



Power Inverter SERIES

The highly energy-efficient Power Inverter Series has reached a new level of energy savings with the incorporation of new technologies and new body design. The side-flow configuration of the integrated outdoor unit body, a maximum piping length of 120m and replacement technologies simplify installation.



Advanced Energy-saving Performance

Utilizing the latest energy-saving technologies with DC inverter technology at the core, a high level of energy-saving performance is achieved. Combining the many energy-saving technologies, an "Energy Rank A" rating for both cooling and heating has been achieved.

Energy Rank (Cooling/Heating)

Series		35	50	60	71	100	125	140
4-way ceiling cassette	PLA-BA	A/A	A/A	A/A	A/A	A/A	A/A	B/A
Wall-mounted	PKA-GAL/FAL	A/B	C/C	B/B	A/B	A/B		
Ceiling-suspended	PCA-GA		B/B	A/B	A/B	A/B	A/B	B/B
	PCA-HA				A/B		A/B	
Floor-standing	PSA-GA				A/B	A/B	B/B	C/C
Ceiling-concealed	PEAD-EA	A/B	A/A	A/A	A/B	A/B	A/A	B/B

Energy Rank A/A 9 combinations (when connected 1:1)

Series		35	50	60	71	100	125	140
4-way ceiling cassette	PLA-BA	A/A	A/A	A/A	A/A	A/A	A/A	A/A
Wall-mounted	PKA-HAL/KAL	A/A	A/A	A/A	A/A	A/A		
Ceiling-suspended	PCA-KA		A/A	A/A	A/A	A/A	A/A	A/A
	PCA-HA				A/B		A/B	
Floor-standing	PSA-GA				A/B	A/B	B/B	C/C
Ceiling-concealed	PEAD-JA	A/A	A/A	A/A	A/A	A/A	A/A	A/A

Energy Rank A/A 25 combinations (when connected 1:1) **3-fold increase**

ADVANCED ENERGY-SAVING TECHNOLOGIES

Highly efficient fan and grille for outdoor unit

The shapes of the fan and grille of the outdoor unit were redesigned, realising an increase in blowing capacity and more efficient heat exchange while maintaining the same operating noise level.

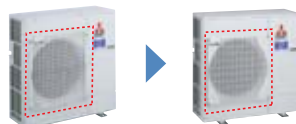
Outdoor unit fan opening increased <RP100-250>

The diameter of the opening for the fan in the outdoor unit has been increased from 490 to 550mm, the same fine pipe diameter as that used for RP200-250 units, resulting in a high-density heat exchanger.



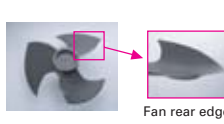
Grille shape changed <RP60-250>

The shape of the air outlet grille has been changed to reduce pressure loss. This has helped improve heat exchange performance.



Inflexed fan <RP100-250>

Adoption of a fan with improved ventilation characteristics and a newly designed rear edge that suppresses wind turbulence raises fan operation efficiency.

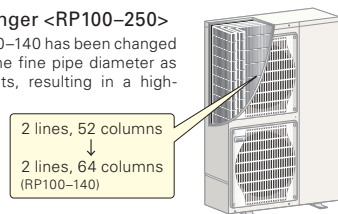


Highly efficient heat exchanger

A high density and increase in surface area have improved the heat-exchange efficiency of the heat exchanger.

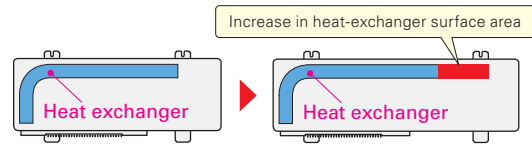
High-density heat exchanger <RP100-250>

The pipe diameter for the RP100-140 has been changed from 9.52 to 7.94mm, the same fine pipe diameter as that used for RP200-250 units, resulting in a high-density heat exchanger.

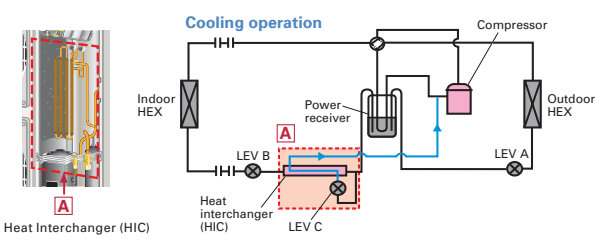


Heat-exchange surface area increased <RP100-250>

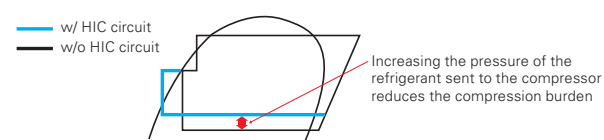
Heat exchanger size extended horizontally, increasing the surface area.



Heat Interchanger (HIC) Added <RP140>



An HIC circuit has been added to improve energy efficiency during cooling operation. Liquid refrigerant is rerouted, transformed into a gas state and injected back into the system to increase overall pressure of the refrigerant being sent to the compressor, thereby reducing the load on the compressor and raising efficiency.



Side-flow Outdoor Units

All operating capacities have been unified to the side-flow configuration. Even for locations requiring large capacities, the small footprint of these outdoor units enable them to be used anywhere.



Silent Control

Fan speed during cooling operation is automatically reduced when the outdoor temperature drops, resulting in quiet, low-noise operation. Operating noise is reduced by 3dB, to half of the audible sound.

Model RP140 (cooling)

Suppressed to about 1/2 the audible sound (compared to daytime use)

"Silent Control" reduces sound further

Day 50dB Outdoor temperature: 35°C

Night 47dB Outdoor temperature: 25°C

3dB reduction

3-phase Power-supply Inverter (RP100-250YHA)

Incorporation of a 3-phase power supply realizes a dramatic reduction in operating current. This special technology is equipped in outdoor units to ensure compliance with electromagnetic compatibility regulations in Europe.

Operating current comparison (for combinations using 4-way ceiling cassettes)

Power Supply		10kW	12.5kW	14.0kW
3-phase	Rated (cooling)	4.5	6.5	7.7
	Rated (heating)	4.6	6.3	7.6
	Max.	9.0	10.5	12.1
	Breaker size	16	16	16
1-phase	Rated (cooling)	11.0	16.6	19.7
	Rated (heating)	11.2	15.9	19.5
	Max.	27.5	27.5	29.1
	Breaker size	32	32	40

Long Pipe Length

The additional refrigerant volume enables piping lengths of up to 120m (RP200/250), thereby making installation easier.

Model	Max. Pipe Length	Max. Height Difference
PUHZ-RP35/50	50m	30m
PUHZ-RP60/71	50m	30m
PUHZ-RP100/125/140	75m	30m
PUHZ-RP200/250	120m	30m

When pipe length exceeds 80m, separate power sources are required for the indoor and outdoor units. (An optional power-supply terminal kit is needed for indoor units with no power supply terminal block.)

Cleaning-free Pipe Reuse Technology

Ability to use existing piping reduces pipe waste and replacement time

No Need to Clean at the Time of System Renewal

Chloride residue builds up in existing pipes and becomes a source of trouble. The incorporation of various original Mitsubishi Electric technologies has resulted in the introduction of "cleaning-free pipe reuse."

Why can't existing piping be used?

R22 refrigerant leaves a chloride residue that builds up in existing piping. If left as is, the refrigerant oil will deteriorate.

At Time of Renewal

Problem 1	Problem 2	Result
Former refrigerant R22	High operating temperature	New refrigerant R410A
Chloride residue	Temperature of moving components in compressor increases	Chloride residue and high heat generated during operation deteriorate refrigerant oil

Must clean piping for models not compatible with "cleaning-free" technology

Existing piping can be used without cleaning

Mitsubishi Electric's Original Replacement Technologies

Countermeasure for Problem 1

Technology 1 Alkyl Benzene Oil

Countermeasure for Problem 2

Technology 2 Friction Reduction (moving parts in compressor)

Technology 1 Original Refrigerant Oil

With a scientifically high level of stability, the adoption of "alkyl benzene oil" for use in RP35-50 units prevents deterioration due to chloride residue.

Low-deterioration alkyl benzene oil

Start of use 10 years later

Technology 2 Friction Reduction

Friction inside the compressor is reduced by using an original Mitsubishi Electric technology called the "Heat Caulking Fixing Method" or coating the edge of the blade in the scroll compressor, thereby suppressing the increase in temperature that causes refrigerant oil deterioration.

Cautions when using existing piping

- Check whether or not existing units can be used (Cleaning-free pipe reuse technology cannot be used with units which have trouble record).
- Chloride residues mixing with refrigerant oil will cause deterioration and change the oil colour to yellow. This can be resolved by installing Power Inverter Series units equipped with Cleaning-free Pipe Reuse technologies. However, in cases iron particulates generated by compressor trouble are existed in the system, regardless of how dark the oil colour is, please clean the existing pipes.
- When removing an old air conditioning unit, please make sure to perform the pump-down process and recover the refrigerant and refrigerant oil.
- Check to ensure that the piping diameter and thickness match Mitsubishi Electric specifications.
- Check to ensure that the flare is compatible with R410A.

Use of existing piping is possible up to these points.

Level 0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0

Start of use

Colour when collected in bottle

Colour of tissue after dipping in it

Iron particulates built up causing a blackish colour