MSZ-FH High Performance Wall-Mount Heat Pump Systems

Due to continuing improvement, above specification may be subject to change without notice.

1. INDOOR UNITS

- MSZ-FH09NA
- MSZ-FH12NA
- MSZ-FH15NA

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2. OUTDOOR UNITS

- MUZ-FH09NA
- MUZ-FH12NA
- MUZ-FH15NA

3. SYSTEM

- Highly energy-efficient system that features 100% (FE-09/18) heating capacity at 5˚F, 92% (FE-12) heating capacity at 5˚F, 82% at -4˚F, and 62% at -13˚F
- Standard Hybrid Catechin Prefilter and anti-allergy enzyme filter for high air-purification abilities
- Updated sleek, compact indoor unit design
- “Powerful mode” function permits system to temporarily run at a lower/higher temperature with an increased fan speed, which quickly brings the room to the optimum comfort level
- Integrated i-see Sensor (MSZ-FH09/12) automatically adjusts the unit’s operation according to the temperature differences detected between the floor and the intake air, ensuring optimum comfort and energy usage
- Base heater is available as an option
- Auto fan speed control: Quiet, Low, Medium, High, and Super High
- Hand-held Wireless Remote Controller
- Advanced microprocessor control
- Auto restart following a power outage
- Catalyst Deodorizing Filter
- Limited warranty: five years parts and seven years compressor

MSZ-FH09NA MSZ-FH12NA MSZ-FH15NA

Indoor model			MSZ-FH09NA	MSZ-FH12NA	MSZ-FH15NA
Power supply	V, phase, Hz		208/230 , 1 , 60		
Disconnect switch		A	15		
Min. circuit ampacity		A	1.0		
Fan motor		F.L.A	0.67		
Airflow Super high - High - Med. - Low - Quiet	COOL Dry (Wet)	CFM	381- 304 - 221 - 167 - 137 (328 - 261 - 190 - 143 - 117)	398 - 304 - 221 - 167 - 137 (342 - 261 - 190 - 143 - 117)	411 - 355 - 304 - 262 - 225 (354 - 305 - 261 - 225 - 194)
	HEAT Dry	CFM	437 - 325 - 225 - 167 - 140	454 - 325 - 225 - 167 - 140	497 - 394 - 317 - 254 - 201
Moisture removal		pt./h	0.6	1.9	4.0
Sound level Super high - High - Med. - Low - Quiet	Cooling	dB(A)	40 - 36 - 29 - 23 - 20	41 - 36 - 29 - 24 - 21	44 - 39 - 35 - 31 - 27
	Heating	dB(A)	42 - 36 - 29 - 24 - 20	42 - 36 - 29 - 24 - 21	46 - 39 - 34 - 29 - 25
Cond. drain connection O.D.		in.	5/8		
Dimensions	W	in.	36-7/16		
	D		9-3/16		
	H		12 (+ 11/16)		
Weight		lb.	29		
External finish			Munsell 1.0Y 9.2/0.2		
Remote controller			Wireless type		
Control voltage (by built-in transformer)			12 - 24 VDC		

NOTE: Test conditions are based on AHRI 210/240.

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3-1. SPECIFICATIONS

MUZ-FH09NA MUZ-FH12NA MUZ-FH15NA

Outdoor unit model			MUZ-FH09NA	MUZ-FH12NA	MUZ-FH15NA
Capacity Rated (Minimum~Maximum)	Cooling ❄1	Btu/h	9,000 (1,700 ~ 12,000)	12,000 (2,500 ~ 13,600)	15,000 (6,450 ~ 19,000)
	Heating 47 ❄1	Btu/h	10,900 (1,600 ~ 18,000)	13,600 (3,700 ~ 21,000)	18,000 (5,150 ~ 24,000)
Capacity Rated (Maximum)	Heating 17 ❄2	Btu/h	6,700 (12,200)	8,000(13,600)	11,000 (18,000)
Power consumption Rated (Minimum~Maximum)	Cooling ❄1	W	560 (100 ~ 1,000)	870 (170 ~ 1,150)	1,200 (410 ~ 2,200)
	Heating 47 ❄1	W	710 (110 ~ 1,470)	950 (280 ~ 2,300)	1,300 (430 ~ 3,360)
Power consumption Rated (Maximum)	Heating 17 ❄2	W	600 (1,440)	720 (1,900)	1,020 (2,480)
EER ❄1 [SEER] ❄3	Cooling		16.1 [30.5]	13.8 [26.1]	12.5 [22.0]
HSPF IV ❄4	Heating		13.5	12.5	12.0
COP	Heating ❄1		4.50	4.20	4.06
Power supply	V , phase , Hz		208/230, 1 , 60		
Max. fuse size (time delay)		A	15		20
Min. circuit ampacity		A	11		16
Fan motor		F.L.A	0.50		0.93
Compressor	Model		SNB092FQAMT	SNB140FQUMT	SNB172FQKMT
		R.L.A	8.2		12.0
		L.R.A	10.3		15.0
	Refrigeration oil L (Model)		0.35 (FV50S)	0.35 (FV50S)	0.40 (FV50S)
Refrigerant control			Linear expansion valve		
Sound level ❄1	Cooling	dB(A)	48	49	51
	Heating	dB(A)	49	51	55
Defrost method			Reverse cycle		
Dimensions	W	in.	31-1/2		33-1/16
	D	in.	11-1/4		13
	H	in.	21-5/8		34-5/8
Weight		lb.	81	83	124
External finish			Munsell 3Y 7.8/1.1		
Remote controller			Wireless type		
Control voltage (by built-in transformer)		VDC	12 - 24		
Refrigerant piping			Not supplied		
Refrigerant pipe size (Min. wall thickness)	Liquid	in.	1/4 (0.0315)		
	Gas	in.	3/8 (0.0315)		1/2 (0.0315)
Connection method	Indoor		Flared		
	Outdoor		Flared		
Between the indoor & outdoor units	Height difference	ft.	40		50
	Piping length	ft.	65		100
Refrigerant charge (R410A)			2 lb. 9 oz.		3 lb. 7 oz.

NOTE: Test conditions are based on AHRI 210/240.

❄1: Rating conditions (Cooling) — Indoor: 80˚FDB, 67˚FWB, Outdoor: 95˚FDB, (75˚FWB)
(Heating) — Indoor: 70˚FDB, 60˚FWB, Outdoor: 47˚FDB, 43˚FWB

❄2: (Heating) — Indoor: 70˚FDB, 60˚FWB, Outdoor: 17˚FDB, 15˚FWB

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Efficiency Ratings

Outdoor Unit	Indoor Unit	SEER	EER	HSPF	COP @ 47° F	COP @ 17° F	Energy Star
WALL-MOUNT HEAT PUMP							
MUZ-FH09NA	MSZ-FH09NA	30.5	16.1	10	4.5	3.33	Yes
MUZ-FH12NA	MSZ-FH12NA	26.1	13.8	10.5	4.2	3.34	Yes
MUZ-FH15NA	MSZ-FH15NA	22.0	12.5	10.3	4.06	3.19	Yes
Note: Efficiency values based on AHRI 210/240 test method.							

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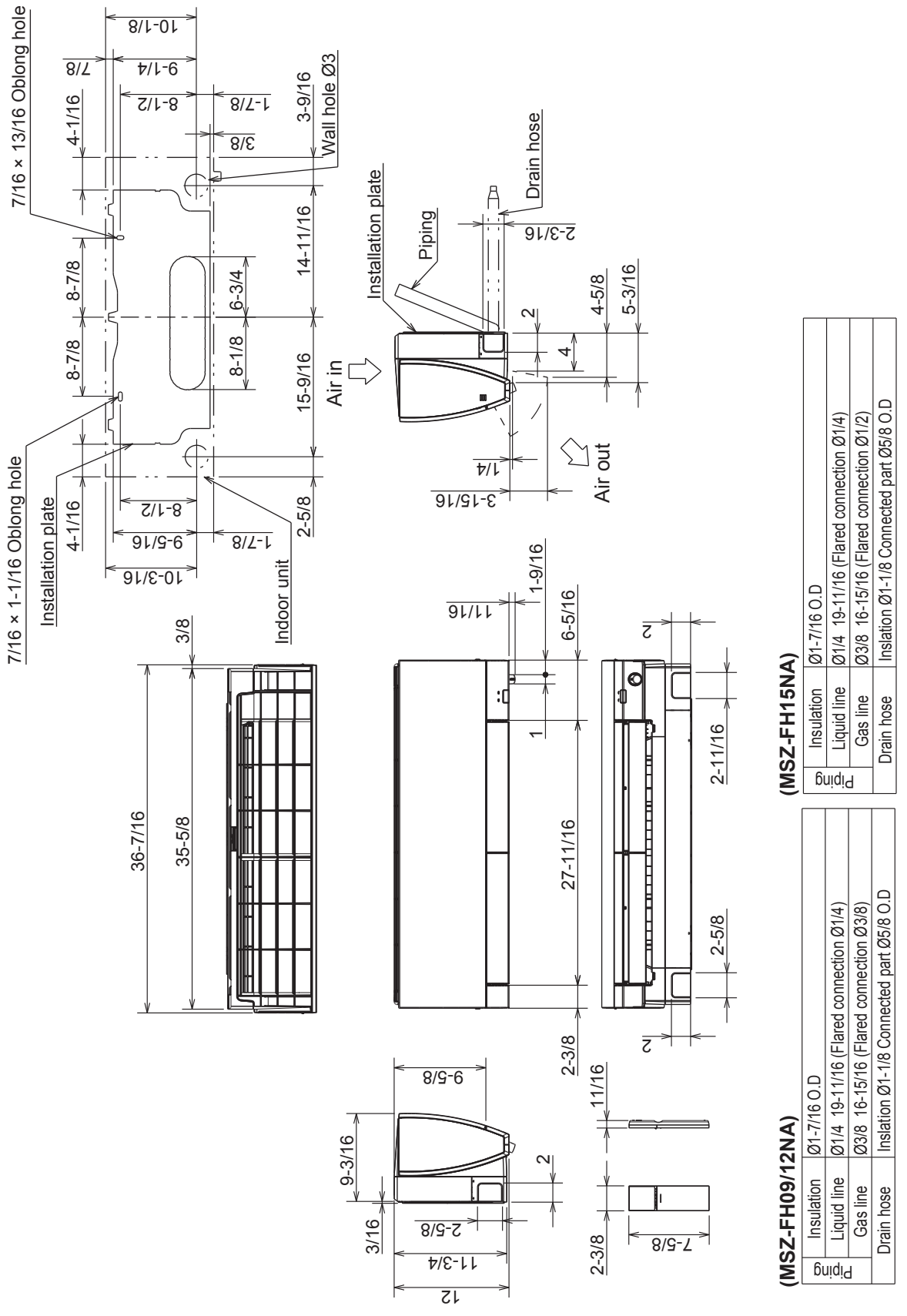
3-2. EXTERNAL DIMENSIONS

MSZ-FH09NA MSZ-FH12NA MSZ-FH15NA

Unit: inch



(MSZ-FH09/12NA)

Piping		
Insulation	Ø1-7/16 O.D	
Liquid line	Ø1/4	19-11/16 (Flared connection Ø1/4)
Gas line	Ø3/8	16-15/16 (Flared connection Ø3/8)
Drain hose	Inslation Ø1-1/8 Connected part Ø5/8 O.D	

(MSZ-FH15NA)

Piping		
Insulation	Ø1-7/16 O.D	
Liquid line	Ø1/4	19-11/16 (Flared connection Ø1/4)
Gas line	Ø3/8	16-15/16 (Flared connection Ø1/2)
Drain hose	Inslation Ø1-1/8 Connected part Ø5/8 O.D	

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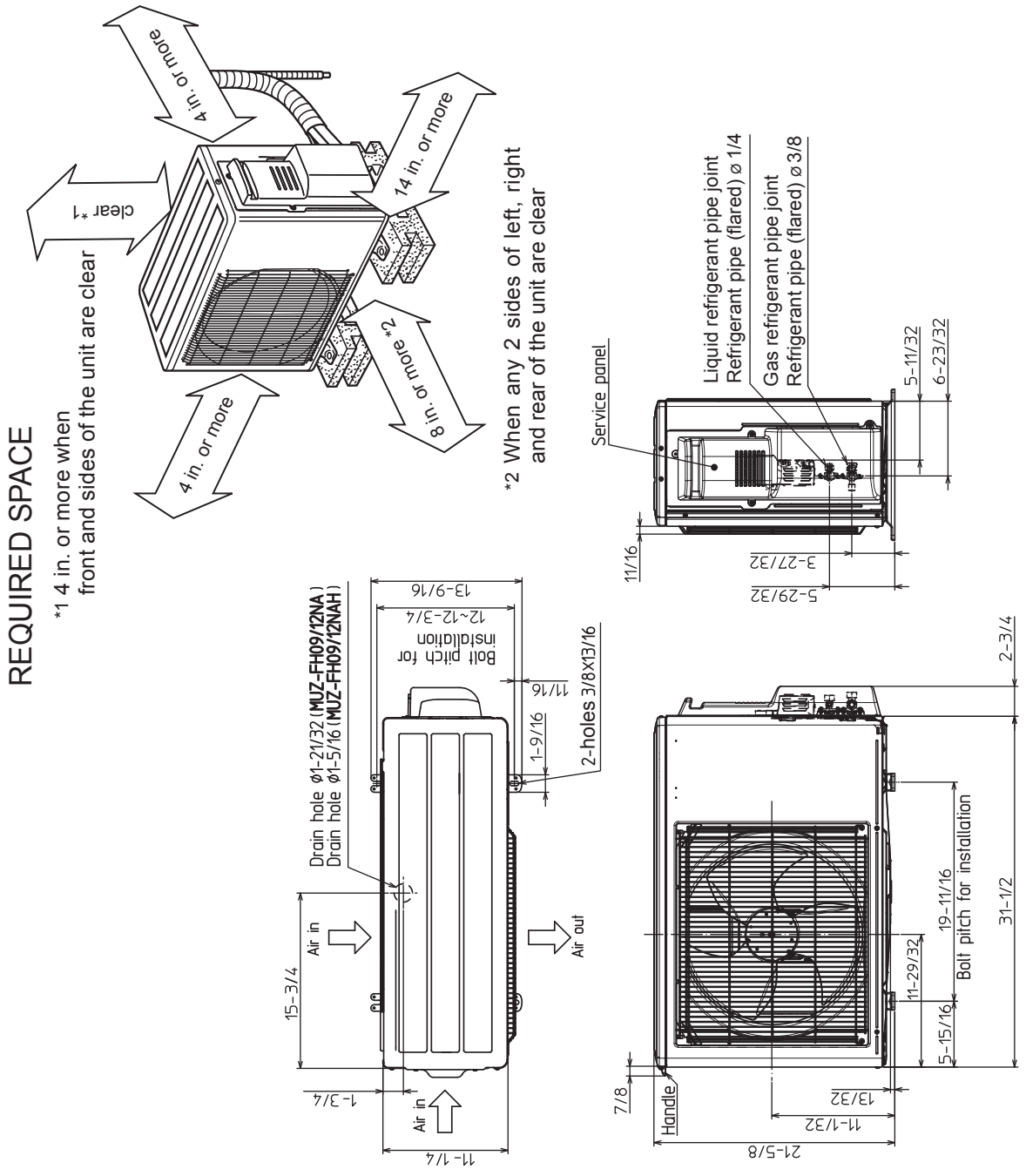
3-2. EXTERNAL DIMENSIONS

MUZ-FH09NA MUZ-FH12NA

Unit: inch



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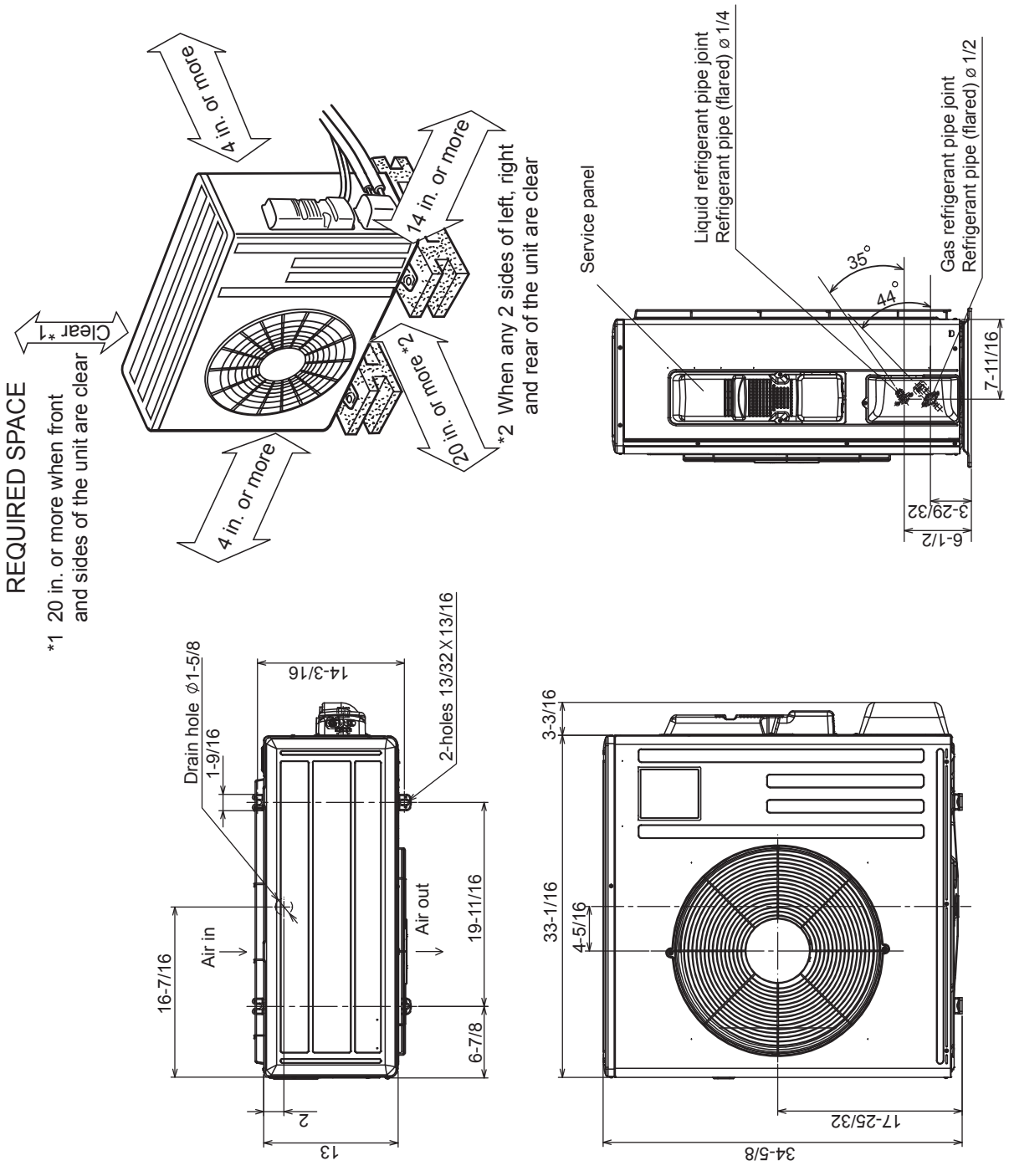
3-2. EXTERNAL DIMENSIONS

MUZ-FH15NA

Unit: inch (mm)



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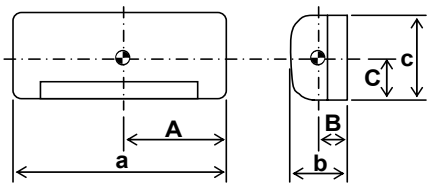
3-3. CENTER OF GRAVITY

MSZ-FH09NA MSZ-FH12NA MSZ-FH15NA

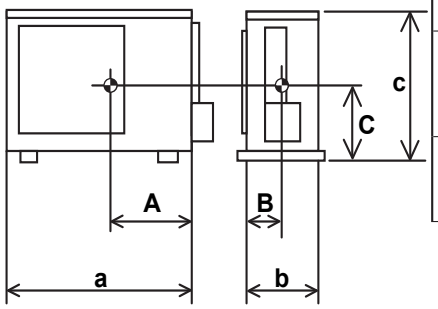
Unit: inch(mm)



Model name	A	B	C	a	b	c
MSZ-FH09NA MSZ-FH12NA MSZ-FH15NA	15-15/64 (387)	4-1/4 (108)	6-7/16 (155)	36-7/16 (925)	9-3/16 (234)	12 (305)

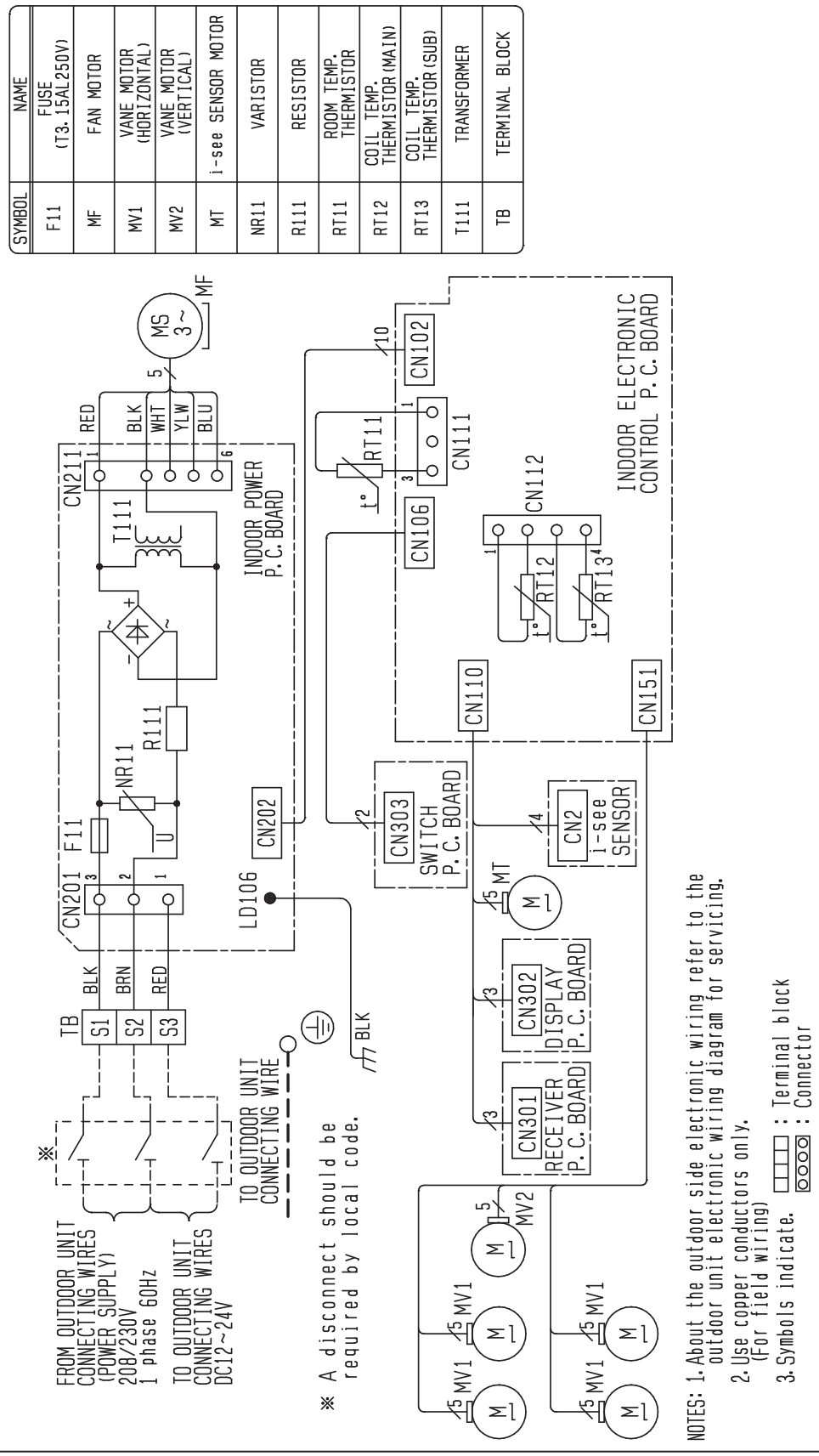
MUZ-FH09NA MUZ-FH12NA MUZ-FH15NA

Unit: inch(mm)



Model name	A	B	C	a	b	c
MUZ-FH09NA MUZ-FH12NA	11-1/16 (280)	5-9/16 (140)	9-1/2 (240)	31-1/2 (800)	11-1/4 (285)	21-5/8 (550)
MUZ-FH15NA	12-5/8 (320)	6-7/16 (163)	15-3/4 (400)	33-1/16 (840)	13 (330)	34-11/16 (880)

MSZ-FH09NA MSZ-FH12NA MSZ-FH15NA



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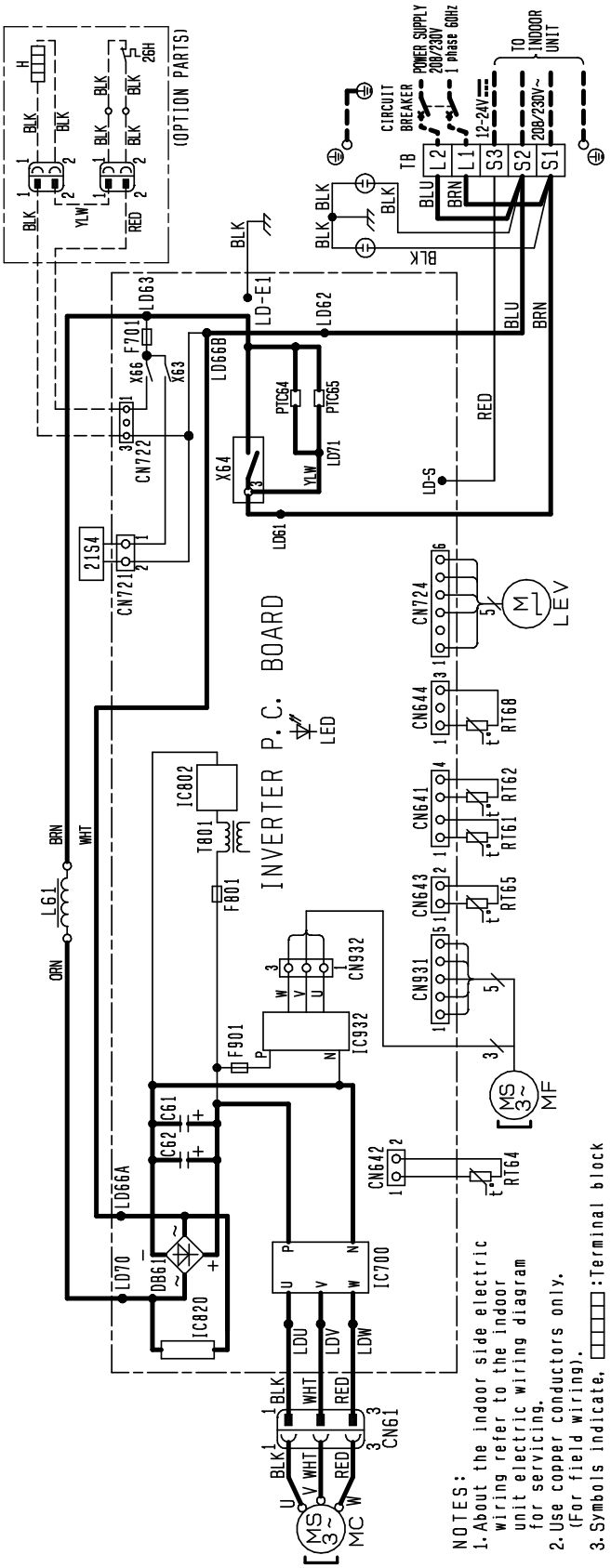
MUZ-FH09NA



NOTES:
1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring).
3. Symbols indicate, □□□□□:Terminal block

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C61, C62	SMOOTHING CAPACITOR	L61	REACTOR	RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR.
DB61	DIODE MODULE	MC	COMPRESSOR		
F701, F801, F901	FUSE (T3.15AL250V)	MF	FAN MOTOR	TB	TERMINAL BLOCK
H	DEFROST HEATER (OPTION PARTS)	PTG64, PTG65	CIRCUIT PROTECTION	T801	TRANSFORMER
IC700, IC820, IC932	POWER MODULE	RT61	DEFROST THERMISTOR	X63, X64, X66	RELAY
IC802	POWER DEVICE	RT62	DISCHARGE TEMP. THERMISTOR	21S4	REVERSING VALVE COIL
LED	LED	RT64	FIN TEMP. THERMISTOR	26H	HEATER PROTECTOR (OPTION PARTS)
LEV	EXPANSION VALVE COIL	RT65	AMBIENT TEMP. THERMISTOR		

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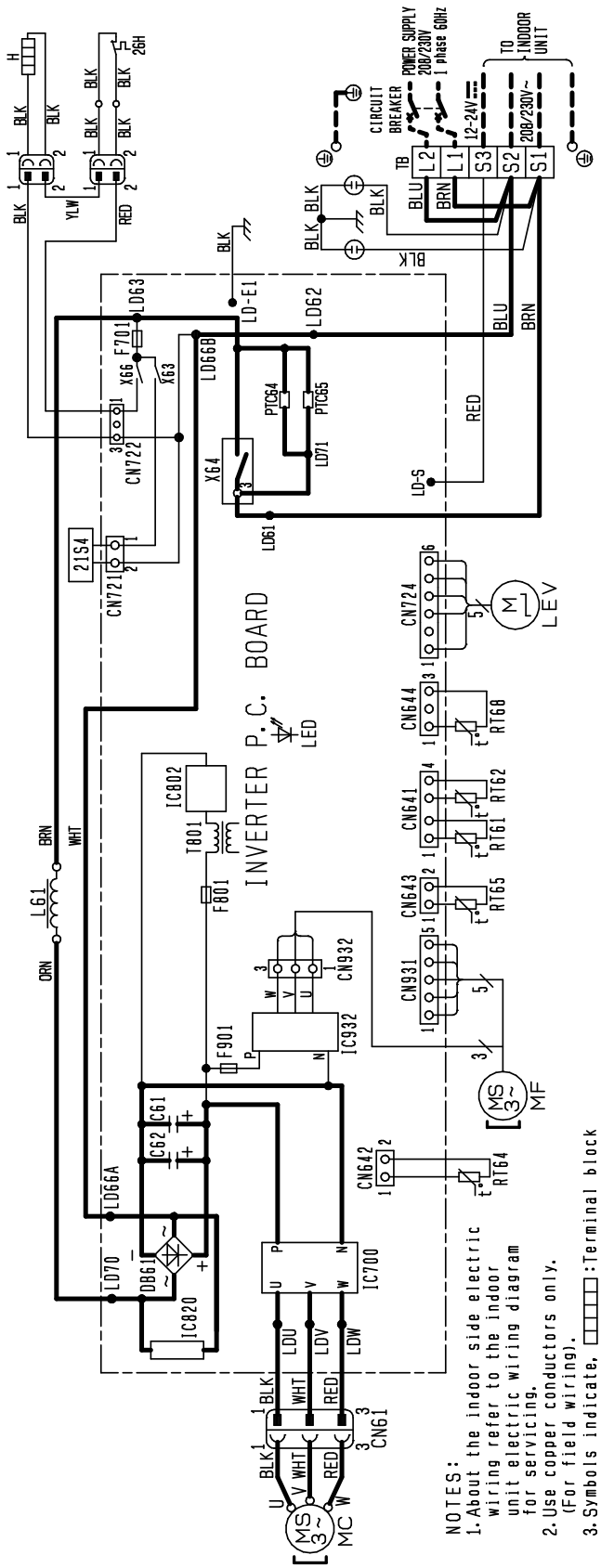
MUZ-FH12NA



NOTES:
1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring).
3. Symbols indicate, □□□□□:Terminal block

SYMBOL	NAME
C61.C62	SMOOTHING CAPACITOR
DB61	DIODE MODULE
F701.F801.F901	FUSE (T3.15AL250V)
H	DEFROST HEATER
IC700.IC820.IC932	POWER MODULE
IC802	POWER DEVICE
LED	LED
LEV	EXPANSION VALVE COIL

SYMBOL	NAME
L61	REACTOR
MC	COMPRESSOR
MF	FAN MOTOR
PTC64, PTC65	CIRCUIT PROTECTION
RT61	DEFROST THERMISTOR
RT62	DISCHARGE TEMP. THERMISTOR
RT64	FIN TEMP. THERMISTOR
RT65	AMBIENT TEMP. THERMISTOR

SYMBOL	NAME
RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR.
TB	TERMINAL BLOCK
T801	TRANSFORMER
X63, X64, X66	RELAY
21S4	REVERSING VALVE COIL
26H	HEATER PROTECTOR

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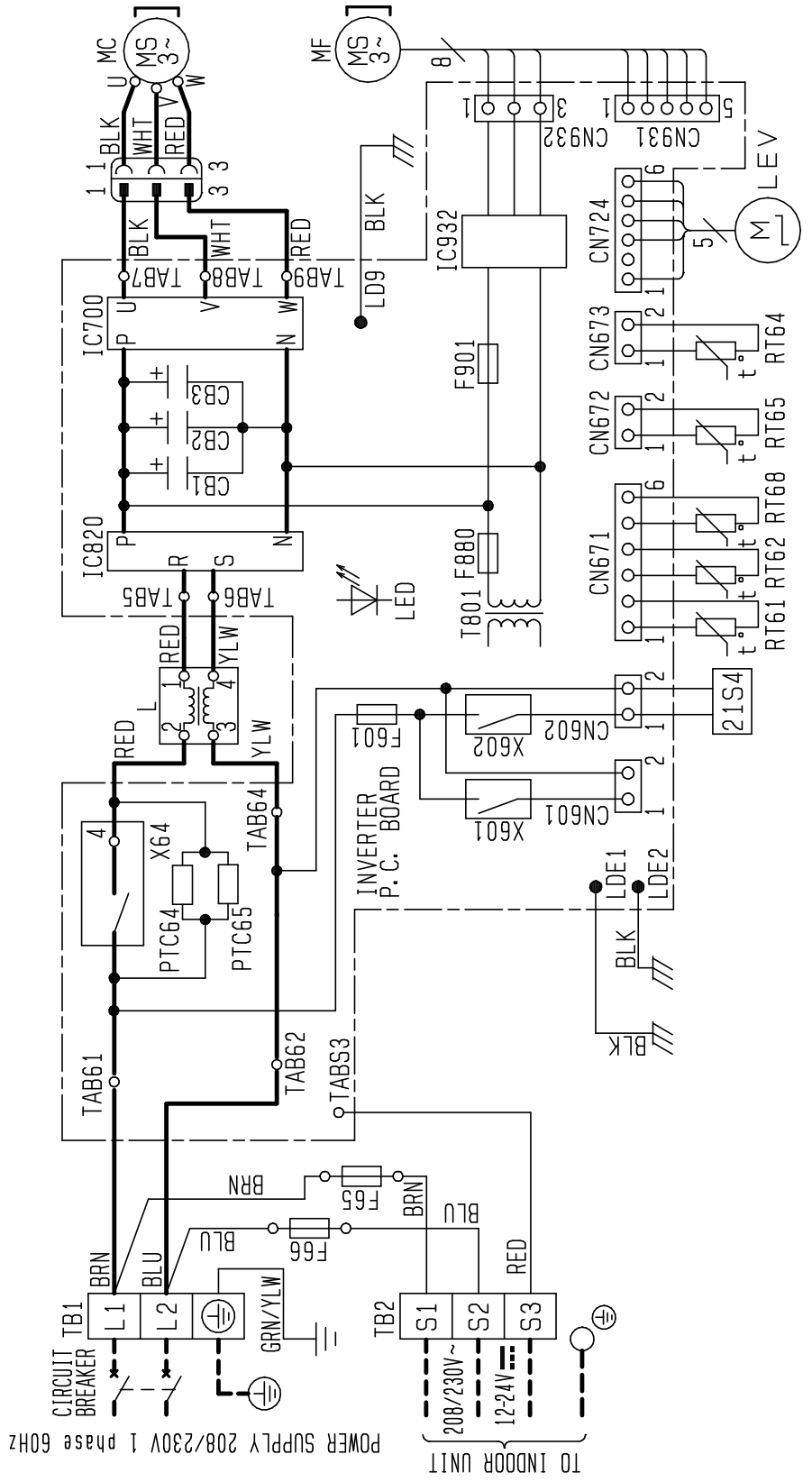
MUZ-FH15NA



SYMBOL	NAME
CB1~3	SMOOTHING CAPACITOR
F65, F66	FUSE (T6.3AL250V)
F601	FUSE (T3.15AL250V)
F880	FUSE (T3.15AL250V)
F901	FUSE (T3.15AL250V)
IC700	IGBT Module
IC820	DIODE Module

SYMBOL	NAME
IC932	IGBT Module
L	REACTOR
LED	LED
LEV	EXPANSION VALVE COIL
MC	COMPRESSOR
MF	FAN MOTOR
PTC64	CIRCUIT PROTECTION

SYMBOL	NAME
PTC65	CIRCUIT PROTECTION
RT61	DEFROST THERMISTOR
RT62	DISCHARGE TEMP. THERMISTOR
RT64	FIN TEMP. THERMISTOR
RT65	AMBIENT TEMP. THERMISTOR
RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR

SYMBOL	NAME
TB1, TB2	TERMINAL BLOCK
T801	TRANSFORMER
X601	RELAY
X602	RELAY
X64	RELAY
21S4	REVERSING VALVE COIL

NOTES 1. About the indoor side electric wiring, refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only (for field wiring). 3. Symbols indicate, □□□ : Terminal block

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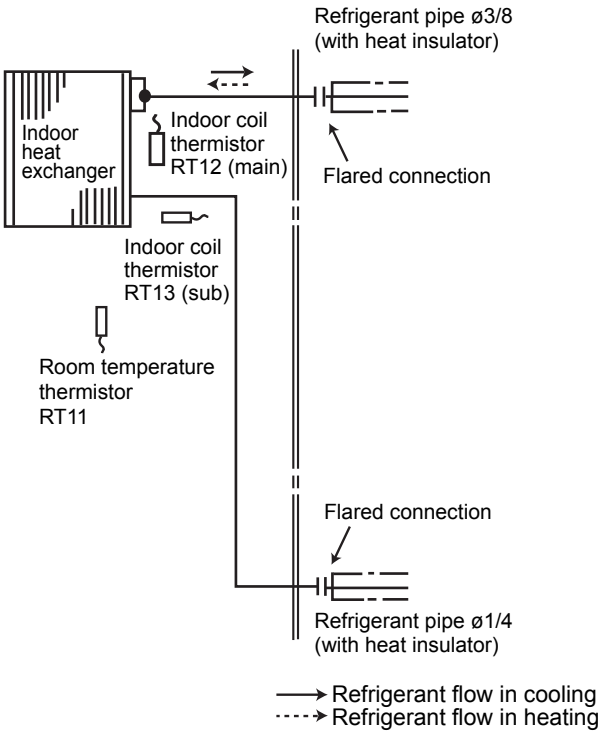
3-5. REFRIGERANT SYSTEM DIAGRAMS

MSZ-FH09NA MSZ-FH12NA

Unit: inch (mm)



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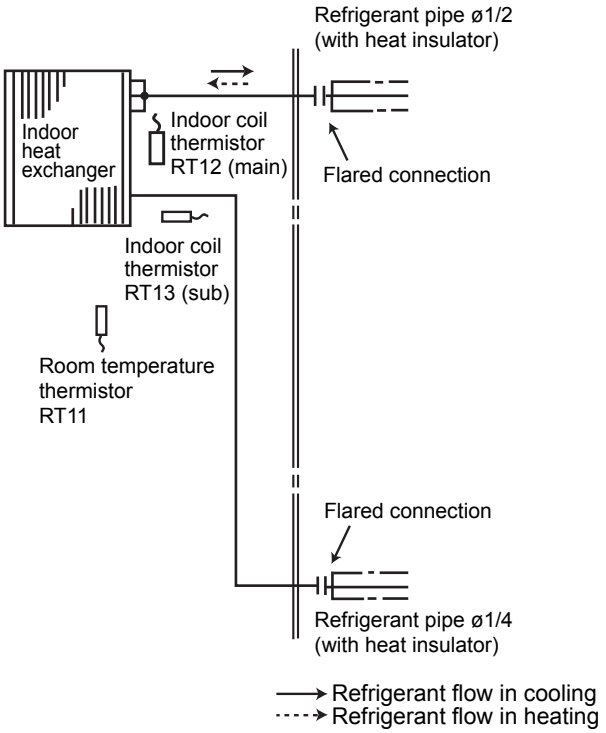

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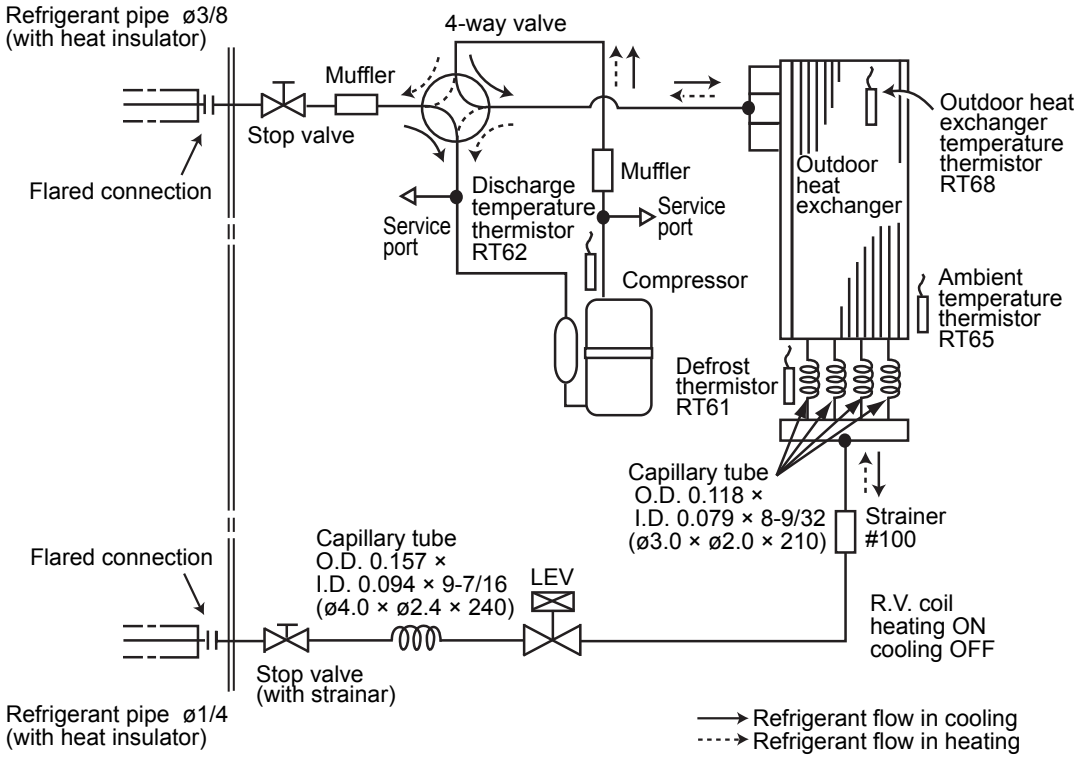
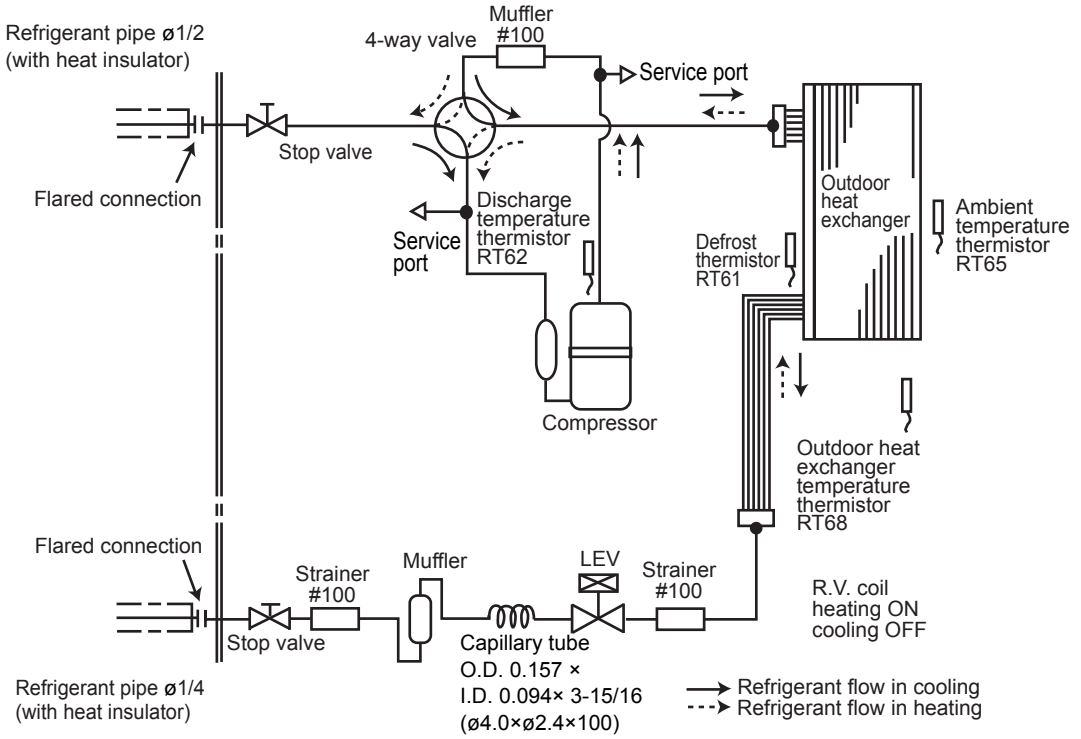
3-5. REFRIGERANT SYSTEM DIAGRAMS

MUZ-FH09NA MUZ-FH12NA

Unit: inch (mm)



MUZ-FH15NA



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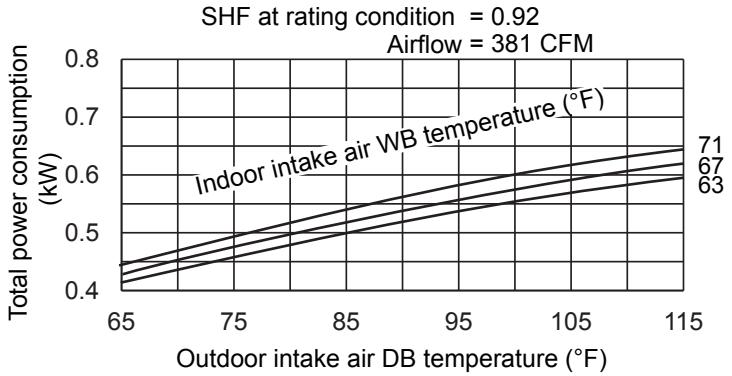
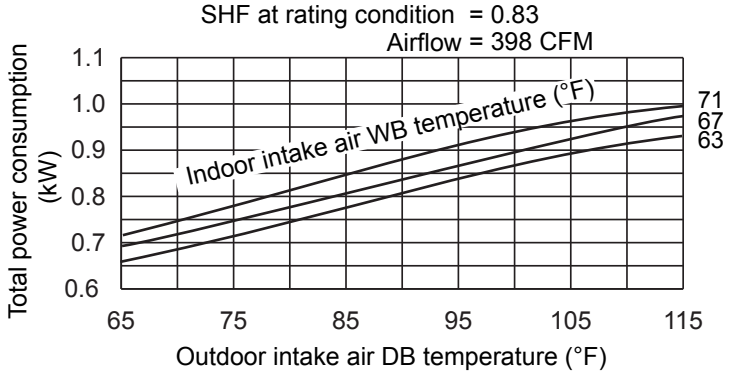
3-6. CAPACITY CORRECTION CURVE BY TEMPERATURE

(1) Cooling

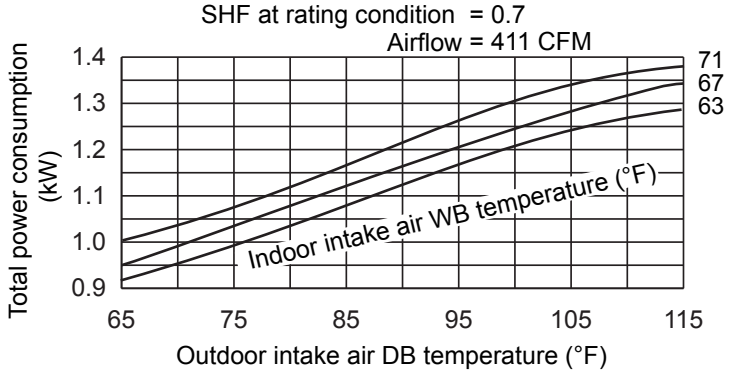
MUZ-FH09NA



MUZ-FH12NA

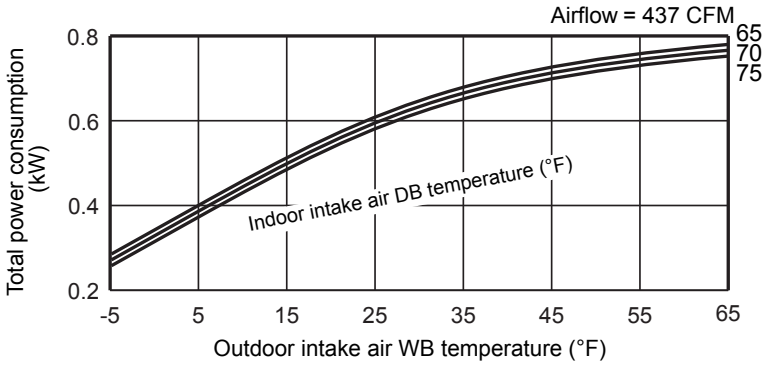


MUZ-FH15NA

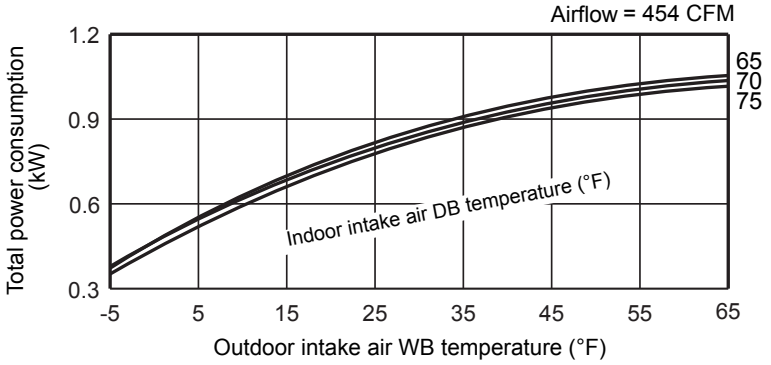


(2) Heating

MUZ-FH09NA



MUZ-FH12NA



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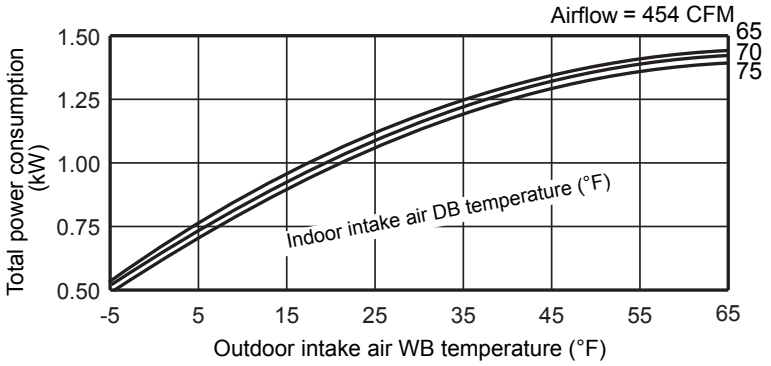


3-7. CAPACITY CORRECTION TABLE BY TEMPERATURE

(1) Cooling Capacity

Model	Indoor air	Outdoor intake air DB temperature (˚F)														
	IWB	75			85			95			105			115		
	(˚F)	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC
MUZ-FH09NA	71	11.0	8.7	0.50	10.3	8.1	0.55	9.7	7.6	0.59	9.0	7.1	0.62	8.3	6.5	0.64
	67	10.4	9.6	0.47	9.7	8.9	0.52	9.0	8.3	0.56	8.4	7.7	0.59	7.7	7.1	0.62
	63	9.8	10.3	0.45	9.1	9.6	0.50	8.5	8.9	0.53	7.7	8.1	0.57	7.0	7.4	0.59
MUZ-FH12NA	71	14.7	10.2	0.77	13.7	9.6	0.85	12.9	9.0	0.91	12.0	8.4	0.96	11.0	7.7	1.00
	67	13.9	11.6	0.73	13.0	10.8	0.80	12.0	10.0	0.87	11.2	9.3	0.92	10.3	8.5	0.97
	63	13.1	12.6	0.70	12.1	11.7	0.77	11.3	10.9	0.83	10.3	9.9	0.89	9.4	9.0	0.92
MUZ-FH15NA	71	18.4	10.4	1.07	17.2	9.7	1.17	16.1	9.1	1.26	15.0	8.5	1.33	13.8	7.8	1.38
	67	17.4	12.2	1.01	16.2	11.3	1.11	15.0	10.5	1.20	14.0	9.8	1.27	12.8	9.0	1.33
	63	16.4	13.6	0.96	15.2	12.6	1.06	14.1	11.8	1.15	12.8	10.7	1.22	11.7	9.8	1.27

NOTE: 1. IWB : Intake air wet-bulb temperature TC : Total Capacity (x10^3 Btu/h)
SHC : Sensible Heat Capacity (x10^3 Btu/h) TPC : Total Power Consumption (kW)
2. SHC is based on 80˚F of indoor Intake air DB temperature.

(2) Heating Capacity

Model	Indoor air	Outdoor intake air WB temperature (˚F)													
	IDB	5		15		25		35		43		45		55	
	(˚F)	TC	TPC	TC	TPC	TC	TPC	TC	TPC	TC	TPC	TC	TPC	TC	TPC
MUZ-FH09NA	75	4.8	0.42	6.3	0.53	7.9	0.62	9.4	0.69	10.6	0.73	11.0	0.74	12.4	0.77
	70	5.2	0.40	6.7	0.51	8.2	0.61	9.6	0.67	10.9	0.71	11.2	0.72	12.7	0.75
	65	5.5	0.38	6.9	0.49	8.6	0.59	10.0	0.66	11.2	0.69	11.6	0.70	13.0	0.74
MUZ-FH12NA	75	6.0	0.56	7.9	0.71	9.9	0.83	11.8	0.93	13.3	0.97	13.7	0.99	15.5	1.03
	70	6.5	0.54	8.4	0.68	10.2	0.81	12.0	0.90	13.6	0.95	14.0	0.97	15.8	1.01
	65	6.8	0.51	8.6	0.66	10.7	0.78	12.4	0.88	14.0	0.93	14.4	0.94	16.2	0.99
MUZ-FH15NA	75	7.9	0.77	10.4	0.97	13.1	1.14	15.6	1.27	17.6	1.33	18.1	1.35	20.5	1.40
	70	8.6	0.73	11.1	0.94	13.5	1.11	15.9	1.24	18.0	1.30	18.5	1.33	21.0	1.38
	65	9.0	0.70	11.3	0.90	14.1	1.07	16.5	1.20	18.5	1.27	19.1	1.29	21.4	1.35

NOTE: 1. IDB : Intake air dry-bulb temperature
TC : Total Capacity (x10^3 Btu/h) TPC : Total Power Consumption (kW)
2. Above data is for heating operation without any frost.

How to operate with fixed operational frequency of the compressor.
1. Press the EMERGENCY OPERATION switch on the front of the indoor unit, and select either EMERGENCY COOL mode or EMERGENCY HEAT mode before starting to operate the air conditioner.
2. The compressor starts with operational frequency.
3. The fan speed of the indoor unit is High.
4. This operation continues for 30 minutes.
5. In order to release this operation, press the EMERGENCY OPERATION switch twice or once, or press any button on the remote controller.

3-7. CAPACITY CORRECTION TABLE BY TEMPERATURE

(3) M-Series Cooling Correction

	70	77	81	86	95	104	115
60	1.11	1.06	1.01	0.97	0.91	0.83	0.76
63	1.16	1.10	1.06	1.02	0.96	0.88	0.81
64	1.18	1.13	1.08	1.04	0.98	0.90	0.83
68	1.23	1.18	1.14	1.10	1.03	0.96	0.89
72	1.28	1.23	1.20	1.15	1.09	1.02	0.95
75	1.34	1.29	1.26	1.22	1.15	1.08	1.02
79	1.38	1.34	1.32	1.28	1.21	1.14	1.07

(4) M-Series Defrost Correction

Outdoor intake temperature W.B. [° F]	43	39	36	32	28	25	21	18	14
Outdoor intake temperature W.B. [° C]	6	4	2	0	-2	-4	-6	-8	-10
Correction factor	1.00	0.80	0.82	0.84	0.87	0.90	0.93	0.96	1.00

(5) M-Series Heating Correction

		Outdoor W.B. [° F]							
		-13	-4	5	14	23	32	41	50
	Indoor								
	EAT DB								
MUZ-FH15NA	60	0.78	0.91	1.07	1.07	1.07	1.07	1.07	1.07
MUZ-FH12NA	60	0.61	0.80	0.98	1.07	1.07	1.07	1.07	1.07
MUZ-FH09NA	60	0.66	0.88	1.07	1.07	1.07	1.07	1.07	1.07
Interpolated Data Between 60 and 65 Indoor EAT DB data sets									
MUZ-FH15NA	63	0.76	0.89	1.05	1.05	1.05	1.05	1.05	1.05
MUZ-FH12NA	63	0.60	0.78	0.96	1.05	1.05	1.05	1.05	1.05
MUZ-FH09NA	63	0.65	0.86	1.05	1.05	1.05	1.05	1.05	1.05
MUZ-FH15NA	65	0.75	0.88	1.03	1.03	1.03	1.03	1.03	1.03
MUZ-FH12NA	65	0.59	0.77	0.95	1.03	1.03	1.03	1.03	1.03
MUZ-FH09NA	65	0.64	0.85	1.03	1.03	1.03	1.03	1.03	1.03
MUZ-FH15NA	70	0.73	0.85	1.00	1.00	1.00	1.00	1.00	1.00
MUZ-FH12NA	70	0.58	0.75	0.92	1.00	1.00	1.00	1.00	1.00
MUZ-FH09NA	70	0.62	0.82	1.00	1.00	1.00	1.00	1.00	1.00
MUZ-FH15NA	75	0.70	0.82	0.96	0.96	0.96	0.96	0.96	0.96
MUZ-FH12NA	75	0.55	0.72	0.89	0.96	0.96	0.96	0.96	0.96
MUZ-FH09NA	75	0.60	0.79	0.96	0.96	0.96	0.96	0.96	0.96
MUZ-FH15NA	80	0.67	0.79	0.93	0.93	0.93	0.93	0.93	0.93
MUZ-FH12NA	80	0.53	0.69	0.85	0.93	0.93	0.93	0.93	0.93
MUZ-FH09NA	80	0.57	0.76	0.93	0.93	0.93	0.93	0.93	0.93

3-8. CAPACITY CORRECTION CURVE BY REFRIGERANT PIPING LENGTH

DUE TO CONTINUING RESEARCH AND PRODUCT IMPROVEMENT, SPECIFICATIONS AND DATA ARE STILL UNDER REVIEW

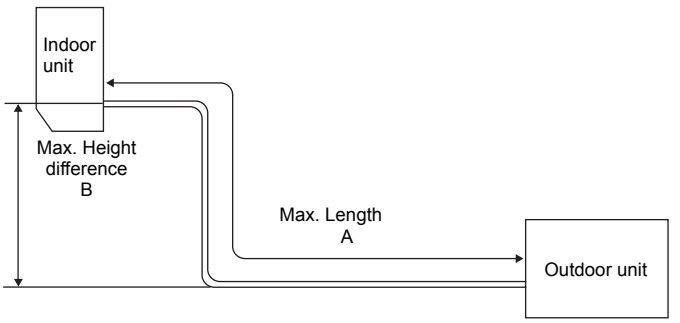
3-9. CAPACITY CORRECTION TABLE BY REFRIGERANT PIPING LENGTH

(1) Cooling Capacity Correction

Refrigerant piping length (one way: ft.)				
	25 (std.)	40	65	100
MUZ-FH09NA **MUZ-FH12NA**	1.0	0.954	0.878	-
MUZ-FH15NA				0.771

(2) Maximum Refrigerant Piping Length & Maximum Height Difference

Model	Refrigerant piping: ft.		Piping size O.D: in.	
	Max. Length A	Max. Height difference B	Gas	Liquid
MUZ-FH09NA **MUZ-FH12NA**	65	40	3/8	1/4
MUZ-FH15NA	100	50	1/2	1/4



Due to continuing improvement, above specification may be subject to change without notice.

3-10. CHARGE CALCULATIONS

(1) Additional Refrigerant Charge (R410A: oz.)

NOTE: Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

Model	Outdoor unit precharged	Refrigerant piping length (one way): ft.					
		25	30	40	50	60	65
MUZ-FH09NA	2 lb. 9 oz.	0	1.08	3.24	5.40	7.56	8.64

Calculation: X oz. = 1.08/5 oz./ft. × (Refrigerant piping length (ft.) - 25)

NOTE: Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

Model	Outdoor unit precharged	Refrigerant piping length (one way): ft.					
		25	30	40	50	60	65
MUZ-FH12NA	2 lb. 9 oz.	0	1.62	4.86	8.10	11.34	12.96

Calculation: X oz. = 1.62/5 oz./ft. × (Refrigerant piping length (ft.) - 25)

NOTE: Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

Model	Outdoor unit precharged	Refrigerant piping length (one way): ft.								
		25	30	40	50	60	70	80	90	100
MUZ-FH15NA	3 lb. 7 oz.	0	1.08	3.24	5.40	7.56	9.72	11.88	14.04	16.20

Calculation: X oz. = 1.08/5 oz./ft. × (Refrigerant piping length (ft.) - 25)

Outlet Air Speed And Coverage

Model name	Mode	Function	Airflow (CFM)	Air speed (ft./s.)	Coverage (ft.)
MSZ-FH09NA	HEAT	Dry	437	19.5	29.8
	COOL	Dry	381	17.0	26.1
		Wet	328	14.6	22.5
MSZ-FH12NA	HEAT	Dry	454	20.3	31.0
	COOL	Dry	398	17.8	27.3
		Wet	342	15.3	23.5
MSZ-FH15NA	HEAT	Dry	497	22.2	33.8
	COOL	Dry	411	18.3	28.0
		Wet	354	15.7	24.1

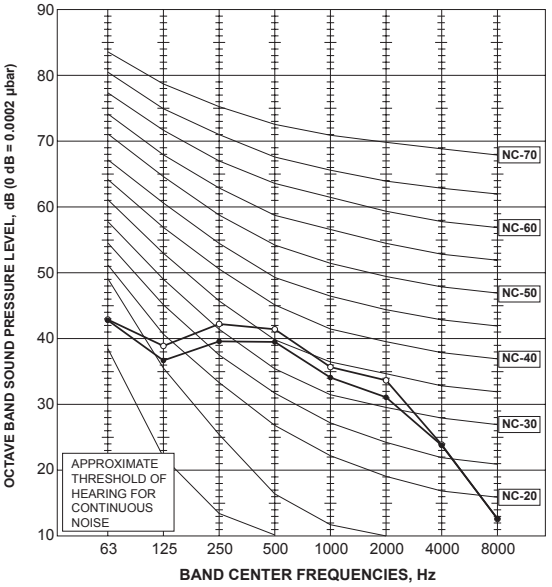
- The air coverage is the figure up to the position where the air speed is 1 ft./s., when air is blown out horizontally from the unit properly at the High speed position.
  The coverage should be used only as a general guideline since it varies according to the size of the room and furniture arranged inside the room.

3-12. SOUND PRESSURE LEVELS

(1) Indoor Unit

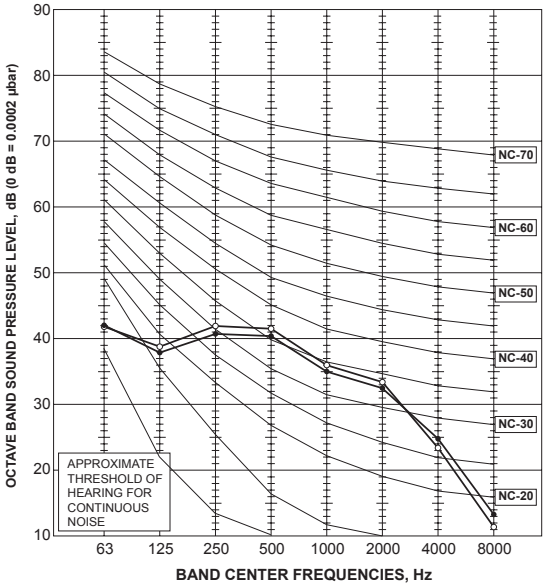
MSZ-FH09NA

NOTCH	SPL(dB(A))	LINE
COOLING(SHi)	40	●——●
HEATING(SHi)	42	○——○



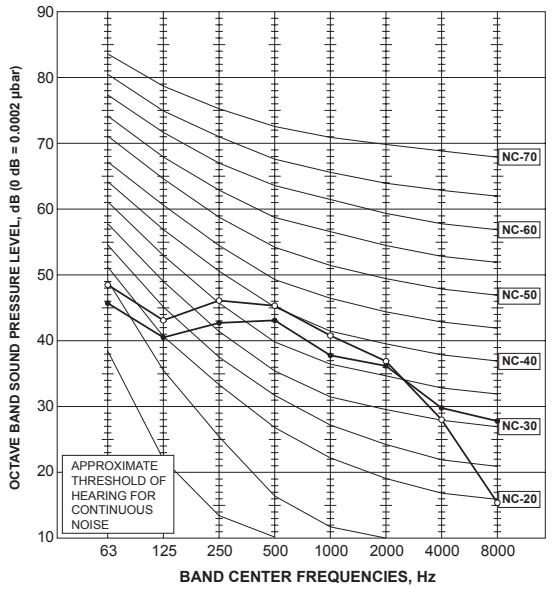
MSZ-FH12NA

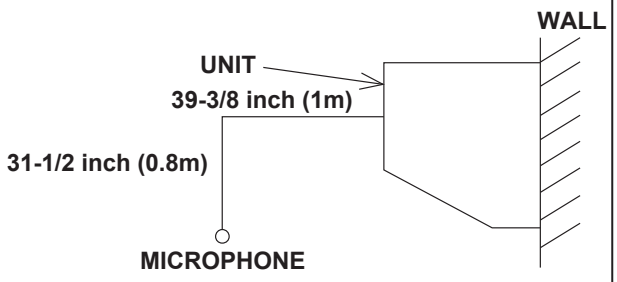
NOTCH	SPL(dB(A))	LINE
COOLING(SHi)	41	●——●
HEATING(SHi)	42	○——○



MSZ-FH15NA

NOTCH	SPL(dB(A))	LINE
COOLING(SHi)	44	●——●
HEATING(SHi)	46	○——○





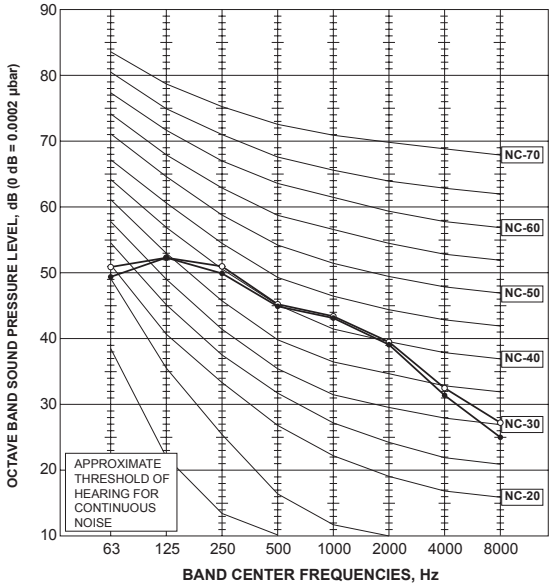
NOTE:The sound level is measured in an anechoic room where echoes are few,when compressor stops.The sound may be bigger than displayed level under actual installation condition by surrounding echoes.The sound level can be higher by about 2 dB than the displayed level during cooling and heating operation.

Due to continuing improvement, above specification may be subject to change without notice.

(2) Outdoor Unit

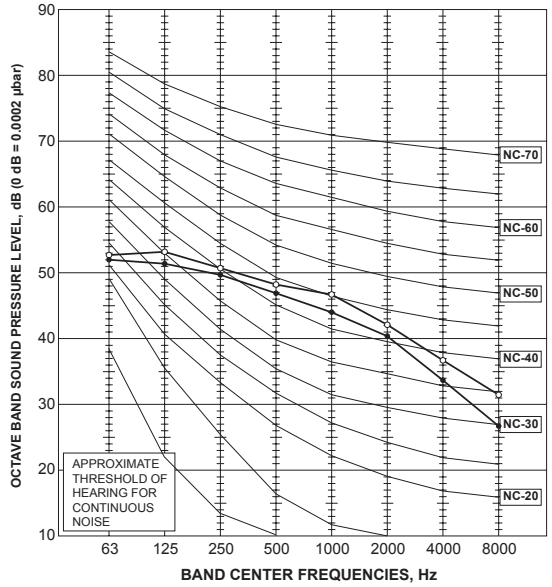
MUZ-FH09NA

NOTCH	SPL(dB(A))	LINE
COOLING	48	●—●
HEATING	49	○—○



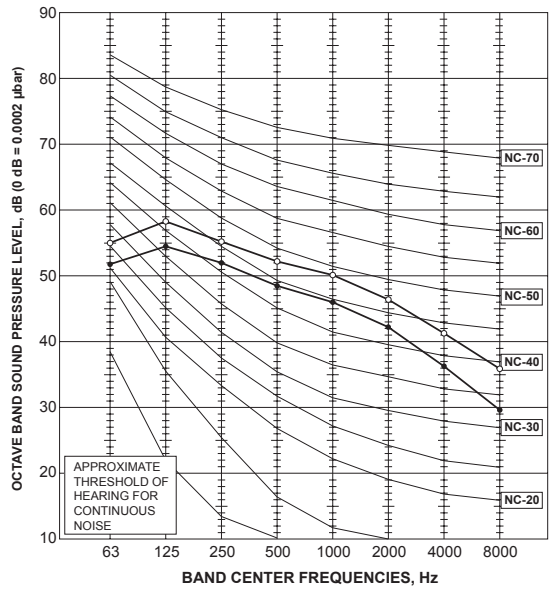
MUZ-FH12NA

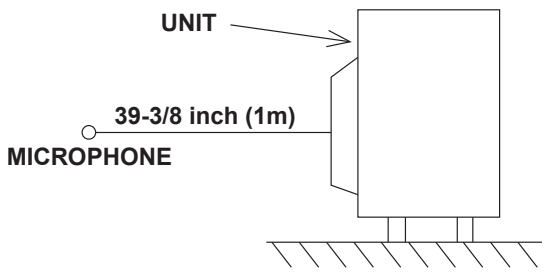
NOTCH	SPL(dB(A))	LINE
COOLING	49	●—●
HEATING	51	○—○



MUZ-FH15NA

NOTCH	SPL(dB(A))	LINE
COOLING	51	●—●
HEATING	55	○—○



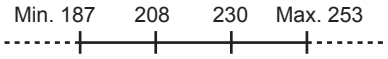


Due to continuing improvement, above specification may be subject to change without notice.

3-13. STANDARD OPERATION RANGE

OPERATING RANGE

(A) POWER SUPPLY

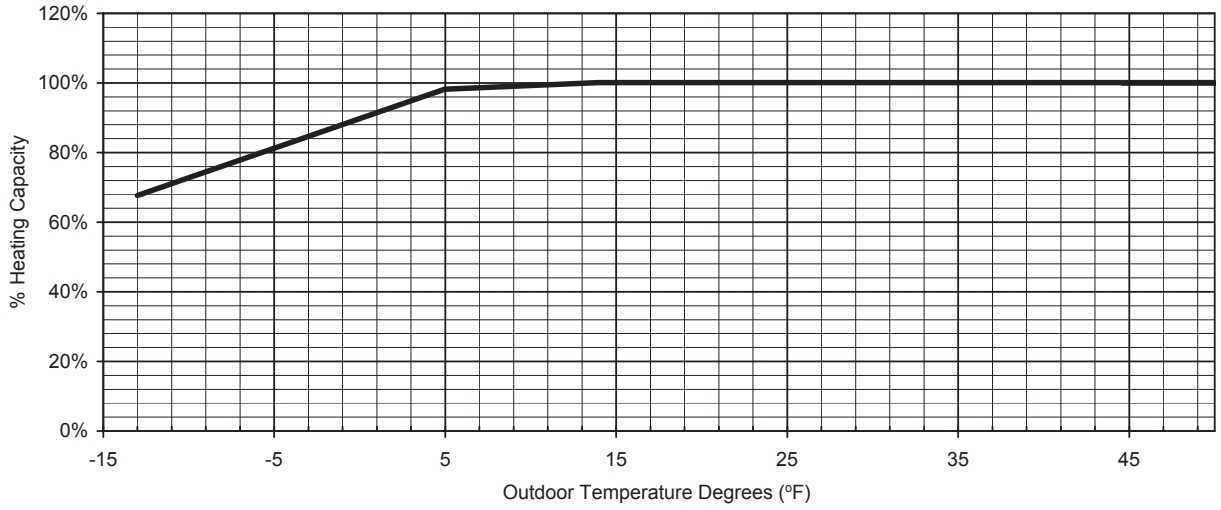
	Rated voltage	Guaranteed voltage (V)
Outdoor unit	208/230 V 1 phase 60 Hz	

(B) OPERATION

Mode	Condition	Intake air temperature (°F)			
		Indoor		Outdoor	
		DB	WB	DB	WB
Cooling	Standard temperature	80	67	95	—
	Maximum temperature	90	73	115	—
	Minimum temperature	67	57	14	—
	Maximum humidity	78 %		—	
Heating	Standard temperature	70	60	47	43
	Maximum temperature	80	67	75	65
	Minimum temperature	70	60	-13	-14

3-14. MAXIMUM HEATING CAPACITY IN LOW AMBIENT TEMPERATURE

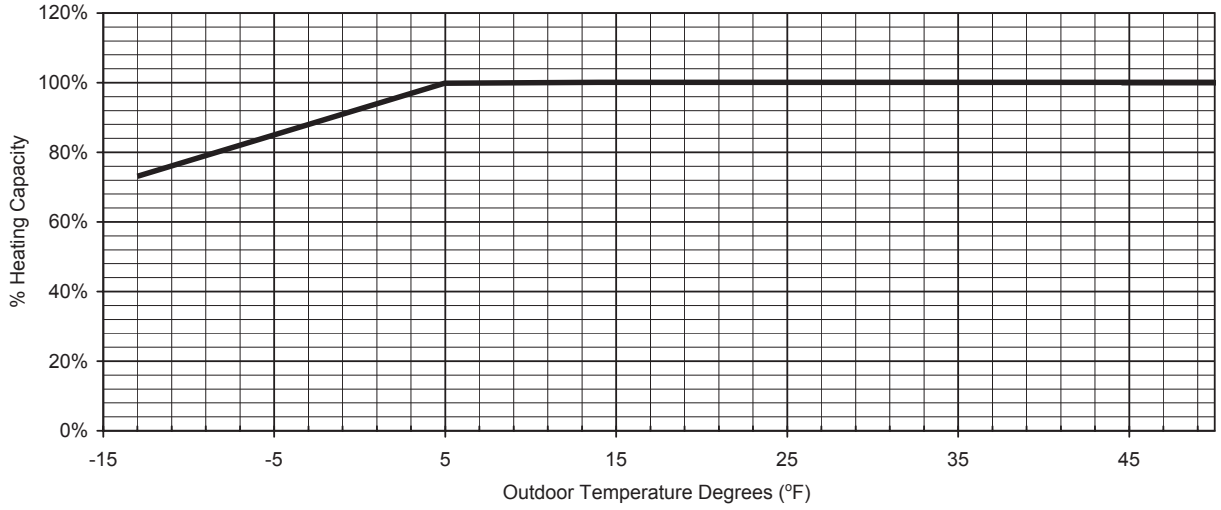
MUZ-FH09NA



HEATING CAPACITY

Outdoor Temperature Degrees (°F)	-13.0	-4.0	5.0	14.0	23.0	32.0	41.0	50.0	69.8
% Heating Capacity	67%	83%	98%	100%	100%	100%	100%	100%	100%

MUZ-FH12NA



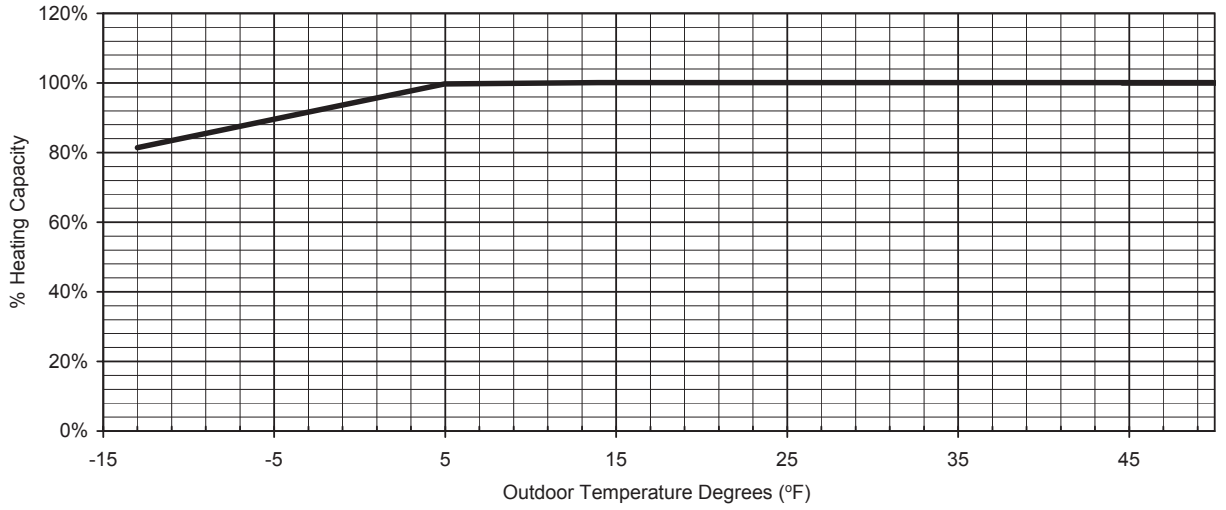
HEATING CAPACITY

Outdoor Temperature Degrees (°F)	-13.0	-4.0	5.0	14.0	23.0	32.0	41.0	50.0	69.8
% Heating Capacity	73%	86%	100%	100%	100%	100%	100%	100%	100%

Due to continuing improvement, above specification may be subject to change without notice.

3-14. MAXIMUM HEATING CAPACITY IN LOW AMBIENT TEMPERATURE

MUZ-FH15NA



HEATING CAPACITY

Outdoor Temperature Degrees (°F)	-13.0	-4.0	5.0	14.0	23.0	32.0	41.0	50.0	69.8
% Heating Capacity	81%	90%	100%	100%	100%	100%	100%	100%	100%

3-15. ACCESSORIES

(1) Indoor Unit

Part Number	Descriptions	Applicable model
C13-103	Blue Diamond Sensor Extension Cable - 15 Ft.	All Models
DPLS1	Drain Pan Level Sensor/Control for indoor unit shut off to prevent Drain Pan Overflow	
MAC-2330FT-E	Anti-Allergy Enzyme Filter (qty of 2)	
MAC-333IF-E	System Control Interface - MA, Contact terminal, and M-NET Control Adapter, Supplemental heat and humidifier adaptor	
MAC-3000FT-E	Anti-Allergy Enzyme Filter	
MCCH1	Portable Central Controller (PCC) - controls up to 16 RedLINK Zones - requires an MHK1 on each indoor unit	
MHK1	Wireless wall-mounted remote controller (MRCH1) with a signal receiver (MIFH1) and cable (MRC1) all in one kit	
MOS1	Outdoor Air Sensor - reads both outside temperature and humidity displayed on MRCH1 and MCCH1 if installed	
PAC-YT53CRAU	Simple MA Remote Controller (requires MAC-333IF-E interface for MSY/Z and MFZ indoor units)	
PAR-31MAA	Wall mounted, hard wired, multi-functional controller: used specifically for grouping (up to 16 units), twinning, lead/lag, and 7 day programmable applications (requires MAC-333IF-E interface for MSY/Z and MFZ indoor units)	
RCMKP1CB	Lockdown Bracket for wireless, hand-held, remote controllers	

(1) Indoor Unit cont.

Part Number	Descriptions		Applicable model
SI30-115	Mini-Condensation pump - 115 volt application		All Models
SI30-230	Mini-Condensation pump - 230 volt application		
TAZ-MS303	3-Pole Disconnect Switch 30 Amps 600 volts rated for interupting power supply at/near indoor unit - fits 2 X 4 utility box		
X87-721	Advanced Blue Diamond Mini-Condensation pump w/ Resevoir & Sensor - 208/230 volt application		
MLS143812T-15	Diamondback Linesets	1/4 x 3/8 x 15' / 1/2" Twin-Tube Insulation	FH09,12
MLS143812T-30		1/4 x 3/8 x 30' / 1/2" Twin-Tube Insulation	
MLS143812T-50		1/4 x 3/8 x 50' / 1/2" Twin-Tube Insulation	
MLS143812T-65		1/4 x 3/8 x 65' / 1/2" Twin-Tube Insulation	
MPLS385812T-10		3/8 x 5/8 x 10' / 1/2" Twin-Tube Insulation	FH15
MPLS385812T-15		3/8 x 5/8 x 15' / 1/2" Twin-Tube Insulation	
MPLS385812T-30		3/8 x 5/8 x 30' / 1/2" Twin-Tube Insulation	
MPLS385812T-50		3/8 x 5/8 x 50' / 1/2" Twin-Tube Insulation	
MPLS385812T-65		3/8 x 5/8 x 65' / 1/2" Twin-Tube Insulation	
MPLS385812T-100		3/8 x 5/8 x 100' / 1/2" Twin-Tube Insulation	

(2) Outdoor Unit

Part Number	Descriptions	Applicable model
CWMB1	4 piece (1 pair) condensing unit wall mounting brackets - painted steel	All Models
DSD-400N	Outdoor Unit 3-1/4 inch Mounting Base (Pair) - Plastic	FH15
MAC-640BH-U	Outdoor Unit Drain Pan Heater used during defrost cycle	FH09,12
MAC-642BH-U	Outdoor Unit Drain Pan Heater used during defrost cycle	FH15
MAC-851DS	Outdoor Unit Drain Socket	FH09,12
MAC-856SG	Outdoor Unit Air Outlet Guide	FH15
MAC-860DS	Outdoor drain pan socket - Provides pipe connection to route condensate out of drain pan	FH15
ULTRILITE1	Condensing Unit Mounting Pad 16” x 36” x 3”	All Models

Due to continuing improvement, above specification may be subject to change without notice.