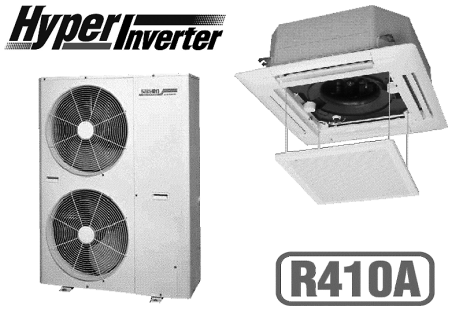
New Product



High Performance Inverter Air conditioner Series 2.5–10 Horsepower-Class with HFC410A

Mitsubishi Heavy Industries, Ltd. (MHI) has launched for sale a total of 176 types of "HYPER INVERTER" air conditioner series for stores with top level COP and piping length in the industry including 5 types of 2.5–10 horsepower-class outdoor units and other indoor units since January 2004. The high performance inverter air conditioner series adopt pseudo azeotropic refrigerant HFC410A excelling the conventional HFC407C coolant in workability and serviceability. Together with the air conditioners (1.5–2.3 horsepower-class) put on sale in April last year, the newly launched line-up of high-performance inverter air conditioners for stores complete the HFC410A adoption program for all our air conditioners ranging from 1.5 to 10 horsepower-class.

1. COP level –Top in the industry

The inverter air conditioners in 8 horsepower-class have achieved the average COP at cooling/heating of 4.20, the top level in the industry, because the performance of compressor, DC inverter and heat exchanger is improved. A high level of COP is obtained for other types of air conditioners as well, with all MHI units easily clearing the standards stipulated in the Energy-saving Regulations (Laws) of Japan for fiscal year 2007. The 8 horsepower-class air conditioners have successfully reduced the annual electricity cost by 50% as compared with the constant-speed units produced 10 years ago.

2. Piping length – Top in the industry

Because of the 1.5 times higher density of the HFC410A coolant than the conventional coolant, the pressure loss in the refrigerant pipe can be reduced. Further, because of the improvement in electronic expansion valve control and addition of recovery control of the compressor lubricating oil, actual plumbing length of 70 m for the types 2.5–4 horsepower-class, 100 m for the types 5–6 horsepower-class and 120 m for the types 8–10 horsepower-class, the top level length in the industry, have been achieved to meet with the customer's needs for the air-conditioning at suburban shopping centers with larger floor area. The units have drastically improved the restriction of the installation space for the outdoor unit and provide higher freedom in design.

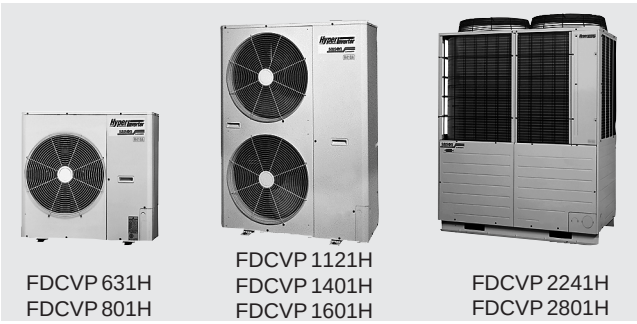


Fig. 1 Appearance of outdoor unit

3. Enhanced Serviceability

In order to ensure quick response at the time of trouble occurrence, an operation data retaining function has been added. Further, the ability to collect the on-site operation data, simply by connecting the outdoor unit to a personal computer and a printed-circuit board, has improved the serviceability of the unit.

4. Full model change of outdoor units on 8–10 horsepower-class

The outdoor units on 8–10 horsepower-class have undergone a full model change in design, with the fan air outlet moved to the top, and the heat exchangers installed on all four sides instead of solely on the rear side in conventional units in order to improve the heat exchange performance.

Table 1 Specifications of outdoor unit

Model		EDCVP 801H (3HP)	FDCVP 1121H (4HP)	FDCVP 2241H (8HP)
Cooling	Capacity (kW)	7.1	10.0	20.0
	Power consumption (kW)	1.69	2.14	5.10
	COP	4.20	4.67	3.92
Heating	Capacity (kW)	8.0	11.2	22.4
	Power consumption (kW)	1.80	2.25	5.00
	COP	4.44	4.98	4.48
Heating/ Low temperature	Capacity (kW)	9.2	12.5	22.0
	Power consumption (kW)	3.58	4.60	8.00
Noise value	(dB (A))	Cooling 46/ Heating 47	Cooling 47/ Heating 49	Cooling 57/ Heating 57
External dimensions	Width (mm)	880	970	1 350
	Depth (mm)	340	370	720
	Height (mm)	845	1 300	1 620
Weight	(kg)	63	95	225

* Values for power consumption and COP are for the indoor unit combined with ceiling-embedded type 4-way outlet.