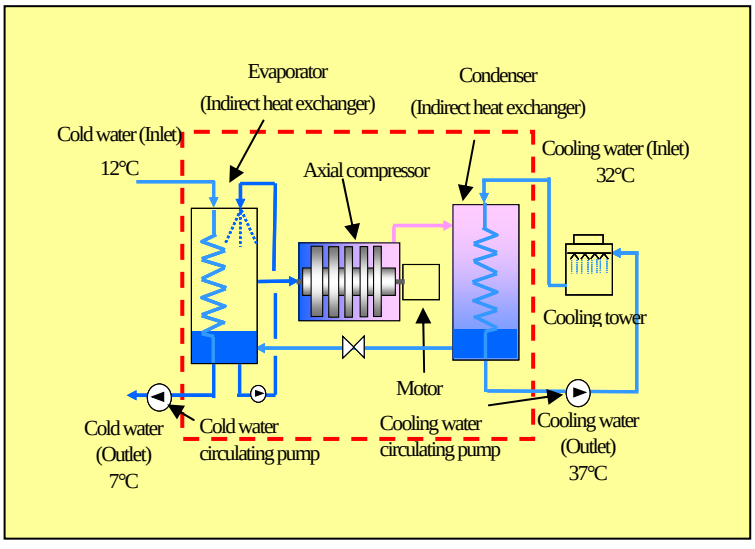
Appendix 2: Outline of Water Vapor Chiller with Axial Compressor

1. Appearance

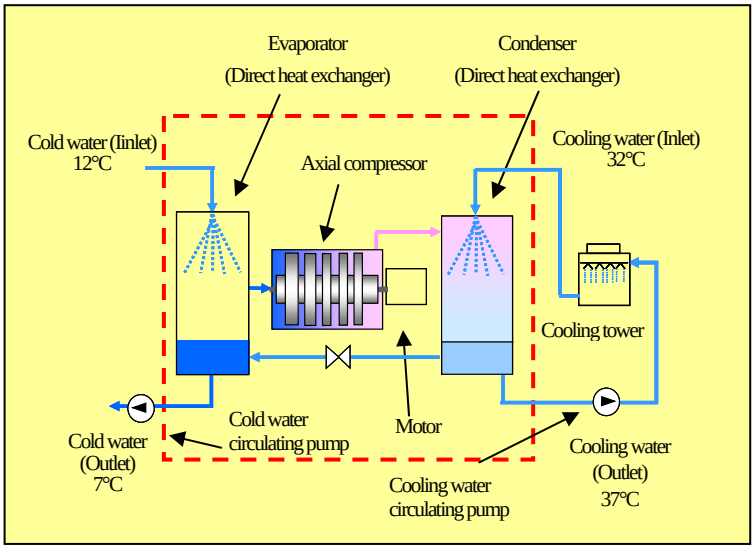
Photo 1　Water Vapor Chiller (Indirect Heat Exchanger)



Water acting as refrigerant circulates from the evaporator to the axial compressor, then to the condenser and back to the evaporator (the refrigerant for this section has been switched from fluorocarbon to water).

Fig. 1　System Overview (Indirect Heat Exchanger)

Photo 2: Water Vapor Chiller (Direct Heat Exchanger)



Water acting as refrigerant circulates from the evaporator to the axial compressor, then to the condenser and back to the evaporator, while being mixed with cooling water and cold water.

Fig. 2: System Overview (Direct Heat Exchanger)

2. Specifications

Table: Water Vapor Chiller with Axial Compressor Specifications

Heat Exchanger	Indirect Heat Exchanger	Direct Heat Exchanger
Target Cooling Capacity	Approx. 1,600 kW	Approx. 1,800 kW
Target COP[*1]	Approx. 4.8	Approx. 5.4
Current Dimensions[*2]	L 7.0 m x W 3.9 m x H 4.2 m	L 6.6 m x W 2.8 m x H 3.5 m
Compressor	Axial compressor for water vapor chiller	
High Pressure Gas Safety Law	Not applicable	
Refrigeration Safety	Not applicable	

*1 Values under the specified water temperature conditions: 12℃ at the cold water inlet and 7℃ at the outlet; 32℃ at the cooling water inlet and 37℃ at the outlet.
(These values are design targets and subject to confirmation by performance tests.)

*2 Dimensions of the current prototype. Smaller dimensions will be pursued for mass production.