

INDUSTRIAL COOLING DATASHEET REFERENCE

Technical reference for industrial chiller spare parts, evaporators, condensers, heat exchangers, pumps, valves, controls, and replacement review.

Evaporator and condenser review

Material compatibility

Replacement quotation checklist

Use this datasheet to prepare component comparison, replacement matching, and quotation data before requesting final APT engineering confirmation.

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QUICK DATASHEET SUMMARY

Chiller Parts and Heat Exchanger Scope

Component datasheets should help buyers and engineers confirm what information is needed for replacement parts, heat exchanger selection, and spare parts quotation.

COMPONENT AREA	REFERENCE DATA	ENGINEERING NOTES
Evaporator	Plate heat exchanger, shell and tube, coil type, stainless steel option, titanium option, project-defined	Confirm process fluid, flow rate, temperature, pressure, fouling risk, and material compatibility.
Condenser	Air cooled condenser coil, water cooled shell and tube, coaxial condenser, replacement condenser	Confirm refrigerant, capacity, condenser water condition, fan arrangement, or cooling tower data.
Heat Exchanger Material	Copper, stainless steel 304 / 316, titanium, carbon steel shell, project-defined	Material should match fluid quality, chloride level, corrosion risk, cleaning method, and hygiene requirement.
Pump and Water Circuit	Standard pump, high pressure pump, stainless steel pump, external pump, tank, filter, valve	Confirm flow rate, pump head, pipe distance, equipment resistance, and water quality.
Refrigeration Parts	Compressor, expansion valve, solenoid valve, filter drier, sight glass, pressure switch, refrigerant sensor	Confirm refrigerant, voltage, capacity, model, connection, and original component information.
Electrical Controls	Temperature controller, PLC, contactor, overload relay, breaker, phase protector, sensor, HMI	Confirm voltage, control logic, wiring diagram, alarm output, and maintenance preference.
Replacement Review	Existing part photos, nameplate, dimensions, connection size, model number, operating condition	Replacement accuracy depends on real component data and installation constraints.

Reference note: Chiller parts should not be selected by appearance only. Capacity, material, refrigerant, fluid side condition, pressure, connection layout, and electrical compatibility should be reviewed together.

Evaporator and Condenser Selection Reference

Heat exchanger matching is the most important part of many chiller parts requests. The tables below separate process-side evaporator data from condenser-side heat rejection data.

EVAPORATOR ITEM	DATA TO CONFIRM	SELECTION NOTES
Evaporator Type	Plate, shell and tube, coil-in-tank, coaxial, project-defined	Selected according to fluid cleanliness, service access, pressure drop, and maintenance method.
Cooling Capacity	kW, kcal/h, RT, or project heat load	Capacity should match real process heat load, not only old chiller nameplate.
Process Fluid	Water, glycol water, DI water, oil, chemical solution, special fluid	Fluid affects material, seal, corrosion allowance, and fouling review.
Inlet / Outlet Temperature	Process return and supply temperature	Used to confirm heat transfer duty and anti-freezing protection.
Process Flow Rate	L/min, m ³ /h, GPM	Must match heat exchanger channel, pressure drop, and pump selection.
Material Requirement	Copper, stainless steel, titanium, PVC, project-defined	Review chloride, pH, conductivity, contamination, cleaning agent, and corrosion risk.
Connection Layout	Thread, flange, port size, inlet/outlet direction	Replacement parts require accurate dimensions and installation space confirmation.

CONDENSER ITEM	DATA TO CONFIRM	SELECTION NOTES
Condenser Type	Air cooled coil, shell and tube, coaxial, project-defined	Selected according to chiller type, heat rejection method, and installation condition.
Refrigerant	R410A, R407C, R134a, R22 replacement, project-defined	Condenser and refrigeration parts must match refrigerant pressure and system design.
Heat Rejection	Project-defined capacity	Usually higher than cooling capacity due to compressor heat input.
Water Cooled Data	Condenser water inlet/outlet temperature, flow, pressure, water quality	Required for water cooled condenser or shell and tube replacement.
Air Cooled Data	Ambient temperature, fan quantity, coil size, airflow direction	Required for air cooled condenser coil or fan replacement.
Mounting and Size	Length, width, height, fixing holes, connection position	Critical for replacement into an existing chiller cabinet.

PARTS DATA TABLES

Pump, Valve, Refrigeration, and Electrical Parts Reference

Spare parts requests should include both the original component information and the actual operating condition, especially when the replacement part is used in an existing chiller.

PUMP / WATER CIRCUIT ITEM	DATA REQUIRED	NOTES	REFRIGERATION ITEM	DATA REQUIRED	NOTES
Pump Type	Standard, high pressure, stainless steel, external	Match flow, head, seal, and fluid.	Compressor	Model, refrigerant, voltage, capacity	Original nameplate photo is preferred.
Flow Rate	L/min, m³/h, GPM	Confirm process demand and pipe resistance.	Expansion Valve	Refrigerant, capacity, temperature range	Match evaporator and operating condition.
Pump Head	m, bar, psi	Confirm height, filters, valves, and equipment pressure drop.	Solenoid Valve	Port size, voltage, refrigerant	Confirm coil voltage and connection.
Motor Voltage	Voltage / phase / frequency	Must match site power and control panel.	Filter Drier	Pipe size, refrigerant, capacity	Selected according to refrigeration circuit.
Tank	Built-in, external, stainless steel, open or closed	Review temperature stability and water quality.	Pressure Switch	High / low pressure range	Protection setting should match refrigerant.
Water Accessories	Filter, valve, pressure gauge, flow switch	Selected according to maintenance and protection needs.	Fan Motor	Voltage, airflow, diameter, mounting	Used for air cooled condenser service.

ELECTRICAL / CONTROL ITEM	REFERENCE DATA	REPLACEMENT REVIEW NOTES
Temperature Controller	Controller model, sensor type, control output, alarm output	Confirm wiring and control logic before replacement.
PLC / HMI	Program function, communication, interface, panel size	Project review is required when program logic is involved.
Contactors / Relay / Breaker	Rated current, coil voltage, pole number, protection rating	Electrical parts must match load and safety requirements.
Sensor	Temperature, pressure, flow, level, signal type	Confirm measuring range, thread, cable, and controller compatibility.
Wiring Reference	Electrical diagram, terminal number, panel photo	Recommended for accurate maintenance and replacement discussion.

REPLACEMENT REVIEW

Existing Chiller Parts Matching Checklist

For replacement parts, APT needs enough information to compare the new component with the existing system. Photos and nameplate data are often more useful than a short text description.

REQUIRED INFORMATION	CUSTOMER INPUT	WHY IT IS NEEDED
Chiller model and serial number		Helps identify original configuration and component direction.
Existing component photos		Shows layout, connection, mounting, label, and service condition.
Component nameplate		Confirms model, capacity, voltage, refrigerant, and rating.
Dimensions		Required for cabinet fit, mounting, and replacement installation.
Connection size and type		Confirms thread, flange, refrigerant port, or water pipe interface.
Refrigerant type		Required for compressor, valve, condenser, and evaporator matching.
Cooling capacity or heat load		Prevents undersized or oversized heat exchanger replacement.
Fluid type and water quality		Affects material, fouling, corrosion, and cleaning requirements.
Flow rate and pressure		Required for pump, evaporator, condenser water, and valve selection.
Voltage / phase / frequency		Required for motor, compressor, valve coil, controller, and panel parts.
Installation constraints		Confirms space, pipe direction, service access, and replacement feasibility.
Failure symptom or service reason		Helps determine whether a single part or system-level review is needed.

Quotation preparation: Send the completed data, photos, component labels, and drawings to APT for chiller parts or heat exchanger datasheet review before price and delivery confirmation.

COMPONENT REQUEST DATA

Information Needed Before Parts or Heat Exchanger Quotation

This page can be used as a customer-facing checklist before requesting spare parts, heat exchanger replacement, or component datasheet support.

Component category: evaporator, condenser, pump, valve, compressor, controller, or electrical part	Existing part brand, model, nameplate, or original specification
Clear photos of the part, mounting position, connection, and label	Chiller type: air cooled, water cooled, custom, or replacement system
Cooling capacity or process heat load	Refrigerant type and operating pressure if available
Process fluid, water quality, glycol ratio, pH, chloride, or DI water condition	Process inlet and outlet temperature
Water flow rate and pump head requirement	Condenser water temperature and flow for water cooled parts
Voltage, phase, frequency, and control voltage	Connection size, pipe direction, flange or thread type
Material requirement: copper, stainless steel, titanium, PVC, or project-defined	Installation space, cabinet dimensions, and service access
Quantity required and target delivery schedule	Failure reason, maintenance goal, or upgrade requirement

Practical note: If the original part is no longer available, APT can review a replacement direction, but the final selection should be confirmed by comparing dimensions, performance data, material, pressure rating, electrical data, and installation layout.

Chiller Parts and Heat Exchanger Datasheet FAQ

Common questions for spare parts, heat exchanger replacement, and component datasheet preparation.

Can APT provide heat exchanger datasheets for chillers?

Yes. APT can review evaporator, condenser, shell and tube, plate heat exchanger, stainless steel, titanium, and project-specific heat exchanger directions according to process data.

What information is needed for replacement parts?

Photos, nameplate data, dimensions, connection size, refrigerant, voltage, flow rate, pressure, material, and existing chiller information help improve matching accuracy.

Can APT match an old chiller part without drawings?

APT can start a preliminary review from photos and measurements, but final matching should be confirmed with dimensions, rating data, and installation layout.

Why is water quality important for heat exchangers?

Water quality affects scaling, corrosion, fouling, material selection, and long-term heat transfer performance, especially for plate and shell and tube heat exchangers.

Can pump flow and head be customized?

Yes. Pump type, flow rate, head, motor voltage, seal material, and stainless steel options can be reviewed according to the process loop.

Are these datasheets final drawings?

No. They are technical references for early review. Final drawings, part model, price, and delivery should be confirmed after engineering review.

Need Chiller Parts or Heat Exchanger Datasheet Support?

Send component photos, nameplate data, dimensions, connection size, fluid condition, flow rate, pressure, voltage, and application details for engineering review.

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