

1 Appearance

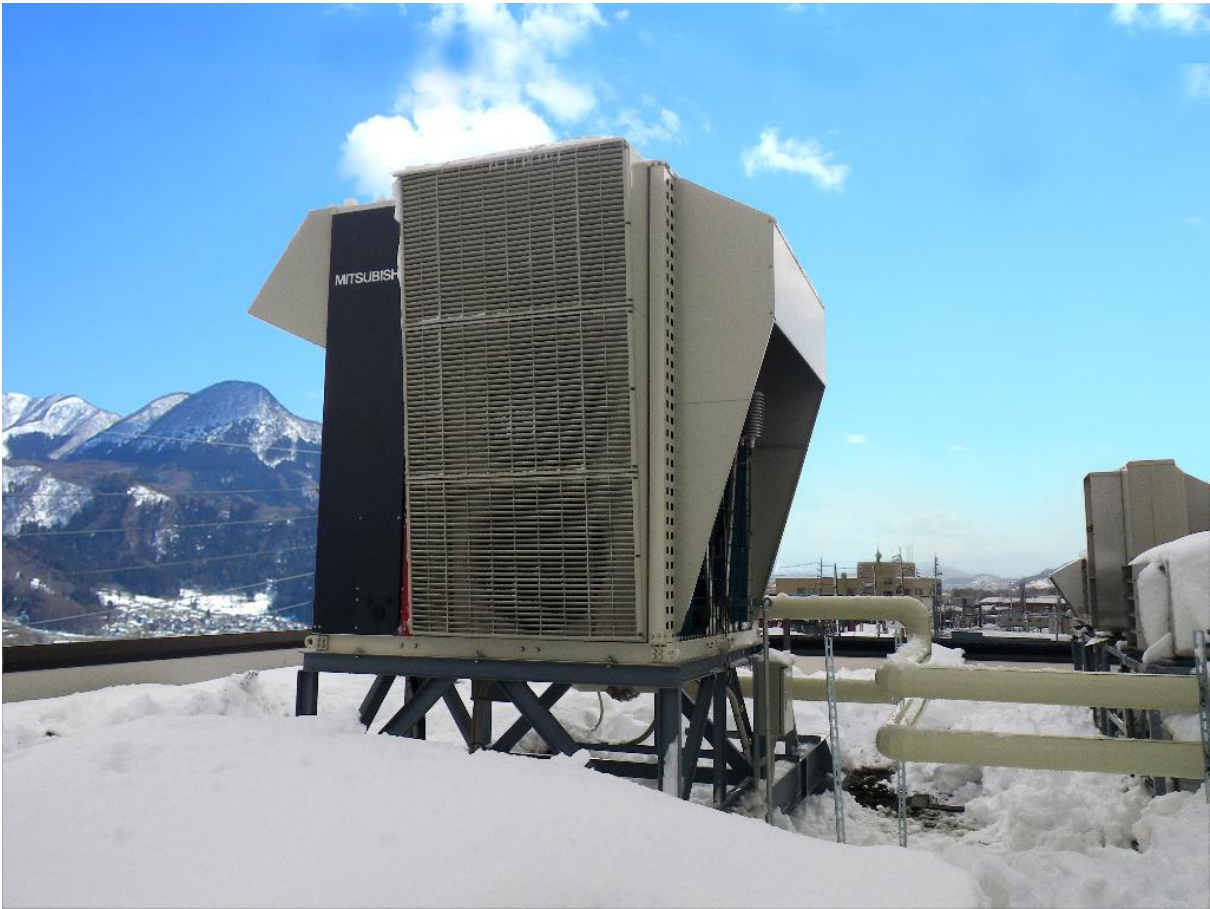


Photo 1 Proving test conditions for the air-cooled heat pump chiller “Compact Cube for Cold Regions”

(This photograph shows the condition with the optional snow protection hood parts mounted on the right and left sides of the main unit)

2 Specifications

Table 1 “Compact Cube for Cold Regions” Specifications

Item		Specification
Heating ^{*6}	Heating capacity	125kW
	Power consumption	35.5kW
	Rated COP	3.52
Cooling ^{*7}	Cooling capacity	150kW
	Power consumption	39.6kW
	Rated COP	3.79
Heating at outside temperature -12°C ^{*8}	Heating capacity	125kW
	Power consumption	55.6kW
	COP	2.25
Compressor	Model × Number of units	Scroll compressor with injection port × 4 units
	Nominal output	9.4kW × 4
Refrigerant	Type	R410A
High Pressure Gas Safety Law division		No notification required ^{*9}
Refrigeration Safety Manager		Not required ^{*9}
Dimensions	Height	2,450mm
	Width	1,950mm
	Depth	2,060mm
Product weight (operating weight)		1,850kg (1,900kg)

*6 Values under the specified heating conditions: heating operation at dry bulb air temperature 7°C/wet bulb air temperature 6°C and a water temperature at the warm water inlet and outlet of 40°C and 45°C, respectively, as prescribed by JIS B8613.

*7 Values under the specified cooling conditions: when spraying water for cooling operation at dry bulb air temperature 35°C/wet bulb air temperature 24°C and a water temperature at the chilled water inlet and outlet of 12°C and 7°C, respectively, as prescribed by JIS B8613.

*8 Values under the specified heating conditions (outside temperature -12°C): heating operation at dry bulb air temperature -12°C/wet bulb air temperature -12.4°C and a water temperature at the warm water inlet and outlet of 40°C and 45°C, respectively.

*9 The legal refrigeration capacity is less than 20 tons, so application for a high-pressure gas license and notification to the prefectural governor, and appointment of a Refrigeration Safety Manager under the High Pressure Gas Safety Law are not required when installing the unit.

3 Developed technologies

(1) Technology for expanding the operating range and increasing heating capacity

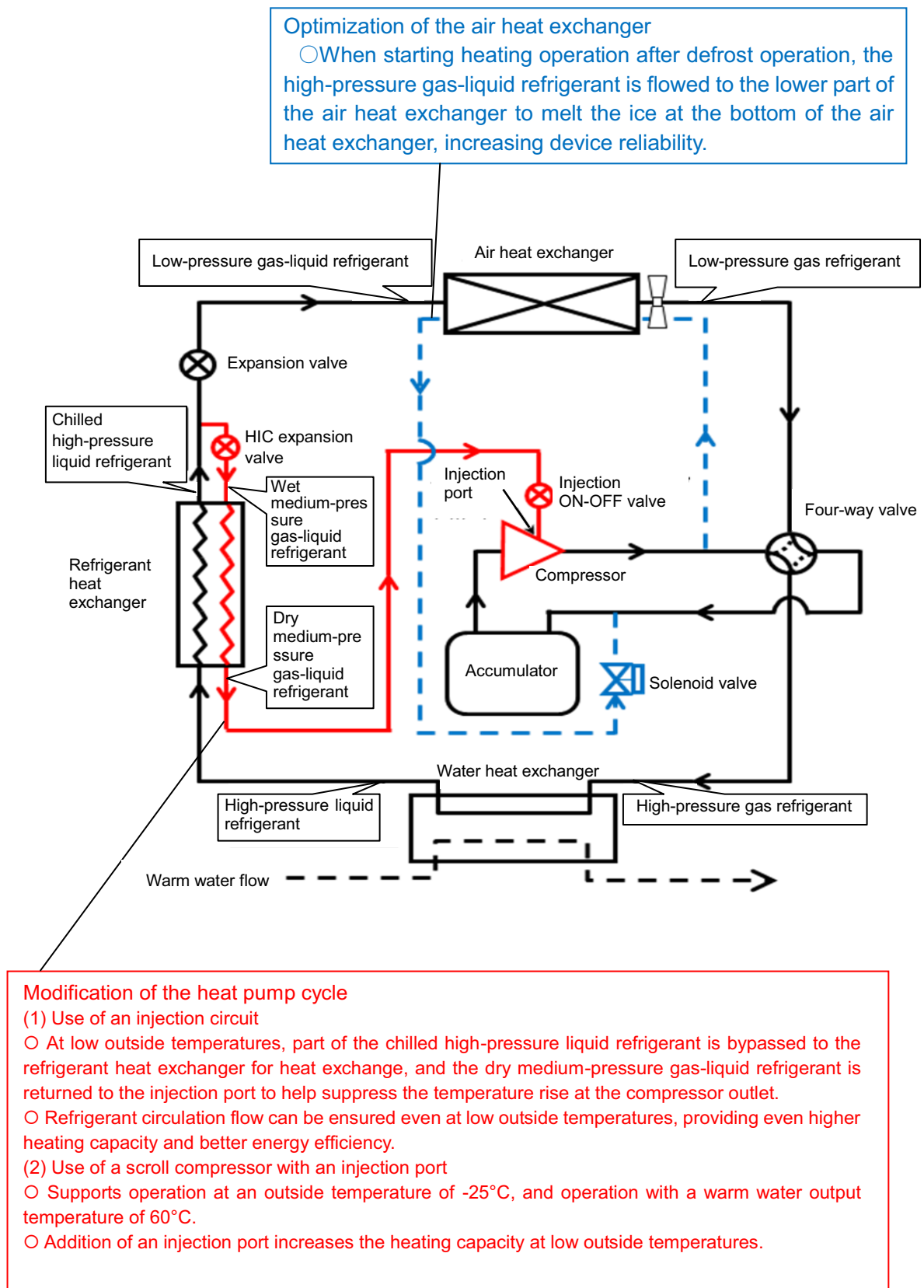


Fig. 1 Explanatory drawing of technologies for expanding the operating range and increasing heating capacity (Refrigerant piping system diagram)

(2) Expanded operating range

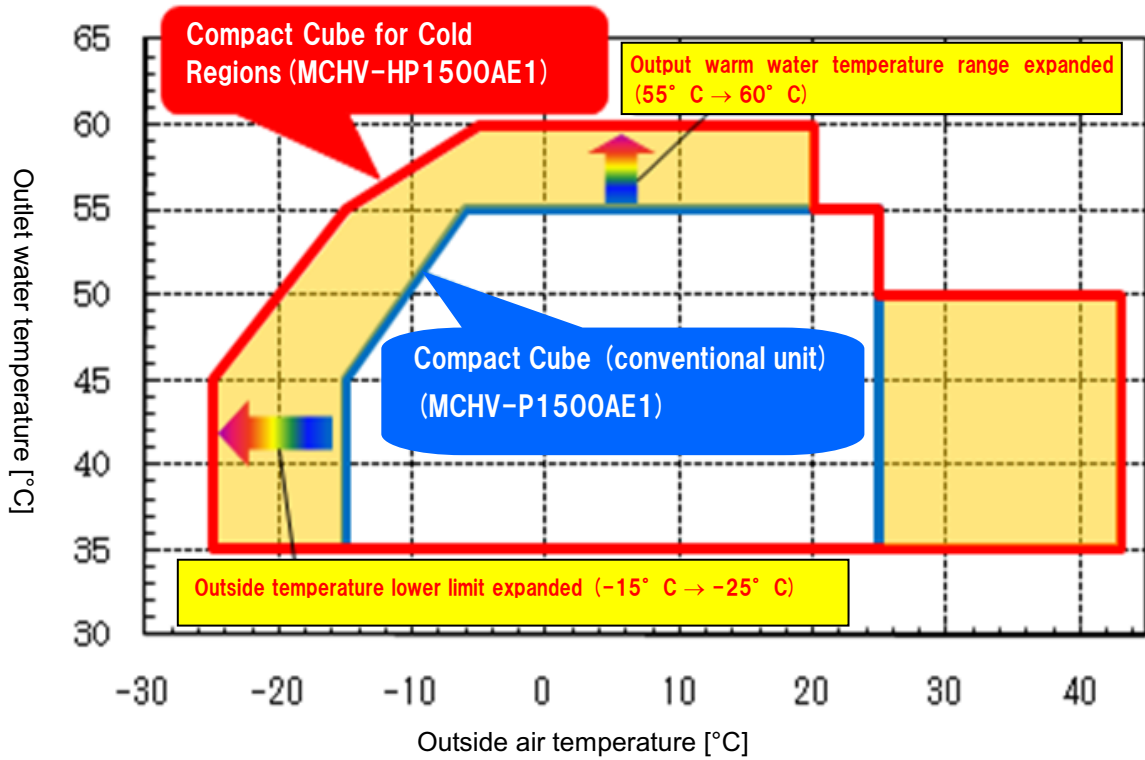


Fig. 2 Graph of outlet temperature vs. outside temperature

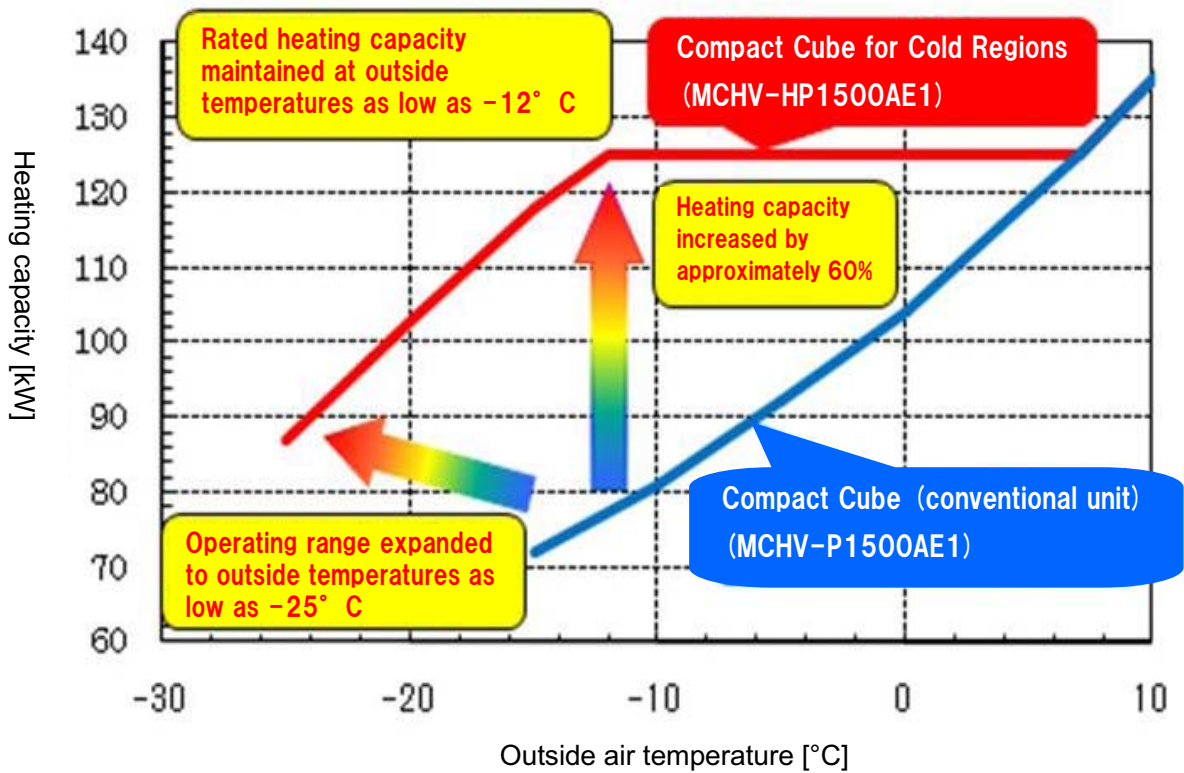


Fig. 3 Graph of heating capacity vs. outside temperature