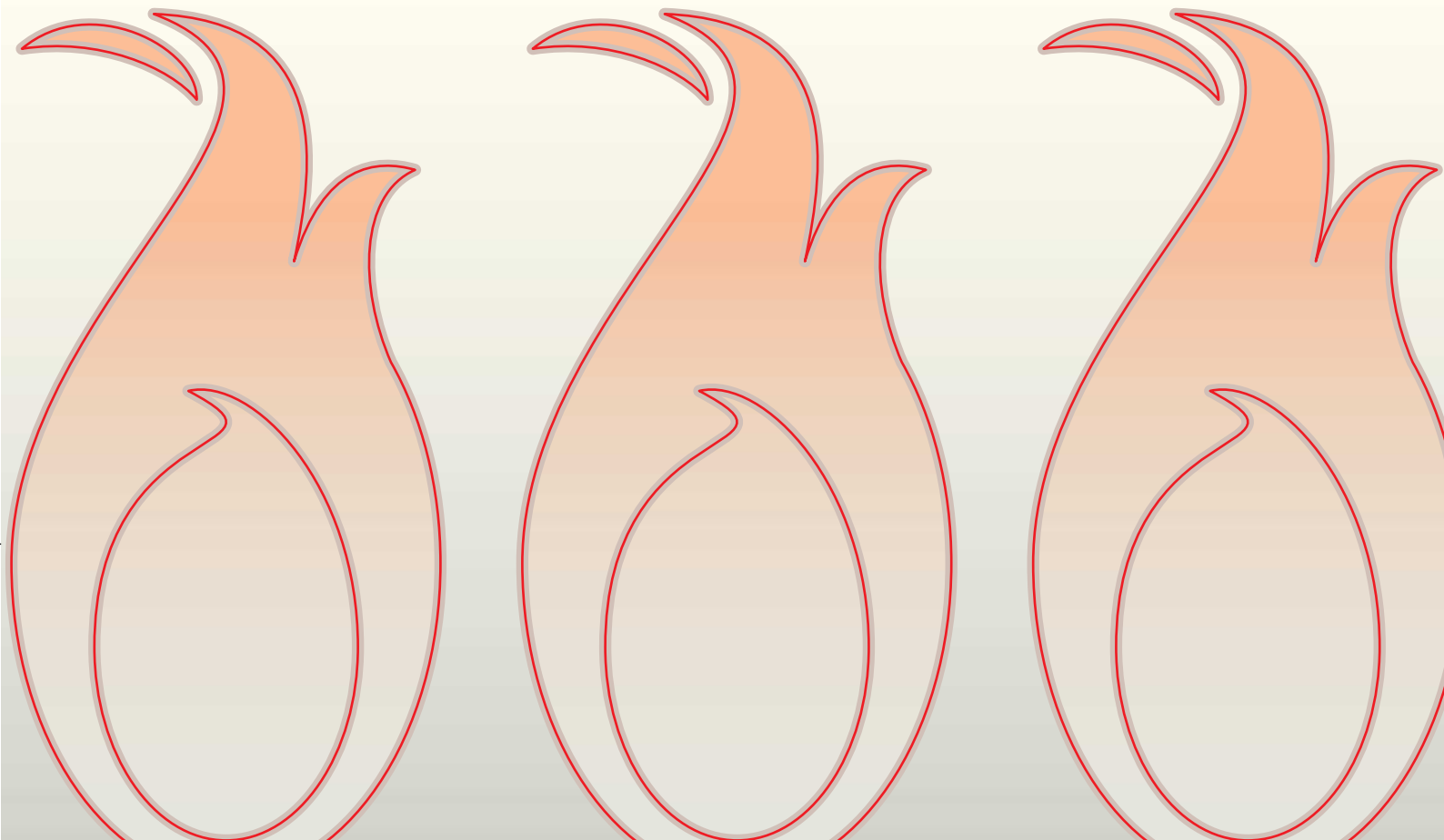
MITSUBISHI ELECTRIC

AIR CONDITIONING SYSTEMS

Changes for the Better

ZUBADAN

CITY MULTI

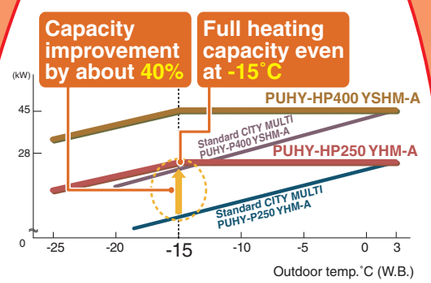


ZUBADAN

As a market leading company, we introduce CITY MULTI ZUBADAN heat pump system; it achieves an incredibly high heating performance even at low outdoor temperature. ZUBA short form of "zubbato" in Japanese and meaning exactly or promptly, and DAN meaning warm, with its expanded heating capabilities, ZUBADAN sets a new standard in performance.

Warm it, and sense our comfort.

Stable Heating Performance
even at -15˚C



Heating capacity

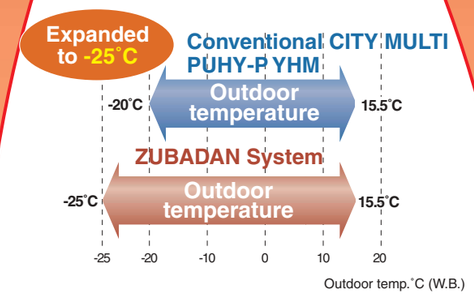
Maximum Stable Operation

By utilizing our advanced Flash Injection Circuit, the system can not only provide continuous heating for up to 250 minutes in one continuous cycle, but also significantly lessens defrost time to give an exceptionally stable heating operation.

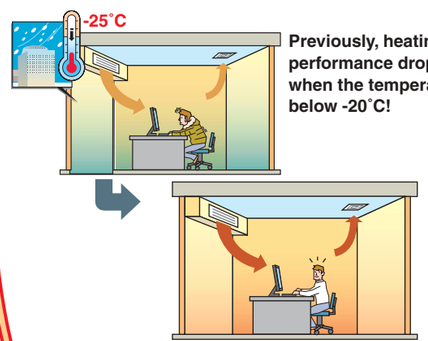
Heating up to 250 min. straight

Reduced Defrosting time

Expanded Heating Operation
down to -25˚C



Heating Operation Mode



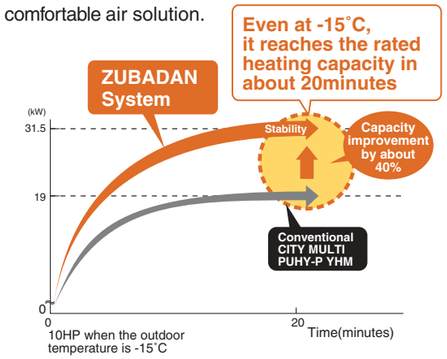
Previously, heating performance drops off when the temperature falls below -20˚C!

With Hyper Heating Inverter System

...however, even at such temperatures, the new Hyper Heating Inverter System has no trouble keeping the occupants nice and toasty!

Shorter Warm-up
in about 20 Min.

With its new improved startup performance, the ZUBADAN system achieves full heating capacity even when outdoor temperature is as low as -15˚C. Heating capacity, about 20 minutes after startup is improved by 40% compared to the conventional model; ensuring occupants an immediate comfortable air solution.



Heating capacity

Reliable and Long Product Life Cycle

Backup Function (HP400 and HP500 models)

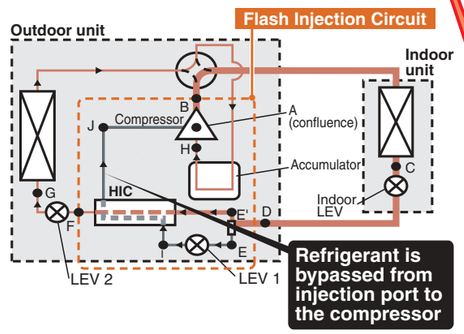
Hyper Heating Inverter system ensures an exceptionally high level of reliability by utilizing a new back-up function, which can be easily operated in the case of a malfunction from an indoor unit remote controller.

Rotation Function (HP400 and HP500 models)

Running outdoor units alternatively using its newly developed 'Rotation Function', the system is able to ensure an optimum product life cycle for both of its component units.

TECHNOLOGY

Flash Injection Circuit



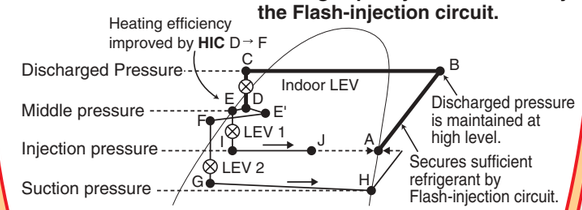
Note : **Heat Interchange Circuit (HIC)**
Heating efficiency is improved by enhancing the recollection of heat at the outdoor unit with the low temperature refrigerant from the HIC.

Startup Comfort

One of the key factors of the units newly designed Flash Injection Circuit is that the optimal amount of refrigerant can be provided to the system via the compressor through a specially designed injection port to ensure a particularly stable operation. In simple terms, the system allows a quick startup time and continuous heating; even in low ambient conditions.

Constant Comfort

Heating capacity is maintained by the Flash-injection circuit.



[Pressure Enthalpy diagram showing HIC]

With its new highly effective defrost feature (which prevents automatic defrosting when it is not required), the Hyper Heating Inverter System can deliver conditioned heating operation up to 250 minutes in one continuous cycle!

SPECIFICATIONS

Model				PUHY-HP200YHM-A(-BS)	PUHY-HP250YHM-A(-BS)	PUHY-HP400YSHM-A(-BS)	PUHY-HP500YSHM-A(-BS)
Power source				3-phase 4-wire 380-400-415V 50/60Hz			
Cooling capacity (Nominal)		*1	kW	22.4	28.0	45.0	56.0
		*1	kcal / h	19,300	24,100	38,700	48,200
		*1	BTU / h	76,400	95,500	153,500	191,100
	Power input		kW	6.40	9.06	12.86	18.16
	Current input		A	10.8-10.2-9.8	15.2-14.5-14.0	21.7-20.6-19.8	30.6-29.1-28.0
	COP		kW / kW	3.50	3.09	3.49	3.08
Temp. range of cooling	Indoor		W.B.	15~24˚C(59~75˚F)	15~24˚C(59~75˚F)	15~24˚C(59~75˚F)	15~24˚C(59~75˚F)
	Outdoor		D.B.	-5~43˚C(23~109˚F)	-5~43˚C(23~109˚F)	-5~43˚C(23~109˚F)	-5~43˚C(23~109˚F)
Heating capacity (Nominal)		*2	kW	25.0	31.5	50.0	63.0
		*2	kcal / h	21,500	27,100	43,000	54,200
		*2	BTU / h	85,300	107,500	170,600	215,000
	Power input		kW	6.52	8.94	13.35	18.04
	Current input		A	11.0-10.4-10.0	15.0-14.3-13.8	22.5-21.4-20.6	30.4-28.9-27.8
	COP		kW / kW	3.83	3.52	3.74	3.49
Temp. range of heating	Indoor		D.B.	15~27˚C(59~81˚F)	15~27˚C(59~81˚F)	15~27˚C(59~81˚F)	15~27˚C(59~81˚F)
	Outdoor		W.B.	-25~15.5˚C(-13~60˚F)	-25~15.5˚C(-13~60˚F)	-25~15.5˚C(-13~60˚F)	-25~15.5˚C(-13~60˚F)
Indoor unit connectable	Total capacity			50~130 % of outdoor unit capacity			
	Model / Quantity			P15~P250 / 1~17	P15~P250 / 1~21	P15~P250 / 1~34	P15~P250 / 1~43
Sound pressure level (measured in anechoic room)			dB<A>	56	57	59	60
Refrigerant piping diameter	Liquid pipe		mm(in.)	12.7(1/2") Brazed	12.7(1/2") Brazed	15.88(5/8") Brazed	15.88(5/8") Brazed
	Gas pipe		mm(in.)	19.05(3/4") Brazed	22.2(7/8") Brazed	28.58(1-1/8") Brazed	28.58(1-1/8") Brazed

Model						Set Model			
						PUHY-HP200YHM-A(-BS)	PUHY-HP200YHM-A(-BS)	PUHY-HP250YHM-A(-BS)	PUHY-HP250YHM-A(-BS)
FAN	*3 Type x Quantity			Propeller fan x 1		Propeller fan x 1			
	Air flow rate		m^3 / min	225	225	225	225	225	225
			L/s	3,750	3,750	3,750	3,750	3,750	3,750
			cfm	7,945	7,945	7,945	7,945	7,945	7,945
	Control, Driving mechanism			Inverter-control,Direct-driven by motor		Inverter-control,Direct-driven by motor			
	Motor output		kW	0.92 x 1	0.92 x 1	0.92 x 1	0.92 x 1	0.92 x 1	0.92 x 1
	External static press.			0 Pa (0 mmH2O)	0 Pa (0 mmH2O)	0 Pa (0 mmH2O)	0 Pa (0 mmH2O)	0 Pa (0 mmH2O)	0 Pa (0 mmH2O)
Compressor	Type x Quantity			Inverter scroll hermetic compressor		Inverter scroll hermetic compressor			
	Manufacture			AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION			
	Starting method			Inverter	Inverter	Inverter			
	Motor output		kW	5.3	6.7	5.3	5.3	6.7	6.7
	Case heater		kW	0.045	0.045	0.045	0.045	0.045	0.045
	Lubricant			MEL32	MEL32	MEL32	MEL32	MEL32	MEL32
External finish				Pre-coated galvanized steel sheets <MUNSELL 5Y 8/1 or similar>		Pre-coated galvanized steel sheets <MUNSELL 5Y 8/1 or similar>			
External dimension HxWxD			mm	1,650 x 920 x 760	1,650 x 920 x 760	1,650 x 920 x 760	1,650 x 920 x 760	1,650 x 920 x 760	1,650 x 920 x 760
			in.	65" x 36-1/4" x 29-15/16"	65" x 36-1/4" x 29-15/16"	65" x 36-1/4" x 29-15/16"	65" x 36-1/4" x 29-15/16"	65" x 36-1/4" x 29-15/16"	65" x 36-1/4" x 29-15/16"
Protection devices	High pressure protection			High pressure sensor, High pressure switch at 4.15MPa (601 psi)		High pressure sensor, High pressure switch at 4.15MPa (601 psi)			
	Inverter circuit (COMP. / FAN)			Over-heat protection,Over-current protection		Over-heat protection,Over-current protection			
	Compressor			Over-heat protection		Over-heat protection			
	Fan motor			Thermal switch		Thermal switch			
Refrigerant	Type x original charge			R410A x 9.0kg (20lbs)	R410A x 9.0kg (20lbs)	R410A x 9.0kg (20lbs)		R410A x 9.0kg (20lbs)	
	Control			LEV and HIC circuit		LEV and HIC circuit		LEV and HIC circuit	
Net weight			kg(lbs)	220(486)	220(486)	220(486)	220(486)	220(486)	220(486)
Heat exchanger				Salt-resistant cross fin & copper tube		Salt-resistant cross fin & copper tube			
HIC circuit (HIC: Heat Inter-Changer)				Copper pipe,tube-in-tube structure		Copper pipe,tube-in-tube structure			
Pipe between unit and distributor	Liquid pipe		mm(in.)	-	-	9.52(3/8") Flare	9.52(3/8") Flare	9.52(3/8") Flare	9.52(3/8") Flare
	Gas pipe		mm(in.)	-	-	19.05(3/4") Brazed	19.05(3/4") Brazed	22.2(7/8") Brazed	22.2(7/8") Brazed
Defrosting method				Auto-defrost mode (Reversed refrigerant circle)		Auto-defrost mode (Reversed refrigerant circle)			
Optional parts				Joint: CMY-Y102S-G2 Header: CMY-Y104/108/1010-G		Outdoor Twinning kit: CMY-Y100VBK2 Joint: CMY-Y102S/L-G2,CMY-Y202-G2 Header: CMY-Y104/108/1010-G			

* Due to continuing improvement, above specifications may be subject to change without notice.

Notes:
1. Nominal cooling conditions(subject to JIS B8615-1)
   Indoor:27˚CDB/19˚CWB(81˚FDB/66˚FWB), Outdoor:35˚CDB(95˚FDB)
   Pipe length:7.5m(24-9/16ft.), Level difference:0m(0ft.)
2. Nominal heating conditions(subject to JIS B8615-1)
   Indoor:20˚CDB(68˚FDB), Outdoor:7˚CDB/6˚CWB(45˚FDB/43˚FWB)
   Pipe length:7.5m(24-9/16ft.), Level difference:0m(0ft.)
3. External static pressure option is available (30Pa, 60Pa / 3.1mmH2O, 6.1mmH2O).

FM33568 / ISO 9001;2000

The Air Conditioning & Refrigeration Systems Works acquired ISO 9001 certification under Series 9000 of the International Standard Organization (ISO) based on a review of Quality management for the production of refrigeration and air conditioning equipment.

ISO Authorization System
The ISO 9000 series is a plant authorization system relating to quality management as stipulated by the ISO. ISO 9001 certifies quality management based on the "design, development, production, installation and auxiliary services" for products built at an authorized plant.

EC97J1227

The Air Conditioning & Refrigeration Systems Works acquired environmental management system standard ISO 14001 certification.

The ISO 14000 series is a set of standards applying to environmental protection set by the International Standard Organization (ISO).

MITSUBISHI ELECTRIC CORPORATION
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