



for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



FM33568 / ISO 9001:2008

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.



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). Registered on March 10, 1998.

Warning

- Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, during repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- mitsubishi electric corporation cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

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R410A CITY MULTI

New publication effective Feb. 2015. Specifications subject to change without notice.

MITSUBISHI ELECTRIC INDIA



AIR CONDITIONERS

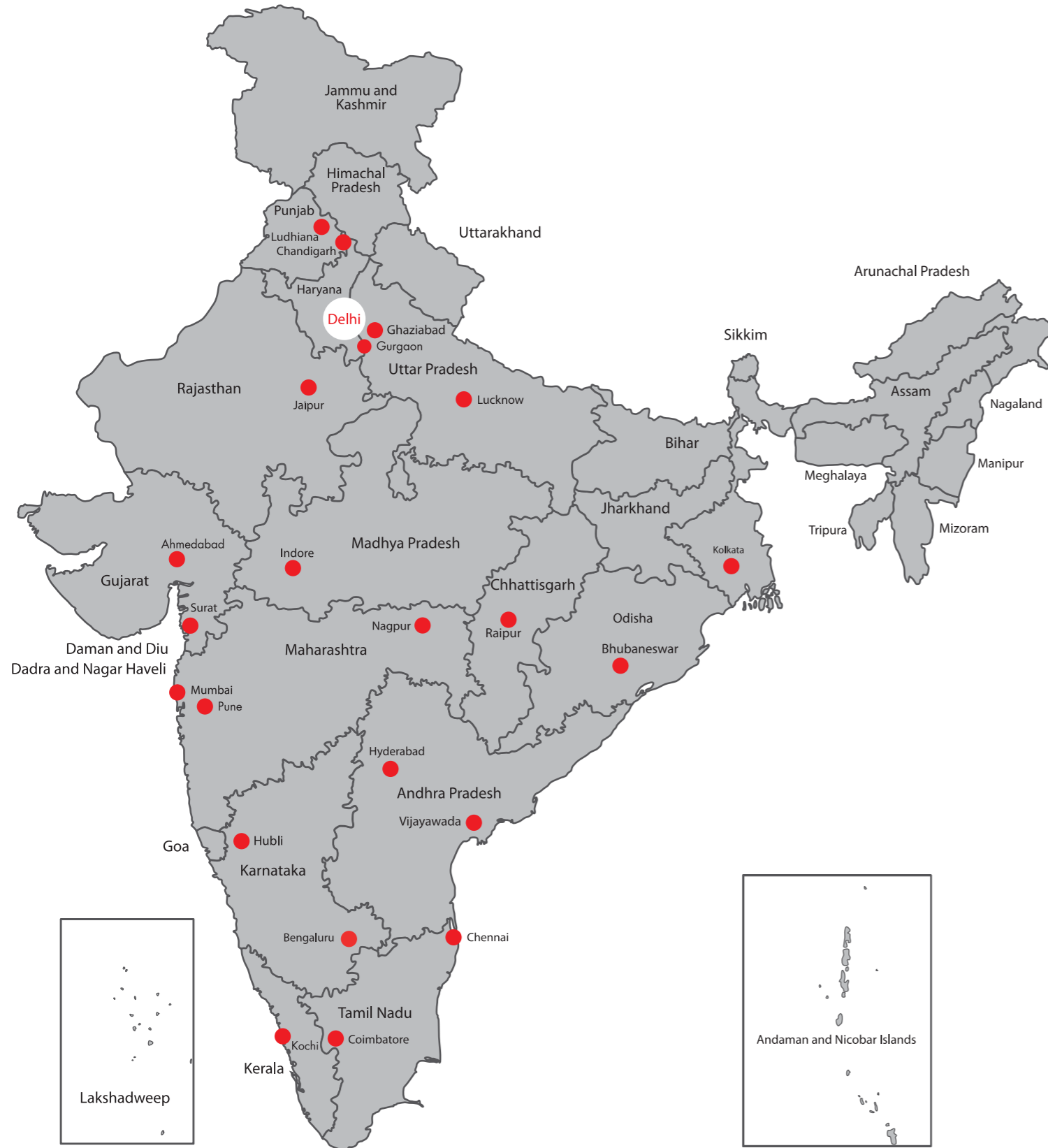
for a greener tomorrow



CITY MULTI
5th Generation VRF with VET

CM13AS-L

All-India ME presence



Founded in 1920, Mitsubishi Electric is one of the pioneering companies in the air conditioning industry. Driven to create air conditioning systems that deliver outstanding performance under any natural climatic condition, Mitsubishi Electric has developed sophisticated yet durable units that provide energy-efficient performance with minimum impact on the environment.

Mitsubishi Electric air conditioners keep the room cool in summers and warm in winters, and deliver exemplary performance under any climate to make life easier.

OUR LATEST TECHNOLOGIES

VRF system

VRF stands for Variable Refrigerant Flow. The job of a VRF air conditioner is to adjust the refrigerant flow according to the requirements of the building. VRF systems are energy efficient and operate quietly. The two pipe system is simple to install and service. The components of a VRF system require less maintenance than the other systems.

Intelligent Power Module (IPM) technology

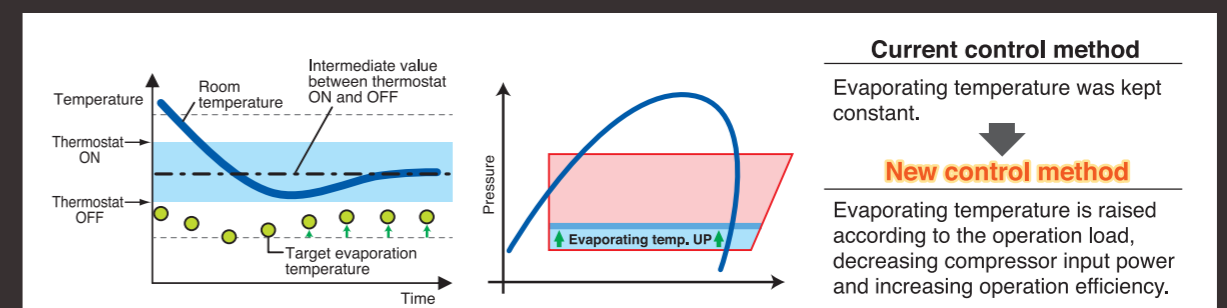
Mitsubishi Electric's CITY MULTI range controls the energy input of the systems with the help of its Intelligent Power Module (IPM) technology. This technology helps in highly efficient operation with its compressed units that match the building requirements.

Inverter driven technology

Mitsubishi Electric has always fulfilled the increasing demands of its customers, as it is the first in the industry to provide inverter driven air conditioners to them. The inverter driven technology in our systems helps to produce proper amount of output to match the requirement of any building. Our air conditioners are efficient and do not waste any energy. Other air conditioners may appear cheaper but have higher running costs and are not as much energy efficient.

VET control (Evaporating Temperature control)

Reduced energy consumption in cooling by controlling the refrigerant temperature according to the operation load and raising evaporating temperature.



The New Models

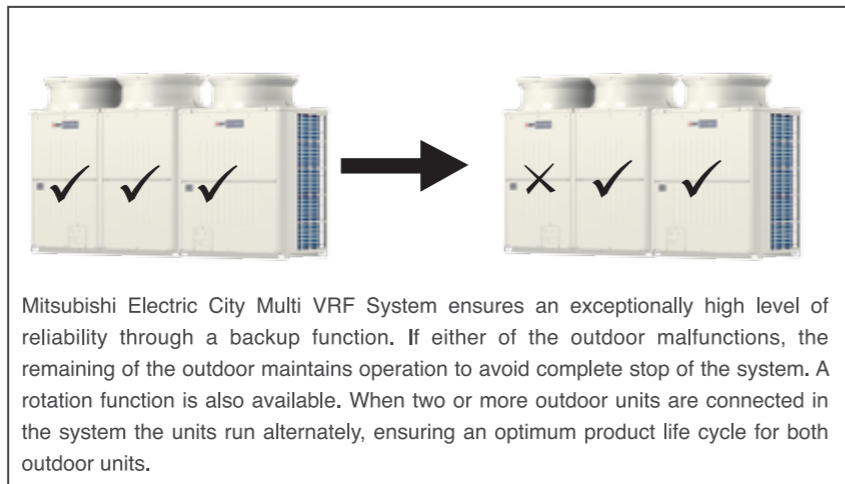
Mitsubishi Electric offers a wide lineup of new models with the maximum capacity upto 54 HP*. Different patterns of combinations of basic modules provide either standard or high COP.

*Applicable to standard model combinations only

New Features

Single module up 20 HP

Capable of covering up to 20 HP with a single module and a single inverter scroll compressor. Reduced piping work.



Mitsubishi Electric City Multi VRF System ensures an exceptionally high level of reliability through a backup function. If either of the outdoor malfunctions, the remaining of the outdoor maintains operation to avoid complete stop of the system. A rotation function is also available. When two or more outdoor units are connected in the system the units run alternately, ensuring an optimum product life cycle for both outdoor units.

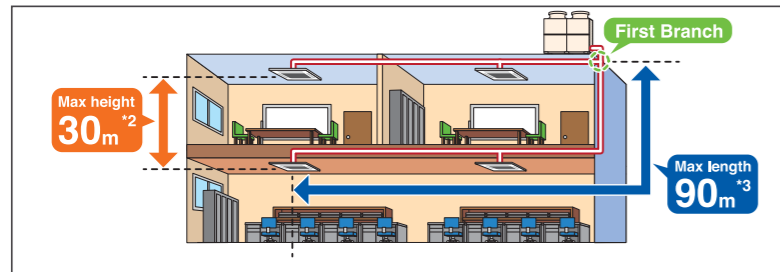
Automatic Back-up & Rotation function

Compatibility to outdoor temperature of up to 52°C*1

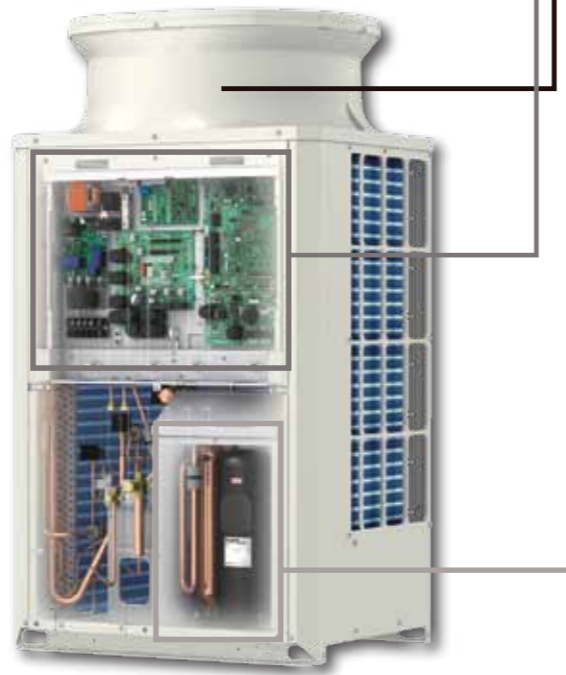
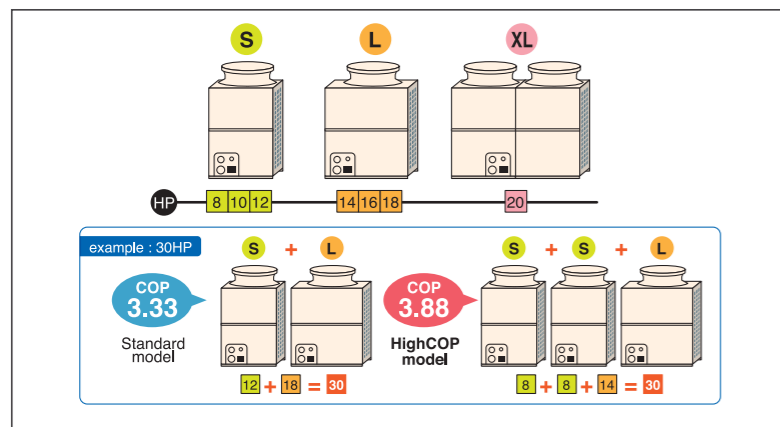
Capable of running cooling operations in the outdoor temperature of up to 52°C*.

Increase in the limit of piping length

Farthest indoor from first branch: 90 m
Height difference between indoor and indoor units is up to 30 m.



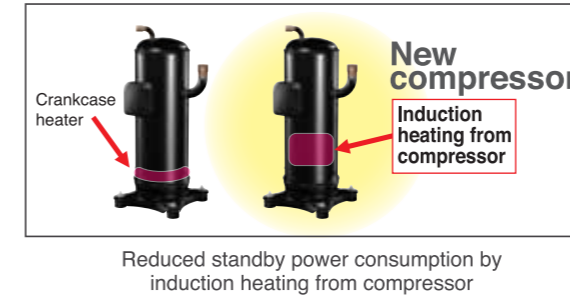
Standard or high COP options are available by different combinations of modules.



Energy Saving

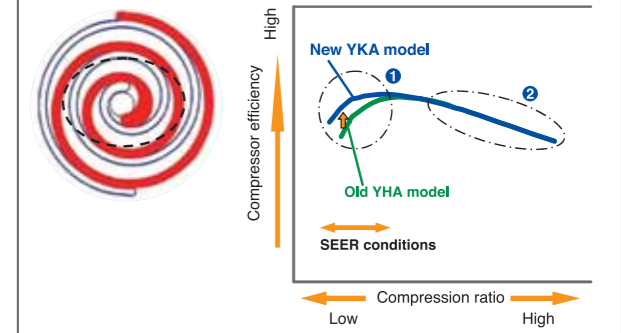
Compressor

- Improved efficiency by the use of DC brushless motor.
- Improved partial-load characteristics achieved by the optimized scroll shape.



Improved SEER performance

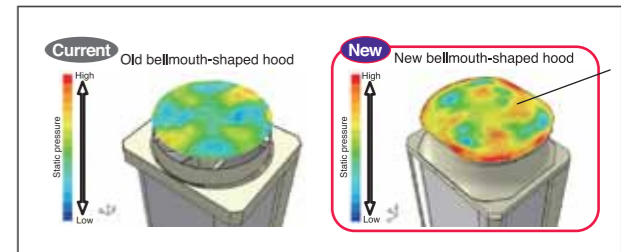
Optimized scroll shape (improved volumetric capacity ratio)



Unit Casing

- Improved static pressure at the exhaust air outlet that allows for a reduction in fan input power by the changed shape of the bellmouth hood.

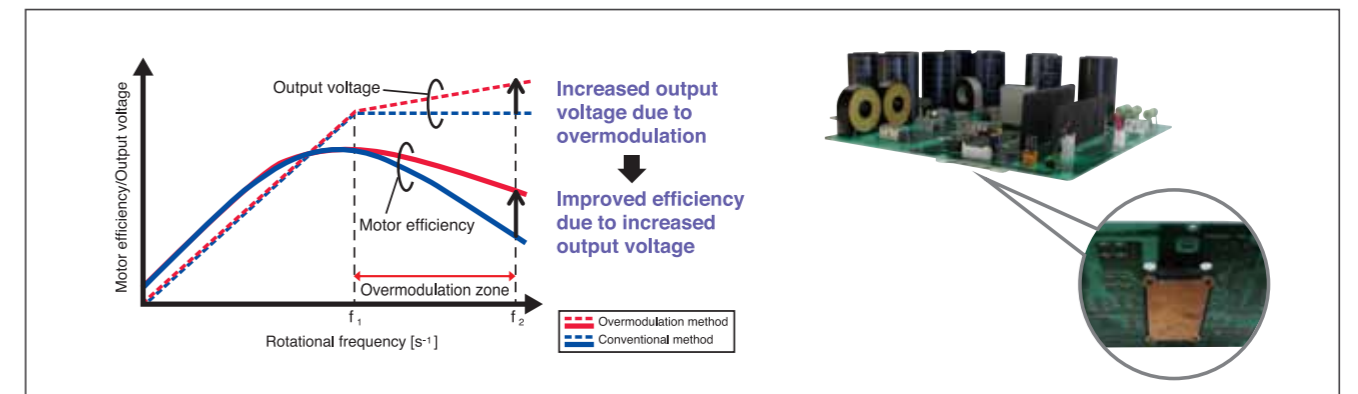
The new bellmouth-shaped hood achieves reduction in fan rotation and increases the pressure at the hood outlet compared to that of the old one, resulting in reduced input power to the fan.



Control

•Original PWM overmodulation control

Improved total efficiency of motor and inverter with the use of our original PWM overmodulation control, increasing the output voltage during high-load operation (when the motor is rotating at high speed).

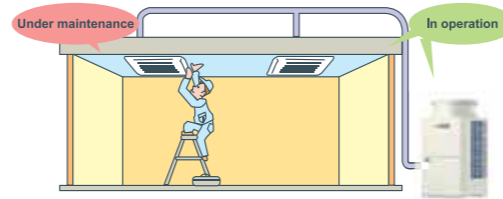


Smart ME Controller - With Human Occupancy Centre

It is equipped with 4 built in senses (temperature, humidity, human occupancy, brightness) to create a comfortable environment with very high efficiency.

Easy Maintenance

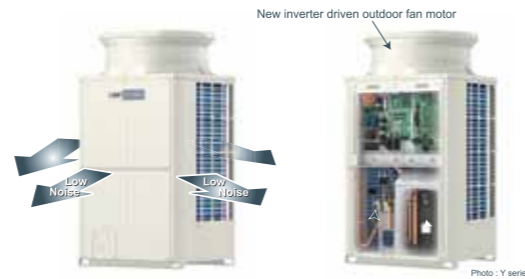
Even when one of the indoor units in the system is under maintenance or failed, the other indoor units can still operate. Be sure to turn off the power to the indoor unit when repairing or servicing the unit.



Low Noise Levels New Fan Design

CITY MULTI VRF systems led the introduction of larger single fan motors some ten years ago, achieving substantially lower noise levels over multiple designs.

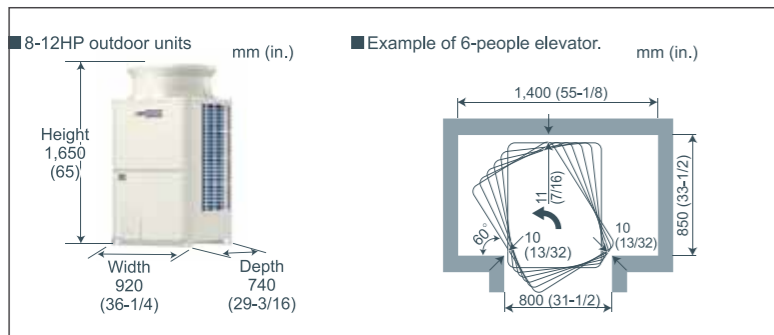
Continuing the development in the areas of blade shape and weight, Mitsubishi Electric have managed to achieve even higher performance and lower noise levels. To reduce noise levels further and comply with inner city residential noise regulations, all outdoor units include low noise mode. This function works by lowering the fan speed and compressor frequency proportionally with reduction in demand.



The compressor compartment is sealed by metal panels in an acoustically insulated chamber to attain low noise levels in all directions.

Industry leading space saving

The new outdoor unit can be transported through a 800 mm wide door.



System Check

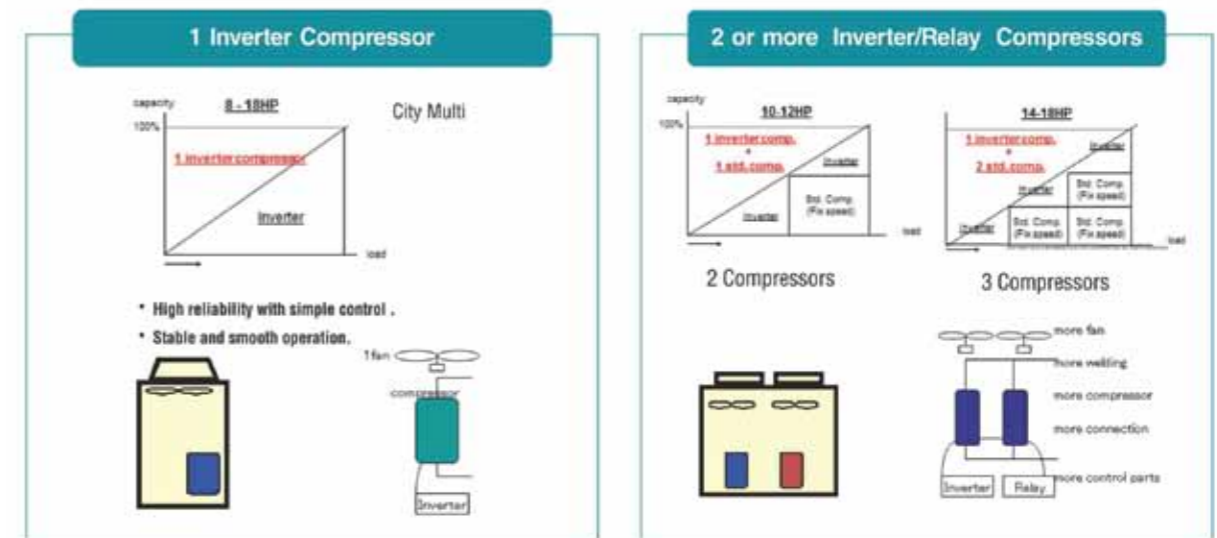
Ensuring simple and easy maintenance, system tests are available to check wiring, sensors and the refrigerant amount.

CITY MULTI Compressor Advantage

8-20 HP CITY MULTI use inverter-driven scroll compressor



- Simple & Smooth Operation
- Reduced oil circulation
- Risk Management for liquid turning back
- Less Space
- High Reliability
- Reduce Rush Current
- Less wear and tear due to low RPM Compressor Motor
- High Reliability due to less no. of moving and non-moving product parts.

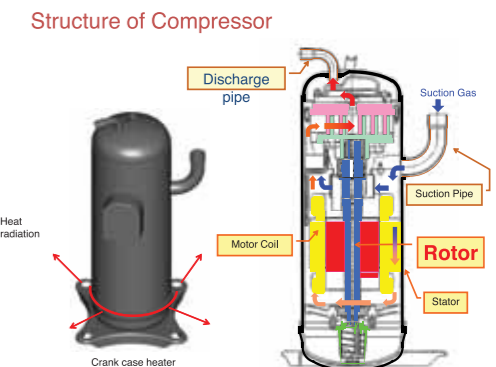


Low Pressure Shell Type Scroll Compressor

















Refrigerant at low pressure and low temperature comes from the side part of the compressor and cools stator windings, it comes indirectly to the scroll part of compressor and get compressed. The high pressure gas after compression will then discharge at upper part of compressor. So, most parts of compressor is occupied by low pressure, low temperature gas. Because of this structure, it is called 'low pressure' shell.

Liquid Turning Back Prevention



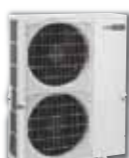



In VRF system the refrigerant volume changes drastically due to change in the Number of units in operation & the risk of liquid turning back(flooding of compressor) is very high. In City Multi's compressor, refrigerant can be stored in shell's lower part to prevent compressor failure.



Wide Selection of Indoor Units

Type	Model name	Image	Tonnage		Tonnage													
			Model	0.5 P15	0.7 P20	0.8 P25	1.03 P32	1.3 P40	1.6 P50	2.1 P63	2.3 P71	2.6 P80	3.2 P100	4.0 P125	4.6 P140	6.4 P200	8.0 P250	
Ceiling Cassette	4-way air flow																	
																		
	2-way air flow																	
	1-way air flow																	
Ceiling Concealed	Low static																	
	Medium static																	
	High static																	
	Fresh Air Intake																	
Ceiling Suspended																		
Wall Mounted																		
Floor Standing/ Floor Mounted Concealed																		
																		
																		
Connection Kit for Air Handling Unit			AH 125 (5 HP)	AH 140 (6 HP)		AH 250 (10 HP)	AH 500 (20 HP)											
Floor Standing Package Type			8 TR (10 HP)	16 TR (20 HP)		24 TR (30 HP)												
Lossnay (Heat Recovery Ventilation System)			Available from 70 m³/hr to 2000 m³/hr (40 cfm to 1150 cfm)															

Wide Selection of Outdoor Units

System Type	Model Name	HP	4	5	6	7	8	9	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54			
		Model	P100	P125	P140	P175	P200	P225	P250	P300	P350	P400	P450	P500	P550	P600	P650	P700	P750	P800	P850	P900	P950	P1000	P1050	P1100	P1150	P1200	P1250	P1300	P1350			
Cooling only	S series NEW PUCY-P YKA(-BS) PUCY-P YSKA(-BS) 	S					8		10	12					10		10	10	10	12					12	12								
		L									14	16	18			14	16	18	18	16	16	18	18			18	14	14	16	16	16	18	18	
		XL													20										20	20								
	Y series - High COP NEW PUCY-EP YSKA(-BS) 	S											8	8	10			12		8	8	10	10	12	12	12								
		L																14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	16	
Air Cooled	S series NEW PUMY-P VKM(-BS) PUMY-P YKM(-BS) 		4	5	6	7	8	9																										
	Heat Pump	Y series PUHY-P YHA(-BS) PUHY-P YSHA(-BS) 	S					8		10	12				10	10	10	12						10	12	12								
			L									14	16	18			14	14	14	14	14	14	16	18	18	16	16	14	14	14	14	14	18	
		Y series - High COP PUHY-EP YJM-A(-BS) 	S					8						8	8	8			8	8	8	8												
			L								10			10			10			10			10											
			XL									12					12	12	12			12	12			12	12	12						
Water Cooled	Y series - High COP PQHY-P YHM-A 		8	10	12						8	8	8	10	10	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12			

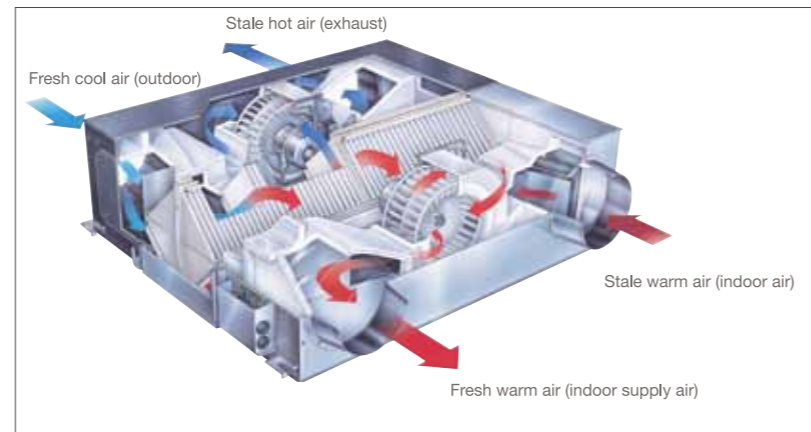
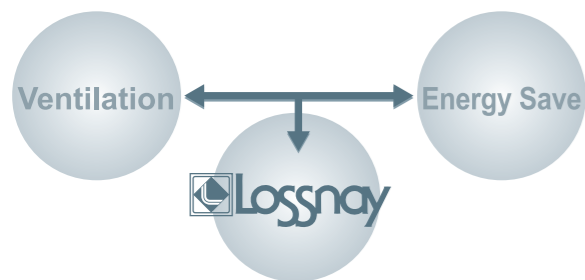
The circled numbers in the table indicate the horse power and the combination.

Energy Recovery Ventilation for enhanced Air Quality – Lossnay

City Multi VRF System is combined with Lossnay System for enhanced indoor air quality. Unified Control System allows greater design freedom.



LOSSNAY Technology

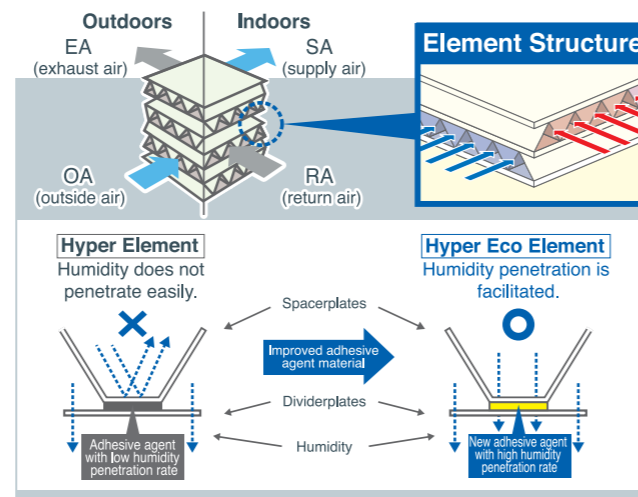


Hyper Eco Core

Better energy conservation by improved total heat exchange efficiency.

Introducing the new Hyper Eco Element

Mitsubishi's newly developed Hyper Eco Element is on board, offering the industry's best total heat exchange efficiency. Energy conservation performance has been improved not only by reducing the air conditioning load associated with ventilation, but also by facilitating humidity penetration.

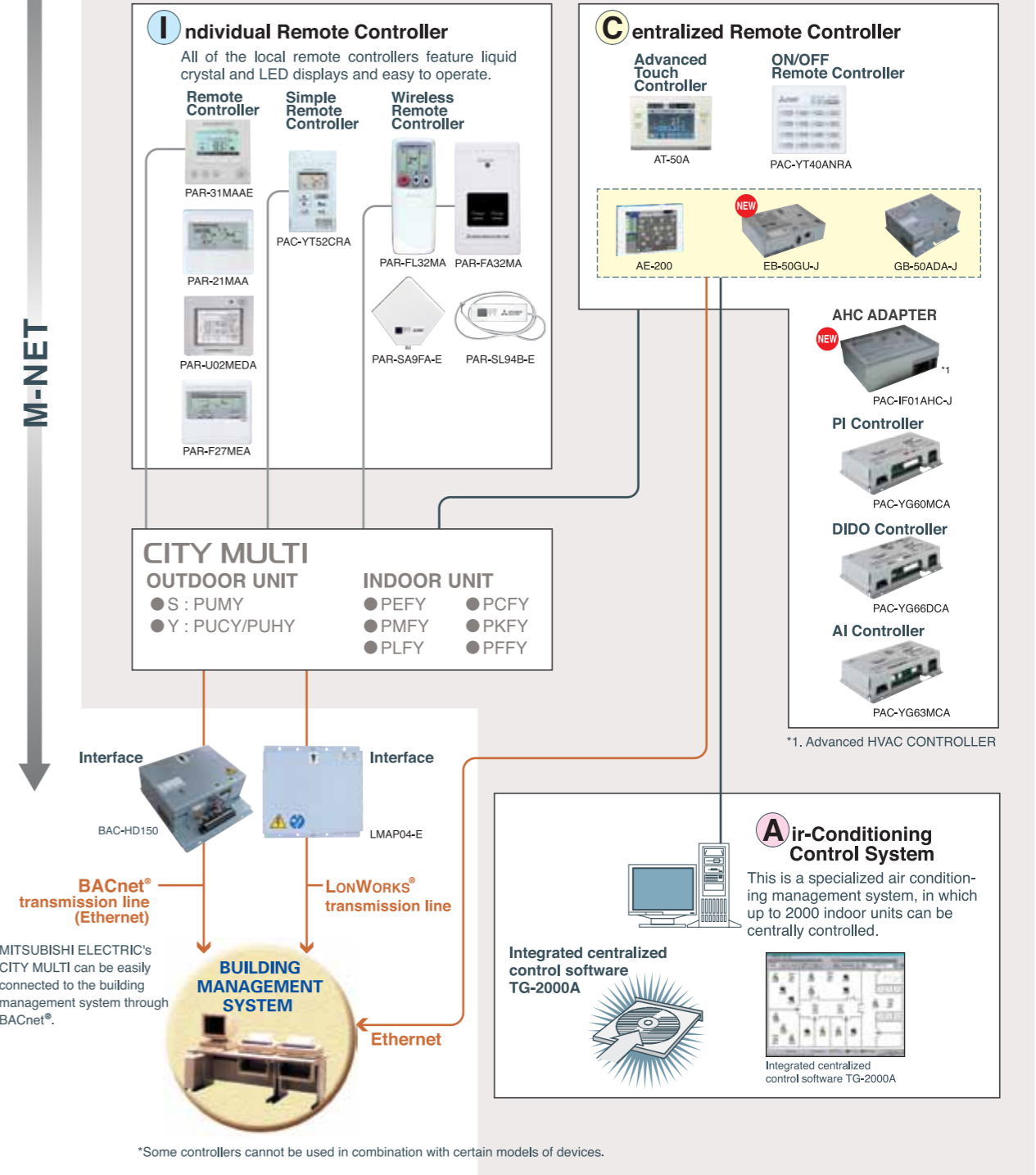


System Controller

The need for control is paramount in order to optimise the performance of any air conditioning system and minimize its running costs. Mitsubishi Electric offers a wide range of control options designed to meet such needs.

MELANS

Use of our MELANS products enhances EFFICIENCY and QUALITY of air-conditioning, contributing to ENERGY SAVING and reduction in running cost. We offer a wide variety of MELANS products to meet all requirements - from the smallest and simplest to the largest and most complex.



HOT WATER HEAT PUMP

Mitsubishi Electric has been designing and manufacturing commercial hot water heat pumps since 1970. We were one of the first manufacturers in Japan to utilize heat pump technology to provide hot water, and also the first manufacturer to develop R407C products, which can supply hot water of up to 70°C, high enough to eliminate legionella bacteria.



70°C
High temperature

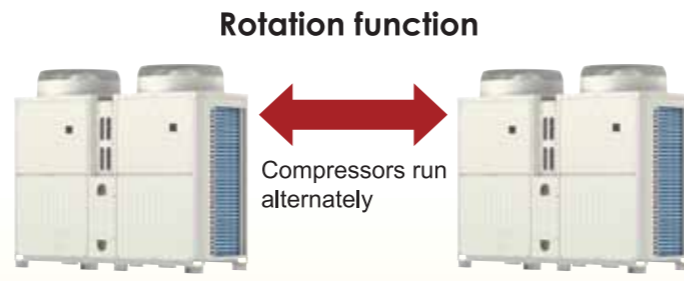
COP
Over 4*

*COP 4.13
Outdoor temp.: 7°C DB/ 6°C WB
Outlet water temp.: 35°C

A "Flash Injection Circuit," which is designed for our ZUBADAN CITY MULTI air conditioning system for cold regions, is incorporated in our new hot water heat pump. Through utilizing this advanced "Flash Injection Circuit" and the latest high-efficiency compressor, the hot water heat pump is able to provide hot water up to 70°C, and with better retention of capacity at low ambient temperatures.

Backup function

Rotation function

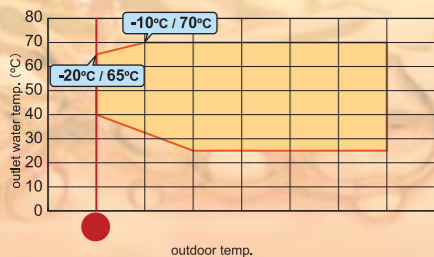


Depending on settings, the rotation function is available for units.

Operable even at -20°C

The hot water heat pump can be operated at outdoor temp. between -20°C and 40°C. It delivers precise comfort even on the coldest days of the year.

Range of operation temperature and outlet water temperature



During defrosting, two compressors, which are equipped within one unit, run alternately resulting in less drop in outlet water temperature.



CAHV-P500YA-HPB

Jet Towel

The Jet Towel Advanatge



For the Environment
No Wastepaper



For Corporate Management
Cost Reduction



For Building Management
Easy Maintenance



For Customers
Improved Service



Easy to Use

- Open Side Design
- Upper and Lower Sensor
- Comfortable Positioning



Hygienic

- Antibacterial Treatment
- Independent Air Ducts
- Alcohol-resistant Resin



Comfort

- Brushless DC Motor
- Air Speed Control
- Heater Setting Switch



Jet Towel
The Best Choice For Fast Hand Drying and Low Power Consumption



Jet Towel Mini
Compact Body, Powerful, User-friendly And Simple And Easy Installation - Fits Anywhere.