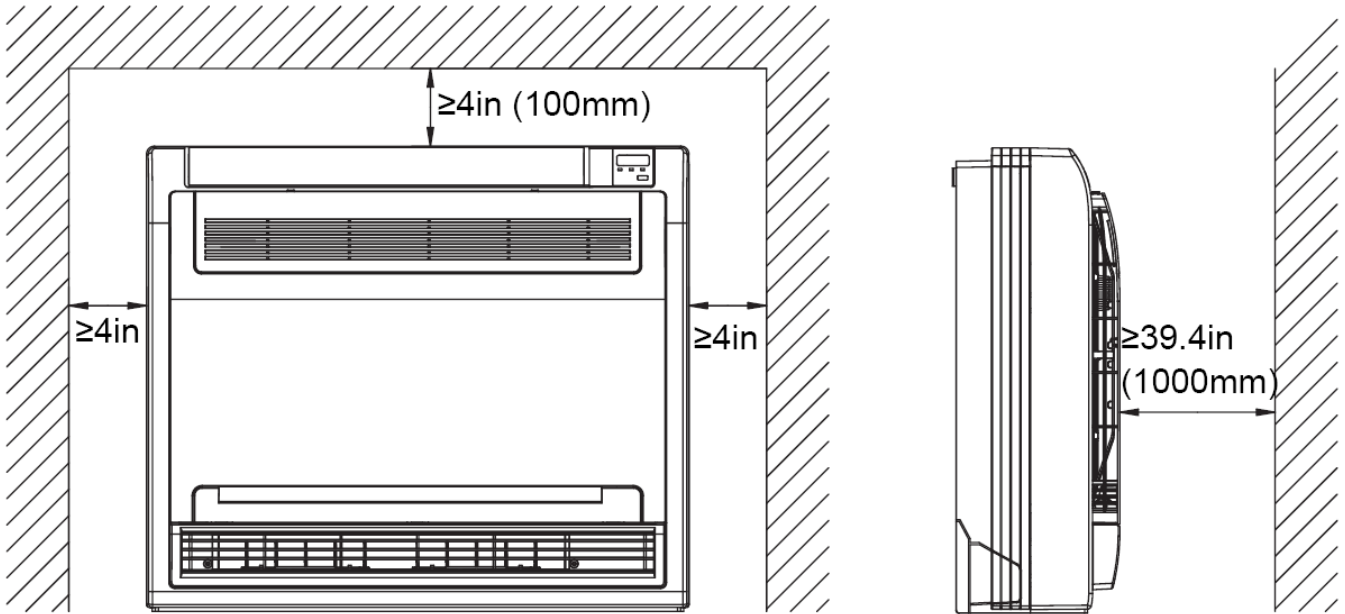


Fig. 20 – Floor Console clearance

CLEARANCES - OUTDOOR (CONTINUED)

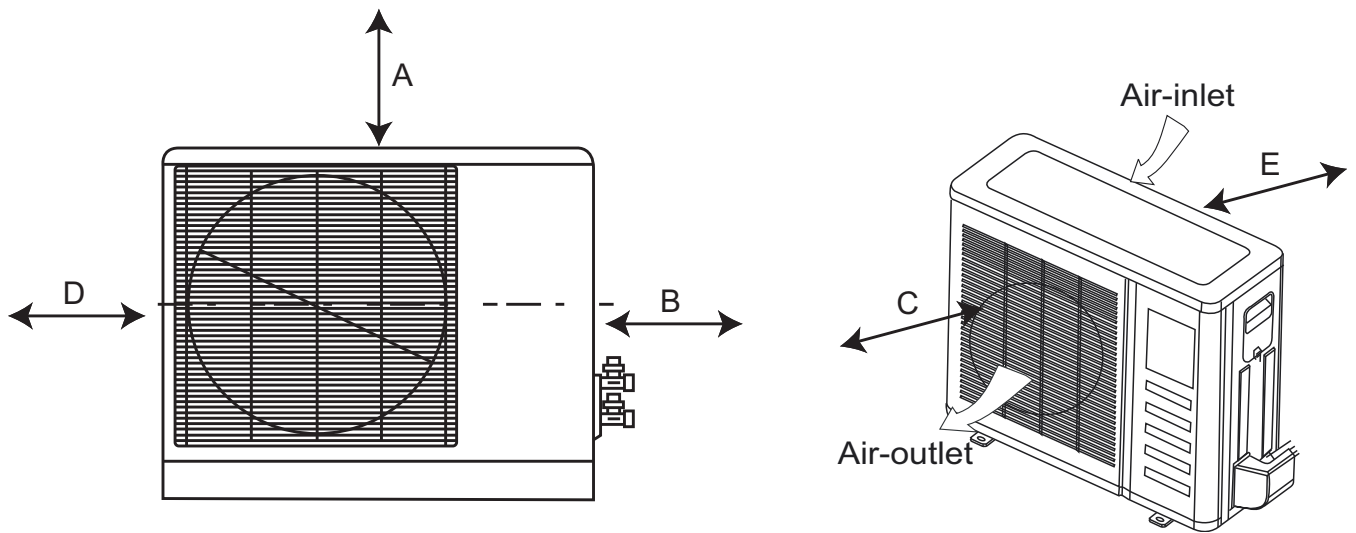


Fig. 21 – Clearances Outdoor 18 - 42

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

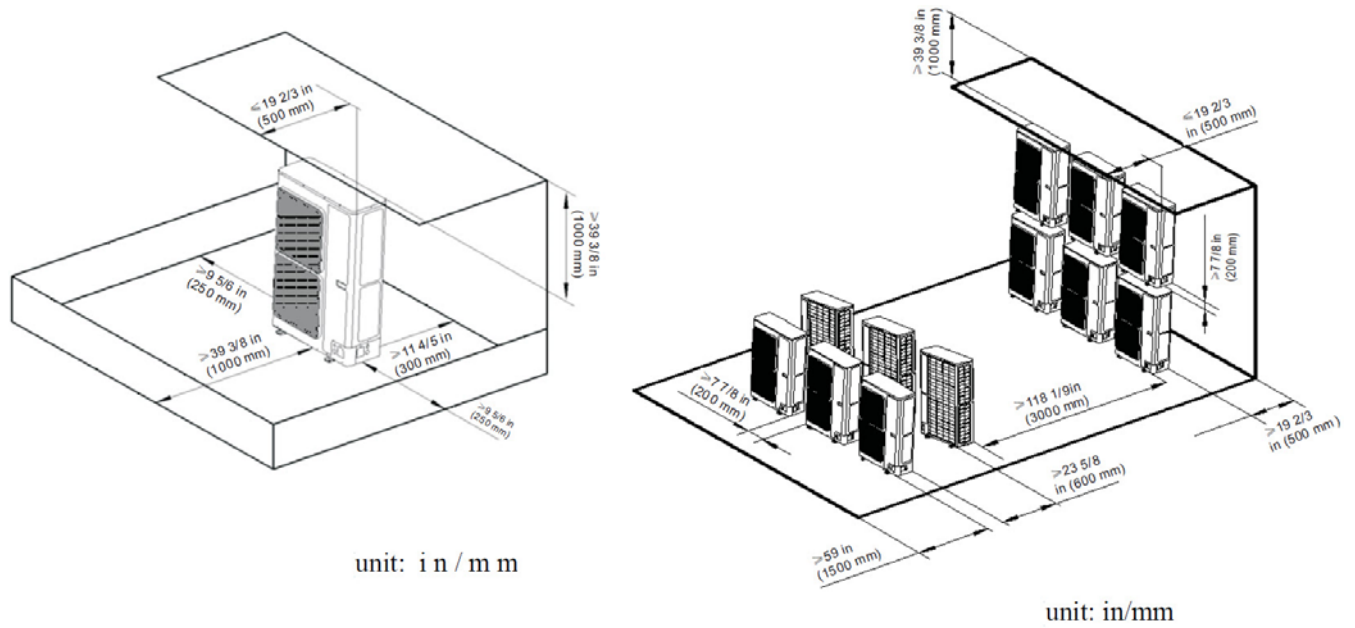


Fig. 22 – Clearances Outdoor 48-56

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	NO	NO	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	
COP @47F	W/W	3.85	3.86	3.76	3.63	3.50	3.53	3.34		
COP @17F	W/W	2.96	2.69	2.71	2.56	2.68	2.21	2.11		
Performance Combination Ducted and Non-Ducted	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	
	HSPF		9	9.6	10	9.9	9.9	8.2	8.2	
COP @47F	W/W	3.53	3.52	3.52	3.30	3.31	3.32	3.18		
COP @17F	W/W	2.68	2.51	2.60	2.43	2.50	2.19	2.16		
Performance Ducted	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	
	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 @47F	W/W	3.22	3.18	3.29	2.97	3.12	3.11	3.01		
COP 17F	W/W	2.39	2.32	2.49	2.29	2.32	2.17	2.21		
Operating Range	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	
Piping	Total Piping Length	Ft.	65	196	230	246	246	443	476	
	Piping to furthest FCU	Ft.	33	65	82	82	82	229	229	
	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					Indoor unit powered by Branch Box		
	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	dB(A)	56	59	59	61	61	57	57		

NOTE: Sizes 48 and 56 require a Branch Box.

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	33.1		
	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.WG.	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 tends 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 2 - 6 ZONE

Outdoor Model Size	2-Zone	3-Zone	4-Zone	5-Zone	6-Zone
18	9+9				
	9+12				
	9+9	9+9+9			
	9+12	9+9+12			
	9+18	9+9+18			
	12+12	9+12+12			
	12+18	12+12+18			
	18+18	18+18			
	9+9	9+9+9	9+9+9+9		
	9+12	9+9+12	9+9+9+12		
24	9+18	9+9+18	9+9+12+12		
	9+24	9+9+24			
	12+12	9+12+12			
	12+18	9+12+18			
	12+21	9+12+21			
	12+24	12+12+24			
	18+18	12+12+18			
	18+21				
	18+24				
	21+21				
30	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	12+12+24			
	18+18	18+18			
36	18+21	9+12+21			
	18+24	9+12+24			
	21+21	9+18+18			
	9+9	9+9+9			
	9+12	9+9+12			
	9+18	9+9+18			
	9+21	9+9+21			
	9+24	9+9+24			
	12+12	9+12+12			
	12+18	9+12+18			
42	12+21	12+12+21			
	12+24	12+12+24			
	18+18	9+18+18			
	18+21	9+18+21			
	18+24	9+18+24			
	21+21	12+12+21			
	21+24	12+12+24			
	24+24	12+12+24			
	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+18+24				
21+21	12+12+21				
21+24	12+12+24				
24+24	12+12+24				
		12+18+18			

APPLICATION DATA 7-9 ZONE

Outdoor Model Size	7-Zone	8-Zone	9-Zone
18			
24			
30			
36			
42			
48	9+9+9+9+9+9+9	9+9+9+9+9+9+9+9	
	9+9+9+9+9+12		
	9+9+9+9+9+18		
	9+9+9+9+12+12		
	9+9+9+9+12+12+12		
56	9+9+9+9+9+9+9	9+9+9+9+9+9+9+9	9+9+9+9+9+9+9+9+9
	9+9+9+9+9+12	9+9+9+9+9+9+12	
	9+9+9+9+9+18	9+9+9+9+9+9+18	
	9+9+9+9+9+21	9+9+9+9+9+12+12	
	9+9+9+9+9+24	9+9+9+9+9+12+12+12	
	9+9+9+9+9+12+12		
	9+9+9+9+9+12+18		
	9+9+9+9+9+12+21		
	9+9+9+9+9+12+24		
	9+9+9+9+12+12+12		
	9+9+9+9+12+12+18		
	9+9+9+9+12+12+21		
	9+9+9+12+12+12+12		
	9+9+9+12+12+12+18		
	9+9+9+12+12+12+21		
9+12+12+12+12+12+12			

COMBINATIONS CAPACITY

Outdoor Unit Size	Combinations	# of Zones	Cooling Capacity (Btu/h)									Heating Capacity (Btu/h)								
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
18	9K+9K	Dual	9,000	9,000																
	9K+12K	Dual	9,000	12,000																
	9K+9K	Dual	9,000	9,000																
	9K+12K		9,000	12,000																
	9K+18K		8,400	16,800																
	12K+12K		12,000	12,000																
	12K+18K		10,000	15,000																
	18K+18K		12,750	12,750																
	9K+9K+9K	Triple	8,667	8,667	8,667															
	9K+9K+12K		8,000	8,000	10,000															
9K+9K+18K	7,000		7,000	12,000																
9K+12K+12K	6,000		10,000	10,000																
12K+12K+12K	8,667	8,667	8,667																	
9+9	9+9		9,000	9,000																
9+12	9+12		9,000	12,000																
9+18	9+18		7,650	15,300																
9+21	9+21		7,560	18,060																
9+24	9+24		7,380	20,400																
12+12	12+12	Dual	12,000	12,000																
12+18	12+18		10,200	15,300																
12+21	12+21		9,960	17,220																
12+24	12+24		9,420	19,440																
18+18	18+18		14,180	14,180																
18+21	18+21		13,200	15,700																
18+24	18+24		12,000	17,100																
21+21	21+21		14,450	14,450																
30	9+9+9	Triple	8,500	8,500	8,500															
	9+9+12		8,000	8,000	10,200															
	9+9+18		7,650	7,650	14,500															
	9+9+21		7,000	7,000	16,000															
	9+9+24		6,300	6,300	17,200															
	9+12+12		8,200	10,000	10,000															
	9+12+18		7,000	8,600	14,000															
	9+12+21		6,000	7,500	15,200															
	12+12+12		9,500	9,500	9,500															
	12+12+18		8,600	8,600	13,000															
	9K+9K+9K+9K		7,400	7,400	7,400															
	9K+9K+9K+12K		7,100	7,100	7,100															
	9K+9K+12K+12K		6,800	6,800	8,000															
	36		9+9	Dual	9,000	9,000														
9+12		9,000	12,000																	
9+18		8,000	17,500																	
9+21		7,700	18,300																	
9+24		7,000	19,300																	
12+12		12,000	12,000																	
12+18		11,400	17,000																	
12+21		10,500	18,500																	
12+24		10,000	20,000																	
18+18		15,300	15,300																	
18+21		14,700	17,200																	
18+24		14,200	18,900																	
21+21		16,700	16,700																	
21+24		15,500	17,700																	
24+24	16,800	16,800																		

COMBINATIONS CAPACITY (CONTINUED)

Outdoor Unit Size	Combinations	# of Zones	Cooling Capacity (Btu/h)									Heating Capacity (Btu/h)										
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9		
36	9+9+9	Triple	8,200	8,200	8,200	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500		
	9+9+12		7,500	7,500	7,500	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830		
	9+9+18		7,200	7,200	7,200	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824	6,824		
	9+9+21		7,000	7,000	7,000	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450	6,450		
	9+9+24		6,600	6,600	6,600	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000		
	9+12+12		8,000	10,800	10,800	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	
	9+12+18		7,400	9,800	14,700	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	
	9+12+21		7,000	9,360	16,400	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	8,300	
	9+12+24		6,800	9,100	18,200	8,160	12,300	12,300	8,160	12,300	12,300	8,160	12,300	12,300	8,160	12,300	12,300	8,160	12,300	12,300	8,160	
	9+18+18		6,500	13,700	13,700	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	
	9+18+21		6,390	12,780	14,900	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	7,830	
	12+12+12		10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	
	12+12+18		9,360	9,360	14,000	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	
	12+12+21		8,760	8,760	15,330	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	
	12+12+24		8,300	8,300	16,300	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	
	12+18+18		8,160	12,300	12,300	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,900	
	9+9+9+9		9+9+9+12	9+9+9+18	9+9+9+21	9+9+9+24	9+12+12+12	12+12+12+12	9+9+9+9+9	9+9+9+9+12	9,000	13,000	13,000	9,000	13,000	13,000	9,000	13,000	13,000	9,000	13,000	
	42		9+12	Dual	8,000	17,500	17,500	8,000	17,500	17,500	8,000	17,500	17,500	8,000	17,500	17,500	8,000	17,500	17,500	8,000	17,500	17,500
			9+18		7,700	18,300	18,300	7,700	18,300	18,300	7,700	18,300	18,300	7,700	18,300	18,300	7,700	18,300	18,300	7,700	18,300	18,300
			9+21		7,000	19,300	19,300	7,000	19,300	19,300	7,000	19,300	19,300	7,000	19,300	19,300	7,000	19,300	19,300	7,000	19,300	19,300
9+24		12,000	12,000		12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	
12+18		11,400	17,000		17,000	11,400	17,000	17,000	11,400	17,000	17,000	11,400	17,000	17,000	11,400	17,000	17,000	11,400	17,000	17,000	17,000	
12+21		10,500	19,500		19,500	10,500	19,500	19,500	10,500	19,500	19,500	10,500	19,500	19,500	10,500	19,500	19,500	10,500	19,500	19,500	19,500	
12+24		10,000	22,700		22,700	10,000	22,700	22,700	10,000	22,700	22,700	10,000	22,700	22,700	10,000	22,700	22,700	10,000	22,700	22,700	22,700	
18+18		15,840	15,840		15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	15,840	
18+21		14,900	17,200		17,200	14,900	17,200	17,200	14,900	17,200	17,200	14,900	17,200	17,200	14,900	17,200	17,200	14,900	17,200	17,200	17,200	
18+24		14,240	18,950		18,950	14,240	18,950	18,950	14,240	18,950	18,950	14,240	18,950	18,950	14,240	18,950	18,950	14,240	18,950	18,950	18,950	
21+21		16,900	16,900		16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	
21+24		15,830	18,520		18,520	15,830	18,520	18,520	15,830	18,520	18,520	15,830	18,520	18,520	15,830	18,520	18,520	15,830	18,520	18,520	18,520	
24+24		17,560	17,560		17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	17,560	
9+9+9		9+9+12	9+9+18		9+9+21	9+9+24	9+12+12+12	12+12+12+12	9+9+9+9	9+9+9+12	8,200	8,200	8,200	8,200	8,200	8,200	8,200	8,200	8,200	8,200	8,200	
9+9+18		9+9+21	9+9+24		9+12+12	9+12+18	9+12+21	9+12+24	9+18+18	9+18+21	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	
9+18+18		9+18+21	9+18+24		9+21+21	9+21+24	9+24+24	9+9+9+9	9+9+9+12	9+9+9+18	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	
9+21+21		9+21+24	9+24+24		12+12+12+12	12+12+12+18	12+12+12+21	12+12+12+24	12+18+18	12+18+21	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	
12+12+12+12		12+12+12+18	12+12+12+21		12+12+12+24	12+18+18	12+18+21	12+18+24	12+21+21	12+21+24	8,000	10,800	10,800	8,000	10,800	10,800	8,000	10,800	10,800	8,000	10,800	
12+18+18		12+18+21	12+18+24		12+21+21	12+21+24	12+24+24	9+9+9+9	9+9+9+12	9+9+9+18	7,400	9,800	15,700	7,400	9,800	15,700	7,400	9,800	15,700	7,400	9,800	
12+21+21		12+21+24	12+24+24		9+9+9+9	9+9+9+12	9+9+9+18	9+9+9+21	9+9+9+24	9+12+12	7,100	9,460	18,400	7,100	9,460	18,400	7,100	9,460	18,400	7,100	9,460	
12+24+24	9+12+18	9+18+18	9+18+21	9+18+24	9+21+21	9+21+24	9+24+24	9+12+21	6,800	9,100	20,200	6,800	9,100	20,200	6,800	9,100	20,200	6,800	9,100			
9+9+9+9	9+9+9+12	9+9+9+18	9+9+9+21	9+9+9+24	9+12+12+12	12+12+12+12	9+9+9+9	9+9+9+12	6,500	14,800	14,800	6,500	14,800	14,800	6,500	14,800	14,800	6,500	14,800			
9+9+9+12	9+9+9+18	9+9+9+21	9+9+9+24	9+12+12+18	9+12+12+21	9+12+12+24	9+18+18	9+18+21	6,390	14,280	16,330	6,390	14,280	16,330	6,390	14,280	16,330	6,390	14,280			
9+9+9+18	9+9+9+21	9+9+9+24	9+12+12+18	9+12+12+21	9+12+12+24	9+18+18	9+18+21	9+21+21	6,120	15,940	15,940	6,120	15,940	15,940	6,120	15,940	15,940	6,120	15,940			
9+9+9+21	9+9+9+24	9+12+12+12	9+12+12+18	9+12+12+21	9+12+12+24	9+18+18	9+18+21	12+12+12+12	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400			
9+9+9+24	9+12+12+18	9+12+12+21	9+12+12+24	9+18+18	9+18+21	9+18+24	9+21+21	9+21+24	9,960	9,960	15,180	9,960	9,960	15,180	9,960	9,960	15,180	9,960	9,960			

COMBINATIONS CAPACITY (CONTINUED)

Outdoor Unit Size	Combinations	# of Zones	Cooling Capacity (Btu/h)									Heating Capacity (Btu/h)											
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9			
42	12+12+21	Triple	9,760	9,760	16,980										11,060	11,060	19,380						
	12+12+24		9,300	9,300	18,900										10,620	10,620	21,260						
	12+18+18		8,900	14,300	14,300										10,130	16,185	16,185						
	12+18+21		8,460	13,500	16,540										9,530	15,300	19,000						
	9+9+9+9	Quad	8,870	8,870	8,870	8,870						11,000	11,000	11,000	11,000								
	9+9+9+12		8,460	8,460	8,460	11,110						10,260	10,260	10,260	13,420								
	9+9+9+18		7,650	7,650	7,650	15,400						8,920	8,920	8,920	18,200								
	9+9+9+21		7,290	7,290	7,290	17,130						8,460	8,460	13,690	13,690								
	9+9+12+12		8,300	8,300	11,200	11,200						9,630	9,630	12,870	12,870								
	9+9+12+18		7,470	7,470	9,960	14,940						8,550	8,550	11,400	17,100								
	9+12+12+12		7,000	10,760	10,760	10,760						8,120	12,390	12,390	12,390								
	9+12+12+18		6,760	9,600	9,600	14,050						8,010	10,680	10,680	16,200								
	12+12+12+12		9,950	9,950	9,950	9,950						11,470	11,470	11,470	11,470								
	9+9+9+9+9		Penta	7,920	7,920	7,920	7,920	7,920				9,100	9,100	9,100	9,100	9,100							
	9+9+9+9+12			7,430	7,430	7,430	7,430	9,980				8,540	8,540	8,540	8,540	11,480							
	9+18			8,506	16,719										9,103	18,452							
	9+21	8,506		20,145										9,103	21,943								
	9+24	8,506	23,086										9,103	24,620									
	12+12	10,236	10,236	10,236										12,637	12,637								
	12+18	10,236	16,207										12,637	18,452									
12+21	10,236	20,145										12,637	21,943										
12+24	10,236	23,086										12,637	24,620										
18+18	16,207	16,207										18,452	18,452										
18+21	16,207	20,145										18,452	21,943										
18+24	16,207	23,086										18,452	24,620										
21+24	20,145	20,145										21,943	21,943										
24+24	20,145	23,086										21,943	24,620										
9+9+9	Triple	8,189	23,086	23,086						24,620	24,620												
9+9+12		8,189	8,189	8,189	8,189					9,547	9,547	9,547	9,547										
9+9+18		8,189	8,189	16,157					9,547	9,547	18,452												
9+9+21		8,189	8,189	16,463					9,547	9,547	21,943												
9+12+12		8,189	8,189	17,084					9,547	9,547	24,620												
9+12+18		8,189	11,771	11,771					9,547	12,637	12,637												
9+12+21		8,189	11,771	16,157					9,547	12,637	18,452												
9+12+24		8,189	11,771	16,463					9,547	12,637	21,943												
9+18+18		8,189	11,771	17,084					9,547	12,637	24,620												
9+18+21		8,189	16,157	16,157					9,547	18,452	18,452												
9+18+24		8,189	16,157	16,463					9,547	18,452	21,943												
9+21+21		8,189	16,157	17,084					9,547	18,452	24,620												
9+21+24		8,189	16,463	16,463					9,547	21,943	21,943												
9+24+24		8,189	17,084	17,084					9,547	21,943	24,620												
12+12+12		11,771	11,771	11,771					12,637	12,637	12,637												
12+12+18		11,771	11,771	16,157					12,637	12,637	18,452												
12+12+21		11,771	11,771	16,463					12,637	12,637	21,943												
12+12+24		11,771	11,771	17,084					12,637	12,637	24,620												
12+18+18	11,771	16,157	16,157					12,637	18,452	18,452													
12+18+21	11,771	16,157	16,157					12,637	18,452	21,943													
12+18+24	11,771	16,157	17,084					12,637	18,452	24,620													
12+21+21	11,771	16,463	16,463					12,637	21,943	21,943													
12+21+24	11,771	16,463	17,084					12,637	21,943	24,620													
18+18+18	16,157	16,157	16,157										17,139	17,139									

COMBINATIONS CAPACITY (CONTINUED)

Outdoor Unit Size	Combinations	# of Zones	Cooling Capacity (Btu/h)									Heating Capacity (Btu/h)										
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9		
56	9+9+12+21+24	Penta	7,359	7,359	9,738	17,682	18,361	8,275	8,275	10,818	18,966	21,964	8,275	8,275	10,818	18,966	21,964	8,275	8,275	10,818	18,966	21,964
	9+9+12+24+24		7,359	7,359	9,738	18,361	18,361	8,275	8,275	10,818	20,864	20,864	8,275	8,275	10,818	20,864	20,864	8,275	8,275	10,818	20,864	20,864
	9+9+18+18+18		7,359	7,359	14,663	14,663	16,835	8,275	8,275	14,663	16,835	16,835	8,275	8,275	14,663	16,835	16,835	8,275	8,275	14,663	16,835	16,835
	9+9+18+18+24		7,359	7,359	14,663	14,663	18,361	8,275	8,275	14,663	18,361	18,361	8,275	8,275	14,663	18,361	18,361	8,275	8,275	14,663	18,361	18,361
	9+9+18+21+21		7,182	7,182	14,113	16,235	16,235	7,963	7,963	15,947	18,966	18,966	7,963	7,963	15,947	18,966	18,966	7,963	7,963	15,947	18,966	18,966
	9+9+18+21+24		7,182	7,182	14,113	16,235	18,361	7,963	7,963	15,947	18,241	20,208	7,963	7,963	15,947	18,241	20,208	7,963	7,963	15,947	18,241	20,208
	9+12+12+12+12		8,576	11,390	11,390	11,390	11,390	8,576	11,390	11,390	12,379	12,379	9,176	12,379	12,379	12,379	12,379	9,176	12,379	12,379	12,379	12,379
	9+12+12+12+18		8,576	11,390	11,390	11,390	16,273	8,576	11,390	11,390	16,273	16,273	9,176	12,379	12,379	12,379	17,325	9,176	12,379	12,379	12,379	17,325
	9+12+12+12+24		8,143	10,682	10,682	10,682	18,346	8,143	10,682	10,682	18,346	18,346	9,176	12,379	12,379	12,379	20,864	9,176	12,379	12,379	12,379	20,864
	9+12+12+18+18		8,143	10,682	10,682	10,682	19,651	8,143	10,682	10,682	19,651	19,651	9,176	12,379	12,379	12,379	21,964	9,176	12,379	12,379	12,379	21,964
	9+12+12+18+24		8,143	10,682	10,682	14,663	16,835	8,143	10,682	10,682	14,663	16,835	8,564	11,293	11,293	16,351	16,351	8,564	11,293	11,293	16,351	16,351
	9+12+12+18+21		7,359	9,738	9,738	14,663	16,835	7,359	9,738	9,738	14,663	16,835	8,564	11,293	11,293	16,351	20,864	8,564	11,293	11,293	16,351	20,864
	9+12+12+21+21		7,359	9,738	9,738	16,763	16,763	7,359	9,738	9,738	16,763	16,763	8,275	10,818	10,818	18,966	21,964	8,275	10,818	10,818	18,966	21,964
	9+12+12+21+24		7,359	9,738	9,738	16,835	19,651	7,359	9,738	9,738	16,835	19,651	8,275	10,818	10,818	18,966	21,117	8,275	10,818	10,818	18,966	21,117
	9+12+12+24+24		7,359	9,357	9,357	18,632	18,632	7,359	9,357	9,357	18,632	18,632	8,275	10,818	10,818	20,496	20,496	8,275	10,818	10,818	20,496	20,496
	12+12+12+12+12		11,390	11,390	11,390	11,390	11,390	11,390	11,390	11,390	11,390	11,390	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293
	12+12+12+12+18		10,682	10,682	10,682	10,682	14,663	10,682	10,682	10,682	14,663	14,663	11,293	11,293	11,293	11,293	16,855	11,293	11,293	11,293	11,293	16,855
	12+12+12+12+21		10,682	10,682	10,682	10,682	16,835	10,682	10,682	10,682	16,835	16,835	11,293	11,293	11,293	11,293	18,535	11,293	11,293	11,293	11,293	18,535
	12+12+12+12+24		10,682	10,682	10,682	10,682	19,651	10,682	10,682	10,682	19,651	19,651	11,293	11,293	11,293	11,293	22,314	11,293	11,293	11,293	11,293	22,314
	12+12+12+18+18		9,738	9,738	9,738	14,663	16,835	9,738	9,738	9,738	14,663	16,835	10,879	10,879	10,879	16,228	16,228	10,879	10,879	10,879	16,228	16,228
	12+12+12+18+21		9,738	9,738	9,738	14,663	16,835	9,738	9,738	9,738	14,663	16,835	10,879	10,879	10,879	16,228	18,854	10,879	10,879	10,879	16,228	18,854
	12+12+12+18+24		9,738	9,738	9,738	14,663	18,743	9,738	9,738	9,738	14,663	18,743	10,879	10,879	10,879	16,228	21,030	10,879	10,879	10,879	16,228	21,030
	12+12+12+21+21		9,357	9,357	9,357	16,763	16,763	9,357	9,357	9,357	16,763	16,763	10,492	10,492	10,492	17,950	17,950	10,492	10,492	10,492	17,950	17,950
	12+12+12+21+24		9,357	9,357	9,357	16,763	18,743	9,357	9,357	9,357	16,763	18,743	10,492	10,492	10,492	17,950	20,410	10,492	10,492	10,492	17,950	20,410
12+12+18+18+18	9,357	9,357	14,138	14,138	14,663	9,357	9,357	14,138	14,138	14,663	10,492	10,492	15,933	15,933	15,933	10,492	10,492	15,933	15,933	15,933		
12+12+18+18+21	8,576	8,576	8,576	8,576	16,231	8,576	8,576	8,576	8,576	16,231	9,176	9,176	9,176	9,176	17,851	9,176	9,176	9,176	9,176	17,851		
9+9+9+9+9+9	9+9+9+9+9+12	9+9+9+9+9+18	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24	9+9+9+9+9+21	9+9+9+9+9+24		
9+9+9+9+9+12	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176		
9+9+9+9+9+18	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176		
9+9+9+9+9+21	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176		
9+9+9+9+9+24	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	8,576	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176	9,176		
9+9+9+9+12+12	8,576	8,576	8,576	8,576	11,390	8,576	8,576	8,576	11,390	11,390	9,176	9,176	9,176	9,176	12,379	9,176	9,176	9,176	9,176	12,379		
9+9+9+9+12+18	8,576	8,576	8,576	8,576	11,390	8,576	8,576	8,576	11,390	14,663	9,176	9,176	9,176	9,176	12,379	9,176	9,176	9,176	9,176	12,379		
9+9+9+9+12+21	8,143	8,143	8,143	8,143	10,682	8,143	8,143	8,143	10,682	16,835	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+9+9+12+24	8,143	8,143	8,143	8,143	10,682	8,143	8,143	8,143	10,682	16,835	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+9+9+18+18	7,359	7,359	7,359	7,359	14,663	7,359	7,359	7,359	14,663	14,663	8,634	8,634	8,634	8,634	16,825	8,634	8,634	8,634	8,634	16,825		
9+9+9+9+18+21	7,359	7,359	7,359	7,359	14,663	7,359	7,359	7,359	14,663	16,835	8,634	8,634	8,634	8,634	16,825	8,634	8,634	8,634	8,634	16,825		
9+9+9+9+18+24	7,359	7,359	7,359	7,359	14,663	7,359	7,359	7,359	14,663	16,835	8,634	8,634	8,634	8,634	16,825	8,634	8,634	8,634	8,634	16,825		
9+9+9+9+21+21	7,359	7,359	7,359	7,359	16,835	7,359	7,359	7,359	16,835	16,835	8,274	8,274	8,274	8,274	18,216	8,274	8,274	8,274	8,274	18,216		
9+9+9+9+21+24	7,359	7,359	7,359	7,359	16,835	7,359	7,359	7,359	16,835	16,835	8,274	8,274	8,274	8,274	18,216	8,274	8,274	8,274	8,274	18,216		
9+9+9+12+12+12	8,143	8,143	8,143	10,682	10,682	8,143	8,143	8,143	10,682	10,682	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+9+12+12+18	8,143	8,143	8,143	10,682	10,682	8,143	8,143	8,143	10,682	14,663	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+9+12+12+21	8,143	8,143	8,143	10,251	10,251	8,143	8,143	8,143	10,251	16,196	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+9+12+12+24	7,359	7,359	7,359	9,675	9,675	7,359	7,359	7,359	9,675	14,663	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+9+12+18+18	7,359	7,359	7,359	9,675	14,663	7,359	7,359	7,359	9,675	14,663	8,395	8,395	8,395	8,395	16,457	8,395	8,395	8,395	8,395	16,457		
9+9+9+12+18+21	7,359	7,359	7,359	9,675	14,663	7,359	7,359	7,359	9,675	16,196	7,923	7,923	7,923	7,923	19,205	7,923	7,923	7,923	7,923	19,205		
9+9+9+12+18+24	7,164	7,164	7,164	9,083	14,261	7,164	7,164	7,164	9,083	17,826	7,653	7,653	7,653	7,653	19,851	7,653	7,653	7,653	7,653	19,851		
9+9+9+12+21+21	6,924	6,924	6,924	9,083	15,750	6,924	6,924	6,924	9,083	15,750	7,653	7,653	7,653	7,653	18,127	7,653	7,653	7,653	7,653	18,127		
9+9+9+12+21+24	8,143	8,143	10,251	10,251	10,251	8,143	8,143	10,251	10,251	10,251	8,852	8,852	8,852	8,852	11,763	8,852	8,852	8,852	8,852	11,763		
9+9+12+12+12+12	8,143	8,143	10,251	10,251	10,251	8,143	8,143	10,251	10,251	14,663												

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. 17-21.

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. 21, 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:

- a. No change in line sizing is required.
- b. Add refrigerant per table below.

Unit Size	Total Line Length ft		Additional Charge, 1/4" Liquid Line / 3/8" Liquid Line, oz/ft.								
	Min	Max	10 - 32 (3 - 10)	>32 - 66 (10 - 20)	>66 - 98 (20 - 30)	>98 - 131.2 (30 - 40)	>131.2 - 196 (40 - 60)	>196 - 230 (60 - 70)	>230 - 246 (70 - 75)	>246 - 443 (75 - 135)	>443 - 476 (135 - 145)
18	10	66	None	0.20 / 0.20							
24	10	196		None	None	0.20 / 0.20	0.20 / 0.20				
30	10	230		None	None	None	0.24 / 0.58	0.24 / 0.58			
36	10	246		None	None	None	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58		
42	10	246		None	None	None	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58		
48	10	443		None	None	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58	
56	10	476		None	None	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58	0.24 / 0.58

Additional Refrigerant Calculation Sizes 30K, 36K and 42K:

Sum Total Liquid Pipe 1/4" (ft) x 0.24 + Sum Total Pipe 3/8" (ft) x 0.58 – 31 oz

Additional Refrigerant Calculation Sizes 48K and 56K:

Sum Total Liquid Pipe 1/4" (ft) x 0.24 + Sum Total Pipe 3/8" (ft) x 0.58 – 51.7 oz

NOTE: If the calculation results in a negative number no additional refrigerant is required.

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. 22 – 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. 23 – 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 appears 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	
Indoor Sound Pressure HP Heating mode	SL	dBa	26	27	29	
	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
Indoor Sound Pressure HP Heating mode	SL	dBa	23	24	33	38
	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
Indoor Sound Pressure HP Heating mode	SL	dBa	25	27	33
	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	35
42			16.5	0.82	2/9	240	24	40
48			22	1	1/6	150	30	50
56			24	1	1/6	150	30	50

*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)

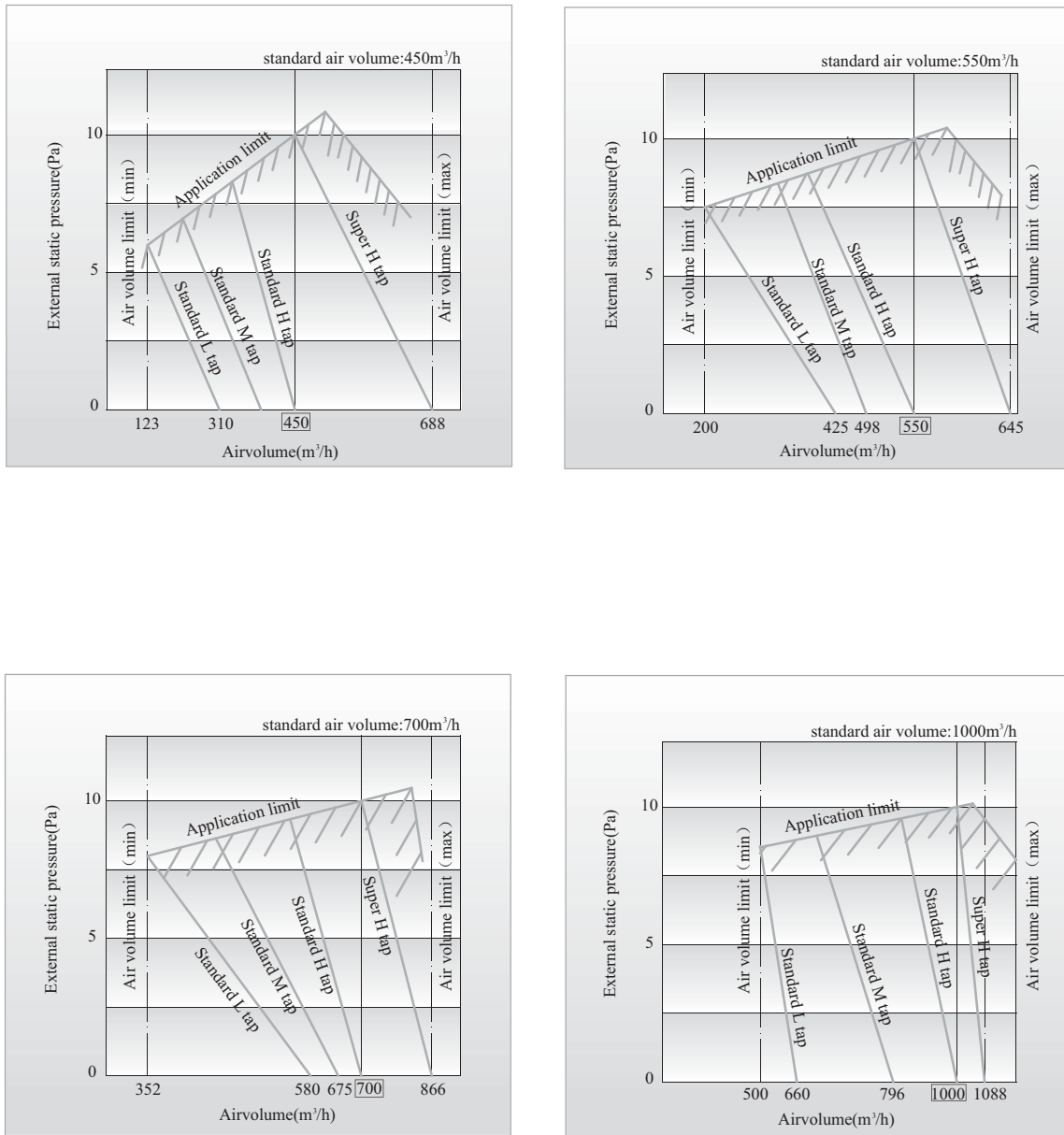


Fig. 24 – Fan Performances

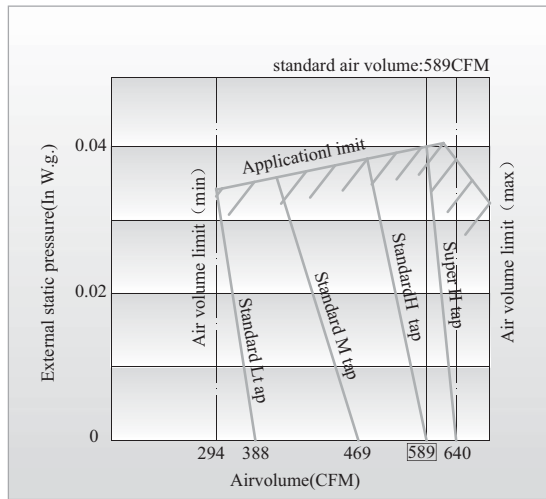
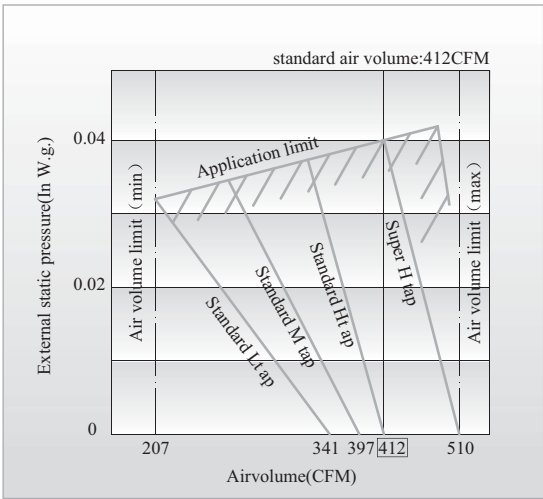
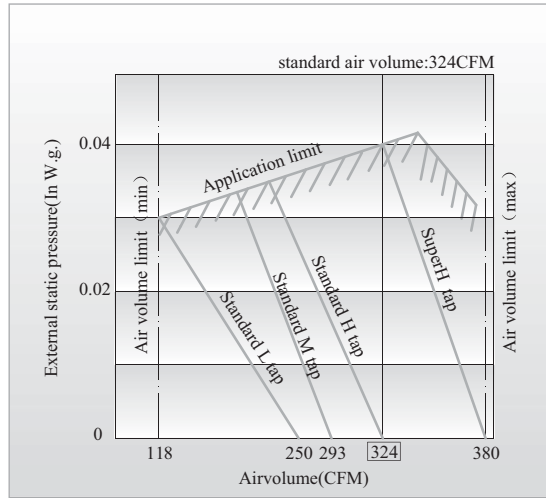
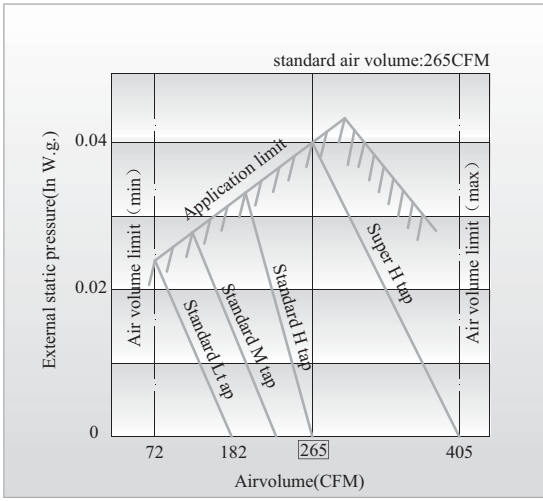


Fig. 25 – Fan Performances

WIRING DIAGRAMS

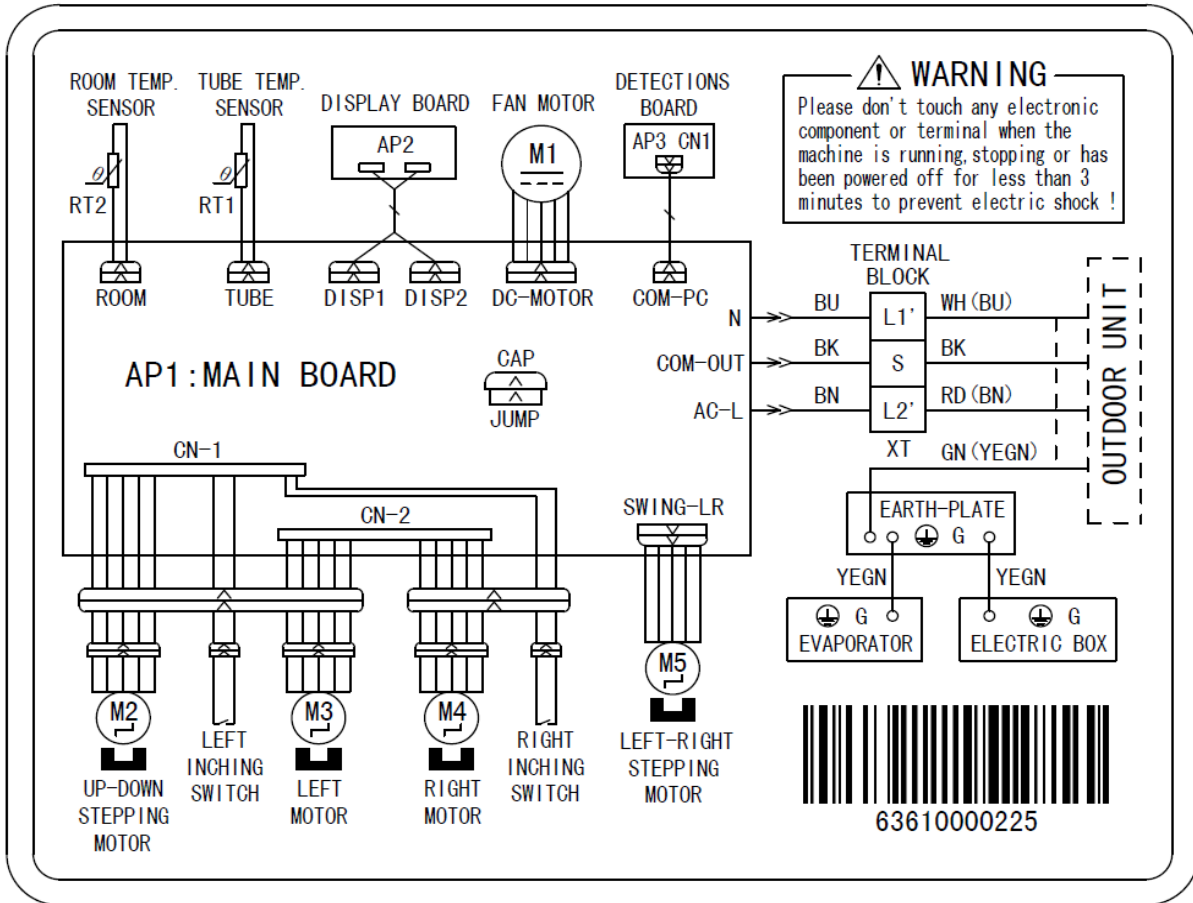


Fig. 26 – Wiring Diagrams GR High Wall 9k, 12k and 18k

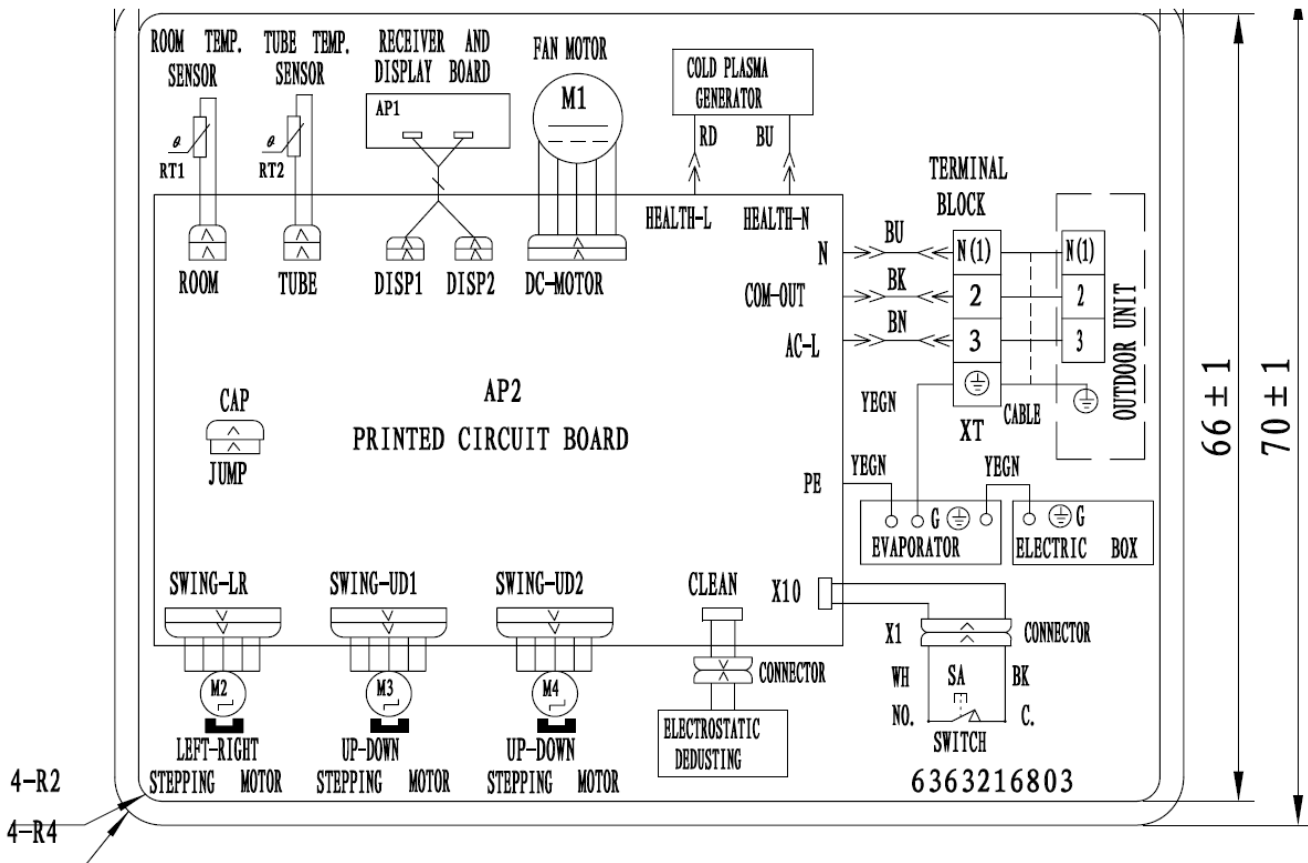


Fig. 27 – Wiring Diagrams GJ*B High Wall 9k, 12k, 18k and 24k

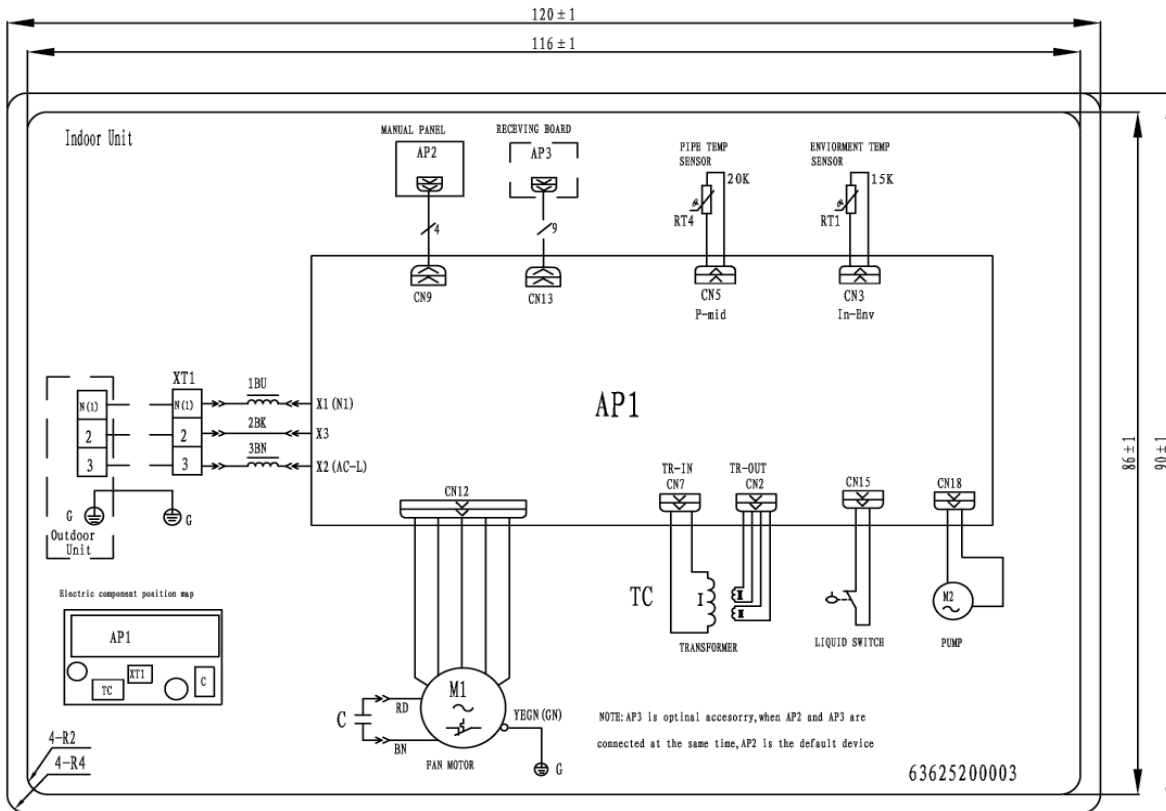


Fig. 28 – Wiring Diagram Ducted 9k, 12k, 18, 21k and 24k

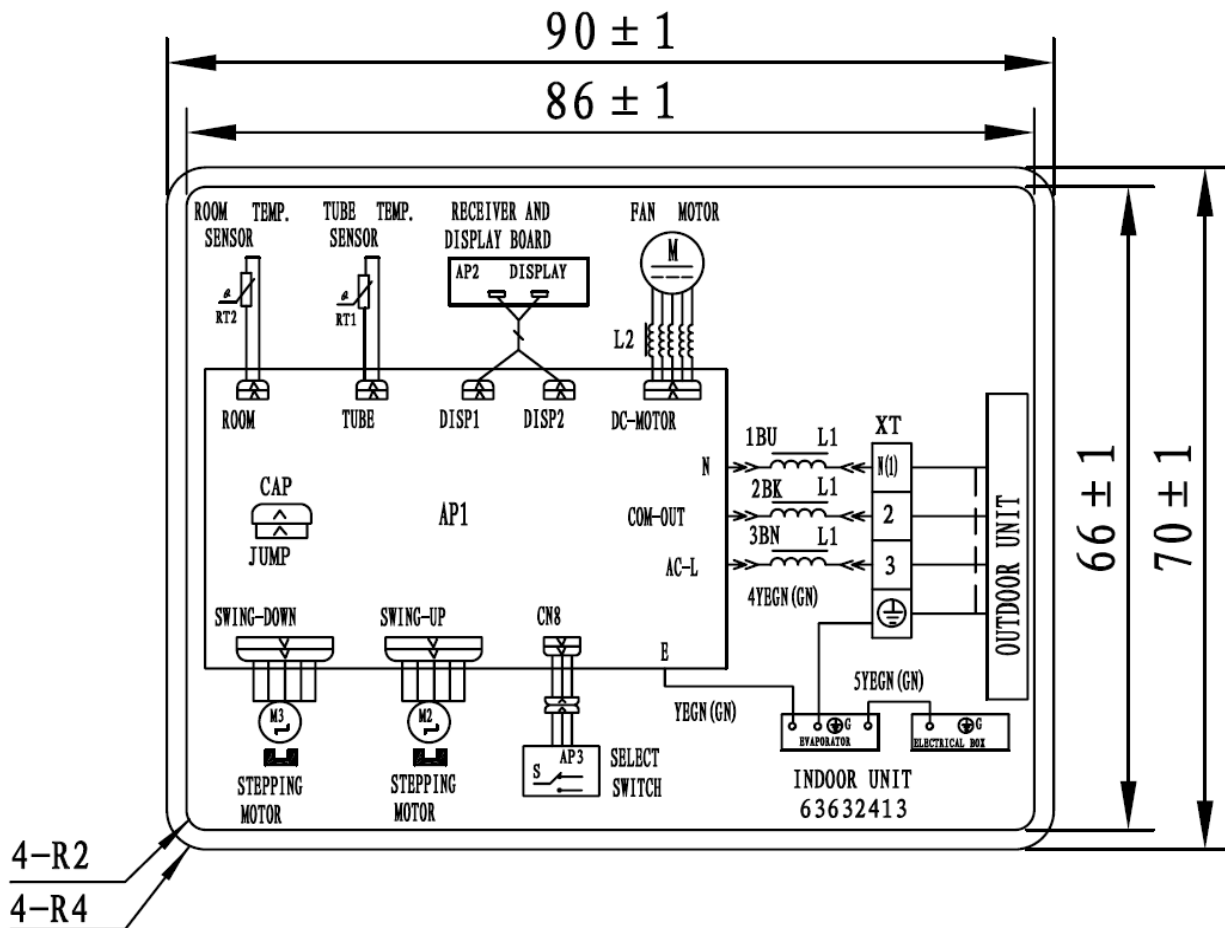


Fig. 29 – Wiring Diagrams Floor Console 9k, 12k and 18k

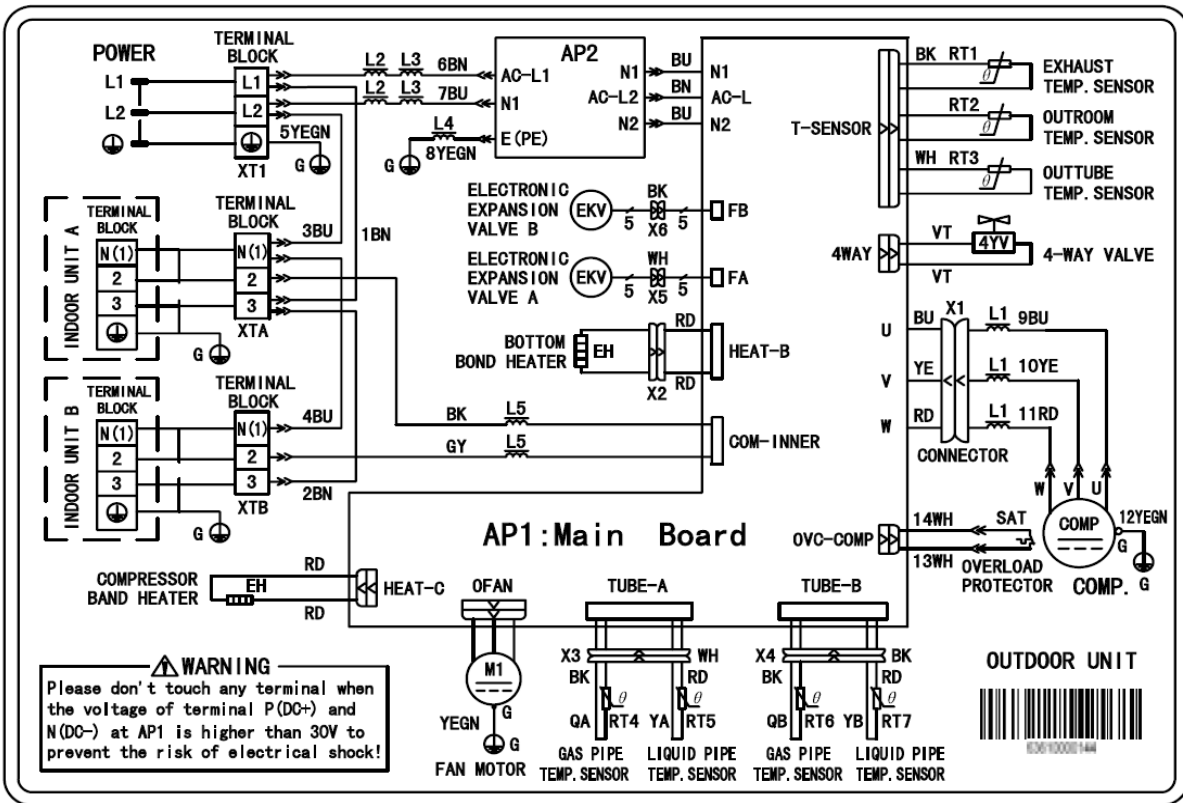


Fig. 32 – Wiring Diagram Outdoor 18k

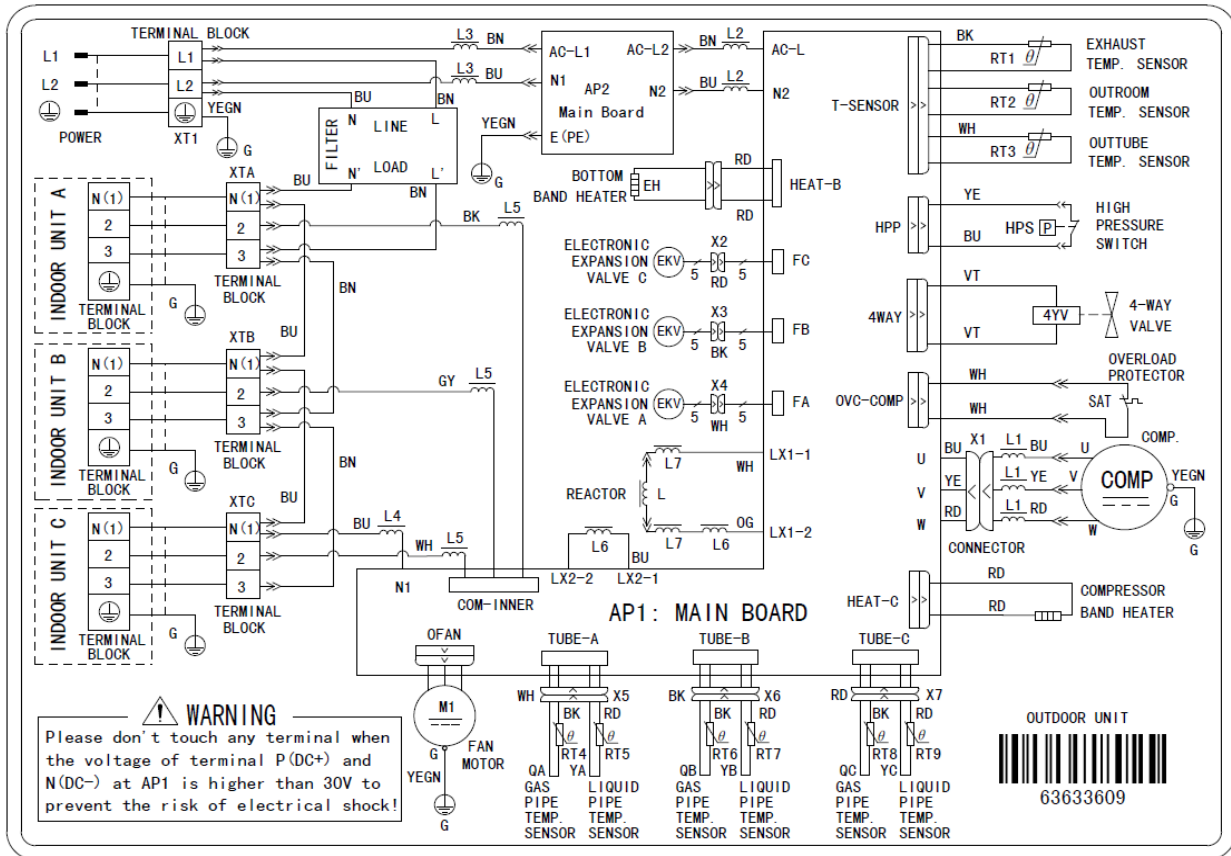


Fig. 33 – Wiring Diagram Outdoor 24k

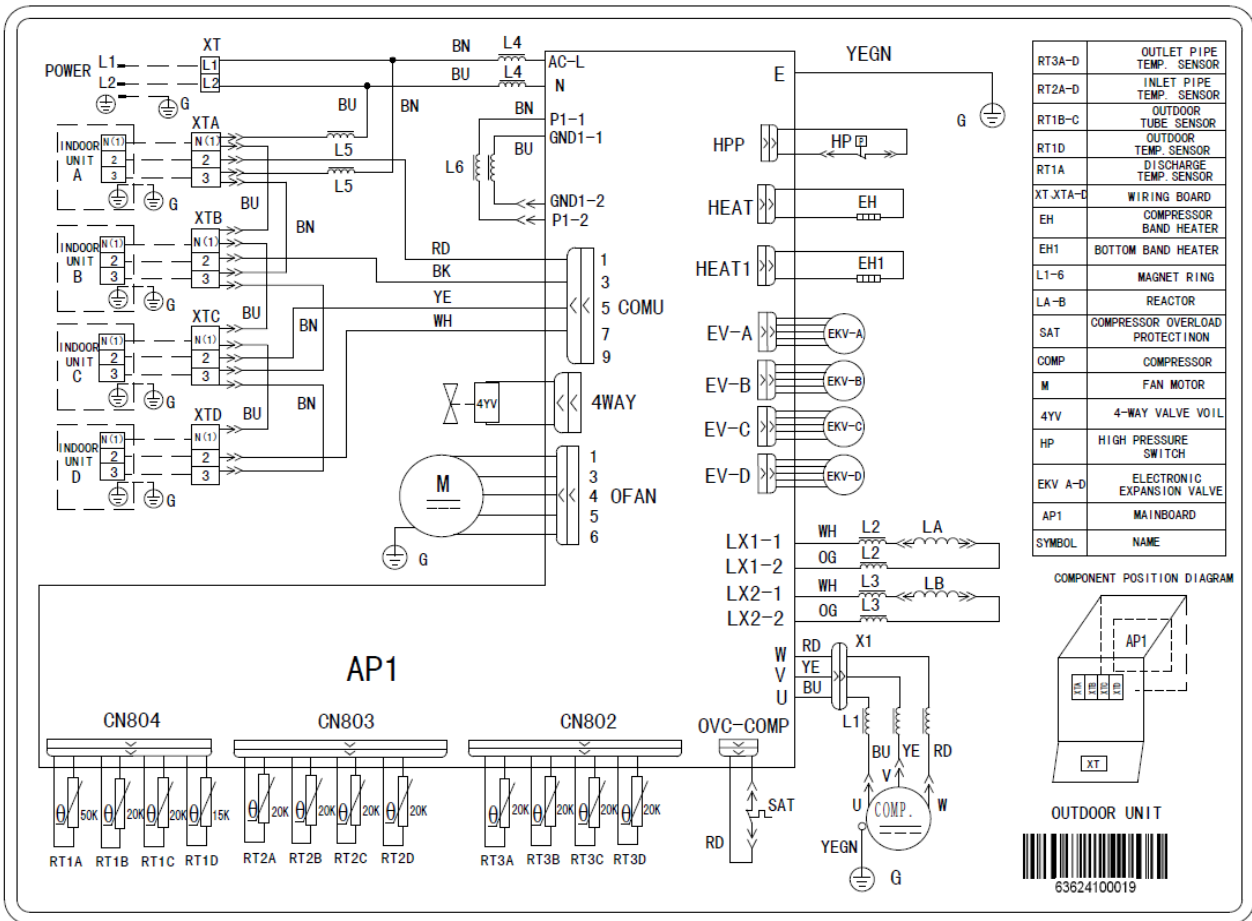


Fig. 34 – Wiring Diagram Outdoor 30k

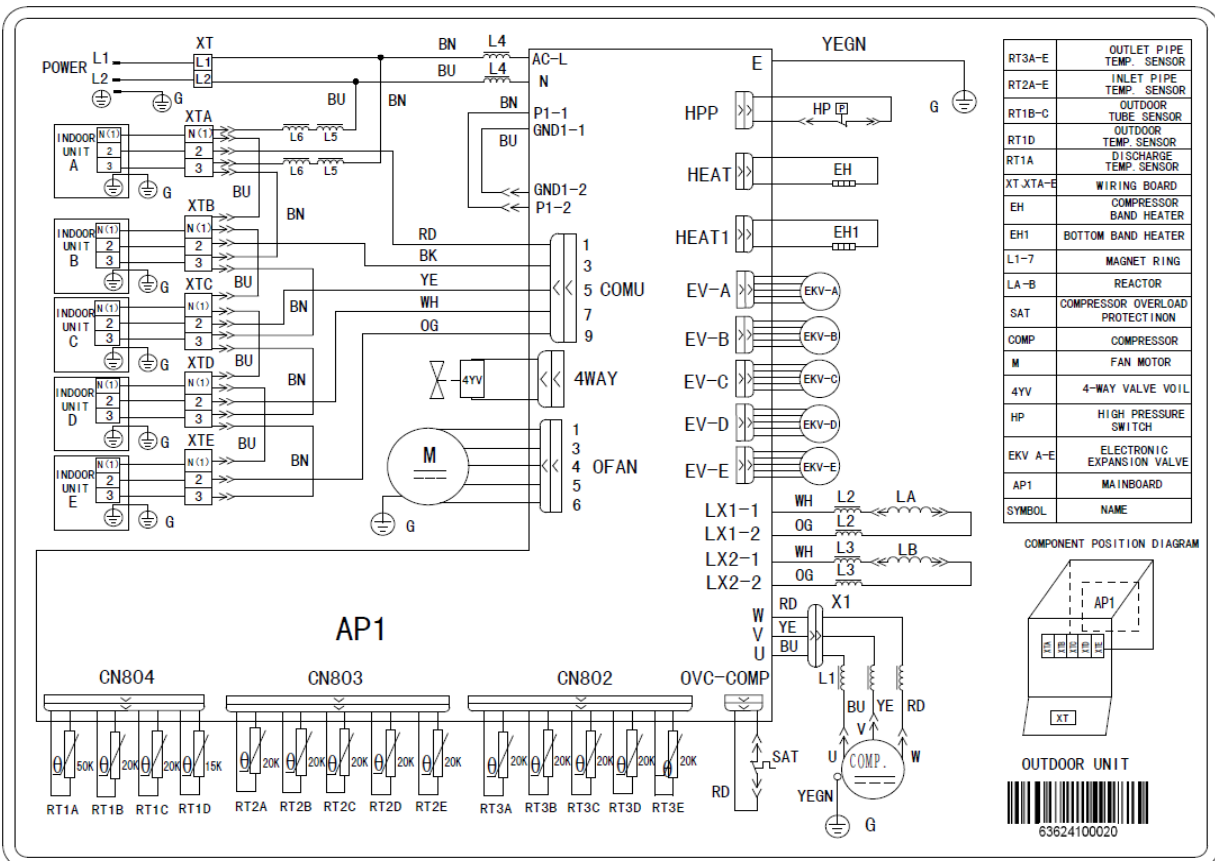


Fig. 35 – Wiring Diagram Outdoor 36k and 42k

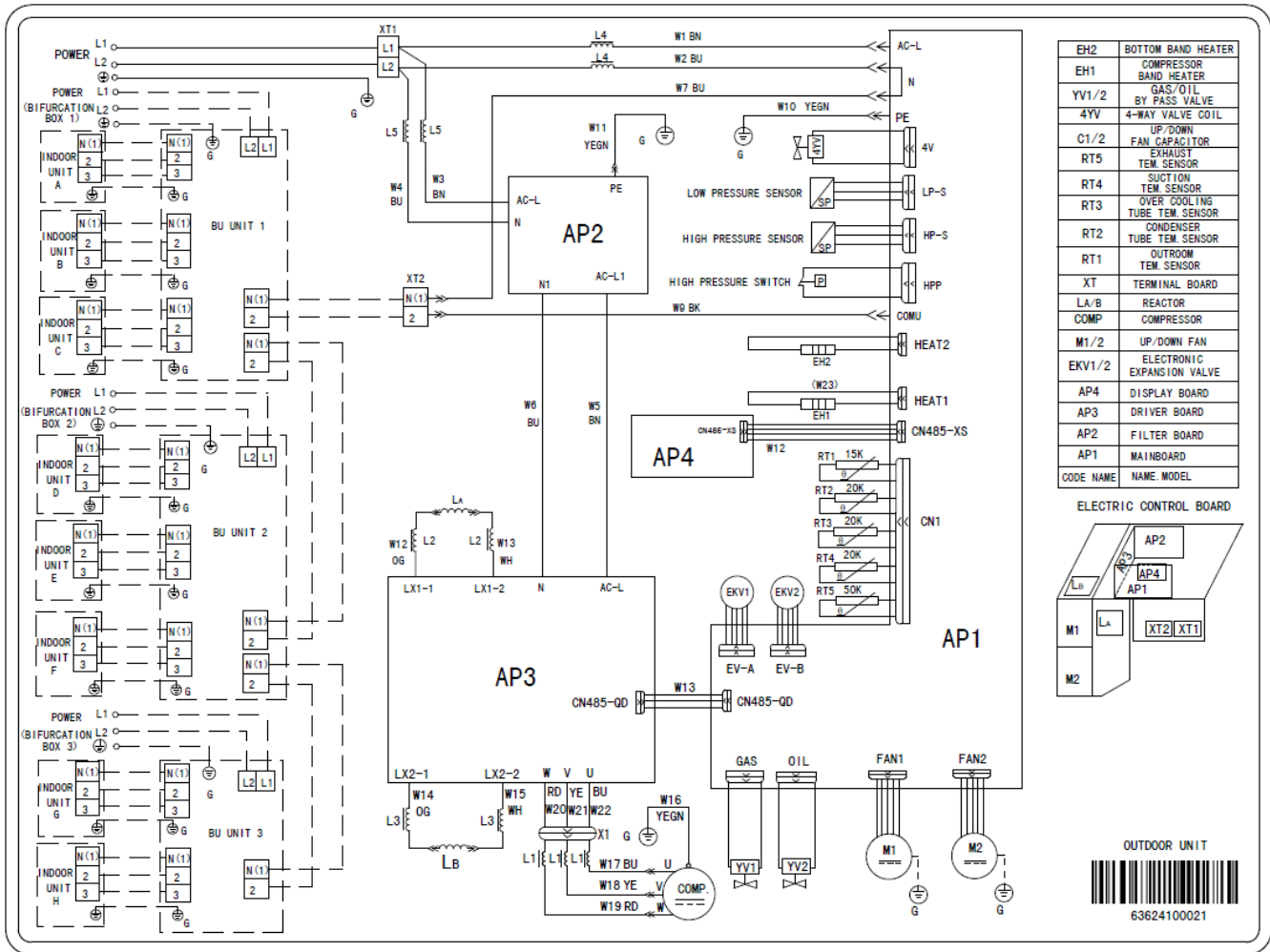


Fig. 36 – Wiring Diagram Outdoor 48k and 56k

GUIDE SPECIFICATIONS

HORIZONTAL DISCHARGE OUTDOOR UNITS

Size Range: 1 ½, 2 ¼, 3 and 4 Ton Nominal Cooling and Heating Capacity

Carrier Model Number: 38GJQ

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:

The coil is constructed of aluminum blue hydrophilic pre-coated 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 gage 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 maybe 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 and blue hydrophilic pre-coated for enhanced wet-ability. 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.

GUIDE SPECIFICATIONS

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 maybe 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 and blue hydrophilic pre-coated for enhanced wet-ability. 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

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.

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 blue hydrophilic pre-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.

GUIDE SPECIFICATIONS

INDOOR DUCTED STYLE DUCTLESS 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 and blue hydrophilic pre-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.

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 and blue hydrophilic pre-coated for enhanced wet-ability. 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. De humidification 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.

