



# HENG AN COOLING

WEIFANG HENG AN IMP&EXP CO.,LTD

HACST HEAT TRANSFER TECHNOLOGY(SHANDONG) CO.,LTD

## Shandong Heng An Eco- technologies Co.,Ltd.

Tel: +86 536 5607108 Fax: +86 536 5607107

Website:www.wfhengan.com

E-mail:sales01@wfhengan.com

Add:No.2613 Yuhe Road,Weifang City,Shandong Province,China.

## Weifang Heng An Imp&Exp Co.,Ltd.

Tel: +86 536 6103201 Fax: +86 536 6103202

Website:www.hengancooling.com

E-mail:sales01@wfhengan.com

Add:No.2613 Yuhe Road,Weifang City,Shandong Province,China.

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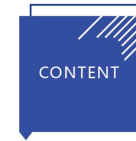
[www.hengancooling.com](http://www.hengancooling.com)  
[www.sd-hacst.com](http://www.sd-hacst.com)





Philosophy of The Company :  
Integrity Management, Pursuit of Excellence,  
Manufacturing Quality Products, Contributing to Society

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## About Heng An

Established in 1975, Weifang Heng An Radiator Group Co., Ltd is a state level high-tech enterprise and the chief director of Radiator Committee of China Association of Automobile Manufacturers, with more than 1100 staffs, an area of 34 hectares and total assets of USD 160 million. The group company currently has 9 subsidiaries, including Weifang Heng An Imp&Exp Co., Ltd., Weifang Heng An Industrial Heat Exchanger Co., Ltd., etc.

Heng An is one of the largest heat exchanger manufacturers, with a state level testing laboratory. It is the first one in the industry gets ISO Quality Management System Certification, TS16949 Quality Management System Certification and Environmental Management System Certification. The company highly focuses on product research& development, it has 12 National New Product categories and 121 patents, and participates many provincial level technology research& innovation projects. Heng An products have been certificated by TUV, SGS, CE, and are awarded China Famous Brand and State Inspection Exemption Product, etc.

Heng An currently has four factories which manufacture industry heat exchangers, copper radiators, aluminum radiators and environmental protecting& energy saving equipment, and the total annual production capability of eight production lines has reached to 3 million units/sets. Heng An products are widely used on automobile, petroleum, chemical engineering, refrigeration and many other areas, and are very popular in both domestic and overseas markets. On account of the great reputation among the customers, Heng An has been selected as the long term supplier of many international brands and cooperates closely with many world-famous enterprises including Caterpillar, Peugeot, XCMG, SINO, etc.

From standardized production to customization, we provide the professional and workable solutions for every customers, and we exceed our customers' expectations by delivering the excellent quality products and service.



**实力雄厚的研发能力**  
Outstanding R&D Ability

- ▶ Professionals:  
We have 52 professionals working on product R&D area, 21 of them have senior professional titles and 12 professionals have doctor degrees.
- ▶ Capability:  
1. Customize product based on different application areas, structures and materials.  
2. Analyze cooling system based on the data collected from the sample installed, and come up with the solution  
3. Help end-users to solve the problems related to the cooling system.
- ▶ Achievements:  
12 national new product categories, 121 national patents and Provincial level technology research & innovation projects.



**应用软件**  
Application Software

Software for Design: Solidworks  
 Software for Analysis:  
 Design, calibration: Thernsystem  
 Fluid Simulation Analysis :Flunt  
 Cooling Capability Analysis: Star  
 Software for Simulation: Vibration modal analysis- Abaqus

**合作创新**  
Cooperation Innovation

▶ National Testing Laboratory  
 Heng An establishes production research cooperative bases together with many institutes including Shandong University, China University of Petroleum, etc. We also establish Shandong Engineering Technology Research Center and Provincial Technology Center for product R&D.  
 Heng An laboratory was established in 1983, it is equipped with the most advanced and comprehensive testing equipment, and is capable of doing wind resistance test, water(oil, air) resistance test, heat dissipation performance test, torsional test, vibration test, thermal shock test, burst test, high temperature& pressure pulse test, salt fog test, etc. The laboratory has passed the assessment by China National Accreditation Service and National Metrology Certification, it can provide reliable and authoritative data for product R&D.

**其它验证项**  
Other testing ability

- Metal Element Spectrum
- Metallographic Analysis
- Digital Magnification
- Projector Measuring
- Salt Fog Test
- Internal Corrosion



Other testing ability

资质荣誉  
Honor

Business License of Legal Entity  
Pressure Vessel Manufacturing License  
China Classification Society Type Approval Certificate  
ISO9001 Quality Management System Certificate



New Design Closed Cooling Tower Patent  
Combine Type Evaporative Condenser Patent  
High-tech enterprise  
National Laboratory Accreditation Certificate



Evaporative Condenser CE certificate  
ISO/TS16949 Quality Management System Certificate  
National Laboratory Accreditation Certificate  
ISO14001 Environment Management System Certificate



Closed Circuit Cooling Tower CE Certificate  
New Type Heat Exchange Coil Patent  
Shell And Tube Type Heat Exchanger With Air-inlet Mechanism Patent  
Air Cooler With Thermal Compensation Mechanism Patent



闭式冷却塔  
Closed Circuit Cooling Tower



Closed Circuit Cooling Towers are routinely selected for numerous commercial and industrial process cooling applications. Some examples include:

- Water-source heat pumps
- Self-contained cooling units
- Chillers
- Hybrid evaporative /Dry cooling
- Cooling special fluids
- Compressor jacket cooling, intercooling, aftercooling
- Machine jacket cooling
- Induction furnaces

复合流冷却塔  
Combined Flow Closed Circuit Cooling Tower



1、BHX Series Combined Flow Closed Circuit Cooling Tower Principle of Operation

The process fluid to be cooled is circulated within a serpentine cooling coil, which is continually wetted on the outside by the spraying water system. The heat is transferred by the wall of coil, becomes saturated steam when it meets spray water and air. Then the heat will be discharged into atmosphere by fan, but water will be collected in the basin by drift eliminator for recirculated spraying. The temperature of spraying water is reduced by PVC fill, spraying water flows in the same direction as the fresh air, to cool coil mainly by significant heat conduction way, which is especially suitable to the cases when cooling tower outlet temperature is much closer to the wet bulb temperature.

Product Characteristics:

■ Excellent Heat Exchange Performance

Parallel air and water path as well as the combination of coils and PVC fill, this effectively avoid the dry spot and scale formation, and improve the heat exchange performance.

■ Convenient Maintenance

Huge maintenance space makes it convenient to inspect the product. Technicians can enter the cooling tower during operation time.

■ Convenient Transportation and Installation

The cooling tower is designed to be standard upper body part and bottom body part, making it is able to be shipped separately and saves transportation and installation cost.

■ Slope Water Basin Design

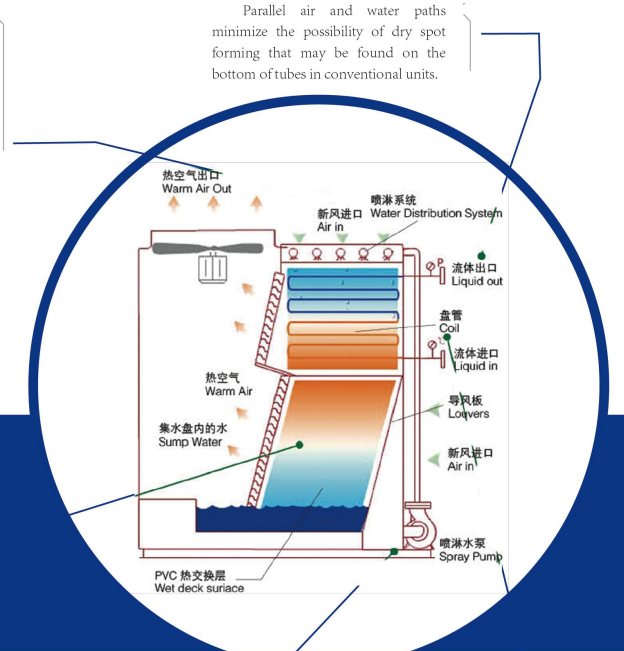
Suspended PVC fill and sloped water basin floor toward the drain facilitate cleaning.



复合流运行原理图  
Working Principle

The cooled recirculating water increases the temperature differential between the water and the warm process fluid, which results in a reduced coil size, fewer coil connections, and reduced the weight of coils. This feature also reduces the tendency to form scale on the coil since cooler water offers higher solubility for scale producing compounds.

Parallel air and water paths minimize the possibility of dry spot forming that may be found on the bottom of tubes in conventional units.



The recirculating spraying water falls from the condensing coil surface to PVC fill where it is cooled by a second fresh air stream using both evaporative and sensible heat transfer processes.

Spraying water is pumped over the condensing coil surface at a minimum rate of 6.8L/s to ensure continuous flooding of the primary heat transfer surface which enhances heat transfer efficiency and minimizes fouling and scale formation.

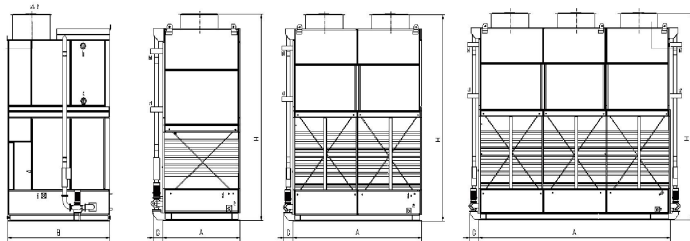
The coils section rejects heat through both evaporative cooling using the fresh air stream, and through the sensible cooling of pre-cooled spray water which rejects the majority heat. Reducing the evaporative cooling part will help reduce the tendency of scale formation on the surface of coils.

**BHX系列(复合流)闭式冷却塔技术参数(国际市场)**  
 BHX Series Closed Circuit Cooling Tower Technical Data (International Market)

MODEL	CAPACITY (M3/h)	FAN			WATER SPRAYING PUMP			INLET/OUTLET DN(MM)	WEIGHT		DIMENSION		
		QTY.	POWER (KW)	AIR VOLUME PER SET (M3/h)	QTY.	POWER (KW)	WATER VOLUME PER SET (M3/h)		SHIPPING (KG)	OPERATING (KG)	LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)
BHX-30	30	1	3	35000	1	1.1	36	DN80	2390	3790	1925	2380	4220
BHX-40	40	1	4	45000	1	1.1	45	DN100	2510	3910	1925	2380	4220
BHX-50	50	1	5.5	65000	1	1.1	45	DN100	2760	4340	1925	2580	4220
BHX-60	60	1	5.5	75000	1	1.5	65	DN100	3290	5140	1925	2900	4220
BHX-70	70	1	7.5	87000	1	1.5	65	DN100	3680	5530	1925	2900	4965
BHX-80	80	2	4	45000	1	2.2	84	DN100	4230	7650	3770	2200	4220
BHX-90	90	2	4	45000	1	2.2	84	DN125	4510	7930	3770	2200	4720
BHX-100	100	2	4	45000	1	2.2	84	DN125	4620	8040	3770	2200	4965
BHX-110	110	3	3	40000	1	3	120	DN125	6170	10170	4240	2200	4720
BHX-125	125	3	4	45000	1	3	120	2-DN100	6510	10510	4240	2200	4965
BHX-135	135	4	3	45000	1	3	120	2-DN100	7100	11950	5610	2200	4220
BHX-150	150	4	3	40000	1	3	120	2-DN100	7310	12160	5610	2200	4730
BHX-165	165	4	4	45000	1	3	120	2-DN100	7590	12440	5610	2200	4965
BHX-180	183	4	4	45000	1	4	170	2-DN125	8920	15580	7450	2200	4220
BHX-200	200	4	4	45000	1	5.5	230	2-DN125	9330	15990	7450	2200	4720
BHX-225	226	4	4	45000	1	5.5	230	2-DN125	9550	16210	7450	2200	4965
BHX-250	250	5	4	45000	1	5.5	230	4-DN100	11650	19090	9300	2200	4720
BHX-265	265	5	4	45000	1	5.5	230	4-DN100	12350	19790	9300	2200	4965
BHX-280	280	6	4	45000	1	5.5	230	4-DN100	12490	19930	9300	2200	4965

**Notes**

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3. Design conditions: wet bulb temperature 28.2°C, inlet water temperature 37°C, outlet water temperature 32°C

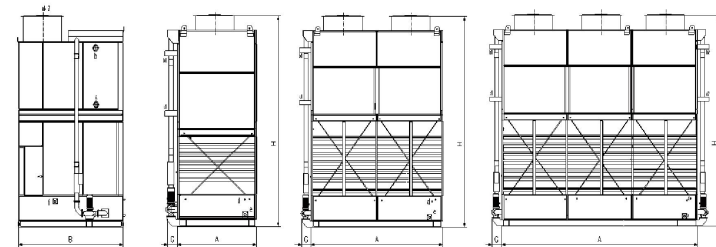


**BHX系列(复合流)闭式冷却塔技术参数(国内市场)**  
 BHX Series Closed Circuit Cooling Tower Technical Data (International Market)

MODEL	CAPACITY	FAN MOTOR (KW)	AIR FLOW (M3/h)	PUMP MOTOR (KW)	AMOUNT OF WATER (M3/h)	INLET/OUTLET DN(MM)	WEIGHT (KG)		DIMENSION		
							SHIPPING	OPERATING	LENGTH	WIDTH	HEIGHT
BHX-30	33	3	46000	1.1	32	DN80	2950	3880	1785	2380	4220
BHX-40	43	4	60000	1.5	45	DN100	3150	4290	1785	2380	4220
BHX-50	51	5.5	65000	1.5	45	DN100	3680	5100	1925	2380	4220
BHX-60	61	5.5	75000	2.2	65	DN100	3850	5500	1925	2980	4240
BHX-70	70	5.5	75000	2.2	65	DN100	4950	7980	1925	2980	4870
BHX-85	88	2-5.5	2-65000	3	100	DN100	5280	8250	3490	2380	4240
BHX-100	105	2-7.5	2-72000	3	100	DN100	5580	8900	3490	2380	4240
BHX-125	128	2-5.5	2-75000	4	130	2-DN100	5750	9100	3770	2580	4870
BHX-150	152	2-7.5	2-87000	4	150	2-DN100	6550	9850	3770	2980	4870
BHX-175	176	3-7.5	3-87000	5.5	180	2-DN100	6890	10900	5610	2580	4910
BHX-200	201	3-7.5	3-87000	5.5	180	2-DN100	7350	11200	5610	2580	4910
BHX-225	226	3-7.5	3-87000	5.5	180	2-DN100	7880	11800	5610	2980	4910
BHX-250	260	3-7.5	3-100000	2-3	2-100	2-DN125	8860	12600	5610	3420	4910
BHX-300	300	4-7.5	4-870000	2-4	2-130	4-DN100	10600	13900	7050	2980	4910
BHX-350	348	4-7.5	4-100000	2-4	2-130	4-DN100	12500	15800	7450	3520	4910
BHX-400	420	4-11	4-120000	2-4	2-150	4-DN100	13900	18900	7450	3520	4910
BHX-450	460	5-7.5	5-100000	2-5.5	2-180	4-DN125	15600	20500	8630	3520	4910
BHX-500	505	5-11	5-120000	2-5.5	2-180	4-DN125	16900	23900	9280	3520	4910

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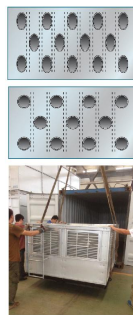
逆流式冷却塔  
Counter Flow Closed Circuit Cooling Tower



For BNX series counter flow type closed circuit cooling tower, the fresh air intakes from bottom air inlet, and will become saturated hot air mixed with spraying water as they flow in reverse direction. The heat will be exhausted out by fans, but the water will be collected to water basin for secondary spraying by its special designed drift eliminator. As no infill inside, BNX series cooling tower has much space to enlarge its coil unit heat rejection area, the structure is more compact and requires less footprint. Especially, its suitable to the fluid with high temperature.

Advantages:

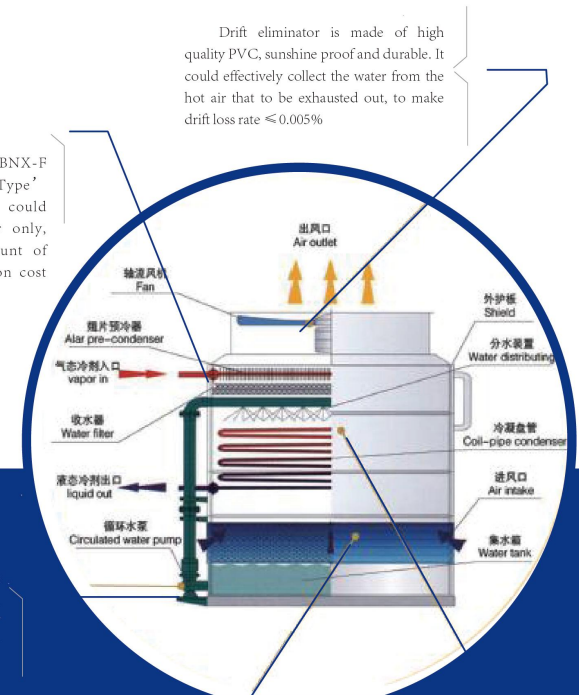
- 1, No infill designed, more compact structure, lower profile, less installation area required, and easy for transport and installation.
- 2, Suitable to severe environment as its structure much more close, which could prevent from sand and dust. So it widely used for casting workshop, mining factory etc.
- 3, Suitable to high temperature fluid, because hot spraying water will not distort PVC fill as no PVC fill designed.
- 4, Freezing resistance, because there is no PVC fill to slow down spraying water flow speed.



逆流运行原理图  
Working Principle

With fin-tube coil designed, BNX-F series 'Dry-Wet Combined Type' closed circuit cooling tower could pre-cool the inner fluid by air only, which reduces evaporative amount of spraying water and save operation cost effectively.

Drift eliminator is made of high quality PVC, sunshine proof and durable. It could effectively collect the water from the hot air that to be exhausted out, to make drift loss rate  $\leq 0.005\%$



Spraying water is pumped over coil surface at a speed no less than 6.8l/s, and keep coil in continuous soaked state, which effectively improve heat transfer efficiency and reduce scaling.

Removable air inlet grille with new design, from where easy access to the water basin for maintenance, it prevents from direct sunlight, avoid the production of algae, and protect it from dust and filth.

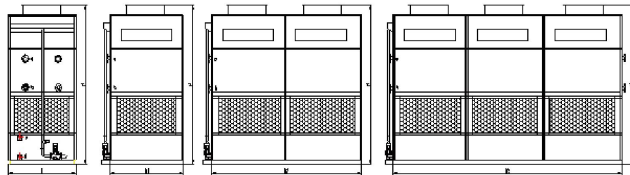
For applications that might deposit soluble scale or sludge within the coil, cleanable tube bundle box type coil is selectable.

BNX系列 (标准) 柜式冷柜技术参数表 (国内市场)

MODEL	CAPACITY (M3/h)			FAN			WATER SPRAYING PUMP			INLET/OUTLET DN(MM)	WEIGHT		DIMENSION		
	QTY	POWER (KW)	AIR VOLUME PER SET (M3/h)	QTY	POWER (KW)	WATER VOLUME PERSET (M3/h)	SHIPPING (KG)	OPERATING (KG)	LENGTH (MM)		WIDTH (MM)	HEIGHT (MM)			
BNX-10	12	1	1.5	18000	1	0.55	23	DN50	890	1660	1230	1150	3440		
BNX-20	21	1	2.2	30000	1	0.75	28	DN50	1370	2480	1925	1150	3650		
BNX-30	33	1	3	45000	1	0.75	28	DN50	1990	3620	1925	1840	3840		
BNX-40	43	1	4	60000	1	1.1	45	DN80	2120	3790	1925	1840	4220		
BNX-50	51	1	5.5	75000	1	1.5	65	DN80	2420	4490	2470	1840	4220		
BNX-60	61	1	7.5	87000	1	1.5	65	DN80	2690	4760	2470	1840	4450		
BNX-70	70	1	7.5	100000	1	2.2	84	DN100	3650	6080	2790	1840	4450		
BNX-80	80	2	4	65000	1	2.2	84	DN100	4150	7480	3770	1840	4220		
BNX-90	90	2	4	65000	1	2.2	84	DN100	4680	8010	3770	1840	4450		
BNX-100	100	2	4	65000	1	2.2	84	DN125	5120	8450	3770	1840	4450		
BNX-110	110	2	5.5	75000	1	3	120	DN125	5360	9430	3770	2200	4220		
BNX-125	125	2	5.5	75000	1	3	120	2-DN100	5980	10050	3770	2200	4450		
BNX-135	135	2	5.5	87000	1	4	170	2-DN100	6230	11270	4846	2200	4350		
BNX-150	150	2	7.5	100000	1	4	170	2-DN100	6560	11590	4846	2200	4650		
BNX-165	165	3	4	65000	1	4	170	2-DN100	7850	13730	5610	2200	4350		
BNX-180	183	3	5.5	75000	1	4	170	2-DN125	8450	14330	5610	2200	4650		
BNX-200	200	3	5.5	75000	1	4	170	4-DN80	9180	15380	6046	2200	4650		
BNX-225	225	3	7.5	87000	1	5.5	230	4-DN80	9780	17340	7230	2200	4650		
BNX-250	250	4	5.5	75000	2	3	120	4-DN100	10860	18520	7450	2200	4650		
BNX-265	265	4	5.5	75000	2	4	170	4-DN100	11480	20880	9030	2200	4965		
BNX-280	280	4	5.5	75000	2	4	170	4-DN100	11720	21120	9030	2200	4965		

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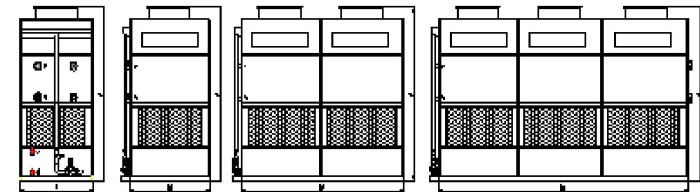


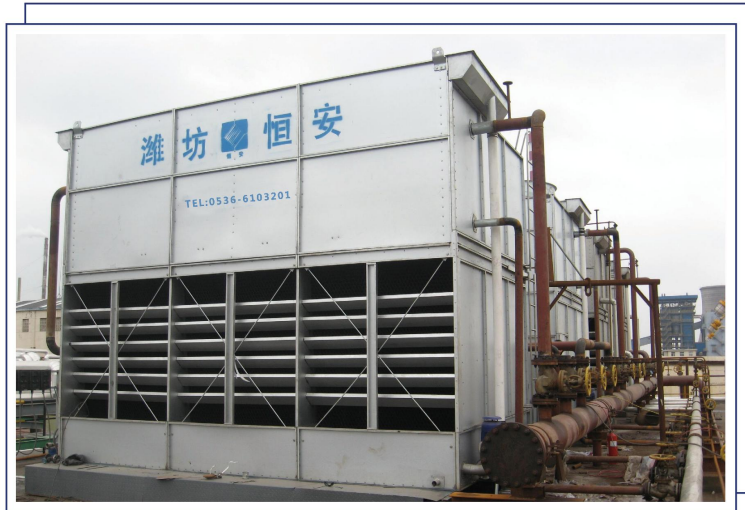
BNX系列 (标准) 柜式冷柜技术参数表 (国内市场)

MODEL	CAPACITY	FAN MOTOR (KW)	AIR FLOW (M3/h)	PUMP MOTOR (KW)	AMOUNT OF WATER (M3/h)	INLET/OUTLET DN(MM)	WEIGHT (KG)		DIMENSION		
							SHIPPING	OPERATING	LENGTH	WIDTH	HEIGHT
BNX-10	12	1.5	18000	0.55	23	DN50	810	1280	1230	1150	3440
BNX-20	21	2-2.2	25000	0.75	28	DN50	1350	2120	1925	1150	3650
BNX-30	33	4	65000	0.75	28	DN50	1610	2420	1925	1840	3650
BNX-40	43	5.5	72000	1.1	53	DN80	2120	3220	1925	1840	3840
BNX-50	51	5.5	78000	1.5	70	DN80	2410	3530	2470	1840	4010
BNX-60	61	7.5	87000	1.5	70	DN80	2690	3820	2470	1840	4010
BNX-70	70	7.5	100000	2.2	84	DN100	3650	5400	2470	2380	4010
BNX-85	88	2-5.5	2-77000	3	120	DN100	4890	7520	3770	1840	4310
BNX-100	105	2-5.5	2-77000	3	120	DN100	5120	7750	3770	1840	4310
BNX-125	128	2-5.5	2-80000	3	150	2-DN100	6320	9020	3770	2380	4510
BNX-150	152	2-11	2-125000	3	150	2-DN100	6490	9190	3770	2380	4590
BNX-175	176	3-5.5	3-77000	5.5	233	2-DN100	8400	12450	5610	2380	4550
BNX-200	201	3-5.5	3-80000	5.5	233	4-DN100	9420	13460	6046	2380	4550
BNX-225	226	3-5.5	3-80000	5.5	233	4-DN100	9780	13820	6046	2380	4630
BNX-250	260	2-11	2-125000	2-3	2-150	4-DN100	13780	19670	6046	2980	4830
BNX-300	300	2-15	2-180000	2-3	2-150	4-DN100	14320	20210	6046	2980	4830
BNX-350	348	3-11	3-125000	2-4	2-180	4-DN100	16310	24050	7240	2980	4830
BNX-400	420	3-11	3-140000	2-5.5	2-233	4-DN100	20220	29890	8630	3490	4970
BNX-450	460	3-11	3-140000	2-5.5	2-233	4-DN125	22480	32280	8630	3490	4970
BNX-500	505	3-15	3-180000	2-5.5	2-233	4-DN125	24750	35710	9026	3490	4970

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Evaporative Condenser is widely used in energy chemical industry, Pharmaceuticals coal, electricity, industrial refrigeration, beer, beverage, food processing, the cold storage, the building air conditioning refrigeration, etc

The food industry industry

- Poultry Slaughtering Plant
- Multi-purpose cold Storage
- Beer and beverage industry
- Industrial ice/Skating Rink
- Ice cream factory m factory
- Fish processing industry

Chemical medicine medicine

- Inter-cooling of methanol/methanol synthetic ammonia compressor
- Syngas cooling condensation
- Methanol distillation process cooling condensation
- Purification process as weoo as cooling condensation
- Steam condensation of turbine
- Ethyl acetate condensation

Evaporative Condenser Advantages :

Compared with the traditional condenser, 'HAC' evaporative condenser has the following advantages:

1、 Energy Saving

Compared with air cooled condenser, the condensing temperature of evaporative condenser is much lower. Every 1 C the condensing temperature increased, the power consumption for refrigerating capacity per unit will be increased by 3%~3.5%. So 'HAC' evaporative condenser has better energy conservation effect.

2、 Water Conservation

'HAC' evaporative condenser makes full use of the latent heat from water vaporization, which could reduce the water loss of spraying water effectively. Its very important for the region where lack of water.

3、 Compact structure, investment cost low

'HAC' evaporative condenser has compact structure, small size and less footprint, because its structure equal to one unit that combined condensing coil and cooling tower, no need to equip a cooling tower for it any more. Meanwhile, it effectively reduce the coil heat exchange area, fan quantity and motor power consumption by making full use of evaporative cooling.

4、 Environmental-friendly

Many chemical plants use tube and shell type or atmospheric type condenser in the past, and vent depressurization is a way often used in the summer due to its condensing pressure too high, but not all non-condensable gas exhausted, which contains a large amount of ammonia, even high to 90% sometimes according to sampling analysis from relevant departments not only ammonia loss much, but also environmental pollution seriously. But it won't happen for HAC evaporative condenser.

复合流蒸发式冷凝器  
Combined Flow Evaporative Condenser

Working Principle

For ZHX series combined flow type evaporative condenser, the coil will soaked fully by spraying water when process fluid flows inside, meanwhile, the heat of working fluid will be transferred by wall of coil tube, and become saturated wet-hot vapor after mixed with water and air, then it will be discharged into atmosphere by fan, but water will be collected into water basin by drift eliminator for recycled spraying, low water consumption. The spraying water temperature will be reduced by PVC infill during the recycling, and it flows in same direction to fresh air, to cool coil mainly by sensible heat conduction way.

Advantages:

(1)Excellent Heat Exchange Performance

Parallel air and water path as well as the combination of coils and PVC fill, this effectively avoid the dry spot and scale formation, and improve the heat exchange performance.

(2)Convenient Maintenance

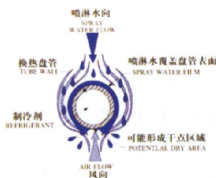
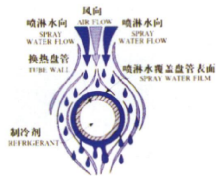
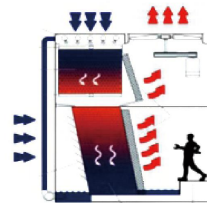
Huge maintenance space makes it convenient to inspect the product. Technicians can enter the cooling tower during operation time.

(3)Convenient Transportation and Installation

The Evaporative condenser is designed to be standard upper body part and bottom body part, making it is able to be shipped separately and saves transportation and installation cost.

(4)Slope Water Basin Design

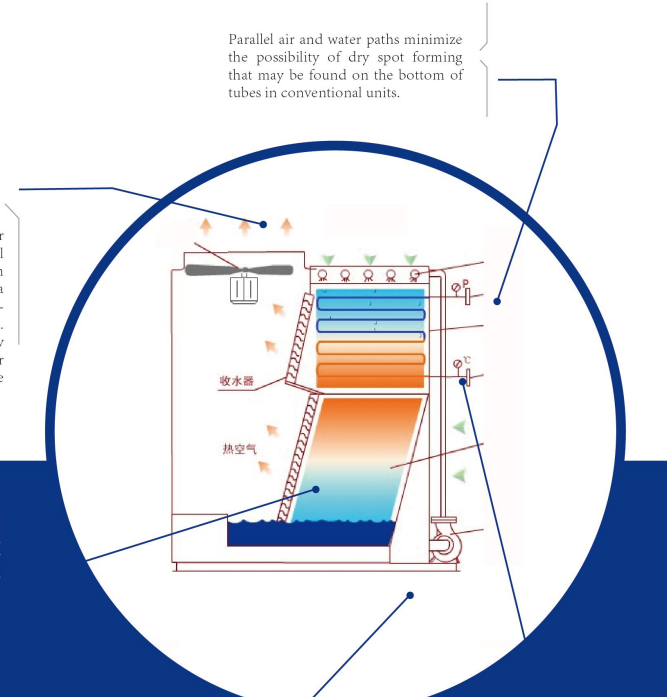
Suspended PVC fill and sloped water basin floor toward the drain facilitate cleaning.



复合流运行原理图  
Working Principle Show

Parallel air and water paths minimize the possibility of dry spot forming that may be found on the bottom of tubes in conventional units.

The cooled recirculating water increases the temperature differential between the water and the warm process fluid, which results in a reduced coil size, fewer coil connections, and reduced the weight of coils. This feature also reduces the tendency to form scale on the coil since cooler water offers higher solubility for scale producing compounds.



The recirculating spraying water falls from the condensing coil to PVC fill where it is cooled by a second fresh air stream using both evaporative and sensible heat transfer processes.

Spraying water is pumped over the condensing coil surface at a minimum rate of 6.8L/s to ensure continuous flooding of the primary heat transfer surface which enhances heat transfer efficiency and minimizes fouling and scale formation.

The coils section rejects heat through both evaporative cooling using the fresh air stream, and through the sensible cooling of pre-cooled spray water which rejects the majority heat. Reducing the evaporative cooling part will help reduce the tendency of scale formation on the surface of coils.

逆流系列  
Counter Flow Evaporative Condenser

逆流运行原理图  
Working Principle Show

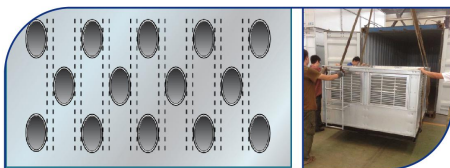
Working principle

For ZNX series combined flow evaporative condenser, the fresh air intakes from bottom air inlet, and will become saturated hot air mixed with spraying water as they flow in reverse direction. The heat will be exhausted out by fans, but the water will be collected to water basin for secondary spraying by its special designed drift eliminator. As no infill inside, ZNX series combined flow evaporative condenser has much space to enlarge its coil unit heat rejection area, more compact structure and requires less footprint.



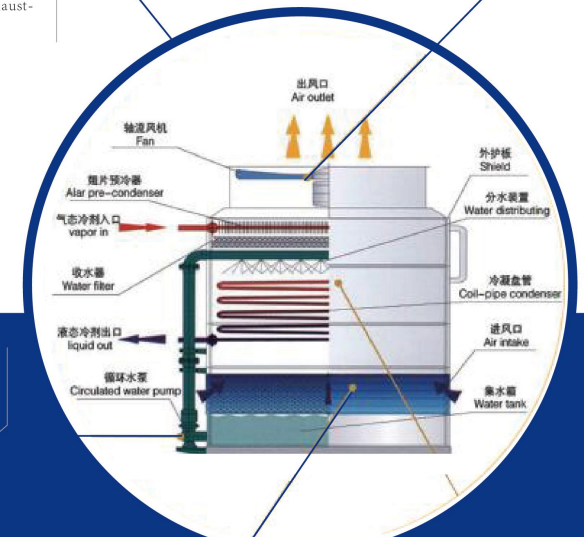
Advantage :

- 1, No infill designed, more compact structure, lower profile, less installation area required, and easy for transport and installation.
- 2, Suitable to severe environment as its structure much more close, which could prevent from sand and dust.
- 3, Suitable to high temperature fluid, because hot spraying water will not distort PVC fill as no PVC fill designed.
- 4, Freezing resistance, because there is no PVC fill to slow down spraying water flow speed.



Drift eliminator is made of high quality PVC, sunshine proof and durable. It could effectively collect the water from the hot air that to be exhausted out, to make drift loss rate  $\leq 0.005\%$

For the applications that might deposit soluble scale or sludge within the coil, cleanable tube bundle box type coil is selectable.



Spraying water is pumped over coil surface at a speed no less than 6.8l/s, and keep coil in continuous soaked state, which effectively improve heat transfer efficiency and reduce scaling.

Removable air inlet grille with new design, from where easy access to the water basin for maintenance, it prevents from direct sunlight, avoid the production of algae, and protect it from dust and filth.



蒸发式冷凝器的选型  
Model Selection

1、 Model Selection

- 1, Confirm Total System Heat Rejection Capacity: Total System Heat Rejection Capacity = Total latent heat of condensing medium inside + Total heat rejection of condensing medium (For refrigeration system, it could be selected based on system refrigeration capacity)
- 2, Confirm the design conditions: Condensing Medium, Condensation Temperature, and Wet Bulb Temperature
- 3, Determine the correction coefficient 'R' by lookup correction coefficient table.
- 4, Determine Corrected Heat Rejection Capacity: Corrected Heat Rejection Capacity = Total System Heat Rejection Capacity \* 'R' (correction coefficient).
- 5, Model selection: select the evaporative condenser model with rated capacity equal to or greater than the Corrected Heat Rejection Capacity.

2、 Example

(Take Ammonia refrigeration as an example)

- 1, Total Heat Rejection Capacity of the ammonia refrigeration system is 1200 kw. (Total Heat Rejection Capacity = Compressor refrigerating capacity + Compressor shaft power)
- 2, Operating condition: Condensation temperature 36 °C, Wet Bulb Temperature 28 °C.
- 3, Lookup 'Correction Coefficient Table for R717', and get the correction coefficient 1.35.
- 4, Determine Corrected Heat Rejection Capacity: 1200kw x 1.35 = 1620kw
- 5, According to ZHX model table of HAC evaporative condenser, select model ZHX-1680 as it's the smallest one in these models with capacity greater than 1620 kw.

3、 Notice

- 1, The parameters in the datasheet is for reference only.
- 2, Operating weight is the weight of equipment full of refrigerant, and bottom water tray full of spraying water.
- 3, For client's non-standard requirement, customization available.
- 4, The rated heat rejection capacity in the datasheet is calculated based on following design conditions: Condensing Temperature=37°C, Maximum Wet bulb Temperature=26°C.

Heat rejection correction index for R717

Condensing temperature ℃	(°C) Air inlet wet bulb temperature																													
	10	12	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
29	0.80	0.87	0.95	1.07	1.12	1.21	1.31	1.44	1.59	1.78	2.04	2.40	2.95	/	/	/	/	/												
30	0.75	0.81	0.90	0.98	1.04	1.11	1.19	1.28	1.41	1.55	1.76	1.99	2.36	/	/	/	/	/												
31	0.71	0.75	0.82	0.91	0.95	1.01	1.08	1.15	1.24	1.35	1.51	1.69	1.93	2.29	/	/	/	/												
32	0.68	0.72	0.77	0.82	0.89	0.93	0.99	1.05	1.13	1.22	1.33	1.49	1.65	1.89	2.24	/	/	/												
33	0.63	0.68	0.72	0.78	0.81	0.87	0.91	0.97	1.02	1.10	1.19	1.29	1.43	1.61	1.84	2.18	/	/												
34	0.61	0.64	0.69	0.73	0.77	0.80	0.84	0.89	0.94	1.00	1.07	1.15	1.27	1.41	1.58	1.81	2.11	/												
35	0.58	0.60	0.64	0.69	0.71	0.74	0.78	0.81	0.87	0.92	0.98	1.04	1.13	1.23	1.37	1.52	1.76	2.05												
36	0.56	0.58	0.61	0.65	0.68	0.70	0.73	0.77	0.80	0.83	0.90	0.95	1.02	1.11	1.21	1.35	1.50	1.74												
37	0.52	0.54	0.58	0.61	0.63	0.65	0.68	0.71	0.74	0.78	0.81	0.88	0.93	1.00	1.08	1.18	1.34	1.48												
38	0.50	0.52	0.56	0.59	0.61	0.62	0.64	0.67	0.69	0.72	0.75	0.80	0.84	0.91	0.98	1.07	1.15	1.32												
39	0.48	0.50	0.52	0.56	0.58	0.59	0.60	0.62	0.64	0.68	0.70	0.74	0.78	0.82	0.89	0.95	1.05	1.15												
40	0.47	0.48	0.50	0.53	0.54	0.56	0.58	0.59	0.61	0.64	0.67	0.69	0.73	0.77	0.81	0.87	0.94	1.03												
41	0.44	0.46	0.48	0.50	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.68	0.71	0.74	0.79	0.84	0.92												
42	0.43	0.44	0.46	0.48	0.49	0.50	0.52	0.53	0.54	0.57	0.59	0.61	0.63	0.67	0.69	0.73	0.78	0.82												
43	0.41	0.42	0.43	0.46	0.47	0.48	0.49	0.50	0.51	0.53	0.56	0.57	0.59	0.61	0.64	0.68	0.72	0.77												
44	0.40	0.41	0.42	0.43	0.44	0.46	0.47	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.63	0.67	0.70												
45	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.46	0.47	0.48	0.49	0.51	0.52	0.54	0.57	0.59	0.62	0.64												

Heat rejection correction index for R22 and R134a

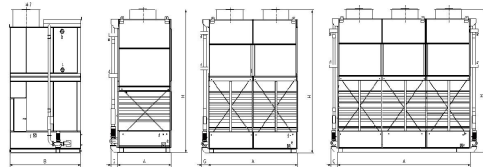
Condensing temperature ℃	(°C) Air inlet wet bulb temperature																													
	10	12	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
29	0.99	1.08	1.19	1.32	1.44	1.50	1.62	1.79	1.96	2.20	2.53	2.97	3.66	/	/	/	/	/												
30	0.93	1.01	1.11	1.21	1.30	1.42	1.48	1.59	1.74	1.93	2.19	2.46	2.93	/	/	/	/	/												
31	0.88	0.93	1.02	1.13	1.19	1.25	1.33	1.43	1.54	1.68	1.88	2.09	2.40	2.83	/	/	/	/												
32	0.84	0.90	0.95	1.02	1.10	1.15	1.22	1.31	1.40	1.51	1.65	1.84	2.05	2.34	2.78	/	/	/												
33	0.79	0.84	0.90	0.97	1.01	1.08	1.13	1.20	1.27	1.37	1.48	1.60	1.78	2.00	2.29	2.70	/	/												
34	0.75	0.80	0.85	0.91	0.95	0.99	1.04	1.10	1.17	1.24	1.32	1.43	1.57	1.74	1.95	2.24	2.59	/												
35	0.71	0.74	0.80	0.85	0.88	0.92	0.97	1.01	1.08	1.14	1.21	1.30	1.40	1.53	1.70	1.89	2.19	2.54												
36	0.69	0.71	0.75	0.81	0.84	0.87	0.91	0.95	0.99	1.03	1.11	1.19	1.27	1.38	1.50	1.68	1.85	2.16												
37	0.64	0.68	0.71	0.75	0.79	0.81	0.84	0.88	0.92	0.97	1.01	1.09	1.15	1.24	1.33	1.45	1.67	1.83												
38	0.62	0.64	0.69	0.73	0.75	0.77	0.80	0.82	0.85	0.90	0.93	0.99	1.04	1.13	1.21	1.32	1.43	1.64												
39	0.59	0.62	0.64	0.69	0.71	0.73	0.74	0.77	0.80	0.84	0.87	0.92	0.97	1.02	1.10	1.19	1.31	1.43												
40	0.58	0.59	0.62	0.67	0.68	0.69	0.71	0.73	0.75	0.80	0.82	0.85	0.91	0.95	1.01	1.08	1.17	1.28												
41	0.56	0.57	0.59	0.62	0.63	0.64	0.68	0.69	0.71	0.74	0.77	0.80	0.84	0.88	0.92	0.98	1.04	1.14												
42	0.53	0.56	0.57	0.59	0.61	0.62	0.64	0.67	0.68	0.70	0.73	0.75	0.79	0.82	0.85	0.91	0.97	1.02												
43	0.51	0.52	0.53	0.57	0.58	0.59	0.61	0.62	0.63	0.67	0.69	0.70	0.73	0.75	0.80	0.84	0.90	0.95												
44	0.50	0.51	0.52	0.53	0.56	0.57	0.58	0.59	0.61	0.63	0.64	0.68	0.69	0.71	0.74	0.79	0.82	0.87												
45	0.47	0.48	0.50	0.51	0.52	0.53	0.56	0.57	0.58	0.59	0.61	0.63	0.64	0.68	0.70	0.73	0.77	0.80												

ZHX系列蒸发式冷凝器技术参数 (国际市场)  
ZHX Series Evaporative Condenser Technical Data (International Market)

MODEL	CAPACITY (M3/h)	FAN			WATER SPRAYING PUMP			INLET/OUTLET DN (mm)	WEIGHT		DIMENSION		
		QTY.	POWER (KW)	AIR VOLUME PER SET (M3/h)	QTY.	POWER (KW)	WATER VOLUME PER SET (M3/h)		SHIPPING (KG)	OPERATING (KG)	LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)
ZHX-320	320	1	3	35000	1	1.1	36	DN80	2390	3790	1925	2380	4220
ZHX-430	430	1	4	45000	1	1.1	45	DN100	2510	3910	1925	2380	4220
ZHX-525	525	1	5.5	65000	1	1.1	45	DN100	2760	4340	1925	2580	4220
ZHX-595	595	1	5.5	75000	1	1.5	65	DN100	3290	5140	1925	2900	4220
ZHX-700	700	1	7.5	87000	1	1.5	65	DN100	3680	5530	1925	2900	4965
ZHX-800	800	2	4	45000	1	2.2	84	DN100	4230	7650	3770	2200	4220
ZHX-870	870	2	4	45000	1	2.2	84	DN125	4510	7930	3770	2200	4720
ZHX-980	980	2	4	45000	1	2.2	84	DN125	4620	8040	3770	2200	4965
ZHX-1100	1100	3	3	40000	1	3	120	DN125	6170	10170	4240	2200	4720
ZHX-1250	1250	3	4	45000	1	3	120	2-DN100	6510	10510	4240	2200	4965
ZHX-1380	1380	4	3	45000	1	3	120	2-DN100	7100	11950	5610	2200	4220
ZHX-1520	1520	4	3	40000	1	3	120	2-DN100	7310	12160	5610	2200	4730
ZHX-1680	1680	4	4	45000	1	3	120	2-DN100	7590	12440	5610	2200	4965
ZHX-1840	1840	4	4	45000	1	4	170	2-DN125	8920	15580	7450	2200	4220
ZHX-2010	2010	4	4	45000	1	5.5	230	2-DN125	9330	15990	7450	2200	4720
ZHX-2245	2245	4	4	45000	1	5.5	230	2-DN125	9550	16210	7450	2200	4965
ZHX-2450	2450	5	4	45000	1	5.5	230	4-DN100	11650	19090	9300	2200	4720
ZHX-2600	2680	5	4	45000	1	5.5	230	4-DN100	12350	19790	9300	2200	4965
ZHX-2820	2820	6	4	45000	1	5.5	230	4-DN100	12490	19930	9300	2200	4965

Notes:

1. Do not use for construction. This brochure includes data current at the time of publication which should be reconfirmed at the time of purchase
2. All location dimensions for coil connections are approximate and should not be used for prefabrication of connecting piping.

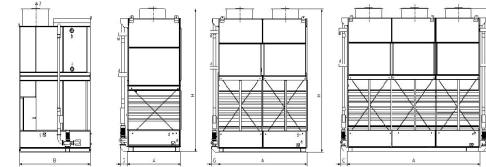


ZHX系列蒸发式冷凝器技术参数 (国内市场)  
ZHX Series Evaporative Condenser Technical Data (China Market)

MODEL	CAPACITY	FAN MOTOR (KW)	AIR FLOW (M3/h)	PUMP MOTOR (KW)	AMOUNT OF WATER (M3/h)	INLET/OUTLET DN (MM)	WEIGHT (KG)		DIMENSION		
							SHIPPING	OPERATING	LENGTH	WIDTH	HEIGHT
ZHX-320	320	3	46000	1.1	32	DN80	2950	3880	1785	2380	4220
ZHX-380	380	4	58000	1.5	45	DN80	3150	4290	1785	2380	4220
ZHX-475	475	4	60000	1.5	45	DN100	3680	5100	1925	2380	4220
ZHX-595	595	5.5	75000	2.2	65	DN100	3850	5500	1925	2980	4240
ZHX-735	735	7.5	87000	2.2	65	DN100	4950	7980	1925	2980	4870
ZHX-850	850	2-5.5	2-65000	3	100	DN100	5280	8250	3490	2380	4240
ZHX-1050	1050	2-7.5	2-72000	3	100	DN100	5580	8900	3490	2380	4240
ZHX-1285	1285	2-5.5	2-75000	4	130	2-DN100	5750	9100	3770	2580	4870
ZHX-1490	1490	2-7.5	2-87000	4	150	2-DN100	6550	9850	3770	2980	4870
ZHX-1765	1765	3-7.5	3-87000	5.5	180	2-DN100	6890	10900	5610	2580	4910
ZHX-2010	2010	3-7.5	3-87000	5.5	180	2-DN100	7350	11200	5610	2580	4910
ZHX-2245	2245	3-7.5	3-87000	5.5	180	2-DN100	7880	11800	5610	2980	4910
ZHX-2450	2450	3-7.5	4-100000	2-3	2-100	2-DN125	8320	12300	5610	3420	4910
ZHX-2600	2600	3-7.5	3-100000	2-3	2-100	2-DN125	8860	12600	5610	3420	4910
ZHX-2850	2850	3-7.5	3-100000	2-3	2-100	2-DN100	9650	13260	5610	3420	4910
ZHX-3000	3000	4-7.5	4-870000	2-4	2-130	4-DN100	10600	13900	7050	2980	4910
ZHX-3400	3400	4-7.5	4-100000	2-4	2-130	4-DN100	12500	15800	7450	2980	4910
ZHX-3800	3800	4-7.5	4-100000	2-4	2-150	4-DN100	13280	17600	7050	3520	4910
ZHX-4200	4200	4-11	4-120000	2-4	2-150	4-DN100	13900	18900	7450	3520	4910
ZHX-4600	4600	5-7.5	5-10000	2-5.5	2-180	4-DN125	15600	20500	8600	3520	4910
ZHX-5000	5000	5-11	5-12000	2-5.5	2-180	4-DN125	16900	23900	8600	3520	4910

Notes:

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2. All location dimensions for coil connections are approximate and should not be used for prefabrication of connecting piping.

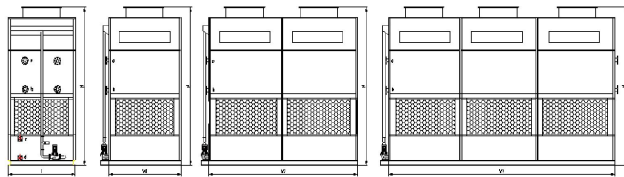


ZNX系列蒸发式冷凝器技术参数 (国际市场)  
ZNX Series Evaporative Condenser Technical Data (International Market)

MODEL	CAPACITY (M3/h)	FAN			WATER SPRAYING PUMP			INLET/ OUTLET DN (MM)	WEIGHT		DIMENSION		
		QTY.	POWER (KW)	AIR VOLUME PER SET (M3/h)	QTY.	POWER (KW)	WATER VOLUME PER SET (M3/h)		SHIPPING (KG)	OPERATING (KG)	LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)
ZNX-100	100	1	1.5	18000	1	0.55	23	DN50	890	1660	1230	1150	3440
ZNX-200	200	1	2.2	30000	1	0.75	28	DN50	1370	2480	1925	1150	3650
ZNX-320	320	1	3	45000	1	0.75	28	DN50	1990	3620	1925	1840	3840
ZNX-430	430	1	4	60000	1	1.1	45	DN80	2120	3790	1925	1840	4220
ZNX-525	525	1	5.5	75000	1	1.5	65	DN80	2420	4490	2470	1840	4220
ZNX-595	595	1	7.5	87000	1	1.5	65	DN80	2690	4760	2470	1840	4450
ZNX-700	700	1	7.5	100000	1	2.2	84	DN100	3650	6080	2790	1840	4450
ZNX-800	800	2	4	65000	1	2.2	84	DN100	4150	7480	3770	1840	4220
ZNX-870	870	2	4	65000	1	2.2	84	DN100	4680	8010	3770	1840	4450
ZNX-980	980	2	4	65000	1	2.2	84	DN125	5120	8450	3770	1840	4450
ZNX-1100	1100	2	5.5	75000	1	3	120	DN125	5360	9430	3770	2200	4220
ZNX-1250	1250	2	5.5	75000	1	3	120	2-DN100	5980	10050	3770	2200	4450
ZNX-1380	1380	2	5.5	87000	1	4	170	2-DN100	6230	11270	4846	2200	4350
ZNX-1520	1520	2	7.5	100000	1	4	170	2-DN100	6560	11590	4846	2200	4650
ZNX-1680	1680	3	4	65000	1	4	170	2-DN100	7850	13730	5610	2200	4350
ZNX-1840	1840	3	5.5	75000	1	4	170	2-DN125	8450	14330	5610	2200	4650
ZNX-2010	2010	3	5.5	75000	1	4	170	4-DN80	9180	15380	6046	2200	4650
ZNX-2245	2245	3	7.5	87000	1	5.5	230	4-DN80	9780	17340	7230	2200	4650
ZNX-2450	2450	4	5.5	75000	2	3	120	4-DN100	10860	18520	7450	2200	4650
ZNX-2600	2600	4	5.5	75000	2	4	170	4-DN100	11480	20880	9030	2200	4965
ZNX-2820	2820	4	5.5	75000	2	4	170	4-DN100	11720	21120	9030	2200	4965

Notes:

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ZNX系列蒸发式冷凝器技术参数 (国内市场)  
ZNX Series Evaporative Condenser Technical Data (China Market)

MODEL	CAPACITY	FAN MOTOR (KW)	AIR FLOW (M3/h)	PUMP MOTOR (KW)	AMOUNT OF WATER (M3/h)	INLET/OUTLET DN (MM)	WEIGHT (KG)		DIMENSION		
							SHIPPING	OPERATING	LENGTH	WIDTH	HEIGHT
ZNX-320	320	4	65000	0.75	28	DN80	1610	2420	1925	1840	3650
ZNX-380	380	4	65000	1.1	36	DN80	1790	2580	1925	1840	3650
ZNX-475	475	5.5	72000	1.1	53	DN80	2250	3360	1925	1840	3900
ZNX-595	595	7.5	87000	1.5	70	DN80	2690	3820	2470	1840	4100
ZNX-735	735	11	125000	2.2	84	DN100	3690	5440	2470	2380	4100
ZNX-850	850	2-5.5	2-77000	3	120	DN100	4890	7520	3770	1840	4310
ZNX-1050	1050	2-5.5	2-77000	3	120	DN100	5120	7750	3770	1840	4310
ZNX-1285	1285	2-5.5	2-80000	3	150	2-DN100	6320	9020	3770	2380	4510
ZNX-1490	1490	2-11	2-125000	3	150	2-DN100	6490	9190	3770	2380	4510
ZNX-1765	1765	3-5.5	3-77000	5.5	233	2-DN100	8400	12450	5610	2380	4550
ZNX-2010	2010	3-5.5	3-80000	5.5	233	4-DN100	9420	13460	6046	2380	4550
ZNX-2245	2245	3-5.5	3-80000	5.5	233	4-DN100	9780	13820	6046	2380	4630
ZNX-2450	2450	2-11	2-125000	2-3	2-150	4-DN100	12360	18170	6046	2980	4830
ZNX-2600	2600	2-11	2-125000	2-3	2-150	4-DN100	13780	19670	6046	2980	4830
ZNX-2850	2850	2-11	2-140000	2-3	2-150	4-DN100	13900	19790	6046	2980	4830
ZNX-3000	3000	2-15	2-180000	2-3	2-150	4-DN100	14320	20210	6046	2980	4830
ZNX-3400	3400	3-11	3-125000	2-4	2-180	4-DN100	16310	24050	7240	2980	4830
ZNX-3800	3800	3-11	3-125000	2-4	2-180	4-DN100	17810	25660	7830	2980	4830
ZNX-4200	4200	3-11	3-140000	2-5.5	2-233	4-DN100	20220	29890	8630	3490	4970
ZNX-4600	4600	3-11	3-140000	2-5.5	2-233	4-DN125	22480	32280	8630	3490	4970
ZNX-5000	5000	3-15	3-180000	2-5.5	2-233	4-DN125	24750	35710	9026	3490	4970

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