NEWIN
All About Cooling Tower

NECH Series

Mixed Flow Evaporative Condenser

NECH stands as a prominent example of evaporative condensers, distinguished by its mixed flow heat transfer, the cross-flow direction of air and refrigerant steam. This innovative design ensures uniform airflow throughout the condenser, resulting in heightened efficiency in heat exchange.

Advantages

➪ **Mixed flow heat transfer, Efficient condensation.**

The vertical cross-flow direction of air and refrigerant steam ensures uniform air flow through the condenser, facilitating efficient heat transfer.

➪ **Secondary heat transfer, enhancing cooling efficiency.**

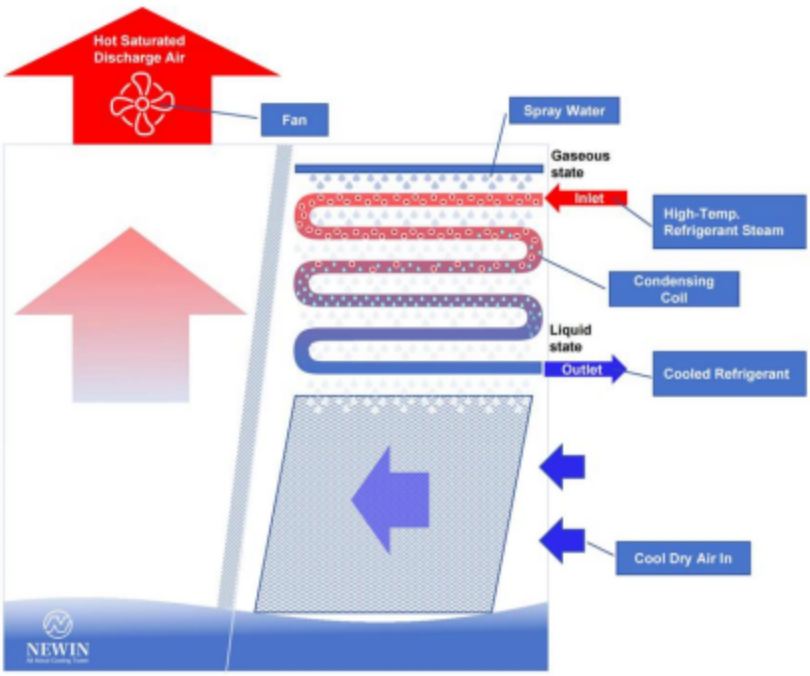
Spray water passes through the condenser coil for initial heat exchange, then flows through the lower part (PVC heat exchange layer) for secondary heat transfer, and finally collects in the water basin for recycling. This process further enhances cooling efficiency.

➪ **Closed circuit system, Energy saving and Environmental protection.**

The gaseous refrigerant is condensed and circulated within a closed coil system, thereby minimizing the risk of contamination, maintaining cleanliness, reducing water consumption and maintenance costs, and ultimately prolonging the lifespan of the equipment.

➪ **Compact structure design, High Strength and Convenient.**

Small occupation area, Convenient to the shipment, Ease of installation and maintenance.



Operating Principle Of NECH

Parts & Options

1. High Efficient Axial Flow Fan

The utilization of the cooling tower special aluminum alloy axial flow fan, forward type blade structure design, small wind resistance, big air volume, low noise, good performance, high efficiency. Streamline high-strength fan stack ensures airflow uniform through the fan inlet and outlet area, maximum reduce the energy consumption.

* Fan motor's protection class: IP55, Insulation class: F class.

2. Uniform Water Distribution

The spray system utilizes SPJT pressure type nozzles to produce a delicate and concentrated liquid mist, propelled by the force of the water pump, resulting in a wide coverage area and uniform distribution.

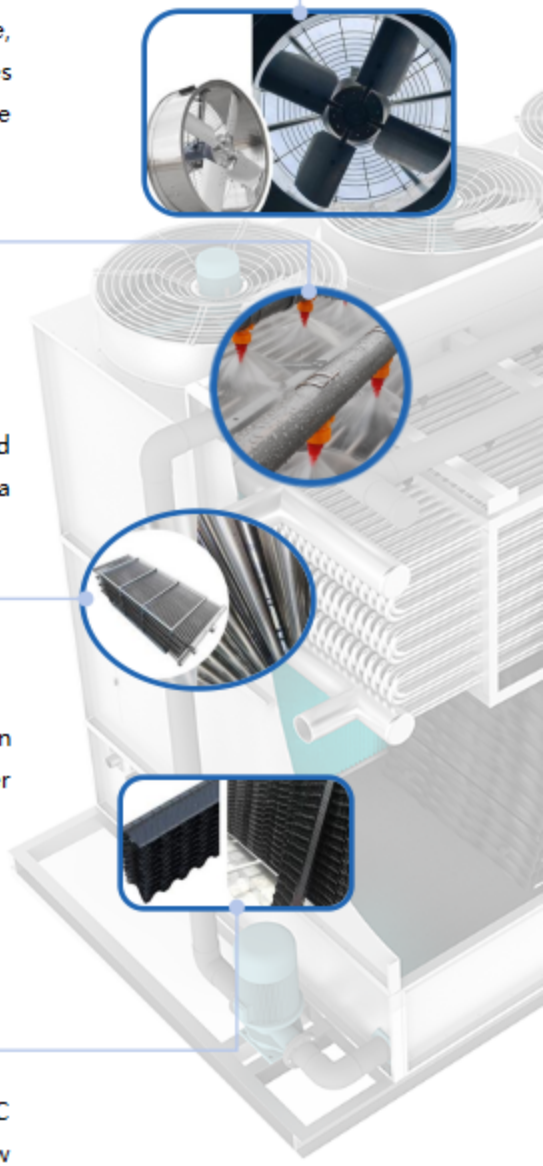
3. Stainless Steel Condenser Coil

The 304 stainless steel condenser coil boasts exceptional anti-corrosion properties, while its unique serpentine coils design enhances heat transfer performance.

* Coil materials: SUS 304/316, Copper or Galvanized steel for option.

4. High Performance Drift Eliminator

NEWIN made MBD series drift eliminator, advanced self-extinguishing PVC material, small wind resistant and effectively remove the exhaust air flow entrained water droplets, maximum drift capture and recovery 99.99%.



5. PVC Heat Exchange Layer

The utilization of NEWIN-made MAH series fills, featuring advanced self-extinguishing PVC material and a special texture design, provides ample heat exchange surface area. These fills are integrally molded with louver and drift eliminator to ensure uniform airflow and effective reduction of drift loss, offering a large heat exchange area and high heat transfer performance.

* Optional high temperature resistant or cold resistant fillers can be utilized to accommodate specific working conditions.

6. Heavy-duty Construction

The modular compact structure using the high quality of Z700 galvanized plates is anti-corrosion and high stability. The **Exceptional corrosion resistant NWN-Armour panel** or SUS304/316 plate is optional.

7. Air Inlet Louver

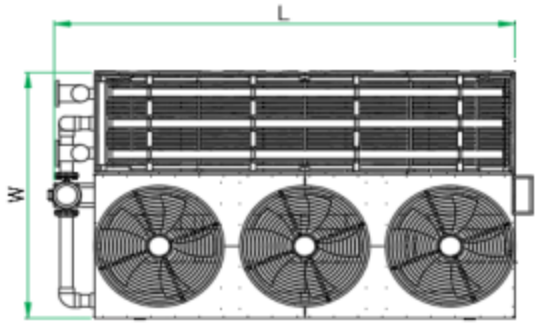
The air inlet louver ensures uniform airflow into the equipment reduces noise, and prevents the packing from being exposed, maintenance-free.

About NWN-Armour Anti-corrosion Panel

The galvanized steel panel with NWN-Armour anti-corrosion coating exhibits exceptional resistance to corrosion, rivaling the characteristics of stainless steel. It serves as a cost-effective substitute for Stainless Steel 304.

Options	
► Noise reduction upgrade	► Anti-Freeze heater
► Vibration isolator	► Stainless steel casing and framework / bolts and nuts (304 / 316)
► High-temperature upgrade	► Dual-speed Motor & VFD motor, or Permanent magnet motor direct-drive fan

Parameter



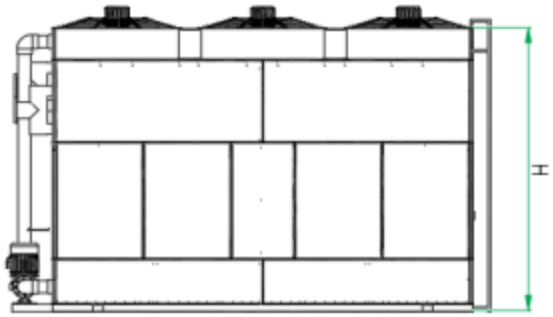


Table 1.Technical Specification

Item / Model	Heat Rejection Capacity (KW)	Dimension (mm)			Axial Fan		Spray Pump		NH3 Ammonia Charge (kg)	Weight (kg)
		Length	Width	Height	Air Volume (m³/h)	Power (Kw)x Qty	Flow (m³/h)	Power (Kw)		
NECH-240	240	2500	1970	2263	32000	1.1*2	32.5	1.5	25	3050
NECH-320	320	2500	1970	2263	32000	1.1*2	32.5	1.5	37	3360
NECH-400	400	3100	1970	2395	48000	1.1*3	45	2.2	39	3680
NECH-480	480	3100	1970	2395	48000	1.1*3	45	2.2	48	4050
NECH-560	560	3100	1970	2890	48000	1.1*3	58	2.2	60	4980
NECH-640	640	3100	1970	2890	48000	1.1*3	58	2.2	71	5180
NECH-800	800	3100	1970	2890	48000	1.1*3	58	2.2	83	6200
NECH-1000	1000	3840	2340	3120	64000	1.1*4	89	4	98	7610
NECH-1200	1200	4350	2340	3645	80000	1.5*4	100	5.5	110	10250
NECH-1400	1400	4350	2340	3645	80000	1.5*4	130	5.5	158	11230
NECH-1600	1600	4350	2340	3645	80000	1.5*4	130	5.5	161	13200
NECH-2000	2000	5630	2340	3890	120000	2.2*4	172	7.5	197	14730

Table 2. Heat Emission Correction Index for R717

Condensing Temp. (°C)	Air Inlet Wet Bulb Temp. (°C)												
	18	19	20	21	22	23	24	25	26	27	28	29	30
30	1.40	1.51	1.63	1.79	1.99	2.24	2.56	3.00					
32	1.18	1.25	1.32	1.43	1.55	1.70	1.88	2.11					
34	1.02	1.07	1.12	1.19	1.28	1.36	1.48	1.61	1.80	2.06			
35	0.95	0.99	1.03	1.08	1.15	1.23	1.30	1.39	1.53	1.69	1.90	2.15	2.47
36	0.89	0.92	0.96	1.01	1.07	1.13	1.20	1.28	1.39	1.53	1.70	1.91	2.17
38	0.78	0.81	0.83	0.86	0.90	0.94	0.99	1.05	1.12	1.21	1.31	1.44	1.59
40	0.70	0.72	0.74	0.76	0.80	0.83	0.87	0.91	0.96	1.02	1.09	1.18	1.29
42	0.63	0.64	0.66	0.68	0.71	0.74	0.76	0.80	0.84	0.88	0.93	0.99	1.06
44	0.56	0.58	0.59	0.61	0.63	0.65	0.67	0.70	0.76	0.76	0.79	0.83	0.86

Table 3. Heat Emission Correction Index for R22 &R134a

Condensing Temp. (°C)	Air Inlet Wet Bulb Temp. (°C)													
	10	12	14	16	18	19	20	21	22	23	24	25	26	28
29	0.86	0.94	1.03	1.15	1.37	1.43	1.55	1.68	1.92	2.10	2.52	3.10		
31	0.77	0.83	0.90	0.99	1.10	1.17	1.24	1.34	1.47	1.62	1.83	2.10	2.48	
33	0.69	0.73	0.79	0.86	0.94	1.00	1.02	1.10	1.20	1.28	1.40	1.56	1.75	2.38
35	0.62	0.66	0.70	0.76	0.83	0.86	0.90	0.93	1.00	1.07	1.18	1.25	1.38	1.68
37	0.57	0.60	0.63	0.67	0.72	0.76	0.78	0.82	0.85	0.90	0.96	1.02	1.10	1.30
39	0.55	0.57	0.59	0.62	0.65	0.68	0.70	0.72	0.75	0.79	0.84	0.88	0.95	1.10
41	0.48	0.49	0.52	0.54	0.57	0.59	0.61	0.63	0.66	0.68	0.71	0.75	0.78	0.90
43	0.44	0.46	0.48	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.66	0.68	0.75
45	0.41	0.42	0.44	0.46	0.48	0.49	0.50	0.52	0.53	0.55	0.56	0.58	0.61	0.66

Instructions for Selection

1. Confirm condensing temperature, wet bulb temperature.
2. Calculate total heat abstraction amount that goes through system to condensers.
3. Take a reference to below Table 2. or Table 3., select heat abstraction amount correction index.
4. Total amount of heat abstraction multiplies heat correction index equals to the condensing load during the working conditions.
5. Take a reference to Graph Specification sheet, select the heat abstraction amount data which is bigger or equivalent tothe data after correction.

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