

APT INDUSTRIAL CHILLER

INDUSTRIAL COOLING
REFERENCE DOCUMENT

<https://applied-chiller.com/>



20HP Air Cooled Chiller for 7700 Plasma Spray System

Project Snapshot

20HP air cooled chiller direction for a 7700 plasma spray system cooling project.

APPLICATION 7700 Plasma Spray System	INDUSTRY Aircraft Engine Overhaul Workshop
COOLING TARGET Closed-loop process water	CHILLER DIRECTION 20HP Air Cooled Industrial Chiller
REVIEW FOCUS Heat load, flow rate, pump pressure, water quality, ambient temperature	



COOLING CHALLENGE

Process Review

- High heat during plasma spray operation and related support equipment duty.
- Stable water temperature required for process reliability and workshop continuity.
- Independent workshop installation without cooling tower dependency.
- Flow rate and pump pressure must match the real equipment loop resistance.

RECOMMENDED DIRECTION

A 20HP air cooled industrial chiller was considered as the preliminary direction for this 7700 plasma spray cooling project. Final sizing should be confirmed by heat load, target water temperature, flow rate, pump pressure, ambient temperature, voltage, and installation layout.

ENGINEERING REVIEW

Engineering Matrix

ENGINEERING ITEM	WHY IT MATTERS	DATA TO CONFIRM
Heat Load	Confirms whether 20HP is suitable as reference direction.	Total cooling demand from the plasma spray system and related equipment.
Water Temperature	Defines controller setpoint and process stability requirement.	Required outlet temperature and acceptable fluctuation.
Flow Rate	Ensures enough circulation through the closed-loop circuit.	Required L/min or m3/h for the equipment loop.
Pump Pressure	Checks whether pump can overcome loop resistance.	Pump head, pipe length, filters, and heat exchanger resistance.
Ambient / Airflow	Affects air cooled condenser margin and ventilation review.	Workshop ambient, airflow clearance, and hot-air recirculation risk.

Reference direction only. Final engineering review should be completed before quotation and final model confirmation.

20HP Air Cooled Chiller Configuration

Main configuration points for a 7700 plasma spray cooling reference project.

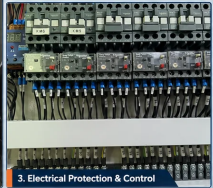
Industrial Chiller Internal Detail View



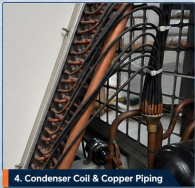
1. Compressor & Refrigeration Circuit



2. Refrigerant Test & Service Ports



3. Electrical Protection & Control



4. Condenser Coil & Copper Piping

Components shown for engineering reference. Final configuration depends on project requirements.

Industrial Chiller Internal Detail View

- 01

Compressor Circuit

Industrial compressor and copper piping for continuous process cooling duty.
- 02

Service Ports

Pressure gauges and service ports for commissioning and maintenance review.
- 03

Electrical Control

Contactors, overload protection, and wiring for industrial operation safety.
- 04

Condenser Coil

Air cooled condenser and copper piping for heat rejection without a cooling tower.

TECHNICAL REFERENCE

COOLING METHOD Air cooled condenser	CAPACITY DIRECTION 20HP reference	COOLING CAPACITY Approx. 50-60 kW / 14-17 TR	COOLING CIRCUIT Closed-loop process water
OUTLET TEMP. Project-defined, often 7-25 C	PUMP SELECTION By required flow and head	POWER SUPPLY 380-460V, 50/60Hz by destination	FINAL REVIEW Heat load / flow / pump head / ambient

Review Note

Final component selection should be confirmed according to actual heat load, flow rate, pump head, target water temperature, ambient condition, voltage, and installation layout.

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