
MDV R410A T3 50Hz Split Type Top-discharge Series Technical Service Manual

Applicable Model:

Indoor unit

MDTC-96C(H)WN1

MDTD-96C(H)WN1

MDFA3T-96C(H)RN1

Outdoor unit

MDOVT-96C(H)N1-R

MDV reserves the right to discontinue, or change specification or designs at any time without notices and without incurring obligations.

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Part. 1 General information

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1. Model Names of Indoor/Outdoor Units

1.1 Model names of units with cooling only:

Indoor unit			Outdoor unit		Cooling capacity	
Type	Model	Power supply	Model	Power supply	kW	MBtu/h
Med-static pressure duct type	MDTC-96CWN1	220-240V~, 1Ph, 50Hz	MDOVT-96CN1-R	380-415V~, 3Ph, 50Hz	28.1	96.0
Hi-static pressure duct type	MDTD-96CWN1					
Floor-standing type	MDFA3T-96CRN1					

1.2 Model names of units with heat pump:

Indoor unit			Outdoor unit		Cooling capacity	
Type	Model	Power supply	Model	Power supply	kW	MBtu/h
Med-static pressure duct type	MDTC-96HWN1	220-240V~, 1Ph, 50Hz	MDOVT-96HN1-R	380-415V~, 3Ph, 50Hz	28.1	96.0
Hi-static pressure duct type	MDTD-96HWN1					
Floor-standing type	MDFA3T-96HRN1					

2. External Appearance

2.1 Indoor units

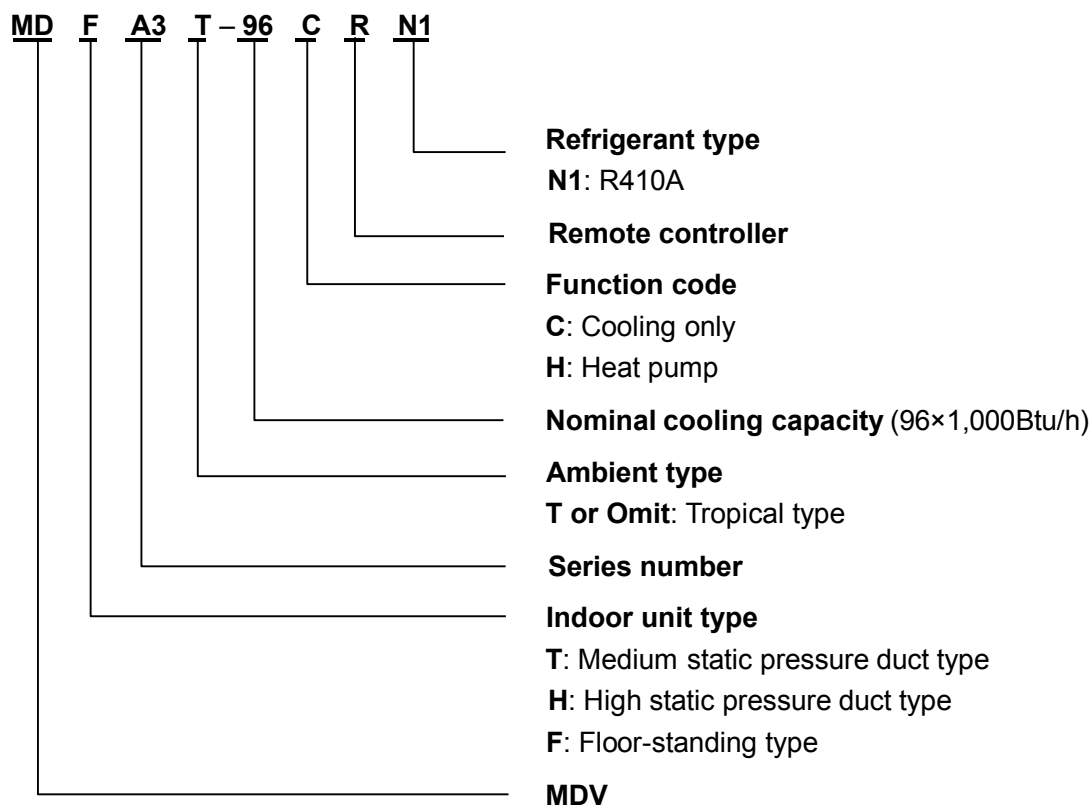
MDTC-96C(H)WN1	MDTD-96C(H)WN1
	
MDFA3T-96C(H)RN1	
	

2.2 Outdoor unit

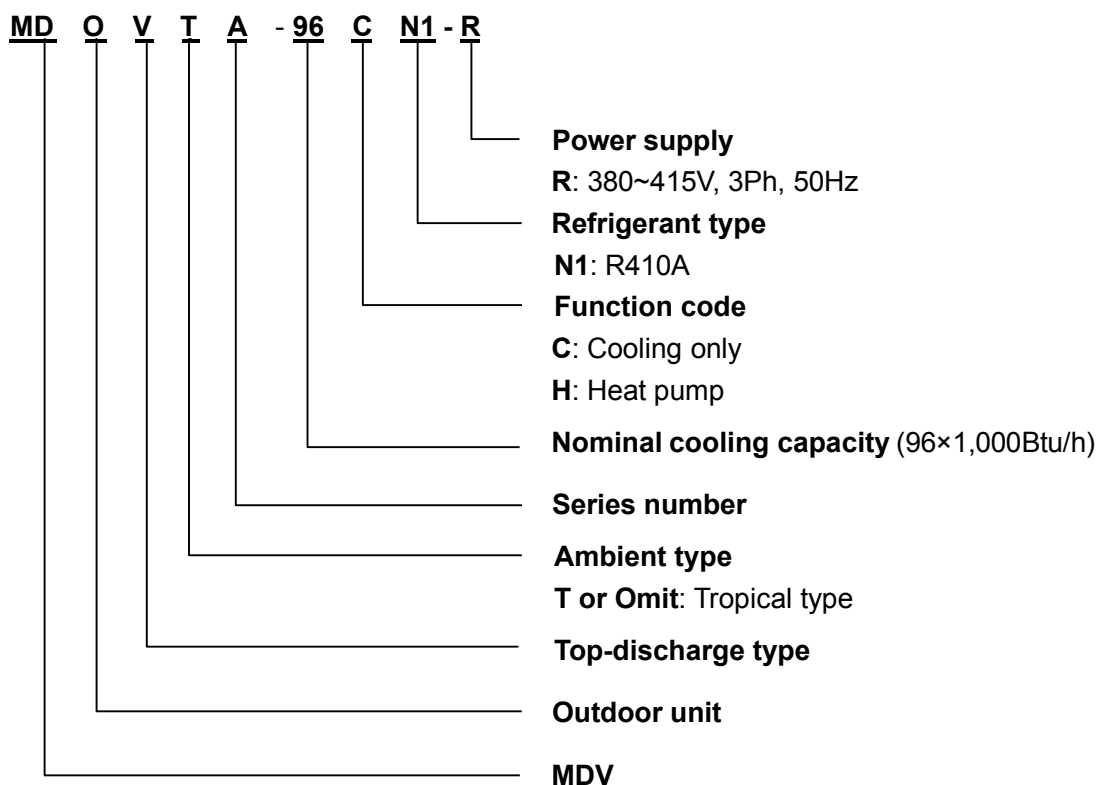
MDOVT-96C(H)N1-R


3. Nomenclature

3.1 Indoor unit:



3.2 Outdoor unit:



Part. 2 Indoor Unit

Duct Type 7

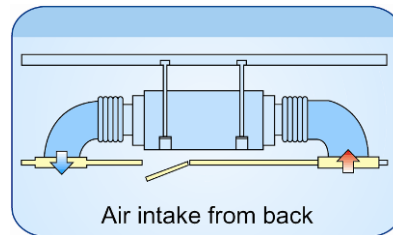
Floor-standing Type 25

Duct Type

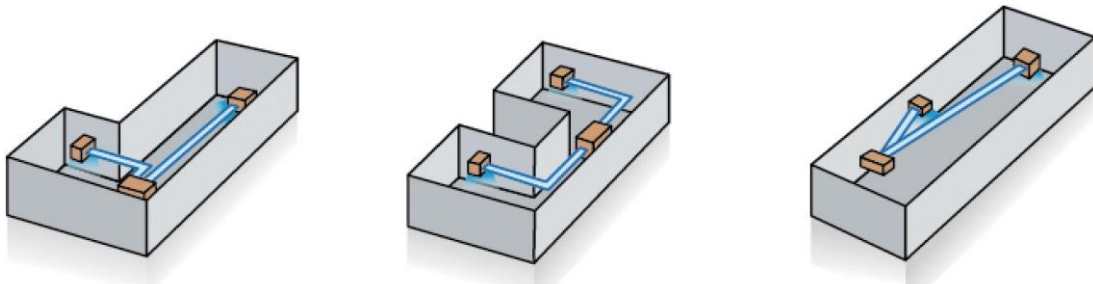
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1. Features

- High capacity of cooling/heating, efficient and energy-saving.
- Nested in the ceiling, space-saving and noble.
- Innovative air supply, which provides homogeneous conditioning of the room temperature.
- The air outlet is laid out in the way you desire.



- Available for remote control or wire control.
- Low noise design.
- It is suitable to be used for office, hospital, commercial place and home, the air conditioner will create the comfortable and elegant environment for you.



- Use refrigerant to transmit cool/heat directly, which provides a high transmitting efficiency.

2. Specifications

Model			MDTC-96HWN1	MDTC-96CWN1
Power supply		\	220-240V~, 1Ph, 50Hz	220-240V~, 1Ph, 50Hz
T1 Cooling	Capacity	Btu/h	96,000	96,000/87,860
		W	28,100	28,100/25,750
	Input	W	9,600	9,600/15,000
	EER	W/W	2.93	2.93/1.72
T3 Cooling	Capacity	Btu/h	87,860	96,000/87,860
		W	25,750	28,100/25,750
	Input	W	15,000	9,600/15,000
	EER	W/W	1.72	2.93/1.72
Heating	Capacity	Btu/h	106,000	\
		W	31,100	\
	Input	W	10,300	\
	COP	W/W	3.02	\
Rated input		W	1,400	1,400
Rated current		A	5.8	5.8
Fan motor	Fan type	\	Centrifugal	Centrifugal
	Model	\	YDK300-4X	YDK300-4X
	Quantity	\	2	2
	Brand	\	Matchwell/Yongan	Matchwell/Yongan
	Input (Hi/Med/Lo)	W	880/730/615	880/730/615
	Capacitor	\	20μF/450V	20μF/450V
	Speed (Hi/Med/Lo)	r/min	1,100/990/880	1,100/990/880
Coil	Number of rows	\	4	4
	Tube pitch(a)×row pitch(b)	mm	25.4×22	25.4×22
	Fin spacing	mm	1.5	1.5
	Fin type	\	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube size	mm	Φ9.52	Φ9.52
	Tube type	\	Inner grooved copper pipe	Inner grooved copper pipe
	Coil(W×H)	mm	1,202×406.4	1,202×406.4
	Number of circuits	\	16	16
Indoor air flow		m³/h	5100	5100
External static pressure		Pa	100	100
Indoor noise pressure level		dB(A)	56	56
Refrigerant	Type	\	R410A	R410A
	Control	\	Capillary	Capillary
Design pressure		MPa	4.4/2.6	4.4/2.6
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ12.7/Φ25.4#	Φ12.7/Φ25.4#
Connection wire	Power wire	\	3×2.5mm²	3×2.5mm²
	Signal wire	\	4×1.0mm²	2×1.0mm²

Continued:

Model			MDTC-96HWN1	MDTC-96CWN1
Drain pipe size (OD)		mm	Φ41	Φ41
Controller		\	KJR-29B1/BK-E	KJR-29B1/BK-E
Operation temperature		°C	17 – 30	17 – 30
Indoor unit	Dimension (W×H×D)	mm	1,452×462×716	1,452×462×716
	Packing (W×H×D)	mm	1,555×500×875	1,555×500×875
	Net/Gross weight	kg	97/109	97/109

Notes:

#. Connection piping diameter of indoor unit is the inlet and outlet pipe of the indoor unit. When the length of the refrigerant pipe between indoor and outdoor is not more than 30m, please connect the straight pipe as the accessory in indoor unit with inlet refrigerant pipe to change the diameter of liquid pipe to Φ9.52. When the length of the refrigerant pipe is more than 30m and less than 50m, please connect the straight pipe (prepared in site) with outlet refrigerant to change the diameter of gas pipe to Φ28.1.

1. T1 nominal cooling capacities are based on the following conditions,

Indoor temperature is 27°C DB/19°C WB; Outdoor temperature is 35°C DB; Equivalent refrigerant piping: 7.5m (horizontal).

2. T3 nominal cooling capacities are based on the following conditions:

Indoor temperature is 27°C DB/19°C WB; Outdoor temperature is 46°C DB; Equivalent refrigerant piping: 7.5m (horizontal).

3. The noise is measured in the semi noise suppression lab.

Model			MDTD-96HWN1	MDTD-96CWN1
Power supply		\	220-240V~, 1Ph, 50Hz	220-240V~, 1Ph, 50Hz
T1 Cooling	Capacity	Btu/h	96,000	96,000
		W	28,100	28,100
	Input	W	9,600	9,600
	EER	W/W	2.93	2.93
T3 Cooling	Capacity	Btu/h	87,860	87,860
		W	25,750	25,750
	Input	W	15,000	15,000
	EER	W/W	1.72	1.72
Heating	Capacity	Btu/h	106,000	\
		W	31,100	\
	Input	W	10,300	\
	COP	W/W	3.02	\
Rated input		W	1,400	1,400
Rated current		A	5.8	5.8
Fan motor	Fan type	\	Centrifugal	Centrifugal
	Model (× Quantity)	\	YDK550-4X	YDK550-4X
	Motor quantity	\	2	2
	Brand	\	Matchwell/Yongan	Matchwell/Yongan
	Input (Hi/Med/Lo)	W	910/780/680	910/780/680
	Capacitor	\	20μF/450V	20μF/450V
	Speed (Hi/Med/Lo)	r/min	1,320/1,230/1,120	1,320/1,230/1,120
Indoor coil	Number of rows	\	4	4
	Tube pitch(a)×row pitch(b)	mm	25.4×22	25.4×22
	Fin spacing	mm	1.5	1.5
	Fin type	\	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube size	mm	Φ9.52	Φ9.52
	Tube type	\	Inner grooved copper pipe	Inner grooved copper pipe
	Coil(W×H)	mm	1,202×406.4	1,202×406.4
	Number of circuits	\	16	16
Indoor air flow		m ³ /h	5100	5100
External static pressure		Pa	196	196
Indoor noise pressure level		dB(A)	56	56
Refrigerant	Type	\	R410A	R410A
	Control	\	Capillary	Capillary
Design pressure		MPa	4.4/2.6	4.4/2.6
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ12.7/Φ25.4#	Φ12.7/Φ25.4#
Connection wire	Power wire	\	3×2.5mm ²	3×2.5mm ²
	Signal wire	\	4×1.0mm ²	2×1.0mm ²

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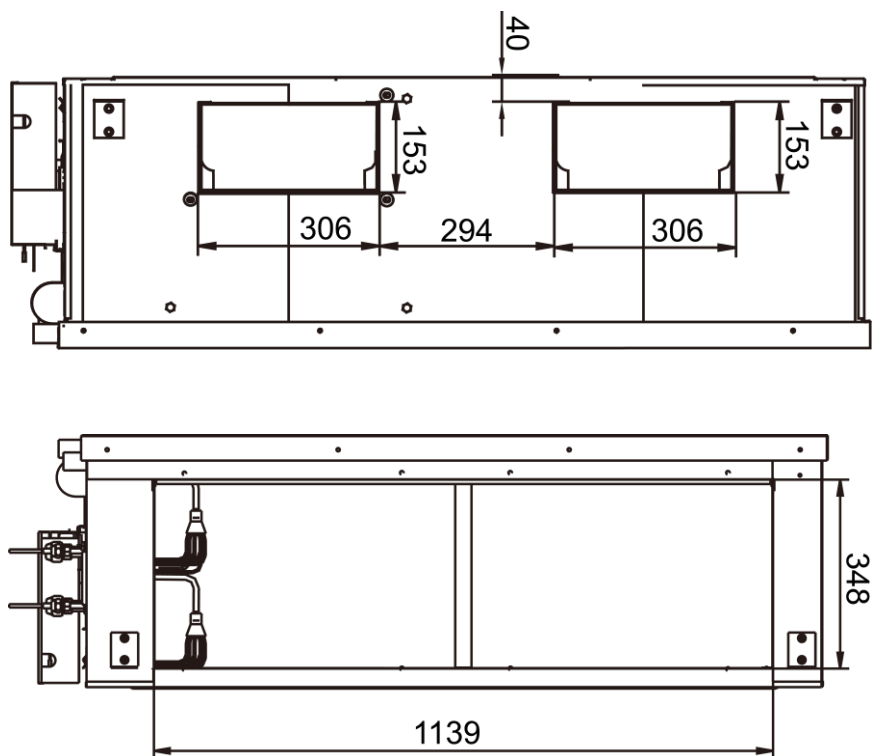
Model			MDTD-96HWN1	MDTD-96CWN1
Drain pipe size (OD)		mm	Φ41	Φ41
Controller		\	KJR-29B1/BK-E	KJR-29B1/BK-E
Operation temperature		°C	17 – 30	17 – 30
Indoor unit	Dimension (W×H×D)	mm	1,452×462×716	1,452×462×716
	Packing (W×H×D)	mm	1,555×500×875	1,555×500×875
	Net/Gross weight	kg	97/109	97/109

Notes:

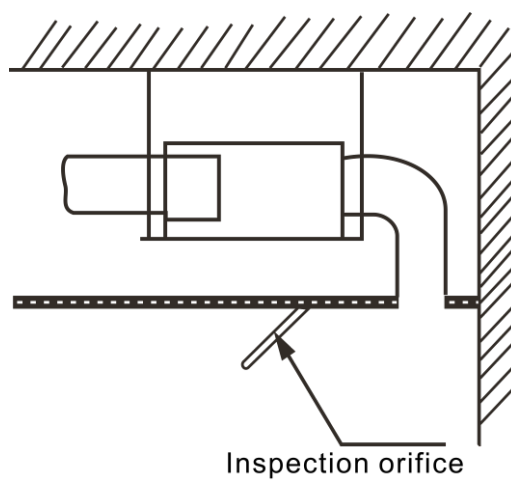
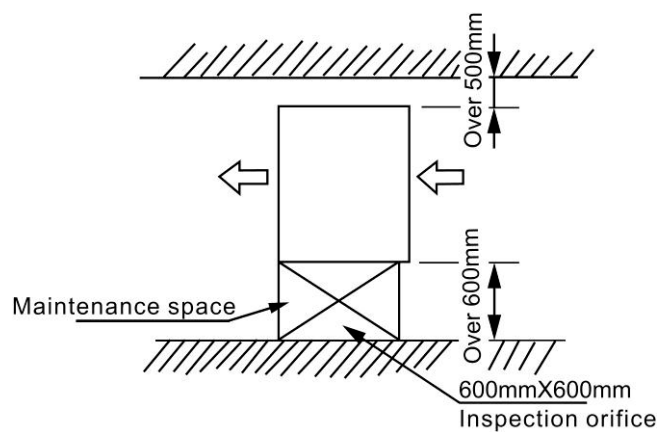
- #. Connection piping diameter of indoor unit is the inlet and outlet pipe of the indoor unit. When the length of the refrigerant pipe between indoor and outdoor is not more than 30m, please connect the straight pipe as the accessory in indoor unit with inlet refrigerant pipe to change the diameter of liquid pipe to Φ9.52. When the length of the refrigerant pipe is more than 30m and less than 50m, please connect the straight pipe (prepared in site) with outlet refrigerant to change the diameter of gas pipe to Φ28.1.
1. T1 nominal cooling capacities are based on the following conditions,
Indoor temperature is 27°C DB/19°C WB; Outdoor temperature is 35°C DB; Equivalent refrigerant piping: 7.5m (horizontal).
2. T3 nominal cooling capacities are based on the following conditions:
Indoor temperature is 27°C DB/19°C WB; Outdoor temperature is 46°C DB; Equivalent refrigerant piping: 7.5m (horizontal).
3. The noise is measured in the semi noise suppression lab.

2. Dimensions (Unit: mm)

MDTC-96C(H)WN1,MDTD-96C(H)WN1:

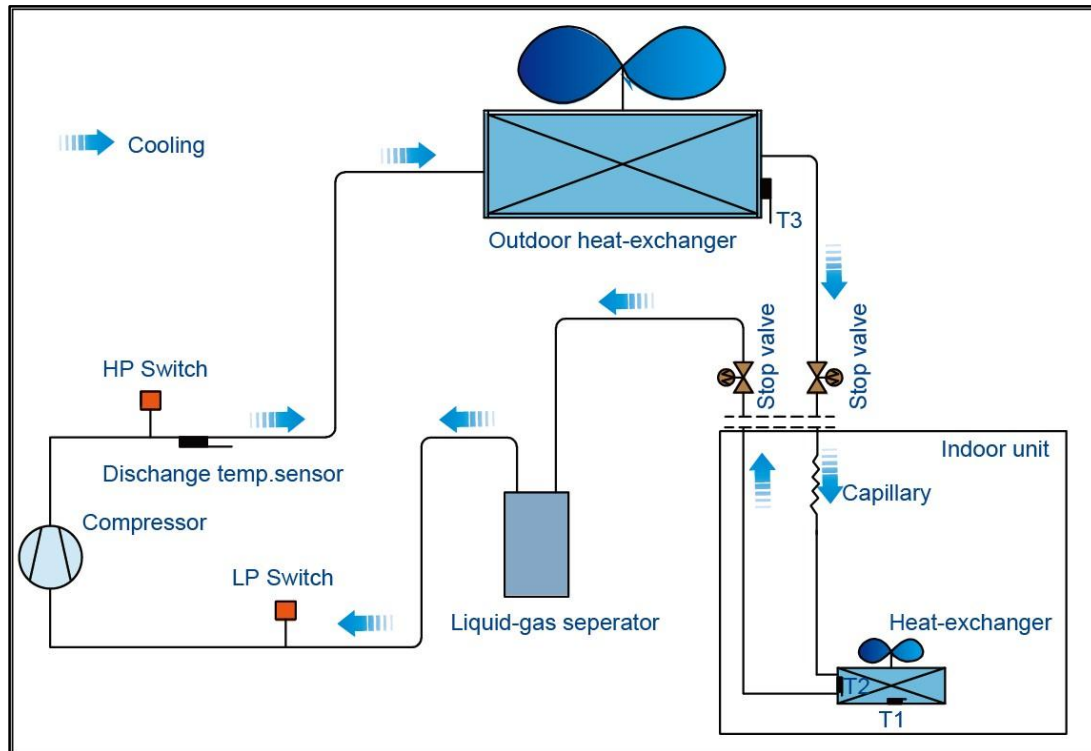


3. Service Space

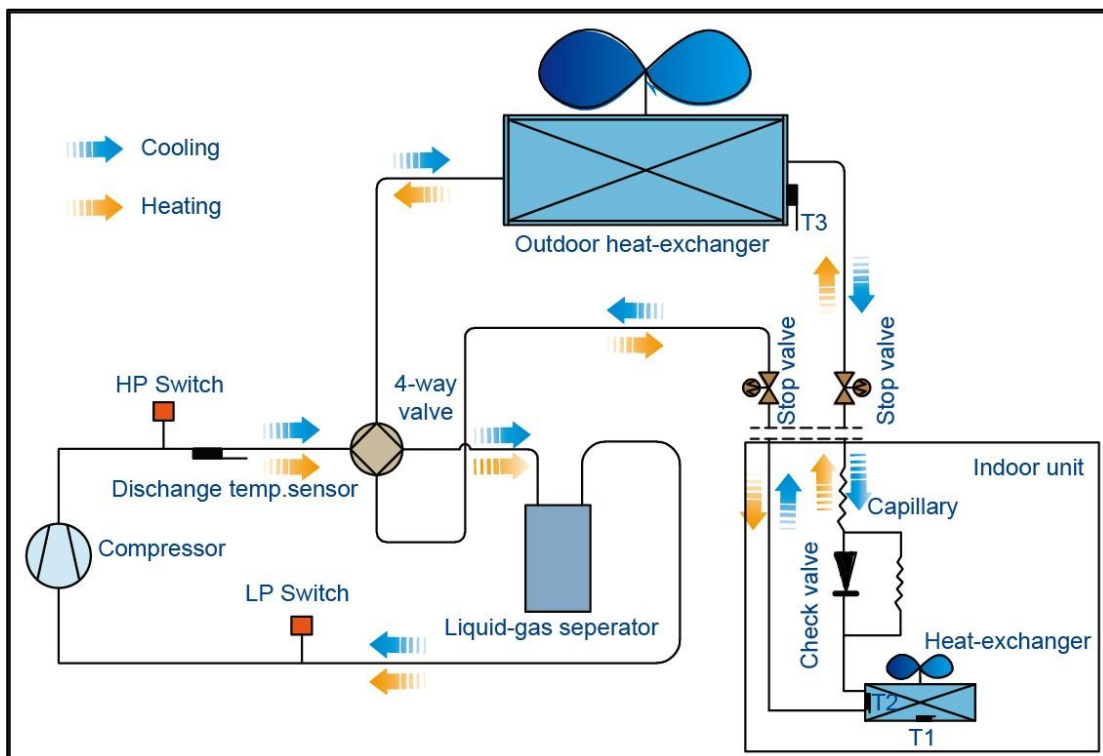


4. Refrigerant circuit

Cooling only: MDTC-96CWN1, MDTD-96CWN1

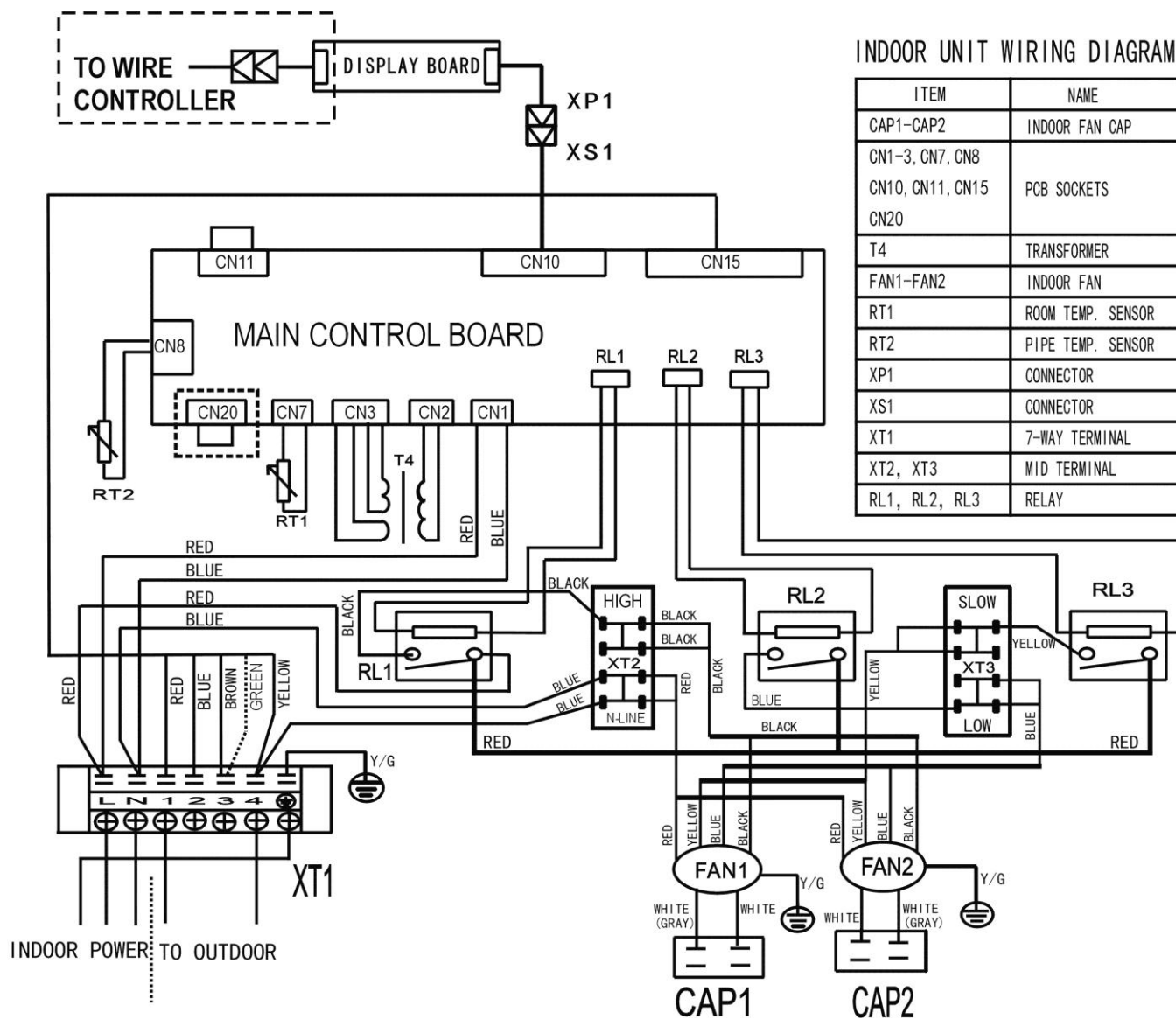


Heat pump: MDTC-96HWN1, MDTD-96HWN1

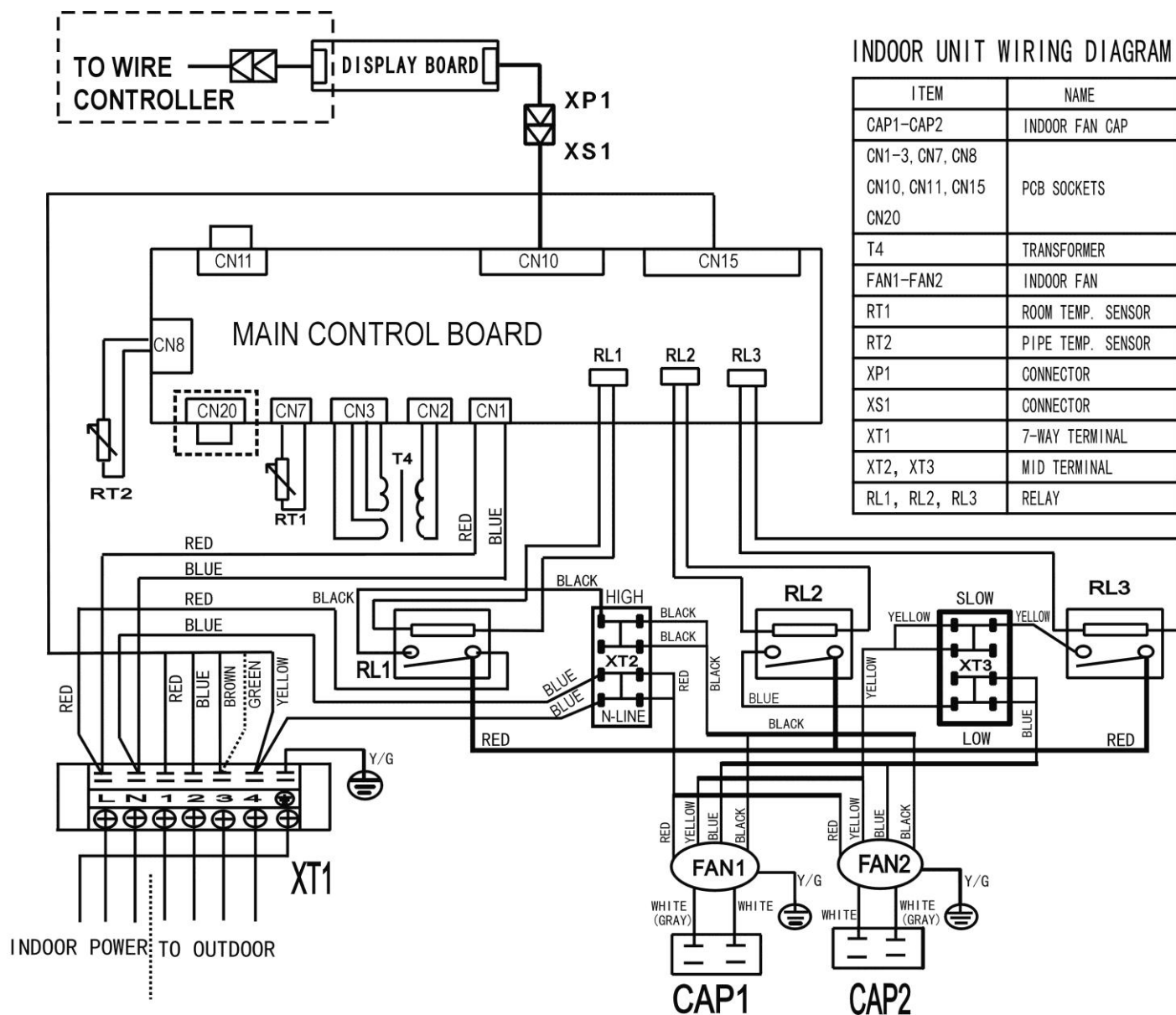


5. Wiring Diagrams

MDTC-96CWN1, MDTD-96CWN1



MDTC-96HWN1, MDTD-96HWN1



6. Capacity Table

MDTC-96C(H)WN1, MDTD-96C(H)WN1

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		29.40									35.00								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI
2470	23.90	19.37	13.09	5.62	20.62	13.75	5.90	21.66	14.44	6.20	19.07	12.71	6.51	20.02	13.35	6.83	21.02	14.02	7.18
	26.70	20.14	15.71	5.85	21.45	16.50	6.14	22.52	17.32	6.45	19.83	15.26	6.77	20.82	16.02	7.11	21.87	16.82	7.46
	29.40	20.95	17.70	6.08	22.31	18.59	6.39	23.42	19.52	6.70	20.63	17.19	7.04	21.66	18.05	7.39	22.74	18.95	7.76
	32.20	21.78	20.09	6.32	23.20	21.09	6.64	24.36	22.15	6.97	21.45	19.50	7.32	22.52	20.48	7.69	23.65	21.50	8.07
2700	23.90	22.66	15.32	6.58	24.13	16.09	6.91	25.33	16.89	7.25	22.31	14.87	7.61	23.42	15.62	7.99	24.60	16.40	8.39
	26.70	23.56	18.38	6.84	25.09	19.30	7.18	26.35	20.27	7.54	23.20	17.85	7.92	24.36	18.74	8.31	25.58	19.68	8.73
	29.40	24.50	20.71	7.11	26.10	21.75	7.47	27.40	22.83	7.84	24.13	20.11	8.24	25.34	21.11	8.65	26.60	22.17	9.08
	32.20	25.49	23.50	7.40	27.14	24.67	7.77	28.50	25.91	8.16	25.10	22.81	8.56	26.35	23.95	8.99	27.67	25.15	9.44
3000	23.90	26.50	17.92	7.69	28.23	18.82	8.08	29.64	19.76	8.48	26.10	17.40	8.91	27.40	18.27	9.35	28.77	19.18	9.82
	26.70	27.56	21.51	8.00	29.36	22.58	8.40	30.82	23.71	8.82	27.14	20.88	9.26	28.50	21.92	9.73	29.93	23.02	10.21
	29.40	28.39	24.00	8.24	30.24	25.20	8.65	31.75	26.46	9.09	27.96	23.30	9.54	29.36	24.46	10.02	30.82	25.69	10.52
	32.20	29.24	26.96	8.49	31.14	28.31	8.91	32.70	29.73	9.36	28.80	26.18	9.83	30.24	27.49	10.32	31.75	28.86	10.84
3300	23.90	30.12	20.37	8.74	32.08	21.38	9.18	33.68	22.45	9.64	29.66	19.77	10.12	31.14	20.76	10.63	32.70	21.80	11.16
	26.70	31.02	24.20	9.01	33.04	25.41	9.46	34.69	26.69	9.93	30.55	23.50	10.43	32.08	24.67	10.95	33.68	25.91	11.50
	29.40	31.96	27.01	9.28	34.03	28.36	9.74	35.73	29.78	10.23	31.47	26.22	10.74	33.04	27.53	11.28	34.69	28.91	11.84
	32.20	32.91	30.35	9.56	35.05	31.86	10.03	36.80	33.46	10.53	32.41	29.46	11.06	34.03	30.94	11.61	35.73	32.48	12.20

Notes: 1. DB = Dry Bulb Temperature (°C), WB = Wet Bulb Temperature (°C)

2. TGC = Total Gross Cooling Capacity (Unit: kW)

3. SHC = Sensible Heat Capacity (Unit: kW)

4. PI = Power input (kW)

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		40.60									46.10								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI
2470	23.90	17.75	11.83	8.67	18.63	12.42	9.10	19.57	13.04	9.56	17.23	11.49	10.04	18.09	12.06	10.54	19.00	12.66	11.07
	26.70	18.46	14.20	9.02	19.38	14.91	9.47	20.35	15.65	9.94	17.92	13.78	10.44	18.82	14.47	10.96	19.76	15.20	11.51
	29.40	19.20	16.00	9.38	20.15	16.80	9.85	21.16	17.64	10.34	18.64	15.53	10.86	19.57	16.31	11.40	20.55	17.12	11.97
	32.20	19.96	18.15	9.75	20.96	19.06	10.24	22.01	20.01	10.75	19.38	17.62	11.29	20.35	18.50	11.85	21.37	19.43	12.45
2700	23.90	20.76	13.84	10.14	21.80	14.53	10.65	22.89	15.26	11.18	20.16	13.44	11.74	21.16	14.11	12.33	22.22	14.82	12.95
	26.70	21.59	16.61	10.55	22.67	17.44	11.08	23.81	18.31	11.63	20.96	16.13	12.21	22.01	16.93	12.82	23.11	17.78	13.46
	29.40	22.46	18.71	10.97	23.58	19.65	11.52	24.76	20.63	12.10	21.80	18.17	12.70	22.89	19.08	13.33	24.04	20.03	14.00
	32.20	23.35	21.23	11.41	24.52	22.29	11.98	25.75	23.41	12.58	22.67	20.61	13.21	23.81	21.64	13.87	25.00	22.73	14.56
3000	23.90	24.29	16.19	11.87	25.50	17.00	12.46	26.78	17.85	13.08	23.58	15.72	13.74	24.76	16.51	14.42	26.00	17.33	15.14
	26.70	25.26	19.43	12.34	26.52	20.40	12.96	27.85	21.42	13.61	24.52	18.86	14.29	25.75	19.81	15.00	27.04	20.80	15.75
	29.40	26.02	21.68	12.71	27.32	22.77	13.35	28.68	23.90	14.01	25.26	21.05	14.71	26.52	22.10	15.45	27.85	23.21	16.22
	32.20	26.80	24.36	13.09	28.14	25.58	13.75	29.54	26.86	14.43	26.02	23.65	15.16	27.32	24.83	15.91	28.68	26.08	16.71
3300	23.90	27.60	18.40	13.48	28.98	19.32	14.16	30.43	20.29	14.87	26.80	17.87	15.61	28.14	18.76	16.39	29.54	19.70	17.21
	26.70	28.43	21.87	13.89	29.85	22.96	14.58	31.34	24.11	15.31	27.60	21.23	16.08	28.98	22.29	16.88	30.43	23.41	17.73
	29.40	29.28	24.40	14.31	30.75	25.62	15.02	32.28	26.90	15.77	28.43	23.69	16.56	29.85	24.88	17.39	31.34	26.12	18.26
	32.20	30.16	27.42	14.74	31.67	28.79	15.47	33.25	30.23	16.25	29.28	26.62	17.06	30.75	27.95	17.91	32.28	29.35	18.81

Notes: 1. DB = Dry Bulb Temperature (°C), WB = Wet Bulb Temperature (°C)

2. TGC = Total Gross Cooling Capacity (Unit: kW)

3. SHC = Sensible Heat Capacity (Unit: kW)

4. PI = Power input (kW)

Gross Cooling Capacity (kW)										
Outdoor DB(°C)		51.70								
Indoor	WB(°C)	16.10			19.40			22.80		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI
2470	23.90	16.73	11.15	16.41	17.23	11.49	16.77	18.44	12.30	17.02
	26.70	17.40	13.38	16.45	17.92	13.78	16.81	19.18	14.75	17.06
	29.40	18.09	15.08	16.49	18.64	15.53	16.85	19.95	16.62	17.10
	32.20	18.82	17.11	16.53	19.38	17.62	16.89	20.75	18.86	17.15
2700	23.90	19.57	13.05	16.61	20.16	13.44	16.97	21.58	14.38	17.22
	26.70	20.35	15.66	16.65	20.96	16.13	17.01	22.44	17.26	17.26
	29.40	21.17	17.64	16.69	21.80	18.17	17.05	23.34	19.45	17.30
	32.20	22.01	20.01	16.73	22.67	20.61	17.10	24.27	22.06	17.35
3000	23.90	22.89	15.26	16.39	23.58	15.72	17.21	25.24	16.83	18.07
	26.70	23.81	18.32	16.43	24.52	18.86	17.25	26.25	20.19	18.11
	29.40	24.52	20.44	16.47	25.26	21.05	17.29	27.04	22.53	18.16
	32.20	25.26	22.96	16.51	26.02	23.65	17.34	27.85	25.32	18.20
3300	23.90	26.02	17.34	17.16	26.80	17.87	17.52	28.68	19.12	17.77
	26.70	26.80	20.61	17.20	27.60	21.23	17.56	29.54	22.73	17.81
	29.40	27.60	23.00	17.24	28.43	23.69	17.60	30.43	25.36	17.85
	32.20	28.43	25.85	17.29	29.28	26.62	17.65	31.34	28.49	17.90

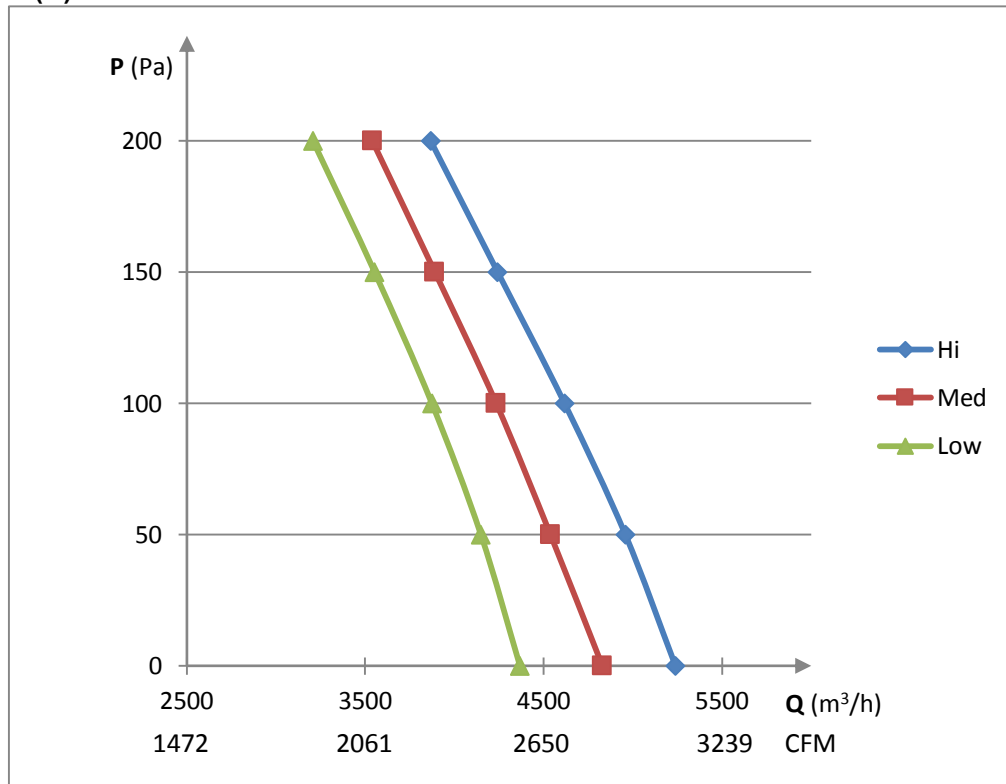
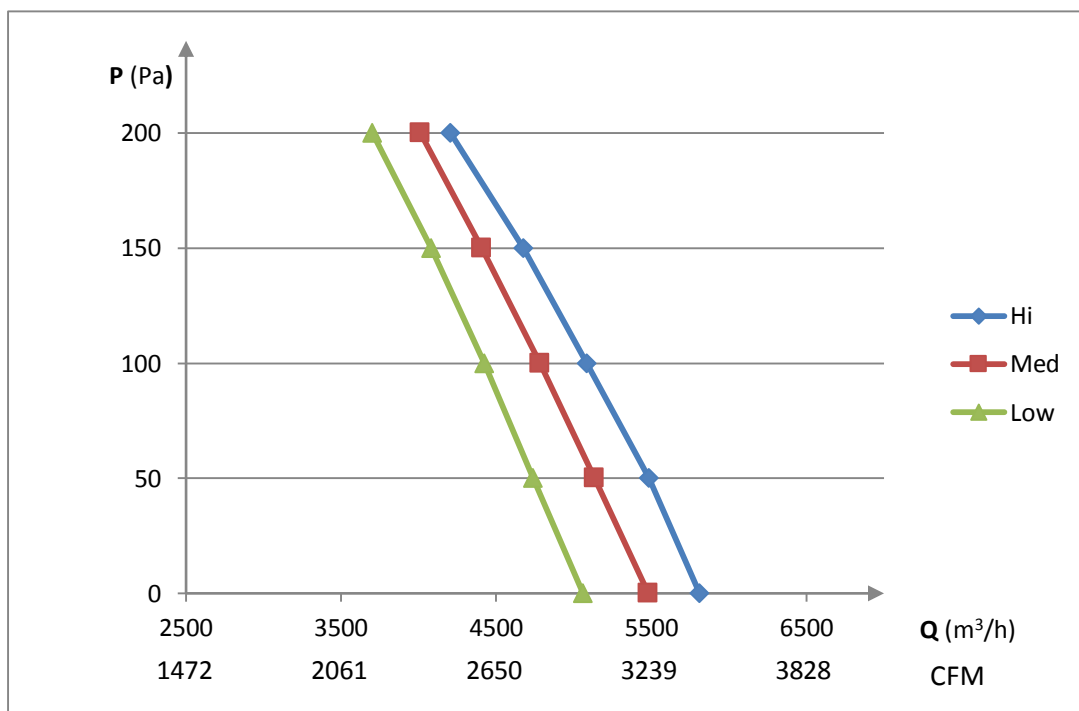
Notes: 1. DB = Dry Bulb Temperature (°C), WB = Wet Bulb Temperature (°C)

2. TGC = Total Gross Cooling Capacity (Unit: kW)

3. SHC = Sensible Heat Capacity (Unit: kW)

4. PI = Power input (kW)

7. Static Pressure Curve

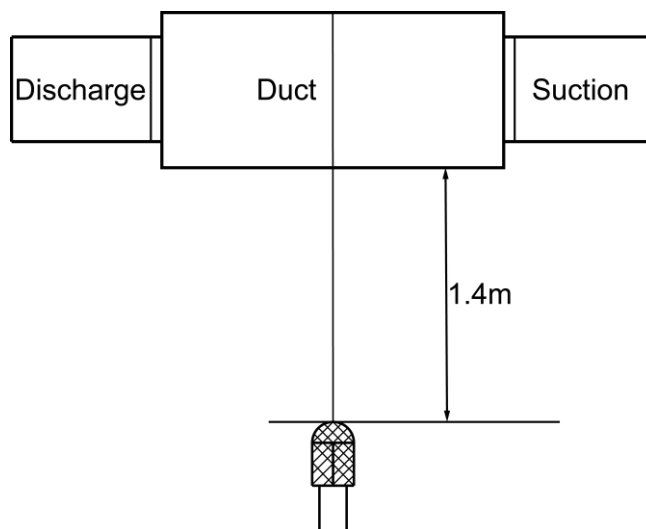
MDTC-96C(H)WN1**MDTD-96C(H)WN1**

8. Electric Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	kW	FLA
MDTC-96CWN1	50	220-240V	198V	264V	10	20	0.6	8
MDTC-96HWN1	50	220-240V	198V	264V	10	20	0.6	8
MDTD-96CWN1	50	220-240V	198V	264V	10	20	1.1	8
MDTD-96HWN1	50	220-240V	198V	264V	10	20	1.1	8

Note:**MCA: Min. Current Amps. (A)****MFA: Max. Fuse Amps. (A)****IFM: Indoor Fan Motor****kW: Fan Motor Rated Output (kW)****FLA: Full Load Amps. (A)**

9. Sound Levels



Model	Noise level
MDTC-96CRN1	56 dB(A)
MDTC-96HRN1	56 dB(A)
MDTD-96CRN1	56 dB(A)
MDTD-96HRN1	56 dB(A)

11. Accessories

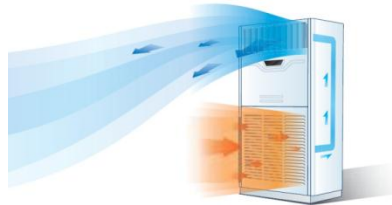
Name	Qty.	Purpose
Owner's manual	1	— —
Installation manual	1	— —
Restriction assembly	1	Connect to system
Water connective pipe	1	Connect to water drainage pipe
Display board subassembly	1	Connect to control signal
Protective sleeve for refrigerant inlet and outlet pipes	2	— —
Wired controller	1	—
Straight refrigerant pipe	1	Connect to liquid pipe

Floor-standing Type

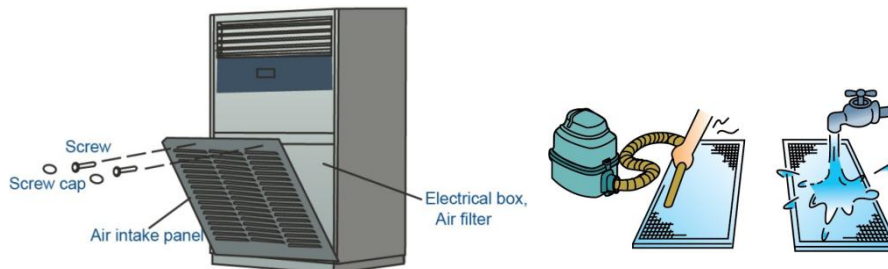
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1. Features

- The appearance is novel, luxurious, refined.
- All round steel shell, for high quality protection of transportation.
- Quick cooling and heating, the air could attach long distance.



- Available for wireless remote control and screen control.
- Suit for hotel, meeting room, airport lounge, etc. public occasion use.
- With auto restart function and self-diagnosis function.
- Easy installation and maintenance.
- High performance heat exchanger.
- Direct drive motor. Indoor unit with centrifugal fan directly drove by motor.
- Washable inlet air filter.



2. Specifications

Model			MDFA3T-96HRN1	MDFA3T-96CRN1
Power supply		\	220-240V~, 1Ph, 50Hz	220-240V~, 1Ph, 50Hz
T1 Cooling	Capacity	Btu/h	96,000	96,000
		W	28,100	28,100
	Input	W	9,600	9,600
	EER	W/W	2.93	2.93
T3 Cooling	Capacity	Btu/h	87,860	87,860
		W	25,750	25,750
	Input	W	15,000	15,000
	EER	W/W	1.72	1.72
Heating	Capacity	Btu/h	10,6000	\
		W	31,100	\
	Input	W	10,300	\
	COP	W/W	3.02	\
Rated input		W	700	700
Rated current		A	3	3
Fan motor	Fan type	\	Centrifugal	Centrifugal
	Model	\	YSK300-6	YSK300-6
	Brand	\	Dayang/Matchwell	Dayang/Matchwell
	Quantity	\	1	1
	Input (Hi/Med/Lo)	W	600/500/437	600/500/437
	Capacitor	\	25μF/450V	25μF/450V
	Speed (Hi/Med/Lo)	r/min	870/760/670	870/760/670
Indoor coil	Number of rows	\	3	3
	Tube pitch(a)×row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.5	1.5
	Fin type	\	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube size	mm	Φ7	Φ7
	Tube type	\	Inner grooved copper pipe	Inner grooved copper pipe
	Coil(W×H)	mm	982×714	982×714
	Number of circuits	\	25	25
Indoor air flow		m³/h	5,100	5,100
Indoor noise level		dB(A)	56	56
Refrigerant	Type	\	R410A	R410A
	Control	\	Capillary	Capillary
Design pressure		MPa	4.4/2.6	4.4/2.6
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ12.7/Φ25.4#	Φ12.7/Φ25.4#
Connection wiring	Power wire	\	3×2.5mm²	3×2.5mm²
	Signal wire	\	4×1.0mm²	2×1.0mm²
Drain pipe size (OD)		mm	Φ41	Φ41

Continued:

Model			M DFA3T-96HRN1	M DFA3T-96CRN1
Controller		\	R51/E	R51/E
Operation temperature		°C	17 - 30	17 - 30
Indoor unit	Dimension (W×H×D)	mm	1,200×1,860×518	1,200×1,860×518
	Packing (W×H×D)	mm	1,362×2,050×582	1,362×2,050×582
	Net/Gross weight	kg	140/154	140/154

Notes:

#. Connection piping diameter of indoor unit is the inlet and outlet pipe of the indoor unit. When the length of the refrigerant pipe between indoor and outdoor is not more than 30m, please connect the straight pipe as the accessory in indoor unit with inlet refrigerant pipe to change the diameter of liquid pipe to $\Phi 9.52$. When the length of the refrigerant pipe is more than 30m and less than 50m, please connect the straight pipe (prepared in site) with outlet refrigerant to change the diameter of gas pipe to $\Phi 28.1$.

1. T1 nominal cooling capacities are based on the following conditions,

Indoor temperature is 27°C DB/19°C WB; Outdoor temperature is 35°C DB; Equivalent refrigerant piping: 7.5m (horizontal).

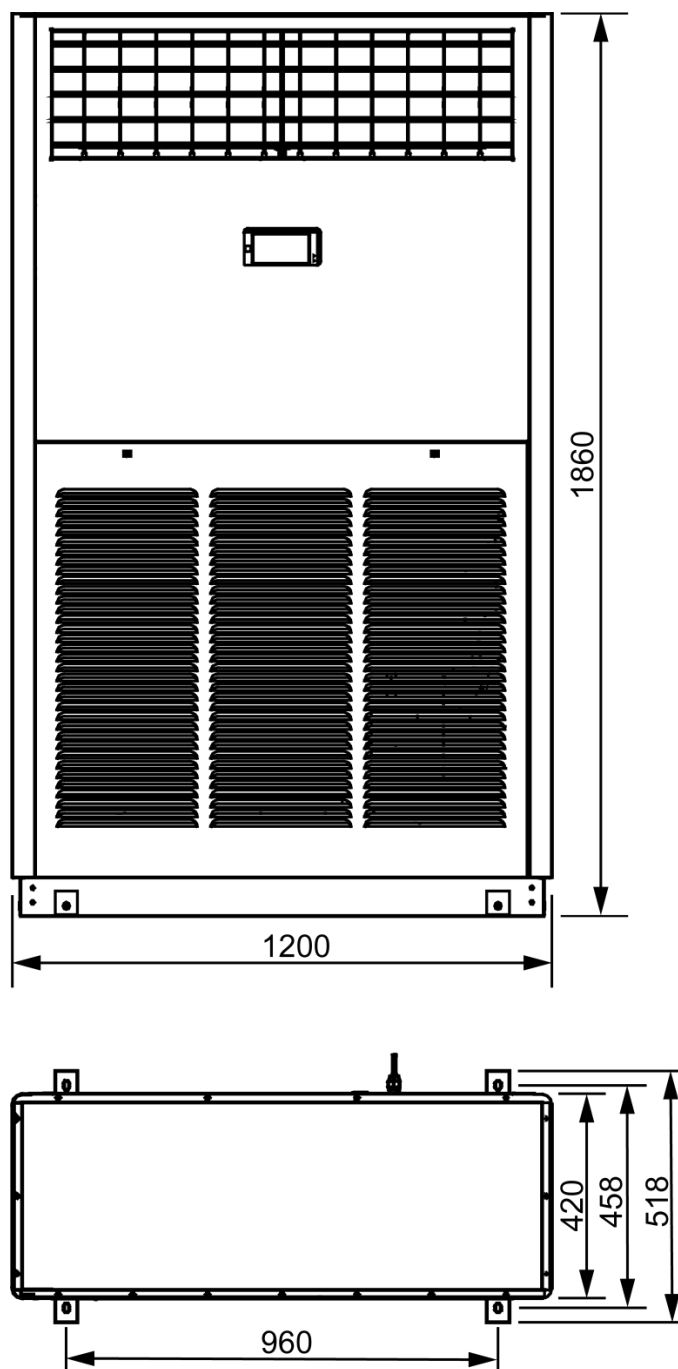
2. T3 nominal cooling capacities are based on the following conditions:

Indoor temperature is 27°C DB/19°C WB; Outdoor temperature is 46°C DB; Equivalent refrigerant piping: 7.5m (horizontal).

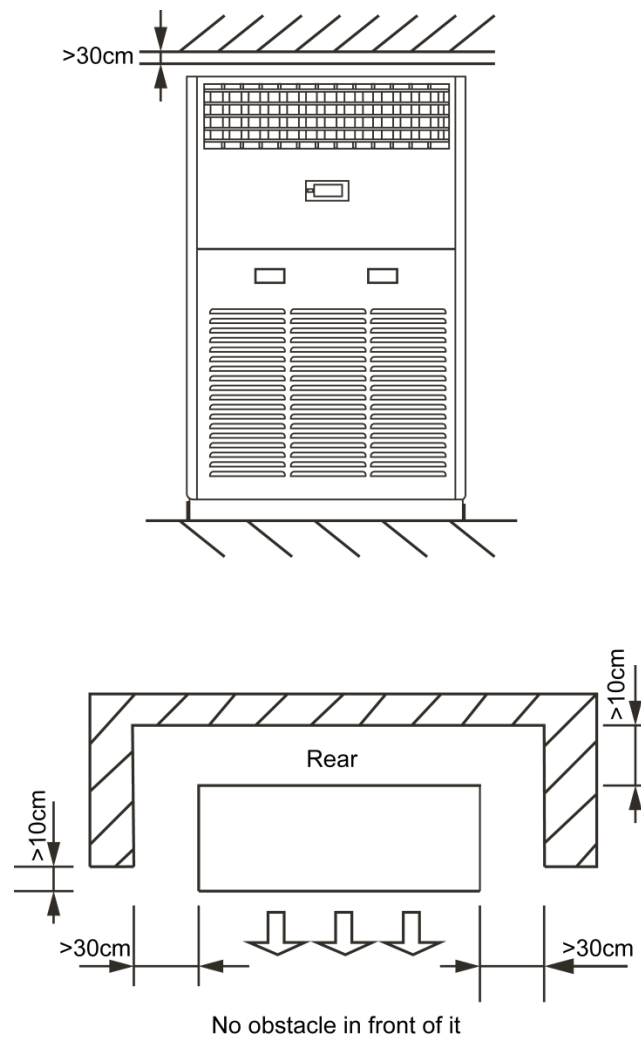
3. The noise is measured in the semi noise suppression lab.

3. Dimensions (Unit: mm)

MDFA3T-96C(H)RN1

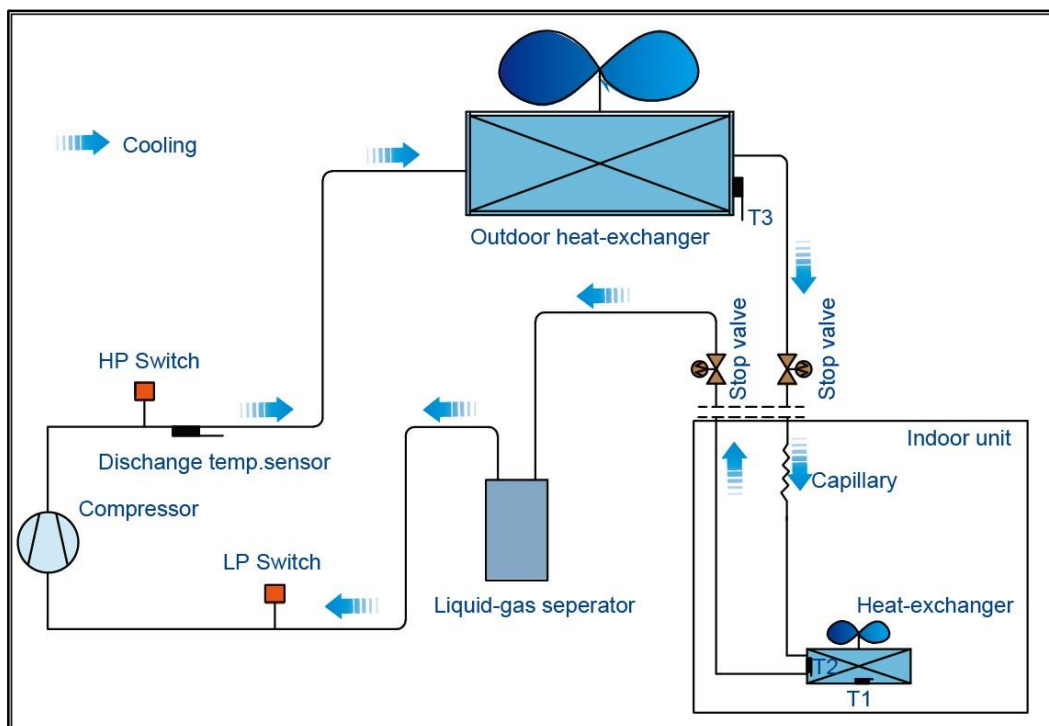


4. Service Space

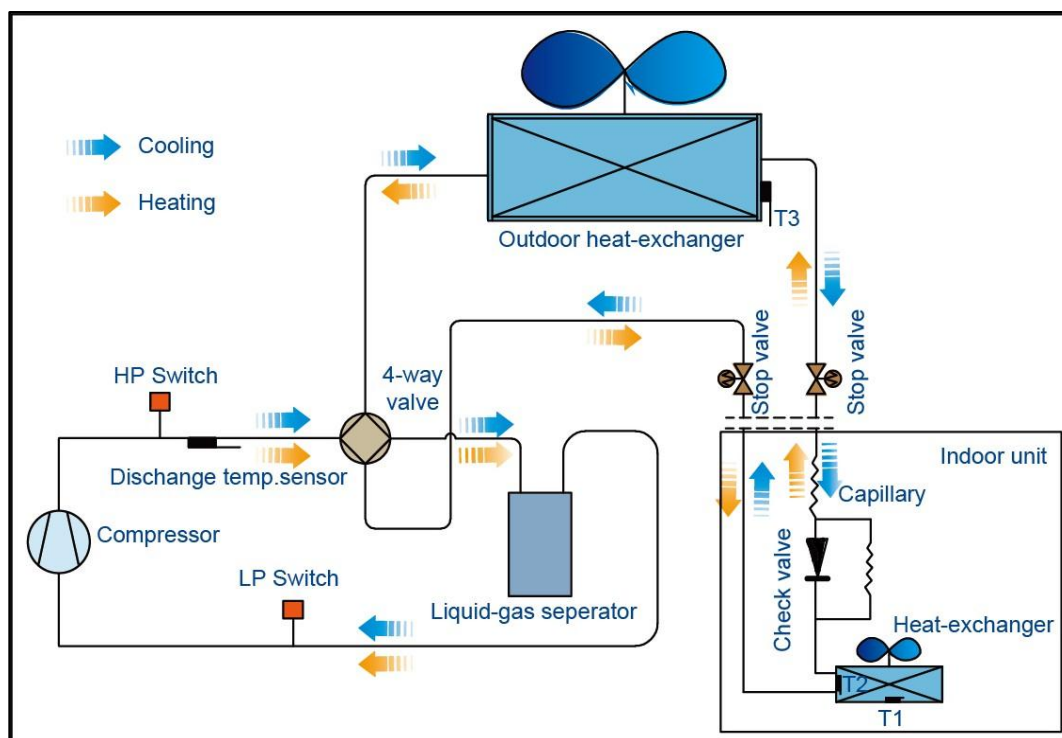


5. Refrigerant Circuit

Cooling only: MDFA3T-96CRN1



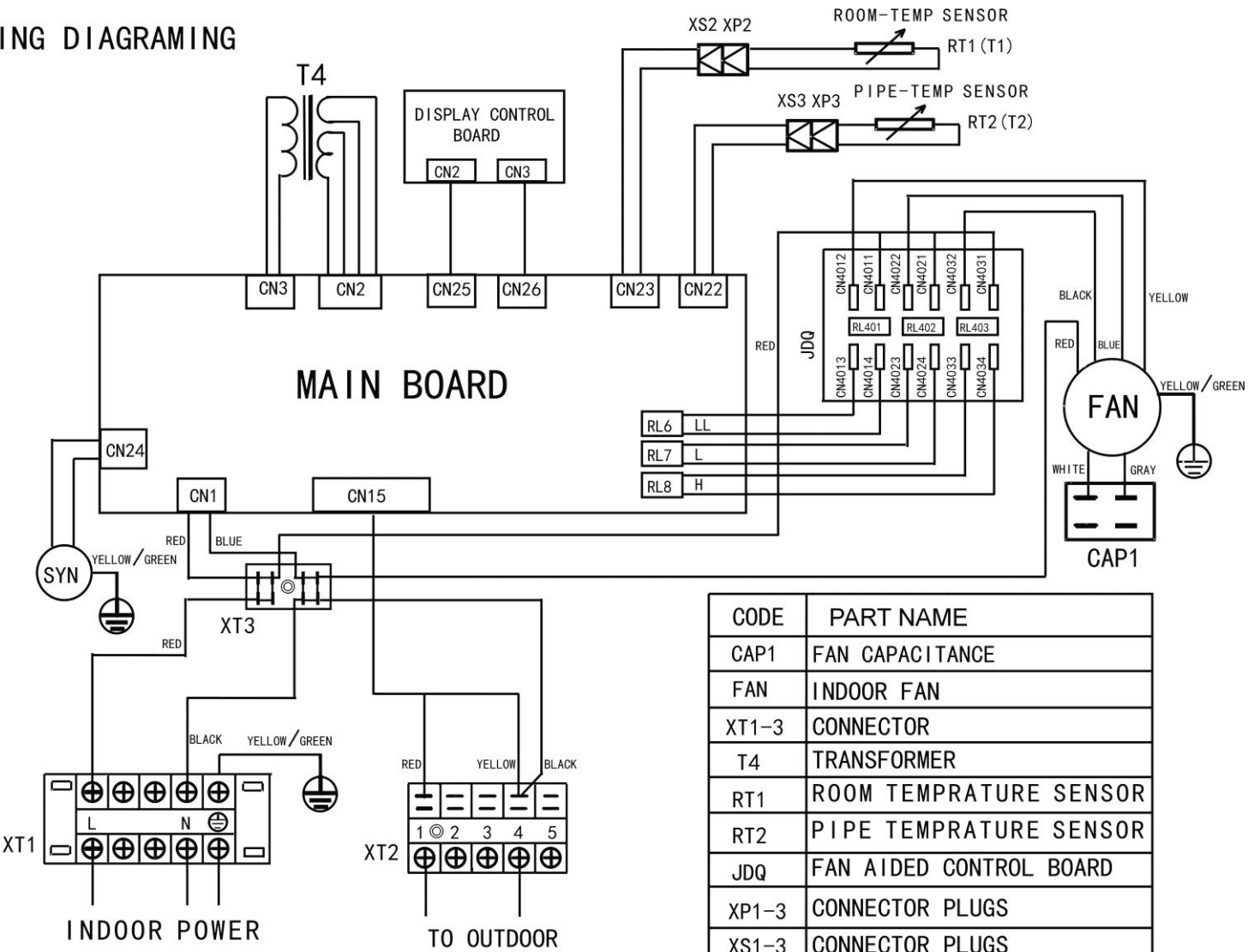
Heat pump: MDFA3T-96HRN1

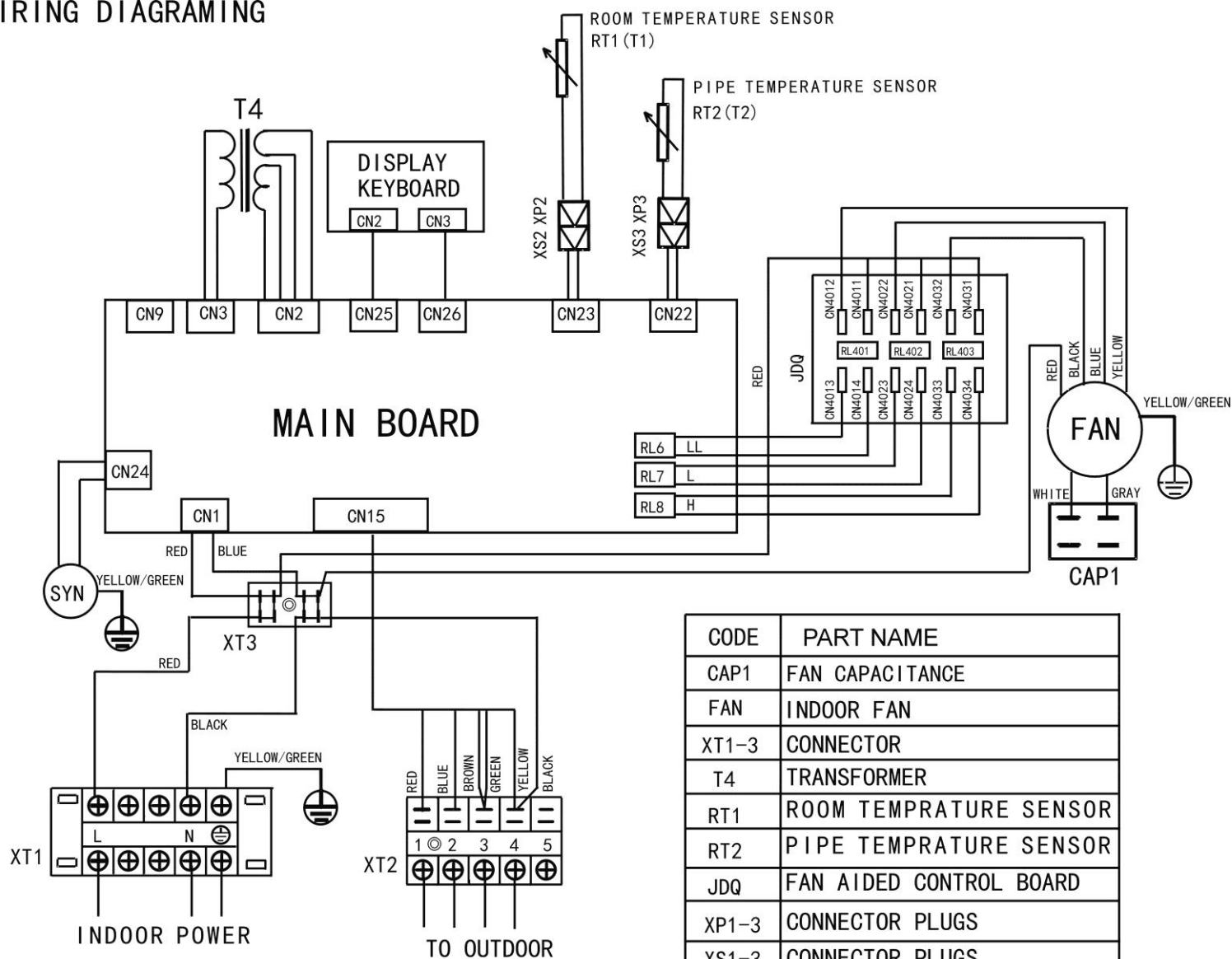


6. Wiring Diagrams

MDFA3T-96CRN1

WIRING DIAGRAMING



MDFA3T-96HRN1**WIRING DIAGRAMING**

CODE	PART NAME
CAP1	FAN CAPACITANCE
FAN	INDOOR FAN
XT1-3	CONNECTOR
T4	TRANSFORMER
RT1	ROOM TEMPRATURE SENSOR
RT2	PIPE TEMPRATURE SENSOR
JDQ	FAN AIDED CONTROL BOARD
XP1-3	CONNECTOR PLUGS
XS1-3	CONNECTOR PLUGS
SYN	SWING MOTOR

7. Capacity Tables

MDFA3T-96C(H)RN1

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		29.40									35.00								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI
2300	23.90	19.46	12.97	5.62	20.43	13.62	5.90	21.45	14.30	6.20	18.89	12.59	6.51	19.83	13.22	6.83	20.82	13.88	7.18
	26.70	20.23	15.56	5.85	21.25	16.34	6.14	22.31	17.16	6.45	19.64	15.11	6.77	20.63	15.87	7.11	21.66	16.66	7.46
	29.40	21.04	17.54	6.08	22.09	18.41	6.39	23.20	19.33	6.70	20.43	17.02	7.04	21.45	17.88	7.39	22.52	18.77	7.76
	32.20	21.88	19.90	6.32	22.98	20.89	6.64	24.13	21.93	6.97	21.25	19.32	7.32	22.31	20.28	7.69	23.42	21.30	8.07
2630	23.90	22.76	15.17	6.58	23.90	15.93	6.91	25.09	16.73	7.25	22.10	14.73	7.61	23.20	15.47	7.99	24.36	16.24	8.39
	26.70	23.67	18.21	6.84	24.85	19.12	7.18	26.10	20.07	7.54	22.98	17.68	7.92	24.13	18.56	8.31	25.34	19.49	8.73
	29.40	24.62	20.51	7.11	25.85	21.54	7.47	27.14	22.62	7.84	23.90	19.92	8.24	25.10	20.91	8.65	26.35	21.96	9.08
	32.20	25.60	23.27	7.40	26.88	24.44	7.77	28.23	25.66	8.16	24.86	22.60	8.56	26.10	23.73	8.99	27.40	24.91	9.44
3000	23.90	26.63	17.75	7.69	27.96	18.64	8.08	29.36	19.57	8.48	25.85	17.23	8.91	27.14	18.10	9.35	28.50	19.00	9.82
	26.70	27.96	21.51	8.00	29.36	22.58	8.40	30.82	23.71	8.82	27.14	20.88	9.26	28.50	21.92	9.73	29.93	23.02	10.21
	29.40	28.80	24.00	8.24	30.24	25.20	8.65	31.75	26.46	9.09	27.96	23.30	9.54	29.36	24.46	10.02	30.82	25.69	10.52
	32.20	29.66	26.96	8.49	31.14	28.31	8.91	32.70	29.73	9.36	28.80	26.18	9.83	30.24	27.49	10.32	31.75	28.86	10.84

Notes: 1. DB = Dry Bulb Temperature (°C), WB = Wet Bulb Temperature (°C)

2. TGC = Total Gross Cooling Capacity (Unit: kW)

3. SHC = Sensible Heat Capacity (Unit: kW)

4. PI = Power input (kW)

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		40.60									46.10								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI
2300	23.90	17.58	11.72	8.67	18.46	12.30	9.10	19.38	12.92	9.56	17.07	11.38	10.04	17.92	11.95	10.54	18.82	12.54	11.07
	26.70	18.28	14.06	9.02	19.20	14.77	9.47	20.15	15.50	9.94	17.75	13.65	10.44	18.64	14.34	10.96	19.57	15.05	11.51
	29.40	19.01	15.84	9.38	19.96	16.64	9.85	20.96	17.47	10.34	18.46	15.38	10.86	19.38	16.15	11.40	20.35	16.96	11.97
	32.20	19.77	17.98	9.75	20.76	18.87	10.24	21.80	19.82	10.75	19.20	17.45	11.29	20.16	18.32	11.85	21.16	19.24	12.45
2630	23.90	20.56	13.71	10.14	21.59	14.39	10.65	22.67	15.11	11.18	19.96	13.31	11.74	20.96	13.98	12.33	22.01	14.67	12.95
	26.70	21.39	16.45	10.55	22.46	17.27	11.08	23.58	18.14	11.63	20.76	15.97	12.21	21.80	16.77	12.82	22.89	17.61	13.46
	29.40	22.24	18.53	10.97	23.35	19.46	11.52	24.52	20.43	12.10	21.59	17.99	12.70	22.67	18.89	13.33	23.81	19.84	14.00
	32.20	23.13	21.03	11.41	24.29	22.08	11.98	25.50	23.18	12.58	22.46	20.42	13.21	23.58	21.44	13.87	24.76	22.51	14.56
3000	23.90	24.29	16.19	11.87	25.50	17.00	12.46	26.78	17.85	13.08	23.58	15.72	13.74	24.76	16.51	14.42	26.00	17.33	15.14
	26.70	25.26	19.43	12.34	26.52	20.40	12.96	27.85	21.42	13.61	24.52	18.86	14.29	25.75	19.81	15.00	27.04	20.80	15.75
	29.40	26.02	21.68	12.71	27.32	22.77	13.35	28.68	23.90	14.01	25.26	21.05	14.71	26.52	22.10	15.45	27.85	23.21	16.22
	32.20	26.80	24.36	13.09	28.14	25.58	13.75	29.54	26.86	14.43	26.02	23.65	15.16	27.32	24.83	15.91	28.68	26.08	16.71

Notes: 1. DB = Dry Bulb Temperature (°C), WB = Wet Bulb Temperature (°C)

2. TGC = Total Gross Cooling Capacity (Unit: kW)

3. SHC = Sensible Heat Capacity (Unit: kW)

4. PI = Power input (kW)

Gross Cooling Capacity (kW)										
Outdoor DB(°C)		51.70								
Indoor	WB(°C)	16.10			19.40			22.80		
CFM	DB(°C)	TGC	SHC	PI	TGC	SHC	PI	TGC	SHC	PI
2300	23.90	16.73	11.15	16.41	17.23	11.49	16.77	18.44	12.30	17.02
	26.70	17.40	13.38	16.45	17.92	13.78	16.81	19.18	14.75	17.06
	29.40	18.09	15.08	16.49	18.64	15.53	16.85	19.95	16.62	17.10
	32.20	18.82	17.11	16.53	19.38	17.62	16.89	20.75	18.86	17.15
2630	23.90	19.57	13.05	16.61	20.16	13.44	16.97	21.58	14.38	17.22
	26.70	20.35	15.66	16.65	20.96	16.13	17.01	22.44	17.26	17.26
	29.40	21.17	17.64	16.69	21.80	18.17	17.05	23.34	19.45	17.30
	32.20	22.01	20.01	16.73	22.67	20.61	17.10	24.27	22.06	17.35
3000	23.90	22.89	15.26	16.39	23.58	15.72	17.21	25.24	16.83	18.07
	26.70	23.81	18.32	16.43	24.52	18.86	17.25	26.25	20.19	18.11
	29.40	24.52	20.44	16.47	25.26	21.05	17.29	27.04	22.53	18.16
	32.20	25.26	22.96	16.51	26.02	23.65	17.34	27.85	25.32	18.20

Notes: 1. DB = Dry Bulb Temperature (°C), WB = Wet Bulb Temperature (°C)

2. TGC = Total Gross Cooling Capacity (Unit: kW)

3. SHC = Sensible Heat Capacity (Unit: kW)

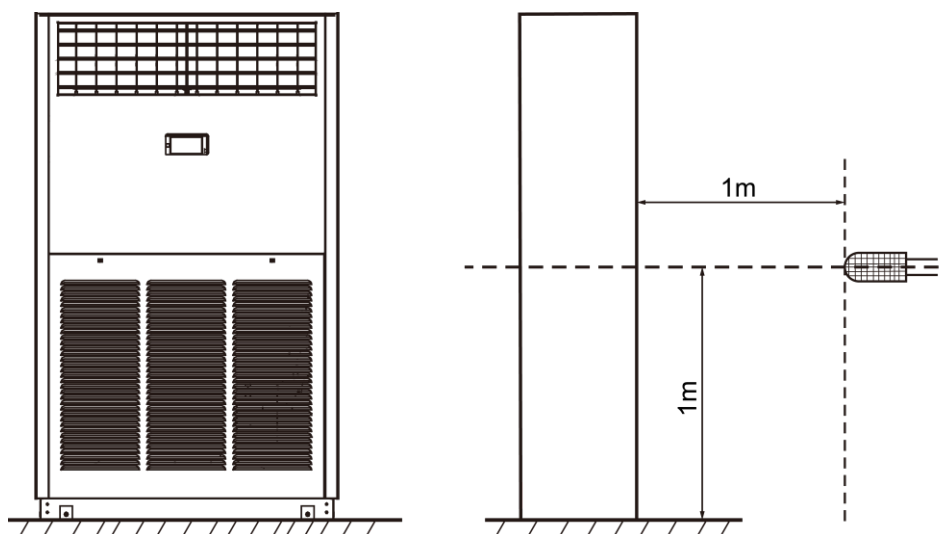
4. PI = Power input (kW)

8. Electric Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
MDFA3T-96CRN1	50	220-240V	198V	264V	3.55	20	0.3	2.84
MDFA3T-96HRN1	50	220-240V	198V	264V	3.55	20	0.3	2.84

Note :**MCA: Min. Current Amps. (A)****MFA: Max. Fuse Amps. (A)****KW: Fan Motor Rated Output (KW)****FLA: Full Load Amps. (A)****IFM: Indoor Fan Motor**

9. Sound Levels



Model	Noise level
MDFA3T-96CRN1	56 dB(A)
MDFA3T-96HRN1	56 dB(A)

10.Accessories

Name	Qty.	Shape	Usage
Owner's manual	1	--	--
Installation manual	1	--	--
Remote controller manual	1	--	--
Water connective pipe	1	--	Connect to water drainage pipe
Remote controller	1		--
AAA battery	2		--
Straight pipe	1	--	Connect to liquid pipe

Part. 3 Outdoor Unit

- 1. Specifications 41
- 2. Dimension (Unit: mm) 43
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- 4. Wiring Diagrams 45
- 5. Electric Characteristics 47
- 6. Sound Levels 48

1. Specifications

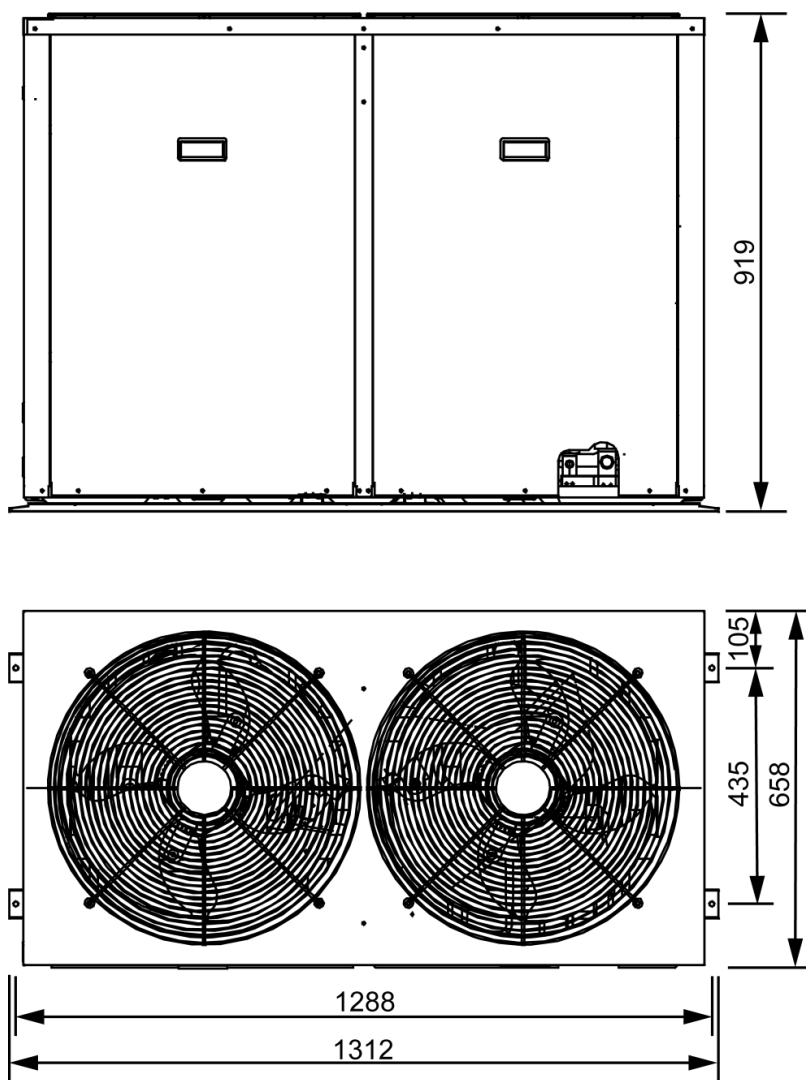
Model			MDOVT-96HN1-R	MDOVT-96CN1-R
Power supply		\	380-415V~, 3Ph, 50Hz	380-415V~, 3Ph, 50Hz
Ambient temperature in cooling		°C	17 – 46	17 ~ 46
Ambient temperature in heating		°C	-7 - 24	\
Rated input		W	14,400	14,400
Rated current		A	23.7	23.7
Compressor	Model	\	HCJ121T4LC6	HCJ121T4LC6
	Type (×Quantity)	\	Scroll (×1)	Scroll (×1)
	Brand	\	Danfoss	Danfoss
	Capacity	W	29,717	29,717
	Input	W	9,224	9,224
	Rated current (RLA)	A	17.9	17.9
	Locked rotor Amp (LRA)	A	125	125
	Thermal protector	\	Internal	Internal
	Refrigerant oil	ml	2,460 (PVE)	2,460 (PVE)
Fan motor	Type	\	Axial fan	Axial fan
	Motor Model	\	YDK400-4C	YDK400-4C
	Quantity		2	2
	Motor Brand	\	Welling/Yongan	Welling/Yongan
	Capacitor	\	25μF/450V	25μF/450V
	Motor Input(4/3 fan blades)	W	(587/388)/(612/388)	(587/388)/(612/388)
	Speed (4/3 fan blades)	r/min	(1,230/870)/(1,180/790)	(1,230/870)/(1,180/790)
Coil	No. of rows	\	3	2
	Tube pitch(a)×row pitch(b)	mm	21×13.37	22×19.05
	Fin spacing	mm	1.3	1.4
	Fin type	\	Hydrophilic aluminum fin	
	Tube outside diameter	mm	Φ7	Φ8
	Tube type		Inner grooved copper pipe	
	Coil (W×H)	mm	2,179×882	2,177×880
	Number of circuits	\	20	18
Outdoor noise pressure level		dB(A)	68	68
Outdoor airflow		m ³ /h	12,000	12,000
Refrigerant	Type	\	R410A	R410A
	Charge	g	6,000	6,000
Design pressure		MPa	4.4/2.6	4.4/2.6
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ12.7/Φ25.4#	Φ12.7/Φ25.4#
Connection wiring	Power wire	\	\	\
	Signal wire	\	2×1.0	2×1.0
Outdoor unit	Dimension (W×H×D)	mm	1,312×919×658	1,312×919×658
	Packing (W×H×D)	mm	1,320×1,060×730	1,320×1,060×730
	Net/ Gross weight	kg	177/192	168/183

Notes:

- #. Connection piping diameter of outdoor unit is the stop valve diameter of the outdoor unit. When the length of the refrigerant pipe between indoor and outdoor is not more than 30m, please connect the straight pipe as the accessory in outdoor unit with high pressure stop valve to change the diameter of liquid pipe to $\Phi 9.52$. When the length of the refrigerant pipe is more than 30m and less than 50m, please connect the straight pipe (prepared in site) with low pressure stop valve to change the diameter of gas pipe to $\Phi 28.1$.
1. The noise is measured in the semi noise suppression lab.

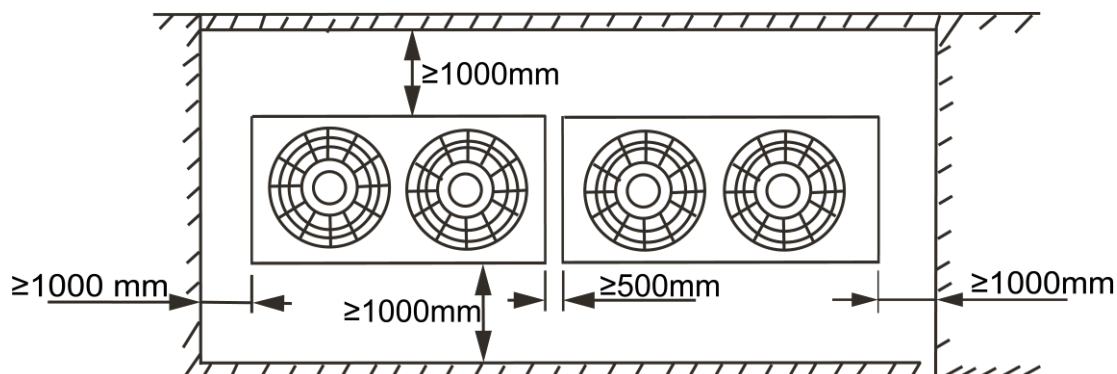
2. Dimension (Unit: mm)

MDOVT-96C(H)N1-R:



3. Service Space

MDOVT-96C(H)N1-R

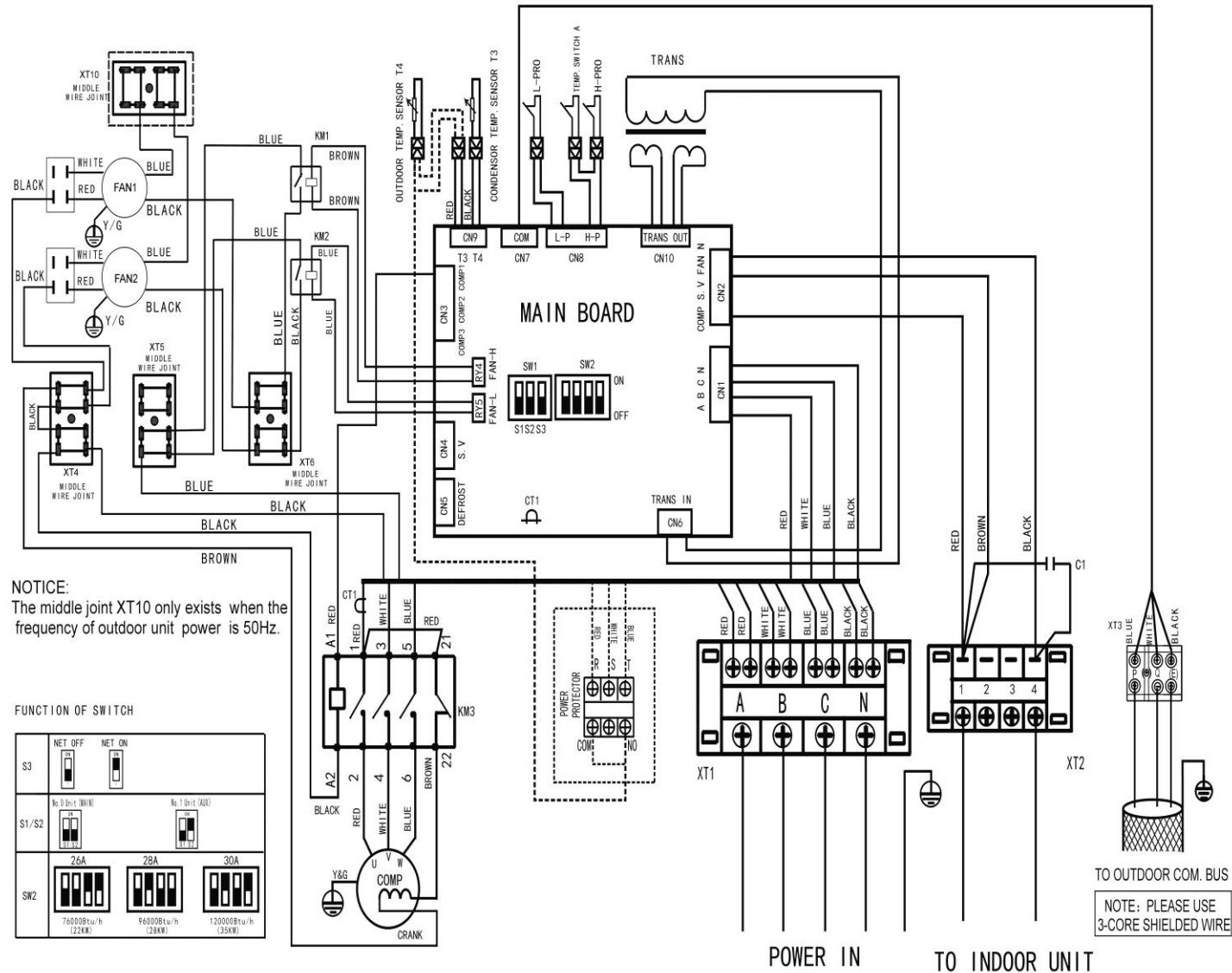
**Notes:**

1. In case any obstacles exist above the outdoor unit, such obstacles must be 2000mm above the outdoor unit.
2. If miscellaneous articles are piled around the outdoor unit, such articles must be 400mm below the top of the outdoor unit.

4. Wiring Diagrams

MDOVT-96CN1-R:

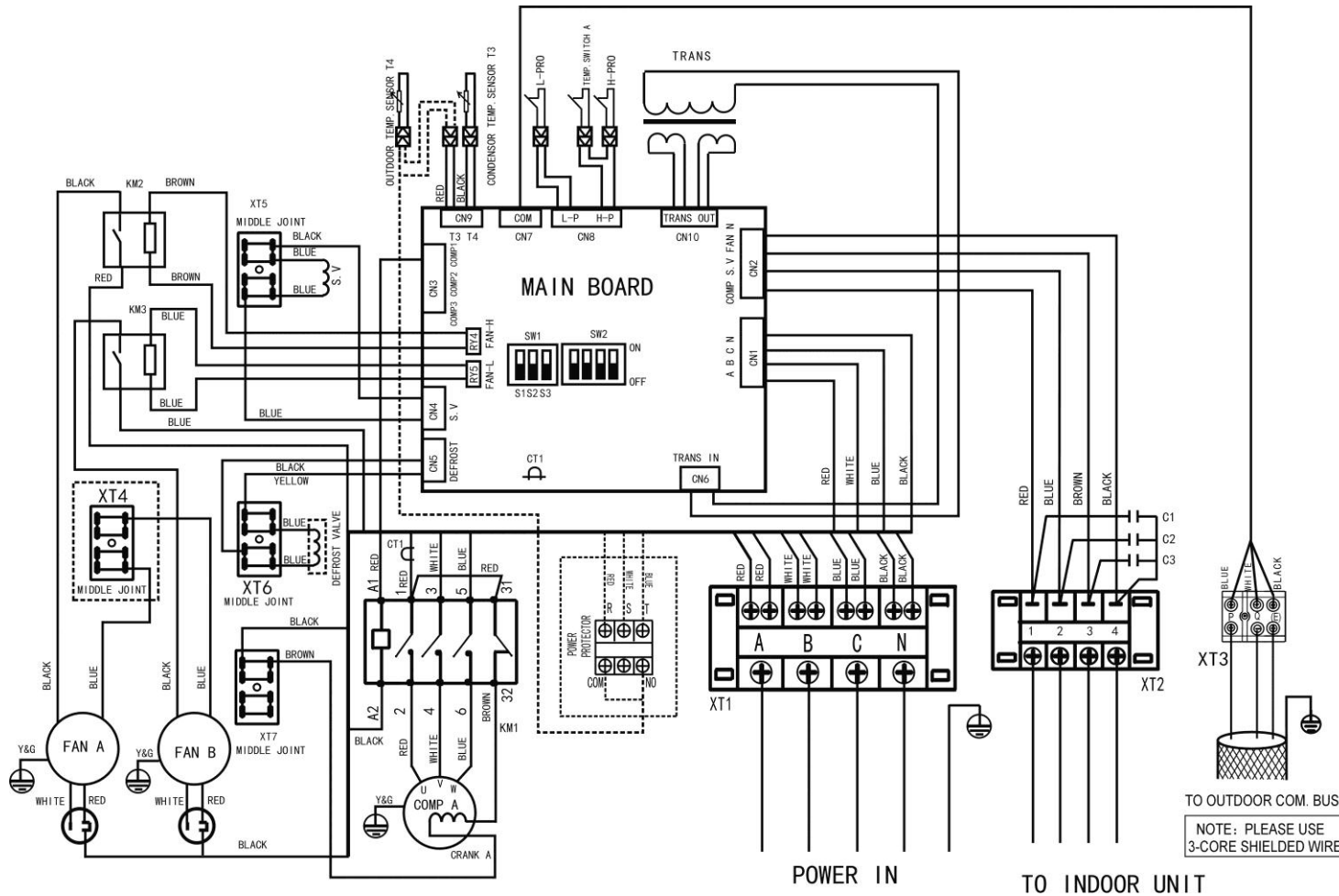
OUTDOOR WIRE DIAGRAM



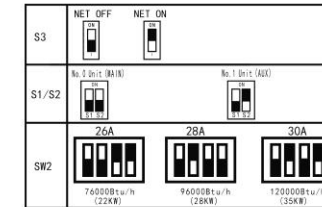
CODE	PART NAME	CODE	PART NAME
COMP	COMPRESSOR	XT1	4-WAY TERMINAL
FAN1 FAN2	OUTDOOR FAN	XT2	4-WAY TERMINAL
CAP1 CAP2	FAN CAP	XT3	3-WAY TERMINAL
KM1 KM2	FAN RELAY	H-PRO	HIGH PRESSURE SWITCH
CT1	CURRENT DETECTOR	L-PRO	LOW PRESSURE SWITCH
KM3	AC CONTACTOR	C1	FILTER CAPACITOR
XT4-XT6, XT10	MIDDLE WIRE JOINT		

LED INDICATION DESCRIPTION

NO	LED1	LED2	Description
1	Light	Light	Stand-by
2	Extinguish	Light	Cool Mode
3	Light	Extinguish	Heat Mode
4	Flashes	Flashes	Defrost
5	Light	1 Flashes	Sequence protection
6	Light	2 Flashes	Communication failure
7	Light	3 Flashes	Fault of outdoor pipe temperature
8	Light	4 Flashes	Fault of outdoor ambient temperature
9	Light	5 Flashes	Low pressure protection
10	Extinguish	1 Flashes	High pressure protection
11	Extinguish	2 Flashes	Current protection
12	Extinguish	3 Flashes	Condensor high temperature protection

MDOVT-96HN1-R:

FUNCTION OF SWITCH



LED INDICATION DESCRIPTION

NO	LED1	LED2	Description
1	Light	Light	Stand-by
2	Extinguish	Light	Cool Mode
3	Light	Extinguish	Heat Mode
4	Flashes	Flashes	Defrost
5	Light	1 Flashes	Sequence protection
6	Light	2 Flashes	Communication failure
7	Light	3 Flashes	Fault of outdoor pipe temperature
8	Light	4 Flashes	Fault of outdoor ambient temperature
9	Light	5 Flashes	Low pressure protection
10	Extinguish	1 Flashes	High pressure protection
11	Extinguish	2 Flashes	Current protection
12	Extinguish	3 Flashes	Condensor high temperature protection

Note: The middle joint XT4 only exists when the frequency of outdoor unit power is 50Hz.

5. Electric Characteristics

Model	Outdoor Unit				Power Supply			Compressor		OFM	
	Hz	Voltage	Min.	Max.	MCA	TOCA	MFA	MSC	RLA	KW	FLA
MDOVT-96CN1-R	50	380-415V	342V	440V	19.8	23.7	26.1	125	14.6	0.8	5.86
MDOVT-96CN1-R	50	380-415V	342V	440V	19.8	23.7	26.1	125	14.6	0.8	5.86

Note:

MCA: Min. Current Amps. (A)

MFA: Max. Fuse Amps. (A)

RLA: Rated Locked Amps. (A)

FLA: Full Load Amps. (A)

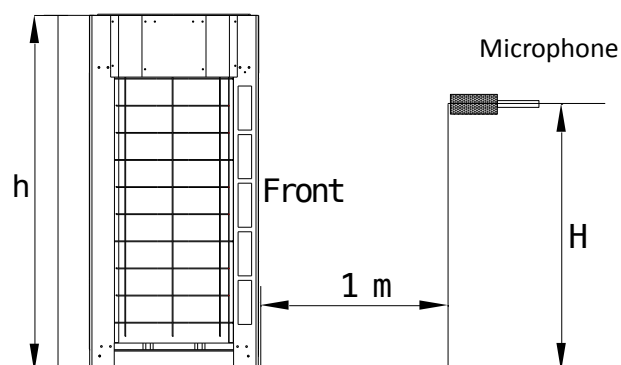
TOCA: Total Over-current Amps. (A)

MSC: Max. Starting Amps. (A)

OFM: Outdoor Fan Motor.

KW: Rated Motor Output (kW)

6. Sound Levels



Note: $H = (h+1) / 2$

Model	Noise level
MDOVT-96CN1-R	68 dB(A)
MDOVT-96HN1-R	68 dB(A)

Part. 4 Installation

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- 6. Heat Insulation of Pipe 68
- 7. Electric Connection 69
- 8. Duct Design Scheme 72
- 9. Trial Run 76
- 10. Names and Functions of AC Components 78
- 11. Trouble shooting 82
- 12. Maintenance 88

1. Notes

WARNING:

- Do not throw or slam the remote controller.
- Operate the remote controller within the receiving scope of the indoor unit, and direct the transmitting part of the remote controller to the receiver of the indoor unit.
- The remote controller should be over 1m away from the television or sound box.
- Do not place the remote controller at a moist place, near the heat sources such as stove, or expose it directly in the sunlight.
- Ensure correct positive and negative poles when loading the batteries.
- Decide the correct way of conveying the equipment.
- Try to transport this equipment with the original package.
- If the air conditioner needs to be installed on a metal part of the building, electric insulation must be performed, and the installation must meet the relevant technical standards of electric devices.
- The appliance must be installed 2.3m above floor.
- The appliance shall not be installed in the laundry.
- Before obtaining access to terminals, all supply circuits must be disconnected.
- The appliance must be positioned so that the plug is accessible.
- The enclosure of the appliance shall be marked by word, or by symbols, with the direction of fluid flow.
- If the supply cord is damaged, it must be replaced by the manufacture or its service agent or a similarly qualified person in order to avoid hazard.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

CAUTION:

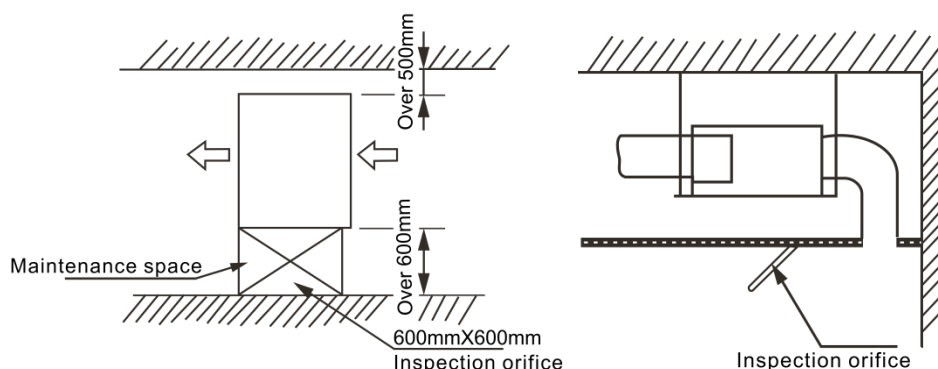
- Install the unit where enough space of installation and maintenance is available.
- Install the unit where the air inlet and outlet are not baffled and the least affected by external air.

- Install the unit where the supply air flow can be sent to all parts in the room.
- Install the unit where it is easy to lead out the connective pipe and the drain pipe.
- Install the unit where no heat is emitted from a heat source directly.
- Installing the equipment in any of the following places may lead to faults of the equipment (if that is inevitable, consult the supplier):
 - The site contains mineral oils such as cutting lubricant.
 - Seaside where the air contains much salt.
 - Hot ring area where corrosive gases exist, e.g., sulfide gas.
 - Factories where the supply voltage fluctuates seriously.
 - Inside a car or cabin.
 - Place like kitchen where oil permeates.
 - Place where strong electromagnetic waves exist.
 - Place where flammable gases or materials exist.
 - Place where acid or alkali gases evaporate, or other special environments.
- Install the unit where the air inlet and air outlet are free from obstacles and strong wind.
- Install the unit in a dry and well ventilated place.
- Install the unit where the bearing surface is level and can bear weight of the unit, and is suitable for installing the unit horizontally without increasing noise or vibration.
- Install the unit where the operation noise and the expelling of air do not affect neighbors.
- Install the unit where no flammable gas is leaked.
- Install the unit where it is convenient for pipe connection and electric connection.

2. Installation of Duct Type Indoor Units

2.1 Installing indoor units

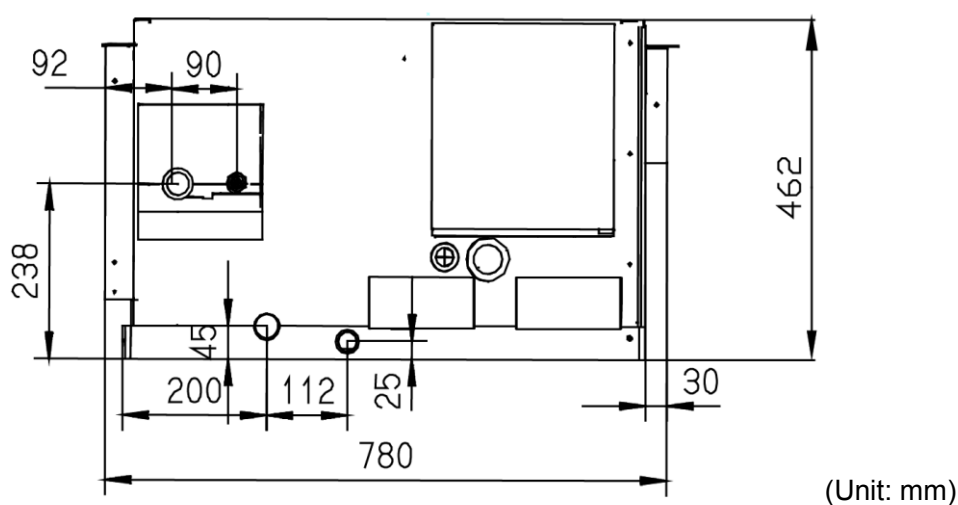
- As the following picture, when install the indoor unit, select the enough solid and level site with enough space for installation and maintenance.
- The inspection orifice should be enough large to repair and maintenance the unit.



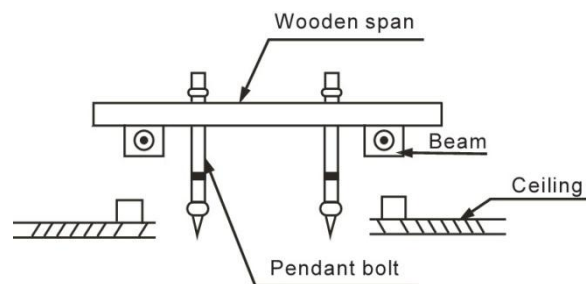
- Use $\Phi 10$ or bigger screws. The screw material is high-quality carbon steel (whose surface is zinc plated or undergoes other anti-rust treatment) or stainless steel.
- The treatment of the ceiling varies between buildings. For detailed measures, consult with the fitting-out staff.
- Fix the pendant bolts firmly and reliably in light of the specific situation.
- Installation of the pendant bolt in different environments.

MDTC-96CWN1, MDTC-96HWN1

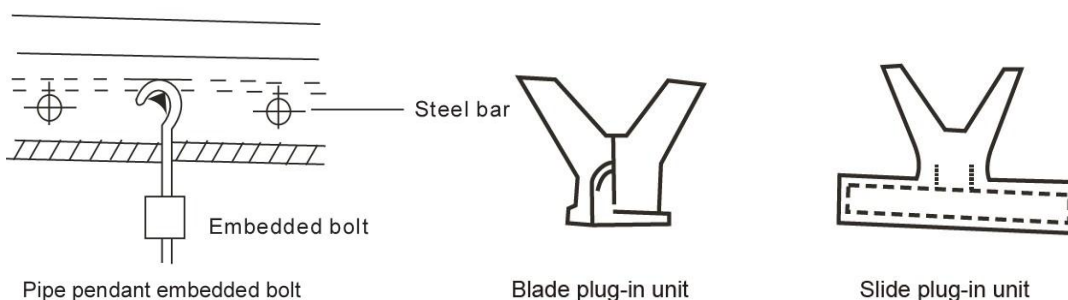
MDTD-96CWN1, MDTD-96CWN1



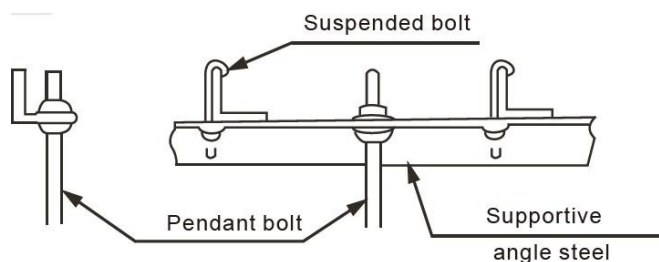
- When the pendant bolt is fixed in wooden structure, please put rectangular sticks across the beams, and set pendant bolts.



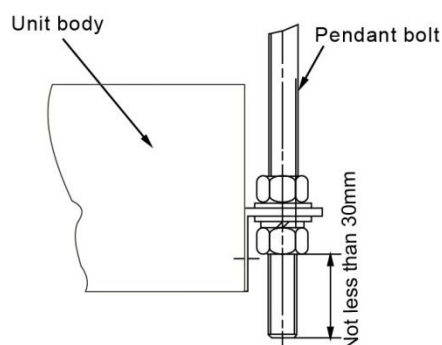
- When in the new concrete roughcast environment, please use embedded bolts, embedded pulling plugs and stick harness. On steel bar have some holes to hang pipe and embed screw bolts.



- When in steel beam and girder structure, set and use supportive angle steel.



- After install the indoor units, use a hoisting device to hoist the indoor unit, and align it with the installation screws to adjust the horizontality. Finally, Tighten the screws.

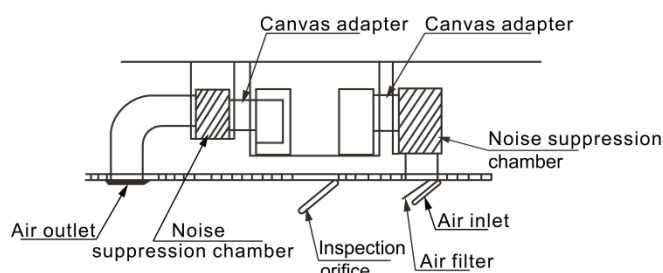


2.2 Designing and connecting the duct

- The duct design must comply with the national heating air conditioner pipeline design

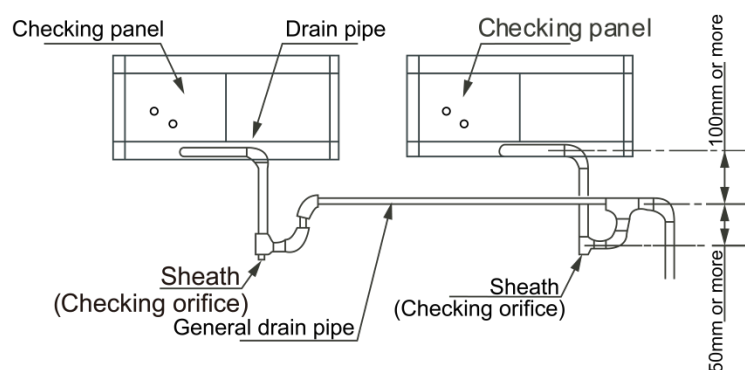
specifications.

- The duct accessories and materials must be produced by professional manufacturers.
- In order to prevent air flow shorting, do not keep the air inlet pipe near the air outlet pipe.
- Install a filter at an easy-to-maintain place such as intake pipe. If without the filter, the dust will gather on the air heat exchanger and lead to fault and water leak of the air conditioner.
- In order to suppress noise effectively, install noise suppression and sound insulation devices, especially in the noise-sensitive spaces such as meeting rooms.
- For connection of the flange plane, use non-flammable canvas adapter to prevent transmission of vibration. For its size, see the indoor unit outline diagram. Use M6×20 screws (configured on site) for connection.
- All pipelines must be connected closely and soundly without leak of air. The pipelines must be adiabatic and free from condensation.



2.3 Install the drainage pipe

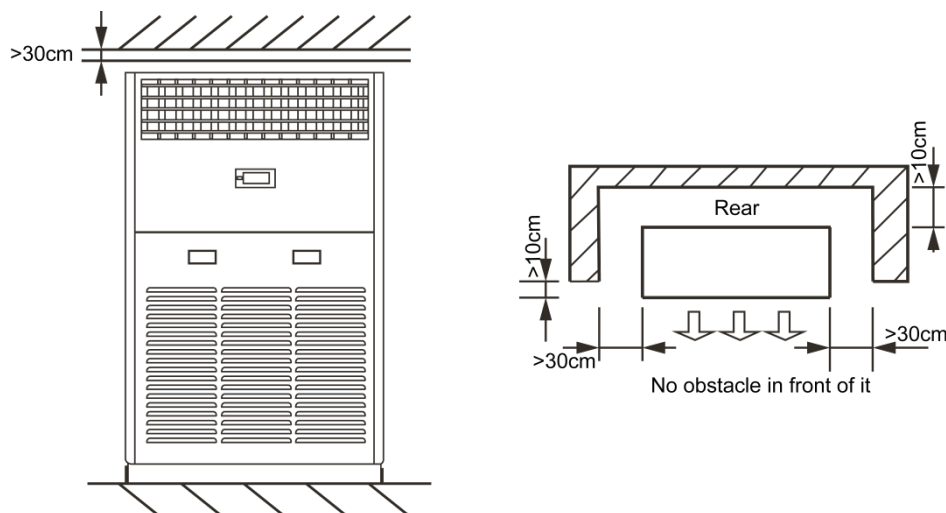
- Install a drain stream trap in the drainpipe to prevent water from overflowing. (The drainpipe absorbs the odor. When the outside static pressure is high (especially the air inlet), it is difficult to drain the water.)
- Drainage should be natural. When constructing, the outside pipe of outdoor unit should be inclined (1/50~1/100).
- The bending part of drainpipe should be fewer than 2. Furthermore, to reduce the depositing dust, avoid bending the pipe as possible as you can.
- Make sure there is no dust or rubbish falling into indoor unit drain elbow and drainpipe.
- After installation, remove the checking panel, pour some water in the drain elbow to see whether it drains smoothly.



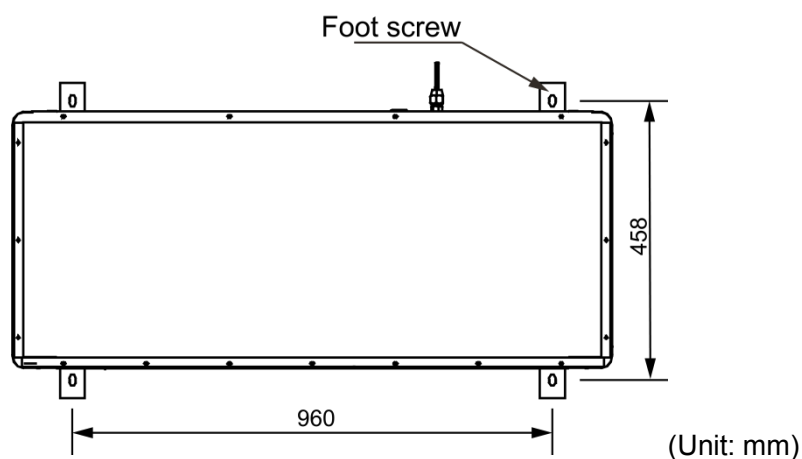
- Open the clapboard of indoor unit, pour the water in to see whether it drains smoothly and whether there is water leakage.
- After confirming that drainage is smoothly and there is no leakage, wrap the drainpipe with insulation material, or there will be condensed water.

3. Installation of Floor-standing Type Indoor Units

- As the following picture, when install the indoor unit, select the enough solid and level site, ensure enough space required for installation and maintenance.

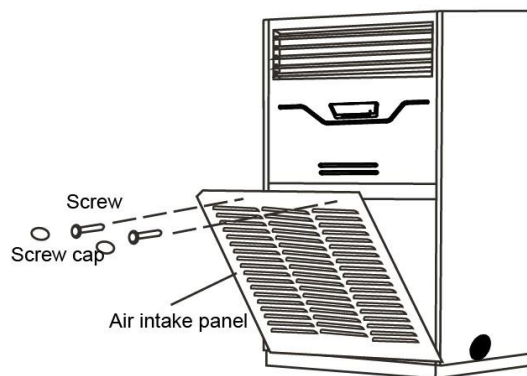


- For anti-fall down, please adopt the following measures:
 - As the following the picture, fix the feet on the floor after select a proper place for installation, since the height of the unit casing is very high.
 - The right and left sides as well as rear can be fixed.

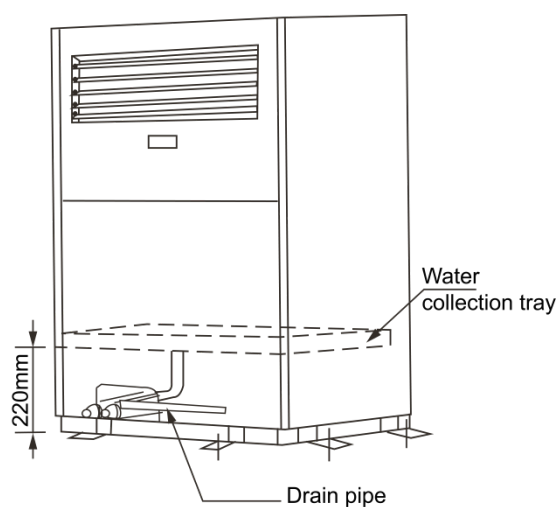


Note: Please be ware of the foot screws, which may be hurt for the passby people, make sure enough security of that, prevent accident occure.

- Put down the air intake panel, before electric connection, Following the picture:
 - Uncover the screw-cap in the air intake panel, and then lossen the screws.
 - Take off the air intake panel, ensure which place secure enough will not make risk to the other people.



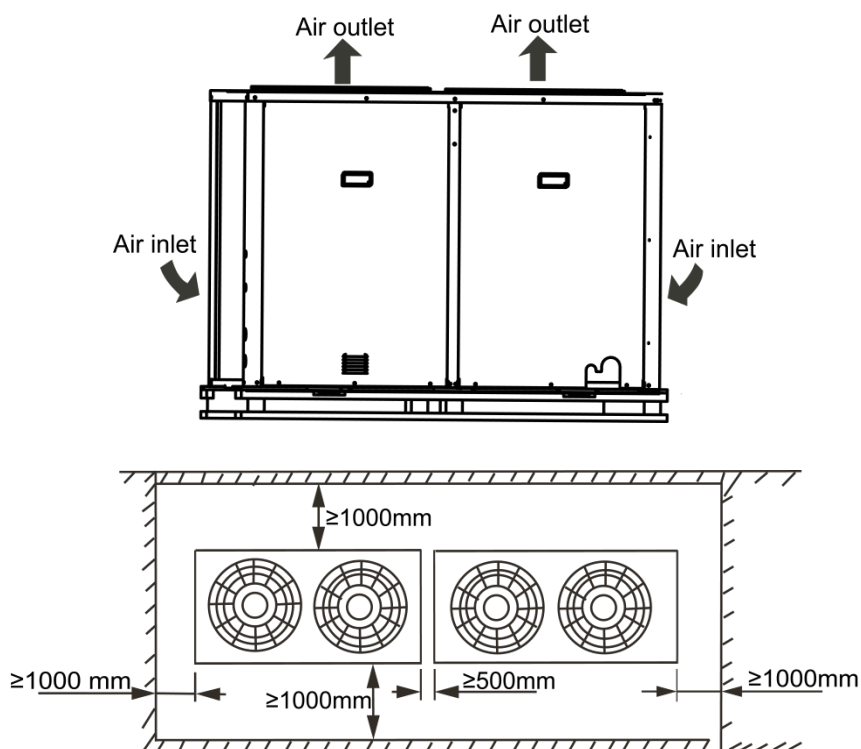
- There is natural drain, it is should be confirmed that the height of drain pipe is not higher than water collection tray.



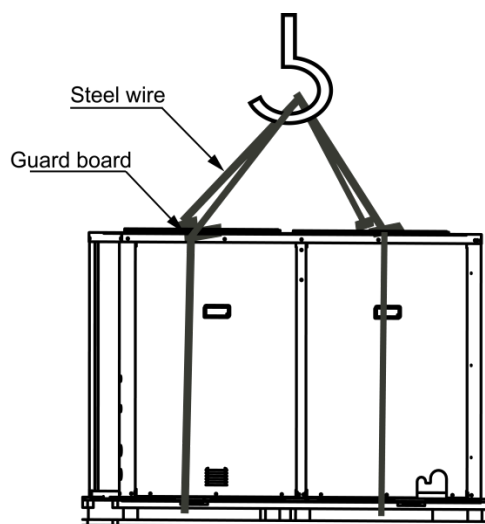
- The number of bends and folds of the drain pipe should not exceed 2. Try to avoid bends to prevent trash accumulation.
- Open the side panel of the indoor unit, fill water inward, and check whether water can be drained smoothly. Check whether water leak at the joint.
- After making sure that water drains smoothly and no water is leaked, use adiabatic wool bushes to preserve heat of the drain pipe. Otherwise, condensate will occur.

4. Installation of Outdoor Units

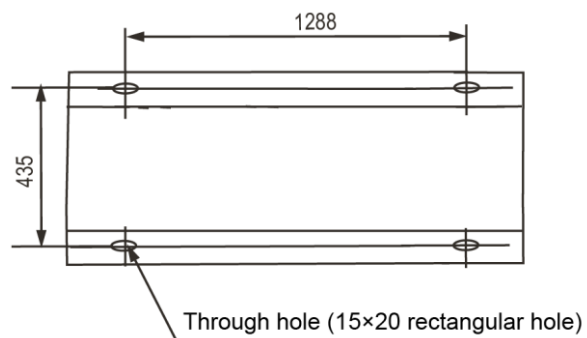
- When installing the unit, leave a space for maintenance shown in the following figure. Install the power supply at the side of the outdoor unit. For installation procedure, see the relevant installation manual.



- Use 4 steel ropes of a $\Phi 6 \text{ mm}$ or bigger size to hoist the outdoor unit and convey into the room.
- In order to prevent scratch and deformity the outdoor unit, apply a guard board to the surface of contact between the steel wire and the unit.
- Remove the cushion used to protect the outdoor unit after finishing the transport.

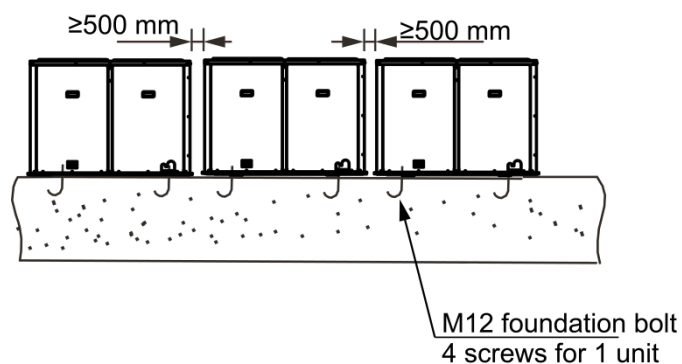


- The distance of the foundation bolt is shown in following picture.

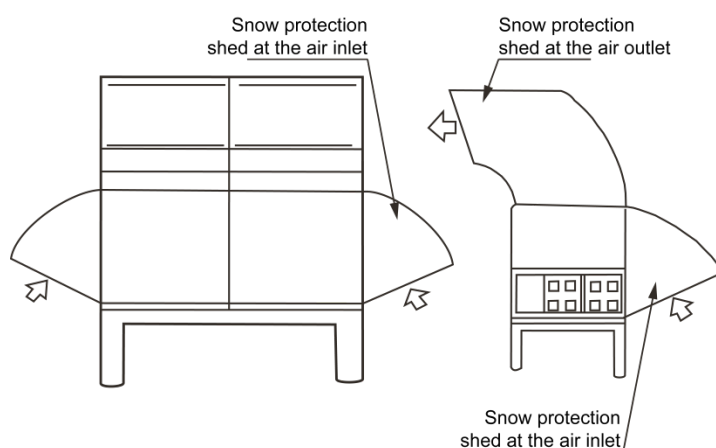


MDVVT-96C(H)N1-R

- As the following shown picture, leave an interval of 500mm between the outdoor units.

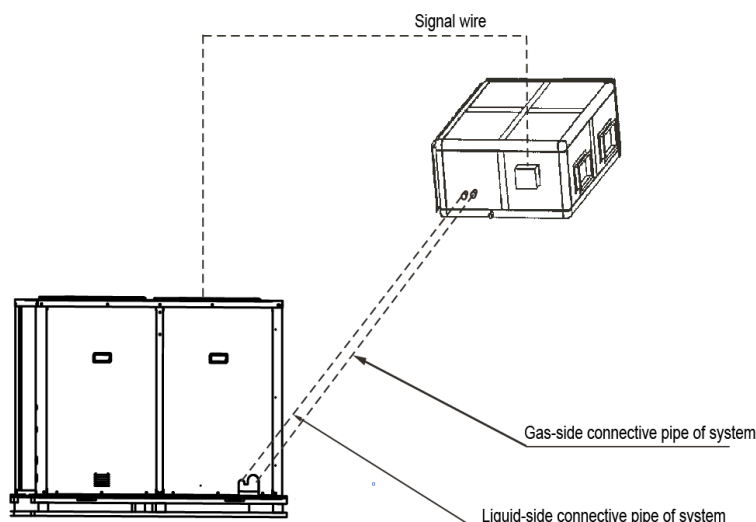


- Snow protection facilities must be installed in the snowfall areas. (In case the snow protection facilities are incomplete, faults may occur.) In order to prevent influence caused by snow, set up raised pavilion, and install snow protection sheds at the air inlet and air outlet.

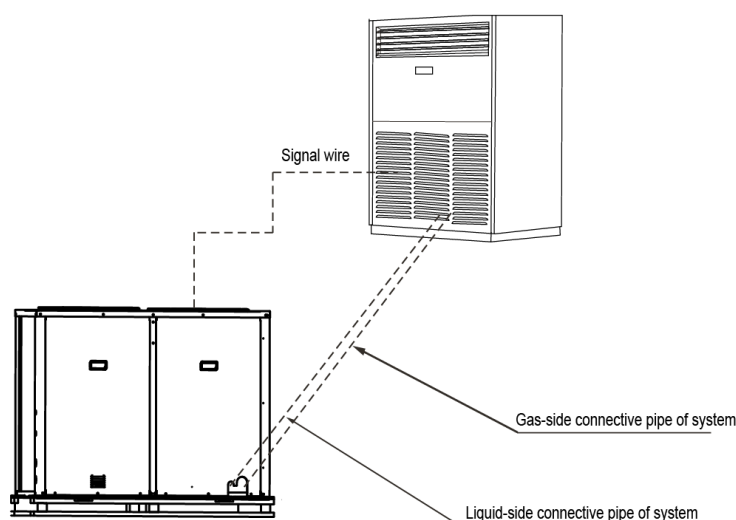


5. Connection of Refrigerant Pipe

- Schematic diagram of connection between indoor unit and outdoor unit:



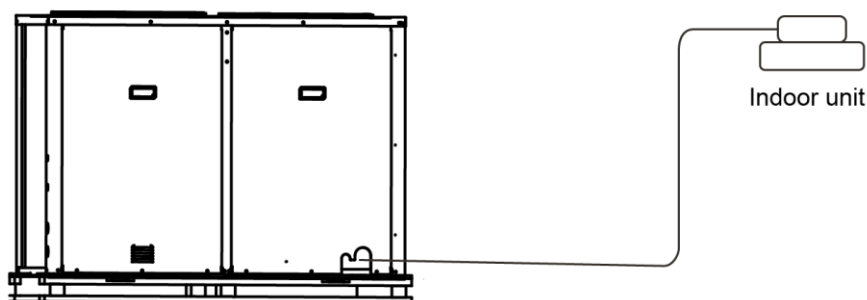
MT(H)B1T-96C(H)WN1 + MDOVT-96C(H)N1-R



MDFA3T-96C(H)WN1 + MOVAT-96C(H)N1-R

- The refrigerant pipe adapter is located inside the outdoor unit. So remove the right front board first. (three pieces of M5 screw)
- When the pipe is connected from the front side, the pipe can be led out through the right front board.
- When welding the refrigerant pipe, in order to prevent internal oxidation of the pipe, nitrogen must be filled in. Otherwise, the oxidized chips may block refrigerating circulatory system.
- Trash and foreign matters may come into the pipe in the process of installing the refrigerant pipe. Be sure to blow them off with nitrogen before connecting the pipe to the outdoor units.

- Use high-pressure nitrogen to clean the pipelines. Do not use the refrigerant of the outdoor unit for cleaning.

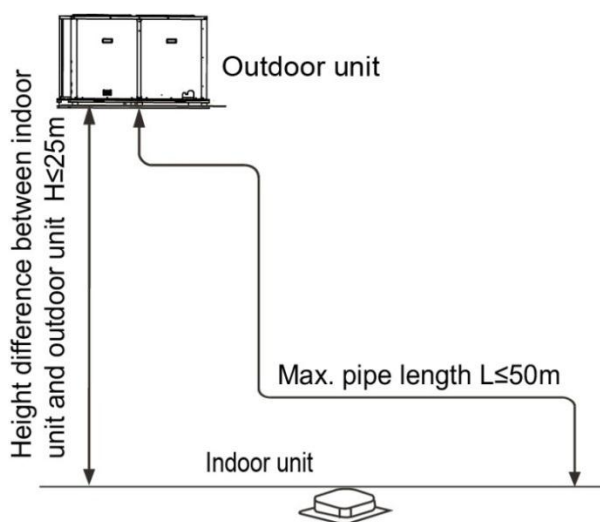


- Pipes size of the units:

Model	Liquid pipe	Gas pipe
MDTC-96CWN1	Φ9.52mm (pipe length $L \leq 30\text{m}$)	Φ25.4mm (pipe length $L \leq 30\text{m}$)
MDTC-96HWN1		
MDTD-96CWN1		
MDTD-96HWN1	Φ12.7mm (pipe length $30 < L \leq 50\text{m}$)	Φ28.6mm (pipe length $30 < L \leq 50\text{m}$)
MDFA3T-96CRN1		
MDFA3T-96HRN1		

Notes: The pipe joint for connecting pipes of different diameters is needed. If the pipe length is not more than 30m, please use the straight pipe as the accessories in the indoor and outdoor unit. If the pipe length is more than 30m, you should prepare it yourself.

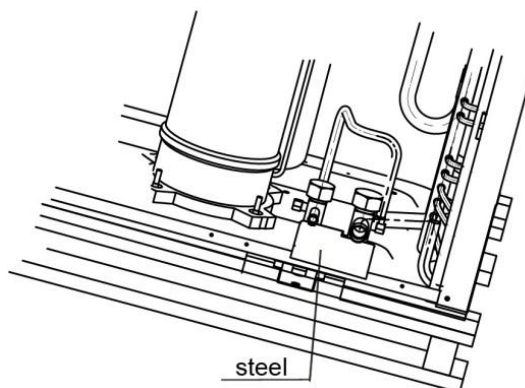
- Allowed length of refrigerant pipe and height difference.



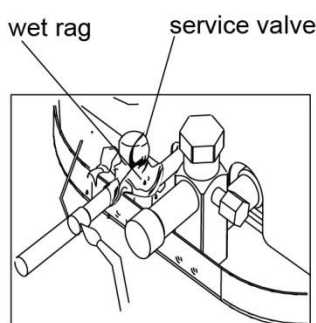
		Allowed value
Max. actual length of pipe (L)		50m
Max. height difference between indoor and outdoor unit	Outdoor unit (upper)	25m
	Outdoor unit (lower)	30m

- Do not increase or decrease piping sizes.

- As shown in following picture, when brazing the indoor and outdoor connective lines, pad a sheet metal under the valve avoids the flame burning the chassis.



- Precaution should be taken to prevent heat damage the service valve by wrapping a wet rag around it as shown in following picture. Also, protect all painted surfaces, insulation, during brazing. Cool joint with rag after brazing.



- Remove the cap and Schrader core from both the liquid and vapor service valve service ports at the outdoor unit. Connect low pressure nitrogen to the liquid line service port.
- Braze the liquid line to the high pressure valve (liquid valve) at the outdoor unit. Be sure to wrap the valve body with a wet rag. Allow the nitrogen to continue flowing. Refer to the Tabular Data Sheet for proper liquid line sizing.
- Remove the rubber plugs from the evaporator liquid and vapor connections at the indoor unit carefully.
- Braze the liquid line to the indoor liquid connection. Nitrogen should be flowing through the evaporator coil.
- Slide the plastic cap away from the vapor connection at the indoor coil. Braze the vapor line to the evaporator vapor connection.
- Protect the vapor valve with a wet rag and braze the vapor line connection to the outdoor unit. The nitrogen flow should be exiting the system from the vapor service port connection.

After this connection has cooled, remove the nitrogen source from the liquid fitting service port.

- Replace the Schrader core in the liquid and vapor valves.
- Leak test all refrigerant piping connections including the service port flare caps to be sure they are leak tight.
- **Do not over tighten.** (between 40 and 60 inch-lbs. maximum.)
- Evacuate the vapor line, evaporator and the liquid line, to 500 microns or less.
- Replace cap on service ports. Do not remove the flare caps from the service ports except when necessary for servicing the system.
- Release the refrigerant charge into the system. Open both the liquid and vapor valves by removing the plunger cap and with a hex wrench back out counter-clockwise until valve stem just touches the chamfered retaining wall.
- Replace plunger cap finger tight, then tighten an additional 1/12 turn (1/ hex flat). Cap must be replaced to prevent leaks.
- Do not connect manifold gauges unless trouble is suspected. Approximately 3/4 ounce of refrigerant will be lost each time a standard manifold gauge is connected.
- Never attempt to repair any brazed connections while the system is under pressure. Personal injury could result.
- After the pipes between the indoor unit and the outdoor unit are connected, replenish compressed nitrogen to perform airtight test.
 - The airtight test is performed by using the compressed nitrogen, 2.94MPa (30kg/cm²G).
 - Tighten the spool of the low pressure valve and high pressure valve before compressing the nitrogen.
 - Compress the nitrogen at the air vent of the gas valve.
 - The gas valve and liquid valve are closed in the process of compressing the nitrogen.
 - **Do not** use oxygen, flammable gas or toxic gas in the airtight test.
- Vacuum

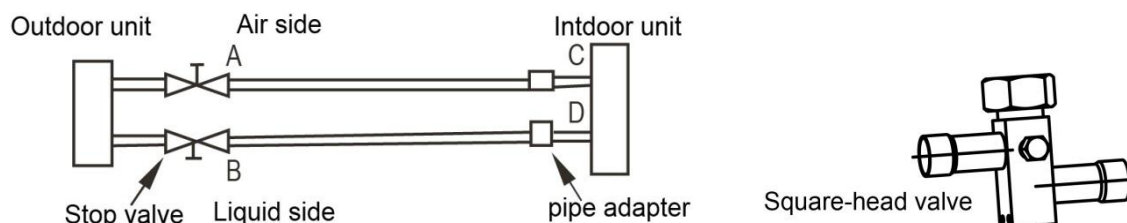
From the following table, select a method of expelling air.

Length of connective pipe (Single pass)	Procedure of expelling air
--	----------------------------

Less than 5m	Use refrigerant in the outdoor unit.
5~15m	Use vacuum pump or refrigerant tank.

Note: If the air conditioner is relocated, be sure to use a vacuum pump or refrigerant tank to expel air.

Use the refrigerant in the outdoor unit to expel air

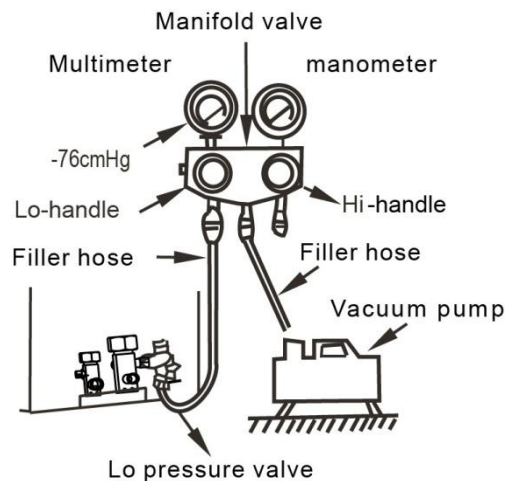


- Screw up the pipe nuts at A, B, C and D completely.
- Loosen and remove the square-head cover of valves A and B, rotate the square-head spool of valve B counter-clockwise for 45 degrees and stay for about 10 seconds, and then close the spool of valve B tightly.
- Detect leak for all adapters at A, B, C and D. After making sure that no leak exists, open the maintenance orifice nut of valve A. After all air is expelled, tighten the maintenance orifice nut of valve A.
- Open the spools of valves A and B completely.
- Tighten the square-head cover of valves A and B completely.

Use refrigerant tank to expel air

- Screw up the pipe nuts at A, B, C and D completely.
- Loosen and remove the square-head cover and maintenance orifice nut of valves A and B.
- Connect the filler hose of refrigerant tank with the maintenance orifice of valve A.
- Loosen the valve of the refrigerant tank, continue filling refrigerant for 6 seconds to expel the air, and tighten the nut of valve B quickly.
- Loosen the valve of the refrigerant tank again, and fill the refrigerant for 6 seconds. Detect leak for all adapters at A, B, C and D. After making sure that no leak exists, screw off the filler hose. After all the filled refrigerant is expelled, screw up the maintenance orifice nut of valve A quickly.
- Open the square-head spools of valves A and B completely.
- Tighten the square-head cover of valves A and B.

Use a vacuum pump



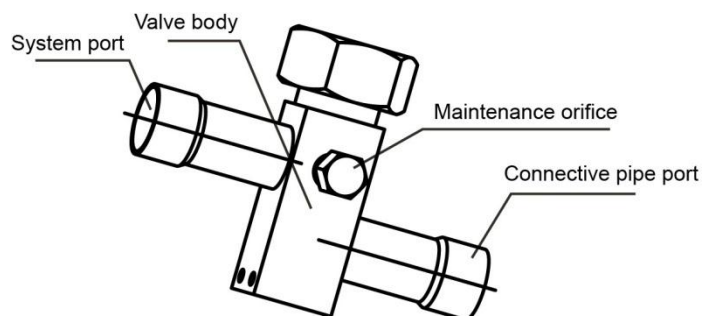
- Loosen and remove the maintenance orifice nut of valve A, and connect the filler hose of the manifold valve to the maintenance orifice of valve A (Tighten both valve A and valve B).
- Connect the filler hose adapter to the vacuum pump.
- Open the low (Lo) pressure handle of the manifold valve completely.
- Start the vacuum pump to extract air. At the beginning of extracting air, slightly loosen the maintenance orifice nut of valve B, check whether any air enters it (The vacuum pump noise changes, and the multi-meter indicates from negative to 0). Then tighten this maintenance orifice nut.
- Upon completion of vacuuming, tighten the low pressure handle of the manifold valve completely and stop the vacuum pump. Keep extracting air for over 15 minutes. Check whether the multi-meter points at $-1.0 \times 10^5 \text{ Pa}$ (-76 cmHg).
- Loosen and remove the square-head cover of valves A and B. After opening valves A and B completely, tighten the square-head cover of valves A and B.
- Remove the filler hose of the maintenance orifice of valve A, and then tighten the nut.

Procedure of using stop valve

- Open the spool until it touches the stop block. Do not attempt to open further.
- Use a spanner or a similar tool to tighten the bonnet.
- Upon completion of installation, open all valves before trial run. Each unit has two valves of different sizes located at the outdoor unit side. Of the two valves, one is gas valve and the other is liquid valve. The procedure of opening/closing the valve is shown

in following picture.

- Procedure of opening the valve: Open the square-head cover, use a spanner to capture the square head and open it thoroughly. Then tighten the square-head cover.
- Procedure of closing the valve: same as the procedure of opening the valve, but rotate the spanner clockwise thoroughly.



- After vacuum, according to the diameter and length of the connective pipe of liquid side between the indoor unit and outdoor unit, calculate the refrigerant replenishment quantity. The refrigerant for replenishment is R410a.

Diameter of liquid-side pipe	Quantity of refrigerant replenished for 1m pipe length
Φ9.52mm	0.060kg
Φ12.7mm	0.115kg

Note: Please check and record the replenished quantity of the air conditioner.

It is not necessary to replenish refrigerant unless the length of connective pipe over 5m.

Otherwise, calculate the refrigerant replenishment quantity by the following formula:

The refrigerant replenishment quantity (kg)

= (the length of pipe (m) – 5) × Quantity of refrigerant replenished for 1m pipe length (kg/m)

- Refrigerant leak precautions.

This air conditioner uses refrigerant R410A. R410A is safe refrigerant which is harmless and non-flammable. The room for placing the air conditioner should have a proper space. Even if refrigerant leakage occurs, the density threshold will not be crossed. Additional measures may also be taken.

- Density threshold: Density of the Freon gas that does not harm the human body. Density threshold of R410A: 0.3kg/m³.
- ✓ Calculate the total quantity of refrigerant to be replenished [A (kg)].

Total refrigerant quantity for 10HP = refrigerant replenishment quantity upon shipment (11kg) + additional refrigerant replenishment corresponding to the pipe length.

✓ Calculate out the indoor volume [B (m³)] (according to the minimum volume)

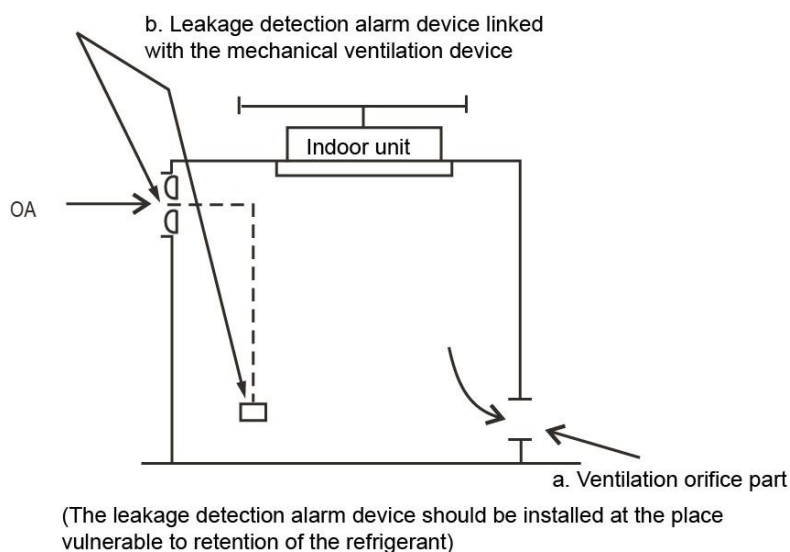
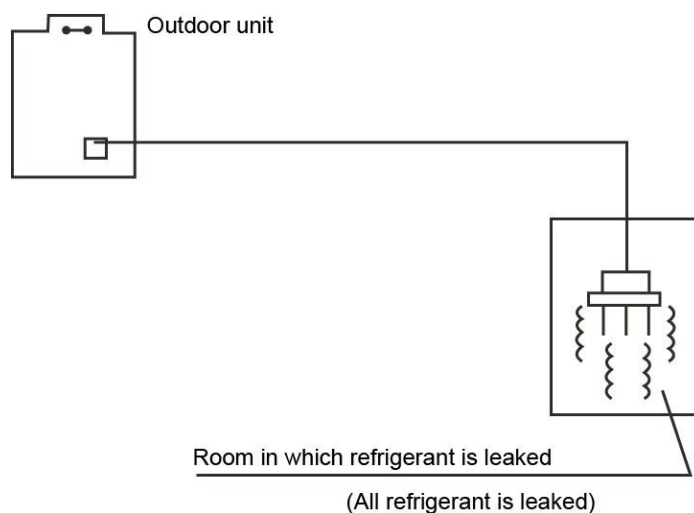
✓ Calculate out the refrigerant density:

$$[A \text{ (kg)}] / [B \text{ (m}^3\text{)}] \leq \text{Density threshold: } 0.3\text{kg/m}^3$$

● Measures against crossing of the refrigerant density threshold.

✓ In order to keep the refrigerant density below the threshold value, please install a mechanic ventilation device. (Perform ventilation often.)

✓ In case frequent ventilation is impossible, please install the leakage detection alarm device linked with the mechanical ventilation device.



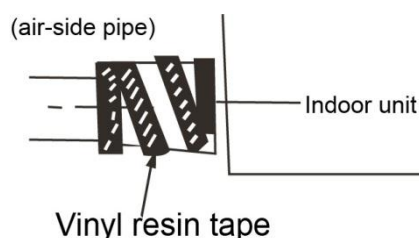
6. Heat Insulation of Pipe

In order to prevent faults caused by condensate of the refrigerant pipe and drain pipe, perform condensate prevention and heat insulation properly.

Note: If it is forecast that high humidity and temperature environment (Condensate temperature is over 23°C) may exist in the ceiling, e.g., inside the ceiling with slab, ceiling which is in the same environment as the outdoor air. It is necessary to apply 10mm or thicker adiabatic wool (16~20kg/m²) to the refrigerant pipe and the drain pipe in addition to applying the general heat insulation materials. Enough heat insulation materials should also be applied to the refrigerant joint and the pipe joint.

Note: the heat insulation of drain pipe refer to the installation of indoor unit.

- Be sure to entwine heat insulation materials round the drain pipe which runs through the room.
- Carry through heat insulation for the drain pipes thoroughly.
- Please use heat-resistant materials as heat insulation material of the air-side pipe. (e.g., EPT)
- Cover heat insulation materials separately at the liquid side and the air side. Moreover, perform heat insulation thoroughly for the air-side pipes of the indoor unit, and prevent water from dripping outside the unit.
- After applying the auxiliary heat insulation materials, use vinyl resin tape to seal refrigerant pipe and drainage pipe to prevent water leak.



7. Electric Connection

7.1 Caution

- Use special power supply for the air conditioner. Design power supplies specific to the indoor unit and outdoor unit. The supply voltage must comply with the nominal voltage.
- The external supply circuit of the air conditioner must have a ground wire, and the power supply ground wire of the indoor unit must be connected with the external ground wire firmly.
- The wiring must be performed by professional technicians according to the circuit diagram labels.
- Distribute the wires according to the relevant electric technical standards promulgated by the State, and set the Residual Current-operated Circuit Breaker (RCCB) properly.
- The power wire and the signal wire shall be laid out neatly and properly, without mutual interference or contacting the connection pipe or valve.
- No power cable is attached to this equipment. The user can select the power cable by reference to the stipulated power supply specifications. No joint of wires is allowed.
- Upon completion of wire connection, double check it and then connect the power supply.
- An all-pole disconnection device which has at least 3mm separation distance in all pole and a residual current device (RCD) with the rating of above 10mA shall be incorporated in the fixed wiring according to the national rule.
- The appliance shall be installed in accordance with national wiring regulations.
- The power cord type designation is H05RN-R or above H07RN-F.

7.2 Specifications of power supply

Type	Indoor unit	Outdoor unit
Model	MDTC-96CWN1 MDTC-96HWN1 MDTD-96CWN1 MDTD-96HWN1 MDFA3T-96CRN1 MDFA3T-96HRN1	MDOVT-96CN1-R MDOVT-96HN1-R
Power	220-240V~, 1Ph, 50Hz	380~415V~, 3Ph, 50Hz
Switch capacity of the main power supply / Fuse(A)	20/10	70/50
Size of power supply cable	RVV-300/500 2×2.5mm ²	YCW-450/750 4×10.0mm ²
Size of power ground wire	RVV-300/500 2.5mm ²	YCW-450/750 10.0mm ²
Connective wire of indoor and outdoor unit	RVV-300/500 4×1.0mm ² (Cooling & Heating) RVV-300/500 2×1.0mm ² (Cooling only)	

■ Power supply wire

The specification of power supply wire as follows:

<Power supply wire of outdoor unit>. In this case, the power cable is individually provides (no power supply device is in use).

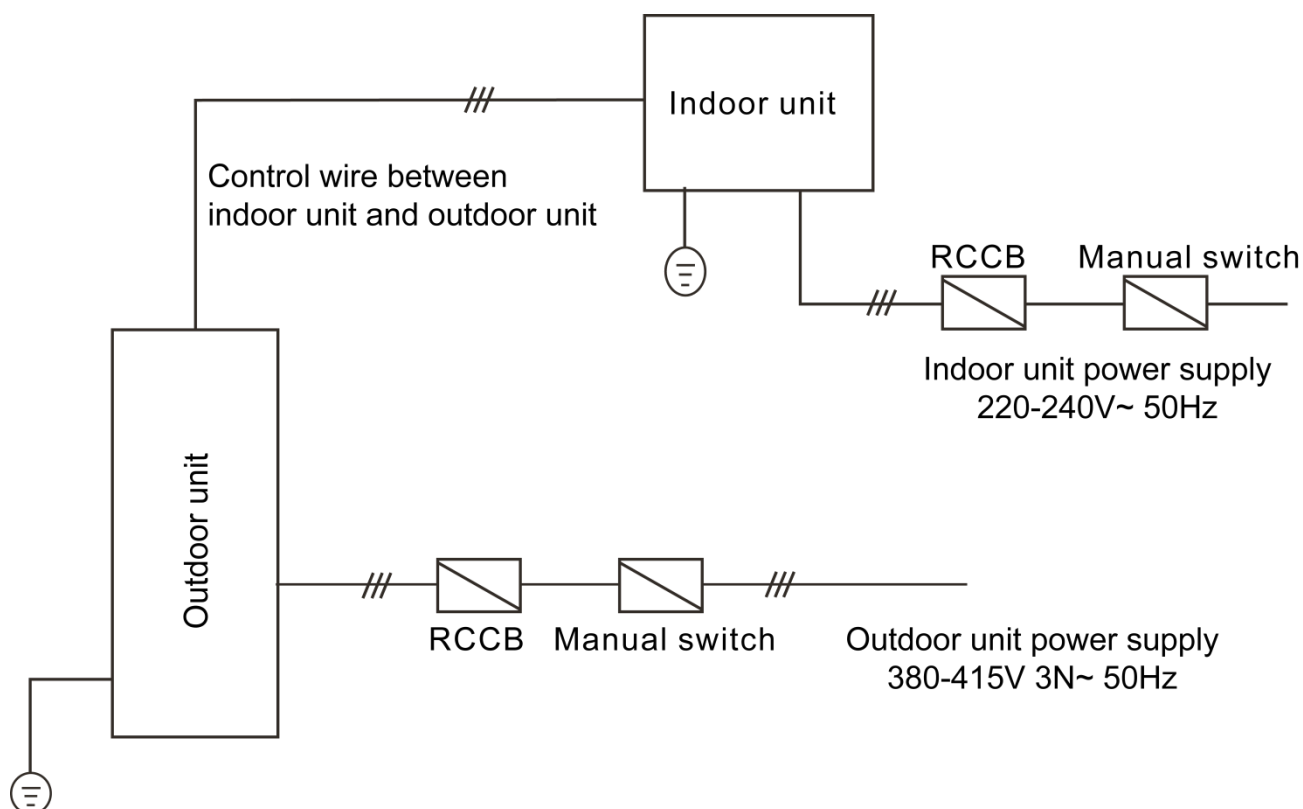
Item Capacity	Power supply	Min. wire size(mm ²)(Metal pipe & synthetic resin pipe wire)		Manual switch(A)		RCCB
		Size (Continuous length:≤30m)	Ground wire	Capacity	Fuse	
MDTC-96CWN1 MDTC-96HWN1 MDTD-96CWN1 MDTD-96HWN1 MDFA3T-96CRN1 MDFA3T-96HRN1	220-240V~ 50Hz	90(A<20m) 23(20m<A<50m)	10	70	50	100mA Below 0.1sec

- The wire size in the table and the continuous wire length are applicable to the circumstance where the potential fall amplitude is within 2%.
- Where the continuous wire length exceeds the values in the table, select the wire size according to the relevant rules.

	Indoor unit	Outdoor unit
Model	MDTC-96CWN1 MDTC-96HWN1 MDTD-96CWN1 MDTD-96HWN1 MDFA3T-96CRN1 MDFA3T-96HRN1	MDOVT-96CN1-R MDOVT-96HN1-R
Power	220-240V~, 50Hz	380-415V~, 3Ph, 50Hz
Switch capacity of the main power supply/Fuse(A)	20/10	70/50
Indoor unit power cable(mm ²) includes grounded wire	RVV-300/500 3×2.5mm ²	—
Outdoor unit power cable(mm ²) includes grounded wire	—	YCW-450/750 5×10mm ²
Connective wire of indoor outside unit	RVV-300/500 4×1.0mm ² (HEAT&COOL) RVV-300/500 2×1.0mm ² (COOL ONLY)	
Wire controls connective wire	RVVP-300/300 5×0.5mm ²	
Outdoor-outdoor unit COMwire	RVVP-300/300 3×0.5mm ² (Shield wire)	

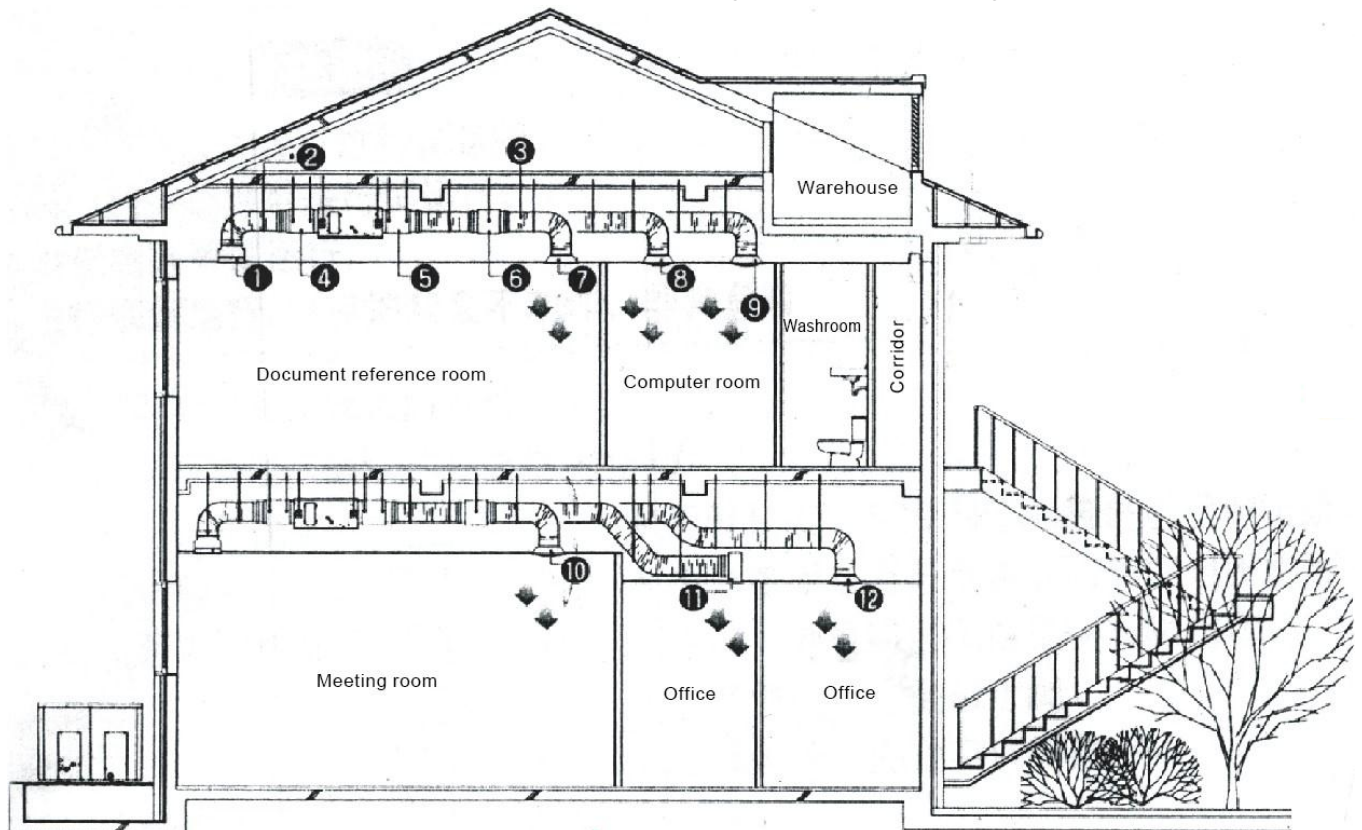
7.3 Schematic diagram

The power wires are as follows:

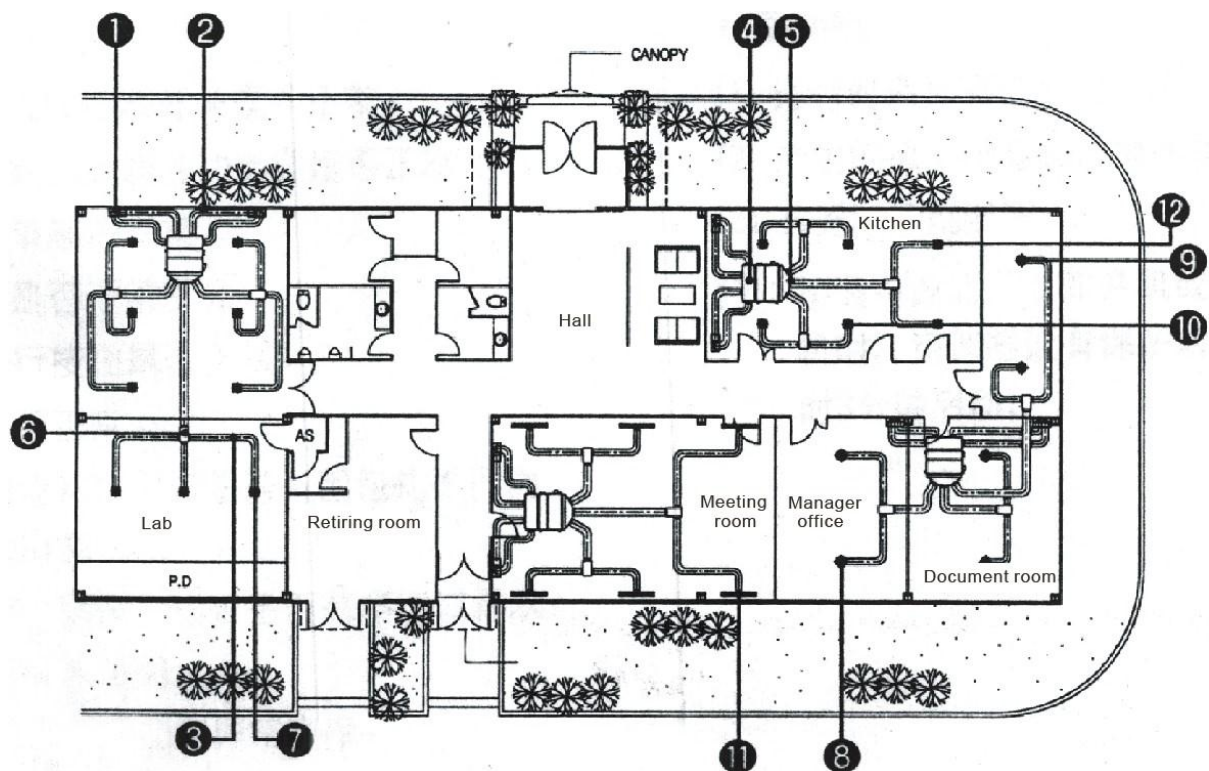


8. Duct Design Scheme

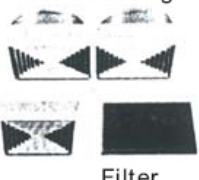
Examples of construction and ventilation pipeline design scheme (Flowering hidden series.)

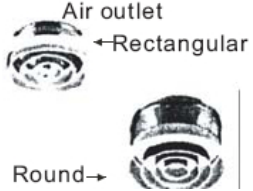


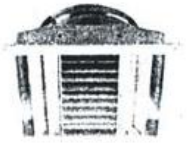
Construction and ventilation pipeline design scheme



Methods of configuring and selecting installation

	Material name	Characteristics, advantages and other contents
1	Air inlet wooden grille  Filter	1. Install the filter at the main body grille in case the store height is low, and at the main body of the indoor unit in case the store height is high. 2. It cleans conveniently at the time of installing/uninstalling the filter. 3. The button structure is easy to install and uninstall.
2	Hose (for absorbing noise) 	1. For purpose of air inlet. 2. Must adopt fire-resistant materials. 3. The heat insulation material must be glass wool.
3	Hose (for general purpose) 	1. For purpose of air outlet. 2. Must adopt fire-resistant materials. (Those materials other materials. (Those materials other shall not be applied.) 3. The heat insulation material must be glass wool.
4	Air inlet noise pipe 	1. Install the unit at the air inlet so that the air flows smoothly and the noise is lower. 2. The noise value varies with the length. 3. The hose joint should be bent lest detachment of the pipe.
5	Air outlet noise pipe 	1. Install the unit at the air outlet so that the air flows smoothly and the noise is lower. 2. The noise value varies with the length. 3. The hose joint should be bent lest detachment of the pipe.
6	Distributor 	1. Install the unit at the air outlet so that the air flows smoothly and the noise is lower. 2. Select 1BY2 or 1BY3 according to the quantity of the diffusers. 3. The diffuser pipes should preferably have the same length after branching, and the minimum length of the ventilation pipes is 5m.

7	Rectangular Air outlet 	1. Fixed model that diffuses air at a 360 angle. 2. The outline size should increase when the air volume is over 350CMH. (For above 303) i.e., when about 9 diffusers are required, the outline size should increase. 3. The diffuser pipes should preferably have the same length after branching, and the minimum length of the ventilation pipes is 5m.
8	Air outlet 	1. Fixed model that diffuses air at a 360 angle. 2. The outline size should increase when the air volume is over 350CMH. (For above 303) i.e., when about 9 diffusers are required, the outline size should increase. 3. Proper air speed: For air speed of over 2-3.5m/s, select other diffusers (with great noise). 4. Install the diffuser pipe if it is necessary to install the model of over 3.5m/s. 5. For purpose of cooling-only model.
9	Air outlet 	1 The lengthwise adjustable model which diffuses air at a 360 angle. 2. With the change of the cooling/heating air flow, the horizontal and vertical distance of the fan can be adjusted (applicable to department store and exhibition hall where the decorative effect is essential).
10	Air outlet ←Rectangular Round→ 	1. Low noise compared with other air outlets. Applicable to tall buildings that require along distance of air conditioning. 2. Select the ventilation pipe connection caliber according to the distance and the air speed. 3. Applicable to store height of over 5m (for design of tall store such as temple, consult manufacturer).
11	Linear diffuser 	1. The fan is the adjustable type which can change direction of air flow. It is used for deluxe decoration. 2. The outline size should increase when the air flow is over 450CMH (3 or 4 SOLT) when about 6 diffusers are required, the outline size should increase. 3. If the proper air speed is 2.5-5m/s and actual air speed reaches over 5m/s, it is necessary to choose other diffusers (with higher noise values).

12	Air outlet woodengrille 	1. Low noise compared with other air outlets. Applicable to tall buildings that require a long distance of air conditioning. 2. Select the ventilation pipe connection caliber according to the distance and the air speed. 3. Applicable to store height of over 5m (for design of tall stores such as temple, consult manufacturer).
Auxiliary materials	Duct wrapping tape 	1. Flanges and pipelines connected to the ventilation pipes. 2. When the noise pipe is connected with the hose, the ventilation pipe tape must be applied (otherwise, with only adhesive tape, the adhesion will be weakened due to change of temperature).
	Aluminium adhesive tape 	1. It is used to prevent glass wool leak and seal the gas at the time of the flanges and pipelines of the ventilation pipes. 2. Entwine for over 3 circles. 3. Use ventilation pipe-specific tapes (instead of ordinary adhesive tapes). In order to ensure the installation quality and durability, it is necessary to use the auxiliary materials of standard specifications provided by manufacturer electronics and the auxiliary products of the specified manufacturers.

9. Trial Run

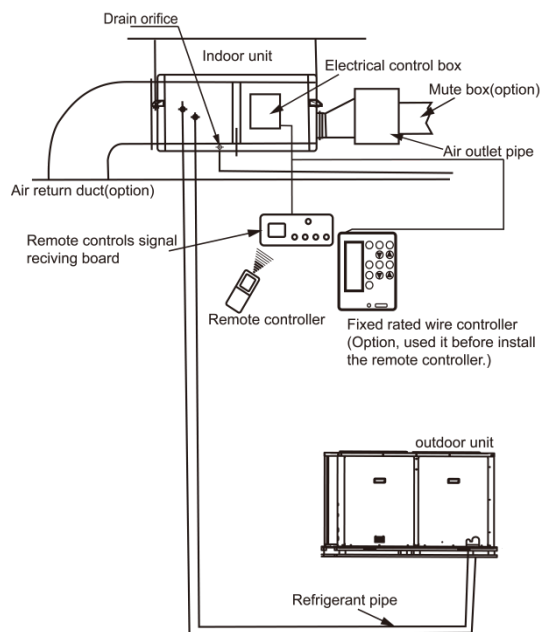
Please conduct in accordance with “Trial Run Tenor Nameplate” on the electric control box.

- Perform the trial run only after the outdoor unit has been powered on for over 12 hours.
- Check whether all valves are opened before trial run.
- Check the electric safety before trial run.
- Do not perform compulsory operation in any way, because it is very dangerous if the protection device is not active.
- Perform trial run only after all installations are finished.
- Confirm the following issues before trial operation:
 - Check whether the indoor unit and the outdoor are installed properly.
 - Check whether the piping and wiring are corrected.
 - Check whether the refrigerant pipeline system is inspected for leakage.
 - Check whether the drain is smooth.
 - Check whether the heat insulation is perfect.
 - Check whether the ground cables are connected correctly.
 - Check whether the pipe length and the refrigerant amount are recorded.
 - Check whether the supply voltage is equal to the rated voltage of the air conditioner.
 - Check whether any obstacles exist at the air inlet/outlet of the indoor or outdoor unit.
 - Open the gas valve and the liquid valve.
 - Connect the power supply to preheat the air conditioner.
- Install the remote controller holder as required by the user. The holder must be installed in a location suitable for transmitting the signals of the remote controller to the indoor unit.
- Use the remote controller or wired controller (matched) to let the air conditioner run in the cooling mode. Inspect the following items against the operation manual. (If any fault occurs, remove the fault by reference to the Section “Faults of Air Conditioner and Causes” in the Operation Manual.)
- Check the indoor unit:
 - Check whether the switch of the remote controller or wire controller is normal.
 - Check whether the functional keys of the remote controller or wire controller are normal.

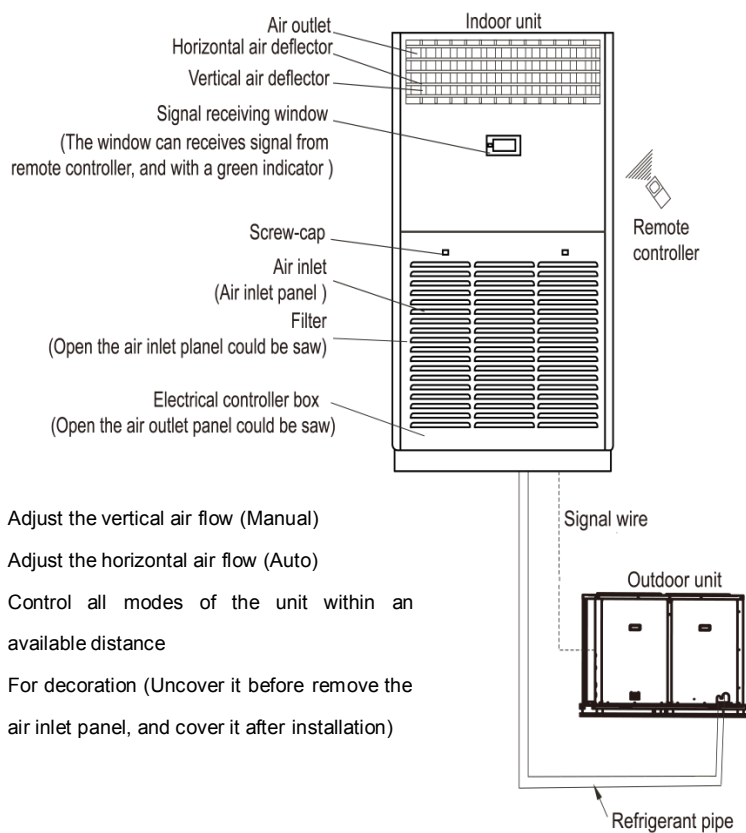
- Check whether the indoor temperature conditioning is normal.
- Check whether the indicators illuminate normally.
- Check whether the manual operation buttons are normal.
- Check whether the drain function is normal.
- Check whether the connective copper pipes and the drain pipes generate condensate due to loose wrapping.
- Open the air inlet grille to check whether any penetration or leak of water occurs, especially at the drain stopper.
- Check whether any vibration or abnormal sound occurs during the operation.
- Test whether the unit works normally in the heating mode.
- Check the outdoor unit:
 - Check whether any vibration or abnormal sound occurs during the operation.
 - Check whether the air, noise and condensate generated by the unit affect the neighbors.
 - Check whether any refrigerant is leaked.

10.Names and Functions of AC Components

MDTC-96C(H)WN1, MDTD-96C(H)WN1



MDFA3T-96C(H)RN1



Horizontal air deflector

Adjust the vertical air flow (Manual)

Vertical air deflector

Adjust the horizontal air flow (Auto)

Remote controller

Control all modes of the unit within an available distance

Screw-cap

For decoration (Uncover it before remove the air inlet panel, and cover it after installation)

10.1 Control keys

■ ON/OFF

This key controls air conditioner drive-up and shut down. Press the key at the first time, the unit will open, and then press it again the unit will shut down. During the unit is on serving the key is lighting; otherwise, the light will off.

■ MODE

This key is for select the service mode. For cool-only unit, only air supply mode and cooling mode could be selected by this key; for heat pump unit, one more function— —heating mode could be selected. You could press the key repeatedly for choose these modes. The selected mode is flashing in 2Hz. If you keep it without adjustment operation within 3 seconds, the system will confirm the mode.

■ Temperature adjustment key

“ $\wedge$ ”key: For increase temperature. Any time you press the key, temperature will increase one Celsius degree. If you press the key last for more than 1 second, the temperature will increase by 1°C/sec, until which up to the maximum temperature 30°C(The buzzer will not buzz at this time.)

“ $\vee$ ”key: For decrease temperature. Any time you press the key, temperature will decrease 1°C. When press the key last for more than 1 second, the temperature will decrease by 1°C per second, until which fall to the minimum 17°C. The buzzer will not buzz at this time.

■ Speed key

For select air flow speed (low speed, medium speed, high speed and auto speed).

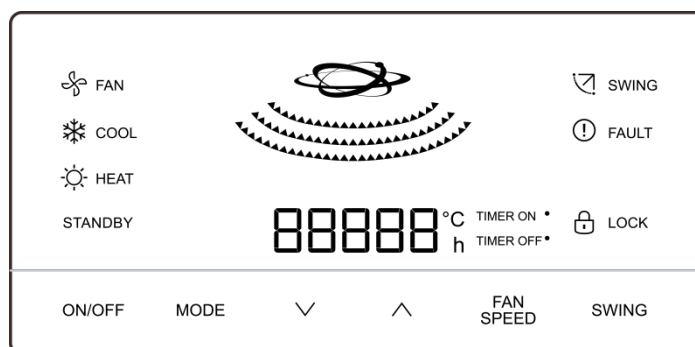
■ Swing key

For select ON/OFF swing function.

■ Lock key

Be used to select lock function on or off. This key is located at the needle orifice of low right of the control panel, which be pressed by pin. If lock the unit by the key, any other keys is invalid, however the signal is effective.

10.2 Display icons



It is named globe and always light-on.

■ 'STANDBY'

The light is on when the system at standby status, and light-off when the unit switches on.

■ **COOL**, **HEAT**, **Fan**

Press **MODE** key, the light of icon is on, the selected mode's icon will flash, after 3 seconds, the light extinction, while the status of selected mode icon is light-on instead of flashing. Power on for the first drive up, after press the **ON/OFF**, default mode of  **FAN** appear. If malfunction occur, **FAN** icon would always light-on, and  **FAULT** icon light up, fault codes is show. Modes only could be shifted at unit on.



This is speed icon. Different speeds correspond to the waves below of Globe icon. The first wave means low wind, the middle wave means medium wind, and the last one stand for high wind, circulating point on these three waves means auto wind.

■ **SWING**

Swing icon. Press the key of **SWING**, which icon is light-up, while close off this mode, the icon will light-off.

■

For temperature display, the  shows temperature value, the unit is °C. For protection and error display, the first  display  (for protection) or  (for error), the last  display codes form  to .

In only air supply mode, no setting temperature is showed at .

■ **Lock**

While locking, the lock icon is light-on; while unlocking, the lock icon is light-off.

11. Trouble shooting

11.1 Phenomena not attributable to faults of air conditioner

The following phenomena do not indicate exception of air conditioner.

- The system does not run.
 - After pressing the **ON/OFF** button, the system does not run immediately.
 - If the **Run** indicator is on, it indicates the air conditioner runs in the normal status.
 - It does not run immediately because the safety device in the system is active to prevent overload.
 - Three minutes later, the air conditioner compressor will run automatically.
 - If the **Run** indicator and the **Defrost/Preheat** indicator are on, it indicates you have selected the heating mode. At the beginning after startup, since the compressor does not run, the temperature of the indoor unit is too low. See the chapter "Cooling/Heating/Supply Air Operation Procedure".
- The indoor unit gives out white aerosol.
 - This phenomenon may occur when the indoor relative humidity is too high and the unit runs in the cooling mode (in a place where there is much oil mist or dust).
 - If the internal stain of the indoor unit is heavy, the temperature in the room will be distributed unevenly. In this case, the interior of the indoor unit must be cleaned.
 - Contact the local distributor or the aftersales service center of manufacturer to inquire about the methods of cleaning the indoor unit. This job must be performed by professional maintainers.
 - This phenomenon may also occur when the air conditioner shifts from defrosting operation to heating operation. That is because the moist generated by defrosting is expelled as steam.
- Noise of air conditioner
 - When the air conditioner runs in the cooling, dry or heating mode automatically, grave continuous sizzles may occur. That is the sounds of refrigerant flowing between the

indoor unit and the outdoor unit. The sizzles may be heard shortly after the unit stops running or when the unit runs in the defrost mode. That is the sound raised because the refrigerant stops flowing or changes to the volume of flow.

- Squeak may occur when the air conditioner starts or stops running. That is the sound raised because the plastic assemblies inflate or deflate when the temperature changes.

- Dust is blown out of the indoor unit.

When the air conditioner resumes service after a long period out of service, the dust in the indoor unit will be blown out.

- The indoor unit gives out smell.

The indoor unit absorbs the smell of the room, furniture or smoking, and gives it out when running.

- Shift from cooling mode to air supply mode.

- In order to prevent frosting of the indoor heat exchanger, the air conditioner shifts to air supply mode automatically, and resumes to cooling mode in a short time.
- When the room temperature decreases to the set temperature, the air conditioner will shut down the compressor automatically, and shifts to the air supply status. After the room temperature rises, the compressor will restart. The action of the compressor in the heating mode is the contrary.

11.2 Faults of air conditioner and cause

- If any of the following exceptions occur, stop operation of the air conditioner immediately. Turn off the power switch, and contact the local aftersales service center of manufacturer:
 - The **Run** indicator blinks quickly (2 blinks per second). After turning off the power switch and then turning it on again, that indicator still blinks quickly.
 - The receiving function of the remote controller fails, or the start and shutdown operation is abnormal.
 - The fuse blows out frequently, or the circuit breaker protection occurs frequently.

- Foreign substance or moist enters the air conditioner or other exceptions occur.
- The indoor unit leaks water.
- Other exceptions occur.

- If the air conditioner fails but does not meet the foregoing phenomena obviously, check the system in the following procedure:

Symptom	Possible causes	Way of handing
The system does not run.	Power supply fails.	Operate it after power supply resumes and connect the power supply properly.
	The power switch is not connected.	
	The fuse blows out or the circuit breaker acts.	Replace the fuse or check whether electric leakage occurs.
	The remote controller or wired controller fails.	Check the remote controller or wired controller.

Symptom	Possible causes	Way of handing
The heating effect is poor.	The outdoor environment temperature is lower than -7°C.	Use a heating device. The unit cannot operate normally.
	The door or window is not closed tightly.	Close doors and windows tightly.
	The refrigerant is leaked or replenishment is deficient.	Detect leak, and fill the refrigerant of a correct quantity.

Symptom	Possible causes	Way of handing
The air conditioner sends air out but cannot provide cool air at all.	The setting temperature is improper.	The setting temperature is lower than the room's temperature during the cooling status or higher during the heating status.
	3-minutes protection of the compressor.	Waiting for 3 minutes.

Symptom	Possible causes	Way of handing
The cooling effect is poor.	The condenser or evaporator is too dirty.	Clean the heat-exchanger.
	The filter is blocked.	Clean the filter.
	The intake orifice or exhaust orifice of the indoor and outdoor unit is blocked.	Remove foreign matters to keep well ventilated.
	The door or window is opened.	Close all the windows and doors.
	Directly exposed to sunlight.	Obstruct sunlight by curtains or jalousie.
	Too many heat sources.	Reduce heat sources.
	Too high outdoor environment temperature.	It is normal, and the cooling effect of the air conditioner is deteriorated.
	The refrigerant is leaked or the replenishment is deficient.	Detect leak, and fill the refrigerant of a correct quantity.

Symptom	Possible causes	Way of handing
The unit keep starting up and shutting down frequently	The refrigerant is excessive or deficient.	Detect leak, and fill the refrigerant of a correct quantity.
	Air or non-condensable gas exists in the refrigerant loop.	Make a vacuum again and fill the refrigerant.
	The compressor fails.	Repair or replace the compressor.
	The voltage is too high or too low.	Install a voltage regulator.
	The refrigerant loop is obstructed.	Locate the causes and replace the part.

11.3 Faults of remote controller and cause

Before requesting for maintenance or repair, inspect the following:

- The shift function cannot be set.

Symptom	Check item	Cause
The wind speed cannot be shifted.	Check whether the mode marked the screen of controller is AUTO .	When you select the AUTO mode, the indoor unit will select “ AUTO ” for the air speed automatically
	Check whether the mode marked on the controller screen is DEWET .	When the dry mode is selected, the indoor unit will set fan speed automatically. The speed can selectable only in cooling, heating and fan mode.

- The transmitting symbol"▲" does not blink.

Symptom	Check item	Cause
Pressing ON/OFF button, the remote controller signal cannot be transmitted.	Check whether the batteries of remote controller are low.	When the batteries are exhausted, the signals cannot be transmitted.

- The temperature indicator does not light up.

Symptom	Check item	Cause
The temperature indicator does not light up.	Check whether the mode marked on the screen is Supply air.	In the Supply air mode, the temperature cannot be set.

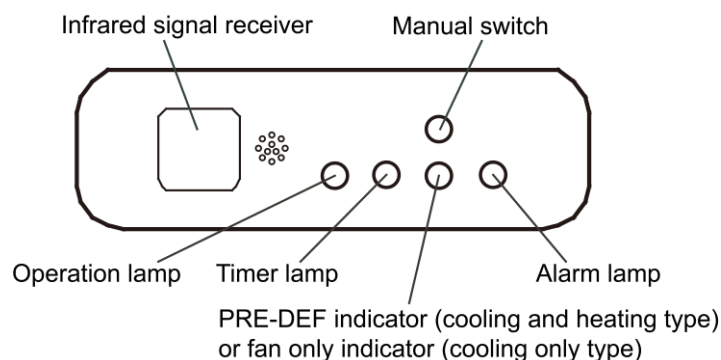
- The display disappears.

Symptom	Check item	Cause
After a while the ON/OFF display disappears.	Check whether the time set on the timer has expired.	The air conditioner stops running because the set time has expired.
After a while the TIMING ON display disappears.	Check whether the time set on the time has expired.	When it comes to the set time of starting operation of the air conditioner, the air conditioner will start running automatically, and the corresponding display will disappear.

- No sound of receiving signal.

Symptom	Check item	Cause
Pressing the ON/OFF button, the air conditioner does not raise the receiving tone.	When the ON/OFF button is pressed, check whether the signal transmitting part of the remote controller is aligned with the receiving part of the indoor unit.	Align the signal transmitting part of the remote controller with the receiving part of the indoor unit. Then press the ON/OFF button repeatedly.
	Check whether the power switch of the air conditioner is connected properly.	The air conditioner cannot receive the signals of the remote controller, because it is shut down.

11.4 Trouble shooting (The Duct Type)



No.	Display	Fault or protection meaning
1	All lamps flashing at 5Hz	The PRO terminal on PCB of indoor unit without connected to Null line, or optical coupler on PCB malfunction
2	Timer lamp flashing at 5Hz	Room temperature sensor malfunction.
3	Operation lamp flashing at 5Hz	Evaporator temperature sensor malfunction.
4	Defrosting lamp flashing at 5Hz	Condenser temperature sensor malfunction.
5	Alarm lamp flashing at 5Hz	Water-level checking malfunction.
6	Operation lamp and timer lamp flashing at 5Hz	EEprom malfunction

11.5 Trouble shooting (The Floor-standing Type)

No.	Display content	Fault or protection meaning
1	E0	EEprom error
2	E1	T1, room temperature sensor, fault of open circuit, short circuit.
3	E2	T2, pipe temperature sensor, fault of open circuit, short circuit.
4	P1	Under cooling mode, T2 is on low temperature protection.
5	P2	Under heating mode, T2 is on high temperature protection.

12.Maintenance

Importance

- Only the professionals can perform repair.
- Before performing operation for the electric connectors or cleaning the filter, turn off the main power switch.
- Do not use water or air with a temperature higher than 50°C to clean the filter or panel.
- Check and maintain the ventilating slot once every half years, wash and maintain with corresponding disinfection shall process once.
- Every two years are recommended. The filter can expel dust and other particles in the air. If it is blocked, the effect of the air conditioner will be degraded. Therefore, clean it every another two weeks if the air conditioner already has been used for a long period.
- If the indoor unit is installed in a place with heavy dust, clean the filter more often.
- If the stain is heavy and difficult to clean, replace the filter.
- Do not replace the power cable without permission. If the power cable is damaged, specialized power cable must be used as substitute.
- The foregoing operations must be performed by the local distributor or aftersales service office of manufacturer.

Maintenance & upkeep of outdoor unit

- The edge of some sheet metal assemblies and the fin of the condenser are very sharp. Incorrect operation may cause harm. Be cautious when cleaning them up.
- Check the air inlet and outlet of the outdoor unit periodically to see whether they are blocked by stain or lampblack.
- Contact the distributor or the aftersales service center of manufacturer.

Operation required before leaving the air conditioner idle for a long period

- Let the air conditioner run in the air supply mode for about half a day, and let its interior be fully dry.
- Switch off the power by the button in remote controller, and then cut off the power supply.
- When the main power switch is turned on, a certain extent of electric power is

consumed even if the air conditioner does not run. Turning off the main power switch can save energy.

- Remove the batteries out of the remote controller.
- After the air conditioner has been in service for several seasons, foreign substance accumulates inside the unit to an extent dependent on the working conditions. Therefore, shut down the air conditioner through the **ON/OFF** button of the controller, and then cut off the power supply.

Startup after a long period out of service

- Check the following issues:
 - Check whether the air inlet or outlet of the indoor unit and outdoor unit is blocked. Remove foreign substance if any.
 - Check whether the ground wire is connected properly.
 - Check whether the condensate water is discharged normally. (Cooling operation season)
 - Check whether the insulation work of refrigerant circuit and ventilating duct is on sound status.
 - Check whether the installing seat is corroded or rusted.
- Startup
 - Connect the indoor unit 12 hours after connect the outdoor unit to power supply.
 - Switch on the power control of remote controller or wired controller, and then startup the air conditioning.

Part. 5 Controller

- 1. Wireless Remote Controller 91
- 2. Wired Controller 98

1. Wireless Remote Controller

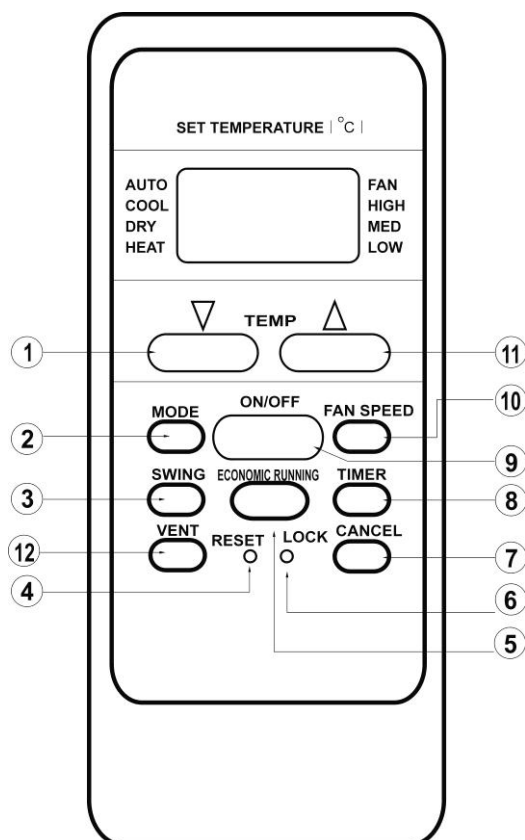
1.1 Remote controller specifications

Model	R51, R51/BG,R51/E,R51/CE,R51/BGE,R51/CBGE
Rated Voltage	3.0V
Lowest Voltage of CPU Emitting Signal	2.0V
Reaching Distance	8m (when using 3.0 voltage, it Gets 11m)
Environment Temperature Range	-5°C~60°C

Performance Features

1. Operating Mode: COOL, HEAT, DRY, FAN and AUTO.
2. Timer Setting Function in 24 hours.
3. Indoor Setting Temperature Range: 17°C ~30°C.
4. LCD (Liquid Crystal Display) of all functions.
5. Night Light Function (Optional).

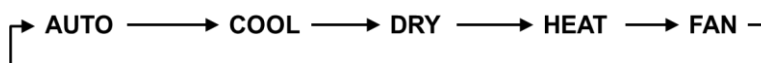
1.2 Introduction of function buttons on the remote controller



Note: This illustration is for explanation purposes only. The actual shape or button names of the remote controller may be slightly different.

1. TEMP Button ▼: Push the **TEMP** button to decrease the indoor temperature setting or to adjust the TIMER in a counter-clockwise direction.

2. MODE Select Button: Each time you push the button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, HEAT and FAN as the following figure indicates:



Note: HEAT only for Heat Pump.

3. SWING Button: Push this switch button to change the louver angle.

4. RESET Button: When the **RESET** button is pushed, all of the current settings are cancelled and the control will return to the initial settings.

5. ECONOMIC RUNNING Button: Push this button to go into the Energy-Saving operation mode.

6. LOCK Button: Push this button to lock in all the current settings. To release settings, push again.

7. CANCEL Button: Push this button to cancel the TIMER settings.

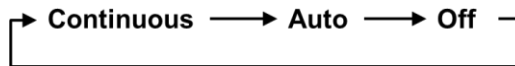
8. TIMER Button: This button is used to preset the time ON (start to operate) and the time OFF (turn off the operation).

9. ON/OFF Button: Push this button to start the unit operation. Push the button again to stop the unit operation.

10. FAN SPEED Button: This button is used for setting Fan Speed in the sequence that goes from AUTO, LOW, MED to HIGH, then back to AUTO.

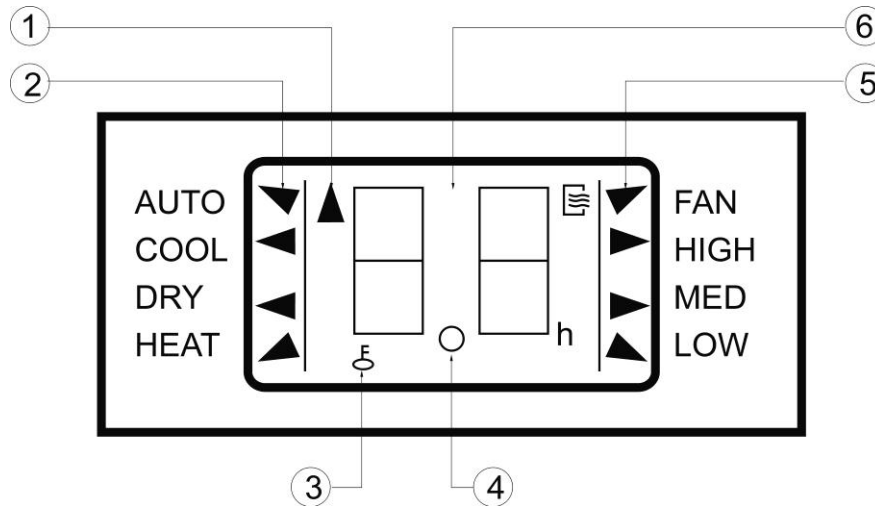
11. TEMP Button ▲: Push the button to increase the indoor temperature setting or to adjust the TIMER in a clockwise direction.

12. VENT Button: Push this button to set the ventilating mode. The ventilating mode will operate in the following sequence:



Note: Ventilation function is available for the fresh air series.

1.3 Names and functions of indicators on remote controller



① **TRANSMISSION Indicator:** This indicator lights when remote controller transmits signals to indoor unit.

② **MODE Display:** Show the current operation modes, AUTO, COOL, DRY and HEAT. HEAT is only available for heat pump model.

③ **LOCK display:** To displayed by pushing the **LOCK** button. Push the **LOCK** button again to clear display.

④ **TIMER Display:** This display area shows the settings of TIMER.

That is, if only the starting time of operation is set, it will display the **TIMER ON**. If only the turning off time of operation is set, it will display the **TIMER OFF**. If both operations are set, it will show **TIMER ON** and **TIMER OFF** which indicates you have chosen to set both the starting time and off time.

⑤ **FAN Display:** When push the **FAN** button, this indicator lights.

⑥ **Digital Display Area:** This area will show the temperature and, if in the TIMER mode, will show the ON and OFF settings of the TIMER.

Note: All items are shown in the previous picture for the purpose of clear presentation but during the actual operation only the relative functional items are shown on the display panel.

1.4 Operating the remote controller

1) Install / Replace Batteries

The Remote Controller uses two alkaline dry batteries (R03/Ir03X2).

- ※ To install batteries, slide back the cover of the battery compartment and install the batteries according to the directions (+ and -) shown on the Remote Controller.
- ※ To replace the old batteries, use the same method as mentioned above.

Notes:

1. When replacing batteries do not use old batteries or a different type battery. This may cause the remote controller to malfunction.
2. If you do not use the remote controller for several weeks remove the batteries. Otherwise battery leakage may damage the remote controller.
3. The average battery life under normal use is about 6 months.
4. Replace the batteries when there is no answering beep from the indoor unit or if the Transmission Indicator light fails to appear.

2) Automatic Operation

When the Air Conditioner is ready for use, switch on the power and the **OPERATION** indicator lamp on the display panel of the indoor unit starts flashing.

- ※ Use the **MODE** select button to select AUTO.
- ※ Push the **TEMP** button to set the desired room temperature. The most comfortable temperature settings are between 21°C and 28°C
- ※ Push the **ON/OFF** button to start the air conditioner. The **OPERATION** lamp on the display panel of the indoor unit lights. The operating mode of AUTO FAN SPEED is automatically set and there are no indicators shown on the display panel of the remote controller.
- ※ Push the **ON/OFF** button again to stop the unit operation.

Notes:

1. In the AUTO mode, the air conditioner can logically choose the mode of COOL, FAN, HEAT and DRY by sensing the difference between the actual ambient room temperature and the set temperature on the remote controller.
2. If the AUTO mode is not comfortable for you, the desired mode can be selected manually.

3) COOL, HEAT, and FAN ONLY Operation

- ※ If the AUTO mode is not comfortable, you may manually change the settings by using COOL, DRY, HEAT (HEAT PUMP units only), or FAN ONLY modes.

- ※ Push the **TEMP** button to set the desired room temperature. When in COOLING mode, the most comfortable settings are 21°C or above. When in HEATING mode, the most comfortable settings are 28°C or below.
- ※ Push the **FAN SPEED** to select the FAN mode of AUTO, HIGH, MED or LOW.
- ※ Push the **ON/OFF** button. The operation lamp lights and the air conditioner start to operate per your settings. Push the **ON/OFF** button again to stop this unit operation.

Note: The **FAN ONLY** mode cannot be used to control the temperature. While in this mode, only steps 1, 3 and 4 may be performed.

4) DRY Operation

- ※ Push the **MODE** button to select DRY.
- ※ Push the **TEMP** button to set the desired temperature from 21°C to 28°C.
- ※ Push the **ON/OFF** button. The operation lamp lights and the air conditioner starts to operate in the DRY mode. Push the **ON/OFF** button again to stop this unit operation.

Note: Due to the difference of the set temperature of the unit and the actual indoor temperature, the Air Conditioner when in DRY mode will automatically operate many times without running the COOL and FAN mode.

5) TIMER Operation

Push **TIMER** button to set the unit what time turn on or off.

a. To set the STARTING time.

- ※ Push the **CANCEL** button to cancel any former settings.
- ※ Push the **TIMER** button. The remote controller will show the **TIMER** and the signal "h" is shown on the display panel. The control is now ready to reset the TIMER ON to start the operation.
- ※ Push the **TEMP** button (▲ or ▼) to set desired unit START time.
- ※ After setting the **TIMER** there will be a one-half second delay before the remote controller transmits the signal to the Air Conditioner. Then, after approximately another 2 seconds, the set temperature will re-appear on the digital display.

b. To set the STOPPING time.

- ※ Press the **CANCEL** button to cancel any former settings.

- ※ Push the **TIMER** button and the remote controller will show the last set time for the START operation and the signal "**h**" will be shown on the display panel. You are now ready to readjust the TIMER OFF to stop the operation.
- ※ Push the **TEMP** button to cancel the TIMER ON setting. The digital area will show "**00**".
- ※ Push the **TIMER** button and the remote controller will show the last set time for the STOP operation and the signal "**h**" will be shown on the display panel. You are now ready to reset the time of the STOP operation.
- ※ Push the **TEMP** button (▲ or ▼) to set the time you want to stop the operation.
- ※ After setting the TIMER there will be a one-half second delay before the remote controller transmits the signals to the Air Conditioner. Then after approximately another 2 seconds, the set temperature will re-appear on the digital display.

c. Set the **STARTING & STOPPING** time

- ※ Press the **CANCEL** button to cancel any former settings.
- ※ Push the **TIMER** button and the remote controller will show the last set time for START operation and the signal "**h**" will be shown on the display panel. You are now ready to readjust the TIMER ON to start the operation.
- ※ Push the **TEMP** button (▲ or ▼) to set the time you want to start the operation.
- ※ Push the **TIMER** button and the remote controller will show the last set time for STOP operation and the signal "**h**" will be shown on the display panel. You are now ready to reset the time of the STOP operation.
- ※ Push the **TEMP** button (▲ or ▼) to set the time you want to stop the operation.
- ※ After setting the TIMER there will be a one-half second delay before the remote controller transmits the signal to the Air Conditioner. Then, after approximately another 2 seconds, the set temperature will re-appear on the digital display.

Notes:

1. Please reset the **TIMER** after cancelling the former time settings.
2. The setting time is relative time. That is the time set is based on the delay of the current time.

Warning

1. Be sure there are no barriers between the remote controller and the receiver of indoor unit otherwise the air conditioner will not work.

2. Keep the Remote Controller away any liquids.
3. Protect the Remote Controller from high temperatures and exposure to radiation.
4. Keep the indoor receiver out of direct sunlight or the air conditioner may malfunction.
5. Keep controller away from EMI (Electro-Magnetic Interference) supplied by other household appliances.

2. Wired Controller



KJR-29B/BK-E

2.1 Wired controller specifications

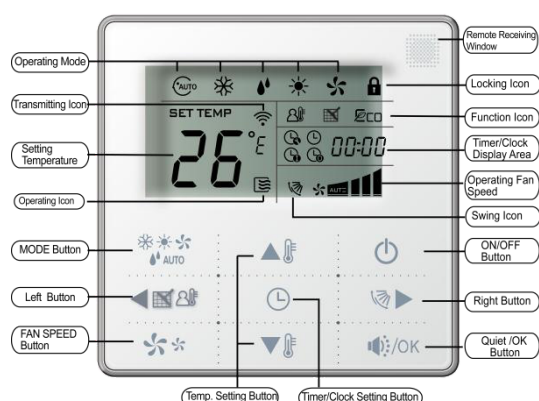
Power Supply Voltage	5.0V DC
Ambient Temperature Range	-15°C ~ 43°C
Ambient Humidity Range	RH40% ~ RH90%

Performance Features

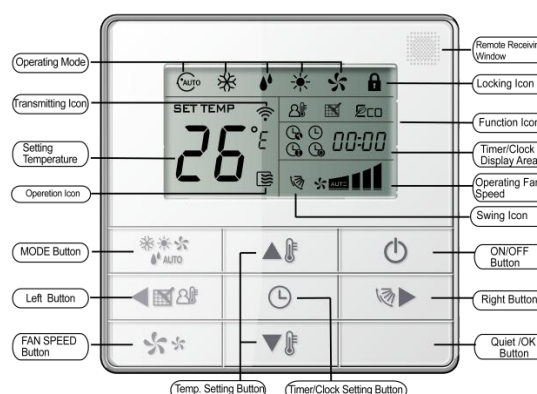
1. Connect with indoor unit via the four ports of A, B, C, and D.
2. Set the mode through buttons.
3. Provided with LED (Liquid Crystal Display) display function.
4. Provided with timing function.
5. Remote receiving function.

2.2 Wired controller outlook

KJR-29B/BK-E, KJR-29B1/BK-E, KJR-29C/BK-E,
KJR-29C1/BK-E



KJR-29A/BK-E, KJR-29A1/BK-E



2.3 Operation instructions

1) Remote signal receiving function:

the wired controller can be a remote signal receiving device, it is possible to use the wireless remote controller to control the air conditioner through the wired controller when the system have been powered on.

Note: The wired controller will not receive the swing controlling instruction. For the indoor unit with swinging function, you can directly use the wireless remote controller to control swinging through the display panel of the indoor unit, or use the swing button on the wired remote controller to control the indoor unit for swinging.

2) On and off the air-conditioner:

Press the  On/Off button to control the indoor unit on and off status.

When the unit is turned off, press the  On/Off button, the unit will be turned on and the operating icon  lights up.

When the unit is turned on, press the  On/Off button, the unit will be turned off and the operating icon  lights off.

3) Set the operating mode

Press the mode button  to set the operating mode, after each button press the operating mode will circle as follow:

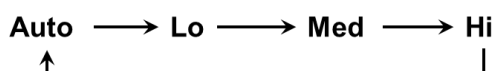


Note: When the controller has been set to cool only, then there is no HEAT mode.

4) Fan speed setting

Under COOL, HEAT and FAN modes, press the fan speed button  can adjust the fan speed setting.

After each fan speed button press will circle as follow:



Note: Under AUTO and DRY modes the fan speed is not adjustable and the default fan speed is auto.

5) Temperature setting

Under AUTO, COOL, DRY, HEAT modes, press the temperature setting buttons  and  to set the temperature, the adjusting range is 17°C~30 °C (or 62 °F~88 °F).

Note: The setting temperature cannot be adjusted under fan mode.

6) Timer on and timer off setting

Press the timer/clock setting button , then enter into the timer on setting status, and screen will display  and 0-0h.

Press the buttons  and  to adjust the timer. If the timer setting is less than 10 hours, each press  or  will increase or decrease 0.5 hour. When the timer setting is more than 10 hours, each press  or  will increase or decrease 1 hour, the maximum timer setting is 24 hours.

After finish adjusting the timer on setting, press the button /OK or wait for 5 seconds to confirm and exit the timer on setting.

Under the timer on setting status, press the timer/clock setting button , then enter into the timer off setting status, and the screen will display  and 0-0h.

The setting method of timer off is the same as the timer on.

Under timer setting state, set the timer on and the timer off to be 0.0h can cancel timer on and time off.

Note: If the wired remote controller has been set timer on/off, press the ON/OFF to turn on or turn off the unit then the timer will be canceled simultaneously.

7) Clock setting

Press the timer/clock button  setting for 3 seconds, and then enter into the clock setting status.

The hour position of the clock will flash, and can press  and  to adjust the hour value.

After finishing the hour setting, press left button  or right button  to switch to minute position setting, then the minute position will flash, press  and  to adjust the minute value.

After finish the clock setting, press the /OK button or wait for 5 seconds to confirm and exit the setting state.

8) Quiet operation

Under COOL, HEAT, FAN modes, press the /OK button to set into the quiet operation, it is used to reduce the running noise through setting the fan speed to low.

Note: Under AUTO, DRY mode, the fan speed is auto and the /OK button does not work.

9) Lock the wired controller

Press the temperature adjusting buttons  and  simultaneously, the wired controller enters into locking state, and the locking icon  will be lighted up.

Under the locking state, the wired remote controller will not respond to the buttons pressing and the control instruction from the wireless remote controller.

Simultaneously press the temperature adjusting buttons  and  again can cancel the locking state.

10) Air filter cleaning reminding function

The wired controller records the total running time of the indoor unit, when the accumulated running time reaches the pre-set value, the air filter cleaning reminding icon  will be lighted up, to remind that the air filter of the indoor unit need to be cleaned.

Press  for 3 seconds, and reset the reminding icon and the wired remote controller will re-accumulate the total running time of the indoor unit.

Note: The default setting value of the reminding function is 2,500 hours, and it can change to be 5,000 hours or 10,000 hours. The setting methods refer to the installation manual.

11) Swing function

If the indoor unit supports swing function, press the right button  to adjust the air outlet direction of the indoor unit. Press this button for 3 seconds can turn on or turn off the auto swing function, the swing icon  will be lighted up when the auto swing function is turned on.

12) Follow-me function

When the system is running and the operating mode is AUTO, COOL or HEAT, press the  button will activate the follow-me function; press this button again to deactivate the function. Operating mode changeover will deactivate the function as well.

When the follow-me function is activated, the icon  will be light up, the wired remote controller will display room temperature read from local sensor, and transmit the temperature value to the indoor unit every 3 minutes.

2.4 Installation of wired controller

1) Safety precaution

- ✓ Read the safety precautions carefully before installing the unit. Stated below are important safety issues that must be obeyed. Confirm there is no abnormal phenomena during test operation after complete, then hand the manual to the user.
- ✓ Please entrust the distributor or professionals to install the unit. Installation by other persons may lead to imperfect installation, electric shock or fire.
- ✓ Strictly follow this manual. Improper installation may lead to electric shock or fire.
- ✓ Reinstallation must be performed by professionals. Improper installation may lead to electric shock or fire.
- ✓ Do not disassemble your air conditioner at will. A random disassembly may cause abnormal operation or heating, which may result in fire.
- ✓ Do not install the unit in a place vulnerable to leakage of flammable gases. Once flammable gases are leaked and left around the wired controller, fire may occur.
- ✓ The wiring should adapt to the wired controller current. Otherwise, electric leakage or heating may occur and result in fire.
- ✓ The specified cables shall be applied in the wiring. No external force may be applied to the terminal. Otherwise, wire cut and heating may occur and result in fire.
- ✓ Don't place the wired controller near the lamps, to avoid the remote signal of the controller to be disturbed.
- ✓ Do not install the unit and controller in a place with much oil, steam, sulfide gas. Otherwise, the product may deform and fail.

2) Accessories

Name	Qty	Remarks
Wired controller	1	\
Cross round head wood mounting screw	3	GB950-86 M4×20 (For mounting on the wall.)
Cross round head mounting screw	2	GB823-88 M4×25 (For mounting on the electrical switch box.)
Installation manual	1	\
Owner's manual	1	\
Plastic expansion pipe	3	For mounting on the wall.
Plastic screw bar	2	For fixing on the 86 electrician box.
Switching wires for signal receiving board	1	For connecting the signal receiving board and 4-core shield wire.
Switching wires for wired controller signal	1	(If needed) For connecting the main control panel and 4-core shielding wire.

3) Supplied assemblies on the site

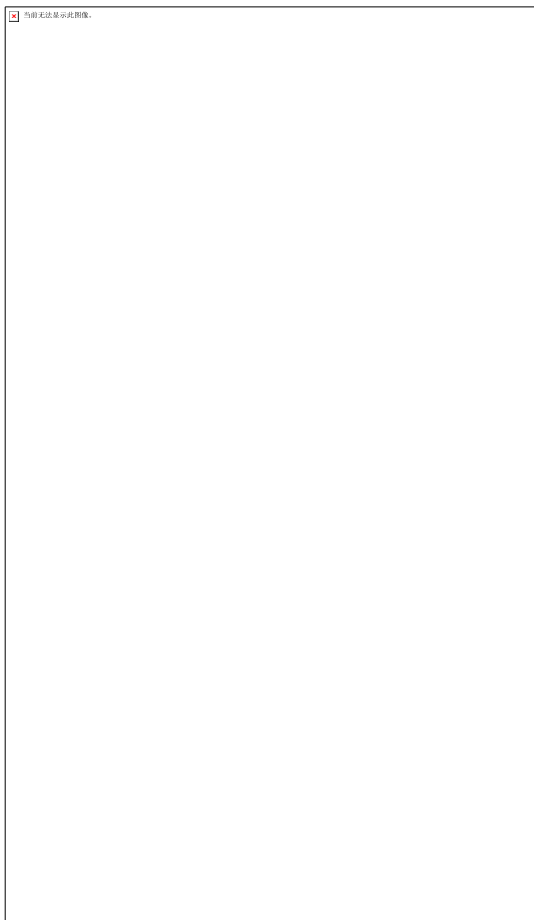
Name	Qty (Embedded into wall)	Specification (Only for reference)	Remarks
4-core shielded cable	1	RVVP-0.5mm ² ×4	The longest is 15m.
86 Electrician box	1	\	\
Wiring tube (Insulating sleeve and tightening screw.)	1	\	\

Notes to installation of wire controller

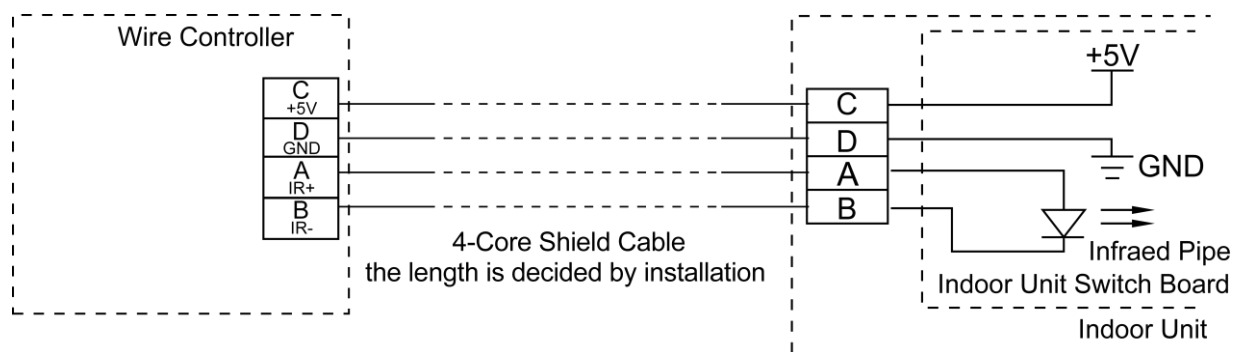
- ✓ The installation manual contains information about the procedure of installing wired controller. Please refer to indoor unit installation manual for connecting between wired controller and indoor unit.
- ✓ Circuit of wired controller is low voltage circuit. Never connect it with a standard 220V or 380V circuit or put it into a same wiring tube with the circuit.
- ✓ The shield cable must be connected stable to the ground, or transmission may fail.
- ✓ Don not attempt to extend the shield cable by cutting, if it is necessary, use terminal connection block to connect.
- ✓ After finishing connection, do not use megger to check the signal wire.

4) Installation procedure

1. Wired remote controller structure size figure (Unit: mm):

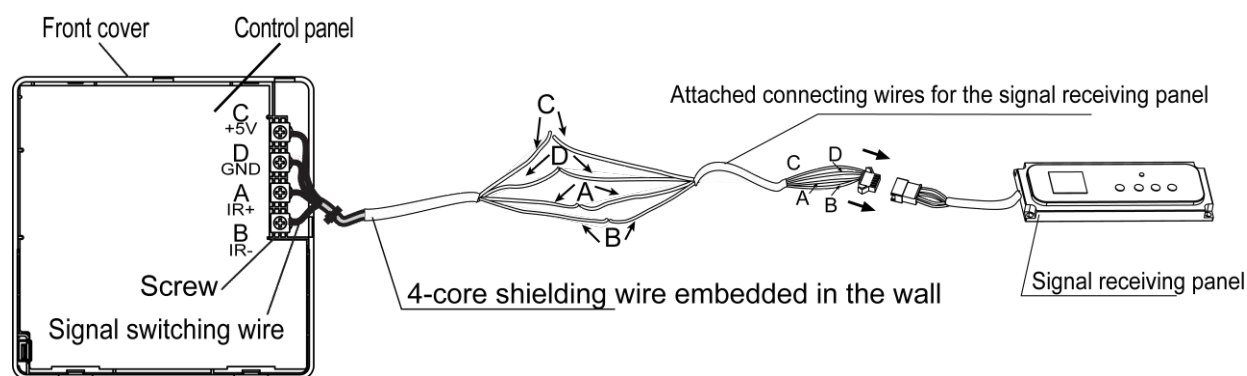


2. Wiring principle sketch:

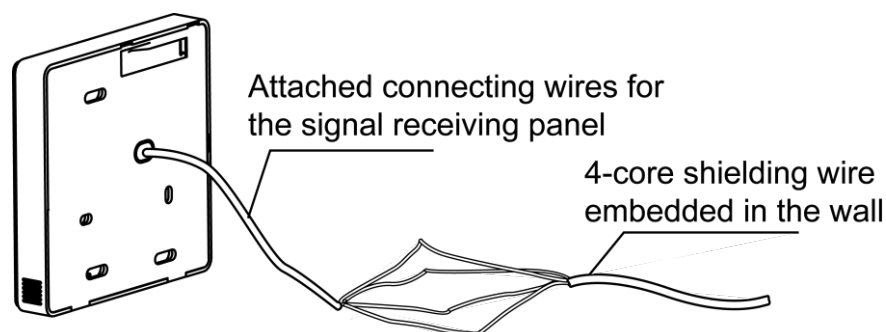


3. Wiring figure:

- Connect two terminals of embedded 4-core shielding wire with the switching wires of wired controller and signal receiving board. Make sure the sequence of 4 terminals (A, B, C and D) should correspond to the wire sequence of signal switching wires (A, B, C and D).



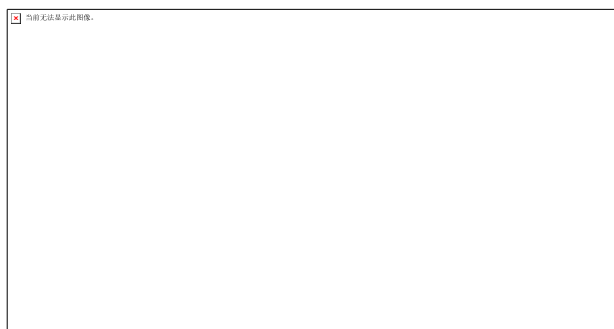
- If the embedded 4-core shielding wire cannot go through the wired controller, it can use signal switching for connection, make sure the wires are reliable and firm.



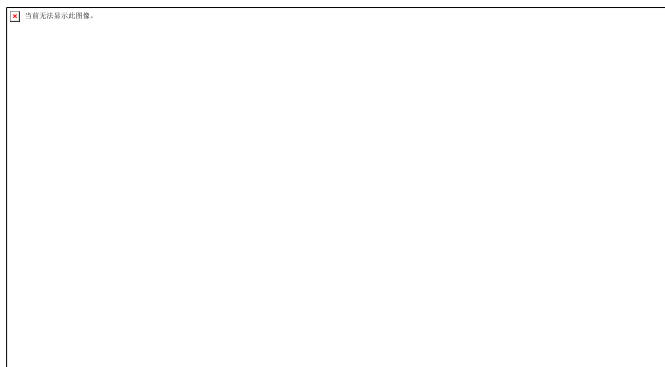
- The tightening torque range of screw is: $0.8 \sim 1.2 \text{ N} \cdot \text{m}$ ($8 \sim 12 \text{ kgf} \cdot \text{cm}$).

4. Wired controller back cover installation

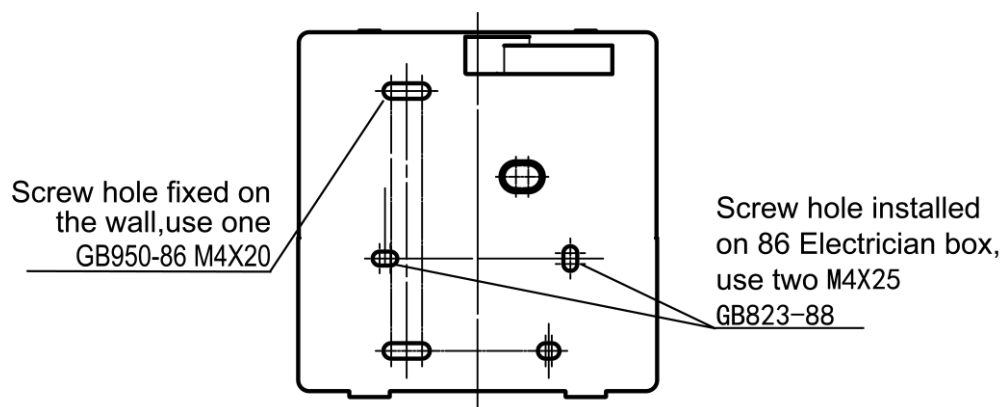
- Use straight head screwdriver to insert into the buckling position in the bottom of wired controller, and spin the screwdriver to take down the back cover. Pay attention to spinning direction, otherwise the back cover will be damaged.



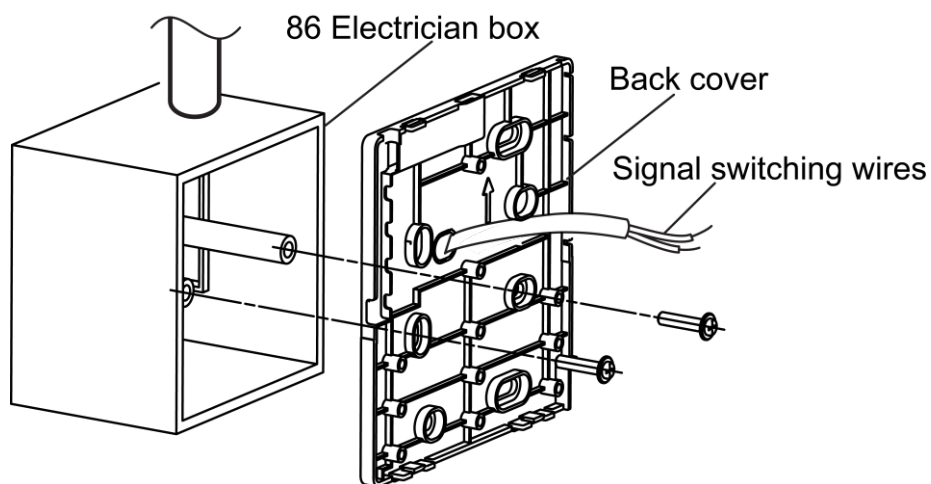
- Use three GB950-86 M4×20 screws to directly install the back cover on the wall.



- Use two M4×25 GB823-88 screws to install the back cover on the 86 electrician box, and use one GB950-86 M4×20 screw for fixing on the wall.



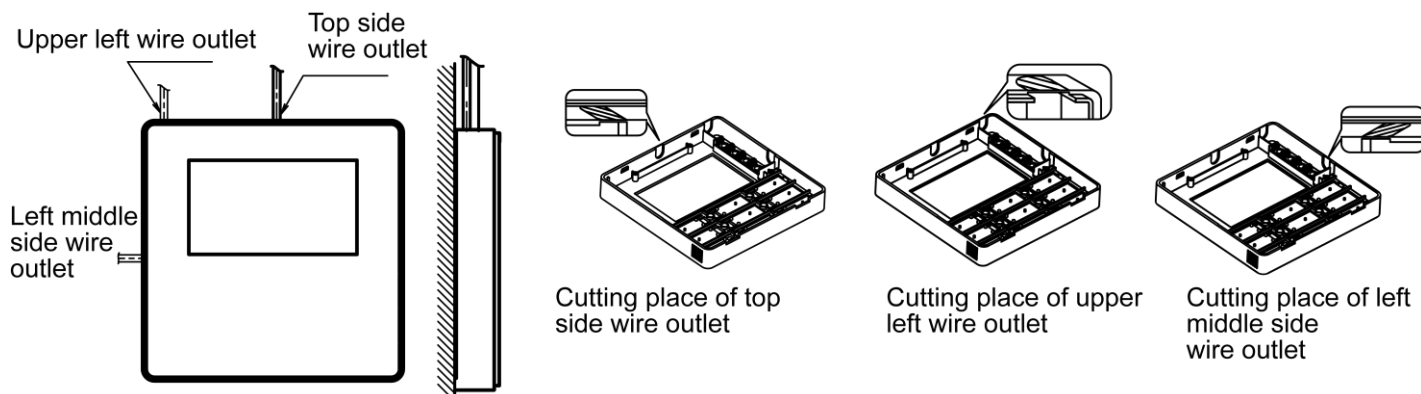
- Adjust the length of two plastic screw bars in the accessory to be standard length from the electrical box screw bar to the wall. Make sure when install the screw bar to the electric box screw bar, make it as flat as the wall.



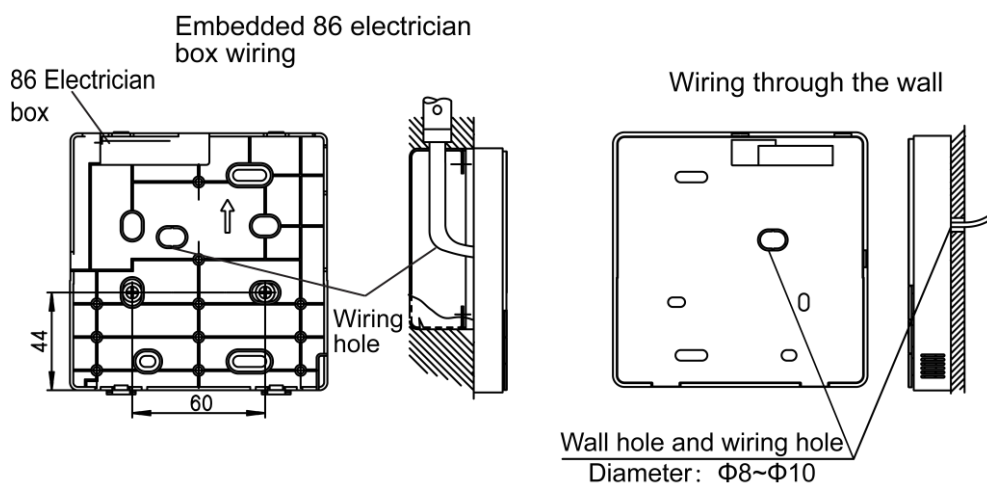
- Use cross head screws to fix the wired controller bottom cover in the electrical box through the screw bar. Make sure the wired controller bottom cover is on the same level after installation, and then install the wired controller back to the bottom cover.
- Over fasten the screw will lead to deformation of back cover.

5. Wiring

A. Wiring, three outlet positions



B. Shielded wiring



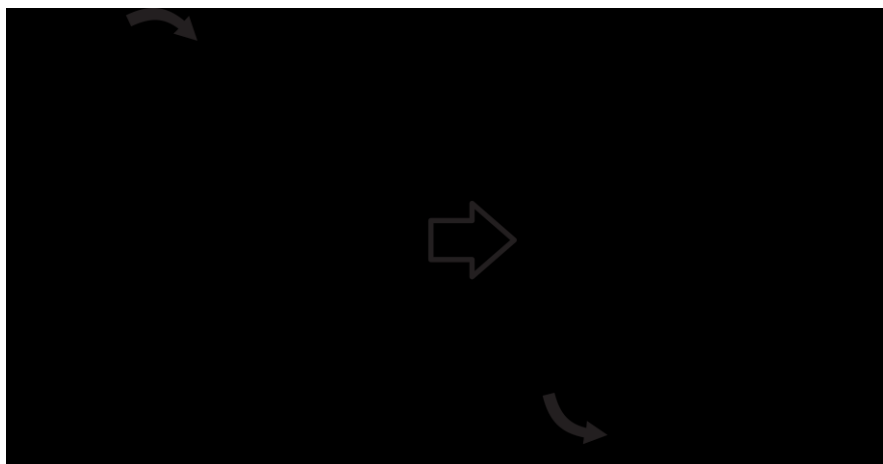
Avoid the water enter into the wired remote controller, use trap and putty to seal the connectors of wires during wiring installation.



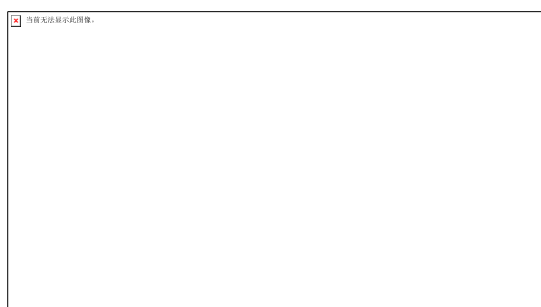
When under installation, reserve certain length of the connecting wire for convenient to take down the wired remote controller while during maintenance.

6. Wired controller's front cover installation:

After adjusting the front cover and then buckle the front cover. Avoid clamping the communication switching wire during installation.



Correct install the back cover and firmly buckle the front cover and back over, otherwise will make the front cover drop off.



7. Wired remote controller initial parameter setting:

- Change the related functions of the controller through adjusting the initial parameters.
- The wired controller initial parameter includes two codes "XY". The first code "X" means the function class, the second code "Y" means detailed configuration of this function.
- Setting method:

Step1: Simultaneously press the mode button  and fan speed button  of the wired controller for 5 seconds to enter the parameter setting state.

Step2: The value of the first code "X" is "0", press the temperature setting buttons  and  to adjust the second code value.

Step3: After setting the second code value, press Quiet/OK button /OK to switch the first code to the next value.

Step4: When the first code value is "6", press Quiet/OK button /OK again to exit the parameters setting.

- The parameters setting function only under the situation which need to adjust the default functions' setting states; otherwise there is no need to do the setting.

First code	Function	Second code				
		0	1	2	3	4
0	Cooling-only/Heat pump selection	Heat pump (Default)	Cooling only	\	\	\
1	Indoor unit communication address setting	Yes (Default)	None	\	\	\
2	Power-off memory	Yes (Default)	None	\	\	\
3	Filter cleaning reminding	Cancel the reminding function	1250 hours	2500 hours	5000 hours	10000 hours
5	Remote receiving function	Yes (Default)	None	\	\	\
6	Centigrade/Fahrenheit display	Centigrade (Default)	Fahrenheit	\	\	\

Note: The second code of the filter cleaning reminding is 2500hours, which as default.