

# Outdoor Unit

## Specifications

### 208-230V~60Hz

MDV-V105W/DVN1

MDV-V120W/DVN1

MDV-V140W/DVN1

MDV-V160W/DVN1



Model			MDV-V105W/DVN1	MDV-V120W/DVN1	MDV-V140W/DVN1	MDV-V160W/DVN1
Power supply		V-Ph-Hz	208-230V~60Hz	208-230V-60Hz	208-230V-60Hz	208-230V-60Hz
Cooling	Capacity*	kW	10.5	12	14	15.5
		Btu/h	35,800	40,900	47,800	52,900
		Kcal/h	9,042	10,340	12,063	13,355
	Input	kW	2.68	3.25	3.95	4.52
EER	W/W	3.92	3.69	3.54	3.43	
Heating	Capacity*	kW	11.5	13.2	15.4	17
		Btu/h	39,200	45,000	52,500	58,000
		Kcal/h	9,906	11,373	13,269	14,647
	Input	kW	2.9	3.47	4.16	4.77
COP	W/W	3.97	3.80	3.70	3.56	
Indoor unit connectable		%	45%~130%	45%~130%	45%~130%	45%~130%
Max. quantity of indoor units			5	6	6	7
Outdoor sound level*(sound pressure level )		dB(A)	57	57	57	57
Compressor	Type		Rotary	Rotary	Rotary	Rotary
	Input	W	3,010	3,010	3,010	4,240
	Refrigerant oil	gal.(ml)	FV50S 0.177+0.058(670ml+200ml)	FV50S 0.230+0.166 (870+630)	FV50S 0.37+0.066(1400+250)	
Outdoor air flow		m <sup>3</sup> /h	5,100	6,000	6,000	6,000
		CFM	3,000	3,531	3,531	3,531
Refrigerant piping	Liquid side	in.(mm)	Φ3/8(Φ9.53)	Φ3/8(Φ9.53)	Φ3/8(Φ9.53)	Φ3/8(Φ9.53)
	Gas side	in.(mm)	Φ5/8(Φ15.9)	Φ5/8(Φ15.9)	Φ5/8(Φ15.9)	Φ5/8(Φ15.9)
Outdoor fan motor	Type		DC motor	DC motor	DC motor	DC motor
	Brand		Panasonic	Panasonic	Panasonic	Panasonic
	Output	W	72	2x85	2x85	2x85
Outdoor fan	Type		Axial fan	Axial fan	Axial fan	Axial fan
Outdoor unit Dimension	Body(WxHxD)	in.(mm)	38-31/32x38-1/32x13-15/64 (990x966x336)	35-7/16x52-1/4x12-19/32(900x1,327x320)		
	Packing (WxHxD)	in.(mm)	43-1/2x39-9/16x17-1/8 (1,105x1,005x435)	40-35/64x57-21/64-17-1/8(1,030x1,456x435)		
Weight	Net weight	lbs.(kg)	158.7(72)	209.4/209.4(95/95)	209.4/209.4(95/95)	220.5/224.9(100/102)
	Gross weight	lbs.(kg)	174.2(79)	233.7/233.7(106/106)	233.7/233.7(106/106)	244.7/249.1(111/113)
Refrigerant	Type		R410A	R410A	R410A	R410A
	Charged volume	lbs.(kg)	6.61(3)	7.3(3.3)	8.6(3.9)	8.6(3.9)
Connection wiring	Power Wiring	mm <sup>2</sup>	3 core x 4.0	3 core x 4.0	3 core x 4.0	3 core x 4.0
	Signal wiring	mm <sup>2</sup>	3 core shielded wire x 0.75			

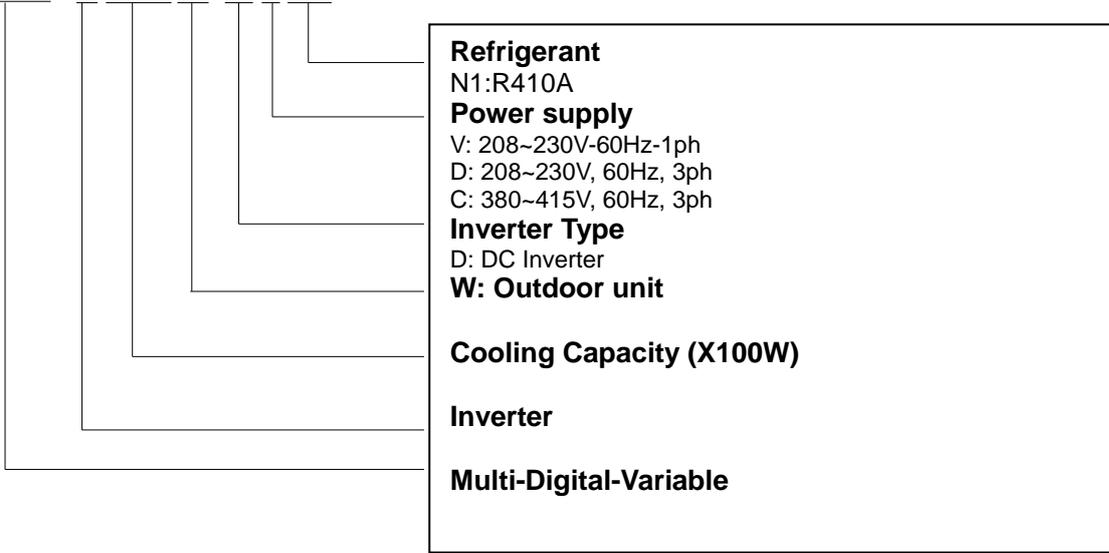
Note:

- The cooling conditions: indoor temp.: 27°C DB(80.6°F), 19°C WB(60°F) outdoor temp.: 35°C DB(95°F) equivalent pipe length: 5m drop length: 0m.
- The heating conditions: indoor temp.: 20°C DB(68°F), 15°C WB(44.6°F) outdoor temp.: 7°C DB(42.8°F) equivalent pipe length: 5m drop length: 0m.
- Sound level: Anechoic chamber conversion value, measured at a point 1 m(3.28ft) in front of the unit at a height of \*m( 1m(3.28ft) for 105 model,1.2m(3.94ft) for 120~160model). During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- The above data may be changed without notice for future improvement on quality and performance.

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## Nomenclature

### MDV-V120W/DVN1

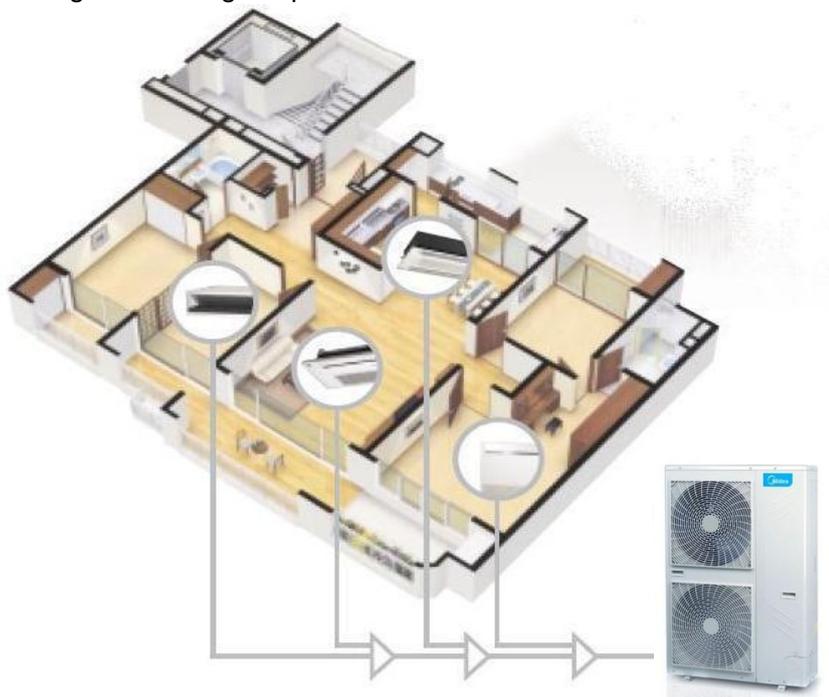


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## Features

### Widely application

The Full DC Inverter mini VRF system is a highly efficient solution for small commercial buildings requiring heating and cooling of up to 8 zones with one outdoor unit. Such as villa, restaurant, school etc.



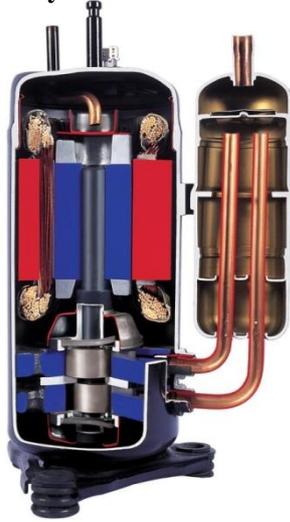
Midea offers a variety indoor unit, more than 100 models of 15 types. Capacity ranges are from 2.2Kw to 14Kw. it is full compliance with residential and light commercial place. Our systems can operate up to 130% of capacity which allows any system to be designed to the customers and applications needs.



**High efficiency and Energy-saving**

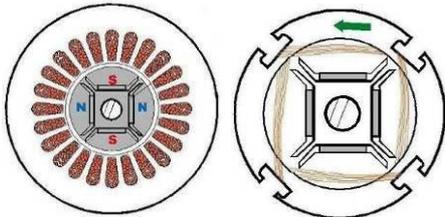
DC inverter Mini VRF realized the industry's top class energy efficiency with cooling and heating COP by adoption of Brushless Reluctance DC compressor control, DC Fan motor and improved heat exchanger performance with a new design.

**High efficiency DC inverter double rotor compressor, saving power 25%**



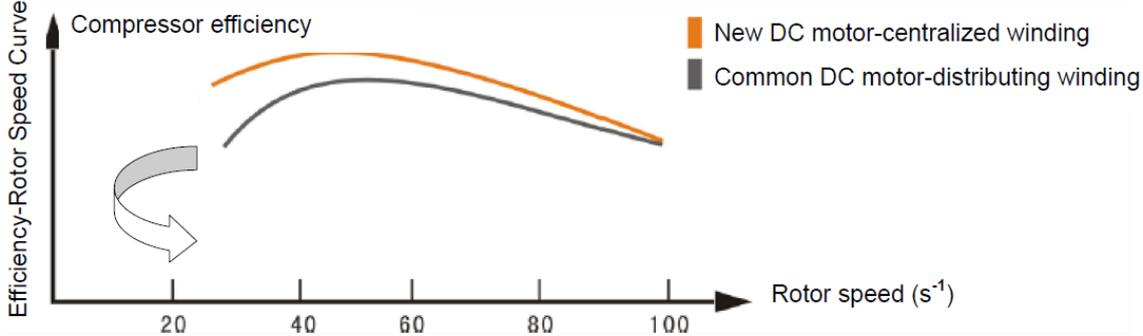
- High efficiency DC inverter
- Optimize compressor start-up technology
- Compact structure
- Double rotor compressor
- Better balance and lower vibration
- Compact structure

The AC load ratio of building is 30%-75%, the area is 55%, most of the AC runs in the mid load, so the mid load operation ratio control the whole year AC running charge.



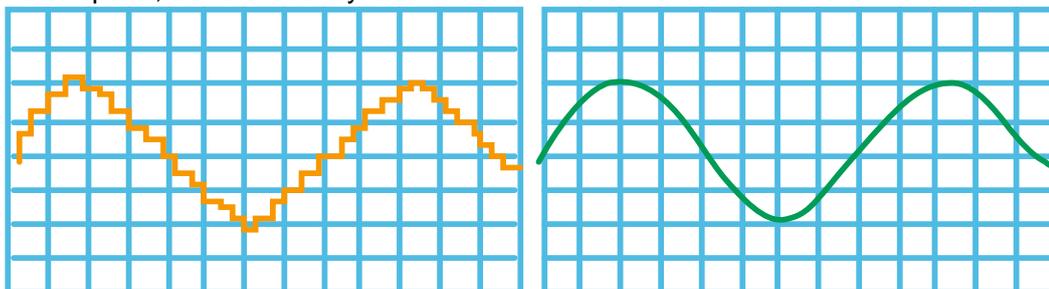
Centralizing winding

Distributing winding



**Smooth sine wave DC Inverter**

Motor uses 180° sine wave vector drive technology to ensure transducer to output smooth curve, which show motor rotor speed to run smooth. While, common frequency motor outputs smooth wave not to precisely show motor speed, so its efficiency is low.

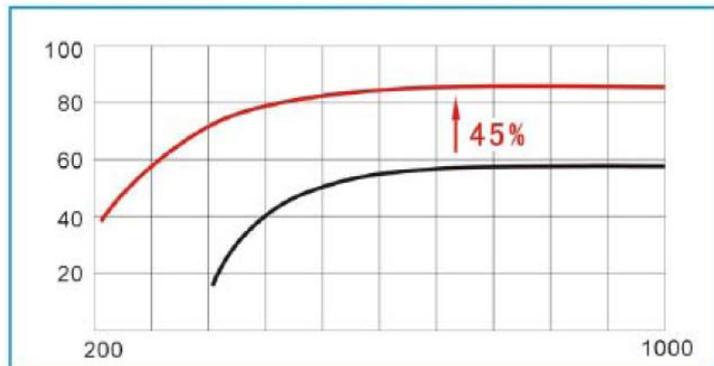
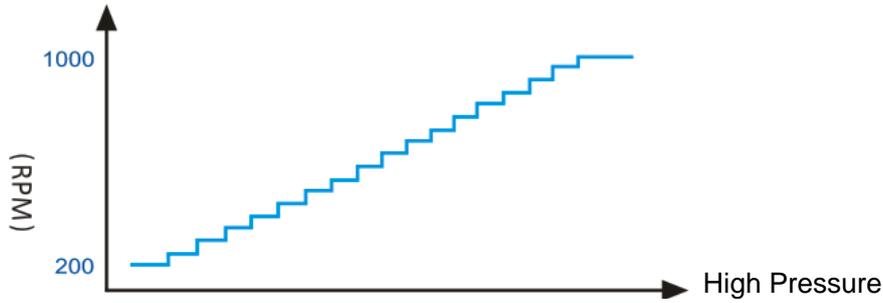


Common smooth wave Sine Wave DC inverter

**High efficiency DC Fan motor, saving power 50%**

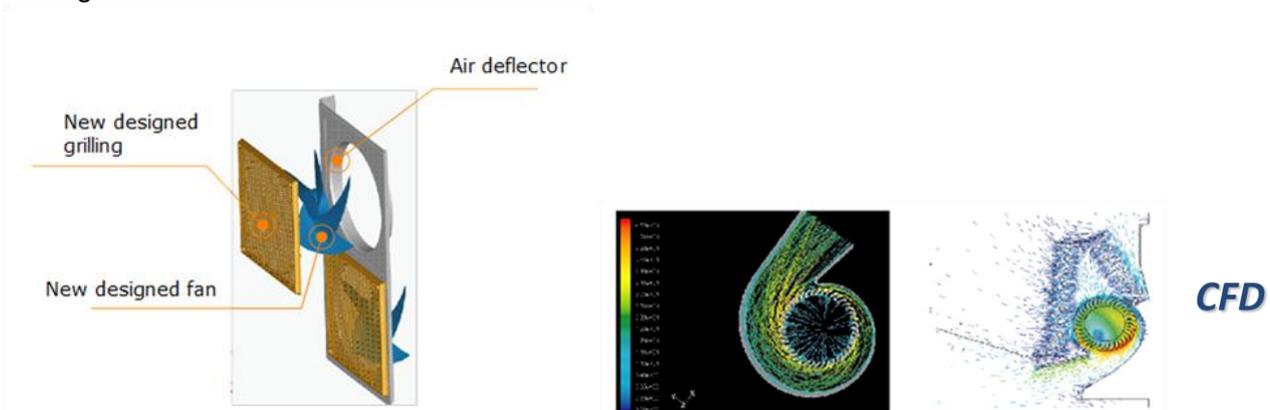
According to the running load and pressure, it controls the speed of DC fan to achieve the min. energy consume, to reach the best effect.

- Used across entire range of models.
- Efficiency improvement by up to 45% especially at low speed.



Motor rotor speed waves among  $\pm 5r$ , and can rapidly match DC Inverter Compressor to output, and enhance efficiency in part load.

Optically design the fan shape and air designed deflector, which increase the air volume and reduce the running noise.

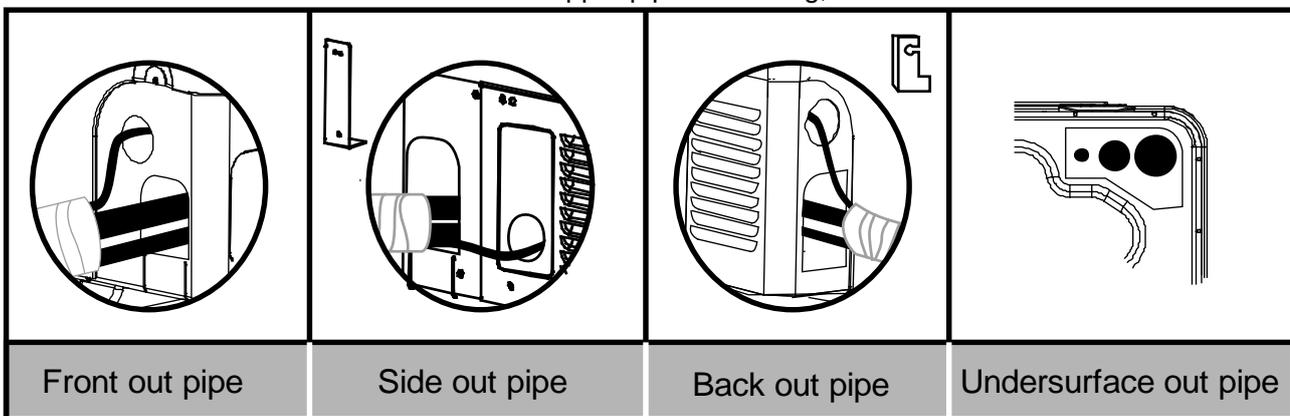


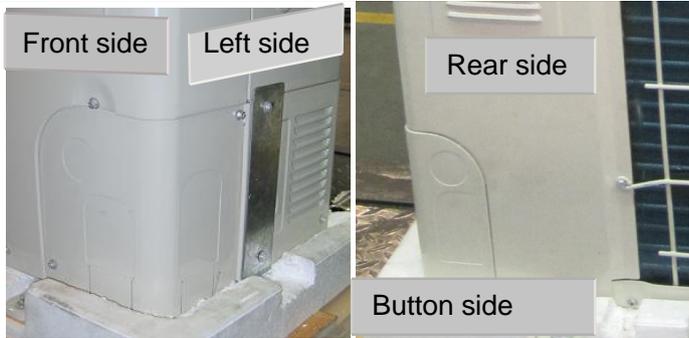
**Convenient for installation and service**

**Easy piping connection**

Branch pipe and Four divergence box is available for Full DC inverter system.

And Midea offers Four direction to connect copper pipe and wiring,





**Easy installation**

Branch pipe and four divergence box are both available for Full DC inverter system, can be selected according to customs variety requests.



Addressing outdoor units and indoor units are automatically done just by pressing the button of the controller

- The outdoor unit can automatically distribute the address to indoor units without any manual settings.
- Wireless controller can enquiry and modify every indoor units address.



It is possible to enable the shared use of the wiring between indoor & outdoor units, as well the centralized control.

Connect ammeter and CCM02 and NIM06 to Mini VRF to achieve power consumption calculation.

