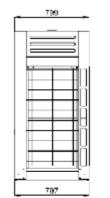
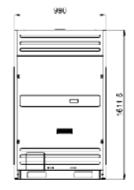
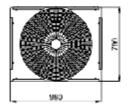
# 2. Dimensions

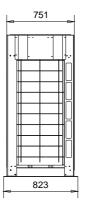
#### MDV-D252W/CSN1 MDV-D280W/CSN1 MDV-D335W/CSN1

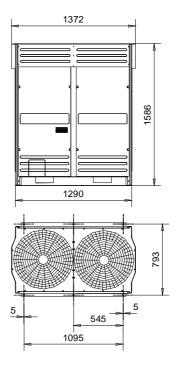






#### MDV-D400W/CSN1 MDV-D450W/CSN1



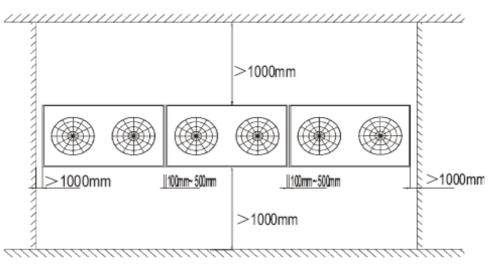


# 3. Service Space

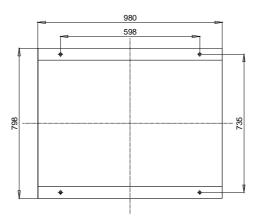
3.1 Power supply equipment is preferred to be installed by the side of the outdoor unit;

3.2 Ensure there is sufficient space for the maintenance of the outdoor unit;

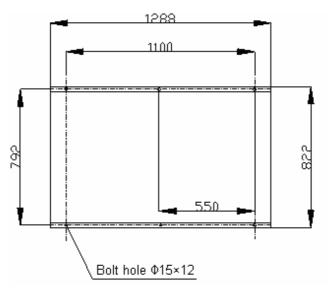
3.3 Proper space between outdoor units should be kept;



**3.4** Distance between foot screws is shown as follows; (unit: mm) MDV-D252W/CSN1 MDV-D280W/CSN1 MDV-D335W/CSN1



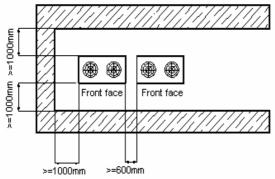
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MDV-D400W/CSN1 MDV-D450W/CSN1
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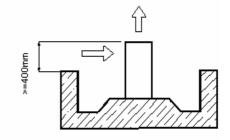


#### 3.5 Outdoor unit arrangement

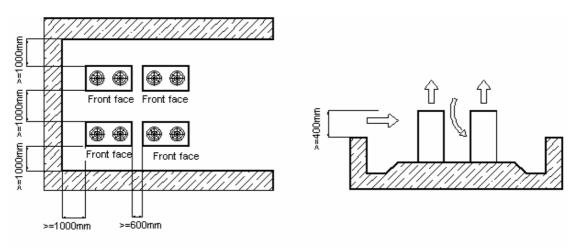
Outdoor units are higher than the surrounding buildings

### Outdoor units are aligned in one line

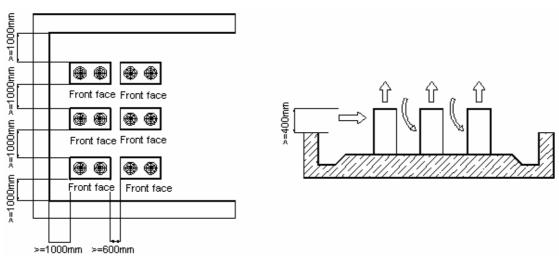




Outdoor units are aligned in two lines

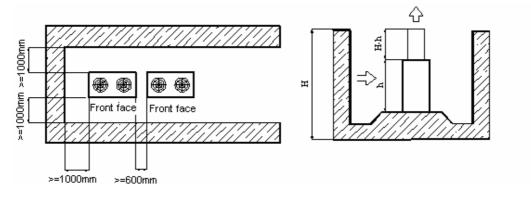


#### More than 2 lines of outdoor units

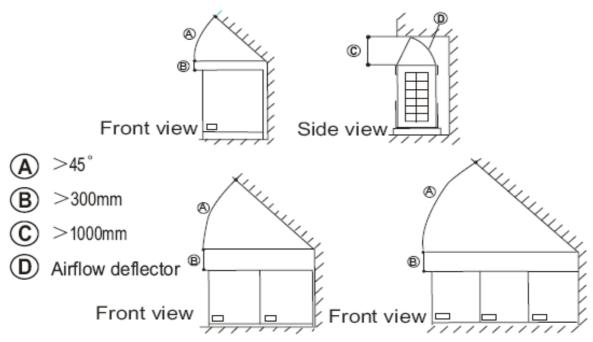


3.6 Outdoor units are lower than the surrounding obstacles

If the outdoor units are lower than the surrounding obstacles, in order to ensure an effective "heat exchange "a conduit is strongly recommended to help the heat emission and avoid the discharging air being absorbed into the system again. The conduit is made on the installation spot with the height HD=H-h. (Note: Because the outdoor fan motor have no enough static pressure, the Max. Length should be less than 3meters.)



**3.7** When there are obstacles above the outdoor unit:



The top of any pile around the outdoor unit should be at least 800mm below the unit top, unless there is mechanism for air discharging.

# 4. Piping Diagrams

4.1 Refrigerant System Diagram

There's no constant speed compressor "F2" in the 8  $_{\sim}$  10  $_{\sim}$  12HP system.

4.2 Function of key parts

ST1: when the operating mode of A/C system changes, turn the flow direction of the refrigerant;

ST2: change the heat exchanger area according to the load in cooling mode;

EXV: adjust the refrigerant flux;

SV1: when there're more than one module in the combination, SV1 is used to cut off the refrigerant flow among modular. If the module is in standby mode, Sv1 will be closed and refrigerant can't enter the module; SV2: cooling down the compressor when the discharge gas temperature of any compressor is more than 100C;

SV3: adjust heat-exchanger area of outdoor when in heating mode;

SV5: used when starting heating mode or defrosting mode;

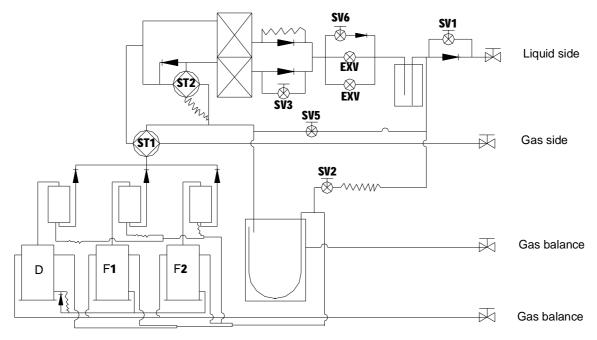
SV6: adjust the refrigerant flux in cooling mode. And in heating mode it will be always open.

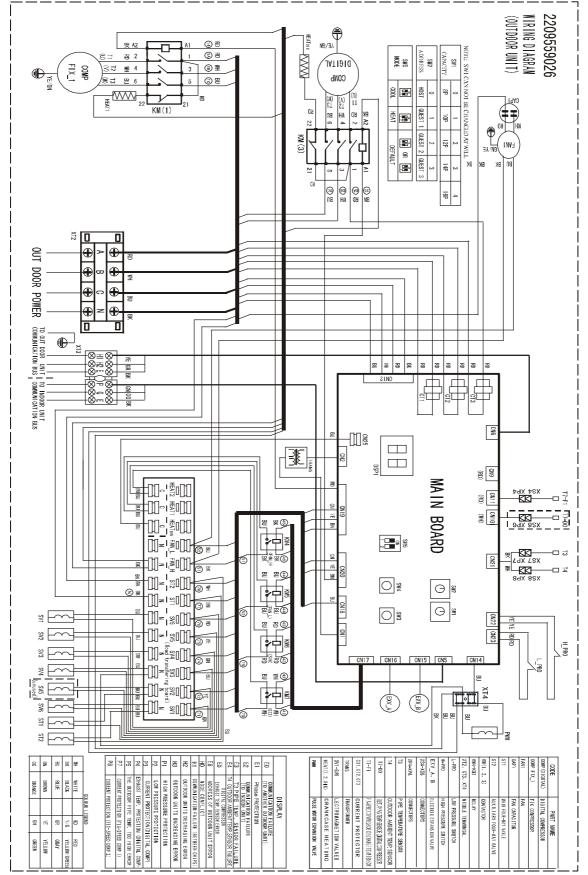
- 4.3 How to check the valves:
- a) Electronic Expansion Valve (EXV): when the outdoor unit is power on , the two EXVs firstly close with 700p,then they open with 350p and enter standby mode, two EXVs' action is not at the same time.
- b) Electromagnetic Valve:

when the outdoor unit is power on, the SV1 open immediately, so you can check the valve as soon as the outdoor unit is power on;

when the compressor starts working in heating mode, the SV3 is open immediately, so you can check the valve as soon as the compressor start; 5 minutes after the outdoor unit start heating mode,SV5 will open; when the compressor starts working in cooling mode, the SV6 open immediately, so you can check the valve as soon as the compressor starts; control the discharge temperature by adjusting the resistance of the temperature sensor, when the discharge temperature is higher than  $105^{\circ}$  SV2 open immediately.

c) Four way valve: when starting heating mode, main four-way valve ST1 turn direction after the compressor has worked for 55s; when the capacity demanded by the indoor unit is less than 12, the auxiliary four-way valve ST2 turn direction.





# 5. Wiring Diagrams

MDV-D252W/CSN1 MDV-D280W/CSN1 MDV-D335W/CSN1

#### MCAC-DTSM-2006-01 MDV-D400W/CSN1

MDV-D450W/CSN1

#### WIRING DIAGRAM (Outdoor Unit) 2209559014 ND/BA HEATING 몇 A2 S -NOTE: SW1 -MW ⊜⊐ ස2 © 2 SW2 ADDRESS SW5 APACITY DIGITAL SW1 FIX\_1 ₫ 4 ()) ∰ 57 COMP 3 ⊕ COWb 1 CAN NOT BE CHANGED AT WILL 0 1 1 2 1 YE/0 <u>چ</u> ತವ **2**6 5 (영) HOST 8 0 (N) E1 731 N8 HM 08 6 4 2 TIANO 22 l<sub>21</sub> KM(1) Œ GUEST 1 [恴] Ē 🗃 Ж А2 \_\_\_\_\_ \_ \_ \_ 22 สม P ãÛ 召 GUEST 2 CUEST 3 哭 A2 EANI 12P 8 . FAN2 -DEFAULT © 3 ω R R ≘ = 공 2 FIX\_2 `≣ ≦ . BK Гnа <u>⊰⊰</u> ≇ 4 14P ΝЯ νя ew COMP 3 ⊕ 2 21 G YE/GN 87 86 88 HEAT2 5 00 80 NH BN 23 16P KM (2 ž 🖸 ۵ Ð • g DOOR Ð Ð Ð Ð POWER R Ð Ð 口 D TO OUT DOOR U $^{\odot}$ . T3 8 2 3 ₩ RD 33 ß 8 I BUS 28 곰 GR BK CN12 COMMUNICATION BUS (GN 06 b) CN6 -00 ŝ 30 CN2 DSb 1 2 9X 28X (RD) MAIN tax tsx ē Ξ UB (RD) III~i≣III BOARD (WH) 2 **≋@** 8 KINA (FAN H) BK \_\_\_\_\_9 \_\_\_\_\_9 () B CN21 III≈ ŽOII କ୍ର = =® Ĕ ≨l 4 BN -\_\_\_\_'≋0∭• **○**¥ ⊖ ≋ 2 % ∭≈i≅I∭ 0118 Θ $\vdash \sim$ ſŨ≃¦≋ſŨŀ ٢ 0 GNZZ CN23 SV1 9<u>1</u> ∭≍ı≋ı∭ -SV2 RORD -∭~<sup>≣</sup>≝o∭· SV3 \_\_\_\_ 8888 CN17 CN16 CN15 CN5 L PRO ŝ 6 Unused -00-=<sup>‡</sup>so00 SV4 ≝ ≣® æ III≃į̃≋o[]] 20 SV2 XT4 EXV\_A EXV\_B SV6 L 뿯 181 B 6 뚖 22 22 1œ SI I ST2 $\overline{}$ ED COMMUNICATION FAILURE ED FTO COMMUNICATION FAILURE ED FTO COMMUNICATION FAILURE ED FTO FEED COMMUNICATION FAILURE ED 96 BR 8 8 ₹ PW HEAT (1, 2, 01G) TRANS 17-51 XP4-XP8 XS4-XS8 EXV\_A. B COMP\_FIX\_1, 2 FAN1, FAN2 CAP1, CAP2 中限 L-PRO COMP (DIGITAL CODE ADDRESS OF OUTDOOR UNIT ERROR NODE CONFLICT COMMUNICATION FAILURE (GETMEEN CHIPS) 5 , 2, 3) CONVUNICATION FAILURE (BETWEEN CHIPS) OUTDOOR UNITS DECREASING ERROR OUTDOOR UNITS INCREASING ERROR Phase PROTECTION COMMUNICATION FAILURE (TO WOOR ONT) T3 OPPE TEMP. SENSOR FAILURE 14 OUTOOR AUBIENTEUP SENSOR FAILURE DIETAL COMPRESSOR 、17-F2 BLACK ORANGE BROWN CURRENT PROTECTION (FIX-SPEED COMP 2) CURRENT PROTECTION (FIX-SPEED COMP 1) DISPLAY OUT LANNO TENY SENSTE (NGTA, COMPRESSOR HEI AFER COLORESY R. NICTURGE TRIPS ENGR CONNECTORS PIPE TEMPERATURE SENSOR NIDDLE TERNINGAL LOW PRESSURE SWITCH FAN CAPACITOR PULSE NOTOR EXPANSION VALVE CURRENT PROTECTOR TRANSFORMER GRANKGASE HEATING RELAY FIX COMPRESSOR CONVECTORS HIGH PRESSURE SWITCH CONTACTOR IA IN FOUR-WAY VAVI DIGITAL COMPRESSOR ECTRIC EXPANSION VALVE TROMAGNET PART NAME ARY FOUR-TA £ ≓ ©90 ∑\_6 AMBIENT TEMP. SENS SM VALVE RED YELLOW/GREEN GRAY GREEN YELLOW COMP ERROR ONP

# 6. Functional parts and safety devices

Part	Model		MDV-D252, 280W/CSN1	MDV-D335W/CSN1
Compressor	Digital Scroll		ZPD72KCE-TFD-433	
	Constant Scroll		ZP57K3E-TFD-422	ZP67KCE-TFD-420
	Opening temperature		<b>110±5℃/ 145±5℃</b>	<b>110±5℃ / 145±5℃</b>
	Trip current		64A (2~10s) /47 A (2~10s)	64A (2~10s) / 55A ( 2~10s)
	Crank case heater		70W×2	
Security Devices	Outdoor fan motor		YDK400-8-YA	
	Safety thermostat of	On	145±5℃	
	fan motor	Off	95±	<b>15</b> ℃
	High pressure switch		OFF: 44kg/cm <sup>2</sup> / ON: 32kg/cm <sup>2</sup>	
	Low pressure switch		OFF: 0.5kg/cm <sup>2</sup> /ON: 1.5kg/cm <sup>2</sup>	
Temperature sensor	Temperature sensor (condenser outlet)		25°C=10ΚΩ	
	Thermostat (Digital discharge)		When Tmax $\geq$ 118°C all the compressors are off	
	Thermostat (Fixed discharge)			

Part	Model		MDV-D400,450W/CSN1	
Compressor	Digital Scroll / Constant Scroll		ZPD72KCE-TFD-433 / ZP67KCE-TFD-420 (X2)	
	Opening temperature		110±5℃ / 145±5℃	
	Trip current		64A (2~10s) / 55A ( 2~10s)	
	Crank case heater		70X3 W	
Security Devices	Outdoor fan motor		YKD450-6A ×2	
	Safety thermostat of	On	145±5°C	
	fan motor	Off	95±15℃	
	High pressure switch		OFF: 44kg/cm <sup>2</sup> / ON: 32kg/cm <sup>2</sup>	
	Low pressure switch		OFF: 0.5kg/cm <sup>2</sup> /ON: 1.5kg/cm <sup>2</sup>	
Temperature sensor	Temperature sensor (condenser outlet)		25°C=10ΚΩ	
	Thermostat (Digital discharge)		When Tmax ${\geq}118^{\circ}{\rm C}~$ all the compressors are off	
	Thermostat (Fixed discharge)			