Multi Split Systems

Models: MMSD - A/AR
MMST - A/AR
MMSH - A/AR

M4MSD - A/AR
M4MST - A/AR

MSD

MST

MSH

McQuay®
Air Conditioning

Contents

Note : Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment.

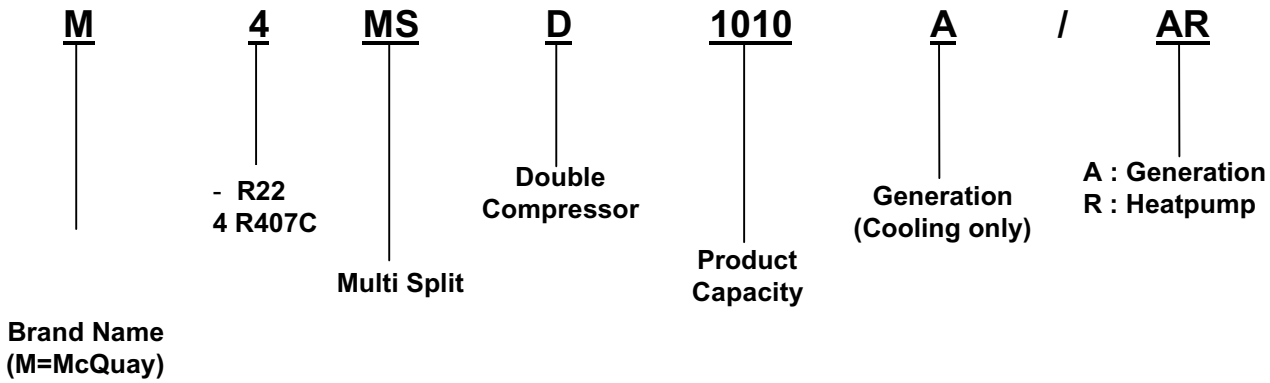
Caution: Sharp edges and coil surfaces are a potential injury hazard. Avoid contact with them.

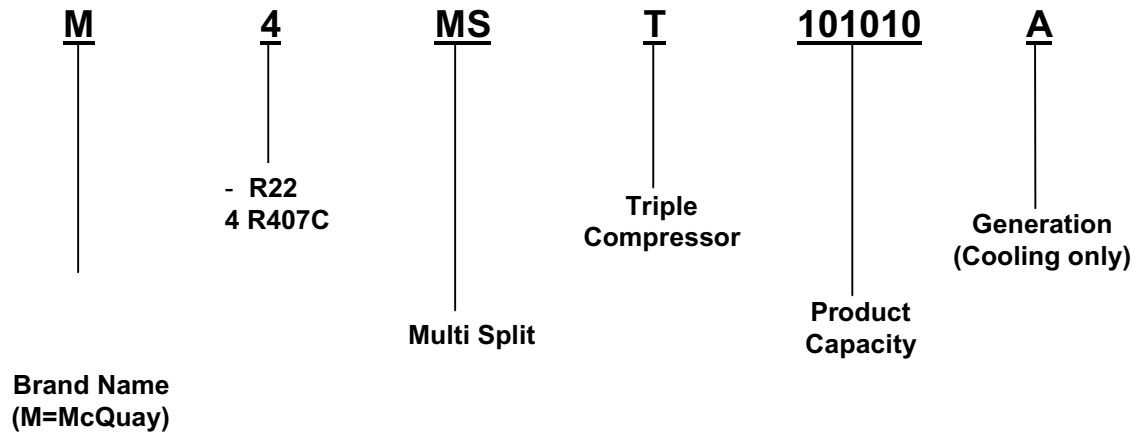
Warning : Moving machinery and electrical power hazard. May cause severe personal injury or death. Disconnect and lock off power before servicing equipment.

General Information

Product Nomenclature :

Example :

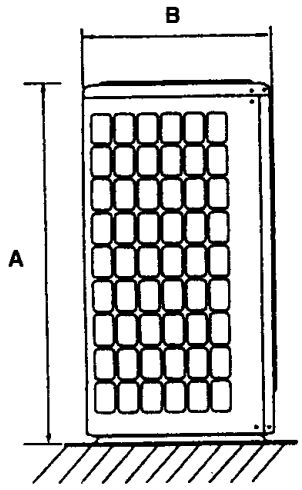




Feature

Triple S (Slim – Short – Stable)

Slim and short outdoor unit can be easily installed even in a narrow balcony and passageway, and yet have a stable profile.

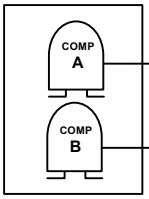
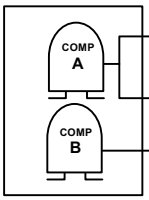
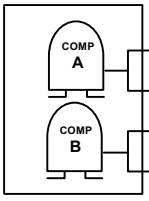


MODEL	A (cm)	B (cm)
MMSD/M4MSD 1010/1015/ 1515 A/AR	64.6	33.5
MMSD 1020A/1520A/AR/2020A	64.95	43.7
MMST/M4MST 101010A/101015A/101515A 151515A/AR MMST 101020A	64.95	43.7
MMSH 8K8A/8K66KA/66K66A 66K555A	64.6	33.5
MMSHK77A	49.4	27.5

Air Discharge

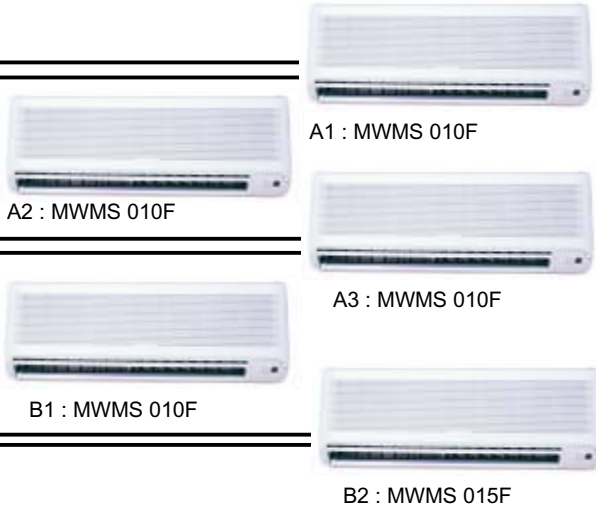
Coupling Versatility

OUTDOOR	INDOOR
 <u>Cooling :</u> MMSD/M4MSD 1010/1015/1515A <u>Heatpump :</u> MMSD/M4MSD 1010/1015/1515AR	 Cooling : MWMS 010/015F Heatpump : MWMS 010/015FR  Cooling : MWMS 010/015F Heatpump : MWMS 010/015FR
 <u>Cooling :</u> MMSD 1020/1520/2020A <u>Heatpump :</u> MMSD 1520AR	 Cooling : MWMS 010/015/020F Heatpump : MWMS 015FR  Cooling : MWMS 020F Heatpump : MWMS 020FR
 <u>Cooling :</u> MMST /M4MST 101010/101015/101515/151515A/AR MMST 101020A	 Cooling : MWMS 010/015F Heatpump : MWMS 010/015FR  Cooling : MWMS 010/015F Heatpump : MWMS 010/015FR  Cooling : MWMS 010/015/020F Heatpump : MWMS 010/015FR

OUTDOOR	INDOOR
COOLING : MMSH8K8A  Double Compressor 2-Indoor Split System 	 A : MWMS 010F  B : MWMS 010F A B
COOLING : MMSH8K66A  Double Compressor 3-Indoor Split System 	 A1 : MWMS 010F  A2 : MWMS 010F  B : MWMS 010F A1 A2 B
COOLING : MMSH66K66A  Double Compressor 4-Indoor Split System 	 A1 : MWMS 010F  A2 : MWMS 010F  B1 : MWMS 010F  B2 : MWMS 010F A1 A2 B1 B2

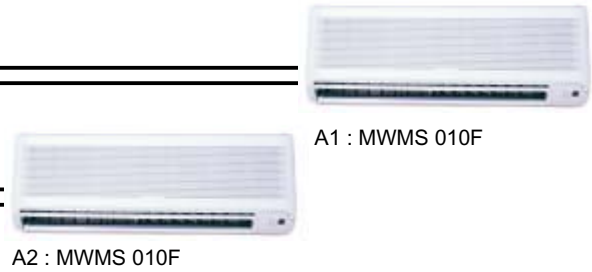
OUTDOOR	INDOOR

COOLING :
MMSH66K555A

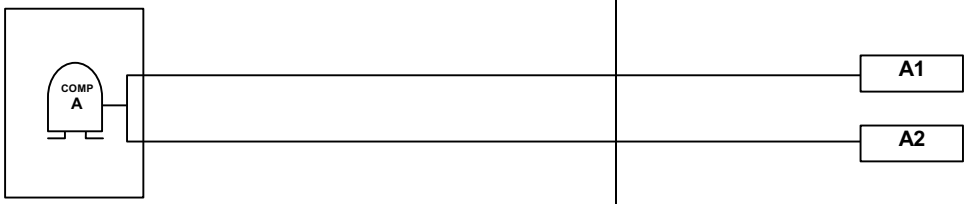


Double Compressor 5-Indoor
Split System

COOLING :
MMSHK77A



Single Compressor 2-Indoor
Split System



Specifications

MMSD SERIES (50/60Hz) – COOLING ONLY

MODEL		OUTDOOR UNIT		MMSD1010A		MMSD1015A		MMSD1515A	
		INDOOR UNIT		MWMS010F	MWMS010F	MWMS010F	MWMS015F	MWMS015F	MWMS015F
NOMINAL COOLING CAPACITY			kcal/h	2,394	2,394	2,394	3,200	3,200	3,200
			W	2,784	2,784	2,784	3,721	3,721	3,721
			Btu/h	9,500	9,500	9,500	12,700	12,700	12,700
POWER CONSUMPTION		ONE UNIT RUNNING (50/60Hz)	W	1,018 / 1,010	1,018 / 1,010	1,018 / 1,010	1,459 / 1,350	1,459 / 1,010	1,459 / 1,010
		TWO UNITS RUNNING (50/60Hz)	W	1,866 / 1,820		2,307 / 2,250		2,748 / 2,680	
RUNNING CURRENT		ONE UNIT RUNNING (50/60Hz)	A	4.50 / 4.60	4.50 / 4.60	4.50 / 4.60	6.40 / 6.20	6.40 / 6.20	6.40 / 6.20
		TWO UNITS RUNNING (50/60Hz)	A	8.30 / 8.50		10.20 / 10.50		12.10 / 12.40	
POWER SOURCE			V/Ph/Hz	220-240 / 1 / 50 / 208-230 / 1 / 60					
REFRIGERANT				R22					
INDOOR UNIT	FAN	FAN TYPE		ANTI FUNGUS CROSS FLOW FAN					
		AIR FLOW	cfm/cmm	300 / 8.50					
		FAN MOTOR		4 POLES x 10W		4 POLES x 10W		4 POLES x 10W	
		RATED INPUT POWER (50/60Hz)	W	26 / 26		26 / 26		26 /26	
		RATED RUNNING CURRENT (50/60Hz)	A	0.11/ 0.12		0.11 / 0.12		0.11/ 0.12	
		FAN MOTOR PROTECTION		BUILT IN THERMAL FUSE					
	COIL	TUBE MATERIAL		SEAMLESS COPPER (INNER GROOVED TUBE)					
		TUBE DIAMETER	mm/in	7.0 / 0.276					
		TUBE THICKNESS	mm/in	0.32 / 0.013					
		FIN MATERIAL		ALUMINIUM (HYDROPHILIC SLIT FIN)					
		FIN THICKNESS	mm/in	0.11 / 0.0043					
		ROW		2					
		FIN PER INCH		18					
		FACE AREA	m^2/ft^2	0.198 / 2.131					
	DIMENSION	HEIGHT	mm/in	290 / 11.4					
		WIDTH	mm/in	815 / 32.1					
		DEPTH	mm/in	179 / 7.0					
	WEIGHT		kg	9.5					
	SOUND LEVEL - H / M / L		dBA	38 / 32 / 29			38 / 34 / 31		
	CONTROL	ROOM TEMPERATURE		THERMOSTAT ELECTRONIC CONTROL					
		AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
		OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE		mm/in	16 / 0.63					
	AIR FILTER			ANTI FUNGUS POLYPROPYLENE FILTER					
	PACKING DIMENSION	HEIGHT	mm/in	371 / 14.6					
		WIDTH	mm/in	875 / 34.4					
		DEPTH	mm/in	269 / 10.6					
OUTDOOR UNIT	COMP.	COMPRESSOR TYPE		ROTARY COMPRESSOR					
		NUMBER		2		2		2	
		CAPACITOR (50/60Hz)	μF	30 / 30		30 / 30	30 / 30	30 / 30	
		LOCK ROTOR AMP. (50/60Hz)	A	20 / 26		20 / 26	25 / 33	25 / 33	
		PROTECTION DEVICE		OVERLOAD PROTECTION					
	FAN	FAN TYPE / DRIVE		PROPELLER / DIRECT					
		BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN					
		DIAMETER	mm/in	420 / 16.5					
		RATED RUNNING CURRENT (50/60Hz)	A	0.66 / 0.80					
		RATED OUTPUT POWER (50/60Hz)	W	80 / 80					
		RATED INPUT POWER (50/60Hz)	W	152 / 178					
	COIL	TUBE MATERIAL		SEAMLESS BARE COPPER		SEAMLESS INNER GROOVED COPPER			
		TUBE DIAMETER	mm/in	9.52 / 3/8					
		TUBE THICKNESS	mm/in	0.35 / 0.014					
		FIN MATERIAL		ALUMINIUM (SLIT FIN TYPE)					
		FIN THICKNESS	mm/in	0.127 / 0.005					
		ROW		2					
		FIN PER INCH		14		16			
		FACE AREA	m^2/ft^2	0.51 / 5.53					
	DIMENSION	HEIGHT	mm/in	646 / 25.4					
		WIDTH	mm/in	840 / 33.1					
		DEPTH	mm/in	330 / 13					
	WEIGHT		kg	62		63		64	
	SOUND LEVEL		dBA	56					
	CASING	MATERIAL		GALVANISED MILD STEEL					
		THICKNESS	mm/in	0.8 / 0.031					
		FINISHING		EPOXY - POLYESTER POWDER					
	PIPE	TYPE		FLARE VALVE					
		SIZE LIQUID	mm/in	6.35 / 1/4		6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	
		SIZE GAS	mm/in	9.52 / 3/8		9.52 / 3/8	12.7 / 1/2	12.7 / 1/2	
	PACKING DIMENSION	HEIGHT	mm/in	710 / 28.0					
		WIDTH	mm/in	982 / 38.7					
		DEPTH	mm/in	461 / 18.1					

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-94
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING – 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

M4MSD SERIES – COOLING ONLY

MODEL			**OUTDOOR UNIT**		M4MSD1010A		M4MSD1015A		M4MSD1515A	
			INDOOR UNIT		MWMS010F	MWMS010F	MWMS010F	MWMS015F	MWMS015F	MWMS015F
NOMINAL				**kcal/h**	2268	2268	2268	3024	3024	3024
COOLING				**W**	2638	2638	2638	3517	3517	3517
CAPACITY				**Btu/h**	9000	9000	9000	12000	12000	12000
POWER			**ONE UNIT RUNNING**	**W**	975	975	975	1370	1370	1370
CONSUMPTION			**TWO UNITS RUNNING**	**W**	1980		2175		2570	
RUNNING			**ONE UNIT RUNNING**	**A**	4.10	4.10	4.10	6.20	6.20	6.20
CURRENT			**TWO UNITS RUNNING**	**A**	7.50		9.60		11.60	
POWER SOURCE				**V/Ph/Hz**	220-240 / 1 / 50					
REFRIGERANT					R407C					
INDOOR UNIT	**FAN**		**FAN TYPE**		ANTI FUNGUS CROSS FLOW FAN					
			AIR FLOW	**cfm/ L/s**	300 / 142					
			FAN MOTOR		4 POLES x 10W		4 POLES x 10W	4 POLES x 12W	4 POLES x 12W	
			RATED INPUT POWER	**W**	25		25	26	26	
			RATED RUNNING CURRENT	**A**	0.11		0.11	0.11	0.11	
			FAN MOTOR PROTECTION		BUILT IN THERMAL FUSE					
	COIL	**TUBE**	**MATERIAL**		SEAMLESS COPPER (INNER GROOVED TUBE)					
			DIAMETER	**mm/in**	7.0 / 0.276					
			THICKNESS	**mm/in**	0.32 / 0.013					
		FIN	**MATERIAL**		ALUMINIUM (HYDROPHILIC SLIT FIN)					
			THICKNESS	**mm/in**	0.11 / 0.0043					
			ROW		2					
			FIN PER INCH		18					
			FACE AREA	**m^2/ft^2**	0.198 / 2.131					
		DIMENSION	**HEIGHT**	**mm/in**	290 / 11.4					
			WIDTH	**mm/in**	815 / 32.1					
			DEPTH	**mm/in**	179 / 7.0					
	WEIGHT			**kg**	9.5					
	SOUND LEVEL - H / M / L			**dBA**	38 / 34 / 30			38 / 35 / 31		
	CONTROL		**ROOM TEMPERATURE**		THERMOSTAT ELECTRONIC CONTROL					
			AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
			OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE			**mm/in**	16 / 0.63					
	AIR FILTER				ANTI FUNGUS POLYPROPYLENE FILTER					
	PACKING DIMENSION		**HEIGHT**	**mm/in**	371 / 14.6					
			WIDTH	**mm/in**	875 / 34.4					
			DEPTH	**mm/in**	269 / 10.6					
OUTDOOR UNIT	**COMP.**		**COMPRESSOR TYPE**		ROTARY COMPRESSOR					
			NUMBER		2		2		2	
			CAPACITOR	**µF**	30		30	30	30	
			LOCK ROTOR AMP.	**A**	20		20	32	32	
			PROTECTION DEVICE		OVERLOAD PROTECTION					
	FAN		**FAN TYPE / DRIVE**		PROPELLER / DIRECT					
			BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN					
			DIAMETER	**mm/in**	406 / 16					
			RATED RUNNING CURRENT	**A**	0.72					
			MOTOR OUTPUT	**W**	80					
			RATED INPUT POWER	**W**	170					
	COIL	**TUBE**	**MATERIAL**		SEAMLESS INNER GROOVED COPPER					
			DIAMETER	**mm/in**	9.52 / 3/8					
			THICKNESS	**mm/in**	0.35 / 0.014					
		FIN	**MATERIAL**		ALUMINIUM (SLIT FIN TYPE)					
			THICKNESS	**mm/in**	0.127 / 0.005					
			ROW		2					
			FIN PER INCH		16					
			FACE AREA	**m^2/ft^2**	0.51 / 5.53					
		DIMENSION	**HEIGHT**	**mm/in**	646 / 25.4					
			WIDTH	**mm/in**	840 / 33.1					
			DEPTH	**mm/in**	330 / 13					
	WEIGHT			**kg**	62		63		64	
	SOUND LEVEL			**dBA**	54					
	CASING		**MATERIAL**		GALVANISED MILD STEEL					
			THICKNESS	**mm/in**	0.8 / 0.031					
			FINISHING		EPOXY - POLYESTER POWDER					
	PIPE	**TYPE**			FLARE VALVE					
		SIZE	**LIQUID**	**mm/in**	6.35 / 1/4		6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	
			GAS	**mm/in**	9.52 / 3/8		9.52 / 3/8	12.7 / 1/2	12.7 / 1/2	
	PACKING DIMENSION		**HEIGHT**	**mm/in**	710 / 28.0					
			WIDTH	**mm/in**	982 / 38.7					
			DEPTH	**mm/in**	461 / 18.1					

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING – 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

MMSD SERIES (50/60Hz) – COOLING ONLY

MODEL		OUTDOOR UNIT		MMSD1020A		MMSD1520A		MMSD2020A
		INDOOR UNIT		MWMS010F	MWMS020F	MWMS015F	MWMS020F	MWMS020F (x2)
NOMINAL COOLING CAPACITY			kcal/h	2,394	4,536	3,200	4,536	4,536
			W	2,784	5,275	3,721	5,275	5,275
			Btu/h	9,500	18,000	12,700	18,000	18,000
POWER CONSUMPTION		ONE UNIT RUNNING (50/60Hz)	W	970 / 960	2,076 / 2,070	1,464 / 1,240	2,076 / 2,070	2,330 / 2,070
		TWO UNITS RUNNING (50/60Hz)	W	3,050 / 2,860		3,350 / 3,120		4,554 / 3,950
RUNNING CURRENT		ONE UNIT RUNNING (50/60Hz)	A	4.5 / 4.5	10.2 / 9.8	6.0 / 5.9	10.2 / 9.8	11.2 / 9.8
		TWO UNITS RUNNING (50/60Hz)	A	14.7 / 13.0		16.2 / 14.2		21.8 / 18.4
POWER SOURCE			V/Ph/Hz	220-240 / 1 / 50 / 208-230 / 1 / 60				
REFRIGERANT				R22				
INDOOR UNIT	FAN	FAN TYPE		ANTI FUNGUS CROSS FLOW FAN				
		AIR FLOW	cfm/cmm	300 / 8.50	420 / 11.90	300 / 8.50	420 / 11.90	420 / 11.90
		FAN MOTOR		4 POLES x 10W	4 POLES x 20W	4 POLES x 10W	4 POLES x 20W	4 POLES x 20W
		RATED INPUT POWER (50/60Hz)	W	26 / 26	40 / 46	26 / 26	40 / 46	40 / 46
		RATED RUNNING CURRENT (50/60Hz)	A	0.11 / 0.12	0.19 / 0.23	0.11 / 0.12	0.19 / 0.23	0.19 / 0.23
		FAN MOTOR PROTECTION		BUILT IN THERMAL FUSE				
	COIL	TUBE MATERIAL		SEAMLESS COPPER (INNER GROOVED TUBE)				
		TUBE DIAMETER	mm/in	7.0 / 0.276	9.52 / 3/8	7.0 / 0.276	9.52 / 3/8	9.52 / 3/8
		TUBE THICKNESS	mm	0.32	0.36	0.32	0.36	0.36
		FIN MATERIAL		ALUMINIUM (HYDROPHILIC SLIT FIN)				
		FIN THICKNESS	mm	0.11	0.11	0.11	0.11	0.11
		FIN ROW		2	2	2	2	2
		FIN PER INCH		18	14	18	14	14
		FACE AREA	m^2/ft^2	0.198 / 2.131	0.224 / 2.411	0.198 / 2.131	0.224 / 2.411	0.224 / 2.411
	DIMENSION	HEIGHT	mm	290	372	290	372	372
		WIDTH	mm	815	1,043	815	1,043	1,043
		DEPTH	mm	179	189	179	189	189
	WEIGHT		kg	9.5	14.5	9.5	14.5	14.5
	SOUND LEVEL - H / M / L		dBA	38 / 32 / 29	46 / 44 / 40	38 / 32 / 29	46 / 44 / 40	46 / 44 / 40
	CONTROL	ROOM TEMPERATURE		THERMOSTAT ELECTRONIC CONTROL				
		AIR DISCHARGE		LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)				
		OPERATION		LCD REMOTE CONTROL / WIRED CONTROL				
	CONDENSATE DRAIN SIZE		mm	16	20	16	20	20
	AIR FILTER			ANTI FUNGUS POLYPROPYLENE HONEYCOMB FILTER				
	PACKING DIMENSION	HEIGHT	mm	371	484	371	484	484
		WIDTH	mm	875	1,123	875	1,123	1,123
		DEPTH	mm	269	292	269	292	292
OUTDOOR UNIT	COMP.	COMPRESSOR TYPE		ROTARY COMPRESSOR				
		NUMBER		2		2		2
		CAPACITOR (50/60Hz)	µF	30 / 30	45 / 40	30 / 30	45 / 40	45 / 40
		LOCK ROTOR AMPERE (50/60Hz)	A	20 / 26	56 / 40	25 / 33	56 / 40	56 / 40
		PROTECTION DEVICE		OVERLOAD PROTECTION				
	FAN	FAN TYPE / DRIVE		PROPELLER / DIRECT				
		BLADE MATERIAL		ALUMINIUM ALLOY WITH ELECTRO - DEPOSITED EPOXY & CHROMATE				GLASS REINFORCED ACRLY STYRENE RESIN
		DIAMETER	mm/in	457.2 / 18				490 / 19.3
		RATED RUNNING CURRENT (50/60Hz)	A	0.61 / 0.82				0.93 / 1.4
		RATED OUTPUT POWER (50/60Hz)	W	50 / 92				150 / 166
		RATED INPUT POWER (50/60Hz)	W	137 / 180				214 / 291
	COIL	TUBE MATERIAL		SEAMLESS BARE COPPER TUBE				
		TUBE DIAMETER	mm/in	9.52 / 3/8				
		TUBE THICKNESS	mm/in	0.35 / 0.014				
		FIN MATERIAL		ALUMINIUM (SLIT FIN TYPE)				
		FIN THICKNESS	mm/in	0.127 / 0.005				
		FIN ROW		3		3		3
		FIN PER INCH		14		14		14
		FACE AREA	m^2/ft^2	0.586 / 6.31		0.586 / 6.31		0.586 / 6.31
	DIMENSION	HEIGHT	mm/in	631.7 / 24.9		631.7 / 24.9		631.7 / 24.9
		WIDTH	mm/in	960 / 37.8		960 / 37.8		960 / 37.8
		DEPTH	mm/in	437 / 17.2		437 / 17.2		437 / 17.2
	WEIGHT		kg	95		99		106
	SOUND LEVEL		dBA	59		59		61
	CASING	MATERIAL		GALVANISED MILD STEEL				
		THICKNESS	mm/in	1.0 - 1.2 / 0.039 - 0.047				
		FINISHING		EPOXY - POLYESTER POWDER				
	PIPE	TYPE		FLARE VALVE / FITTING				
		SIZE LIQUID	mm/in	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4
		SIZE GAS	mm/in	9.52 / 3/8	15.88 / 5/8	12.70 / 1/2	15.88 / 5/8	15.88 / 5/8
	PACKING DIMENSION	HEIGHT	mm	824		824		824
		WIDTH	mm	1194		1194		1194
		DEPTH	mm	611		611		611

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-94
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING – 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

MMST SERIES (50Hz) – COOLING ONLY

MODEL		**INDOOR UNIT**		MMST101010A	MMST101015A		MMST101515A		MMST151515A	MMST101020A*	
		OUTDOOR UNIT		3 x MWMS010F	2 x MWMS010F	MWMS015F	MWMS010F	2 x MWMS015F	3 x MWMS015F	2 x MWMS010F	MWMS020F
NOMINAL			**kcal/h**	3 x 2,394	2 x 2,394	3,200	2,394	2 x 3,200	3 x 3,200	2 x 2,394	4,536
COOLING			**W**	3 x 2,784	2 x 2,784	3,721	2,784	2 x 3,721	3 x 3,721	2 x 2,784	5,275
CAPACITY			**Btu/h**	3 x 9,500	2 x 9,500	12,700	9,500	2 x 12,700	3 x 12,700	2 x 9,500	18,000
TOTAL POWER CONSUMPTION (50/60Hz)			**W**	2,616 / 2,679	3,136 / 3,097		3,656 / 3,513		4,176 / 3,933	3,955 / -	
TOTAL RUNNING CURRENT (50/60Hz)			**A**	11.1 / 12.6	13.6 / 14.5		16.0 / 16.4		18.4 / 18.3	17.5 / -	
POWER SOURCE			**V/Ph/Hz**	220 - 240 / 1 / 50 / 208-230 / 1/ 60							
REFRIGERANT				R22							
INDOOR UNIT	**FAN**	**FAN TYPE**		ANTI FUNGUS CROSS FLOW FAN							
		AIR FLOW	**cfm/ L/s**	300 / 142							420 / 11.90
		FAN MOTOR		4 POLES x 10W							4 POLES x 20W
		INPUT POWER (50/60Hz)	**W**	26 / 26						26 / -	40 / -
		RUNNING CURRENT (50/60Hz)	**A**	0.11 / 0.12						0.11 / -	0.19 / -
		FAN MOTOR PROTECTION		BUILT-IN THERMAL FUSE							
	COIL	**TUBE** **MATERIAL**		INNER GROOVED SEAMLESS COPPER TUBE							
		TUBE **DIAMETER**	**mm/in**	7.0 / 0.276							9.52 / 3/8
		TUBE **THICKNESS**	**mm/in**	0.32 / 0.013							0.36 / 0.014
		FIN **MATERIAL**		ALUMINIUM (HYDROPHILIC SLIT FIN)							
		FIN **THICKNESS**	**mm/in**	0.11 / 0.0043							
		FIN **ROW**		2							2
		FIN **FIN PER INCH**		18							14
		FACE AREA	**m^2/ft^2**	0.198 / 2.13							0.224 / 2.411
	DIMENSION	**HEIGHT**	**mm/in**	290 / 11.4							372 / 14.6
		WIDTH	**mm/in**	815 / 32.1							1,043 / 41.1
		DEPTH	**mm/in**	179 / 7.0							189 / 7.4
	WEIGHT		**kg**	9.5							14.5
	SOUND PRESSURE LEVEL (H / M / L)		**dBA**	38 / 32 / 29		38 / 34 / 31	38 / 32 / 29	38 / 34 / 31	38 / 34 / 31	38 / 32 / 29	48 / 44 / 39
	CONTROL	**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT							
		AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)							
		OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL							
	CONDENSATE DRAIN SIZE		**mm/in**	16 / 0.63							20 / 0.79
	AIR FILTER			ANTI FUNGUS CROSS FLOW FAN							
	OPTIONAL AIR FILTER			DUAL ACTION ELECTROSTATIC AIR PURIFYING AND DEODORIZING FILTER							NIL
	PACKING DIMENSION	**HEIGHT**	**mm/in**	371 / 14.6							484 / 19.1
		WIDTH	**mm/in**	875 / 34.4							1,123 / 44.2
		DEPTH	**mm/in**	269 / 10.6							292 / 11.5
OUTDOOR UNIT	**COMP.**	**COMPRESSOR TYPE**		ROTARY							
		CAPACITOR (50/60Hz)	**µF**	30 / 30						30 / -	40 / -
		LOCK ROTOR AMP. (50/60Hz)	**A**	20 / 26	20 / 26	25 / 33	20 / 26	25 / 33	25 / 33	20 / -	47 / -
		PROTECTION DEVICE		OVERLOAD PROTECTION							
	FAN	**FAN TYPE / DRIVE**		PROPELLER / DIRECT							
		BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN							
		DIAMETER	**mm/in**	490 / 19.3							
		RATED RUNNING CURRENT (50/60Hz)	**A**	0.92 / 1.40						0.92 / -	
		RATED OUTPUT POWER (50/60Hz)	**W**	150 / 166						150 / -	
		RATED INPUT POWER (50/60Hz)	**W**	215 / 291						215 / -	
	COIL	**TUBE** **MATERIAL**		SEAMLESS BARE COPPER TUBE						SEAMLESS INNER GROOVED COPPER TUBE	
		TUBE **DIAMETER**	**mm/in**	0.95 / 3/8							
		TUBE **THICKNESS**	**mm/in**	0.35 / 0.014							
		FIN **MATERIAL**		ALUMINIUM (SLIT FIN TYPE)							
		FIN **THICKNESS**	**mm/in**	0.127 / 0.005							
		FIN **ROW**		3							
		FIN **FIN PER INCH**		14							
		FACE AREA	**m^2/ft^2**	0.50 / 5.39							
	DIMENSION	**HEIGHT**	**mm/in**	631.7 / 24.9							
		WIDTH	**mm/in**	960 / 37.8							
		DEPTH	**mm/in**	437 / 17.2							
	WEIGHT		**kg**	97	101		105		109	104	
	CASING	**MATERIAL**		GALVANISED MILD STEEL							
		THICKNESS	**mm/in**	1.0 - 1.2 / 0.039 - 0.047							
		FINISHING		EPOXY POLYESTER POWDER							
	SOUND PRESSURE LEVEL		**dBA**	61	61		62		62	61	
	PIPE	**TYPE**		FLARE VALVE							
		SIZE	**LIQUID** **mm/in**	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4
			GAS **mm/in**	9.52 / 3/8	9.52 / 3/8	12.7 / 1/2	9.52 / 3/8	12.7 / 1/2	12.7 / 1/2	9.52 / 3/8	15.88 / 5/8
	PACKING DIMENSION	**HEIGHT**	**mm/in**	824 / 32.4							
		WIDTH	**mm/in**	1,194 / 47.0							
		DEPTH	**mm/in**	611 / 24.1							

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3) NOMINAL COOLING CAPACITY IS BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO
26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

MMSH SERIES (50Hz) – COOLING ONLY

MODEL			OUTDOOR UNIT		MMSH8K8A	MMSH8K66A	MMSH66K66A	MMSH66K555A		MMSHK77A
			INDOOR UNIT		MWMS010F (x2)	MWMS010F (x3)	MWMS010F (x4)	MWMS010F (x4)	MWMS015F (x1)	MWMS015F (x2)
POWER SOURCE				V/Ph/Hz	220-240 / 1 / 50					
REFRIGERANT					R22					
INDOOR UNIT	FAN		FAN TYPE		ANTI FUNGUS CROSS FLOW FAN					
			AIR FLOW	cfm/ L/s	300 / 142					
			FAN MOTOR		4 POLES x 12W					
			RATED INPUT POWER	W	26					
			RATED RUNNING CURRENT	A	0.11					
			FAN MOTOR PROTECTION		BUILT-IN THERMAL FUSE					
	COIL	TUBE	MATERIAL		INNER GROOVED SEAMLESS COPPER TUBE					
			DIAMETER	mm/in	7.0 / 0.276					
			THICKNESS	mm/in	0.32 / 0.013					
		FIN	MATERIAL		ALUMINIUM (HYDROPHILIC SLIT FIN)					
			THICKNESS	mm/in	0.11 / 0.0043					
			ROW		2					
			FIN PER INCH		18					
			FACE AREA	m^2/ft^2	0.198 / 2.131					
	DIMENSION		HEIGHT	mm/in	290 / 11.4					
			WIDTH	mm/in	815 / 32.1					
			DEPTH	mm/in	179 / 7.0					
	WEIGHT (EACH INDOOR UNIT)			kg	9.5					
	SOUND LEVEL - H / M / L			dBA	38 / 32 / 29				38 / 34 / 31	
	CONTROL		ROOM TEMPERATURE		MICROCOMPUTER CONTROLLED THERMOSTAT					
			AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
			OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE			mm/in	16 / 0.63					
	AIR FILTER				ANTI FUNGUS POLYPROPYLENE HONETCOMB FILLTER					
	PACKING DIMENSION		HEIGHT	mm/in	371 / 14.6					
			WIDTH	mm/in	875 / 34.4					
			DEPTH	mm/in	269 / 10.6					
OUTDOOR UNIT	COMP.		COMPRESSOR TYPE		ROTARY					
			NUMBER		2					1
			CAPACITOR	µF	25					30
			LOCK ROTOR AMP.	A	15 x 2			21 x 2		25
			PROTECTION DEVICE		OVERLOAD PROTECTION					
	FAN		FAN TYPE / DRIVE		PROPELLER / DIRECT					
			BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN					
			DIAMETER	mm/in	420 / 16.5					355 / 14
			RATED RUNNING CURRENT	A	0.7					0.28
			RATED OUTPUT POWER	W	80					30
			RATED INPUT POWER	W	170					62
	COIL	TUBE	MATERIAL		PLAIN SEAMLESS C. TUBE	INNER GROOVED SEAMLESS COPPER TUBE				
			DIAMETER	mm/in	9.52 / 3/8					
			THICKNESS	mm/in	0.35 / 0.014					
		FIN	MATERIAL		ALUMINIUM (SLIT FIN TYPE)					
			THICKNESS	mm/in	0.127 / 0.005					
			ROW		2					1
			FIN PER INCH		14	16				19
			FACE AREA	m^2/ft^2	0.51 / 5.53					0.32 / 3.50
	DIMENSION		HEIGHT	mm/in	646 / 25.4					494 / 19.4
			WIDTH	mm/in	840 / 33.1					740 / 29.1
			DEPTH	mm/in	330 / 13.0					270 / 10.6
	WEIGHT			kg	62	63	64	65		35
	SOUND LEVEL			dBA	56					50
	CASING		MATERIAL		GALVANISED MILD STEEL					
			THICKNESS	mm/in	0.8 / 0.031					
			FINISHING		EPOXY POLYESTER POWDER					
	PIPE		TYPE		FLARE VALVE					
			SIZE LIQUID	mm/in	6.35 / 1/4					6.35 / 1/4
			GAS	mm/in	9.52 / 3/8					12.7 / 1/2
	PACKING DIMENSION		HEIGHT	mm/in	710 / 28.0					558 / 22.0
			WIDTH	mm/in	982 / 38.7					851 / 33.5
			DEPTH	mm/in	461 / 18.1					401 / 15.8

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a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

COOLING CAPACITY – MMSH SERIES (50Hz) – COOLING ONLY

MODEL	OUTDOOR UNIT	MMSHK77A		MMSH8K8A	
	INDOOR UNIT	INDOOR A,B: MWMS015F X2		INDOOR A, B : MWMS010F	
NOMINAL COOLING CAPACITY	NUMBER OF UNIT OPERATING	ONE UNIT RUNNING	TWO UNITS RUNNING	ONE UNIT RUNNING	TWO UNITS RUNNING
		A OR B	A+B	A OR B	A + B
	kcal/h	3,100	1840 + 1840	2,091	2,091 + 2,091
	W	3,605	2140 + 2140	2,433	2,433 + 2,433
	Btu/h	12,300	7300 + 7300	8,300	8,300 + 8,300
POWER CONSUMPTION (W)		1389	1445	804	1466
RUNNING CURRENT (A)		6.1	6.4	3.4	6.1

MODEL	OUTDOOR UNIT	MMSH8K66A				
	INDOOR UNIT	INDOOR A1, A2, B : MWMS010F				
NOMINAL COOLING CAPACITY	NUMBER OF UNIT OPERATING	ONE UNIT RUNNING		TWO UNITS RUNNING		THREE UNITS RUNNING
		A1 OR A2	B	A1 + A2	A1+B OR A2+B	A1 + A2 + B
	kcal/h	2,520	2,041	1,613 + 1,613	2,520 + 2,041	1,613 + 1,613 + 2,041
	W	2,931	2,374	1,876 + 1,876	2,931 + 2,374	1,876 + 1,876 + 2,374
	Btu/h	10,000	8,100	6,400 + 6,400	10,000 + 8,100	6,400 + 6,400 + 8,100
POWER CONSUMPTION (W)		1150	835	1246	1840	1,940
RUNNING CURRENT (A)		5.0	3.6	5.3	7.9	8.2

MODEL	OUTDOOR UNIT	MMSH66K66A			
	INDOOR UNIT	INDOOR A1, A2, B1, B2: MWMS010F			
NOMINAL COOLING CAPACITY	NUMBER OF UNIT OPERATING	ONE UNIT RUNNING	TWO UNITS RUNNING		FOUR UNITS RUNNING
		A1, A2, B1 OR B2	A1+A2 OR B1+B2	A1+B1 OR A2+B2	A1+A2+B1+B2
	kcal/h	2,520	1,613 + 1,613	2,520 + 2,520	4 x 1,613
	W	2,931	1,876 + 1,876	2,931 + 2,931	4 x 1,876
	Btu/h	10,000	6,400 + 6,400	10,000 + 10,000	4 x 6,400
POWER CONSUMPTION (W)		1164	1248	2188	2355
RUNNING CURRENT (A)		5.1	5.4	9.6	10.2

MODEL	OUTDOOR UNIT	MMSH66K555A					
	INDOOR UNIT	INDOOR A1, A2, A3, B1: MWMS010F, B2 : MWMS015F					
NOMINAL COOLING CAPACITY	NUMBER OF UNIT OPERATING	ONE UNIT RUNNING		TWO UNITS RUNNING			
		A1,A2,A3 OR B1	B2	A1+A2, A2+A3, OR A3+A1	B1+B2	(A1,A2 OR A3) + B1	(A1,A2 OR A3) + B2
	kcal/h	2,520	3,024	1,613 x 2	1,512 + 1,764	2,520 x 2	2,520 + 3,024
	W	2,931	3,517	1,876 x 2	1,578 + 2,052	2,931 x 2	2,931 + 3,517
	Btu/h	10,000	12,000	6,400 x 2	6,000 + 7,000	10,000 x 2	10,000 + 12,000
POWER CONSUMPTION (W)		1207	1262	1288	1301	2244	2299
RUNNING CURRENT (A)		5.3	5.5	5.6	5.7	9.9	10.1

MODEL	OUTDOOR UNIT	MMSH66K555A			
	INDOOR UNIT	INDOOR A1, A2, A3, B1: MWMS010F, B2 : MWMS015F			
NOMINAL COOLING CAPACITY	NUMBER OF UNIT OPERATING	THREE UNITS RUNNING			
		A1+A2+A3	A1+A2+B1	A1+A2+B2	A1+B1+B2
	kcal/h	1,134 x 3	1,613x2 + 2,520	1,613x2 + 3,024	2,520 + 1,512 + 1,764
	W	1,319 x 3	1,876x2 + 2,931	1,876x2 + 3,517	2,931 + 1,758 + 2,052
	Btu/h	4,500 x 3	6,400x2 + 10,000	6,400x2 + 12,000	10,000 + 6,000 + 7,000
POWER CONSUMPTION (W)		1332	2325	2380	2338
RUNNING CURRENT (A)		5.8	10.2	10.4	10.3

MODEL	OUTDOOR UNIT	MMSH66K555A			
	INDOOR UNIT	INDOOR A1, A2, A3, B1: MWMS010F, B2 : MWMS015F			
NOMINAL COOLING CAPACITY	NUMBER OF UNIT OPERATING	FOUR UNITS RUNNING			FIVE UNITS RUNNING
		A1+A2+A3+B1	A1+A2+A3+B2	A1+A2+B1+B2	A1+A2+A3+B1+B2
	kcal/h	1,134x3 + 2,520	1,134x3 + 3,024	1,613x2 + 1,512 + 1,764	1,134x3 + 1,512 + 1,764
	W	1,319x3 + 2,931	1,319x3 + 3,517	1,876x2 + 1,758 + 2,052	1,319x3 + 1,758 + 2,052
	Btu/h	4,500x3 + 10,000	4,500x3 + 12,000	6,400x2 + 6,000 + 7,000	4,500x3 + 6,000 + 7,000
POWER CONSUMPTION (W)		2369	2424	2419	2464
RUNNING CURRENT (A)		10.4	10.5	10.6	10.8

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a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR

M4MSD SERIES – HEATPUMP UNIT

MODEL		OUTDOOR UNIT		M4MSD1010AR		M4MSD1015AR		M4MSD1515AR	
		INDOOR UNIT		MWMS010FR	MWMS010FR	MWMS010FR	MWMS015FR	MWMS015FR	MWMS015FR
NOMINAL COOLING CAPACITY		ONE / TWO UNIT RUNNING	kcal/h	2268 / 2268	2268 / 2268	2268 / 2268	2772 / 2646	2772 / 2646	2772 / 2646
			W	2638 / 2638	2638 / 2638	2638 / 2638	3224 / 3077	3224 / 3077	3224 / 3077
			Btu/h	9000 / 9000	9000 / 9000	9000 / 9000	11000 / 10500	11000 / 10500	11000 / 10500
NOMINAL HEATING CAPACITY		ONE / TWO UNIT RUNNING	kcal/h	2394 / 2268	2394 / 2268	2394 / 2268	3024 / 2898	3024 / 2898	3024 / 2898
			W	2784 / 2638	2784 / 2638	2784 / 2638	3517 / 3370	3517 / 3370	3517 / 3370
			Btu/h	9500 / 9000	9500 / 9000	9500 / 9000	12000 / 11500	12000 / 11500	12000 / 11500
POWER CONSUMPTION (COOLING)		ONE UNIT RUNNING	W	994	994	994	1466	1466	1466
		TWO UNITS RUNNING	W	1914		2365		2818	
POWER CONSUMPTION (HEATING)		ONE UNIT RUNNING	W	992	992	992	1476	1476	1476
		TWO UNITS RUNNING	W	1820		2245		2672	
RUNNING CURRENT (COOLING)		ONE UNIT RUNNING	A	4.21	4.21	4.21	6.71	6.71	6.71
		TWO UNITS RUNNING	A	8.14		10.52		12.90	
RUNNING CURRENT (HEATING)		ONE UNIT RUNNING	A	4.21	4.21	4.21	6.71	6.71	6.71
		TWO UNITS RUNNING	A	7.74		10.02		12.30	
POWER SOURCE			V/Ph/Hz	220-240 / 1 / 50					
REFRIGERANT				R407C					
INDOOR UNIT	FAN TYPE			ANTI FUNGUS CROSS FLOW FAN					
	AIR FLOW		cfm/ L/s	300 / 142					
	FAN MOTOR			4 POLES x 10W		4 POLES x 10W	4 POLES x 12W	4 POLES x 12W	
	RATED INPUT POWER		W	25		25	26	26	
	RATED RUNNING CURRENT		A	0.11		0.11	0.11	0.11	
	FAN MOTOR PROTECTION			BUILT IN THERMAL FUSE					
	COIL TUBE MATERIAL			SEAMLESS COPPER (INNER GROOVED TUBE)					
	COIL TUBE DIAMETER		mm/in	7.0 / 0.276					
	COIL TUBE THICKNESS		mm/in	0.32 / 0.013					
	COIL FIN MATERIAL			ALUMINIUM (HYDROPHILIC SLIT FIN)					
	COIL FIN THICKNESS		mm/in	0.11 / 0.0043					
	COIL FIN ROW			2					
	COIL FIN PER INCH			18					
	FACE AREA		m^2/ft^2	0.198 / 2.131					
	DIMENSION	HEIGHT	mm/in	290 / 11.4					
		WIDTH	mm/in	815 / 32.1					
		DEPTH	mm/in	179 / 7.0					
	WEIGHT		kg	9.5					
	SOUND LEVEL - H / M / L		dBA	38 / 34 / 30			38 / 35 / 31		
	CONTROL	ROOM TEMPERATURE		THERMOSTAT ELECTRONIC CONTROL					
		AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
		OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE		mm/in	16 / 0.63					
	AIR FILTER			ANTI FUNGUS POLYPROPYLENE HONEYCOMB FILTER					
	PACKING DIMENSION	HEIGHT	mm/in	371 / 14.6					
		WIDTH	mm/in	875 / 34.4					
		DEPTH	mm/in	269 / 10.6					
OUTDOOR UNIT	COMP. COMPRESSOR TYPE			ROTARY COMPRESSOR					
	COMP. NUMBER			2		2		2	
	COMP. CAPACITOR		µF	30		30		30	
	COMP. LOCK ROTOR AMP.		A	20		20	32	32	
	PROTECTION DEVICE			OVERLOAD PROTECTION					
	FAN FAN TYPE / DRIVE			PROPELLER / DIRECT					
	FAN BLADE MATERIAL			GLASS REINFORCED ACRLY STYRENE RESIN					
	FAN DIAMETER		mm/in	406 / 16					
	FAN RATED RUNNING CURRENT		A	0.72					
	FAN MOTOR OUTPUT		W	80					
	FAN RATED INPUT POWER		W	170					
	COIL TUBE MATERIAL			INNER GROOVED SEAMLESS COPPER TUBE					
	COIL TUBE DIAMETER		mm/in	9.52 / 3/8					
	COIL TUBE THICKNESS		mm/in	0.35 / 0.014					
	COIL FIN MATERIAL			ALUMINIUM (SLIT FIN TYPE)					
	COIL FIN THICKNESS		mm/in	0.127 / 0.005					
	COIL FIN ROW			2					
	COIL FIN PER INCH			16					
	FACE AREA		m^2/ft^2	0.51 / 5.53					
	DIMENSION	HEIGHT	mm/in	646 / 25.4					
		WIDTH	mm/in	840 / 33.1					
		DEPTH	mm/in	330 / 13					
	WEIGHT		kg	63		64		65	
	SOUND LEVEL		dBA	54					
	CASING	MATERIAL		GALVANISED MILD STEEL					
		THICKNESS	mm/in	0.8 / 0.031					
		FINISHING		EPOXY - POLYESTER POWDER					
	PIPE TYPE			FLARE VALVE					
	PIPE SIZE	LIQUID	mm/in	6.35 / 1/4		6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	
		GAS	mm/in	9.52 / 3/8		9.52 / 3/8	12.7 / 1/2	12.7 / 1/2	
	PACKING DIMENSION	HEIGHT	mm/in	710 / 28.0					
		WIDTH	mm/in	957 / 37.7					
		DEPTH	mm/in	461 / 18.1					

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

MMSD SERIES (50Hz) – HEATPUMP

MODEL		OUTDOOR UNIT		MMSD1010AR		MMSD1015AR		MMSD1515AR	
		INDOOR UNIT		MWMS010FR	MWMS010FR	MWMS010FR	MWMS015FR	MWMS015FR	MWMS015FR
NOMINAL COOLING CAPACITY		ONE OR TWO UNIT RUNNING	kcal/h	2,343 / 2,293	2,343 / 2,293	2,343 / 2,293	3,024 / 2,898	3,024 / 2,898	3,024 / 2,898
			W	2,726 / 2,667	2,726 / 2,667	2,726 / 2,667	3,517 / 3,370	3,517 / 3,370	3,517 / 3,370
			Btu/h	9,300 / 9,100	9,300 / 9,100	9,300 / 9,100	12,000 / 11,500	12,000 / 11,500	12,000 / 11,500
NOMINAL HEATING CAPACITY		ONE OR TWO UNIT RUNNING	kcal/h	2,746 / 2,696	2,746 / 2,696	2,746 / 2,696	3,276 / 3,024	3,276 / 3,024	3,276 / 3,024
			W	3,195 / 3,136	3,195 / 3,136	3,195 / 3,136	3,810 / 3,517	3,810 / 3,517	3,810 / 3,517
			Btu/h	10,900 / 10,700	10,900 / 10,700	10,900 / 10,700	13,000 / 12,000	13,000 / 12,000	13,000 / 12,000
POWER CONSUMPTION (COOLING)		ONE UNIT RUNNING	W	1,000	1,000	1,000	1,293	1,293	1,293
		TWO UNITS RUNNING	W	1,862		2,123		2,472	
POWER CONSUMPTION (HEATING)		ONE UNIT RUNNING	W	1,160	1,160	1,160	1,390	1,390	1,390
		TWO UNITS RUNNING	W	2,046		2,370		2,450	
RUNNING CURRENT (COOLING)		ONE UNIT RUNNING	A	4.50	4.50	4.50	5.70	5.70	5.70
		TWO UNITS RUNNING	A	8.30		9.50		11.20	
RUNNING CURRENT (HEATING)		ONE UNIT RUNNING	A	5.10	5.10	5.10	6.10	6.10	6.10
		TWO UNITS RUNNING	A	9.20		10.40		11.00	
POWER SOURCE			V/Ph/Hz	220-240 / 1 / 50					
REFRIGERANT				R22					
INDOOR UNIT	FAN	FAN TYPE		ANTI FUNGUS CROSS FLOW FAN					
		AIR FLOW	cfm/cmm	300 / 8.50					
		FAN MOTOR		4 POLES x 10W		4 POLES x 10W		4 POLES x 10W	
		RATED INPUT POWER	W	26					
		RATED RUNNING CURRENT	A	0.11					
		FAN MOTOR PROTECTION		BUILT IN THERMAL FUSE					
	COIL	TUBE MATERIAL		SEAMLESS COPPER (INNER GROOVED TUBE)					
		TUBE DIAMETER	mm/in	7.0 / 0.276					
		TUBE THICKNESS	mm/in	0.32 / 0.013					
		FIN MATERIAL		ALUMINIUM (HYDROPHILIC SLIT FIN)					
		FIN THICKNESS	mm/in	0.11 / 0.0043					
		FIN ROW		2					
		FIN PER INCH		18					
		FACE AREA	m^2/ft^2	0.198 / 2.131					
	DIMENSION	HEIGHT	mm/in	290 / 11.4					
		WIDTH	mm/in	815 / 32.1					
		DEPTH	mm/in	179 / 7.0					
	WEIGHT		kg	9.5					
	SOUND LEVEL - H / M / L		dBA	38 / 32 / 29			38 / 34 / 31		
	CONTROL	ROOM TEMPERATURE		THERMOSTAT ELECTRONIC CONTROL					
		AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
		OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE		mm/in	16 / 0.63					
	AIR FILTER			ANTI FUNGUS POLYPROPYLENE HONEYCOMB FILTER					
	PACKING DIMENSION	HEIGHT	mm/in	371 / 14.6					
		WIDTH	mm/in	875 / 34.4					
		DEPTH	mm/in	269 / 10.6					
OUTDOOR UNIT	COMP.	COMPRESSOR TYPE		ROTARY COMPRESSOR					
		NUMBER		2		2		2	
		CAPACITOR	µF	30		30		30	
		LOCK ROTOR AMP.	A	20		20	25	25	
		PROTECTION DEVICE		OVERLOAD PROTECTION					
	FAN	FAN TYPE / DRIVE		PROPELLER / DIRECT					
		BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN					
		DIAMETER	mm/in	420 / 16.5					
		RATED RUNNING CURRENT	A	0.7					
		RATED OUTPUT POWER	W	80					
		RATED INPUT POWER	W	170					
	COIL	TUBE MATERIAL		INNER GROOVED SEAMLESS COPPER TUBE					
		TUBE DIAMETER	mm/in	9.52 / 3/8					
		TUBE THICKNESS	mm/in	0.35 / 0.014					
		FIN MATERIAL		ALUMINIUM (SLIT FIN TYPE)					
		FIN THICKNESS	mm/in	0.127 / 0.005					
		FIN ROW		2					
		FIN PER INCH		16					
		FACE AREA	m^2/ft^2	0.51 / 5.53					
	DIMENSION	HEIGHT	mm/in	646 / 25.4					
		WIDTH	mm/in	840 / 33.1					
		DEPTH	mm/in	330 / 13					
	WEIGHT		kg	63		64		65	
	SOUND LEVEL		dBA	56					
	CASING	MATERIAL		GALVANISED MILD STEEL					
		THICKNESS	mm/in	0.8 / 0.031					
		FINISHING		EPOXY - POLYESTER POWDER					
	PIPE	TYPE		FLARE VALVE					
		SIZE LIQUID	mm/in	6.35 / 1/4		6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	
		SIZE GAS	mm/in	9.52 / 3/8		9.52 / 3/8	12.7 / 1/2	12.7 / 1/2	
	PACKING DIMENSION	HEIGHT	mm/in	710 / 28.0					
		WIDTH	mm/in	957 / 37.7					
		DEPTH	mm/in	461 / 18.1					

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

MMSD SERIES (50Hz) – HEATPUMP

MODEL			OUTDOOR UNIT		MMSD 1520AR	
			INDOOR UNIT		MWMS015FR	MWMS020FR
NOMINAL COOLING CAPACITY			ONE/TWO UNIT RUNNING	kcal/h	2,898 / 2,772	4,536 / 4,536
				W	3,370 / 3,224	5,275 / 5,275
				Btu/h	11,500 / 11,000	18,000 / 18,000
NOMINAL HEATING CAPACITY			ONE/TWO UNIT RUNNING	kcal/h	3,175 / 3,024	5,040 / 4,914
				W	3,693 / 3,517	5,862 / 5,715
				Btu/h	12,600 / 12,000	20,000 / 19,500
POWER CONSUMPTION (COOLING)			ONE UNIT RUNNING	W	1,340	2,180
			TWO UNITS RUNNING	W	3,450	
POWER CONSUMPTION (HEATING)			ONE UNIT RUNNING	W	1,380	2,400
			TWO UNITS RUNNING	W	3,470	
RUNNING CURRENT (COOLING)			ONE UNIT RUNNING	A	6.0	11.8
			TWO UNITS RUNNING	A	17.3	
RUNNING CURRENT (HEATING)			ONE UNIT RUNNING	A	6.2	12.7
			TWO UNITS RUNNING	A	17.5	
POWER SOURCE				V/Ph/Hz	220-240 / 1 / 50	
REFRIGERANT					R22	
INDOOR UNIT	FAN		FAN TYPE		ANTI FUNGUS CROSS FLOW FAN	
			AIR FLOW	cfm/cmm	300 / 8.50	420 / 11.90
			FAN MOTOR		4 POLES x 12W	4 POLES x 20W
			RATED INPUT POWER	W	26	40
			RATED RUNNING CURRENT	A	0.11	0.19
			FAN MOTOR PROTECTION		THERMAL OVERLOAD RELAY	
	COIL	TUBE	MATERIAL		SEAMLESS COPPER (INNER GROOVED TUBE)	
			DIAMETER	mm/in	7.0 / 0.276	9.52 / 0.375
			THICKNESS	mm/in	0.32 / 0.013	0.36 / 0.014
		FIN	MATERIAL		ALUMINIUM (HYDROPHILIC SLIT FIN)	
			THICKNESS	mm/in	0.11 / 0.0043	
			ROW		2	2
			FIN PER INCH		18	14
			FACE AREA	m^2/ft^2	0.198 / 2.131	0.224 / 2.411
	DIMENSION		HEIGHT	mm/in	290 / 11.4	372 / 14.6
			WIDTH	mm/in	815 / 32.1	1043 / 41.1
			DEPTH	mm/in	179 / 7.0	189 / 7.4
	WEIGHT			kg	9.5	14.5
	SOUND LEVEL - H / M / L			dBA	42 / 39 / 35	46 / 44 / 40
	CONTROL		ROOM TEMPERATURE		THERMOSTAT ELECTRONIC CONTROL	
			AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)	
			OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL	
	CONDENSATE DRAIN SIZE			mm/in	16 / 0.63	20 / 0.79
	AIR FILTER				ANTI FUNGUS POLYPROPYLENE HONEYCOMB FILTER	
	PACKING DIMENSION		HEIGHT	mm/in	371 / 14.6	484 / 19.1
			WIDTH	mm/in	875 / 34.4	1123 / 44.2
			DEPTH	mm/in	269 / 10.6	292 / 11.5
OUTDOOR UNIT	COMP.		COMPRESSOR TYPE		ROTARY COMPRESSOR	
			NUMBER		2	
			CAPACITOR	µF	30	45
			LOCK ROTOR AMP.	A	25	49
			PROTECTION DEVICE		OVERLOAD PROTECTION	
	FAN		FAN TYPE / DRIVE		PROPELLER / DIRECT	
			BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN	
			DIAMETER	mm/in	490 / 19.3	
			RATED RUNNING CURRENT	A	0.92	
			RATED OUTPUT POWER	W	150	
			RATED INPUT POWER	W	215	
	COIL	TUBE	MATERIAL		INNER GROOVED SEAMLESS COPPER TUBE	
			DIAMETER	mm/in	9.52 / 3/8	
			THICKNESS	mm/in	0.35 / 0.014	
		FIN	MATERIAL		ALUMINIUM (SLIT FIN TYPE)	
			THICKNESS	mm/in	0.127 / 0.005	
			ROW		3	
			FIN PER INCH		14	
			FACE AREA	m^2/ft^2	0.50 / 5.39	
	DIMENSION		HEIGHT	mm/in	631.7 / 24.9	
			WIDTH	mm/in	960.0 / 37.8	
			DEPTH	mm/in	437.0 / 17.2	
	WEIGHT			kg	100	
	SOUND LEVEL			dBA		
	CASING		MATERIAL		GALVANISED MILD STEEL	
			THICKNESS	mm/in	0.8 / 0.031	
			FINISHING		EPOXY - POLYESTER POWDER	
	PIPE	TYPE			FLARE VALVE	
		SIZE	LIQUID	mm/in	6.35 / 1/4	6.35 / 1/4
			GAS	mm/in	12.70 / 1/2	15.88 / 5/8
	PACKING DIMENSION		HEIGHT	mm/in	813 / 32.0	
			WIDTH	mm/in	1144 / 45.0	
			DEPTH	mm/in	611 / 24.1	

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b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

M4MST SERIES (50Hz) – COOLING ONLY

MODEL			**OUTDOOR UNIT**		M4MST101010A	M4MST101015A		M4MST101515A		M4MST151515A
			INDOOR UNIT		3 x MWMS010F	2 x MWMS010F	MWMS015F	MWMS010F	2 x MWMS015F	3 x MWMS015F
NOMINAL				**kcal/h**	3 x 2,268	2 x 2,268	3,024	2,268	2 x 3,024	3 x 3,024
COOLING				**W**	3 x 2,638	2 x 2,638	3,517	2,638	2 x 3,517	3 x 3,517
CAPACITY				**Btu/h**	3 x 9,000	2 x 9,000	12,000	9,000	2 x 12,000	3 x 12,000
TOTAL POWER CONSUMPTION				**W**	2,580	3,103		3,626		4,149
TOTAL RUNNING CURRENT				**A**	11.1	13.6		16.1		18.6
POWER SOURCE				**V/Ph/Hz**	220 - 240 / 1 / 50					
REFRIGERANT / CONTROL					R407C / CAPILLARY TUBE					
INDOOR UNIT	**FAN**	**FAN TYPE**			ANTI FUNGUS CROSS FLOW FAN					
		AIR FLOW		**cfm/ L/s**	300 / 142					
		FAN MOTOR			4 POLES x 10W		4 POLES x 12W	4 POLES x 10W	4 POLES x 12W	
		INPUT POWER		**W**	25		26	25	26	
		RUNNING CURRENT		**A**	0.11					
		FAN MOTOR PROTECTION			BUILT-IN THERMAL FUSE					
	COIL	**TUBE**	**MATERIAL**		INNER GROOVED SEAMLESS COPPER TUBE					
			DIAMETER	**mm/in**	7.0 / 0.276					
			THICKNESS	**mm/in**	0.32 / 0.013					
		FIN	**MATERIAL**		ALUMINIUM (HYDROPHILIC SLIT FIN)					
			THICKNESS	**mm/in**	0.11 / 0.0043					
			ROW		2					
			FIN PER INCH		18					
		FACE AREA		**m^2/ft^2**	0.198 / 2.13					
	DIMENSION		**HEIGHT**	**mm/in**	290 / 11.4					
			WIDTH	**mm/in**	815 / 32.1					
			DEPTH	**mm/in**	179 / 7.0					
	WEIGHT			**kg**	9.5					
	SOUND PRESSURE LEVEL (H / M / L)			**dBA**	38 / 32 / 29	38 / 32 / 29	38 / 34 / 31	38 / 32 / 29	38 / 34 / 31	38 / 34 / 31
	CONTROL		**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT					
			AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
			OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE			**mm/in**	16 / 0.63					
	AIR FILTER				ANTI FUNGUS POLYPROPYLENE FILTER					
	OPTIONAL AIR FILTER				DUAL ACTION ELECTROSTATIC AIR PURIFYING AND DEODORIZING FILTER					
	PACKING DIMENSION		**HEIGHT**	**mm/in**	371 / 14.6					
			WIDTH	**mm/in**	875 / 34.4					
			DEPTH	**mm/in**	269 / 10.6					
OUTDOOR UNIT	**COMP.**	**COMPRESSOR TYPE**			ROTARY					
		CAPACITOR		**µF**	30					
		LOCK ROTOR AMP.		**A**	20	20	25	20	25	25
		PROTECTION DEVICE			OVERLOAD PROPTECTION					
	FAN	**FAN TYPE / DRIVE**			PROPELLER / DIRECT					
		BLADE MATERIAL			GLASS REINFORCED ACRLY STYRENE RESIN					
		DIAMETER		**mm/in**	490 / 19.3					
		RATED RUNNING CURRENT		**A**	0.98					
		RATED OUTPUT POWER		**W**	150					
		RATED INPUT POWER		**W**	230					
	COIL	**TUBE**	**MATERIAL**		SEAMLESS BARE COPPER TUBE					
			DIAMETER	**mm/in**	0.95 / 3/8					
			THICKNESS	**mm/in**	0.35 / 0.014					
		FIN	**MATERIAL**		ALUMINIUM (SLIT FIN TYPE)					
			THICKNESS	**mm/in**	0.127 / 0.005					
			ROW		3					
			FIN PER INCH		14					
		FACE AREA		**m^2/ft^2**	0.50 / 5.39					
	DIMENSION		**HEIGHT**	**mm/in**	631.7 / 24.9					
			WIDTH	**mm/in**	960 / 37.8					
			DEPTH	**mm/in**	437 / 17.2					
	WEIGHT			**kg**	97	101		105		109
	CASING		**MATERIAL**		GALVANISED MILD STEEL					
			THICKNESS	**mm/in**	1.0 - 1.2 / 0.039 - 0.047					
			FINISHING		EPOXY POLYESTER POWDER					
	SOUND PRESSURE LEVEL			**dBA**	61					
	PIPE	**TYPE**			FLARE VALVE					
		SIZE	**LIQUID**	**mm/in**	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4
			GAS	**mm/in**	9.52 / 3/8	9.52 / 3/8	12.7 / 1/2	9.52 / 3/8	12.7 / 1/2	12.7 / 1/2
	PACKING DIMENSION		**HEIGHT**	**mm/in**	824 / 32.4					
			WIDTH	**mm/in**	1,194 / 47.0					
			DEPTH	**mm/in**	611 / 24.1					

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b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

M4MST SERIES (50Hz) – HEATPUMP

MODEL		**OUTDOOR UNIT**		M4MST101010AR	M4MST101015AR		M4MST101515AR		M4MST151515AR
		INDOOR UNIT		3 x MWMS010FR	2 x MWMS010FR	MWMS015FR	MWMS010FR	2 x MWMS015FR	3 x MWMS015FR
NOMINAL			**kcal/h**	3 x 2,268	2 x 2,268	3,024	2,268	2 x 3,024	3 x 3,024
COOLING			**W**	3 x 2,638	2 x 2,638	3,517	2,638	2 x 3,517	3 x 3,517
CAPACITY			**Btu/h**	3 x 9,000	2 x 9,000	12,000	9,000	2 x 12,000	3 x 12,000
NOMINAL			**kcal/h**	3 x 2,268	2 x 2,268	2,772	2,268	2 x 2,272	3 x 2,272
HEATING			**W**	3 x 2,638	2 x 2,638	3,224	2,638	2 x 3,224	3 x 3,224
CAPACITY			**Btu/h**	3 x 9,000	2 x 9,000	11,000	9,000	2 x 11,000	3 x 11,000
TOTAL POWER CONSUMPTION (COOLING)			**W**	2,691	3,065		3,439		3,813
TOTAL POWER CONSUMPTION (HEATING)			**W**	2439.0	2769.0		3099.0		3429.0
TOTAL RUNNING CURRENT (COOLING)			**A**	11.7	13.5		15.3		17.1
TOTAL RUNNING CURRENT (HEATING)			**A**	10.8	12.7		14.6		16.5
POWER SOURCE			**V/Ph/Hz**	220 - 240 / 1 / 50					
REFRIGERANT / CONTROL				R407C / CAPILLARY TUBE					
INDOOR UNIT	**FAN**	**FAN TYPE**		ANTI FUNGUS CROSS FLOW FAN					
		AIR FLOW	**cfm/ L/s**	300 / 142					
		FAN MOTOR		4 POLES x 10W		4 POLES x 12W	4 POLES x 10W	4 POLES x 12W	
		INPUT POWER	**W**	25		26	25	26	
		RUNNING CURRENT	**A**	0.11					
		FAN MOTOR PROTECTION		BUILT-IN THERMAL FUSE					
	COIL	**TUBE** **MATERIAL**		INNER GROOVED SEAMLESS COPPER TUBE					
		TUBE **DIAMETER**	**mm/in**	7.0 / 0.276					
		TUBE **THICKNESS**	**mm/in**	0.32 / 0.013					
		FIN **MATERIAL**		ALUMINIUM (HYDROPHILIC SLIT FIN)					
		FIN **THICKNESS**	**mm/in**	0.11 / 0.0043					
		FIN **ROW**		2					
		FIN **FIN PER INCH**		18					
		FACE AREA	**m^2/ft^2**	0.198 / 2.13					
	DIMENSION	**HEIGHT**	**mm/in**	290 / 11.4					
		WIDTH	**mm/in**	815 / 32.1					
		DEPTH	**mm/in**	179 / 7.0					
	WEIGHT		**kg**	9.5					
	SOUND PRESSURE LEVEL (H / M / L)		**dBA**	38 / 32 / 29	38 / 32 / 29	38 / 34 / 31	38 / 32 / 29	38 / 34 / 31	38 / 34 / 31
	CONTROL	**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT					
		AIR DISCHARGE		AUTOMATIC LOUVER (UP & DOWN) & GRILLE (LEFT & RIGHT)					
		OPERATION		LCD WIRELESS MICRO COMPUTER REMOTE CONTROL					
	CONDENSATE DRAIN SIZE		**mm/in**	16 / 0.63					
	AIR FILTER			ANTI FUNGUS POLYPROPYLENE FILTER					
	OPTIONAL AIR FILTER			DUAL ACTION ELECTROSTATIC AIR PURIFYING AND DEODORIZING FILTER					
	PACKING DIMENSION	**HEIGHT**	**mm/in**	371 / 14.6					
		WIDTH	**mm/in**	875 / 34.4					
		DEPTH	**mm/in**	269 / 10.6					
OUTDOOR UNIT	**COMP.**	**COMPRESSOR TYPE**		ROTARY					
		CAPACITOR	**µF**	30					
		LOCK ROTOR AMP.	**A**	20	20	25	20	25	25
		PROTECTION DEVICE		OVERLOAD PROPTECTION					
	FAN	**FAN TYPE / DRIVE**		PROPELLER / DIRECT					
		BLADE MATERIAL		GLASS REINFORCED ACRLY STYRENE RESIN					
		DIAMETER	**mm/in**	490 / 19.3					
		RATED RUNNING CURRENT	**A**	0.98					
		RATED OUTPUT POWER	**W**	150					
		RATED INPUT POWER	**W**	230					
	COIL	**TUBE** **MATERIAL**		SEAMLESS BARE COPPER TUBE					
		TUBE **DIAMETER**	**mm/in**	0.95 / 3/8					
		TUBE **THICKNESS**	**mm/in**	0.35 / 0.014					
		FIN **MATERIAL**		ALUMINIUM (SLIT FIN TYPE)					
		FIN **THICKNESS**	**mm/in**	0.127 / 0.005					
		FIN **ROW**		3					
		FIN **FIN PER INCH**		14					
		FACE AREA	**m^2/ft^2**	0.50 / 5.39					
	DIMENSION	**HEIGHT**	**mm/in**	631.7 / 24.9					
		WIDTH	**mm/in**	960 / 37.8					
		DEPTH	**mm/in**	437 / 17.2					
	WEIGHT		**kg**	97	101		105		109
	CASING	**MATERIAL**		GALVANISED MILD STEEL					
		THICKNESS	**mm/in**	1.0 - 1.2 / 0.039 - 0.047					
		FINISHING		EPOXY POLYESTER POWDER					
	SOUND PRESSURE LEVEL		**dBA**	66					
	PIPE	**TYPE**		FLARE VALVE					
		SIZE **LIQUID**	**mm/in**	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4	6.35 / 1/4
		SIZE **GAS**	**mm/in**	9.52 / 3/8	9.52 / 3/8	12.7 / 1/2	9.52 / 3/8	12.7 / 1/2	12.7 / 1/2
	PACKING DIMENSION	**HEIGHT**	**mm/in**	824 / 32.4					
		WIDTH	**mm/in**	1,194 / 47.0					
		DEPTH	**mm/in**	611 / 24.1					

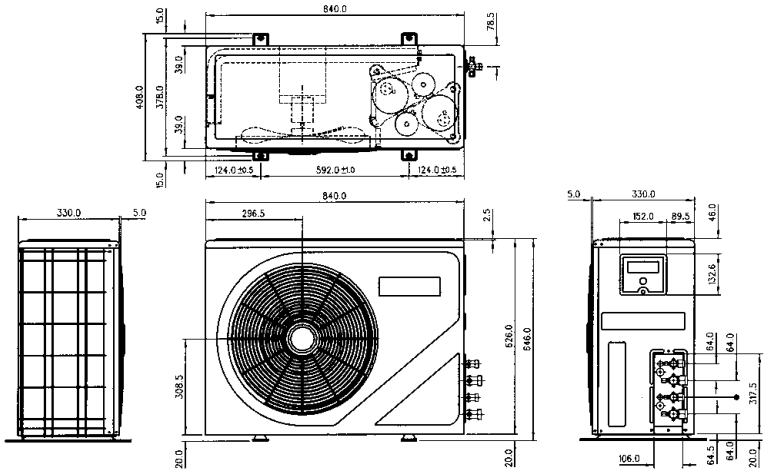
1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-94
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 19.4°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

Outlines And Dimensions

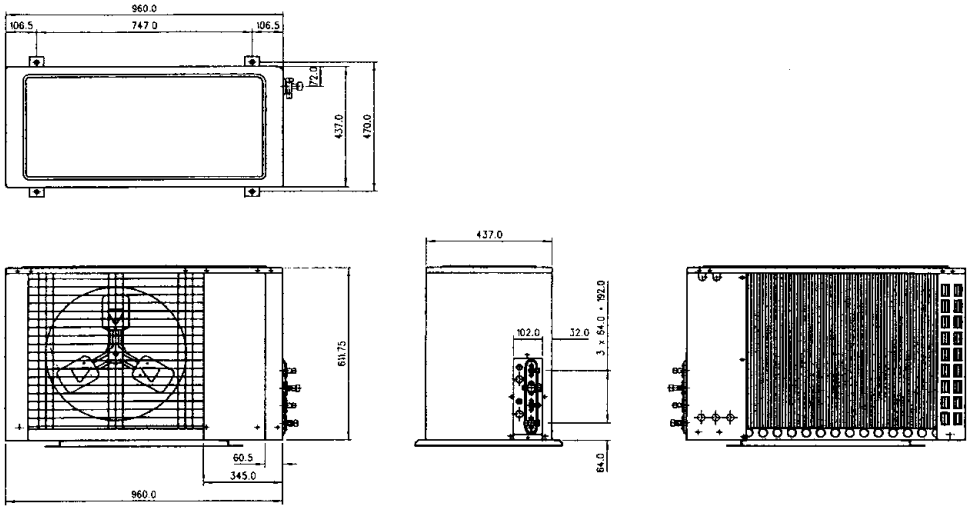
Outdoor Unit

Model : MMSD 1010 / 1015 / 1515 A/AR

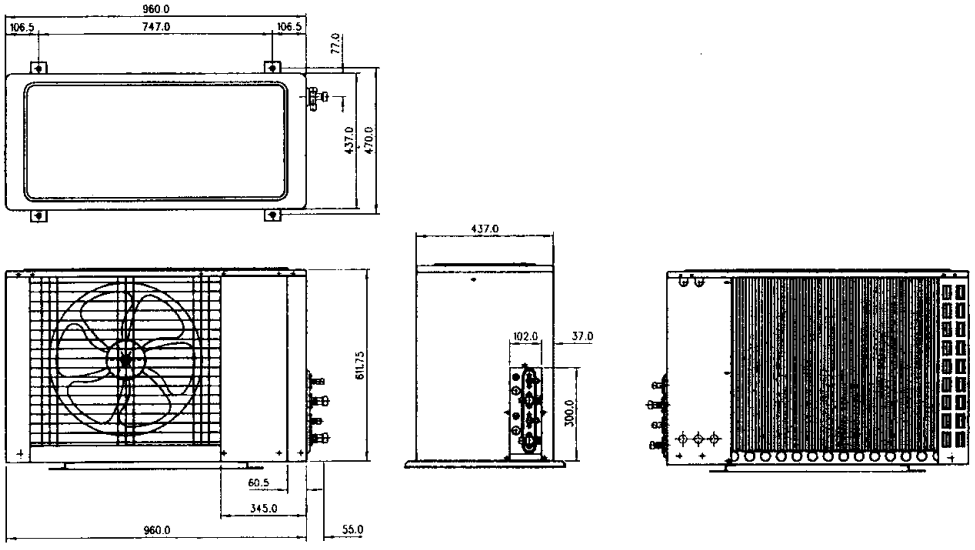
M4MSD 1010 / 1015 / 1515 A/AR



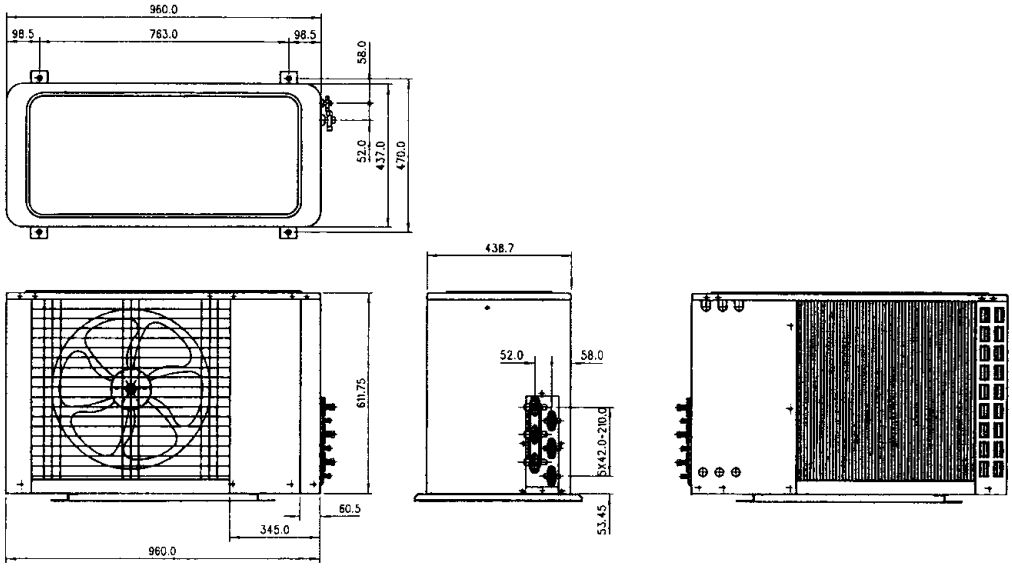
Model : MMSD 1020A / 1520 A/AR



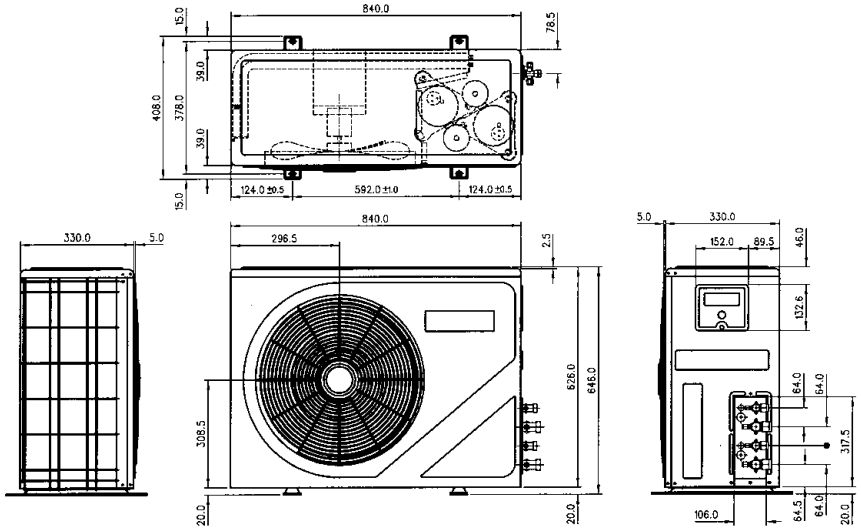
Model : MMSD 2020A



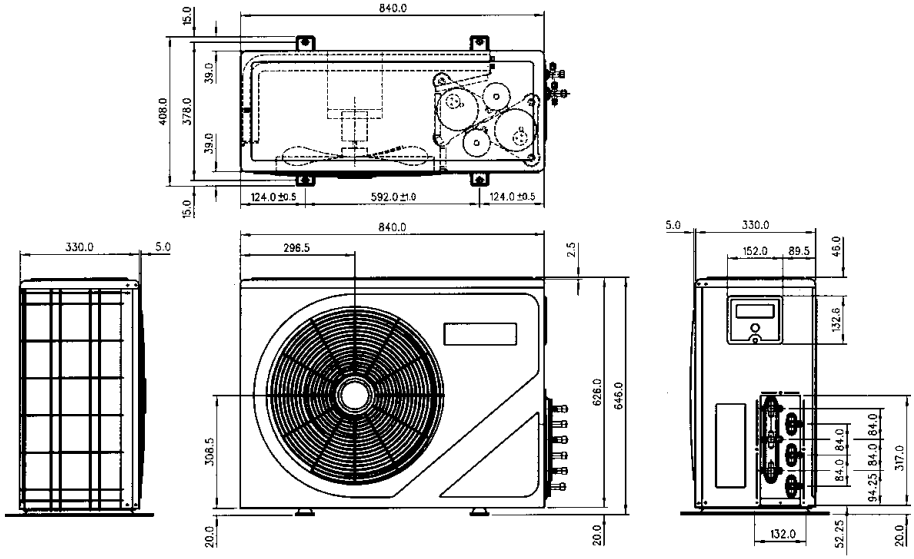
Model : MMST 101010A / 101015A / 101515A / 151515A / 101020A
M4MST 101010A / 101015A / 101515A / 151515 A/AR



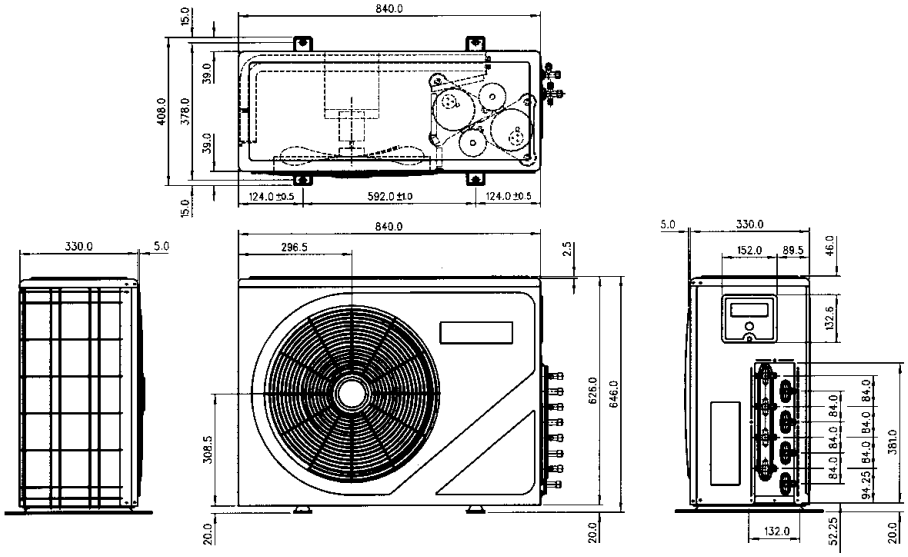
Model : MMSH8K8A



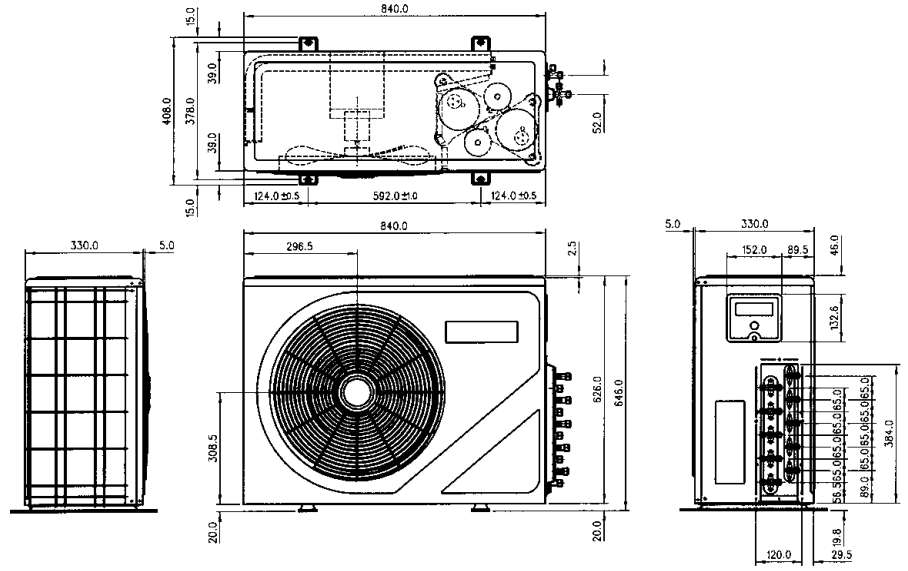
Model : MMSH8K66A



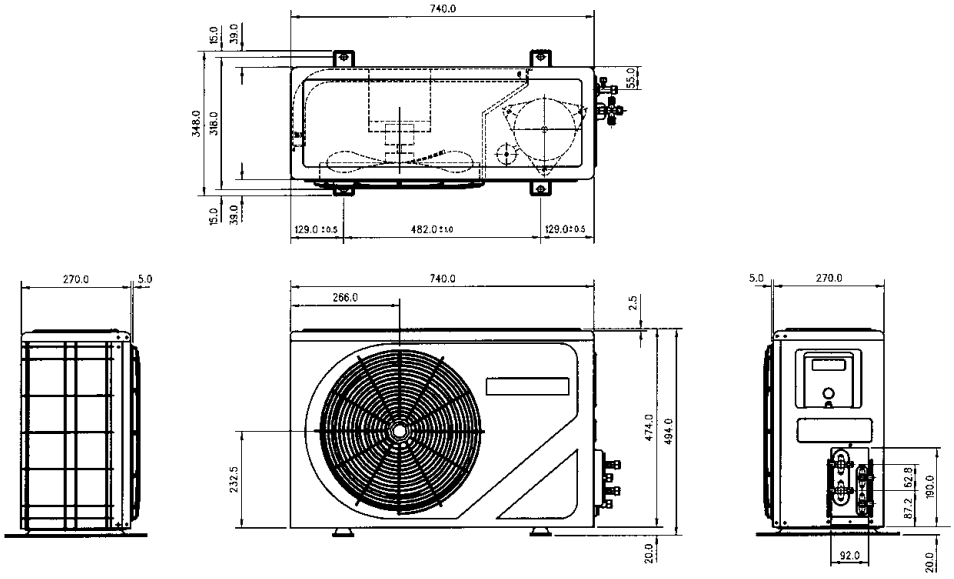
Model : MMSH66K66A



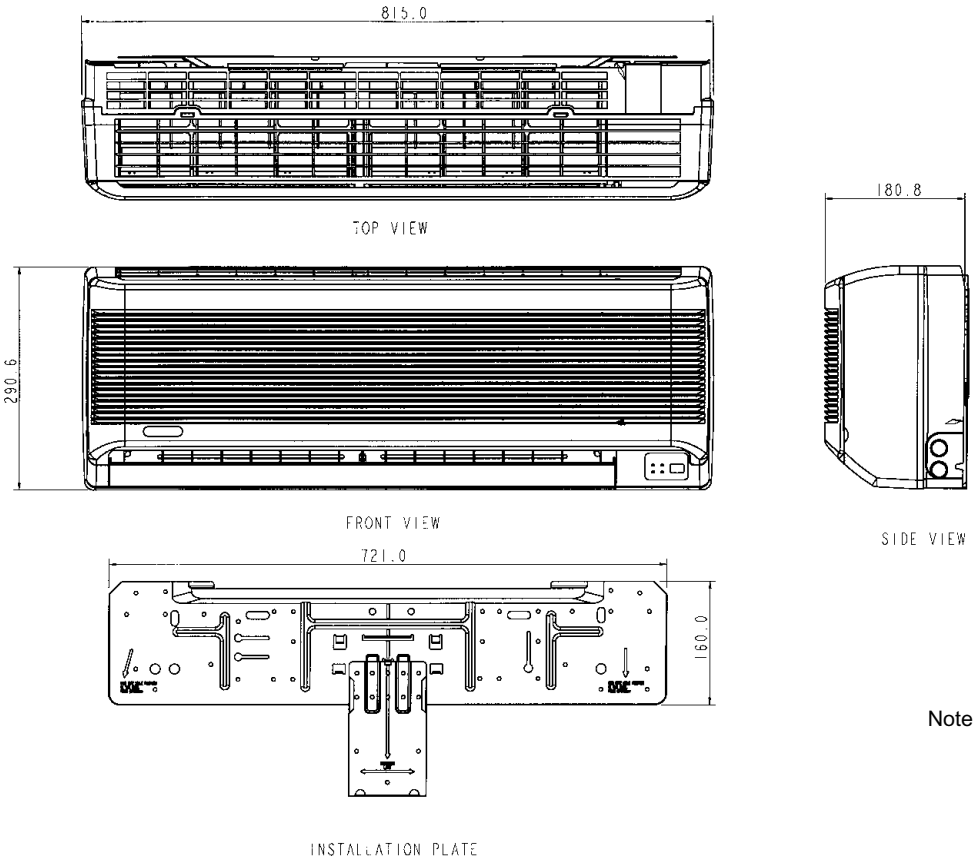
Model : MMSH66K555A



Model : MMSHK77A

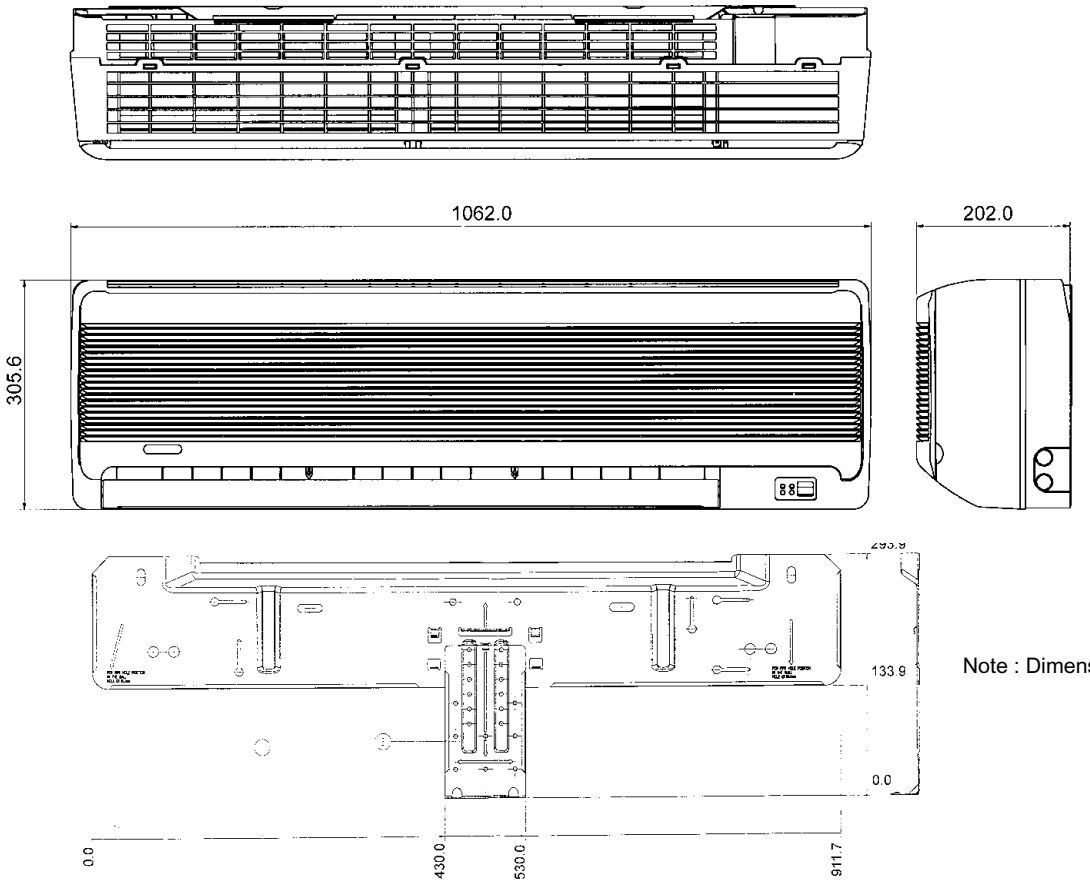


Indoor Unit
Model: MWMS 010/015 F/FR



Note : Dimension in mm

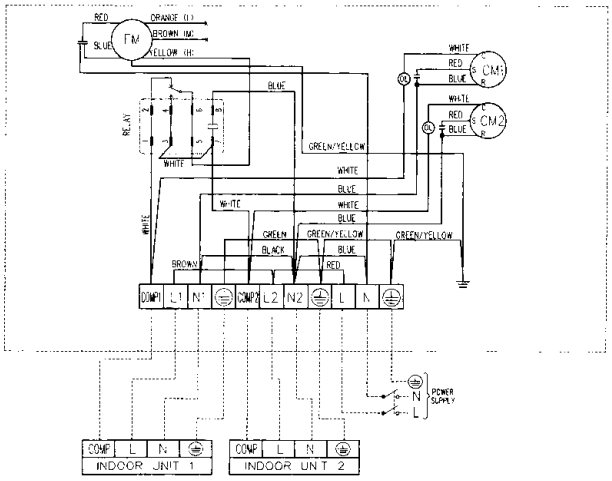
Indoor Unit
Model : MWMS 020 F/FR



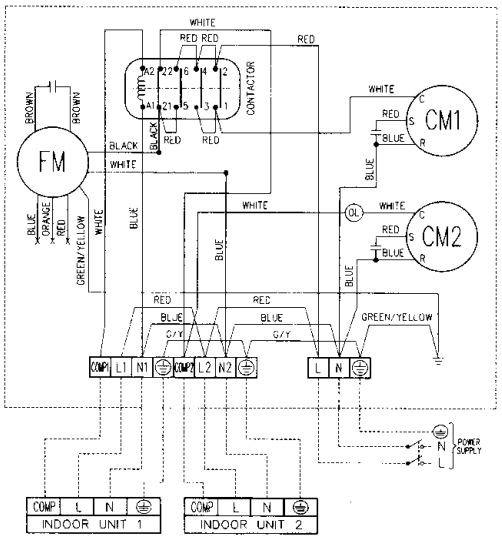
Note : Dimension in mm

Wiring Diagrams

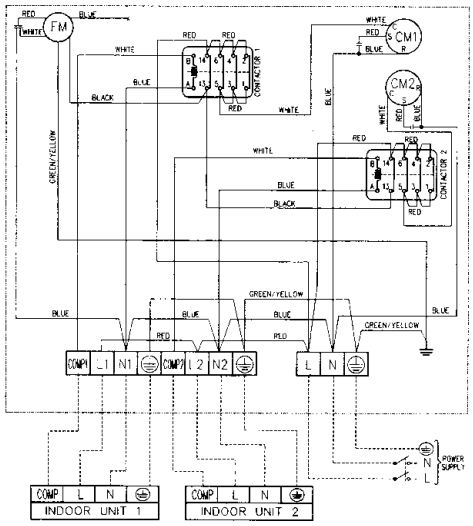
Outdoor Unit – Cooling Only
Model : MMSD 1010A/ 1015A/ 1515A



Model : MMSD 1020A/ 1520A

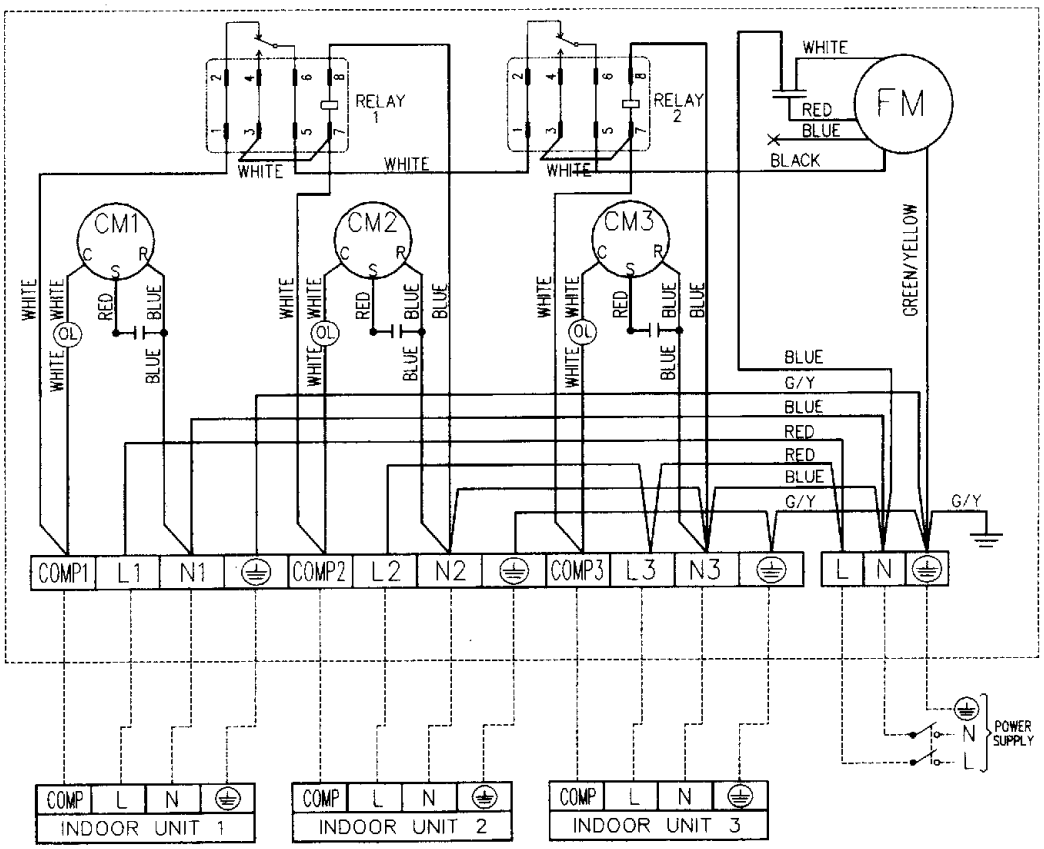


Model : MMSD 2020A

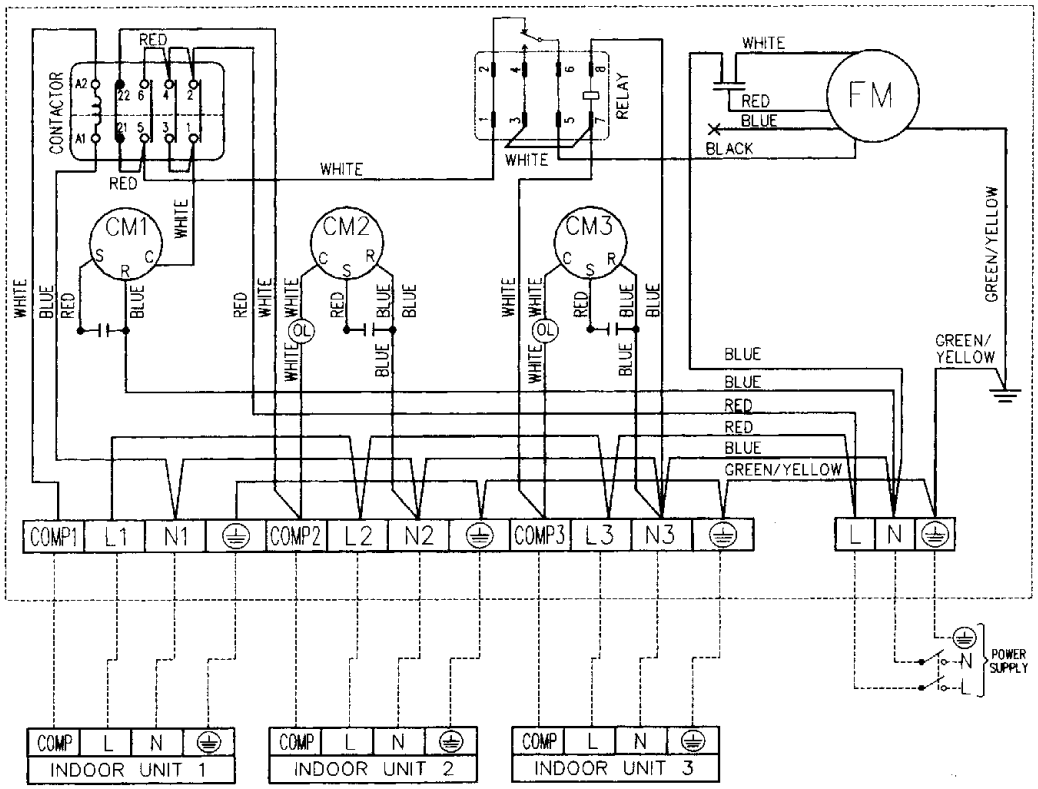


Outdoor Unit – Cooling Only

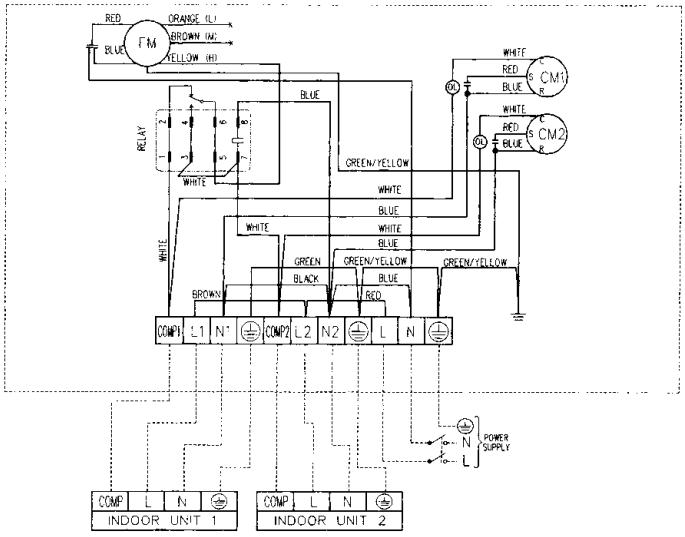
Model : MMST/M4MST 101010A/ 101015A/ 101515A/ 151515A



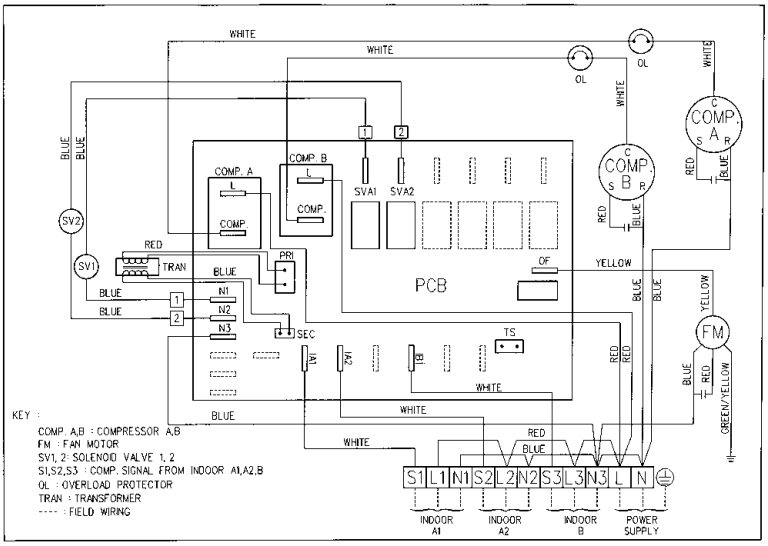
Model : MMST 101020A



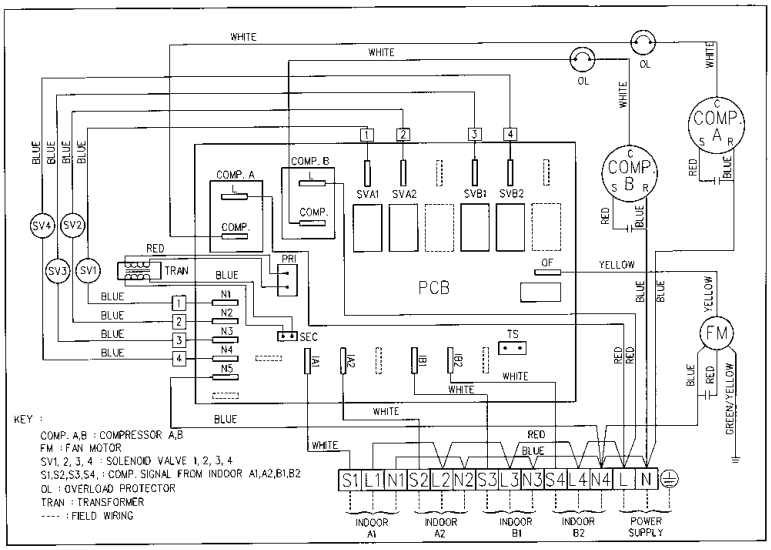
Outdoor Unit – Cooling Only
Model : MMSH8K8A



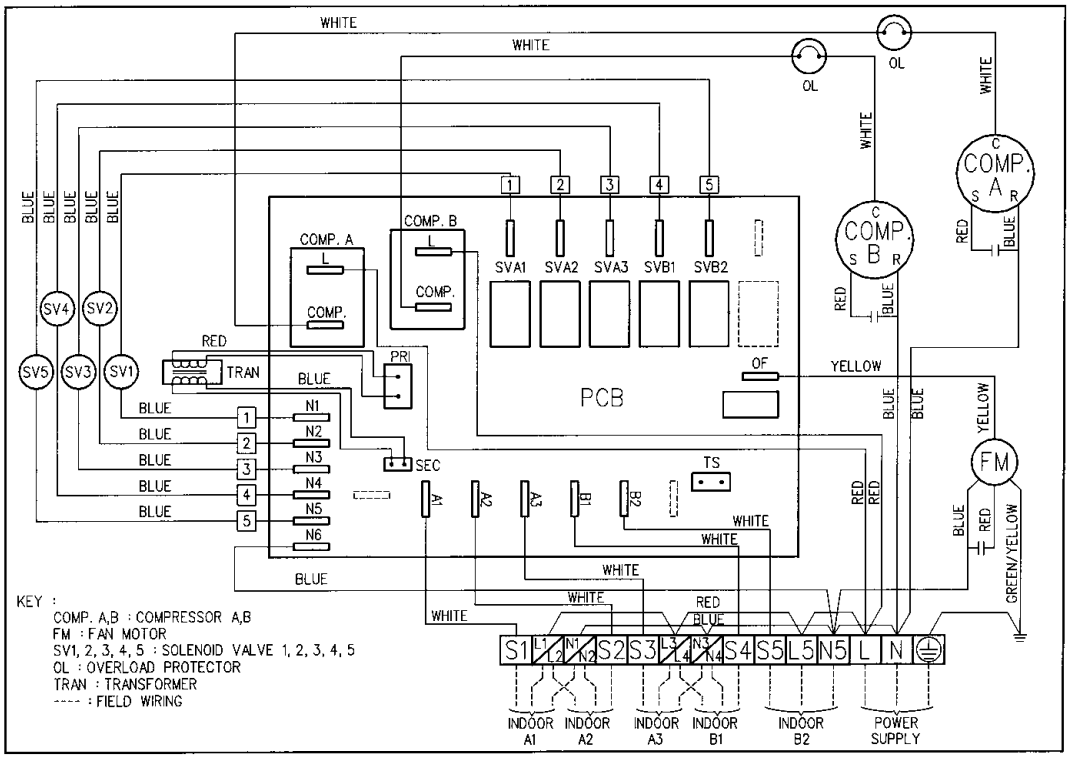
Model : MMSH8K66A



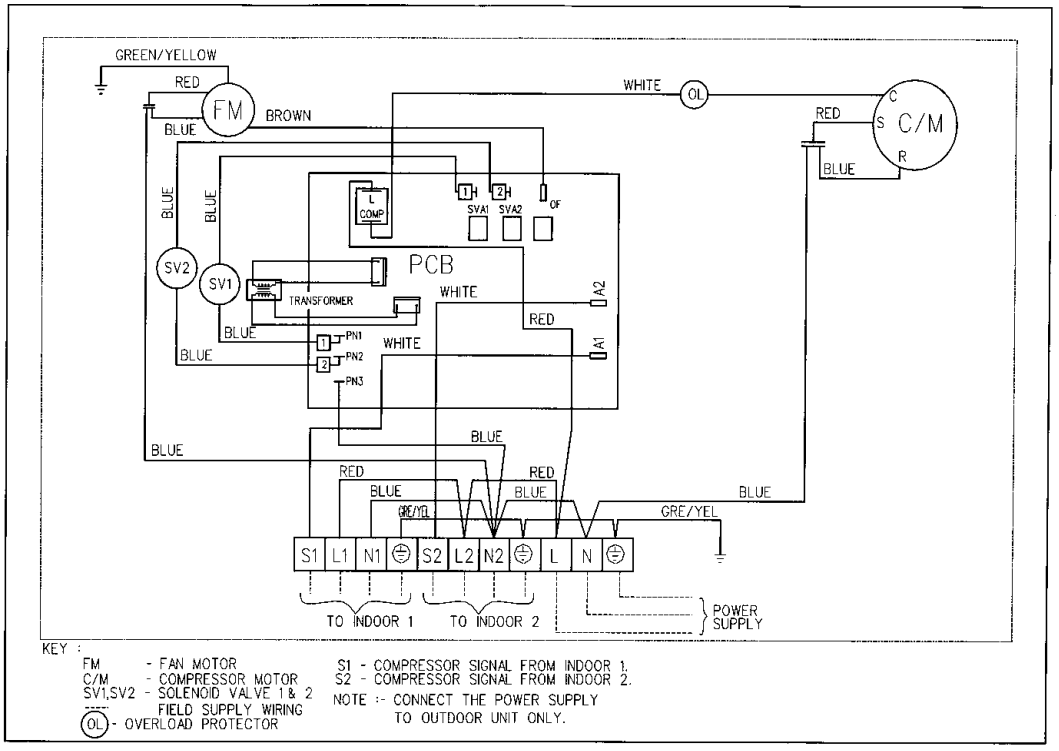
Model : MMSH66K66A



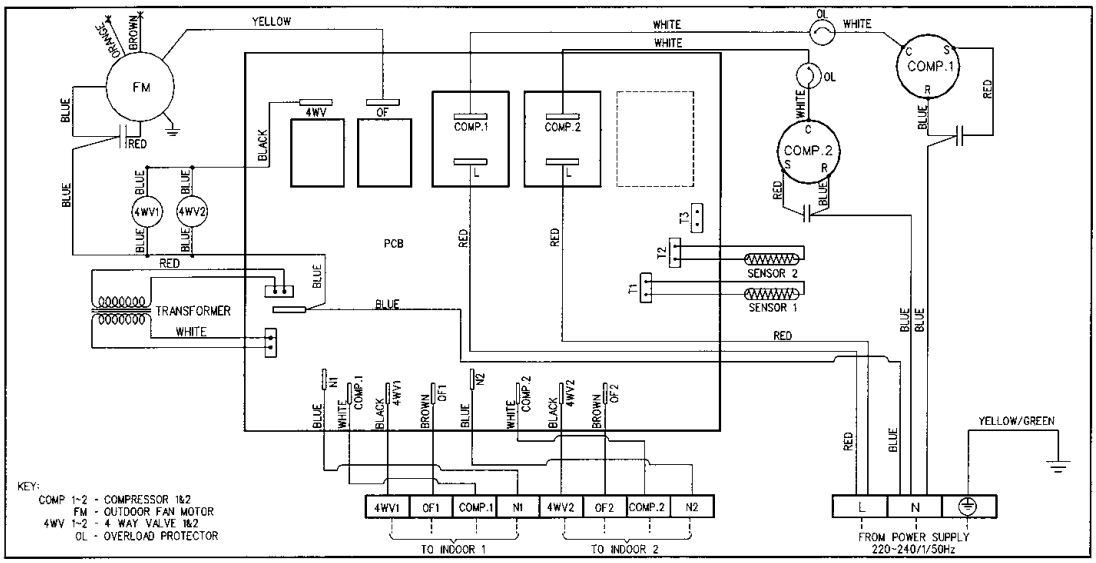
Outdoor Unit – Cooling Only
Model : MMSH66K555A



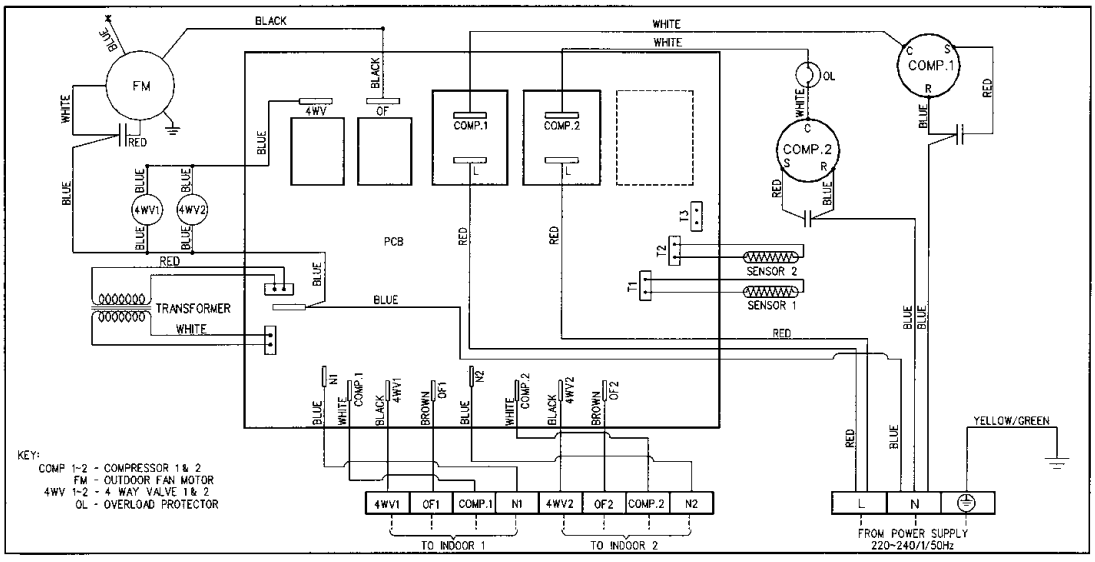
Model : MMSHK77A



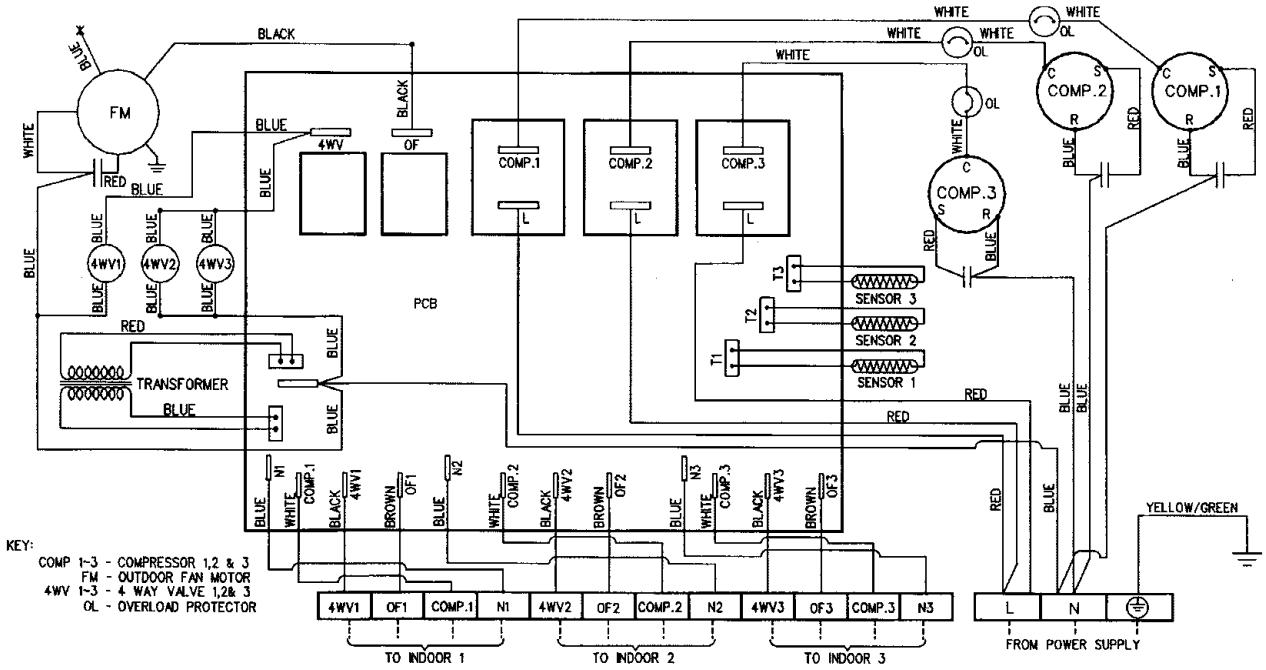
Outdoor Unit – Heatpump
Model : MMSD 1010 / 1015 / 1515 AR



Model : MMSD 1520AR



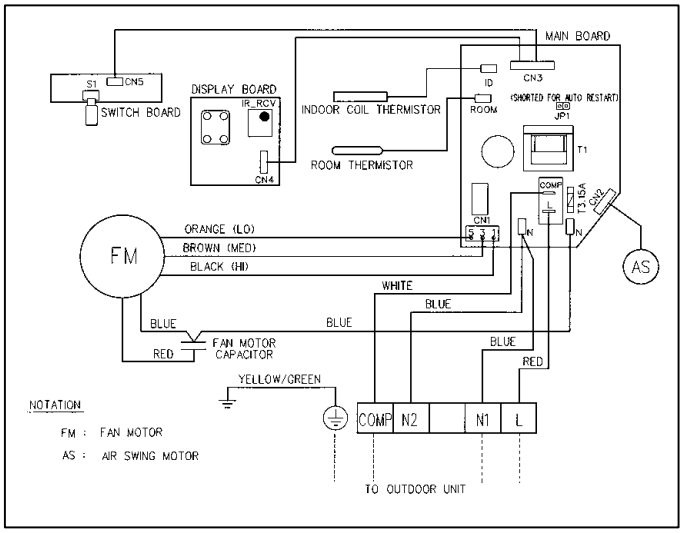
Outdoor Unit – Heatpump
Model : M4MST 101010 / 101015 / 101515 / 151515AR



Indoor Unit

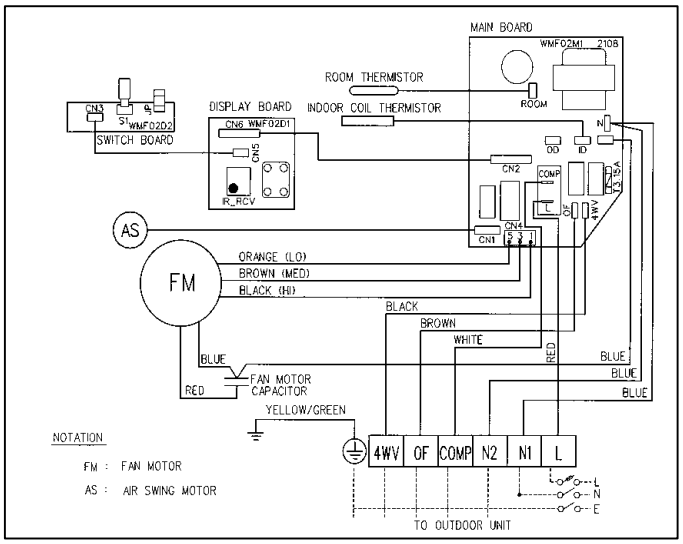
Cooling Only

Model : MWMS 010F/ 015F/ 020F (AUTO RANDOM RESTART)



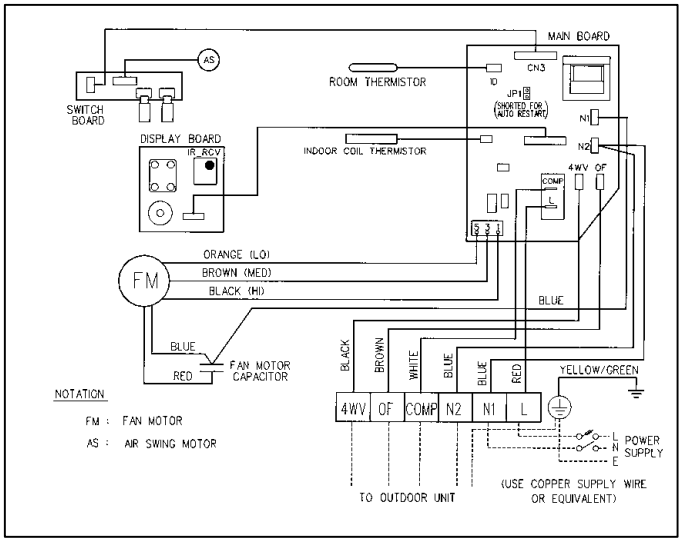
Heatpump Unit

Model : MWMS 010FR/ 015FR/ 020FR



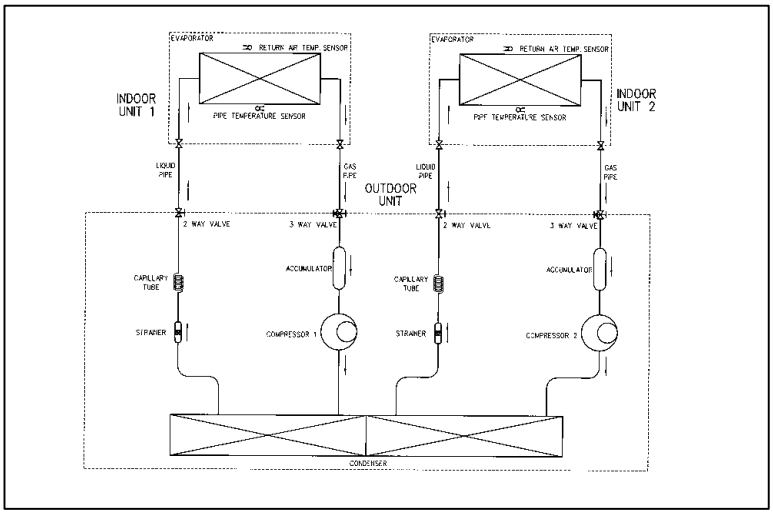
Heatpump Unit

Model : MWMS 010FR/ 015FR/ 020FR (AUTO RANDOM RESTART)

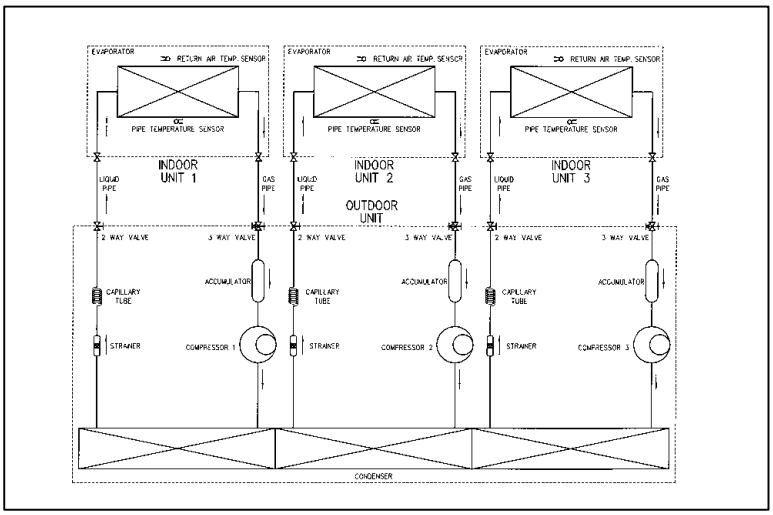


Refrigerant Circuit Diagram

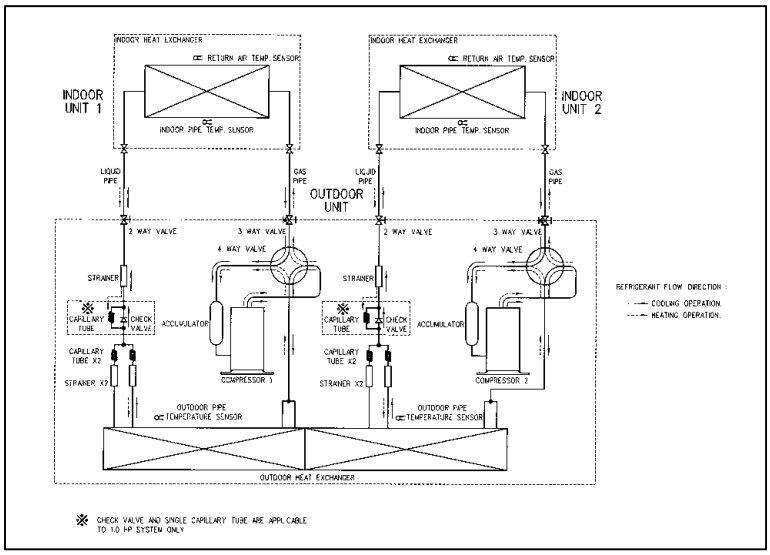
Model : MMSD 1010/ 1015/ 1515/ 1020/ 1520/ 2020A
M4MSD 1010/ 1015/ 1515A



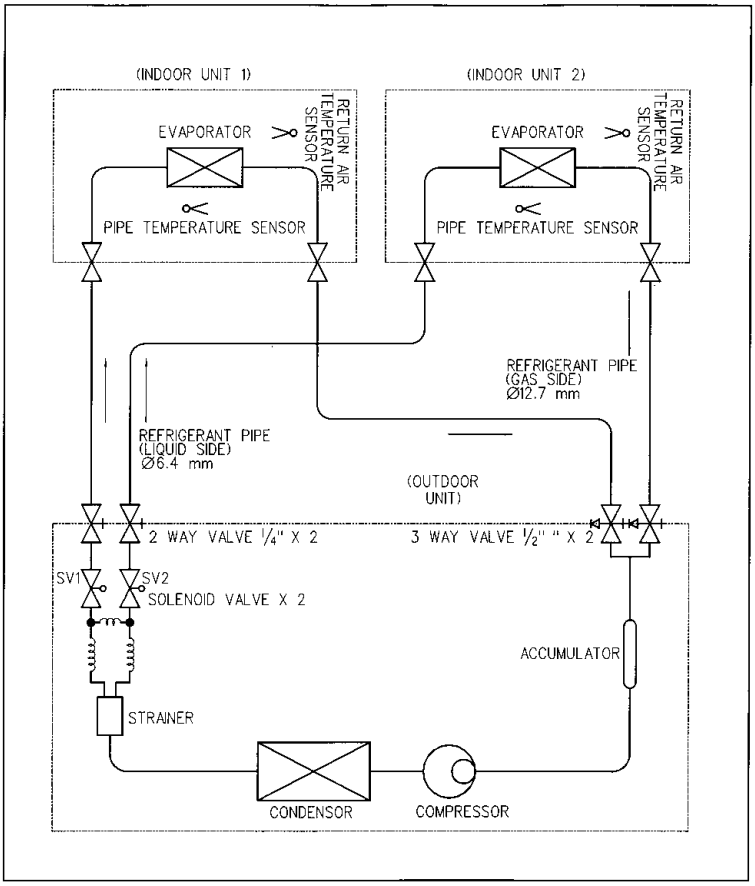
Model : MMST/M4MST 101010/ 101015/ 101515/ 151515, MMST 101020A



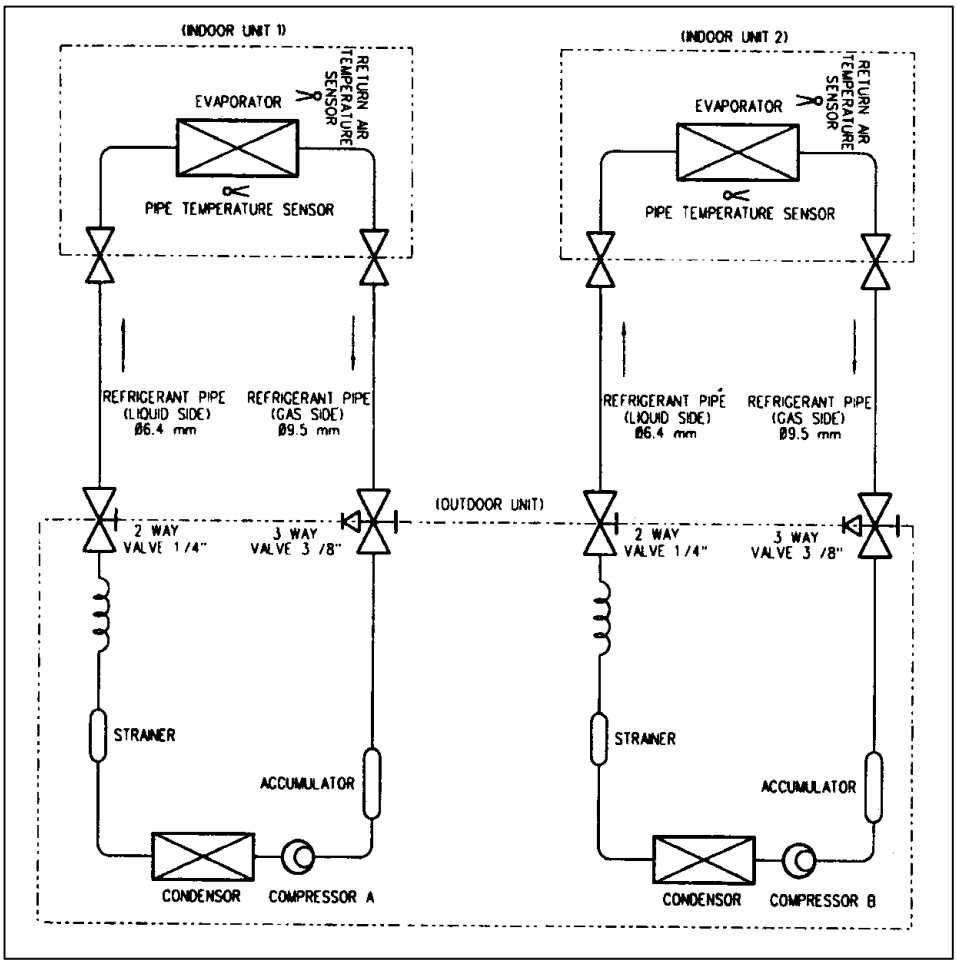
Model : MMSD 1010/ 1015/ 1515/ 1520AR
M4MSD 1010/ 1015/ 1515A



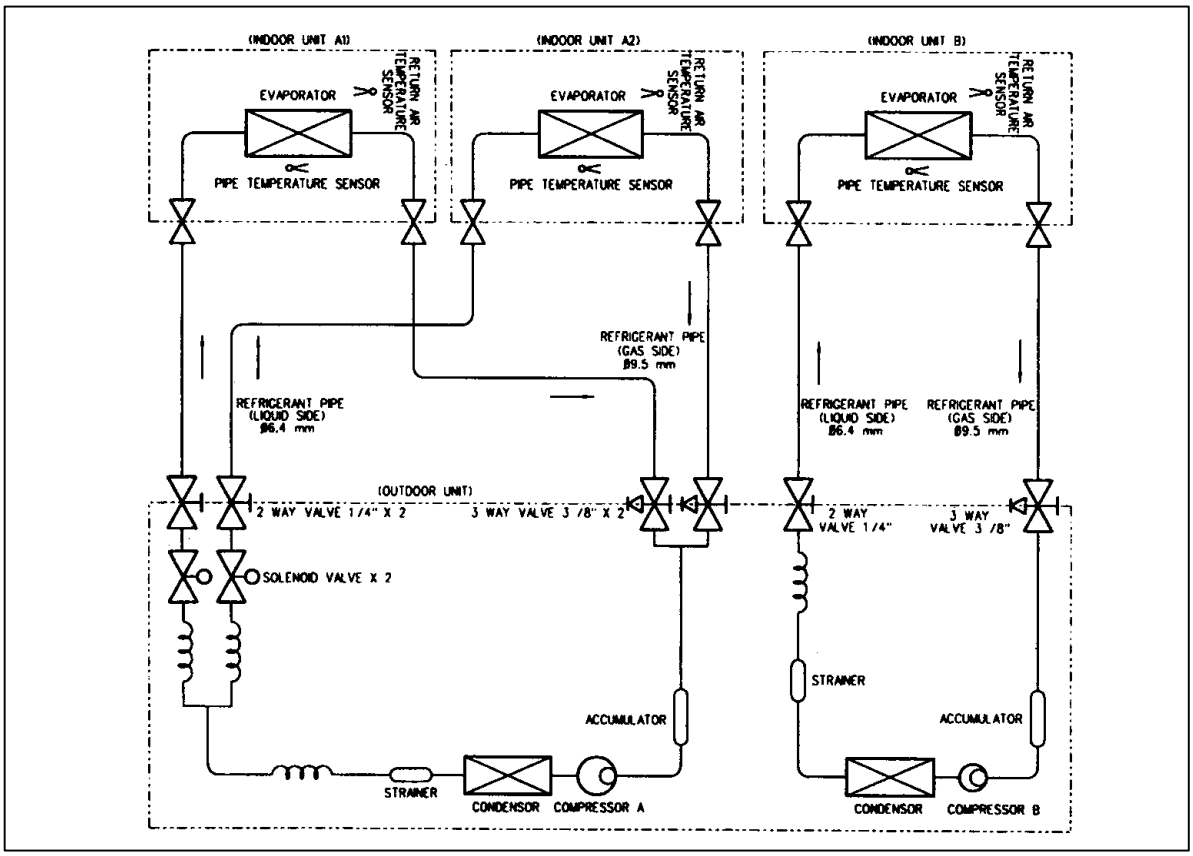
Model : MMSHK77A



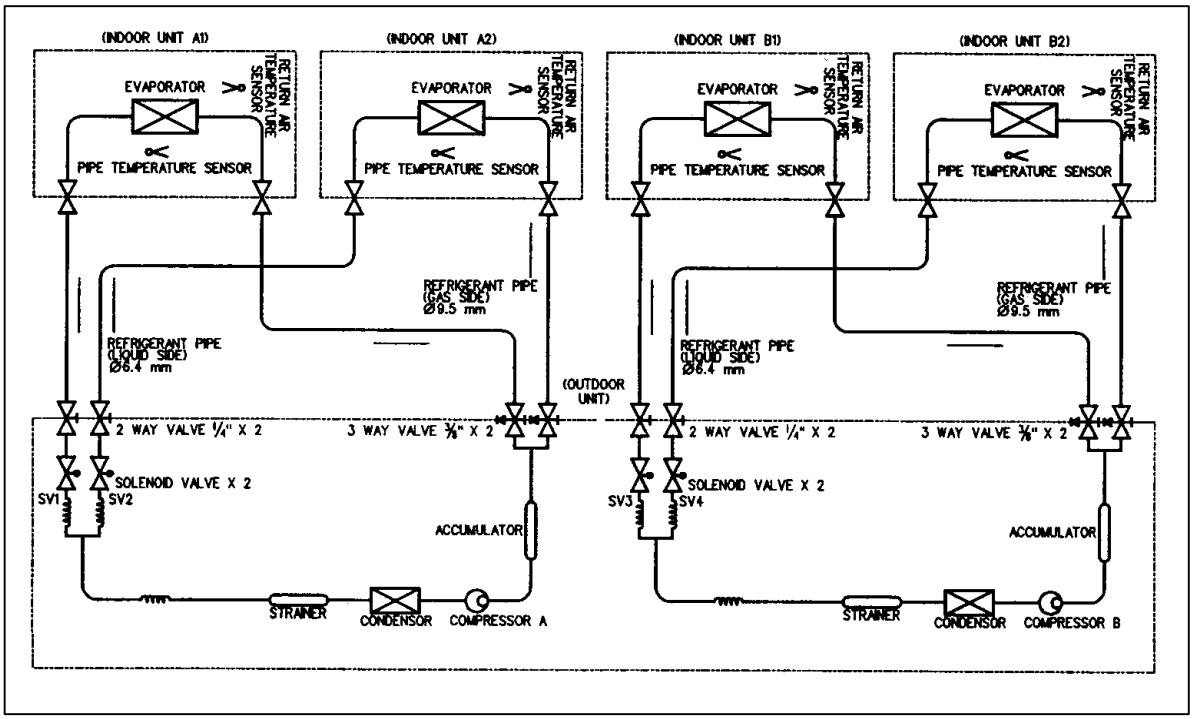
Model : MMSH8K8A



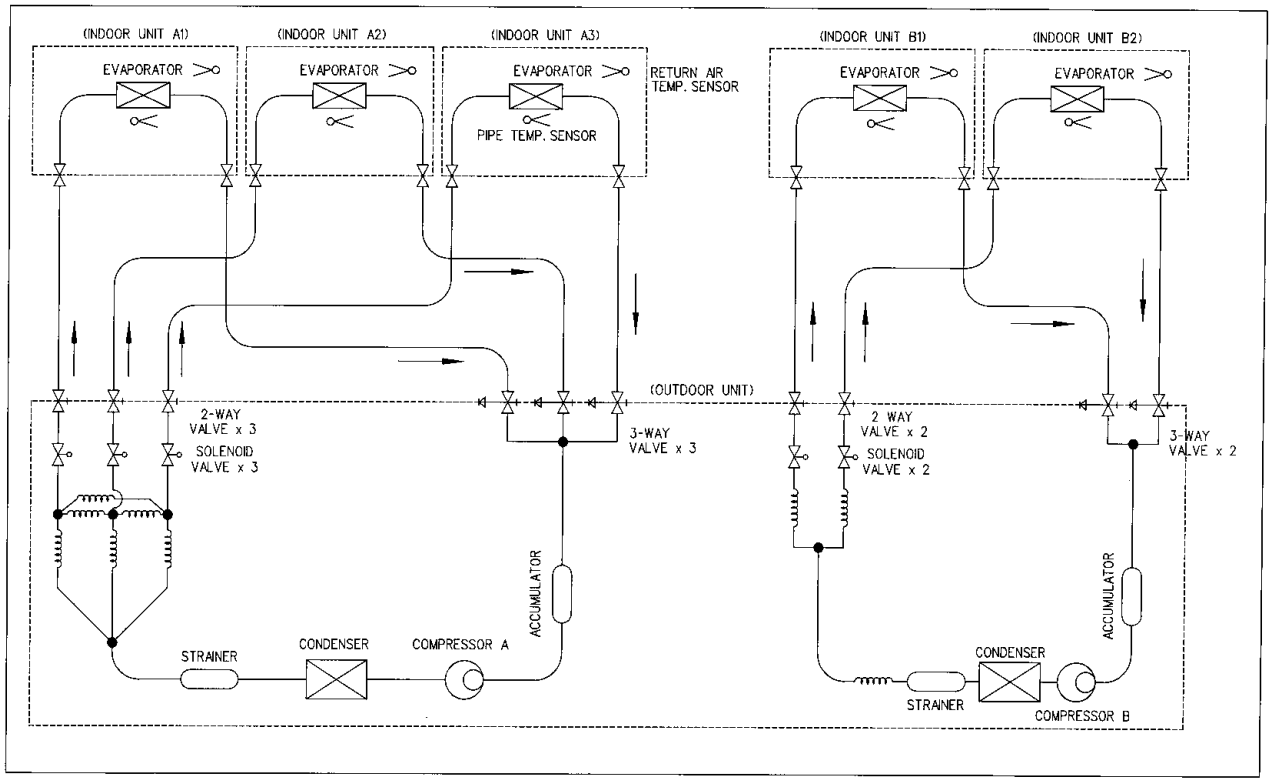
Model : MMSH8K66A



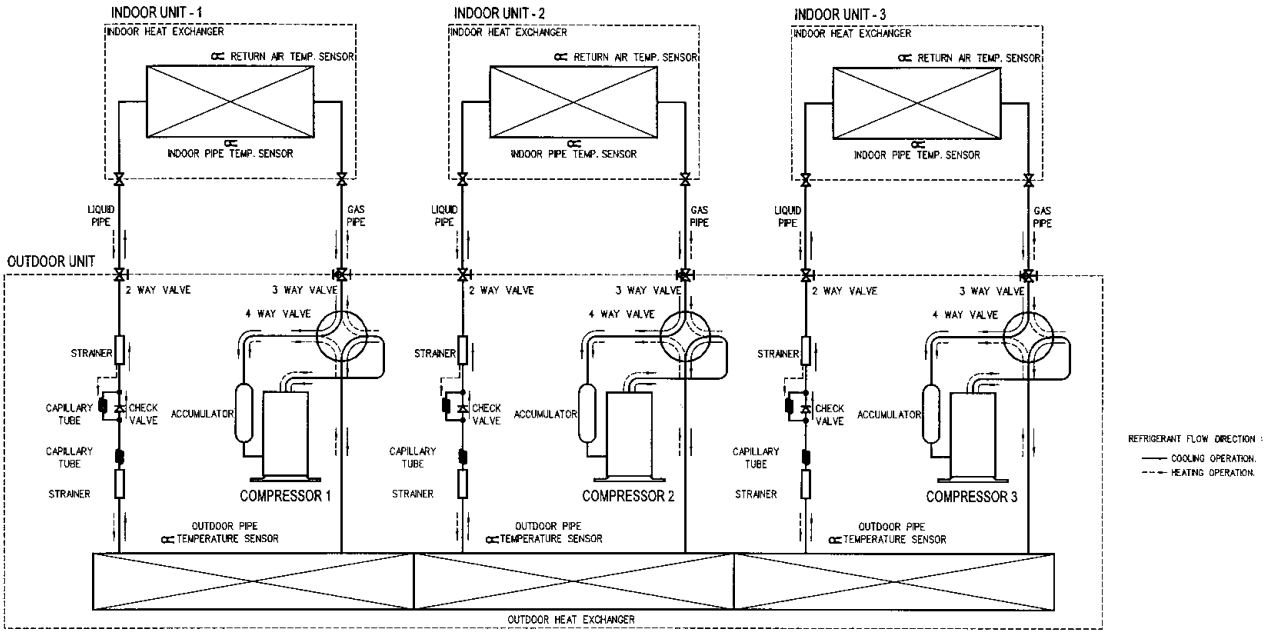
Model : MMSH66K66A



Model : MMSH66K555A



Model : M4MST 101010 / 101015 / 101515 / 151515AR



Special Precautions For R407C

Special Precautions When Dealing With Refrigerant R407C Unit

1) What is new refrigerant R407C?

R407C is a zeotropic refrigerant mixture which has zero ozone depletion potential and thus conformed to the Montreal Protocol regulation. It requires Polyol ester oil (POE) oil for its compressor's lubricant. Its refrigerant capacity and performance are about the same as the refrigerant R22.

2) Components

Mixture weight composition R32(23%), R125(25%), R134a(52%)

3) Characteristic

- R407C liquid and vapor components have different compositions when the fluid evaporates or condenses. Hence, when leak occurs and only vapor leaks out, the composition of the refrigerant mixture left in the system will change and subsequently affect the system performance. If just additional refrigerant is added to leaked system, system performance will drop. It is recommended that the system should be evacuated thoroughly before recharging with R407C.
- When refrigerant R407C is used, the composition will differ depending on whether it is in gaseous or liquid phase. Hence when charging R407C, ensure that only liquid is being withdrawn from the cylinder or can. This is to make certain that only original composition of R407C is being charged into the system.
- POE oil is used as lubricant for R407C compressor, which is different from the mineral oil used for R22 compressor. Extra precaution must be taken not to expose the R407C system too long to moist air.

4) Check List Before Installation/Servicing

- Tubing
  Refrigerant R407C is more easily affected by dust of moisture compared with R22, make sure to temporarily cover the ends of the tubing prior to installation
- Compressor oil
  No additional charge of compressor oil is permitted.
- Refrigerant
  No other refrigerant other that R407C
- Tools
  Tools specifically for R407C only (must not be used for R22 or other refrigerant)
  i) Manifold gauge and charging hose
  ii) Gas leak detector
  iii) Refrigerant cylinder/charging cylinder
  iv) Vacuum pump c/w adapter
  v) Flare tools
  vi) Refrigerant recovery machine

5) Handling And Installation Guidelines

Like R22 system, the handling and installation of R407C system are closely similar. All precautionary measures; such as ensuring no moisture, no dirt or chips in the system, clean brazing using nitrogen, and thorough leak check and vacuuming are equally important requirements. However, due to zeotropic nature of R407C and its hydroscopic POE oil, additional precautions must be taken to ensure optimum and trouble-free system operation.

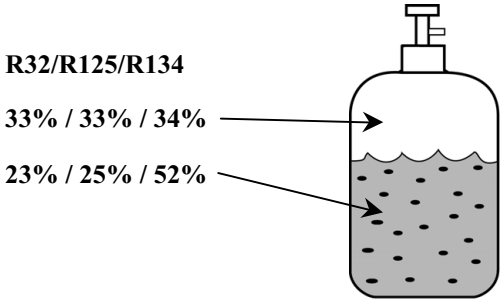
a) Filter-dryer must be installed along the liquid line for all R407C air conditioners. This is to minimise the contamination of moisture and dirt in the refrigerant system. Filter-dryer must be of molecular sieve type. For a heat-pump system, install a two-way flow filter dryer along the liquid line.

b) During installation or servicing, avoid prolong exposure of the internal part of the refrigerant system to moist air. Residual POE oil in the piping and components can absorb moisture from the air.

c) Ensure that the compressor is not expose to open air for more than the recommended time specified by its manufacturer (typically less than 10 minutes). Removed the seal-plugs only when the compressor is about to be brazed.

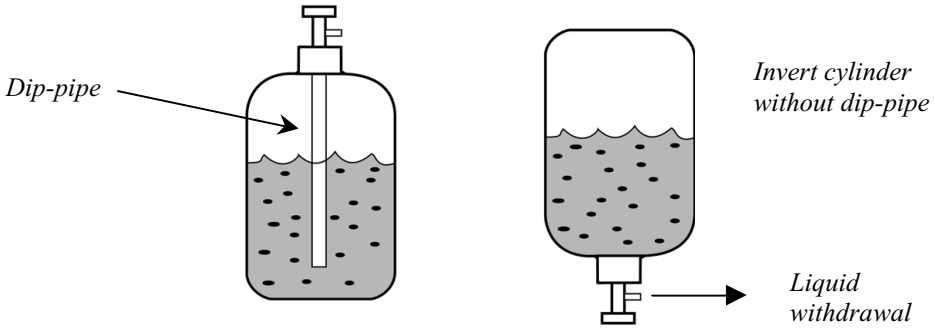
d) The system should be thoroughly vacuumed to 1.0 Pa (-700mmHg) or lower. This vacuuming level is more stringent than R22 system so as to ensure no incompressible gas and moisture in the system.

e) When charging R407C, ensure that only liquid is being withdrawn from the cylinder or can. This is to ensure that only the original composition of R407C is being delivered into the system. The liquid composition can be different from the vapor composition.



Composition of R407C in vapor phase is different from liquid phase.

f) Normally, the R407C cylinder or can is being equipped with a dip-pipe for liquid withdrawal. However, if the dip-pipe is not available, invert the cylinder or can so as to withdraw liquid from the valve at the bottom.



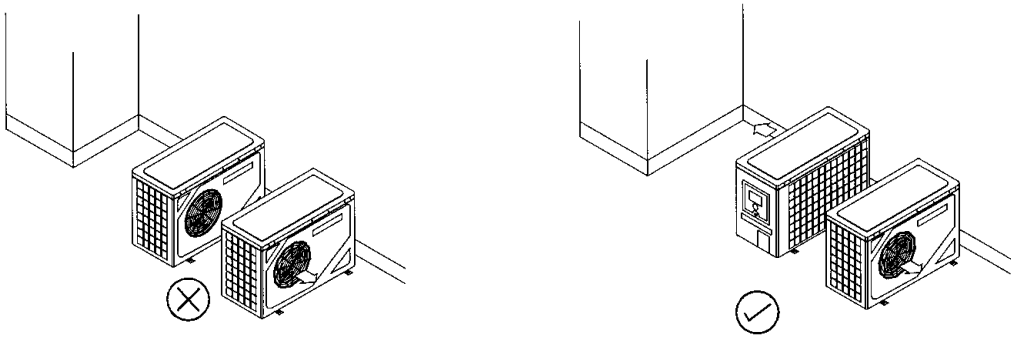
g) When servicing leak, the top-up method, commonly practiced for R22 system, is not recommended for R407C system. Unlike R22 where the refrigerant is of a single component, the composition of R407C, which made-up of three different components, may have changed during the leak. Consequently, a top-up may not ensure that the R407C in the system is of original composition. This composition shift may adversely affect the system performance. It is recommended that the system should be evacuated thoroughly before recharging with R407C.

Installation

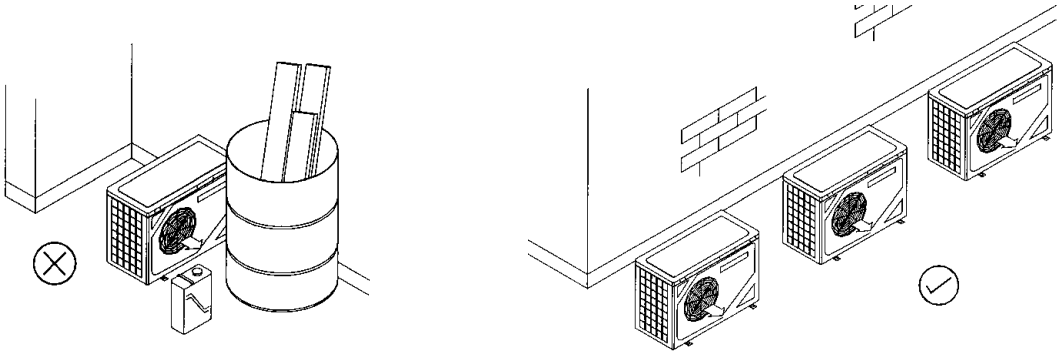
Location For Installation Of The Condensing Units

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

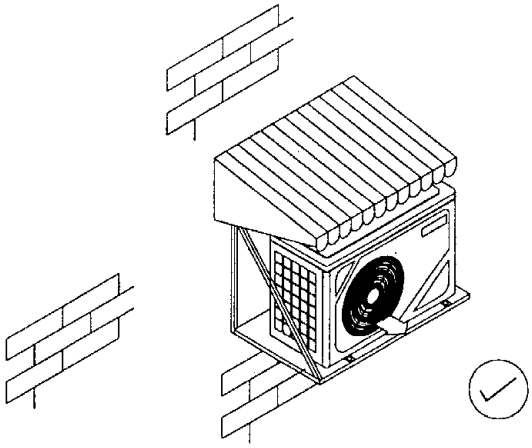
- Install the condensing (outdoor) unit in a way such that hot air distributed by the outdoor condensing unit cannot be drawn in again (as in the case of short circuit of hot discharge air) Allow sufficient space for maintenance around the unit.



- Ensure that there is no obstruction of air flow into or out of the unit. Remove obstacle which block air intake or discharge.



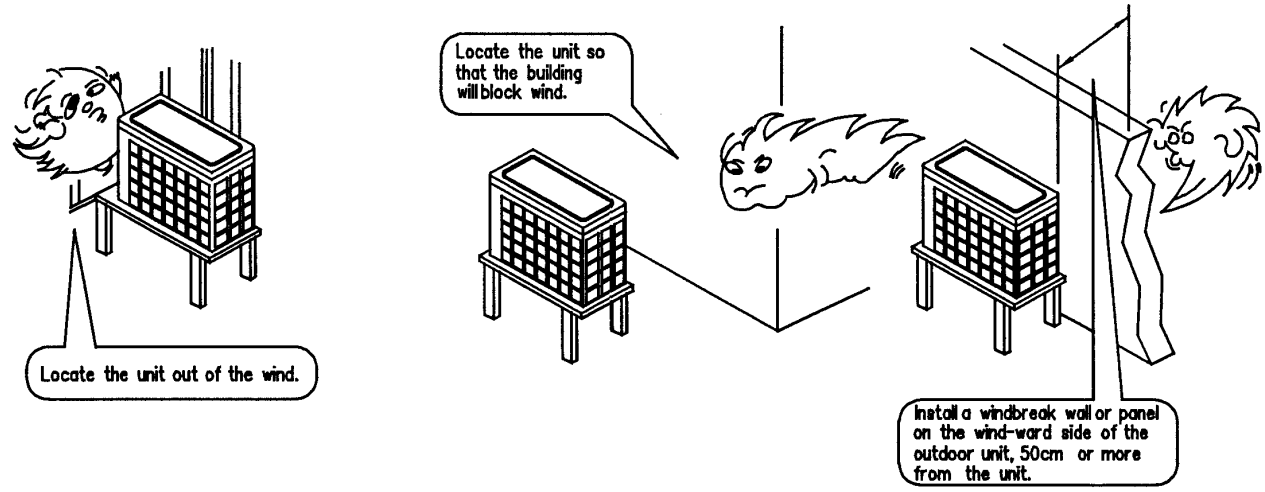
- The location must be well ventilated, so that the unit can draw in and distribute plenty of air thus lowering the condensing temperature.
- A place capable of carrying the weight of the outdoor unit and isolating noise and vibration.
- A place protected from direct sunlight. Otherwise use an awning for protection, if necessary.
- A place where smooth drainage of rain water and water formed by defrosting is acceptable.

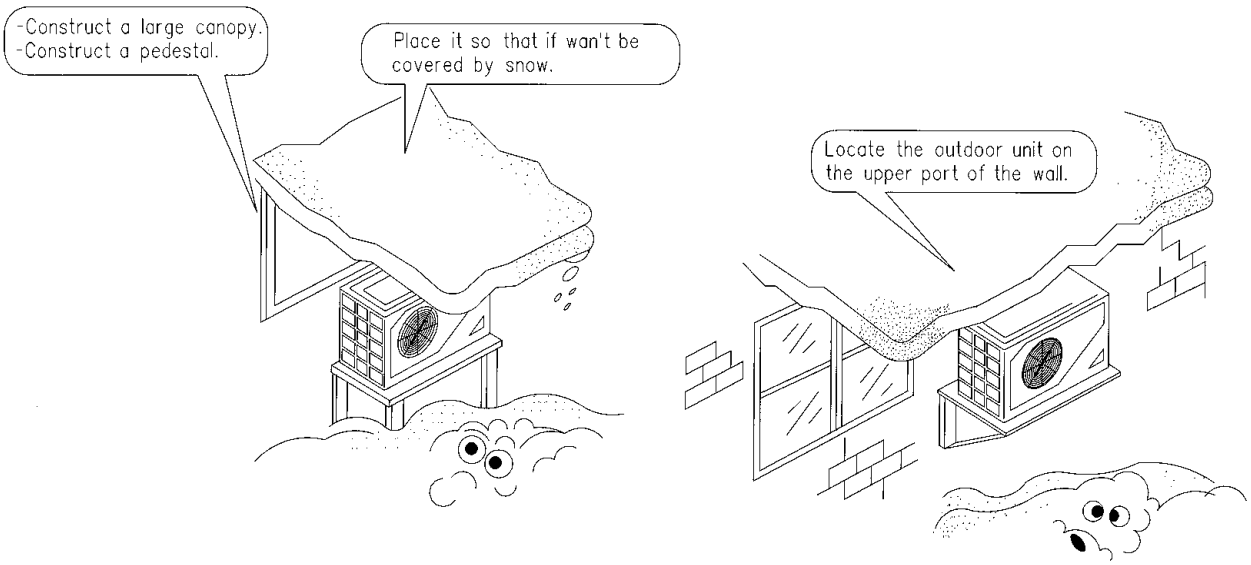


- The location must not be susceptible to dust or oil mist.

Caution : **If the condensing unit is operated in an atmosphere containing oils (including machine oils), salt (coastal area), sulphide gas (near hot spring, oil refinery plant), such substances may lead to failure of the unit.**

INSTALLATION IN ZONE EXPOSED TO STRONG WIND OR HIGH SNOW FALLS (FOR HEATPUMP MODEL)





Maximum Pipe Length And Maximum Number Of Bends

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

MODEL / DATA	MMSD / M4MSD			MMST/M4MST	MMST
	1010A – 1515A	1020A – 1520A	2020A	101010A – 151515A/AR	101020A
Max. Length (L) m	12 / 12	12 / 15	15 / 15	12 / 12 / 12	12 / 12 / 15
Max. elevation (H) m	5 / 5	5 / 8	8 / 8	5 / 5 / 5	5 / 5 / 8
Max. No. of Bends	10 / 10	10 / 10	10 / 10	10 / 10 / 10	10 / 10 / 10

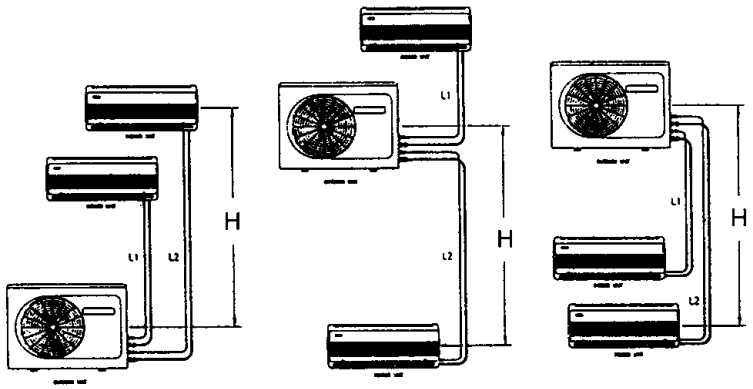
Model	Circuitry	Max. Individual L1 or L2 (m)	*Max. Total L1 + L2 (m)	*Max. Length Difference L1 – L2 (m)	Max. Elevation H (m)	*Max. Height Difference ΔH(m)	*Max. Number of bends
MMSH8K8A	COMP. A	12	-	-	5	-	10
	COMP. B	12	-	-	5	-	10
MMSH8K66A	COMP. A	12 / 12	20	8	5	7	10
	COMP. B	12	-	-	5	-	10
MMSH66K66A	COMP. A	12 / 12	20	8	5	7	10
	COMP. B	12 / 12	20	8	5	7	10
MMSH66K555A	COMP. A	12 / 12	20	8	5	7	10
	COMP. B	12 / 12	20	8	5	7	10

* For units sharing the same compressor only.

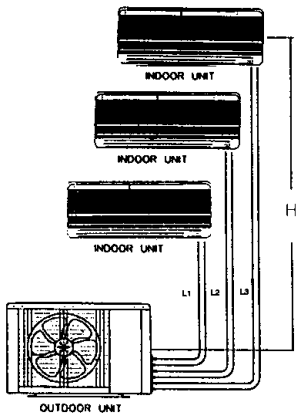
CAUTION :

- Our guarantee on the performance of our air-conditioners will be revoked if the height, length and/or the number of bends of the refrigerant piping system installed is beyond the limit above.
- Bendings must be carefully made so as not to crush the pipe. Use a pipe bender to bend a pipe s far as possible.

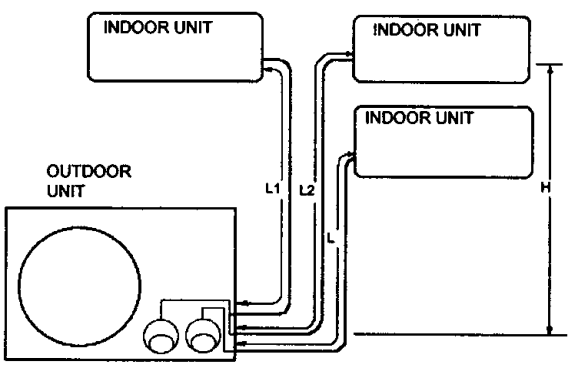
1) MMSD

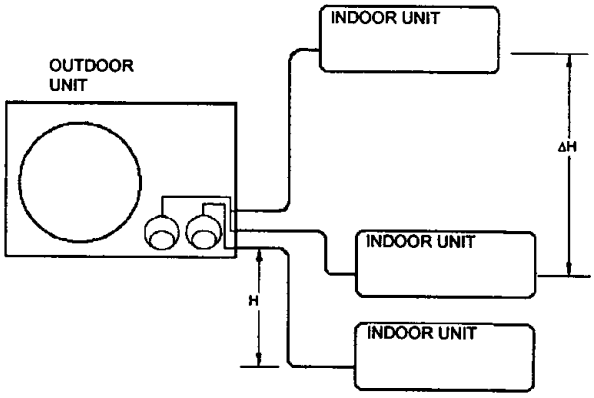


2) MMST



3) MMSH

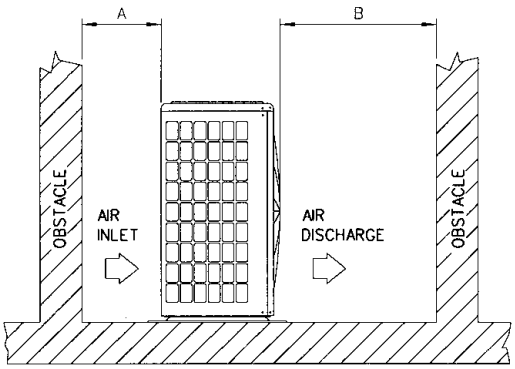


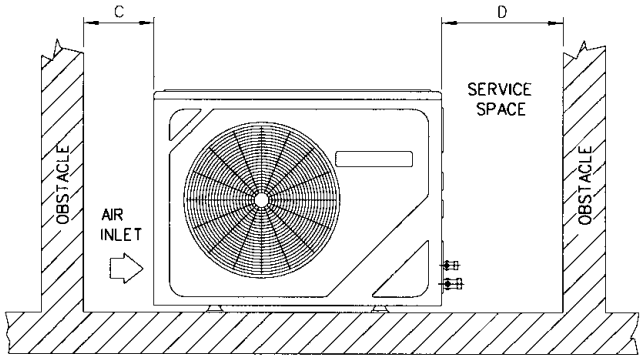


Installation Clearance

Single Condensing Unit Installation

Outdoor units must be installed such that there is no short circuit of the hot discharge air or obstruction to smooth air flow. Select the coolest possible place where intake air should not be hotter than the outside temperature (max 45 °C).



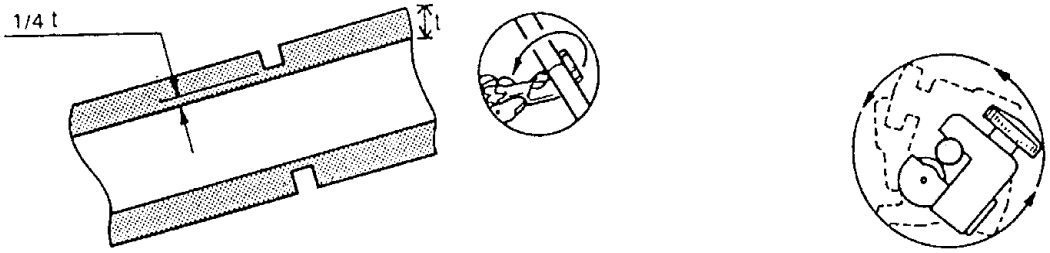


All Models	A	B	C	D
Minimum Distance	300 mm	1000 mm	300mm	500mm

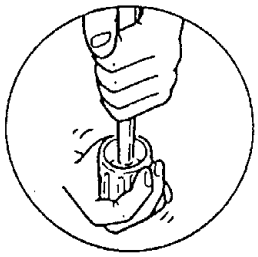
NOTE :- (1) If any obstacle is higher than 2m, or if there is any obstruction at the upper part of the unit, allow more space than indicated in the table above.

Flaring Technique (For Flare Connection)

- Cut the pipe stages by stages, Advancing the blade of pipe cutter slowly. Extra force and a deep cut will cause more distortion of pipe and therefore extra burr.

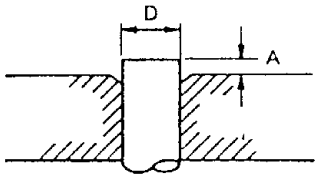


- Remove burr with the burr remover. This will avoid unevenness on the flare face which will cause gas leak. Hold the flaring end down to prevent burr from dropping inside pipe.



- The exact length of pipe protruding from the face of the flare die is determined by the flaring tool. The table shows the use of an imperial die and riged die.

PIPE Ø (MM)	A(MM)	
	IMPERIAL DIE	RIGED DIE
6.35 (¼")	1.3	0.7
9.52 (3/8")	1.6	1.0
12.7 (½")	1.9	1.3
15.88 (5/8")	2.2	1.7

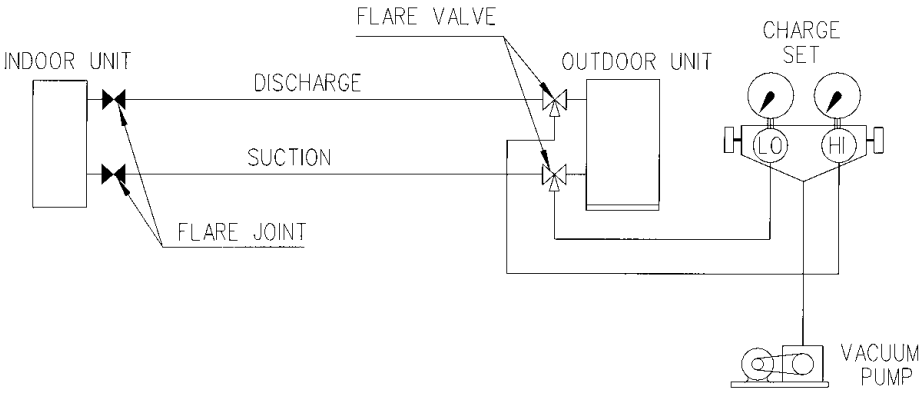


Fix the pipe firmly on the flare die. Match the centers of both the flare die and the flaring punch, and tighten flaring punch fully.

Vacuuming And Charging

The pre-charged outdoor unit does not need any vacuuming or charging. However once it is connected, the connecting pipe line and the indoor need to be vacuumed before releasing the R22 from the outdoor unit.

1) Open the service port core cap.
2) Connect pressure gauge to the service port.
3) Connect the line to vacuum pump. Open the charging manifold valve and turn the pump on. (Diagram 1) (evacuation time varies by the capacity of the pump but averagely in 1 hour).
4) Repeat step 1 to step 3 every indoor with respective to the correct pair of flare valve. For 1 to 2 indoor unit.



5) After evacuation, unscrew the spindle (diagram 2B) for the gas to run to indoor unit.

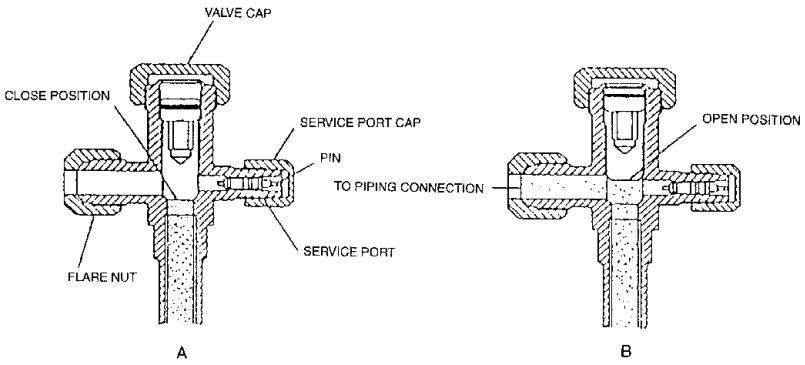


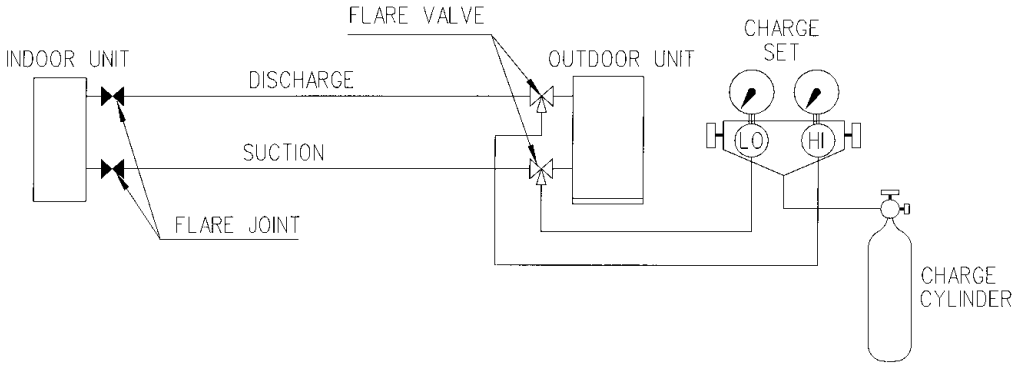
Diagram 2

Additional Charge (For Flare Connection)

The refrigerant gas is charged in the outdoor unit and, if the piping length to every indoor is 5m, additional charge of the refrigerant after vacuuming is not necessary.

When the piping length to every indoor is more than 5m, please add 15g of refrigerant for every addition of 1m pipe length.

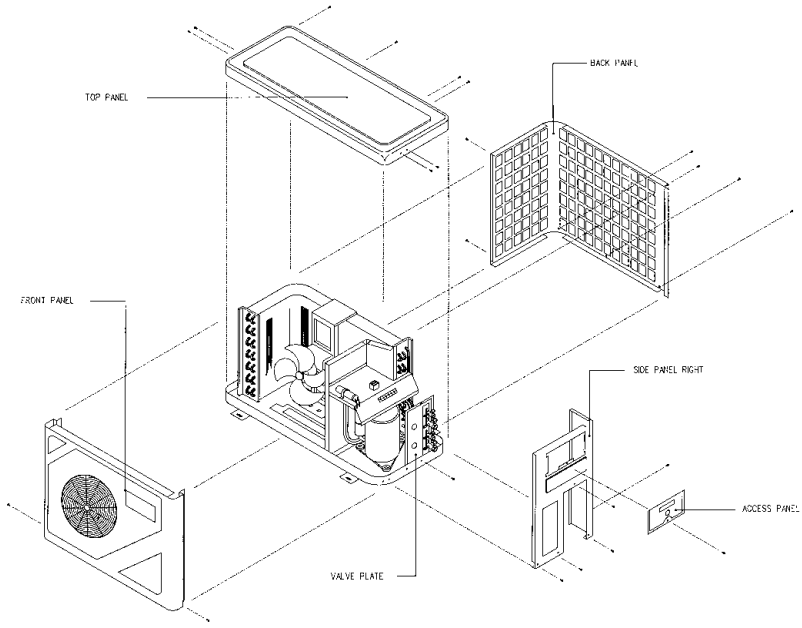
Diagram shows typical charging method.



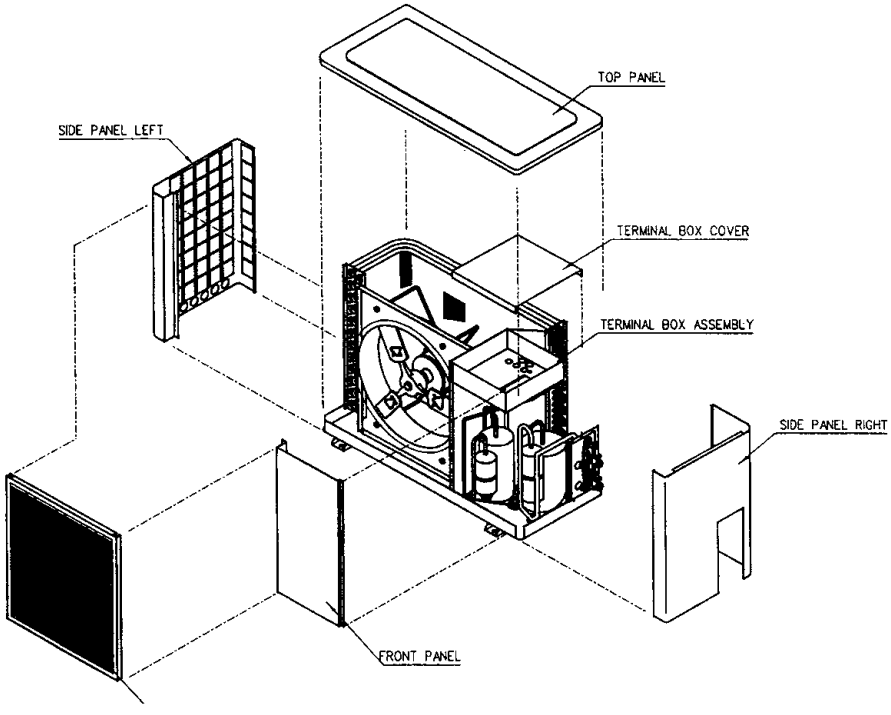
Servicing and Maintenance

The design of the MMSD & MMST outdoor series allows servicing to be carried out readily and easy. The removal of the top, side, front and back panel make almost every part accessible.

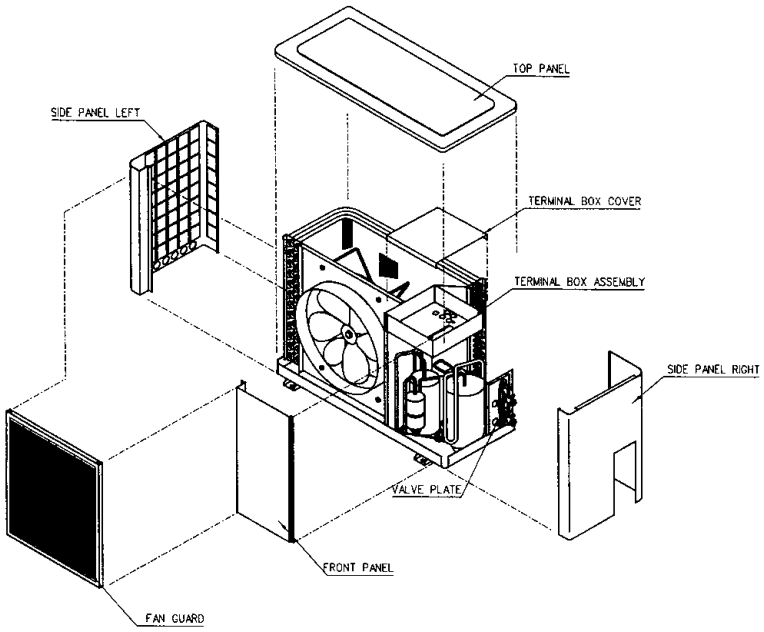
Model : Cooling – MMSD/M4MSD 1010A / 1015A / 1515A
Heatpump – MMSD/M4MSD 1010AR / 1015AR / 1515AR
Cooling – MMSH8K8A/ 8K66A/ 66K66A/ 66K555A



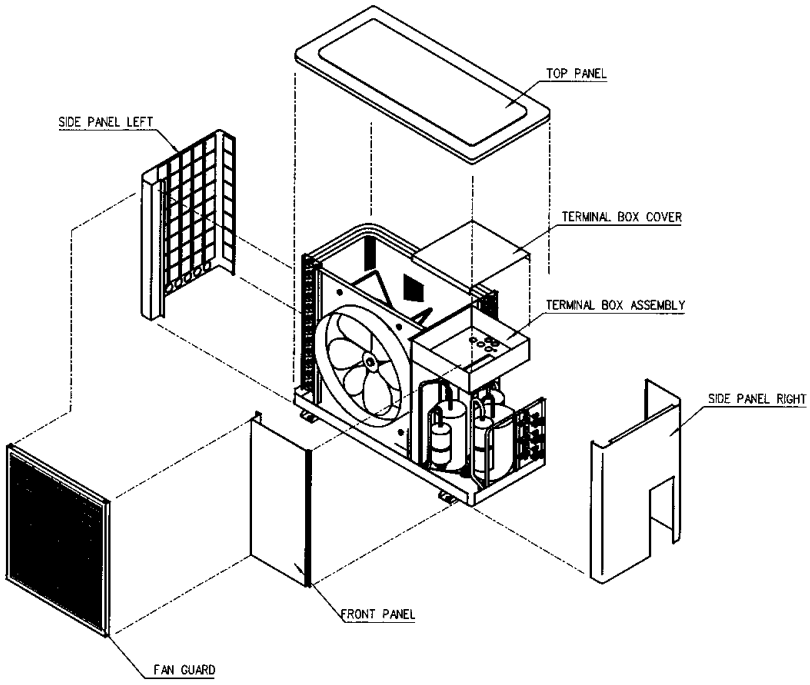
Model : Cooling – MMSD1020A / 1520A
Heatpump – MMSD1520AR



Model : MMSD2020A



Model : MMST101010A – 101020A
M4MST 101010 / 101015 / 101515 / 151515 A/AR



Under normal circumstance, these outdoor units require a check and cleaning of air intake coil surface once quarterly. However, if a unit is installed in areas subjected to much oil mist and dust, the coils must be regularly cleaned by qualified Air Conditioner Service Technicians to ensure sufficient heat exchange and proper operation. Otherwise, the systems life span may be shortened.

CAUTION!

Do not charge OXYGEN, ACETYLENE OR OTHER FLAMMABLE and poisonous gases into the unit when performing a leakage test or an airtight test. These gases could cause severe explosion and damage if expose to high temperature and pressure.
It is recommended that only nitrogen or refrigerant be charged when performing the leakage or airtight test.

Operation

Electrical Connections

Wiring regulations on wire diameters differ from country to country. Please refer to your LOCAL ELECTRICAL CODES for field wiring rules. Be sure that installation comply with such rules and regulations.

General Precautions

Ensure that the rated voltage of the unit corresponds to the name plate before carrying out proper wiring according to the wiring diagram.

Provide a power outlet to be used exclusively for each unit. A power supply disconnect and a circuit breaker for over current protection should be provided in the exclusive line.

All wiring must be firmly connected.

All wiring must not touch the refrigerant piping, compressor or any moving parts of fan motors.

Operational Check

After all wiring is completed and the system is charged with refrigerant, make sure that unit is operating properly. Check that :

- Condenser fan is running, with warm air blowing off the condensing unit.
- Evaporator blowers are running and discharging cool air.
- The micro-computer system incorporate a 3-minute delay in the circuitry. Thus, it requires about 3 minutes upon cut off before the outdoor condensing unit can start up.
- To check if there is any mis-wiring, turn on one unit at a time.
- After running for 10-15 minutes. Check that if the suction (low side) pressure is within normal operating range.

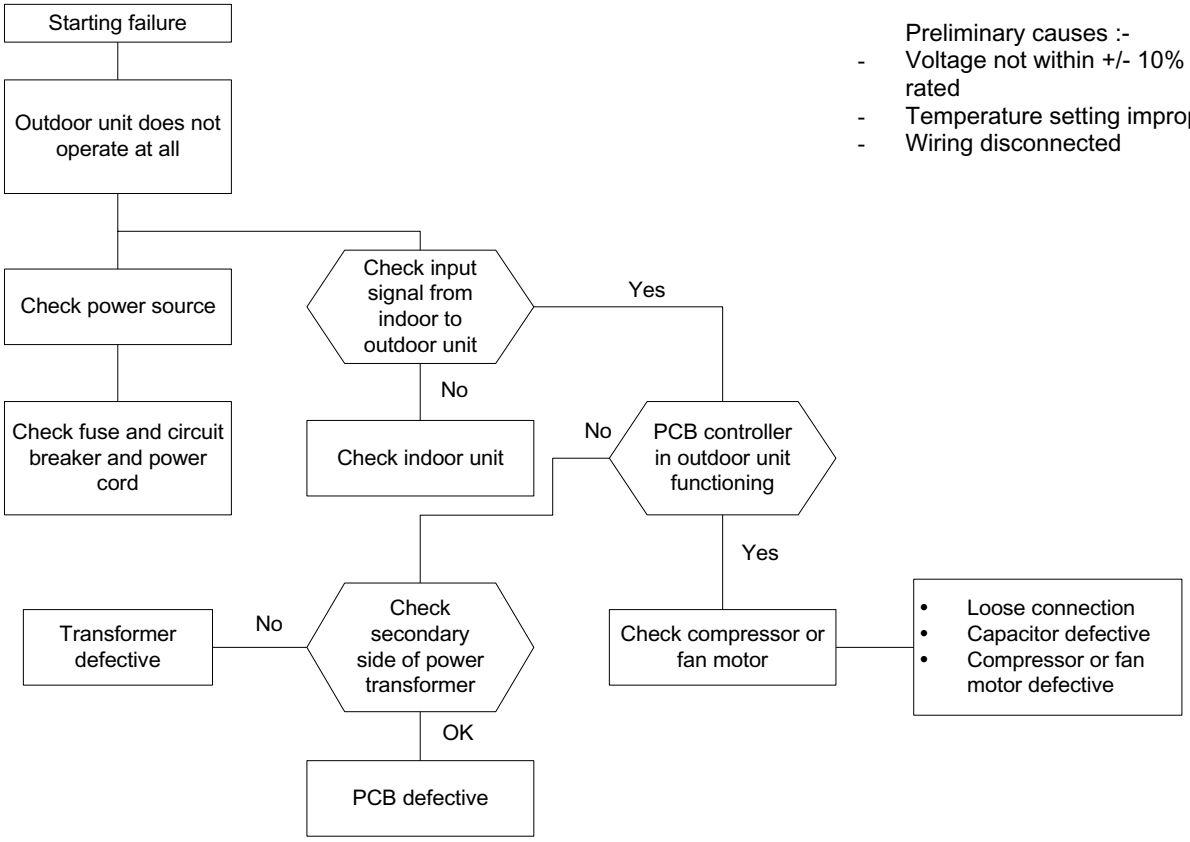
Troubleshooting

When any air conditioner malfunction is noted, immediately switch off the power supply to the unit and contact the local dealer, if necessary. Some simple trouble shooting tips are given below :

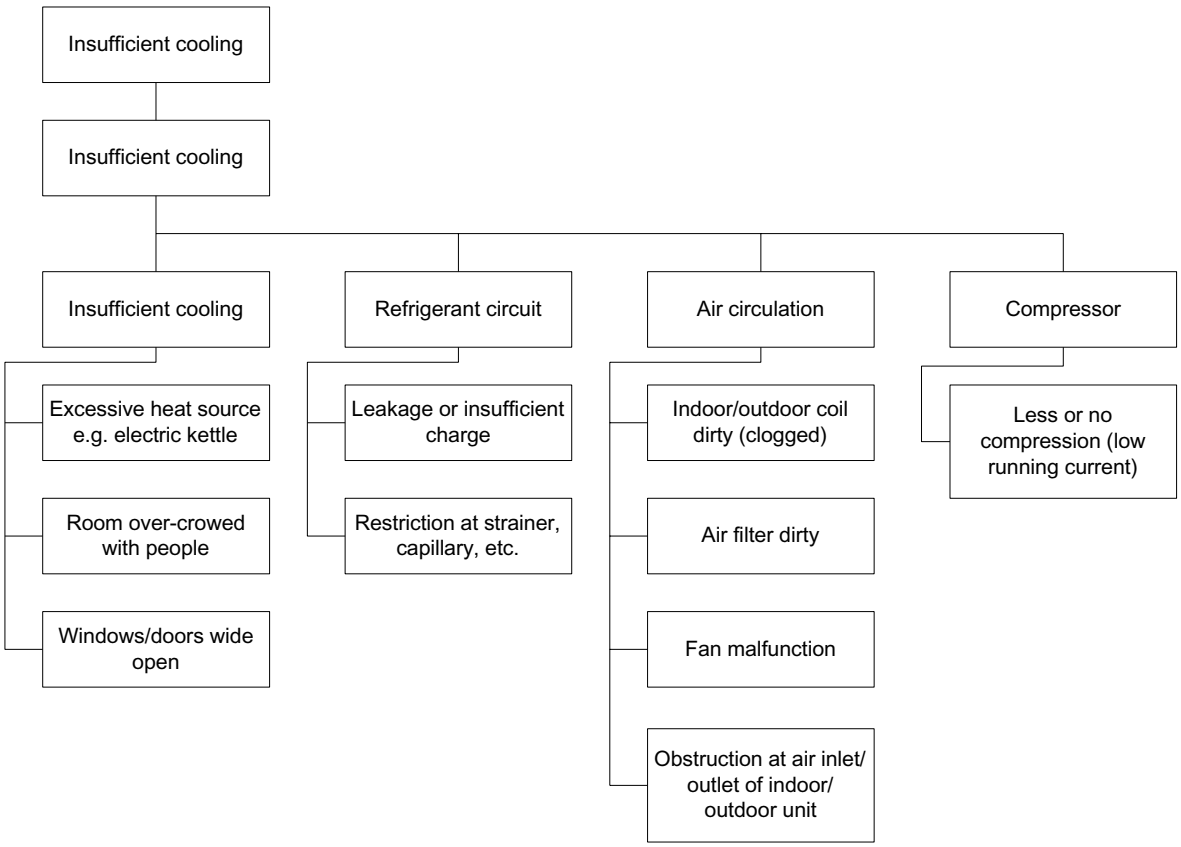
TROUBLE	PROBABLE CAUSE	SUGGESTED ACTION
1. Fan does not work	1. No power supply 2. Fan capacitor faulty 3. Fan motor faulty 4. Switch faulty	1. Check power supply 2. Contact local dealer 3. Contact local dealer 4. Change switch
2. Fan works, but compressor does not work	1. Thermostat setting too high 2. Compressor capacitor faulty 3. Compressor faulty 4. Compressor contactor faulty	1. Reset thermostat 2. Contact local dealer 3. Contact local dealer 4. Contact local dealer
3. Both fan and compressor does not work	1. Power failure 2. Starter trip 3. Fuse blown in power switch or operating unit	1. Operate when power supply resume 2. Reset starter 3. Check and replace fuse
4. Air-Conditioner works but cooling not satisfactory	1. Thermostat setting too high 2. Door and/or windows not closed 3. Condenser coil dirty 4. Some objects blocking the inlet and/or outlet of the unit 5. Refrigerant charge too low	1. Reset thermostat 2. Close door and/or windows 3. Clean condenser coil 4. Remove the objects 5. Contact local dealer

Generally, there are two kinds of common problems, i.e. starting failure and insufficient cooling. “Starting failure” is caused by electrical defect while “insufficient cooling” is caused by improper application or defects in refrigerant circuit.

Diagnosis Of Starting Failure

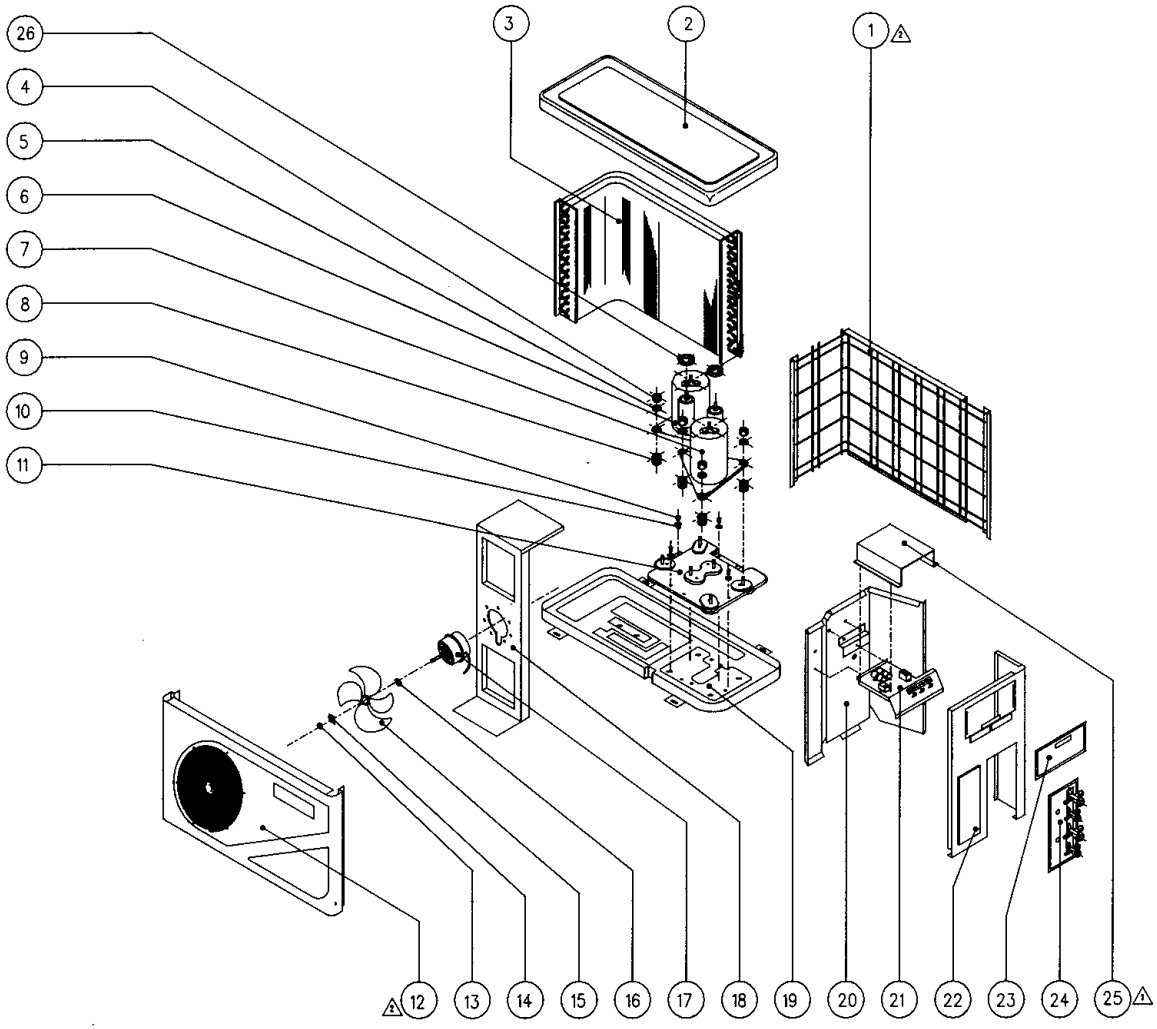


Diagnosis Of Insufficient Cooling



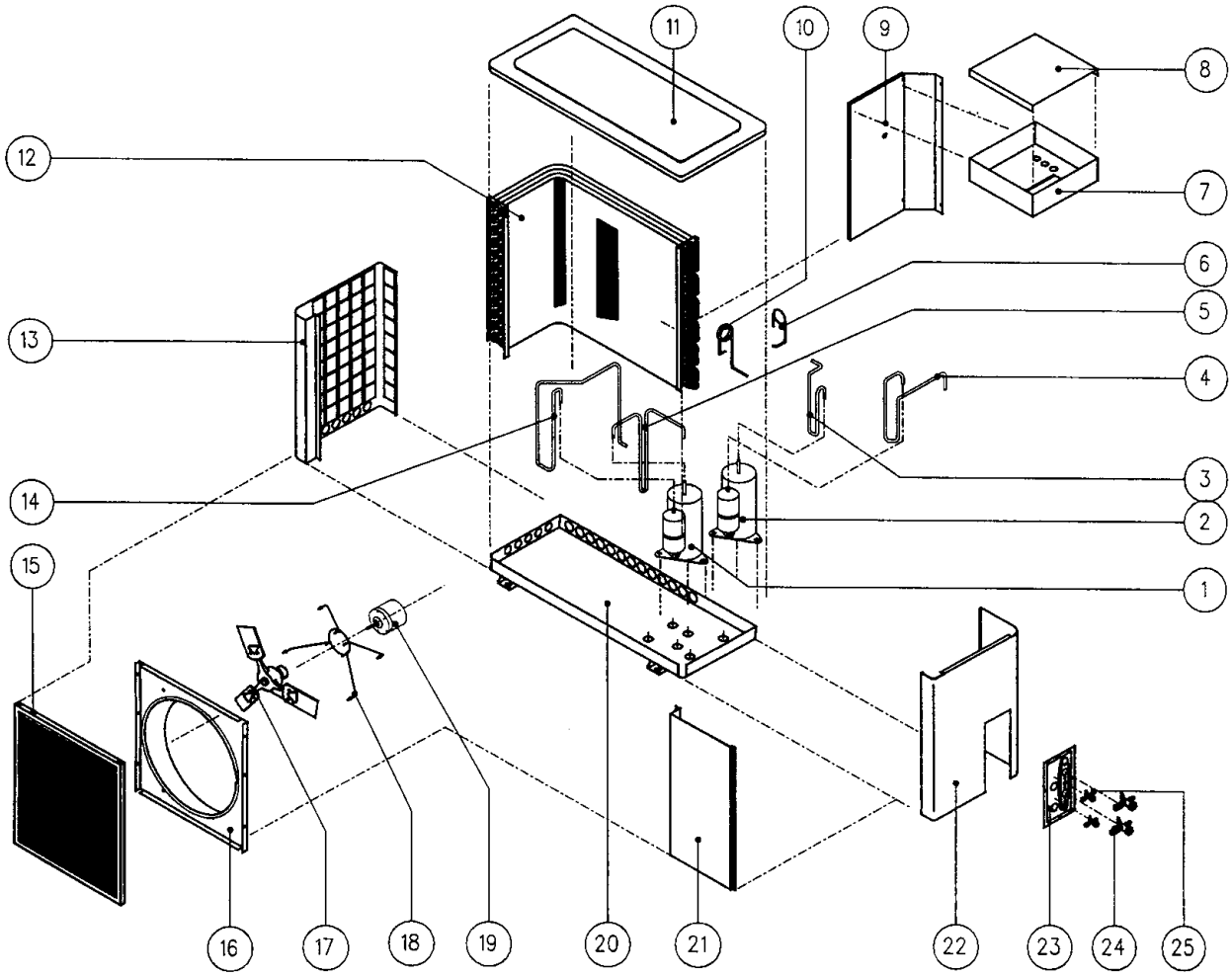
Part List

Model : MMSD/M4MSD 1010 / 1015 / 1515 A/AR



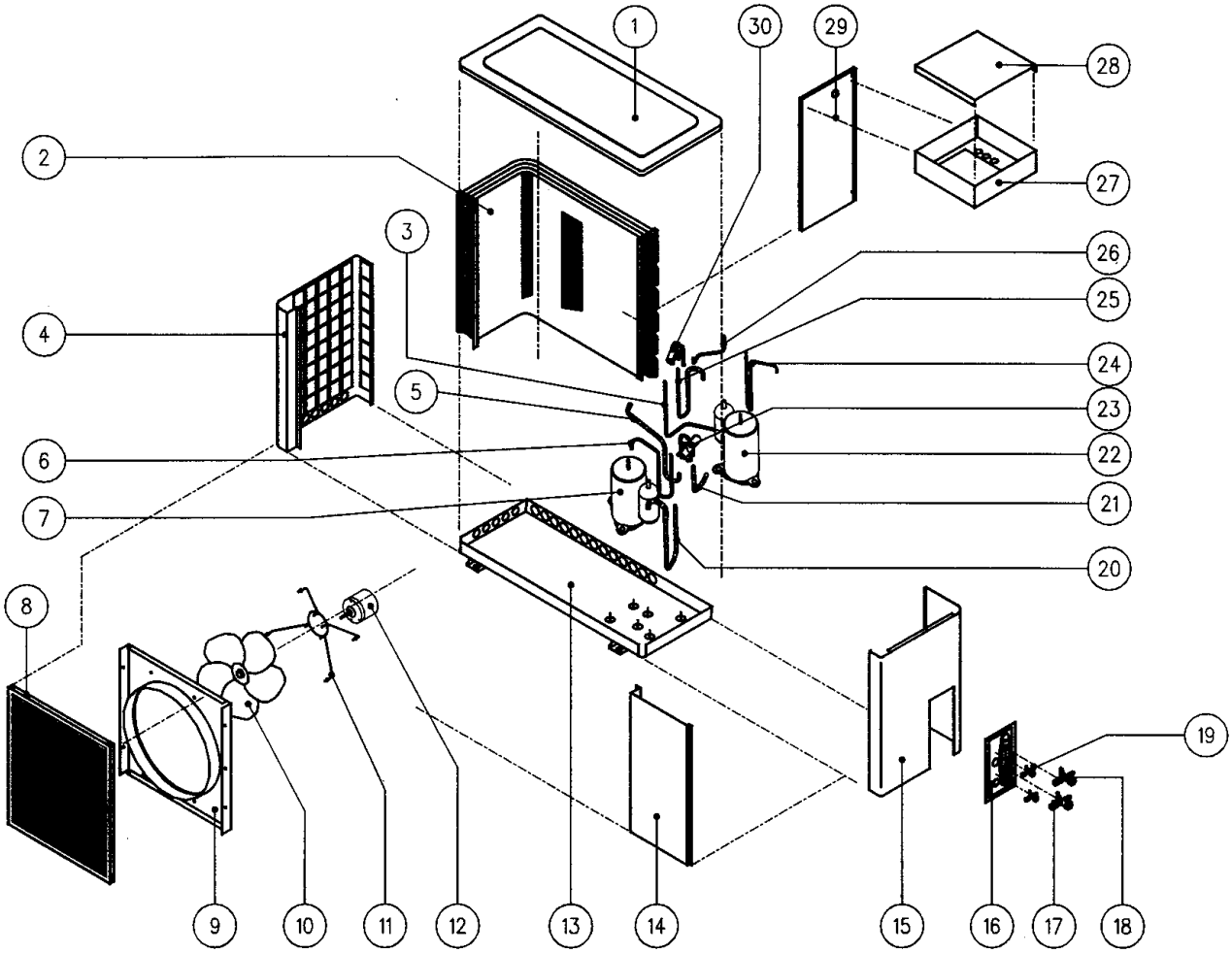
1. BACK PANEL	14. SQUARE WASHER
2. TOP PANEL	15. FAN BLADE
3. CONDENSER COIL ASSEMBLY	16. RING WASHER
4. COMPRESSOR NUT M8	17. FAN MOTOR
5. FLAT WASHER	18. FAN MOTOR BRACKET
6. ROTARY COMPRESSOR 2	19. BASE PAN ASSEMBLY
7. ROTARY COMPRESSOR 1	20. PARTITION ASSEMBLY
8. RUBBER GROMMET	21. TERMINAL BOX PANEL WIRING ASSEMBLY
9. TRUSS HEAD PHILIP SCREW	22. SIDE PANEL
10. SPRING WASHER	23. ACCESS PANEL
11. MOUNTING PLATE ASSEMBLY	24. FLARE VALVE MOUNTING PLATE ASSEMBLY
12. FRONT PANEL	25. TERMINAL BOX COVER
13. HEX NUT 3/8”	

Model : MMSD 1020A / 1520 A



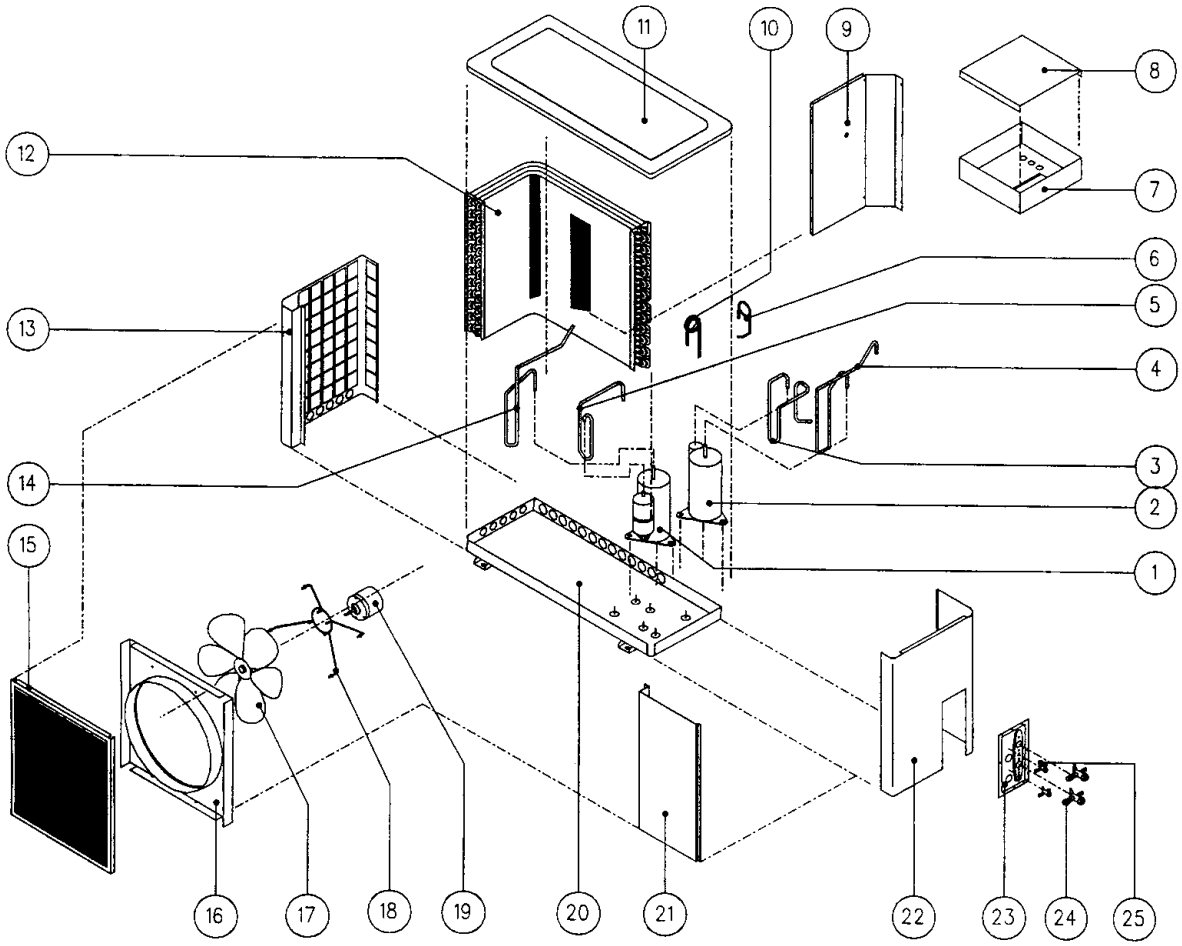
1. ROTARY COMPRESSOR 2 (1.0/1.5HP)	14. SUCTION TUBE 2
2. ROTARY COMPRESSOR 1 (2.0HP)	15. FAN GUARD
3. DISCHARGE TUBE 1	16. ORIFICE FOR 18” PROPELLER
4. SUCTION TUBE 1	17. FAN BLADE 18”
5. DISCHARGE TUBE 2	18. FAN MOTOR BRACKET
6. CAP. TUBE 2 ASSY	19. FAN MOTOR
7. CONTROL BOX ASSY	20. BASE PAN ASSY
8. CONTROL BOX COVER	21. FRONT PANEL
9. PARTITION	22. SIDE PANEL RIGHT
10. CAP. TUBE 1 ASSY	23. VALVE PLATE
11. TOP PANEL	24. FLARE VALVES (GAS)
12. CONDENSER COIL ASSY	25. FLARE VALVES (LIQUID)
13. SIDE PANEL LEFT	

Model : MMSD 1020A / 1520 AR



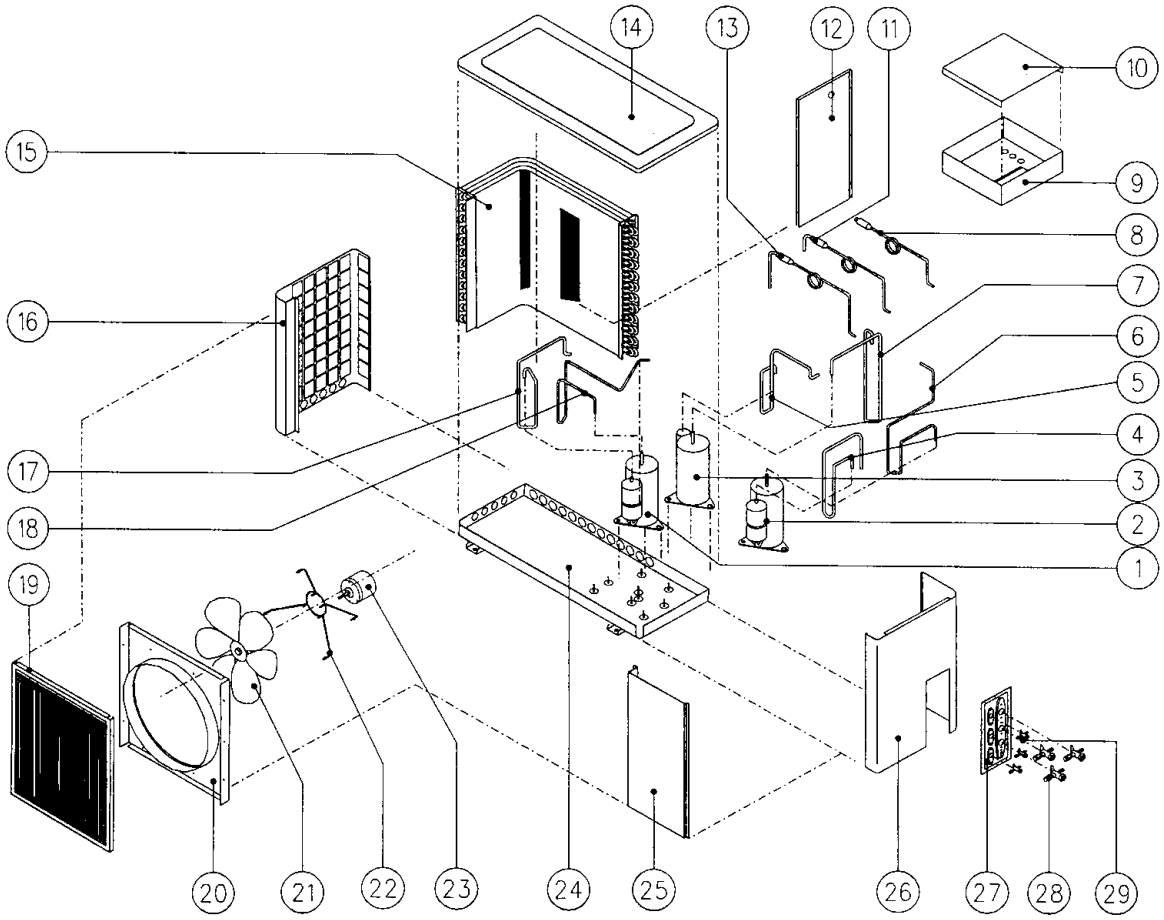
1. PANEL, TOP	16. ASSEMBLY, FLARE VALVE PLATE
2. ASSEMBLY, CONDENSER COIL	17. VALVE, FLARE 3 WAY ½”
3. TUBE, 4WV ‘E’ – GAS TO VALVE COMP. 1	18. VALVE, FLARE 3 WAY 5/8”
4. ASSEMBLY, SIDE PANEL LEFT INS.	19. VALVE, FLARE 3 WAY ¼”
5. TUBE, 4WV ‘C’ – O/D COIL COMP. 1	20. ASSY., SUCTION COMP. 2
6. TUBE, DISCHARGE COMP. 2	21. TUBE, 4WV ‘E’ COMP. 2
7. MATSUSHITA COMPRESSOR (2JS350D3BB02)	22. MATSUSHITA COMPRESSOR (2KS224D3AC02)
8. ASSEMBLY, FAN GUARD INS.	23. 4 WAY VALVE (CHV0201 OR V26110B)
9. ASSEMBLY, ORIFICE FOR 19” PROPELLER	24. ASSY., DISCHARGE COMP. 1
10. PROPELLER FAN 19”	25. ASSY., TUBE SUCTION COMP. 1
11. BRACKET, FAN MOTOR	26. TUBE, 4WV ‘C’ – GAS 1
12. MOTOR, FAN	27. ASSEMBLY, TERMINAL BOX (MAIN)
13. ASSEMBLY, BASE PAN	28. COVER, TERMINAL BOX
14. ASSEMBLY, PANEL FRONT INS.	29. PANEL, PARTITION
15. ASSY., SIDE PANEL RIGHT INS.	30. 4 WAY VALVE (CH0101 OR VH7100B)

Model : MMSD 2020A



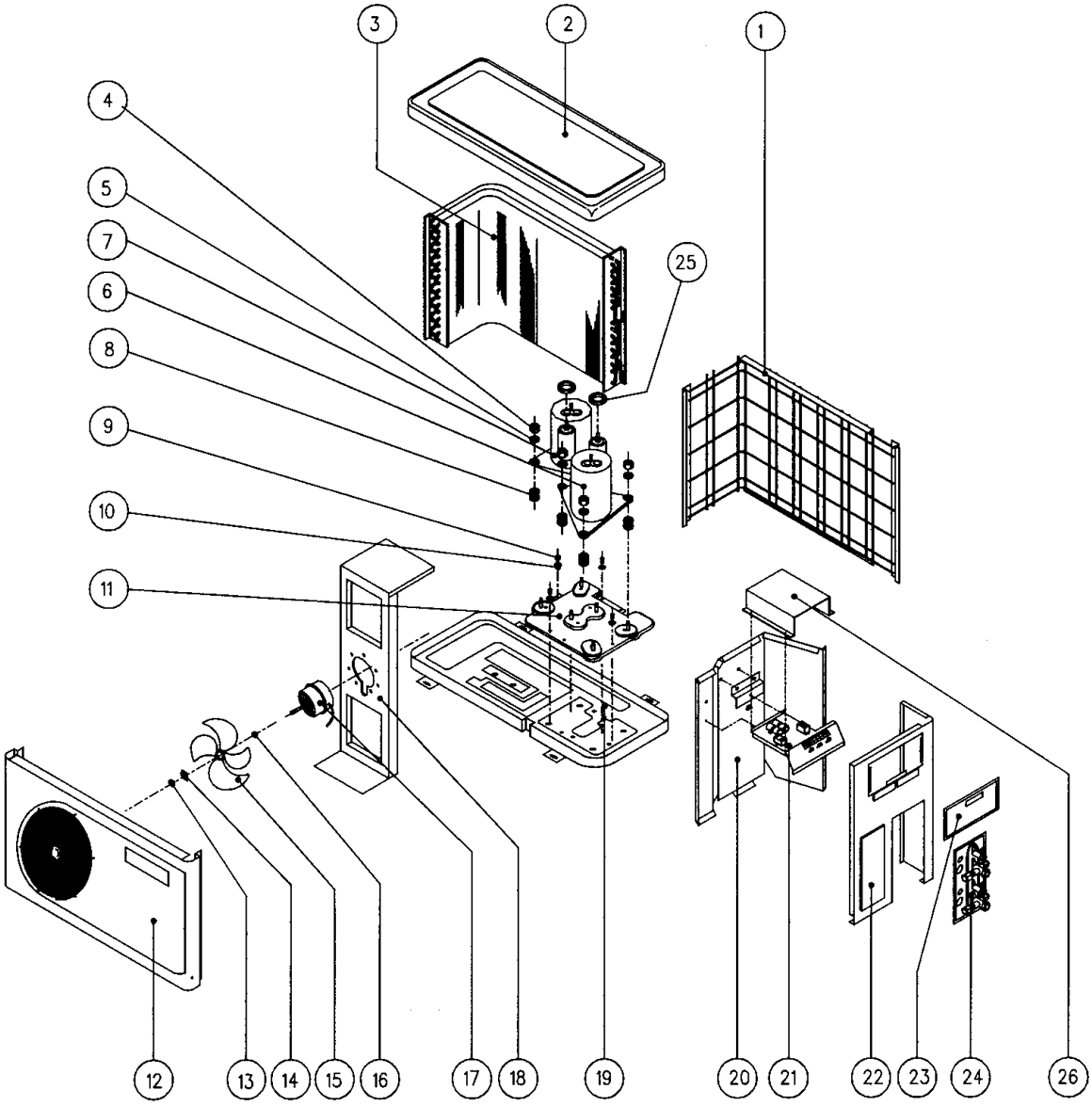
1. ROTARY COMPRESSOR 1	14. DISCHARGE TUBE 1
2. ROTARY COMPRESSOR 2	15. FAN GUARD
3. SUCTION TUBE 2	16. ORIFICE FOR 19” PROPELLER
4. DISCHARGE TUBE 2	17. FAN BLADE 19”
5. SUCTION TUBE 1	18. FAN MOTOR BRACKET
6. CAP. TUBE 2 ASSY	19. FAN MOTOR
7. CONTROL BOX ASSY	20. BASE PAN ASSY
8. CONTROL BOX COVER	21. FRONT PANEL
9. PARTITION	22. SIDE PANEL RIGHT
10. CAP. TUBE 1 ASSY	23. VALVE PLATE
11. TOP PANEL	24. FLARE VALVES (GAS)
12. CONDENSER COIL ASSY	25. FLARE VALVES (LIQUID)
13. SIDE PANEL LEFT	

Model : MMST 101010A – 101020A



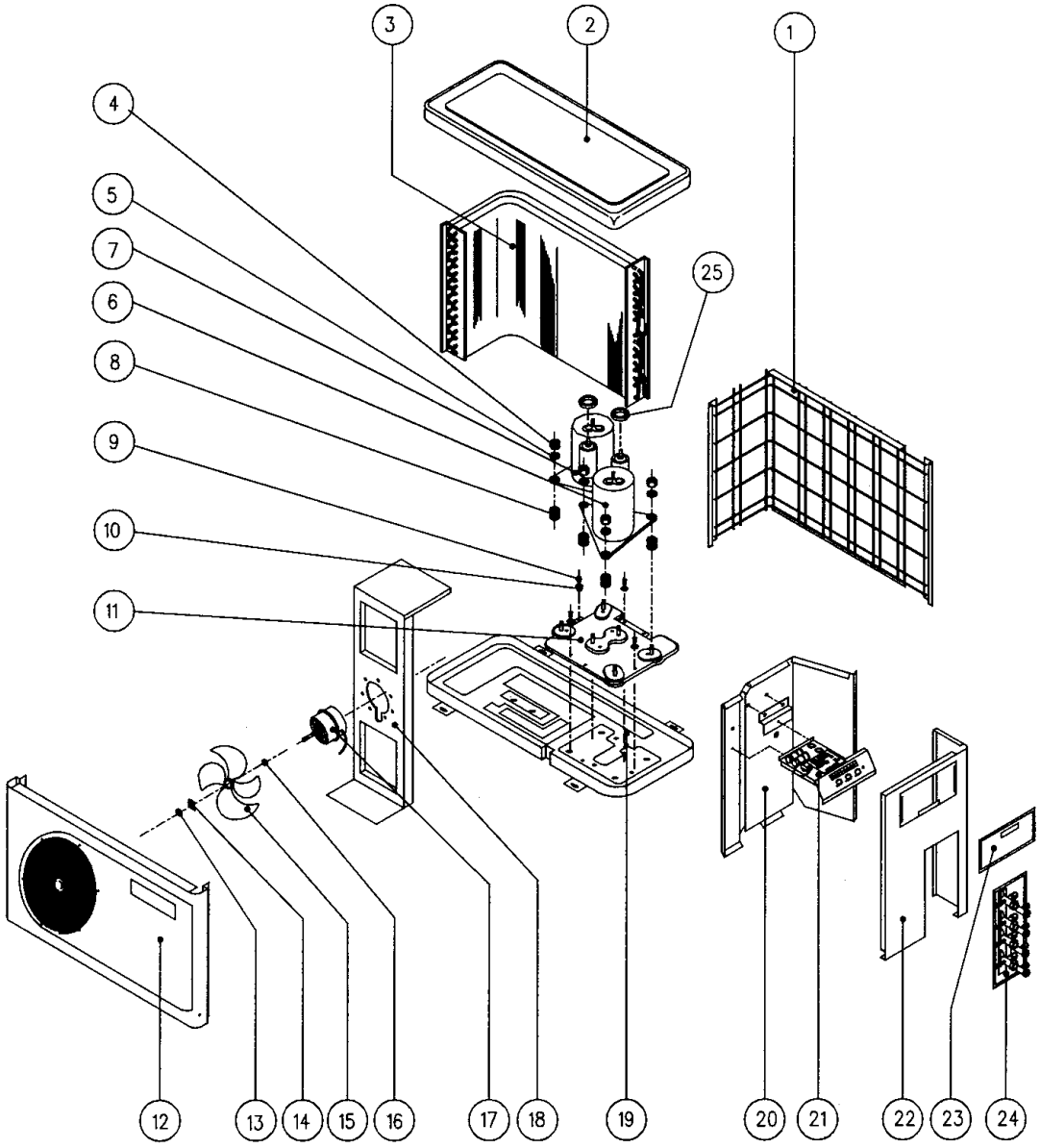
1. ROTARY COMPRESSOR 2	16. SIDE PANEL LEFT
2. ROTARY COMPRESSOR 1	17. SUCTION TUBE 2
3. ROTARY COMPRESSOR 3	18. DISCHARGE TUBE 2
4. SUCTION TUBE 1	19. FAN GUARD
5. SUCTION TUBE 3	20. ORIFICE FOR 19” PROPELLER
6. DISCHARGE TUBE 1	21. PROPELLER 19”
7. DISCHARGE TUBE 3	22. FAN MOTOR BRACKET
8. CAP. TUBE 1 ASSY	23. FAN MOTOR
9. CONTROL BOX ASSY	24. BASE PAN ASSY
10. CONTROL BOX COVER	25. FRONT PANEL
11. CAP. TUBE 2 ASSY	26. SIDE PANEL RIGHT
12. PARTITION	27. VALVE PLATE
13. CAP. TUBE 3 ASSY	28. FLARE VALVES (GAS)
14. TOP PANEL	29. FLARE VALVES (LIQUID)
15. CONDENSER COIL ASSY	

Model : MMSH8K8A



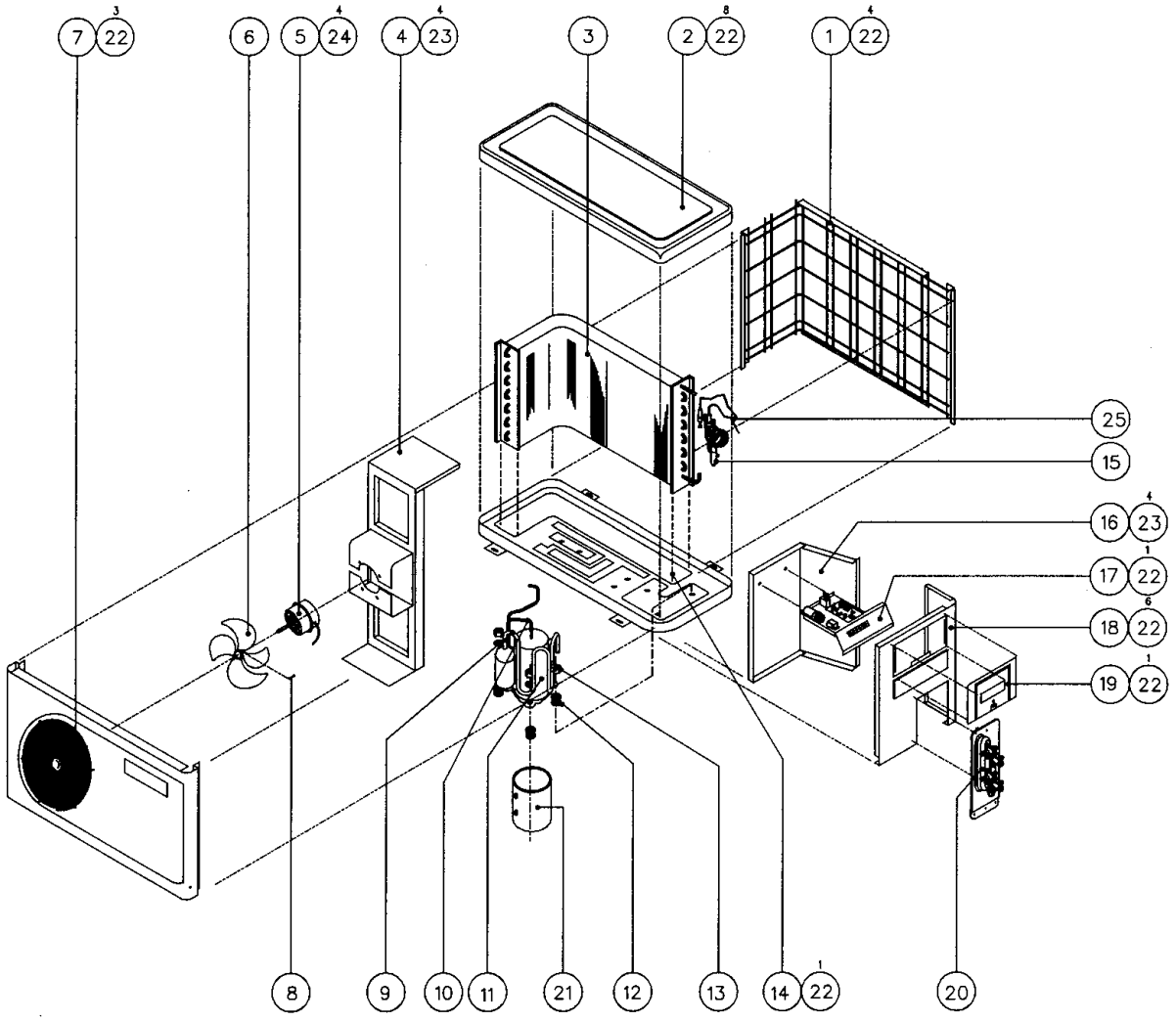
1. BACK PANEL	14. SQUARE WASHER
2. TOP PANEL	15. FAN BLADE
3. CONDENSER COIL ASSY	16. RING WASHER
4. HEXAGON NUT	17. FAN MOTOR
5. FLAT WASHER	18. FAN MOTOR BRACKET
6. ROTARY COMPRESSOR A	19. BASE PAN ASSEMBLY
7. ROTARY COMPRESSOR B	20. PARTITION ASSEMBLY
8. RUBBER GROMMET	21. TERMINAL BOX PANEL WIRING ASSEMBLY
9. TRUSS HEAD PHILLIP SCREW	22. SIDE PANEL
10. SPRING WASHER	23. ACCESS PANEL
11. MOUNTING PLATE ASSEMBLY	24. VALVE PLATE ASSEMBLY
12. FRONT PANEL	25. RUBBER DAMPER
13. HEX. NUT 3/8”	26. TERMINAL BOX COVER

Model : MMSH8K66A / MMSH66K66A / MMSH66K555A



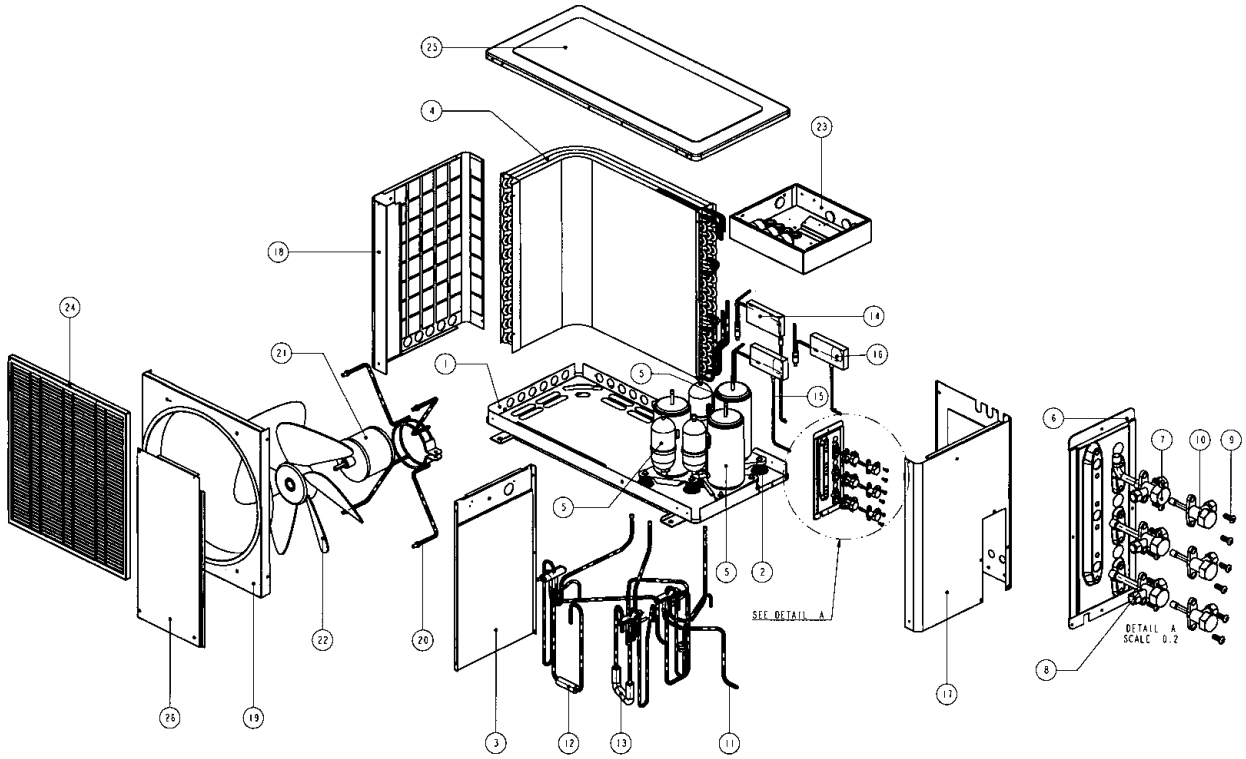
1. BACK PANEL	14. SQUARE WASHER
2. TOP PANEL	15. FAN BLADE
3. CONDENSER COIL ASSY	16. RING WASHER
4. COMPRESSOR NUT M8	17. FAN MOTOR
5. FLAT WASHER	18. FAN MOTOR BRACKET
6. ROTARY COMPRESSOR A	19. BASE PAN ASSEMBLY
7. ROTARY COMPRESSOR B	20. PARTITION ASSEMBLY
8. RUBBER GROMMET	21. TERMINAL BOX PANEL WIRING ASSEMBLY
9. TRUSS HEAD PHILLIP SCREW	22. SIDE PANEL
10. SPRING WASHER	23. ACCESS PANEL
11. MOUNTING PLATE ASSEMBLY	24. VALVE PLATE ASSEMBLY
12. FRONT PANEL	25. RUBBER DAMPER
13. HEX. NUT 3/8”	

Model : MMSHK77A



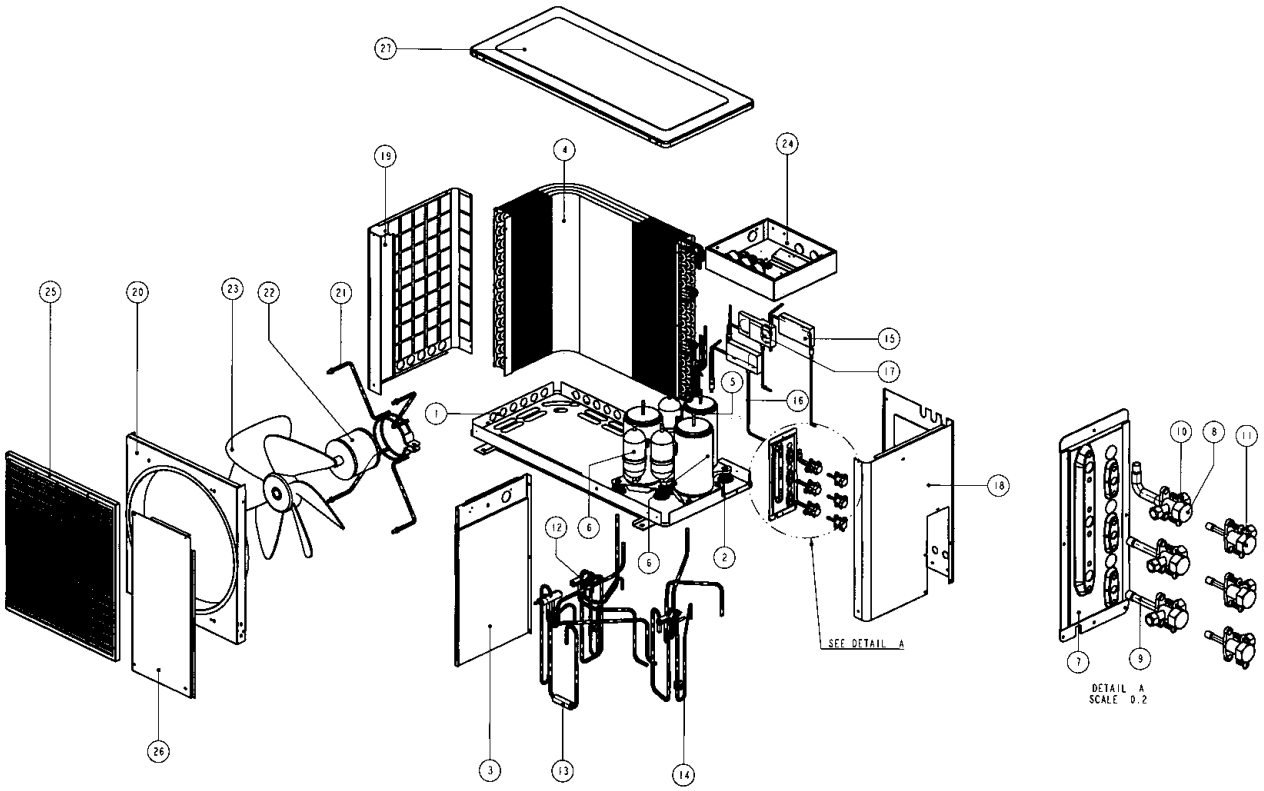
1. BACK PANEL ASSY	14. BASE PAN ASSY
2. TOP PANEL ASSY	15. CAPILLARY TUBE ASSY
3. CONDENSER COIL ASSY	16. PARTITION ASSY
4. MOTOR MOUNTING BRACKET	17. TERMINAL BOX ASSY
5. FAN MOTOR	18. SIDE PANEL ASSY
6. FAN BLADE	19. ACCESS PANEL
7. FRONT GRILLE ASSY	20. VALVE PLATE ASSY
8. FAN SET SCREW	21. COMPRESSOR JACKET
9. TUBE SUCTION A & B ASSY	22. TRUSS HEAD PHILIP SCREW
10. DISCHARGE TUBE	23. PAN HEAD TAPPING SCREW
11. ROTARY COMPRESSOR	24. TRUSS HEAD PHILIP SCREW
12. RUBBER GROMMET	25. SOLENOID COIL INS 1&2 ASSY
13. NUT WITH WASHER (M8)	

Model : M4MST101010AR



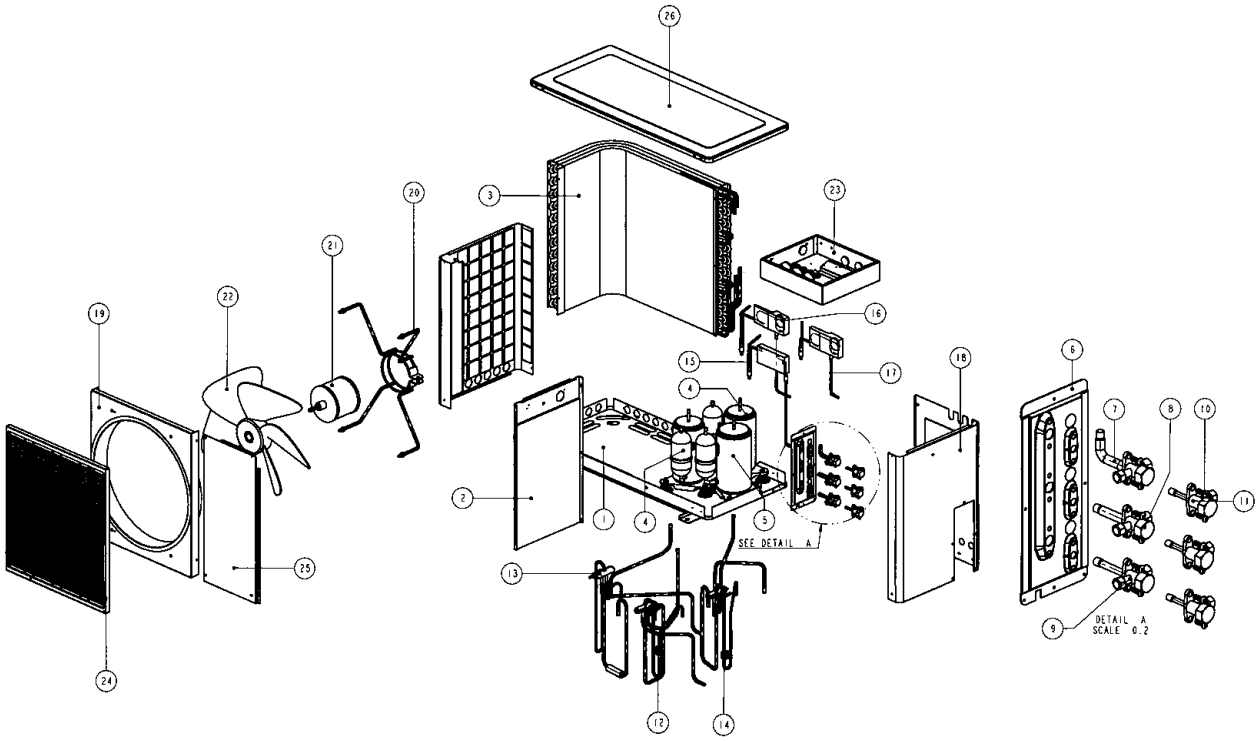
1. ASSY., BASE PAN	14. ASSY., CAP. TUBE 1 (1.0 HP)
2. COMPRESSOR, RUBBER GROMMET	15. ASSY., CAP. TUBE 2 (1.0 HP)
3. ASSY., INS. PARTITION	16. ASSY., CAP. TUBE 3 (1.0 HP)
4. ASSY., OUTDOOR COIL MAIN	17. ASSY., SIDE PANEL RIGHT INS.
5. ASSY., COMP. 4PS1640AA	18. PANEL, SIDE LEFT
6. ASSY., VALVE PLATE MAIN	19. ASSY., ORIFICE 19” PROPELLER
7. ASSY., 3-WAY VALVE (3/8”)	20. BRACKET, MOTOR
8. ASSY., 3-WAY VALVE (3/8”)	21. ASSY., FAN MOTOR
9. SCREW, TRUSS HEAD PHILLIP	22. PROPELLER, FAN (19”)
10. ASSY., 2-WAY VALVE (¼”)	23. ASSY., PANEL TERMINAL BOX
11. ASSY., 4WV COMP. 1 (1.0 HP)	24. FAN, GUARD
12. ASSY., 4WV COMP. 2 (1.0 HP)	25. PANEL, TOP
13. ASSY., 4WV COMP. 3 (1.0 HP)	26. PANEL, FRONT

Model : M4MST101015AR



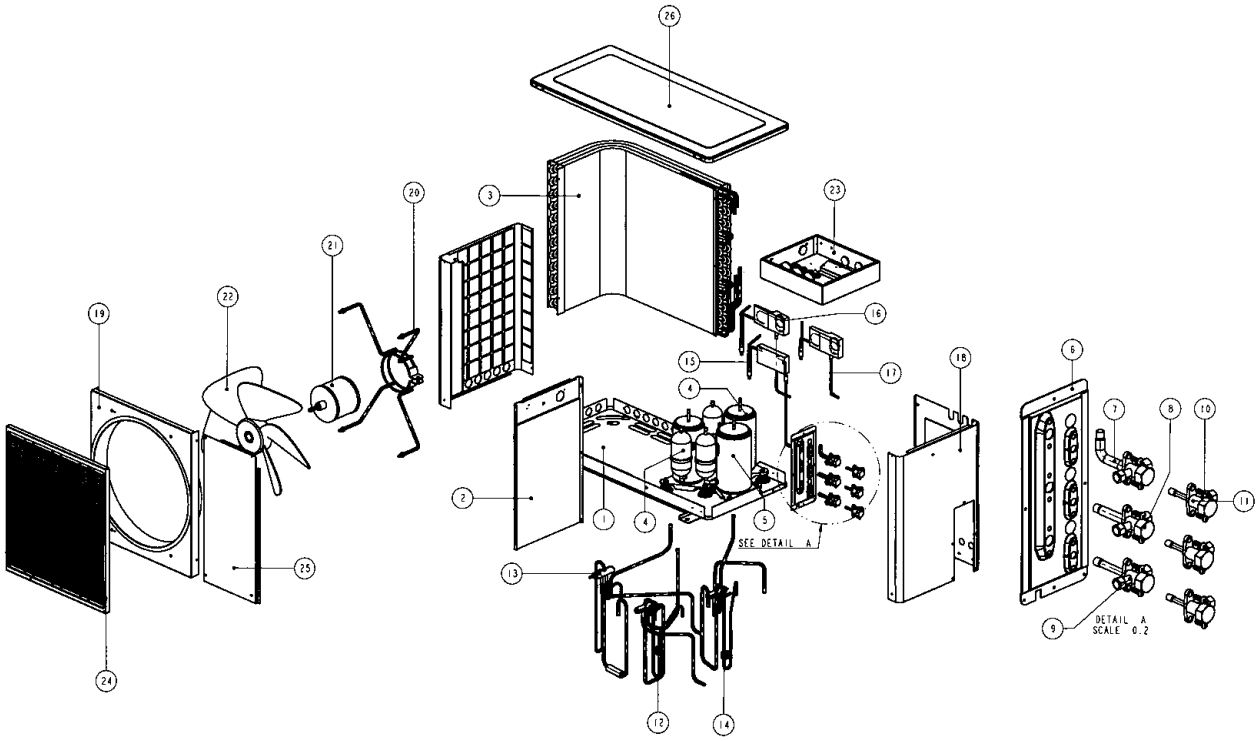
1. ASSY., BASE PAN	15. ASSY., CAP. TUBE 1 (1.0 HP)
2. COMPRESSOR, RUBBER GROMMET	16. ASSY., CAP. TUBE 2 (1.0 HP)
3. ASSY., INS. PARTITION	17. ASSY., CAP. TUBE 3 (1.5 HP)
4. ASSY., OUTDOOR COIL MAIN	18. ASSY., SIDE PANEL RIGHT INS.
5. ASSY., COMP. 4PS1640AA	19. PANEL, SIDE LEFT
6. ASSY., COMP. 4PS2250AA	20. ASSY., ORIFICE 19” PROPELLER
7. ASSY., VALVE PLATE MAIN	21. BRACKET, MOTOR
8. ASSY., 3-WAY VALVE (½”)	22. ASSY., FAN MOTOR
9. ASSY., 3-WAY VALVE (3/8”)	23. PROPELLER, FAN (19”)
10. SCREW, TRUSS HEAD PHILLIP	24. ASSY., PANEL TERMINAL BOX
11. ASSY., 2-WAY VALVE (¼”)	25. FAN, GUARD
12. ASSY., 4WV COMP. 1 (1.0 HP)	26. PANEL, FRONT
13. ASSY., 4WV COMP. 2 (1.0 HP)	27. PANEL, TOP
14. ASSY., 4WV COMP. 3 (1.5 HP)	

Model : M4MST101515AR



1. ASSY., BASE PAN	14. ASSY., 4WV COMP. 3 (1.5 HP)
2. ASSY., INS. PARTITION	15. ASSY., CAP. TUBE 1 (1.0 HP)
3. ASSY., OUTDOOR COIL MAIN	16. ASSY., CAP. TUBE 2 (1.5 HP)
4. ASSY., COMP. 4PS1640AA	17. ASSY., CAP. TUBE 3 (1.5 HP)
5. ASSY., COMP. 4PS2250AA	18. ASSY., SIDE PANEL RIGHT INS.
6. ASSY., VALVE PLATE MAIN	19. ASSY., ORIFICE 19” PROPELLER
7. ASSY., 3-WAY VALVE (½”)	20. BRACKET, MOTOR
8. ASSY., 3-WAY VALVE (½”)	21. ASSY., FAN MOTOR
9. ASSY., 3-WAY VALVE (3/8”)	22. PROPELLER, FAN (19”)
10. SCREW, TRUSS HEAD PHILLIP	23. ASSY., PANEL TERMINAL BOX
11. ASSY., 2-WAY VALVE (¼”)	24. FAN, GUARD
12. ASSY., 4WV COMP. 1 (1.0 HP)	25. PANEL, FRONT
13. ASSY., 4WV COMP. 2 (1.5 HP)	26. PANEL, TOP

Model : M4MST151515AR



1. ASSY., BASE PAN	14. ASSY., CAP. TUBE 2 (1.5 HP)
2. ASSY., INS. PARTITION	15. ASSY., CAP. TUBE 3 (1.5 HP)
3. ASSY., OUTDOOR COIL MAIN	16. ASSY., SIDE PANEL RIGHT INS.
4. ASSY., VALVE PLATE MAIN	17. PANEL, ASSY. SIDE LEFT
5. ASSY., 3-WAY VALVE (½")	18. ASSY., ORIFICE 19" PROPELLER
6. ASSY., 3-WAY VALVE (½")	19. BRACKET, MOTOR
7. SCREW, TRUSS HEAD PHILLIP	20. ASSY., FAN MOTOR
8. ASSY., 2-WAY VALVE (¼")	21. PROPELLER, FAN (19")
9. ASSY., COMP. 4PS2250AA	22. ASSY., PANEL TERMINAL BOX
10. ASSY., 4WV COMP. 1 (1.5 HP)	23. FAN, GUARD
11. ASSY., 4WV COMP. 2 (1.5 HP)	24. PANEL, TOP
12. ASSY., 4WV COMP. 3 (1.5 HP)	25. PANEL, FRONT
13. ASSY., CAP. TUBE 1 (1.5 HP)	

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