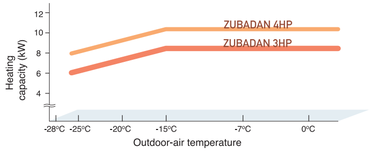
Hi-Power

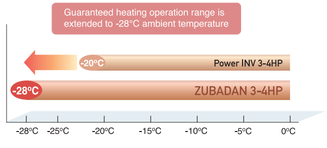
Even at the very low ambient temperature, our ZUBADAN can provide powerful heating.

- Our unique flash injection circuit enables the nomal capacity to be maintained to -15°C.
- The guaranteed operating range of the heating mode is extended to -28°C.

Improved Heating Performance

Mitsubishi Electric's unique "Flash Injection" circuit achieves remarkably high heating performance. This technology has resulted in an excellent heating capacity rating in outdoor temperatures as low as -15°C, and the guaranteed heating operation range of the heating mode has been extended to -28°C. Accordingly, the heat-pump units of the ZUBADAN Series are perfect for warming homes in the coldest of regions.

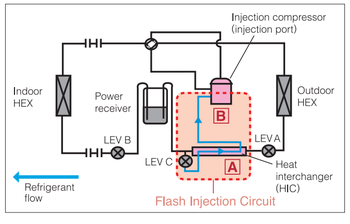




Mitsubishi Electric's Flash Injection Technology The Key to High Heating Performance at Low Outdoor Temperatures

■ Flash Injection Circuit

ZUBADAN



A Heat Interchanger (HIC)

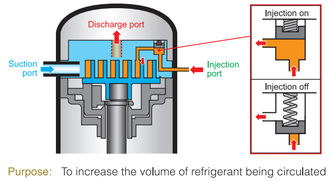
HIC cross-sectional view

Purpose: Transform liquid refrigerant into liquid-gas state

Effect: Injection circuit increases energy efficiency

The compressor is subjected to a heavy load when compressing liquid refrigerant, and the result is lower operation efficiency. The addition of HIC supports refrigerant heat exchange at two different pressure levels. The heat-exchange process transforms the injected liquid refrigerant into a gas liquid state, thereby decreasing the load on the compressor during the compression process.

B Injection Compressor



Purpose: To increase the volume of refrigerant being circulated

Effect: Improves heating capacity at low outdoor temperatures, and enables higher outlet temperature adjustment and higher defrost operation speed

Refrigerant passes from the HIC into the compressor through the injection port. Having two refrigerant inlets makes it possible to raise the volume of refrigerant being circulated when the outdoor temperature is low and at the start of heating operation.

Specifications

■ Outdoor unit

MODEL NAME			PUHZ-SW75YAA(-BS)	PUHZ-SW100VAA(-BS)	PUHZ-SW75YAA(-BS)	PUHZ-SW100YAA(-BS)	PUHZ-SHW80VAA(-BS)	PUHZ-SHW112VAA(-BS)	PUHZ-SHW80YAA(-BS)	PUHZ-SHW112YAA(-BS)
POWER SUPPLY(Phase, cycle, voltage)			1φ, 230V, 50Hz		3φ, 400V, 50Hz		1φ, 230V, 50Hz		3φ, 400V, 50Hz	
MAX. Current		A	22.0	28.0	11.5	13.0	22.0	29.0	13.0	13.0
Braker size		A	25.0	32.0	16.0	16.0	25.0	32.0	16.0	16.0
Dimensions		HxWxD	1020 x 1050 x 480							
Weight		Net(kg)	92	114	104	126	116	116	128	128
		Gross(kg)	107	129	119	131	131	131	143	143
Heating		P.desing(kW)	7.1	10.0	7.1	10.0	9.0	12.7	9.0	12.7
		SCOP	3.31	3.32	3.28	3.30	3.39	3.46	3.36	3.44
		ηs	129	130	129	130	133	135	133	135
		RANK	A++	A++	A++	A++	A++	A++	A++	A++
	A7W35	Capacity(kW)	8.0	11.2	8.0	11.2	8.0	11.2	8.0	11.2
		COP	Under study	4.46	4.40	4.46	4.65	4.46	4.65	4.46
	A2W35	Capacity(kW)	7.5	10.0	7.5	10	8.0	11.2	8	11.2
		COP	3.4	3.32	3.40	3.32	3.55	3.22	3.55	3.22
DHW		ηwh	104	103	104	103	103	103	103	103
		RANK	A	A	A	A	A	A	A	A
Cooling	A35W7	Capacity(kW)	7.1	10.0	7.1	10	7.1	10.0	7.1	10
		COP	2.7	2.83	2.70	2.83	3.31	2.83	3.31	2.83
	A35W18	Capacity(kW)	7.1	10.0	7.1	10	7.1	10.0	7.1	10
		COP	4.4	4.47	4.43	4.47	4.52	4.74	4.52	4.74
Outlet water temp		Heating(°C)	+60	+60	+60	+60	+60	+60	+60	+60
		Heating(kg/min)	22.9	32.1	22.9	32.1	22.9	32.1	22.9	32.1
Water Flow rate		Lot1(kg/min)	14.3	20.1	14.3	20.1	14.3	20.1	14.3	20.1
		Cooling(kg/min)	20.4	28.7	20.4	28.7	20.4	28.7	20.4	28.7
Sound pressure level (SPL)	Heating	dB(A)	43	47	43	47	45	47	45	47
Sound power level (PWL)	Heating	dB(A)	58	60	58	60	59	60	59	60
PiPing	Diameter	Liquid(mm)/Gas(mm)	9.52 / 15.88							
		Max.Length(m)	40	75	40	75	75	75	75	75
		Chargeless(m)	10	10	10	10	30	30	30	30
		Max.Length(m)	30							
Refrigerant			R410A(GWP2088)	R410A(GWP2088)	R410A(GWP2088)	R410A(GWP2088)	R410A(GWP2088)	R410A(GWP2088)	R410A(GWP2088)	R410A(GWP2088)
		Chargeless(kg)	3.0	4.2	3.0	4.2	4.6	4.6	4.6	4.6
		CO_2 equivalent(t)	6.27	8.77	6.27	8.77	9.61	9.61	9.61	9.61
		MAX.(kg)	4.8	6.0	4.8	6.0	6.0	6.0	6.0	6.0
		CO_2 equivalent(t)	10.03	12.53	10.03	12.53	12.53	12.53	12.53	12.53
Guaranteed operating range		Heating(°C)	-20 to +24	-20 to +24	-20 to +24	-20 to +24	-28 to +24	-28 to +24	-28 to +24	-28 to +24
		DHW(°C)	-20 to +35	-20 to +35	-20 to +35	-20 to +35	-28 to +35	-28 to +35	-28 to +35	-28 to +35
		Cooling(°C)	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46

Dimension and required space

Height	Depth	Width	m3
1020	480	1050	0,51

Required space in front of the unit is just 350mm.
It realizes the same installation space with current model.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
http://Global.MitsubishiElectric.com

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MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow

Air-to-water Heat Pump Systems

10th anniversary ecodan

ecodan
Renewable Heating Technology

Mitsubishi Electric Quality

“ecodan” can heat rooms and supply domestic hot water, realising greater comfort and energy saving.

“ecodan” – Economic, eco conscious next generation heating system

Both energy-saving and safe for the environment, the Mitsubishi Electric ecodan incorporates a highly efficient heat pump system that captures “the heat in the air”, a renewable energy resource. Equipped with advanced inverter control, meticulous temperature control assures comfortable heating, and its space-saving “All-in-one” indoor unit is easy to install. These energy-saving, high comfort and simple installation characteristics have drawn the ecodan heating system into the spotlight centre stage.

Excellent ecodan’s heating performance, even at low outdoor temperature!

INDOOR UNIT	OUTDOOR UNIT			
Packaged type	Small capacity (Under 5kW)*	Medium capacity (7.5kW~14kW)*		Large capacity (≧16kW)*
ZUBADAN		PUHZ-HW112/140		
POWER INVERTER	PUHZ-W50	PUHZ-W85	PUHZ-W112	
Split type	Small capacity (Under 5kW)*	Medium capacity (7.5kW~14kW)*		Large capacity (≧16kW)*
ZUBADAN		NEW PUHZ-SHW80/112AA	PUHZ-SHW80/112/140	PUHZ-SHW230
POWER INVERTER	PUHZ-SW50	NEW PUHZ-SW75/100AA	PUHZ-SW75 PUHZ-SW100/120	PUHZ-SW160/200
Eco Inverter	SUHZ-SW45			
ATA/ATW Hybrid system	Small capacity (Under 5kW)*	Medium capacity (7.5kW~14kW)*		Large capacity (≧16kW)*
Mr.SLIM+		PUHZ-FRP71		
PUMY + ecodan		PUMY-P112/125/140		

*Rated capacity is at conditions A2W35. (according to EN14511)

Hydro box, cylinder unit

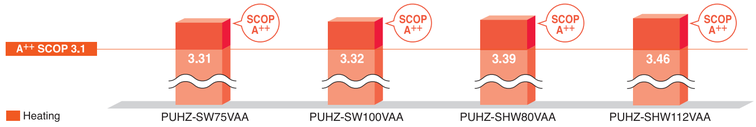
Reversible hydro box, Reversible cylinder unit

Dedicated Heat Pump Outdoor Unit for Residential ATW Application.

High performance

ErP Lot 1 Compliant with highest seosonal space heating energy efficiency class A++

Powerful heating yet annaully high energy efficiency, achieving rank A++.

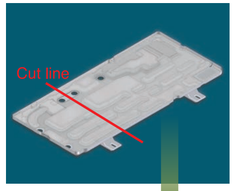


New compresser

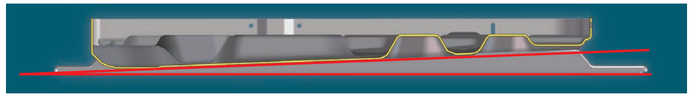
- **Compact**
- **High performance**

* for PUHZ-SW100V/YAA
PUHZ-SHW80V/YAA
PUHZ-SHW112V/YAA

Higher reliability



sectional view



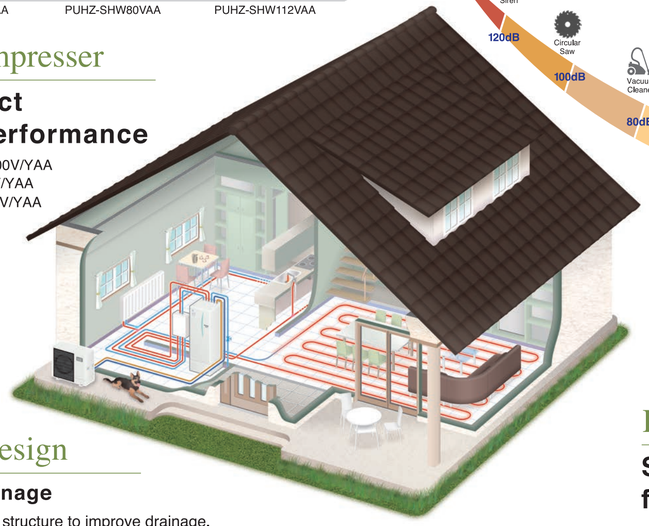
New base design

Improving drainage

- Optimising the base structure to improve drainage.
- Slope on the base achieves smooth and faster drainage.

Optimizing defrost control and operation.

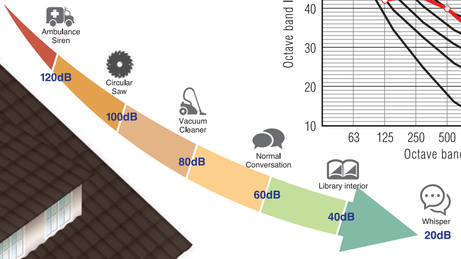
Optimizing outdoor unit heat exchanger to avoid ice-forming.

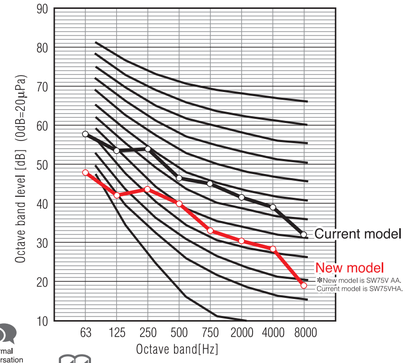


Low noise

Noise reduction -10dB(A)

10dB(A) less in PWL comparing with the current models (of 3-4HP).

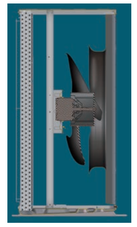




Blowing Air

To reduce fan noise

- Optimising fan position
- Optimising bell mouth shape
- Bigger fan diameter



Enclosing noise

Shutting out noise from compressor.

- The structure of double enclosing
Primary : enclosing a compressor
(the structure is patented.)
Secondary : enclosing machine room.

Avoiding vibration and resonance

- Dedicated soft rubber mount for the compressor to avoid vibration.
- Optimising piping structure to avoid vibration and resonance.