601 N.W. 65th Court,
Ft. Lauderdale, FL 33309
Phone: 954-776-5471
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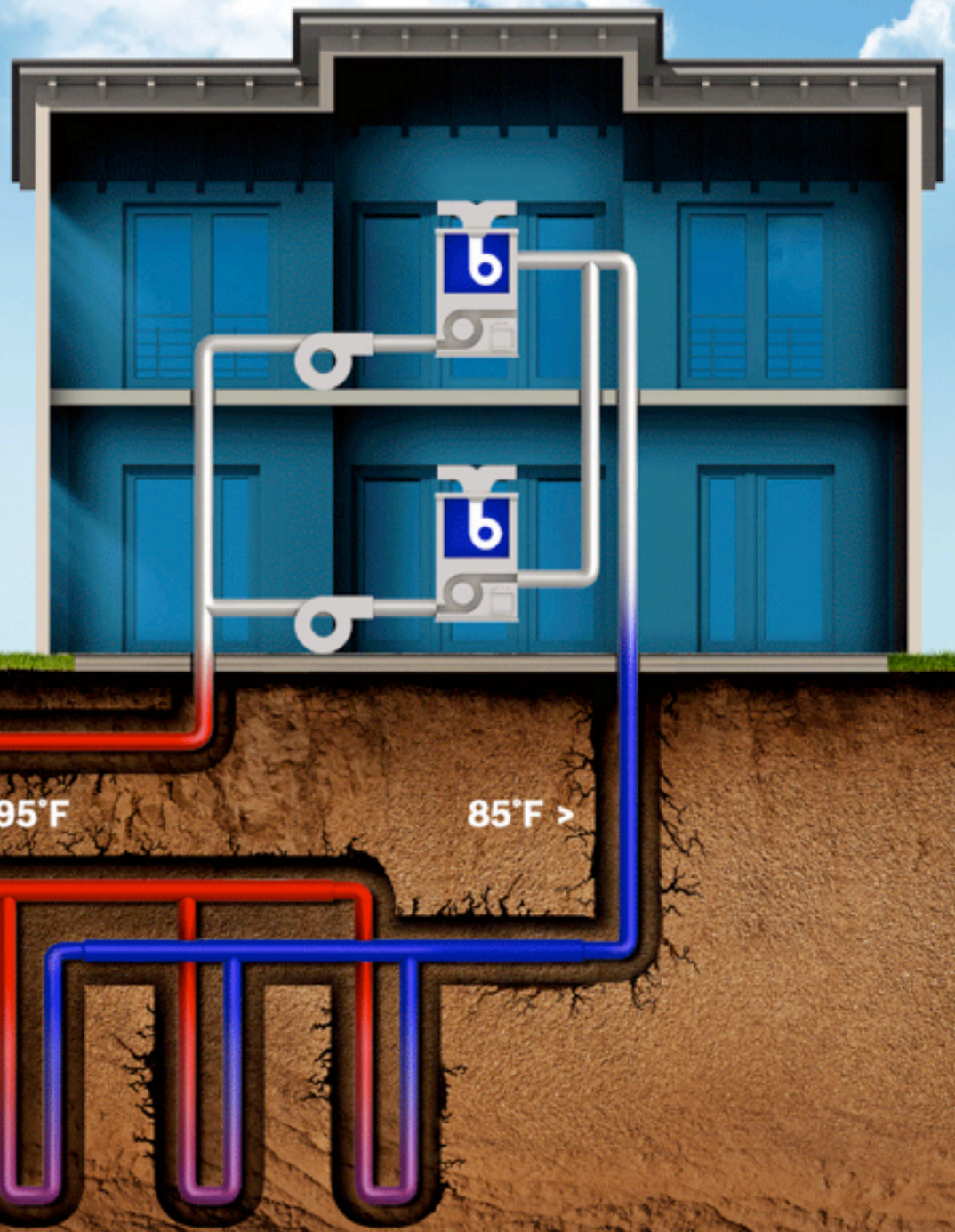

Mode 1: Summer

The heat pumps are cooling during hot summer weather. In this mode, heat is removed from the air and transferred to the closed loop ground heat exchanger. The engineered closed loop ground heat exchanger then transfers the heat energy to the earth's cooler soil to sustain a maximum design fluid temperature. This heat energy is also stored in the earth to be removed in the heating season.

Mode 2: Winter

The stored heat energy rejected in the cooling operation is then recovered by the closed loop ground heat exchangers cooler fluid and transferred to the geothermal heat pump where the mechanical refrigeration components boost the circulating air to a comfortable warm temperature.

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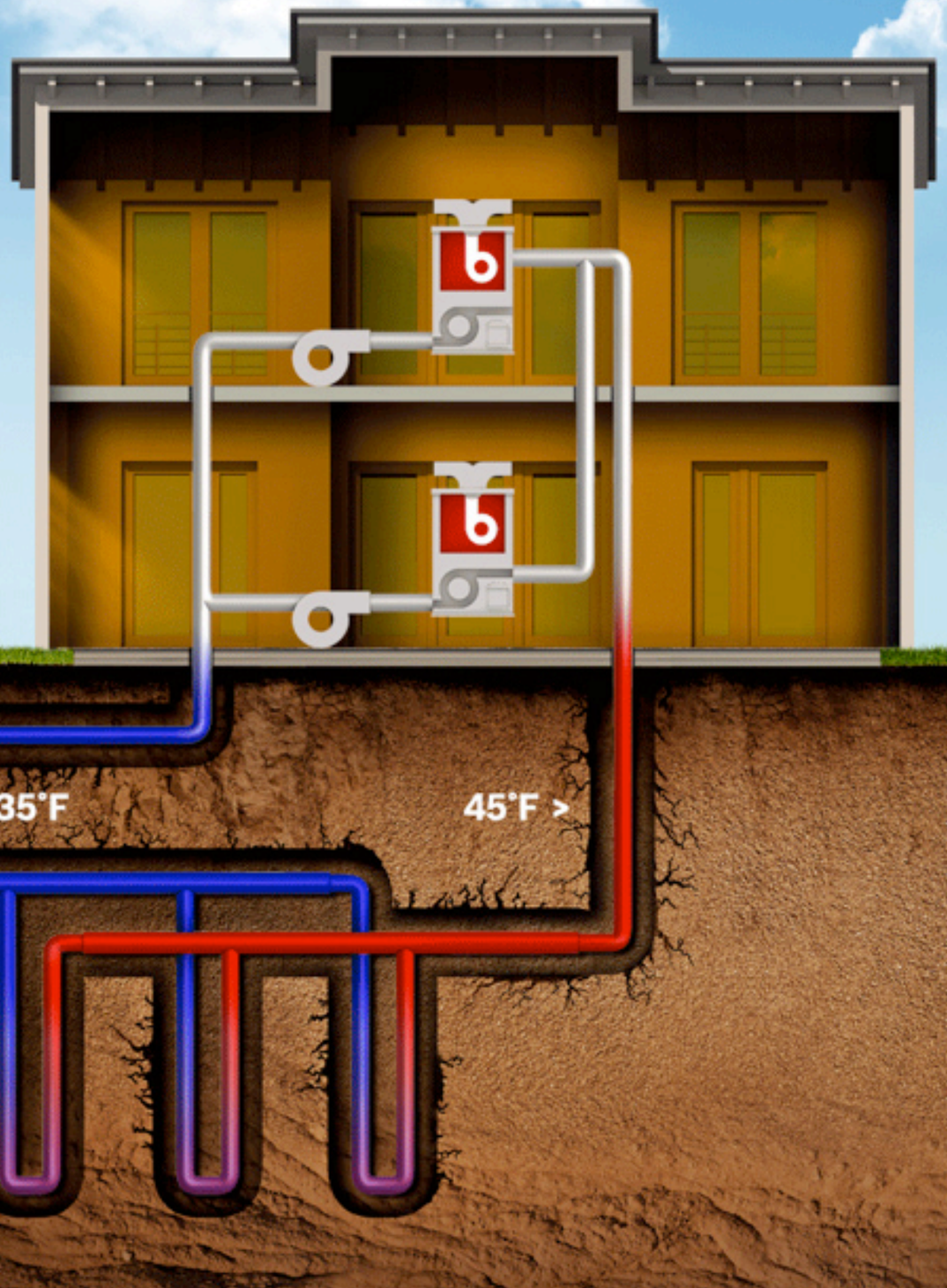

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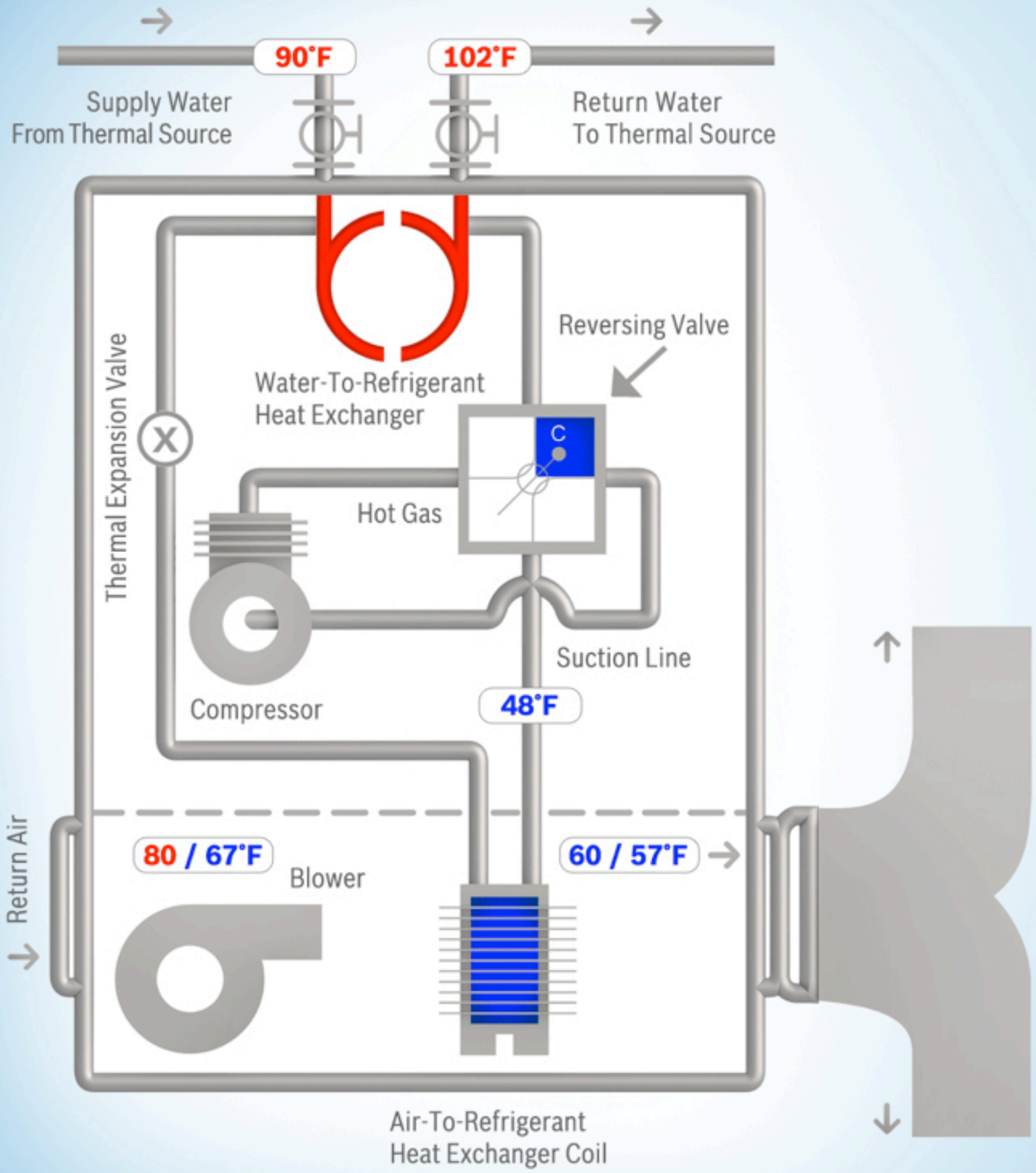

WORKING MODE OF A HEAT PUMP

Cooling Mode

During the COOLING mode, the refrigerant, a hot gas, is guided from the compressor to the water-to-refrigerant heat exchanger by the reversing valve. In the water-to-refrigerant heat exchanger, the water removes the heat and the hot gas condenses into a liquid. This liquid then flows through a thermal expansion valve metering system to the air-to-refrigerant heat exchanger coil. While it evaporates into a gas, the liquid absorbs heat and cools the air that passes over the coil surface. The cooling cycle is completed when the refrigerant flows as a low pressure gas through the reversing valve and back to the suction side of the compressor.

Heating Mode

During the HEATING mode, the refrigerant, a hot gas, is guided from the compressor to the air-to-refrigerant heat exchanger coil by the reversing valve. In the air-to-refrigerant heat exchanger coil, the heat is removed by the air that passes over the coil surface, and the hot gas condenses into a liquid. This liquid then flows through a thermal expansion valve metering system to the water-to-refrigerant heat exchanger. While it evaporates into a gas, the liquid absorbs heat and cools the water. The heating cycle is completed when the refrigerant flows as a low pressure gas through the reversing valve and back to the suction side of the compressor.

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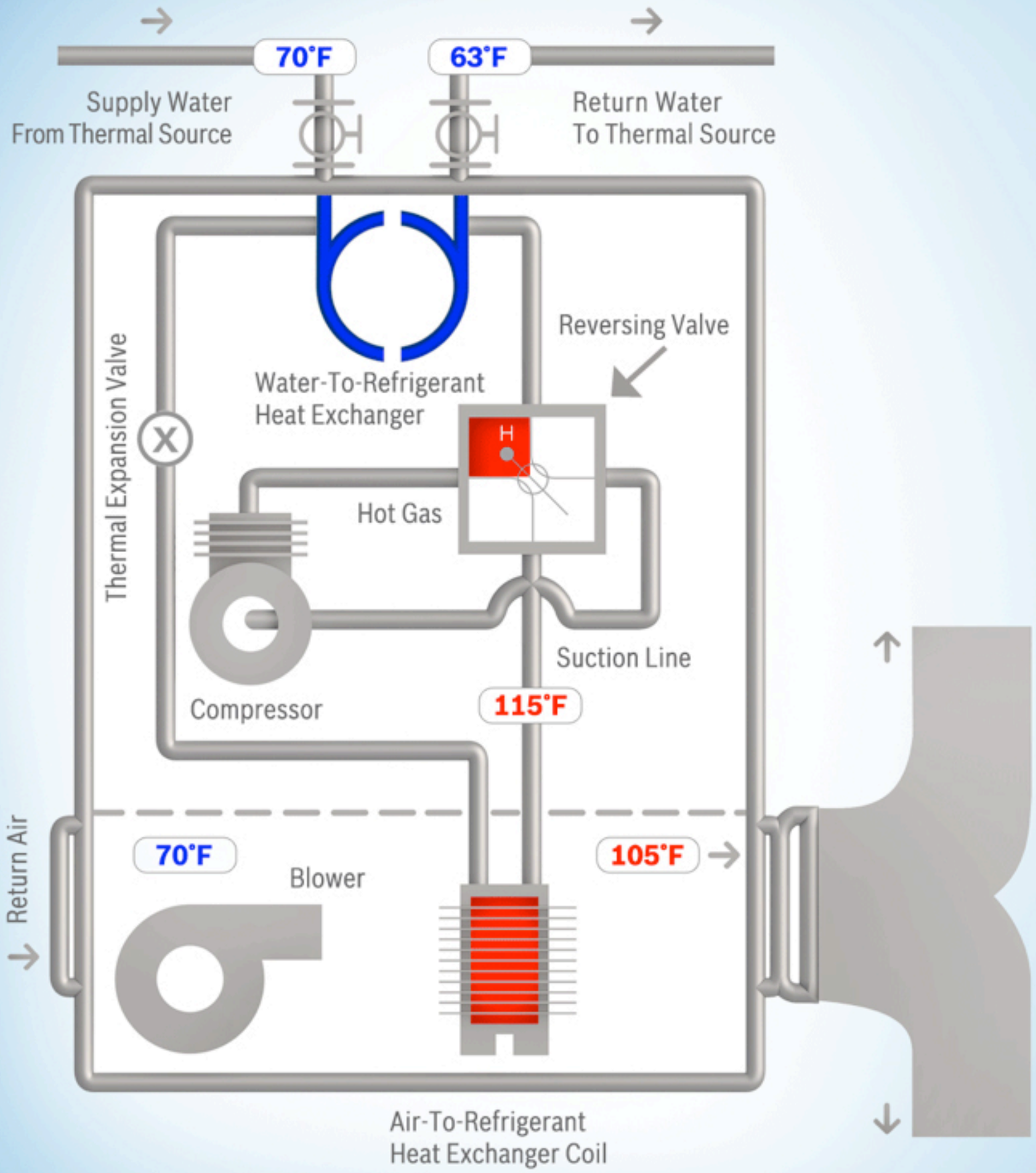

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