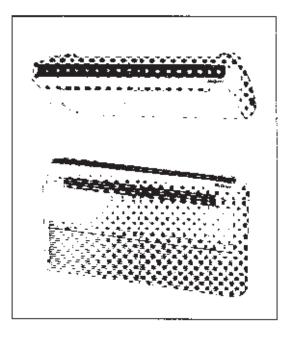
# Catalog 2110B



# Ceiling And Floor Convertible Fan Coil Unit

Models: MCM 020D/DR MCM 025D/DR MCM 030D/DR MCM 040D/DR MCM 050D/DR



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**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.

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# **Special features**

#### **Ultra Slim New Stylish Design Profile**

This unit is contemporary in design and match even the most up to date interior decor. The slim, round profile and compact design of this unit adds a touch of elegance to every decor. No indoor connection pipe and hanger bracket are visible.

#### **Ceiling And Floor Convertible With Space Saving Installation**

This unit is designed for ceiling exposed type and floor exposed type with a very economical and space saving installation. No need renovation to wall or ceiling for ceiling exposed and no foundation work is required for floor exposed installation. This easy to install and ready to operate unit ensure rapid and low installation cost.

#### **Strong And Robust**

The unit is built from strong casing material and robust parts to ensure long lasting reliable service. The drain pan is made from the POLYSTYRENE with a plastic coating on the surface to ensure no leaking and no condensation occur.

#### Friendly Serviceability

The air filter, electrical parts, fan and fan motor assembly can all be inspected and replace from bottom of the unit by simply removing the newly designed press in, pull out air intake grille. The POLYSTYRENE drain pan and the heat exchanger coils can remove from the unit easily by remove the bottom panel.

#### **Microcomputer Remote Controller**

The incorporated microprocessor give more accurate control and with the following extra features:

- Fan motor speed can be set at high/medium/low and automatic.
- Timer on/off the unit can be pre-set to on and off automatically.
- Electronic thermostat room temperature is precisely controlled resulting in energy saving and increase comfort.
- Sleep mode automatically increase set temperature since room temperature is lower at night thus achieving healthy sleep.

#### Wireless Remote Controller

The compact wireless remote controller makes it possible to operate the air conditioner anywhere within the room.

#### Auto Or Manual Control On Vertical Airflow Direction

With auto control, the louver will automatically swing up and down to create an excellent air distribution. You can select your desired horizontal air flow direction by adjusting the vertical grille.

# **Specifications**

# Cooling only

MODEL			INDOOR UNIT		MCM020D	MCM025D	MCM030D	MCN	1040D	MCM	1050D		
IODEE	-		OUTDOOR UNIT		MLC020B	MLC025B	MMC030A	MMC040B	MLC040C	MMC050B	MLC050C		
NOMINA	AI			kcal/h	5,040	6,300	7,560	10,080	10,080	12,600	12,600		
COOLIN				W	5,862	7,327	8,792	11,723	11,723	14,654	14,654		
CAPACI				Btu/h	20,000	25.000	30.000	40,000	40,000	50,000	50,000		
		R SOURCE		V/Ph/Hz	20,000	20,000		240 / 1 / 50	10,000	00,000	00,000		
		GERANT / CC			R22 / CAPILLAR	Y TUBE IN OUTDOOR			APILLARY TUBE IN INDO	IOR			
	_	AIR FLOW		cfm/cmm	590 / 16.7	680 / 19.3	740 / 21.0	-	/ 31.8		/ 31.8		
	- F	FAN MOTOR		cini/cinin	4 POLES X 45W	4 POLES X 95W	4 POLES X 95W		6 X 145W		5 X 145W		
FAN	r	RATED INPUT	DOWED	W	96	130	132	24		24			
	- H		IING CURRENT	A	0.40	0.58	0.58	1.0		1.			
-	-			A		0.56 B.C	5.I.G.C		34 3.C		G.C		
					c	5.D.U		.52 / 3/8	5.0	3.1.	6.0		
				mm/in mm/in				35 / 0.014					
	. F	MATERIA				ALUMINIUM (HYDROPHILIC TYPE)							
CO	Ş	TUICKNE		mm/in		ALOWINION	0.1	1 / 0.0043					
	-		33	11111/111	3	3	3	4	1	4	1		
ŝ		FIN PER I	NCH		12	12	12		2		2		
5	ŀ	FACE AREA	NOT	m²/ft²	0.19 / 2.06	0.19 / 2.06	0.24 / 2.58		/ 3.95		/ 3.95		
			HEIGHT	mm/in	214 / 8.42	214 / 8.42	249 / 9.80		/ 9.80		/ 9.80		
		ISION	WIDTH	mm/in	1,214 / 47.80	1,214 / 47.80	1,214 / 47.80		/ 67.40		/ 67.40		
	('		DEPTH	mm/in	670 / 26.30	670 / 26.30	670 / 26.30		26.30		26.30		
WE		нт		kg	43	43	45	7			0		
<u> </u>	_101		ROOM TEMPERATURE		77	70	MICROCOMPUTER C		-	, ,	<u> </u>		
0	л	ROL	AIR DISCHARGE	-	AUTOMATIC LOUVER (UP&DOWN) & MANUAL LOUVER (BOTTOM)								
00		NOL	OPERATION				D WIRELESS MICROC	,	, ,				
0	חאר	ENSATE DRA		mm/in		10		0.05 / 3/4					
		LTER				14	ASHABLE SARAN NET						
		NG	HEIGHT	mm/in	301	1/11.9	345 / 13.6		,	13.6			
			WIDTH	mm/in		1/51.6	1,361 / 53.5		1,816				
DIN					) / 29.9	760 / 29.9		760					
DO		R SOURCE	DEFTH	mm/in V/Ph/Hz	100	220 - 240 / 1 / 50	100129.9			0/3/50			
FU	_	COMPRESSO	R TYPE	V/FII/IIZ	ROTARY	HERMETIC	r	RECIP	ROCATING HERME				
	- F	CAPACITOR		μF	35	45	45	-	-	-	-		
<u>م</u>	. P	LOCK ROTOR	AMD	A A	47	59	85		5	6			
COMP	Ď		IING CURRENT	A	9.9	12.5	13.9		/ 5.8	-	/ 8.3		
0		RATED INPUT		W	2,073	2.761	2,809	3,780	3,486	4,500	4,943		
		PROTECTION				D PROTECTION		ERLOAD PROTECTION AN	-				
	_	FAN TYPE / D						LER / DIRECT					
	- F	BLADE MATE					GLASS REINFORCE		RESIN				
_	ŀ	DIAMETER		mm/in	420	.0 / 16.5	355.6 / 14.0	355.6 / 14.0	609.6 / 24.0	406.4 / 16.0	609.6 / 24.0		
FAN	r		ING CURRENT	A		).56	2 x 0.28	2 x 0.28	1.09	2 x 0.78	1.09		
	- F	RATED OUTP		W		55	2 x 30	2 x 30	145	2 x 80	145		
	- P	RATED INPUT		W		133	124	124	241	341	241		
		MATERIA		· · ·	S.B.C	S.I.G.C	1		S.B.C				
				mm/in	-		. 9	.52 / 3/8					
				mm/in	0.35 / 0.014	0.36 / 0.014 AVERAGE			0.35 / 0.014				
<   =	Į	MATERIA			ALUMINIU	M (SLIT TYPE)			ALUMINIUM				
COL	3		SS	mm/in			0.1	27 / 0.005					
				•		2	3	2	2	3	2		
		FIN PER I	NCH			14	14	14	16	14	16		
	ľ	FACE AREA		m²/ft²	0.5	1 / 5.53	0.55 / 6.00	0.77 / 8.29	0.87 / 9.33	0.77 / 8.29	0.87 / 9.33		
			HEIGHT	mm/in	646	/ 25.40	991 / 39.00	1094 / 43.07	850 / 33.46	1094 / 43.07	850 / 33.46		
DIN	MEN	ISION	WIDTH	mm/in	840	/ 33.10	772 / 30.40	960 / 37.79	1029 / 40.53	960 / 37.79	1029 / 40.53		
			DEPTH	mm/in	330	/ 13.00	400 / 15.75	437 / 17.20	400 / 15.75	437 / 17.20	400 / 15.75		
WE	EIGI	HT		kg	57	58	90	95	100	112	105		
			MATERIAL				GALVANIS	ED MILD STEEL					
CA	SIN	G	THICKNESS	mm/in			0.8	8 / 0.031					
			FINISHING	•			POLYES	TER POWDER					
	ľ	TYPE						RE VALVE					
$\vdash$			LIQUID	mm/in	6.35 / 1/4	9.52 /	3/8		9.52	/ 3/8			
, PE	E SIZE		GAS	mm/in	15.88 / 5/8	15.88				5 / 3/4			
PIPE													
		NG		mm/in	710	/ 27.95	1,183 / 46.57	1,265 / 49.80	1,000 / 39.37	1,265 / 49.80	1,000 / 39.37		
PA	CKI	NG ISION	HEIGHT WIDTH	mm/in mm/in		/ 27.95 / 37.68	1,183 / 46.57 904 / 35.59	1,265 / 49.80 1,084 / 42.68	1,000 / 39.37 1,200 / 47.24	1,265 / 49.80 1,084 / 42.68	1,000 / 39.37 1,200 / 47.24		

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-89

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

 Abbreviation
 SEAK
 SEAMLESS BARE COPPER

 S.I.G.C
 SEAMLESS INNER GROOVE COPPER

DUITDOOR LINIT         ML 02058         ML 02058         ML 02058         ML 020508										
NOMINAL Decomposition         Augh         5.942         6.548         7.860         110.86         12.096           COUND COUNTY         Bigh         5.000         24.000         3.000         4.000         4.000           CAPACITY         Bigh         5.000         24.000         3.000         4.000         4.000           CAPACITY         Bigh         7.200         7.2580         2.200         1.00         4.900         4.900           CAPACITY         Bigh         7.200         7.2580         2.200         1.00         4.900         4.900           CAPACITY         Bigh         7.000         7.2580         7.201         1.00         4.900         4.900           POWER SOURCE         WPHW         Concentry         Bigh         7.00         7.2580         7.00         7.2580         7.00         7.2580         7.00         7.2580         7.00         7.200	MOD	EL								MCM050DR
COCUMO         W         5.882         7.784         9.792         11.732         14.988           COCUMO         Exam         2.200         2.200         3.000         4.884         4.892         17.20           NORMAL         Exam         5.202         5.200         4.894         19.200         17.20 </td <td>NOM</td> <td>NIAL</td> <td></td> <td>OUTDOOR UNIT</td> <td>keel/b</td> <td></td> <td></td> <td></td> <td></td> <td></td>	NOM	NIAL		OUTDOOR UNIT	keel/b					
CARACTY         Binh         22.00         32.00         40.00         40.00         40.00         40.00           MAMAL         Maih         5.25         6.50         7.327         5.37         10.00         46.00           VEATING         With         6.155         7.327         5.37         10.00         46.00           VEATING         With         7.00         5.15         7.427         5.17         10.00         46.00           VEATING         With         7.00         7.00         7.00         46.00         46.00           VEATING         With         7.00         7.00         7.00         40.00         40.00           VEATING         With         7.00         7.00         7.00         40.02         10.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
NOMINAL (LATING)         Isalh         5.262         6.300         8.044         10.322         12.046           CANACTY         Burn         71.001         72.001         72.002         32.000         41.000         40.000           DEWESSIONT CONTROL REPORT         VPHIP         22.002         32.000         102.012.01         41.000         40.000           State         RATE D RAY LPROVER         22.002         32.000         102.012.01         40.000         40.000           State         RATE D RAY LPROVER         24.001.01         102.012.01         102.012.01         102.012.01         102.012.01         102.012.01         102.012.01         40.000         40.000         102.012.01         40.000         40.000         102.012.01			,			,	,	,		
HIRTING         W.         6,155         7.372         9.378         102316         14.088           CANCIT         Bubh         71.000         45.000										
CARACTY         Buth         21:00         25:00         32:00         41:00         48:00           PERFERENT         VPM/rs         22:04/178         72:04/178         72:04/178         72:04/178           PARE         ARA 2010K         PROVERS         22:04/178         72:04/178         72:04/178           PARE         ARA 2010K         PROVERS         ARA 2010K         74:04/178         74:02           PARE         MARTERAL         ARA 2010K         ARA 2010K         ARA 2010K         74:02         71:02           PARE         MARTERAL         ARA 2010K         ARA 2010K         ARA 2010K         ARA 2010K         74:02         74:02           PARE         MARTERAL         ARA 2010K         ARA 2010K         ARA 2010K         74:02         74:02         74:02           PARE         MARTERAL         ARA 2010K         ARA 2010K         ARA 2010K         74:02         74:02         72									,	
POWERS SURCE         WithEz         220:241/11/20         220:241/11/20         220:241/11/20           BERRIGEANT CONTROL         BERRIGEANT CONTROL <td></td> <td></td> <td>,</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			,							
JAR FLOW         Jeffent         State         June 2001         June 2001 <thjune 2<="" td=""><td></td><td></td><td></td><td>URCE</td><td></td><td>,</td><td></td><td></td><td>.,,</td><td>,</td></thjune>				URCE		,			.,,	,
BALE         FAN LIGTOR         A POLES X49V         4 POLE X49V <td>F</td> <td>REFR</td> <td>IGERA</td> <td>ANT / CONTROL</td> <td></td> <td>R22 / CAPILLARY</td> <td>TUBE IN OUTDOOR</td> <td>R22</td> <td>/ CAPILLARY TUBE &amp; TXV IN OUTDO</td> <td>OR</td>	F	REFR	IGERA	ANT / CONTROL		R22 / CAPILLARY	TUBE IN OUTDOOR	R22	/ CAPILLARY TUBE & TXV IN OUTDO	OR
Image: solution of the			AIR F	LOW	cfm/cmm	590 / 16.7	680 / 19.3	740 / 21.0	1,120 / 31.8	1,120 / 31.8
BREE FUNNING CURRENT         A         0.40         0.58         0.58         104         114           Image: Control of the co		Ž				4 POLES X 45W	4 POLES X 95W	4 POLES X 95W	4 POLES X 145W	4 POLES X 145W
Image: constraint of the second sec		Ē								
Understand         Display	ΙĻ				A					
Import         Import         Construction         ALLMINUM (HYDROPHILE TYPE)           Import         Import         3         3         0.11/0043         4           Import         Tablesis         mmin         3         3         0.11/0043         4           Import         Tablesis         mmin         2         12 </td <td></td> <td></td> <td>ш 🛛</td> <td></td> <td></td> <td>S.</td> <td>B.C</td> <td></td> <td>S.B.C</td> <td>S.I.G.C</td>			ш 🛛			S.	B.C		S.B.C	S.I.G.C
Import         Import         Construction         ALLMINUM (HYDROPHILE TYPE)           Import         Import         3         3         0.11/0043         4           Import         Tablesis         mmin         3         3         0.11/0043         4           Import         Tablesis         mmin         2         12 </td <td></td>										
Diggo         2         THICKNEES         mmin         0         0         1         0         1         0         1         0         1 <th1< th=""> <th1< th=""> <th1< th="">         &lt;</th1<></th1<></th1<>			1		mm/in			0.35 / 0.014		
Image: Term Part North         3         3         4         4           PACE AREA         m <sup>AP</sup> 12         12 <t< td=""><td></td><td>S</td><td></td><td></td><td>mm/in</td><td></td><td>ALUMINIUM</td><td>0 11 / 0 00/3</td><td></td><td></td></t<>		S			mm/in		ALUMINIUM	0 11 / 0 00/3		
Digital FER.NCH         12	⊢	0			11111/111	3	3		4	Λ
DIMENSION         WOTH         mm/n         1.214/47.80         1.216/27.81         1.216/27.81         1.216/27.	S									
DIMENSION         WOTH         mm/n         1.214/47.80         1.216/27.81         1.216/27.81         1.216/27.	К		_		m <sup>2</sup> /ft <sup>2</sup>					
DIMENSION         WOTH         mm/n         1.214/47.80         1.216/27.81         1.216/27.81         1.216/27.	<u> </u> <u></u> ]		PROE							
DEPTH         mmln         670/26.30         670/26.		DIMF	NSION							1,714 / 67.40
VECHT         Ig         43         43         45         70         70           CONTROL         RODENTROLE         RODENTROLE         MUCROCOMPUTER RUNDONTA LIADUNER (INSORTAT)           CONTROL         DEFRATURN         UCRONTROLED THERNONTALID INTERNENDSTAT           CONDENSATE DRAN SIZE         mmin         LCD WIRELESS MICROCOMPUTER REMOTENTRAL           CONDENSATE DRAN SIZE         mmin         19.05/34           AR FLITER         mmin         345/13.6           PACKING         HEIGHT         mmin           DIMENSION         MUDTH         mmin           DIMENSION         MUDTH         mmin           TOD (29.9         760/29.9           COMPRESSOR TYPE         ROTARY HERMETIC           CARACTOR         µF           LOCK ROTOR AMP.         A           A 49.0         56.5           SR ATED RUNNING CURRENT (COLING)         A           A 10.0         13.3         13.4           COMPRESSOR TYPE         VIPINHZ           COMPRESSOR TYPE         VIPINHZ           COMPRESSOR TYPE         ROTARY HERMETIC           COMPRESSOR TYPE         A           RATED RUNNING CURRENT (HEATING)         A           VE 2040         2.677	ľ									670 / 26.30
ROOM TEMPERATURE         MICROCONTROLED THERMOSTAT           CONTROL         AIR DISCHARGE         AITOMATE LOUVER (UPERONTROL)           CONTROLED BAN SIZE         mmin         LCO WIRELES MICROCOMPUTER REMOTE CONTROL.           CONDENSATE DRAN SIZE         mmin         ULCO WIRELES MICROCOMPUTER REMOTE CONTROL.           CONDENSATE DRAN SIZE         mmin         WASHABLE SMICROCOMPUTER REMOTE CONTROL.           DEPTH         mmin         301/11.9         345/13.6           DEPTH         mmin         1.311/51.6         1.361/53.5           DEPTH         mmin         760/29.9         760/29.9           COMPER SOURCE         V/Phintrz         220.240/11/50         380.400/39.0           COMPER SOURCE         V/Phintrz         220.240/11/50         380.400/39.0           CORE SOURCE         V/Phintrz         713.6         12.9         54.7           CORE SOURCE         V/Phintrz         713.6         12.9         54.7         70.0           CORE SOURCE         V/Phintrz         720.240/17.0         82.4         70.7         72.643.0         78.0           CORE SOURCE         NONTROLLES NONT		NEIG	HT							
CONTROL         AR DISCHARGE         AUTOMATIC LOUVER (UPEADOWN) & MANUAL LOUVER (BOTTOM) OPERATON           CONDENSATE DRAN SUE         mm/n         CONDENSATE DRAN SUE         mm/n           CONDENSATE DRAN SUE         mm/n         10 56 / 34           MAR FLITER         WASHABLE SARAN NORT CONTROL.         345 / 13.6           PACKING         MEIGHT         mm/n         301 / 11.9         346 / 13.6         138 / 13.5           DIMENSION         WEIGHT         mm/n         301 / 11.9         346 / 13.6         138 / 13.5         1.18 / 71.4           DIMENSION         WEIGHT         mm/n         301 / 11.9         346 / 13.6         1.28 / 73.5         1.18 / 71.4           OWER SOURCE         VPINHz         220 - 240 / 11.50         380 - 420 / 3.0         200 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         760 / 20.9         7.0         760 / 20.9         7.0         760 / 20.9         7.0         7.0				ROOM TEMPERATURE					THERMOSTAT	
CONDENSATE DRAIN SIZE         mm/m         19 06 / 3/4           MRF FLITE         mm/m         301 / 11 9         345 / 13.6         345 / 13.6           PACKING         WEIGHT         mm/m         301 / 11 9         345 / 13.6         345 / 13.6           DIMENSION         WEIGHT         mm/m         301 / 11 9         346 / 13.6         1381 / 25.5         1.181 / 71.4           DIMENSION         WEIGHT         mm/m         760 / 29.9         760 / 29.9         760 / 29.9           POWER SOURCE         V/Ph/Hz         220- 240 / 1/.50         360 - 420 / 3.0         20.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9         760 / 20.9         364 - 50 / 76.0         4.6         0.40 / 3.0         62.0         7.6         7.1         7.3.6         12.9         5.4         7.0         7		CONT	ROL	AIR DISCHARGE			AUTOMATIC L	OUVER (UP&DOWN) & MANU	JAL LOUVER (BOTTOM)	
International         Washable SARAN NET (OPTIONAL IONIZER FLITER)           PACKINO         HEIGHT         mmin         301/119         346/136         346/136           PACKINO         WIDTH         mmin         1,311/516         1,361/53.5         1,816/77.4           DIMENSION         WIDTH         mmin         760/29.9         760/29.9         760/29.9           POWER SOURCE         VPIhirtz         ROTARY HERMETIC         RECIPOCATING HERMETIC         RECIPOCATING HERMETIC           CARACITOR         µF         35         45         45         45         -           LOCK ROTOR AMP.         A         49.0         56.5         78.0         45.0         62.0           RATED RUNNING CURRENT (COOLING)         A         11.0         13.3         13.4         6.0         7.6           RATED RUNNING CURRENT (COOLING)         W         2,400         2,667         2,643         3,431         4,480           PROTECTION DEVICE         OVERLOAD PROTECTION AD MULAU REST HOHLON PRESSURE SMICH         PROFELLER / DIRECT         3.0         2.2         3.00           RATED INPUT POWER RIFEATING)         W         2,140         2.757         2.682         2.921         3.30           DIAMETER         INPUT POWER RIFEATING) <td></td> <td></td> <td></td> <td>OPERATION</td> <td></td> <td></td> <td>LCD WIR</td> <td></td> <td>EMOTE CONTROL</td> <td></td>				OPERATION			LCD WIR		EMOTE CONTROL	
PACKING         HEIGHT         mmin         301/119         345/136         345/136           DIMENSION         WDTH         mmin         1311/516         1361/535         1316/714           DIMENSION         MEDTH         mmin         760/29.9         760/29.9         760/29.9           POWER SOURCE         VIPhrkz         220.240/11/50         380-420/3/50         380-420/3/50           CAMPRESSOR TYPE         ROTARY HERMETIC         RECIPROCATING HERMETIC         RECIPROCATING HERMETIC         RECIPROCATING HERMETIC           CAPACITOR         JF         35         45         45         -         -           LOCK KOTOR AMP.         A         49.0         55.5         77.0         62.0         7.6           RATED RUNNING CURRENT (COOLING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (VEATING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (VEATING)         W         2.140         2.757         2.562         2.821         3.902           PROTECTION DEVICE         OVERLOAD PROTECTION         OVERLOAD PROTECTION MURLIA RESET HIGHLY MESSURE SWITCH         FAIT DRALES         1003.6         1003.6         1003	(	CONE	DENSA	TE DRAIN SIZE	mm/in					
DIMENSION         WIDTH         mm/m         1.311 / 51.6         1.381 / 53.5         1.816 / 71.4           DEPTH         mm/m         760 / 29.9         760 / 29.9         760 / 29.9         760 / 29.9           POWER SOURCE         VPM/Hz         220 - 240 / 1 / 50         880 / 29.9         760 / 29.9         760 / 29.9           CAPARCTOR         µF         35         45         45         -         -           CAPACITOR         µF         35         45         45         -         -           CARACTOR         µF         35         45         45         -         -           COK ROTCR AMP.         A         49.0         56.5         78.0         45.0         62.0           RATED RUNNING CURRENT (COLING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (HEATING)         W         2.040         2.767         2.662         2.921         3.902           PROTECUTION DEVICE         OVER.OW PROTECTION         0.66 / 2.00         -         -         -           BLADE MATERIAL         mm/in         420.0 / 16.5         E066 / 2.00         -         -         -           RATED DUPUT POWER         W										
Depth         mm/m         760 / 29.9         760 / 29.9         760 / 29.9           POWER SORCE         VIPhiHz         220 - 240 / 1 / 50         380 - 420 / 3 / 50           COMPRESSOR TYPE         ROTARY HERMETIC         RECIPROCATING HERMETIC         RECIPROCATING HERMETIC           CAPACITOR         µF         35         45         -         -           QUESC         µF         35         45         -         -         -           CAPACITOR         µF         35         45         45         -										
POWER SOURCE         WPh/Hz         220 - 240 / 1 / 50         380 - 420 / 3 / 50           COMPRESSOR TYPE         RECIPROCATING HERMETIC         RECIPROCATING HERMETIC         RECIPROCATING HERMETIC           CAPACITOR         µF         35         45         45         -         -           LOCK ROTOR RAMP.         A         49.0         56.5         78.0         46.0         62.0           RATED RUNNING CURRENT (COOLING)         A         11.0         13.3         13.4         6.0         7.6           RATED INPUT POWER (COOLING)         W         2.040         2.667         2.643         3.43.1         4.40           PROTECTION DEVICE         OVERLOAD PROTECTION         OVERLOAD PROTECTION ADMANAL RESET MONLON PRESSURE SWITCH         RATED INPUT POWER (HEATING)         W         2.040         2.667         2.643         3.43.1         4.40           PROTECTION DEVICE         OVERLOAD PROTECTION         OVERLOAD PROTECTION ADMANAL RESET MONLON PRESSURE SWITCH         RATED INPUT POWER NEWSENS         SWITCH         RATED TO UNEVE         SWITCH         RATED TO UNEVE POWER         SWITCH         SWITCH         SWITCH         SWITCH         SWITCH         RATED TO UNEVE POWER         SWITCH         SWITCH         SWITCH         SWITCH         SWITCH         SWITCH         SWITCH		DIME	NSION						1.5	
COMPRESSOR TYPE         DROTARY HERMETIC         RECIPROCATING HERMETIC           CAPACITOR         µF         35         45         - <td></td> <td>0.014</td> <td></td> <td></td> <td></td> <td>760</td> <td></td> <td>760 / 29.9</td> <td></td> <td></td>		0.014				760		760 / 29.9		
CAPACITOR         µF         35         45         45         -         -           Q         CAPACITOR         A         49.0         56.5         78.0         45.0         62.0           LOCK ROTOR AMP.         A         49.0         56.5         78.0         45.0         62.0           RATED RUNNING CURRENT (LEATING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (COOLING)         W         2.040         2.667         2.643         3.431         4.480           PROTECTION DEVICE         OVERLOAD PROTECTION         OVERLOAD PROTECTION AND MAUA RESET HIGHLOW PRESSURE SWITCH         9.0 <td< td=""><td></td><td>JOW</td><td></td><td></td><td>V/Pn/Hz</td><td>DOTADY</td><td></td><td></td><td></td><td></td></td<>		JOW			V/Pn/Hz	DOTADY				
LOCK ROTOR AMP.         A         490         56.5         78.0         44.0         62.0           RATED RUNNING CURRENT (COLING)         A         11.0         13.3         13.4         6.0         7.6           RATED RUNNING CURRENT (HEATING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (COLING)         W         2.400         2.667         2.643         3.431         4.480           PROTECTION DEVICE         OVER.0AD PROTECTION         OVERLOAD PROTECTION AND MANUAL RESET HIGH.LOW PRESURE SWITCH         PROFELIER / DIRECT         3.902           BLADE MATERIAL         OVER.0AD PROTECTION         OVERLOAD PROTECTION AND MANUAL RESET HIGH.LOW PRESURE SWITCH         PROFELIER / DIRECT         3.902           BLADE MATERIAL         Matterial         Matterial         0.6LASS REINFORCED ACR'L STYRENE RESIN         3.902           UMATERIAL         Matterial         Matterial         0.56         1.09         1.09         2.7           RATED UNPUT POWER         W         133         241         241         640           MATERIAL         S.B.C         S.I.G.C         S.B.C         S.B.C         S.B.C           MATERIAL         Matterial         0.36 / 0.014         0.36 / 0.014         0.					υE					,
Book         RATED RUNNING CURRENT (COOLING)         A         110         133         134         6.0         7.6           RATED RUNNING CURRENT (HEATING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (COOLING)         W         2.040         2.667         2.643         3.431         4.480           PROTECTION DEVICE         OVER.0AP PROTECTION NOVER.0AP INCIDENT AND ANNUAL RESET HIGHLOW PRESURE SWITCH         DVER.0AP PROTECTION AND ANNUAL RESET HIGHLOW PRESURE SWITCH           FAN TYPE / DRIVE         PROPELLER / DIRECT         PROPELLER / DIRECT         BLADE MATERIAL         CGLASS REINFORCED ACKYL STYRENE RESIN           BLADE MATERIAL         0.56         1.09         1.09         2.7           RATED INPUT POWER         W         55         1.45         1.46         4.60           RATED OUTPUT POWER         W         55         1.45         1.46         4.60           RATED INPUT POWER         W         55         1.45         1.46         4.60           RATED INPUT POWER         W         58.C         S.B.C         S.B.C         S.B.C         S.B.C           MATERIAL         S.B.C         S.B.C         S.B.C         S.B.C         S.B.C         S.B.C									45.0	62.0
S         RATED RUNNING CURRENT (HEATING)         A         9.7         13.6         12.9         5.4         7.0           RATED INPUT POWER (COOLING)         W         2,040         2,667         2,643         3,431         4,480           RATED INPUT POWER (HEATING)         W         2,140         2,757         2,562         2,921         3,902           PROTECTION DEVICE         OVERLOAD PROTECTION         OVERLOAD PROTECTION MANUAL RESET HIGHLOW PRESSURE SWITCH           FAN TYPE / DRIVE         PROPELLER / DRIVE         PROPELLER / DRECT           BLADE MATERIAL         GLASS REINFORCED A CRYL STYRENE RESIN           RATED OUNDUT POWER         W         55         145         145         460           RATED OUNDUT POWER         W         58.C         51.0C         58.C         51.05           DIAMETER         mm/in         58.C         51.0C         58.C         52.014         0.35/0014		₽								
RATED INPUT POWER (COOLING)         W         2.040         2.667         2.643         3.431         4.480           RATED INPUT POWER (COOLING)         W         2.140         2.757         2.562         2.921         3.902           PROTECTION DEVICE         OVER.0AD PROTECTION         OVER.0AD PROTECTION AD MANUL RESET HIGHLOW PRESSURES SWITCH           FAN TYPE / DRIVE         PROPELLER / DIRECT           BLADE MATERIAL         GLASS REINFORCED ACRYL STYRENE RESIN           DIAMETER         mm/in         420.0 / 16.5         609.6 / 24.0           RATED OUTPUT POWER         W         55         145         1445         460           RATED OUTPUT POWER         W         55         145         1445         460           RATED OUTPUT POWER         W         133         241         241         635           DIAMETER         mm/in         58.0 C         51.6 C         38.0 C         38.0 C           DIAMETER         mm/in         0.36/0014 VERAGE         0.36/0014         0.35/0014         0.35/0014         0.35/0014         0.35/0014           VER         DIAMETER         mm/in         4.00014 VERAGE         0.36/0014         0.35/0014         0.35/0014         0.35/0014         0.35/0014           VER <td>1</td> <td>ğ</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1	ğ								
PROTECTION DEVICE         OVERCAOD PROTECTION         OVERCAOD PROTECTION AND MANUAL RESET HIGHLOW PRESSURE SWITCH           FAN TYPE / DRIVE         PROPELLER / DIRECT         PROPELLER / DIRECT           BLADE MATERIAL         GLASS REINFORCED ACTIVISTIVE RESIN         Class REINFORCED ACTIVISTIVE RESIN           DIAMETER         mm/in         420.0 / 16.5         609.6 / 24.0           RATED OUTPUT POWER         W         55         145         145         460           RATED NUNING CURRENT         A         0.56         1.09         1.09         2.7           RATED NUNING CURRENT         A         0.55         145         145         460           RATED NUNING CURRENT         A         0.50         1.09         0.57         0.57           RATERIAL         SILG.C         SILG.C         SILG.C         SILG.C         0.57         0.57         0.57         0.57         0.57         0.57         0.57         0.57         0.57		0				2,040				
FAN TYPE / DRIVE         PROPELLER / DIRECT           BLADE MATERIAL         GLASS REINFORCED AGRYL STYRENE RESIN           BLADE MATERIAL         GLASS REINFORCED AGRYL STYRENE RESIN           RATED RUINNING CURRENT         A           RATED DUTPUT POWER         W           RATED RUINNING CURRENT         A           RATED DUTPUT POWER         W           BLADE MATERIAL         S.B.C           NATERIAL         S.B.C           DIAMETER         mm/in           Cash out 4         0.35/0014           ALUMINUM (SLIT TYPE)         ALUMINUM           THICKNESS         mm/in           ROW         2         2           FIN PER INCH         14         16           FACE AREA         m²ft²         0.51/5.53         0.87/19.33           DIMENSION         WIDTH         mm/in         330/13.0			RATE	D INPUT POWER (HEATING)	W	2,140	2,757	2,562	2,921	3,902
BLADE MATERIAL         GLASS REINFORCED ACRYL STYRENE RESIN           DIAMETER         mm/in         420.0 / 16.5         609.6 / 24.0           RATED RUNNING CURRENT         A         0.56         1.09         1.09         2.7           RATED OUTPUT POWER         W         55         145         145         460           RATED NUP POWER         W         133         241         241         635           MATERIAL         S.B.C         S.I.G.C         S.B.C         35 / 0.014         0.35 / 0.014			PROT	ECTION DEVICE		OVERLOAD	PROTECTION	OVERLOAD PROTECT	ION AND MANUAL RESET HIGH/LOV	PRESSURE SWITCH
No.         DiAMETER         mm/in         420.0 / 16.5         609.6 / 24.0           RATED RUNNING CURRENT         A         0.56         1.09         1.09         2.7           RATED RUNNING CURRENT         A         0.56         1.45         145         460           RATED INPUT POWER         W         133         241         241         635           MATERIAL         S.B.C         S.I.G.C         S.B.C         S.B.C         S.B.C           MATERIAL         0.35 / 0.014         0.36 / 0.014 AVERAGE         0.35 / 0.014	l l									
Image: Second			_					SS REINFORCED ACRYL ST		
Image: State of the s		AN								-
RATED INPUT POWER         W         133         241         241         635           MATERIAL         S.B.C		цĽ	_							
Line         MATERIAL         S.B.C         S.I.G.C         S.B.C           DIAMETER         mm/in         0.35 / 0.014         0.015 / 0.015         0.015 / 0.015         0.015 / 0.015         0.015 / 0.015         0.										
Bit Production         Diameter         mm/in         0.36/0.014         0.36/0.014         0.35/0.016	-		M	2	Ŵ			241		035
BOD         Introduction         Introduction <thintroduction< th="">         Introduction</thintroduction<>	μ		HE F		mm/in	3.8.6	3.1.0.0	9.52 / 3/8	0.0.0	
Image: Constraint of the second sec	RU		F			0.35 / 0.014	0.36 / 0.014 AVERAGE		0.35 / 0.014	0.35 / 0.014
Image: Constraint of the second sec	8	_								
Image: Constraint of the second sec		õ			mm/in		. /	0.127 / 0.005		
FIN PER INCH         14         16           FACE AREA         m²ft²         0.51 / 5.53         0.87 / 9.33           DIMENSION         HEIGHT         mm/in         646 / 25.40         850 / 33.46           DIMENSION         WIDTH         mm/in         840 / 33.10         1029 / 40.53           DEPTH         mm/in         330 / 13.00         400 / 15.75           WEIGHT         kg         57         58         98         110         115           CASING         MATERIAL         GALVANISED MILD STEEL         115         115         115           VEIGHT         FINISHING         POLYESTER POWDER         98         100         115           VEIGAS         mm/in         6.35 / 1/4         9.52 / 3/8         9.52 / 3/8           PACKING         LIQUID         mm/in         6.35 / 1/4         9.52 / 3/8         19.05 / 3/4           PACKING         HEIGHT         mm/in         710 / 27.95         1,000 / 39.37         19.05 / 3/4           DIMENSION         WIDTH         mm/in         710 / 27.95         1,200 / 47.24         1.200 / 47.24	Ē	U					2		2	
FACE AREA         m <sup>2</sup> /ft <sup>2</sup> 0.51 / 5.53         0.87 / 9.33           DIMENSION         HEIGHT         mm/in         646 / 25.40         850 / 33.46           DIMENSION         WIDTH         mm/in         840 / 33.10         1029 / 40.53           VEIGHT         Mm/in         330 / 13.00         400 / 15.75           WEIGHT         kg         57         58         98         110         115           CASING         MATERIAL         GALVANISED MILD STEEL         110         115           VEIGHT         FINISHING         0.8 / 0.031         9.52 / 3/8         9.52 / 3/8           TYPE         IQUID         mm/in         6.35 / 1/4         9.52 / 3/8         19.05 / 3/4           VEIGHT         ING         15.88 / 5/8         19.05 / 3/4         19.05 / 3/4           PACKING         HEIGHT         mm/in         710 / 27.95         1,000 / 39.37           DIMENSION         WIDTH         mm/in         710 / 27.95         1,200 / 47.24	OUTD	0	1 1			1	4		16	
DIMENSION         WIDTH         mm/in         840 / 33.10         1029 / 40.53           DEPTH         mm/in         330 / 13.00         400 / 15.75           WEIGHT         kg         57         58         98         110         115           WEIGHT         MATERIAL         GALVANISED MILD STEEL         100 / 15.75         110         115           CASING         ITHICKNESS         mm/in         0.8 / 0.031         FINISHING         90.175         90.27 / 37.85         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         9.52 / 3/8         19.05 / 3/4         9.05 / 3/4 <td>OUTD</td> <td>0</td> <td></td> <td>IN PER INCH</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	OUTD	0		IN PER INCH						
DEPTH         mm/in         330 / 13.00         400 / 15.75           WEIGHT         kg         57         58         98         110         115           Kg         57         58         98         100         115           CASING         MATERIAL         GALVANISED MILD STEEL         115           THICKNESS         mm/in         0.8 / 0.031         POLYESTER POWDER           FINISHING         FOLYESTER POWDER         9.52 / 3/8         9.52 / 3/8           SIZE         LIQUID         mm/in         6.35 / 1/4         9.52 / 3/8         9.52 / 3/8           GAS         mm/in         15.88 / 5/8         19.05 / 3/4         19.05 / 3/4           PACKING         HEIGHT         mm/in         710 / 27.95         1.000 / 39.37           DIMENSION         WIDTH         mm/in         957 / 37.68         1,200 / 47.24	OUTD	0	F		m²/ft²		/ 5.53		0.87 / 9.33	
WEIGHT         kg         57         58         98         110         115           MATERIAL         GALVANISED MILD STEEL           CASING         MATERIAL         0.8 / 0.031           FLARE VALVE           FLARE VALVE           TYPE           SIZE         LIQUID         mm/in         6.35 / 1/4         9.52 / 3/8         9.52 / 3/8           PACKING         HEIGHT         mm/in         710 / 27.95         1,000 / 39.37           DIMENSION         WIDTH         mm/in         710 / 27.95         1,200 / 47.24	OUTD	0	F	AREA		0.51 646 /	25.40		850 / 33.46	
MATERIAL         GALVANISED MILD STÉEL           THICKNESS         mm/in         0.8 / 0.031           FINISHING         POLYESTER POWDER           Image: Size stress of the			F FACE	AREA HEIGHT WIDTH	mm/in mm/in	0.51 646 / 840 /	25.40 33.10		850 / 33.46 1029 / 40.53	
CASING         THICKNESS         mm/in         0.8 / 0.031           FINISHING         POLYESTER POWDER           TYPE         FLARE VALVE           SIZE         LIQUID         mm/in         6.35 / 1/4         9.52 / 3/8         9.52 / 3/8           PACKING         HEIGHT         mm/in         15.88 / 5/8         15.88 / 5/8         1000 / 39.37           DIMENSION         WIDTH         mm/in         957 / 37.68         1,200 / 47.24		DIME	FACE NSION	AREA HEIGHT WIDTH	mm/in mm/in mm/in	0.51 646 / 840 / 330 /	25.40 33.10 13.00		850 / 33.46 1029 / 40.53 400 / 15.75	
FINISHING         POLYESTER POWDER           Image: Bit of the state of the s		DIME	FACE NSION	AREA HEIGHT WIDTH DEPTH	mm/in mm/in mm/in	0.51 646 / 840 / 330 /	25.40 33.10 13.00		850 / 33.46 1029 / 40.53 400 / 15.75 110	115
TYPE         FLARE VALVE           Umage         TYPE         FLARE VALVE           SIZE         LIQUID         mm/in         6.35 / 1/4         9.52 / 3/8         9.52 / 3/8           GAS         mm/in         15.88 / 5/8         15.88 / 5/8         19.05 / 3/4           PACKING         HEIGHT         mm/in         710 / 27.95         1,000 / 39.37           DIMENSION         WIDTH         mm/in         957 / 37.68         1,200 / 47.24		DIME	FACE NSION	AREA HEIGHT WIDTH DEPTH MATERIAL	mm/in mm/in mm/in kg	0.51 646 / 840 / 330 /	25.40 33.10 13.00	GALVANISED MILD ST	850 / 33.46 1029 / 40.53 400 / 15.75 110	115
Ling         Ling         mm/in         6.35 / 1/4         9.52 / 3/8		DIME	FACE NSION	AREA HEIGHT WIDTH DEPTH MATERIAL THICKNESS	mm/in mm/in mm/in kg	0.51 646 / 840 / 330 /	25.40 33.10 13.00	GALVANISED MILD STE 0.8 / 0.031	850 / 33.46 1029 / 40.53 400 / 15.75 110 EEL	115
GAS         mm/in         15.88 / 5/8         15.88 / 5/8         19.05 / 3/4           PACKING         HEIGHT         mm/in         710 / 27.95         1,000 / 39.37           DIMENSION         WIDTH         mm/in         957 / 37.68         1,200 / 47.24		DIME WEIG CASII	FACE NSION HT	AREA HEIGHT WIDTH DEPTH MATERIAL THICKNESS FINISHING	mm/in mm/in mm/in kg	0.51 646 / 840 / 330 /	25.40 33.10 13.00	GALVANISED MILD ST 0.8 / 0.031 POLYESTER POWDE	850 / 33.46 1029 / 40.53 400 / 15.75 110 EEL	115
PACKING         HEIGHT         mm/in         710 / 27.95         1,000 / 39.37           DIMENSION         WIDTH         mm/in         957 / 37.68         1,200 / 47.24		DIME WEIG CASII	FACE NSION HT NG TYPE	AREA HEIGHT WIDTH DEPTH MATERIAL THICKNESS FINISHING	mm/in mm/in kg mm/in	0.51 646 / 840 / 330 / 57	25.40 33.10 13.00 58	GALVANISED MILD ST 0.8 / 0.031 POLYESTER POWDE FLARE VALVE	850 / 33.46 1029 / 40.53 400 / 15.75 110 EEL R	
DIMENSION WIDTH mm/in 957 / 37.68 1,200 / 47.24		DIME WEIG CASII	FACE NSION HT NG TYPE	AREA HEIGHT WIDTH DEPTH MATERIAL THICKNESS FINISHING LIQUID	mm/in mm/in kg mm/in mm/in	0.51 646 / 840 / 330 / 57 6.35 / 1/4	25.40 33.10 13.00 58 9.	GALVANISED MILD STI 0.8 / 0.031 POLYESTER POWDE FLARE VALVE 52 / 3/8	850 / 33.46 1029 / 40.53 400 / 15.75 110 EEL IR 9.52	2 / 3/8
			FACE FACE NSION HT NG TYPE SIZE	AREA HEIGHT WIDTH DEPTH MATERIAL THICKNESS FINISHING LIQUID GAS	mm/in mm/in kg mm/in mm/in mm/in	0.51 646 / 840 / 330 / 57 6.35 / 1/4 15.88 / 5/8	25.40 33.10 13.00 58 9. 15	GALVANISED MILD STI 0.8 / 0.031 POLYESTER POWDE FLARE VALVE 52 / 3/8	850 / 33.46 1029 / 40.53 400 / 15.75 110 EEL R 9.52 19.05 19.0	2 / 3/8
DEPTH mm/in 461 / 18.15 560 / 22.05			FACE FACE NSION HT NG SIZE ING	AREA HEIGHT WIDTH DEPTH MATERIAL THICKNESS FINISHING LIQUID GAS HEIGHT	mm/in mm/in kg mm/in mm/in mm/in mm/in	0.51 646 / 840 / 330 / 57 6.35 / 1/4 15.88 / 5/8 710 /	25.40 33.10 13.00 58 9. 15 27.95	GALVANISED MILD STI 0.8 / 0.031 POLYESTER POWDE FLARE VALVE 52 / 3/8	850 / 33.46 1029 / 40.53 400 / 15.75 110 EEL R 9.52 19.0 1,000 / 39.37	2 / 3/8

# **Heat Pump**

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
 ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-89
 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

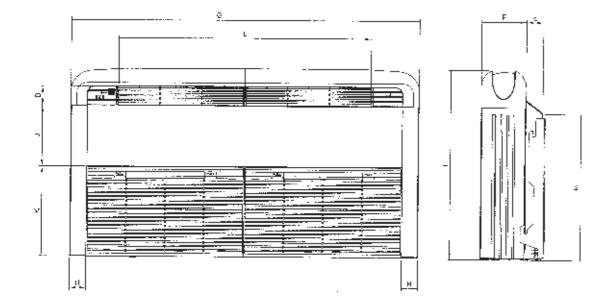
 Abbreviation
 S.B.C.
 SEAMLESS BARE COPPER

 S.I.G.C
 SEAMLESS INNER GROOVE COPPER

# **Outlines and dimensions**

Indoor Unit Model: MCM - D SERIES (Cooling only and heat pump)

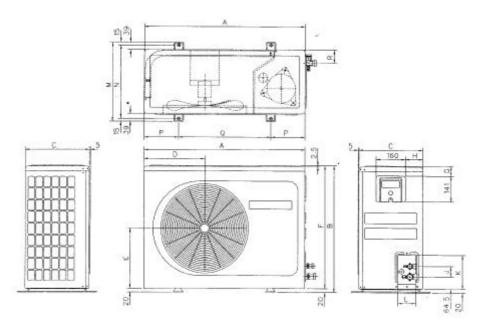




MODEL	MCM 020D/DR	MCM 025D/DR	MCM 030D/DR	MCM 040D/DR	MCM 050D/DR
Α	1174	1174	1174	1674	1674
В	75	75	75	75	75
С	1082	1082	1082	1582	1582
D	68	68	68	68	68
E	58	58	93	93	93
F	156	156	156	156	156
G	1214	1214	1214	1714	1714
Н	57	57	57	57	57
I	670	670	670	670	670
J	216	216	216	216	216
K	319	319	319	319	319
L	879	879	879	1379	1379
М	517	517	517	517	517

All dimensions in mm

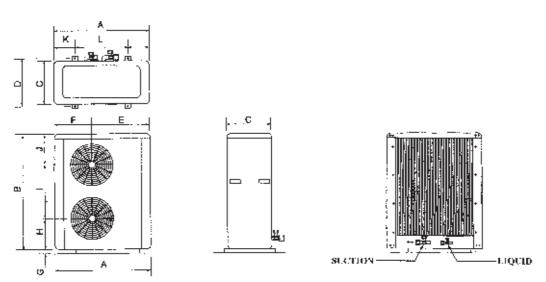
### Outdoor unit Model: MLC - B SERIES



MODEL	Α	В	С	D	Е	F	G	Н	J	Κ	L	Μ	Ν	Ρ	Q	R
MLC 020B / BR	840	646	330	297	309	626	46	90	64	177	106	408	378	124	492	78.5
MLC 025B / BR	840	646	330	297	309	626	46	90	64	177	106	408	378	124	492	78.5

All dimensions in mm

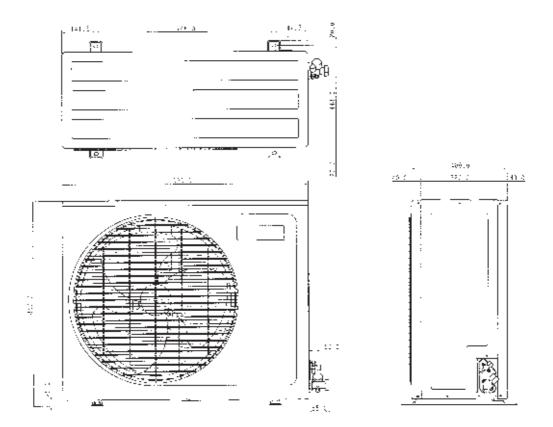
### Model: MMC SERIES



MODEL	Α	В	С	D	E	F	G	Н	I	J	K	L	М
MMC 030A	772	991	400	414	492	280	25	284	441	240	127	518	127
MMC 040B	960	1095	437	470	622	338	20	305	492	277	106	748	106
MMC 050B	960	1095	437	470	622	338	20	305	492	277	106	748	106

All dimensions in mm

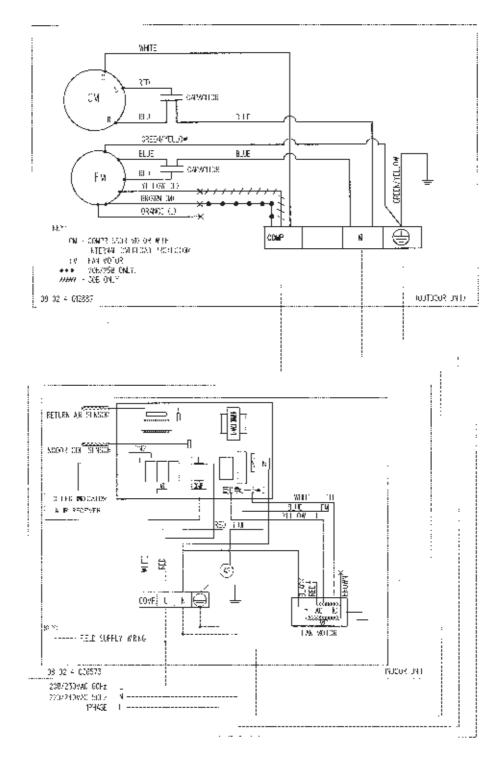
# Model : MLC 040/050C, MLC 030/040/050CR

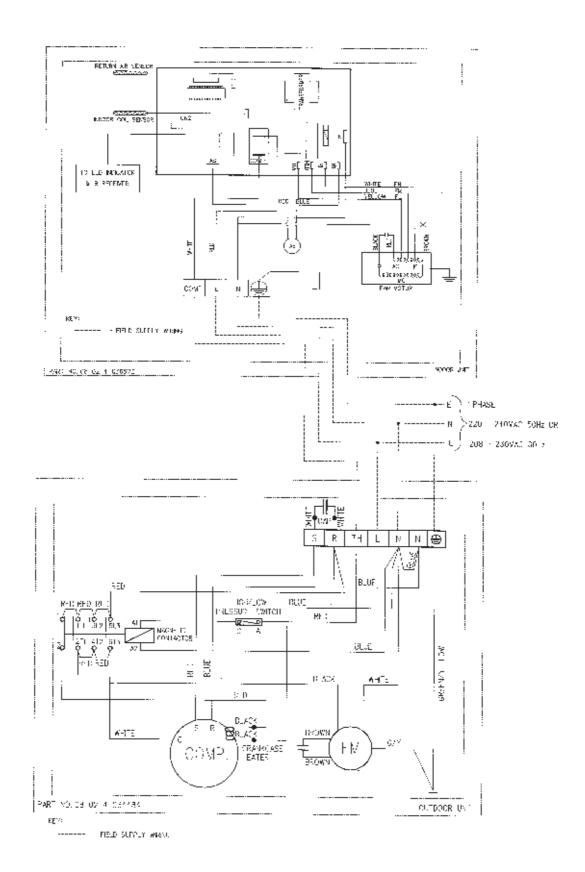


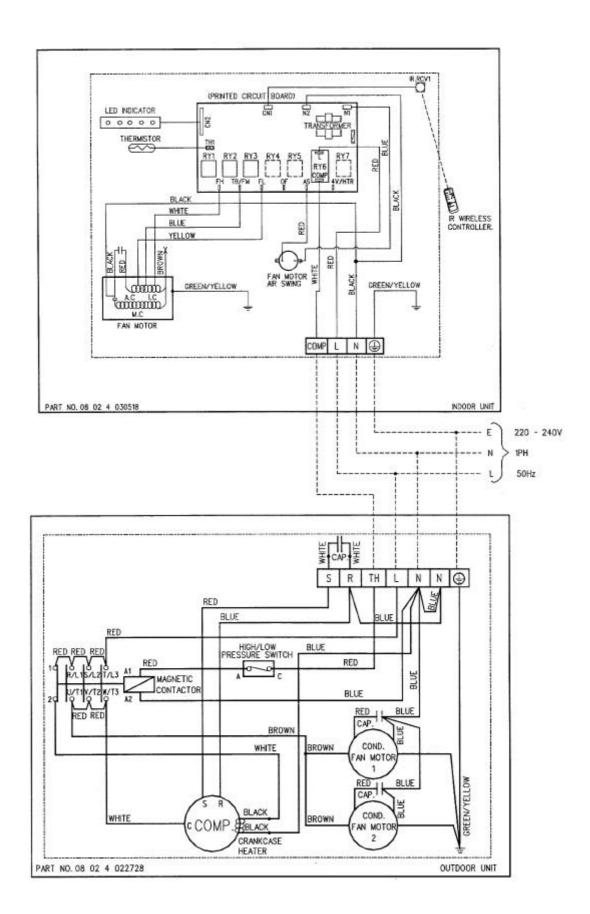
**Caution** Sharp edges and coil surfaces are potential locations which may cause injury hazards. Avoid from being in contact with these places.

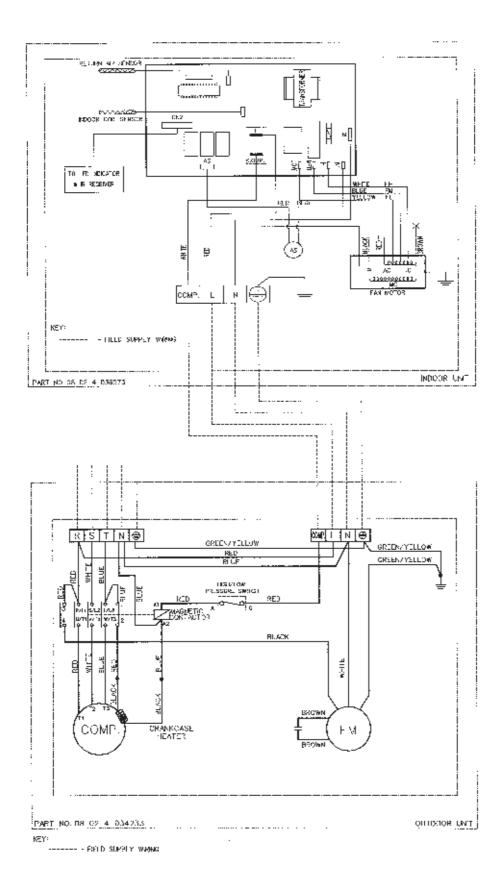
# **Wiring diagrams**

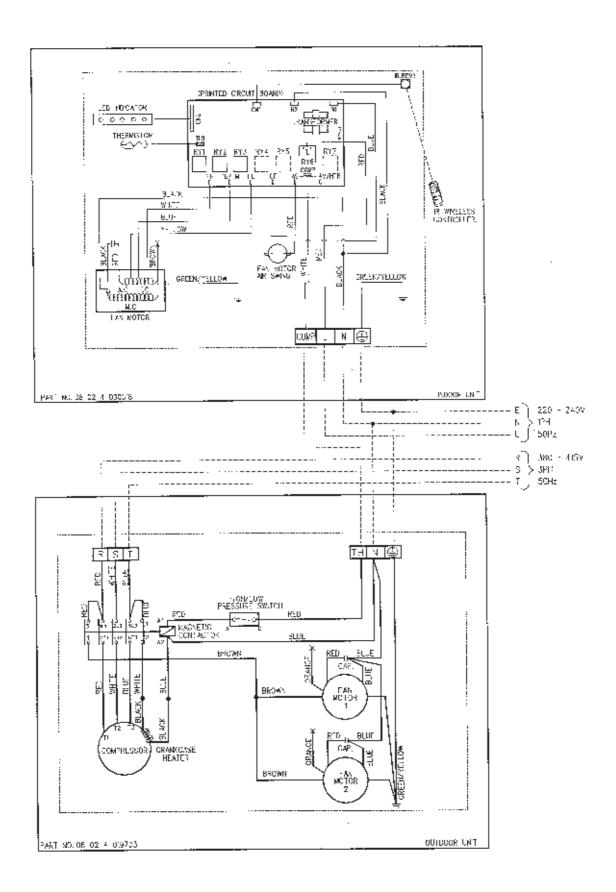
#### Model : MCM 020/025D - MLC 020/025B

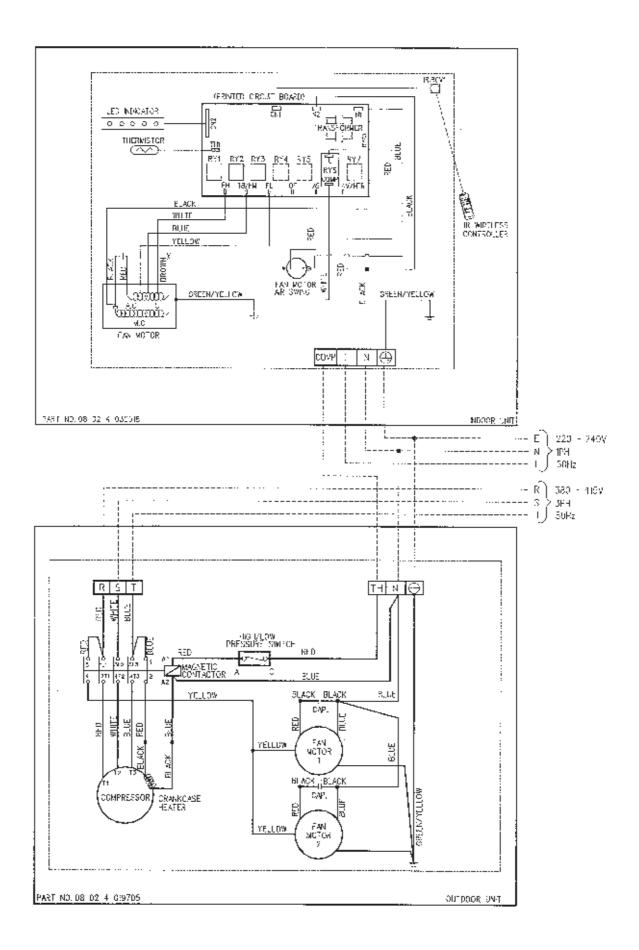




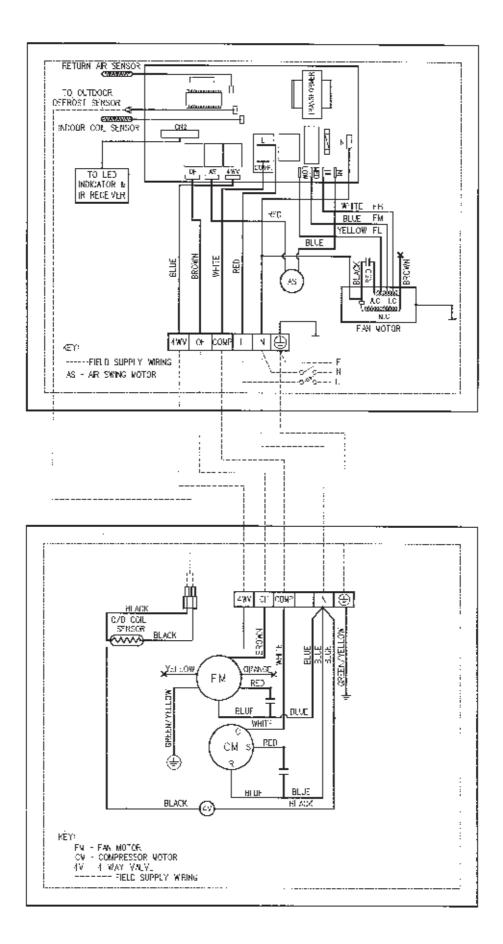




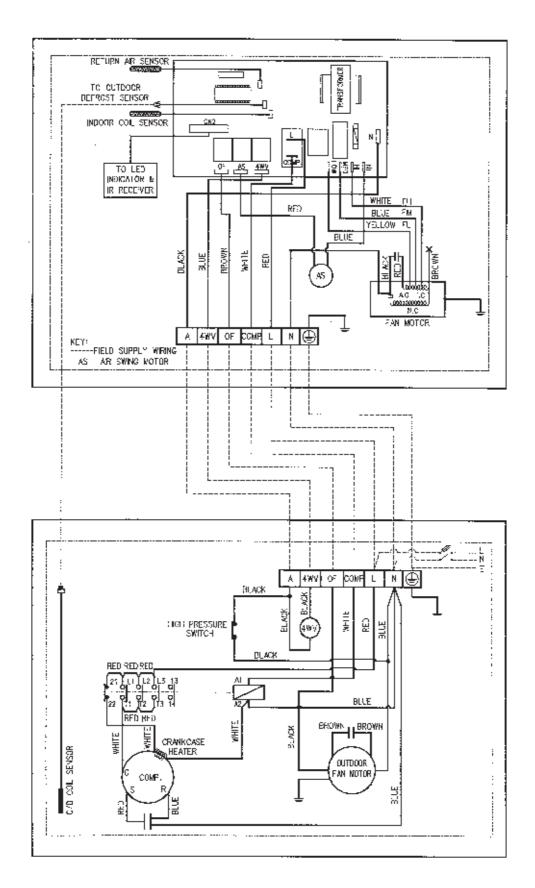




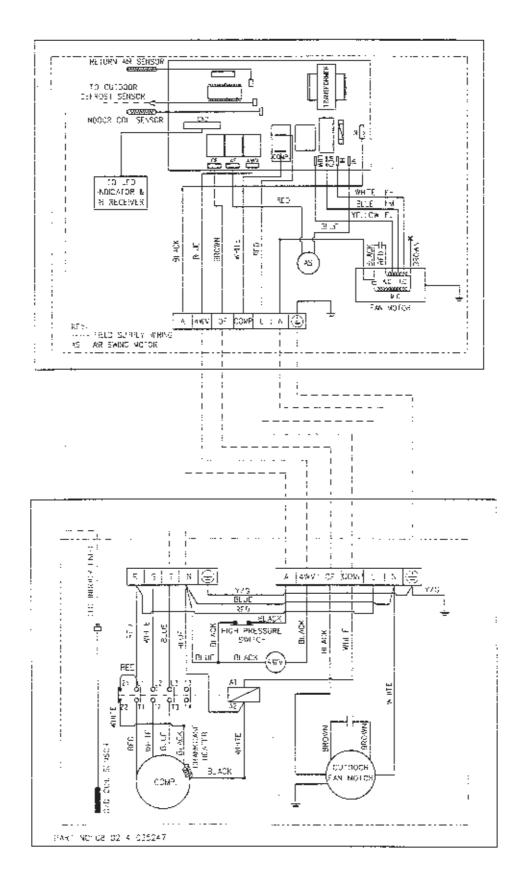
#### Model: MCM 020DR - MLC 020BR MCM 025DR - MLC 025BR



#### Model: MCM 030DR - MLC 030CR



#### Model: MCM 040DR - MLC 040CR MCM 050DR - MLC 050CR





Sharp edges and coil surface are potential injury hazard. Avoid from contact with them.

# (1) INSTALLATION OF INDOOR UNIT

### **Preliminary Site Survey**

- Electrical supply and installation shall conform to the local authority (eg. National Electrical Board).
- Voltage supply fluctuation must not exceed ±10% of the rated voltage. Electricity supply lines must be independent of welding transformers which can cause high supply fluctuation.
- Ensure that the installation location is convenient for wiring and piping.

### **Standard Mounting**

Ensure that the overhead supports are strong enough to hold the weight of the unit. Position the hanger rods (wall mounting bracket for floor standing), and check for its alignment with the unit as shown in Figure A. Also, check that the hangers are secured and the base of the fan coil unit is leveled in both horizontal directions, taking into account the gradient for drainage flow as recommended in Figure B.

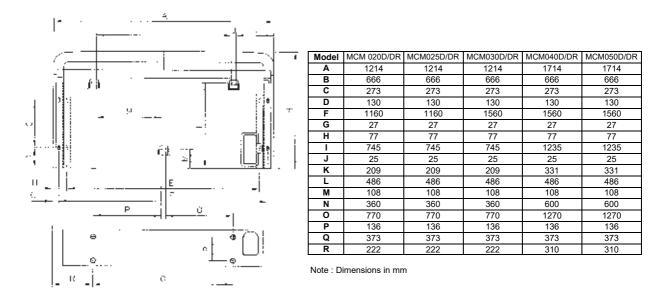


Figure A

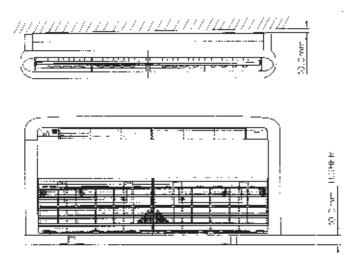


Figure B

Please ensure that the following steps are taken:

- Cheek the gradient for drainage flow as recommended in Figure B.
- Provide clearance for easy servicing and optimal air flow as shown in Figure B.
- The indoor unit must be installed such that there is no short circuit of the cool discharge air with the warm return air.
- Do not install the indoor unit where there is direct sunlight shining on the unit. The location should be suitable for piping and drainage installation. The unit must be a large distance away from the door.

#### **Semi-Enclose Mounting**

• In case the units is to be half recessed into false ceiling, please check the unit is well align.

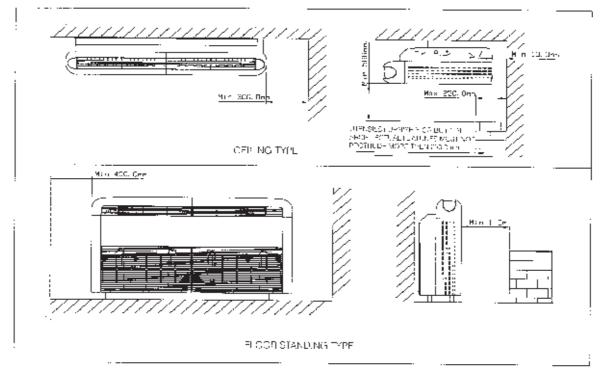


Figure C

• Provide the installation space as shown in Fig. D.

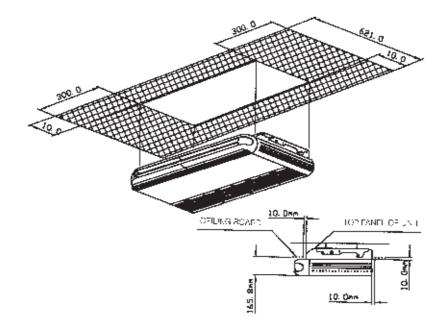
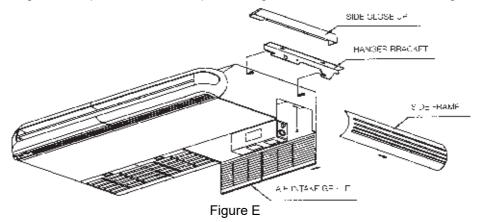


Figure D

### Installation - Ceiling Exposed Type

STEP 1

Remove air intake grille, side panel, side close-up and hanger bracket from the unit; see Fig E.



STEP 2 Position the hanger rods as per Fig B and install the hanger bracket; see Fig F.

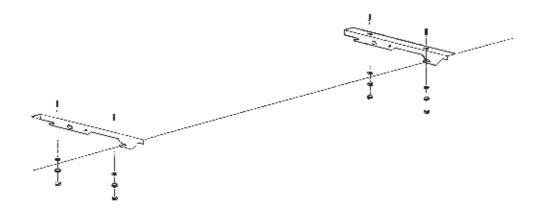


Figure F

#### STEP 3

Hanger up the unit and tighten the bolt, after completed the piping and drain pipe; install back the grille and panel Fig. G.

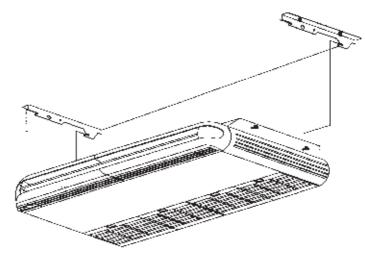


Figure G

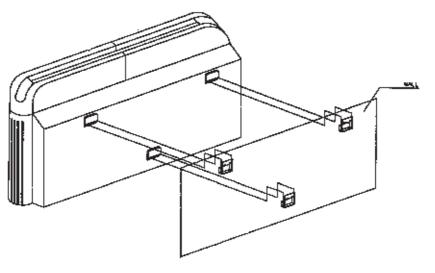
# Installation - Floor Standing Type

STEP 1

Remove air intake grille, side panel, side close-up and side panel from the unit; see Fig E.

STEP 2

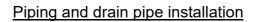
Position the floor support and wall mounting bracket as per Fig B. install the unit; see Fig 1.



\* Wall mounting bracket will be supplied upon request.

Fig I

STEP 3 Two type of piping and drain pipe connection as Fig J.



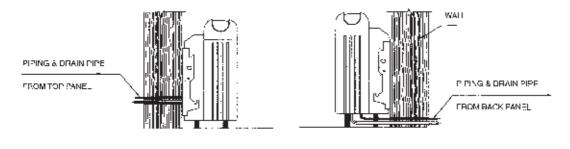
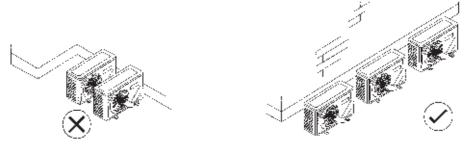


Fig J

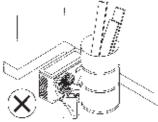
# (2) Installation Of Outdoor Unit

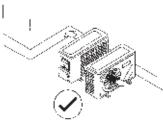
As condensing temperature rises, evaporating temperature rises and cooling capacity drops. In order to achieve maximum cooling capacity, the location selected for outdoor unit should fulfil the following requirements:-

• Install the condensing (outdoor) unit in away 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.

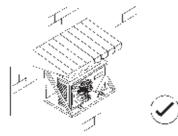


• Ensure that there are no obstruction of air flow into or out of the unit. Remove obstacles which block air intake or discharge.





- 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 bearing 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.

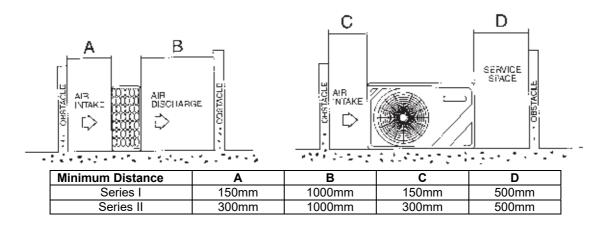


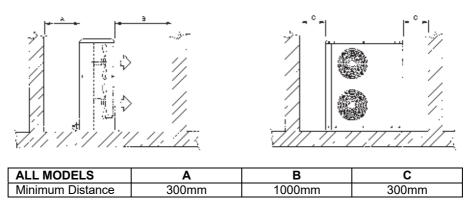
The location must not be susceptible to dust or oil mist.

#### Installation Clearance

 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).

#### **MLC SERIES**





### (3) Refrigerant Piping 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 the result the

MODEL DATA	020	025	030	040	050
Max. Length, L	15m	15m	20m	20m	20m
Max. Elevation, H	8m	8m	10m	10m	10m
Max. No. of bends	10	10	10	10	10

compressor may become defective. Always choose the shortest path and follow the recommendation as tabulated below:

MODEL	020	025	030	040	050
Liquid (mm/in)	6.35(1/4)	9.52(3/8)	9.52(3/8)	9.52(3/8)	9.52(3/8)
Suction (mm/in)	15.88(5/8)	15.88 (5/8)	15.88 (5/8)	19.05 (3/4)	19.05 (3/4)

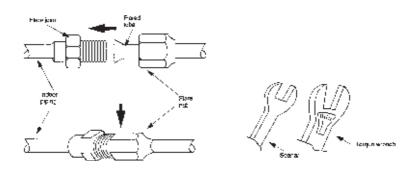
### Piping Sizes (Flare Connection Type)

• Piping sizes are as follows:

# **Piping Connection To The Units**

- Align the center of the piping and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks.
- When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

PIPE SIZE (mm/in)	TORQUE (Nm)
6.35(1/4)	18
9.53(3/8)	42
12.7(1/2)	55
15.88(5/8)	65
9.05(3/4)	78



# (4) Wiring 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.
- The unit must be **GROUNDED** to prevent possible hazards due to insulation failures.
- All wiring must be firmly connected.
- All wiring must not touch the hot refrigerant piping, compressor or any moving parts of fan motors.

# (5) Vacuuming and Charging

- The precharged 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.

(evacuation time varies by the capacity of the pump but averagely in 1 hour).

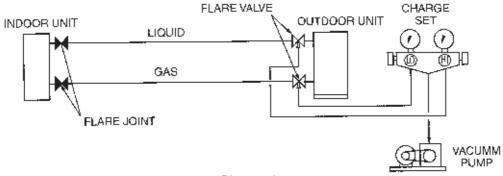
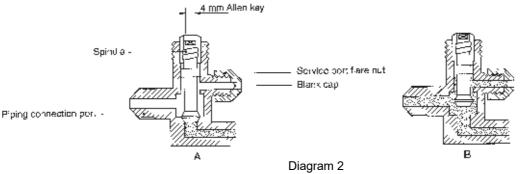


Diagram 1

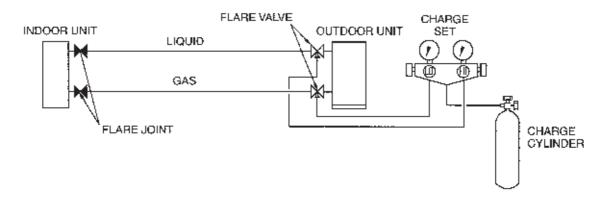
4) After evacuation, unscrew the spindle (diagram 2B) for the gas to run to indoor unit.



# (6) Additional Charge

- The refrigerant gas has already charged into the outdoor unit. For the piping length of 5m. Additional refrigerant charge after vacuuming is not necessary.
- When the piping length is more than 5m, please use the table below (unit in gram).

MODEL	7m	10m	15m	20m
020	30	75	150	-
025	76	190	380	-
030	100	250	500	750
040	100	250	500	750
050	100	250	500	750



# (7) Overall Checking

- Ensure the following, in particular:
  - 1) The unit is mounted solidly and rigid in position.
  - 2) Piping and connections are leak proof after charging.
  - 3) Proper wiring has been done.
  - Drainage check pour some water into drain pan.
  - Test run
  - 1) Conduct a test run after water drainage test and gas leakage test.
  - 2) Watch out for the following:
    - a) Is the electric plug firmly inserted into the socket?
    - b) Is there any abnormal sound from unit?
    - c) Is there any abnormal vibrations with regard to unit itself or piping?
    - d) Is there smooth drainage of water?
  - Cheek that:
  - 1) Outdoor fan is running, with warm air blowing off the outdoor unit (cooling cycle).
  - 2) Indoor blower is running and discharge cool air (cooling cycle).
  - 3) Suction (low side) pressure as recommended is before this.
  - 4) The remote controller incorporate a 3 minute delay in there circuit. Thus, it requires about 3 minutes before the outdoor unit can start up.

# (8) Standard Operating Condition

# **Cooling Only Unit**

Temperature	Ts °C	Th °C
minimum indoor temperature	19.4	13.9
maximum indoor temperature	26.7	19.4
minimum outdoor temperature	19.4	13.9
maximum- outdoor temperature	46.0	24.0

#### Heat Pump Unit

Temperature	Ts °C	Th °C
minimum indoor temperature	10.0	-
maximum indoor temperature	26.7	-
minimum outdoor temperature	-8.0	-9.0
maximum- outdoor temperature	24	18

Ts : Dry bulb temperature Th : Wet bulb temperature

# **Servicing and maintenance**



#### Disconnect from Main Supply before Servicing the air conditioner

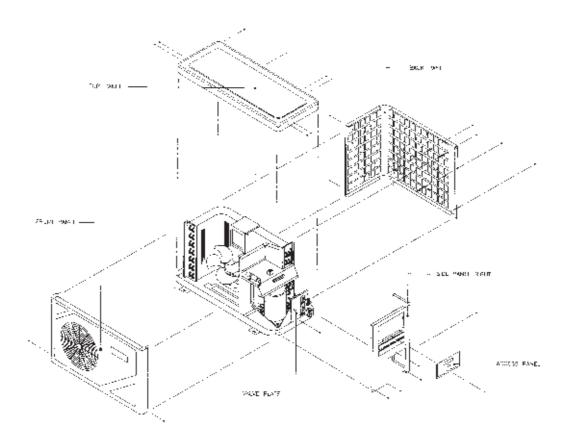
The unit is designed to give a long life operation with minimum maintenance required. However, it should be regularly checked and the following items should be given due attention.

Components	Maintenance Procedure	Recommended Schedule			
Air Filters	<ol> <li>Clean with a vacuum cleaner, or by tapping lightly and then washing in lukewarm water (below 40°C) With neutral soap.</li> </ol>	Every 2 weeks. More frequently if required.			
	2. Rinse well to dry before re-installing.				
	<ol> <li>Note Never use petrol, thinner, benzene or any other chemicals.</li> </ol>				
Indoor Unit	<ol> <li>Clean away dirt or dust on grille or panel by wiping with a soft cloth soaked in lukewarm (or cold) water or neutral detergent solution.</li> </ol>	Every 2 weeks. More frequently if required.			
	2. Note: Never use petrol, thinner, benzene or any other volatile chemicals, which may cause plastic surface to deform.				
Condensate Drain	1. Check and clean.	Every 3 months.			
Pan & Pipe					
Indoor Fan	1. Check for unusual noise.	As necessary.			
Indoor/Outdoor Coil	<ol> <li>Check and remove dirt which are clogged between fins.</li> </ol>	Every month.			
	2. Check and remove obstacles which hinder air flow in and out of indoor/outdoor unit.	Every month.			
Electrical	1. Check voltage, current and wiring.	Every 2 months.			
	<ol> <li>Check faulty contacts caused by loose connections, foreign matters, etc.</li> </ol>	Every 2 months.			
Compressor	1. No maintenance needed if refrigerant circuit remains sealed. However, check for refrigerant leak at joints & fittings.Every 6 months.				
Compressor Lubrication	1. Oil is factory charged. Not necessary to add oil if circuit remains sealed.	No maintenance required.			
Fan Motors Lubrication	1. All motors pre-lubricated and sealed at factory. No maintenance required.				

### PRE-START UP MAINTENANCE (AFTER EXTENDED SHUTDOWN)

- Inspect thoroughly and clean indoor and outdoor units.
- Clean or replace air filters.
- Clean condensate drain line.
- Clean clogged indoor and outdoor coils.
- Check fan imbalance before operation.
- Tighten all wiring connections and panels.
- Check for refrigerant leakage.

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



Under normal circumstances, these outdoor units only 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.



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

# Troubleshooting

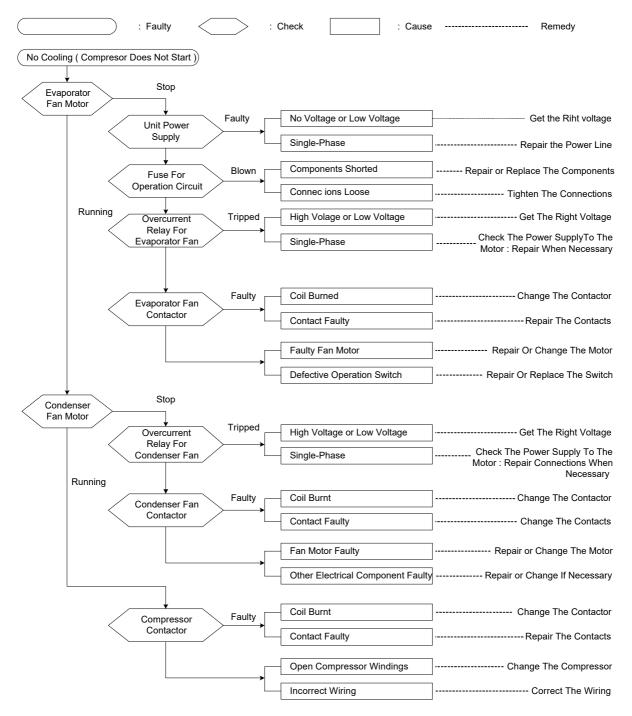
When any air-conditioner malfunction is noted, immediately switch off the power supply to the unit, and contact the local dealer, if necessary. Some simple troubleshooting tips are given below :

FAULT	CAUSE		
1. Fan does not work 3 minutes after starting	Protection against the frequent starting. Wait 3 or 4 minutes.		
2. The air conditioning unit does not work	<ul> <li>Power failure or you must be replaced the fuse.</li> <li>The power plug is disconnected.</li> <li>Possibility of making a programming error in the controller.</li> <li>If the fault persist after these verifications, contact your installer.</li> </ul>		
3. The air conditioning unit does not blow sufficiently	<ul> <li>The air filter is dirty.</li> <li>The doors or windows are open.</li> <li>The air entrance and exit are clogged.</li> <li>The regulate temperature is not high enough.</li> </ul>		
4. The remote control light is deficient	<ul> <li>The batteries are discharge.</li> <li>The batteries are not correctly inserted.</li> <li>The assembly is not good.</li> </ul>		
5. Air discharge flow has a bad odor	<ul> <li>This odor can be caused by cigarette smoke particles, perfume, sweat, which stick to the coil.</li> <li>Check if there is any moisture on the walls, garment, other.</li> <li>Check the drain pan.</li> </ul>		
6. Condensation on the air grille of indoor unit	<ul> <li>This is due to air humidity after a long time of operation.</li> <li>The unit has a lower temperature point, increase the point and operate at high speed.</li> </ul>		
7. The water flow of air conditioning unit	Check the condensate evacuation.		
8. The air conditioning unit are noisy	"Air flow noise" : refrigerant fluid admission in evaporator.		

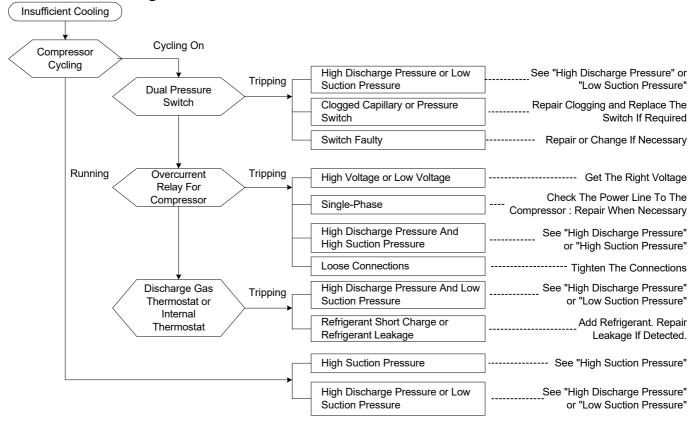
### Diagnosis By Flow Chart (Cooling Only)

The following chart are efficient checking procedures for troubleshooting when these fan-coil units, are coupled with the condensing units using standard wiring. For dual circuited models, perform the procedures for each circuit.

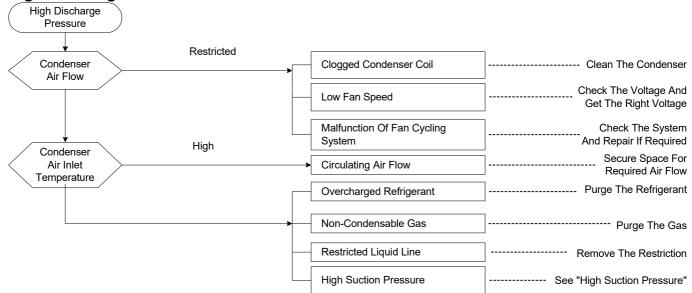
### **No Cooling**



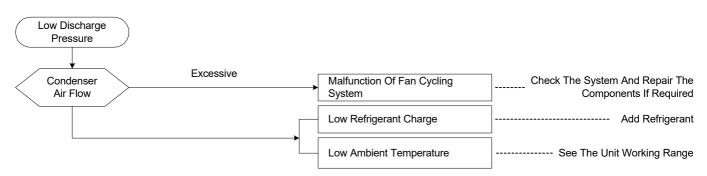
### **Insufficient Cooling**

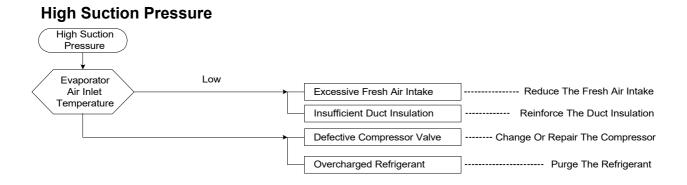


#### High Discharge Pressure

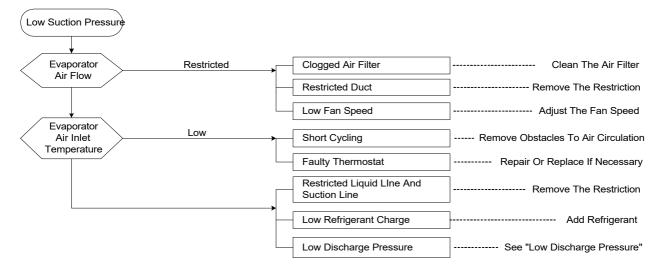


### Low Discharge Pressure

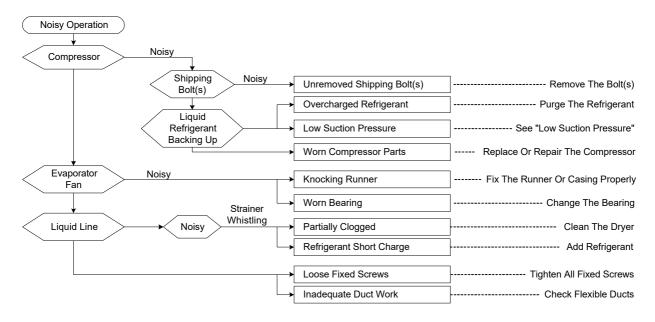




# Low Suction Pressure



### **Noisy Operation**

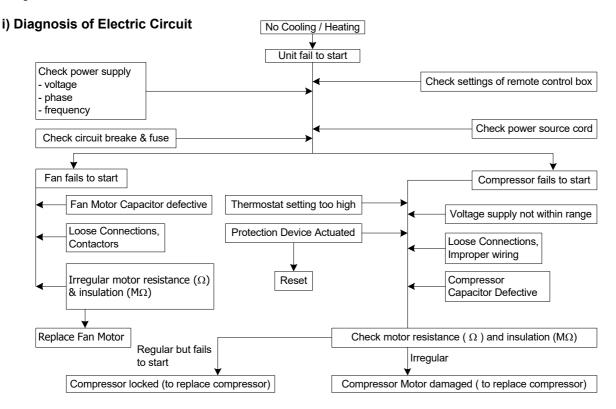


### For Heat Pump Models By means of pressure readings :

PRESSURE					PROBABLE CAUSE	
Data Circuit	Too Low	A Little Low	Normal	A Little High	Too High	
High Side					•	1. Overcharged with refrigerant.
Low Side					•	2. Non-condensable gases in refrigerant circuit (e.g. oil).
						3. Obstructed air-intake/discharge.
						4. Short circuiting of hot air outdoor unit.
High Side	•					1. Poor compression/no compression (compressor defective.)
Low Side					•	2. Check valve stick in open position.
						3. Reversing valve leaking.
High Side		•				1. Undercharged with refrigerant.
Low Side	•					2. Refrigerant leakage.
						3. Air filter clogged/dirty (indoor unit).
						4. Indoor fan locked.
						5. Defective defrost control, outdoor coil freeze up (heating).
						6. Outdoor fan locked (heating).
High Side					•	1. Outdoor fan blocked (cooling).
Low Side				•		2. Outdoor coil dirty (cooling).
						3. Indoor fan locked (heating).
						4. Indoor filter clogged/dirty (heating).
						5. Non-condensable gases in refrigerant circuit (e.g. air)
High Side Low Side				•	•	1. Air intake temperature of indoor unit too high.

#### By Means Of Diagnosis Flow Chart

Generally, there are two kind of problems, i.e. starting failure and insufficient cooling/heating. "Starting Failure" is caused by electrical defect while "Insufficient Cooling/Heating" is caused by improper application or defects in refrigerant circuit.



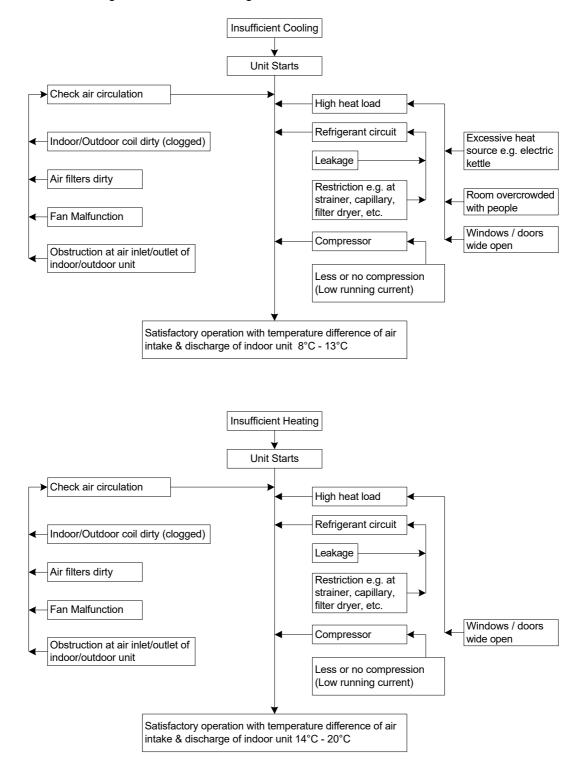
#### 32

The most common causes of air conditioner failure to "start" are:

- a) Voltage not within  $\pm 10\%$  of rated voltage.
- b) Power supply interrupted.
- c) Control settings improper.
- d) Air conditioner is disconnected from main power source.
- e) Fuse blown or circuit breaker off.

#### ii) Diagnosis Of Refrigerant Circuit / Application

There might be some cases where the unit starts running but does not perform satisfactory, i.e. insufficient cooling. Judgement could be made by measuring temperature difference of indoor unit's intake and discharge air as well as running current.





DOP : 0299

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