

WET SURFACE AIRCOOLED CONDENSER

Thermal Products, Inc.
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How It Works

The Niagara Wet Surface Aircooled Condenser, in one machine, does the work of both a cooling tower and a submerged coil condenser.

The heat of condensation flows from the refrigerant gas (through the tube walls and the film of water which covers them) into the air stream and outdoors. Heat transfer rate is high, mostly as latent heat of vaporization. Condenser tubes are thoroughly and continuously drenched by a massive flow of water from flooding nozzles. This water is recirculated. Such a small portion of it is actually vaporized (or drained off to prevent accumulation of dissolved solids) that savings of

water expense frequently return the price of the machine in one year.

Because condenser tube surfaces are never dry and because the superheat in the refrigerant gas has been already taken out by the Duopass (dry surface de-superheater coil), there is no aggravation of scaling on the tube surfaces. This adds greatly to the life of the equipment.

You also save power expense. With full capacity you condense at a lower temperature, reducing the spread between suction and head pressures, balancing the system with the lowest power consumption per ton of refrigeration.

Niagara Blower Company

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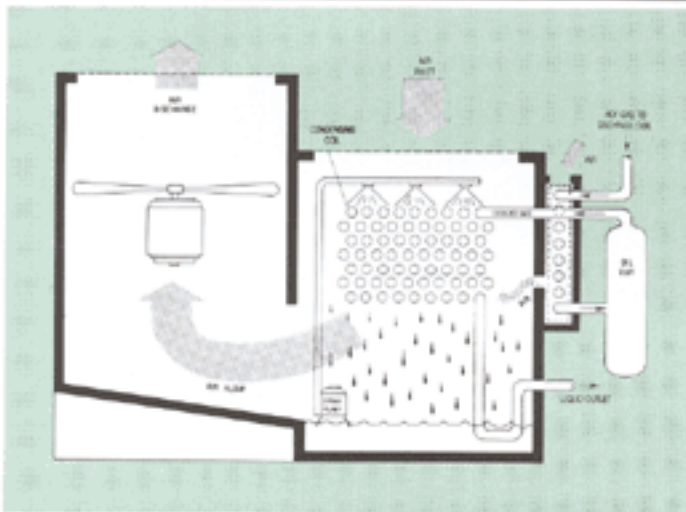
NIAGARA WET SURFACE AIRCOOLED CONDENSER PHYSICAL DATA



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CAPACITY RANGE

10 to 1400 tons; large selection of models and arrangements at small tonnage intervals, provides a close match to any capacity requirement.



It has been said, "A refrigerant condenser can't be too well built." Niagara Condensers are unsurpassed in design, materials and workmanship and offer these special features that can lower your operating costs.

- 1. Condensing Tube Bundles:** Ample in extent to assure always full capacity. You may choose either prime or extended fin surface tube bundles. Finned tube bundles permit operation without sprays at low outside air temperatures. Prime surface tube bundles require minus 20°F for full capacity with dry operations.
- 2. Cascade Water Spray System:** Effective flooding nozzles, carefully positioned spray tree, float valve control of make-up and blowdown, form a balanced system with utmost dependability. Massive, recirculated cascade water spray flow keeps tube bundles clean, holds full capacity.
- 3. Fan System:** Niagara air engineering assures the most effective use of moving air. You may choose either centrifugal or propeller type fans with standard-make fan motors and bearings. Fan Assemblies are statically and dynamically balanced at the factory. Fan units are available to fit all indoor or outdoor location needs.

- 4. Sectional Panel Construction:** Casings are assembled of panel type construction with easy access to spray nozzles and float valve. Panels are heavy gauge steel accurately formed and protected from corrosion by Niagara "Rubberkote" or hot-dip galvanizing. Low silhouette design is desirable for roof installation.

Optional Features:

Niagara Duopass: This extra coil is located in a dry air bypass section, adjacent to condensing tube bundle and will remove the superheat, bringing gas temperature down near the condensing point, arresting the formation of scale on the condensing coils and condensing tube oil vapors. Warm, fresh air from this bypass mixes with air leaving the condenser, reducing fog or drift precipitating from the leaving air.

Niagara "Oil-Out": Located in the refrigerant gas line between the "Duopass" and condensing coils, effectively removes oil and dirt from the refrigerant, restoring the system to its "new plant" efficiency.

Air Intake Control Dampers: This optional control varies the air volume to adjust the condensing capacity directly to changes in the load, giving you automatic year round operation at constant head pressure and maximum capacity, for low cost, trouble-free operation.

APPROXIMATE MAXIMUM BASE DIMENSIONS

Model No.	Width	Length	Model No.	Width	Length	Model No.	Width	Length
A2501	43	70	A2510	138	178	A2524	320	178
02	43	95	11	153	178	26	336	178
03	63	85	12	162	178	28	360	178
04	63	112	13	170	178	30	380	178
05	63	145	14	180	178	32	416	178
06	83	148	15	188	178	34	456	178
07	83	175	16	208	178	36	496	178
08	99	178	20	272	178	38	548	178
09	130	178	22	304	178	40	604	178