Shandong Heng An Eco- technologies Co.,Ltd.

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Weifang Heng An Imp&Exp Co.,Ltd.

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HACST Heat Transfer Technology (Shandong) CO.,LTD

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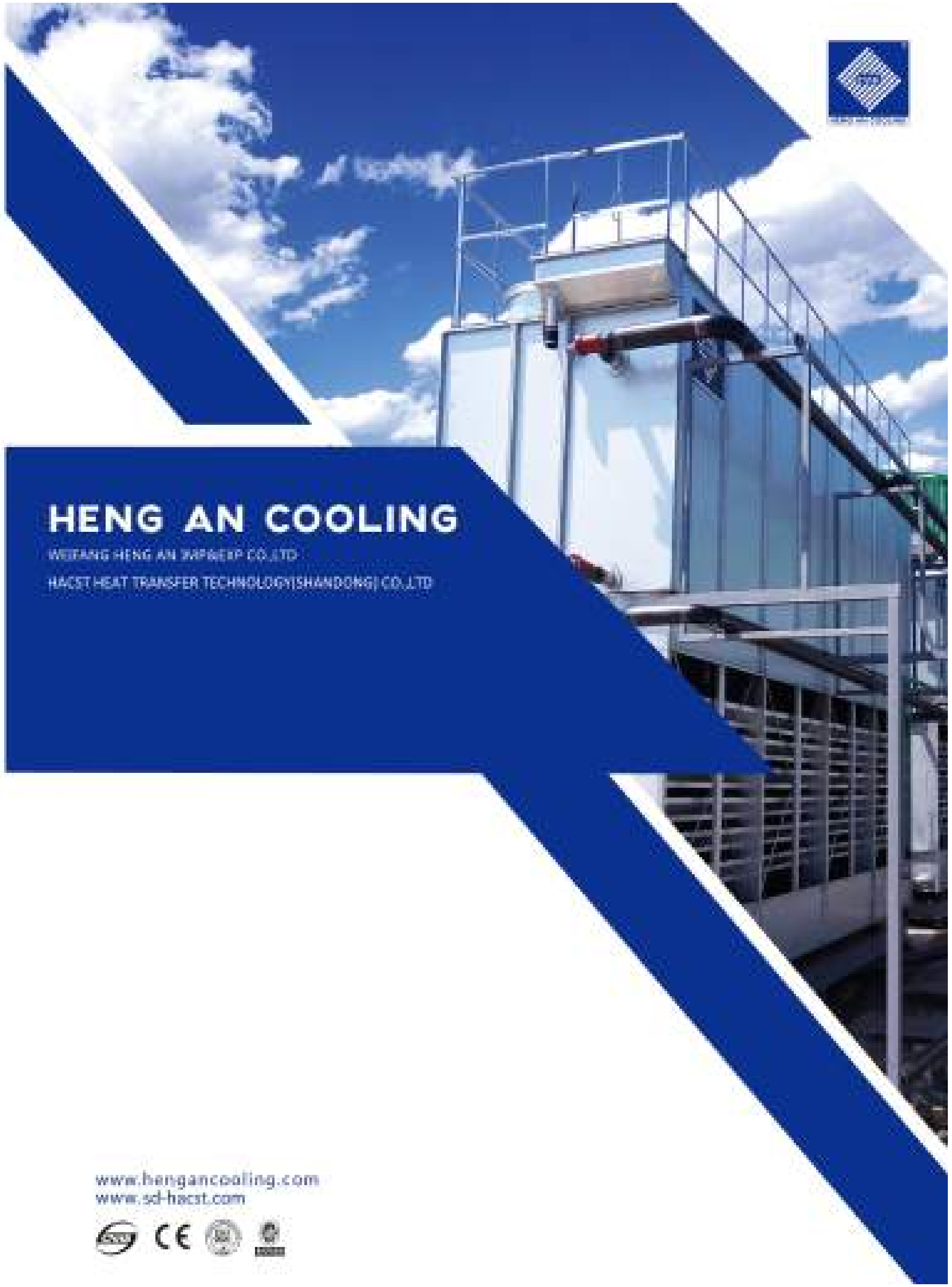

HENG AN COOLING

WEIFANG HENG AN IMP&EXP CO.,LTD

HACST HEAT TRANSFER TECHNOLOGY(SHANDONG) CO.,LTD

www.hengancooling.com
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 140 million. The group company currently has 5 subsidiaries, including Weifang Heng An Impekap 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 113 patents, and participates many provincial level technology research& innovation projects. Heng An products have been certificated by TOV, SIS, 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 4 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, JCMG, SDEC, 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.

实力领悍的研发能力
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: Thermonom
Fluid Simulation Analysis Fluent
Cooling Capability Analysis Star

Software for Simulation: Vibration modal analysis- Abaqus

合作创新
Cooperative Innovation

› National Testing Laboratory
Hang 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.
Hang An laboratory was established in 1985, 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, frame 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.

其它验证能
Other testing ability

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

荣誉资质
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
Coutlow 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

逆流闭式冷却塔
Counter Flow Closed Circuit Cooling Tower

1、 HNE Series Countercurrent 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 water 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.

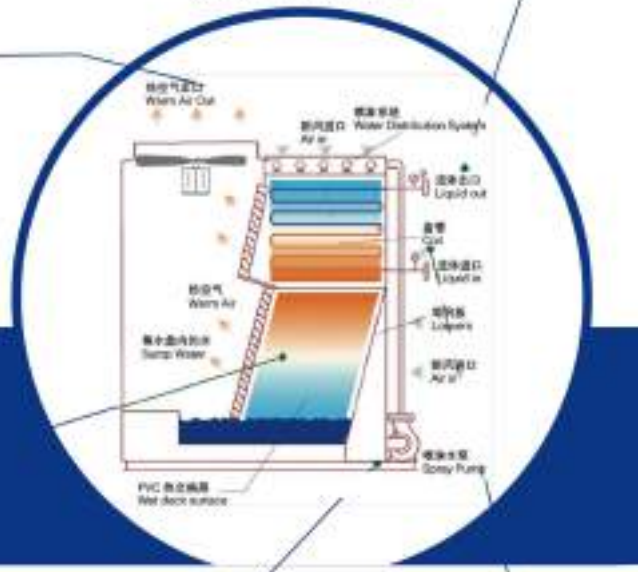
■ Slope Water Basin Design

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

复合湿运行原理图
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 to PVC fill where it is cooled by a second fresh air stream using both evaporation and sensible heat transfer processes.

Spraying water is pumped over the condensing coil surface at a minimum rate of 4.8L/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（耐高温）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 DIA(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	30	DN80	2190	3790	1925	2300	4230
BHX-40	40	1	4	45000	1	1.1	40	DN100	2510	5810	1925	2300	4230
BHX-50	50	1	5.5	65000	1	1.1	40	DN100	2740	4940	1925	2300	4230
BHX-60	69	1	5.5	75000	1	1.5	65	DN100	3290	5144	1925	2300	4230
BHX-70	79	1	7.5	67000	1	1.5	65	DN100	3680	5534	1925	2300	4065
BHX-80	89	2	4	45000	1	2.2	84	DN100	4230	7659	3770	2300	4230
BHX-90	98	2	4	45000	1	2.2	84	DN125	4510	7854	3770	2300	4730
BHX-100	108	2	4	45000	1	3.7	84	DN125	4620	8840	3770	2300	4065
BHX-110	118	3	3	40000	1	3	120	DN125	6170	10178	4240	2300	4720
BHX-125	125	3	4	45000	1	3	120	2-DN100	6510	10318	4240	2300	4065
BHX-135	135	4	3	45000	1	5	130	2-DN100	7100	11550	5610	2300	4230
BHX-150	150	4	3	40000	1	5	130	2-DN100	7350	12168	5610	2300	4730
BHX-165	165	4	4	45000	1	5	130	2-DN100	7500	12448	5610	2300	4065
BHX-180	185	4	4	40000	1	6	170	2-DN125	9020	15508	7450	2300	4230
BHX-200	208	4	4	45000	1	5.5	200	2-DN125	9100	15908	7450	2300	4730
BHX-225	228	4	4	45000	1	5.5	200	2-DN125	9550	16218	7450	2300	4065
BHX-250	256	5	4	45000	1	5.5	200	4-DN100	11050	18608	9300	2300	4730
BHX-265	265	5	4	45000	1	5.5	200	4-DN100	12350	18798	9300	2300	4065
BHX-280	288	6	4	45000	1	5.5	200	4-DN100	12490	19958	9300	2300	4065

Notes:
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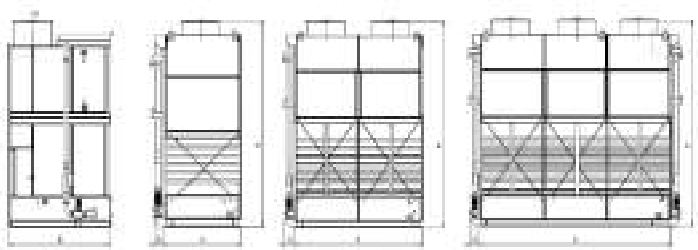
2.All location dimensions for coil connections are approximate and should not be used for prefabrication of connecting piping.
3.Design conditions: wet bulb temperature 28.2℃,inlet water temperature 37℃,outlet water temperature 32℃



BHX系列（耐高温）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	DN90	2950	3890	1785	2300	4220
BHX-40	43	4	60000	1.5	43	DN100	3150	4200	1785	2300	4220
BHX-50	51	5.5	65000	1.5	45	DN100	3000	5100	1925	2300	4220
BHX-60	61	5.5	75000	2.2	60	DN100	3650	5500	1925	2300	4240
BHX-70	70	5.5	75000	2.2	65	DN100	4050	7000	1925	2300	4870
BHX-85	88	2-5.5	2-65000	3	100	DN100	5200	8250	3400	2300	4240
BHS-100	105	2-7.5	2-72000	3	100	DN100	5500	8900	3400	2300	4240
BHS-125	130	3-5.5	3-75000	4	130	2-DN100	5750	9100	3770	2300	4870
BHS-150	152	2-7.5	2-87000	4	150	2-DN100	6650	9850	3770	2900	4870
BHS-175	170	3-7.5	3-87000	5.5	180	2-DN100	6800	10000	5610	2300	4910
BHS-200	201	3-7.5	3-87000	5.5	180	2-DN100	7350	11200	5610	2300	4910
BHS-225	226	3-7.5	3-87000	5.5	180	2-DN100	7800	11800	5610	2900	4910
BHS-250	260	3-7.5	3-100000	2-3	2-100	2-DN125	8800	12600	5610	3020	4910
BHS-300	300	4-7.5	4-870000	2-4	2-130	4-DN100	10600	13500	7050	2300	4910
BHS-350	348	4-7.5	4-100000	2-4	2-130	4-DN100	12500	15800	7450	3020	4910
BHS-400	430	4-11	4-120000	2-4	2-150	4-DN100	13000	18000	7450	3020	4910
BHS-450	400	5-7.5	5-100000	2-5.5	2-180	4-DN125	13900	20500	8630	3020	4910
BHS-500	505	5-11	5-120000	2-5.5	2-180	4-DN125	16900	23000	9200	3020	4910

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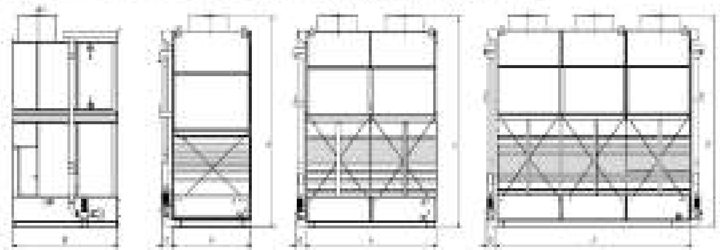
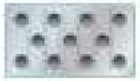


逆流式冷却塔 Counter Flow Closed Circuit Cooling Tower

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.



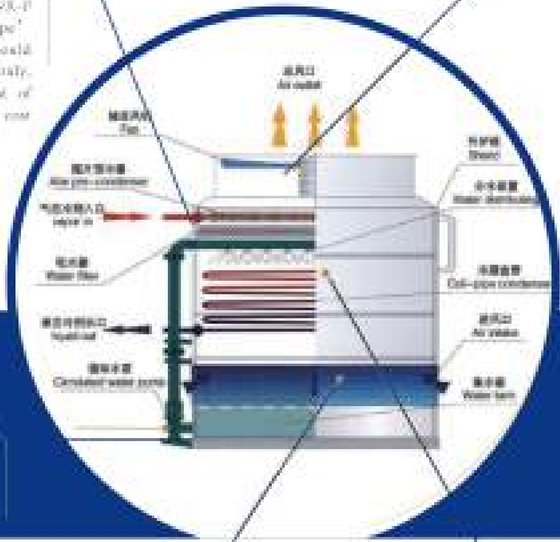
■ Advantages

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.

Working Principle

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 <0.001%

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.



Spraying water is pumped over coil surface at a speed no less than 0.8l/s, and keep coil in continuous soaked state, which effectively improve heat transfer efficiency and reduce scaling.

Removable air inlet grille with new design, give whole 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 acids or sludge within the coil, cleanable tube bundle box type coil is selectable.

MODEL	CAPACITY (RT)	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)
BNX-10	12	1	1.5	18000	1	0.55	23	DN50	890	1600	1230	1150	3440
BNX-20	21	1	2.2	30000	1	0.75	28	DN50	1370	2400	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	49	DN80	2120	3790	1925	1840	4120
BNX-50	51	1	5.5	75000	1	1.5	65	DN80	2400	4400	2470	1840	4220
BNX-60	61	1	7.5	87000	1	1.5	65	DN80	2690	4700	2470	1840	4450
BNX-70	70	1	7.5	100000	1	2.2	84	DN100	3650	6000	2790	1840	4420
BNX-80	90	2	4	65000	1	2.2	84	DN100	4030	7480	3770	1840	4220
BNX-90	90	2	4	65000	1	2.2	84	DN100	4600	8030	3770	1840	4450
BNX-100	100	2	4	65000	1	2.2	84	DN125	5030	8490	3770	1840	4420
BNX-110	110	2	5.5	75000	1	3	128	DN125	5560	9400	3770	2200	4120
BNX-125	125	2	5.5	75000	1	3	128	2-DN100	5980	10050	3770	2200	4450
BNX-135	135	2	5.5	87000	1	4	170	2-DN100	6230	11270	4840	2200	4350
BNX-150	150	2	7.5	100000	1	4	170	2-DN100	6560	11590	4840	2200	4450
BNX-165	165	3	4	65000	1	4	170	2-DN100	7950	13730	5630	2200	4350
BNX-180	183	3	5.5	75000	1	4	170	2-DN125	8480	14030	5630	2200	4400
BNX-200	200	3	5.5	75000	1	4	170	4-DN80	9080	15460	6840	2200	4450
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	128	4-DN100	10860	18520	7450	2200	4450
BNX-265	265	4	5.5	75000	2	4	170	4-DN100	11400	20080	9030	2200	4965
BNX-280	280	4	5.5	75000	2	4	170	4-DN100	11730	21130	9030	2200	4965

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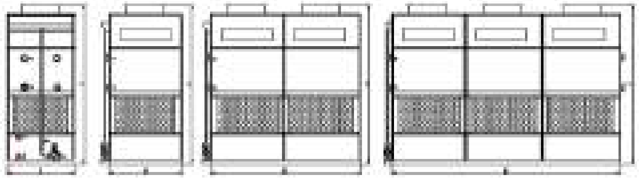

MODEL	CAPACITY	FAN MOTOR (KW)	AIR FLOW (M3/h)	PUMP MOTOR (KW)	AMOUNT OF WATER (M3/h)	INLET/OUTLET (DN MM)	WEIGHT (KG)		DIMENSION		
							SHIPPING	OPERATING	LENGTH	WIDTH	HEIGHT
BNX-10	12	1.5	18000	0.55	23	DN50	810	1300	1230	1150	3440
BNX-20	21	2-2.2	25000	0.75	28	DN50	1260	2120	1925	1150	3640
BNX-30	33	4	65000	0.75	28	DN50	1610	2920	1925	1840	3630
BNX-40	43	5.5	72000	1.1	58	DN80	2120	3220	1925	1840	3840
BNX-50	51	5.5	78000	1.5	70	DN80	2430	3520	2470	1840	4050
BNX-60	61	7.5	87000	1.5	70	DN80	2680	3820	2470	1840	4050
BNX-70	70	7.5	100000	2.2	84	DN100	3650	5400	2470	2200	4050
BNX-85	88	2-5.5	2-72000	3	120	DN100	4890	7320	3770	1840	4310
BNX-100	108	2-5.5	2-72000	3	120	DN100	5120	7750	3770	1840	4310
BNX-125	128	2-5.5	2-88000	3	150	2-DN100	6320	9020	3770	2200	4510
BNX-150	152	2-11	2-125000	3	190	2-DN100	6490	9100	3770	2200	4590
BNX-175	176	3-5.5	3-72000	5.5	233	2-DN100	8490	12450	5610	2200	4530
BNX-200	201	3-5.5	3-88000	5.5	233	4-DN100	9420	13480	6046	2200	4630
BNX-225	226	3-5.5	3-88000	5.5	233	4-DN100	9780	13820	6046	2200	4630
BNX-250	268	2-11	2-125000	2-3	2-150	4-DN100	13790	19670	6046	2900	4830
BNX-300	306	2-15	2-160000	2-3	2-150	4-DN100	14320	20210	6046	2900	4830
BNX-350	348	3-11	3-125000	2-4	2-190	4-DN100	16310	24650	7240	2900	4830
BNX-400	428	3-15	3-140000	2-5.5	2-235	4-DN100	20320	29830	8030	3400	4970
BNX-450	468	3-15	3-140000	2-5.5	2-235	4-DN125	22400	32290	8030	3400	4970
BNX-500	508	3-15	3-160000	2-5.5	2-235	4-DN125	24750	35710	9026	3400	4970

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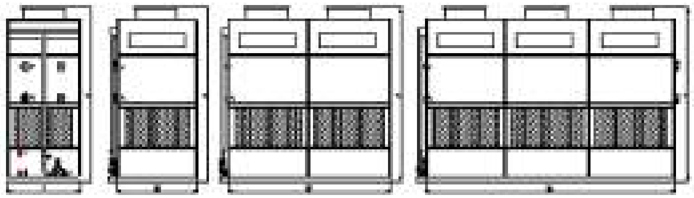
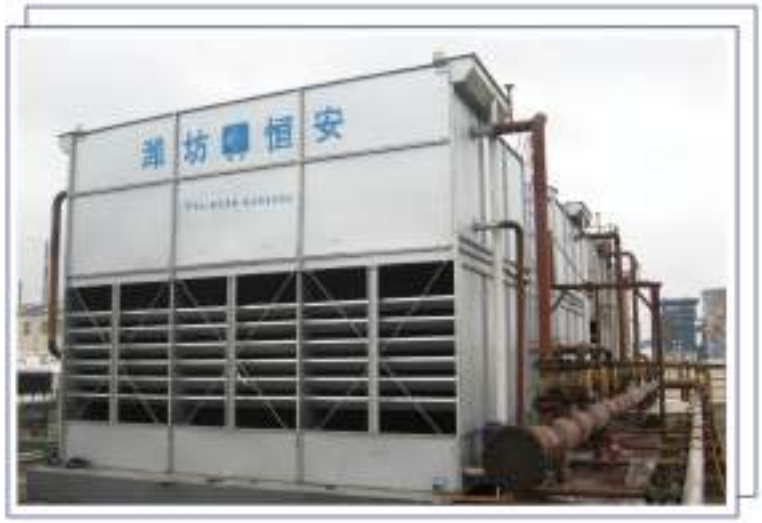




Evaporative Condenser is widely used in energy chemical industry,Pharmaceuticals oval, electricity, industrial refrigeration, beer,beverage,food processing, the cold storage, the building air conditioning refrigeration,etc

The food industry industry

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

Chemical medicine industry

- Inter-cooling of nurtured/methanol synthetic ammonia compressor
- Syngas cooling condensation
- Methanol distillation process cooling condensation
- Purification process as water as cooling condensation
- Steam condensation of sulfuric
- 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℃ 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 ram deprimanization 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.

蒸发式冷凝器

Working Principle

For ZHX series combined flow type evaporative condenser, the coil will soaked fully by spraying water when pressure 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 fill 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

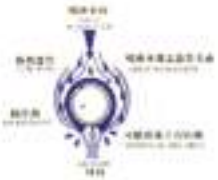
Huge maintenance space makes it convenient to inspect the product. Technicians can enter the cooling tower during operation time.

(3)Convenient Transportation and Installation

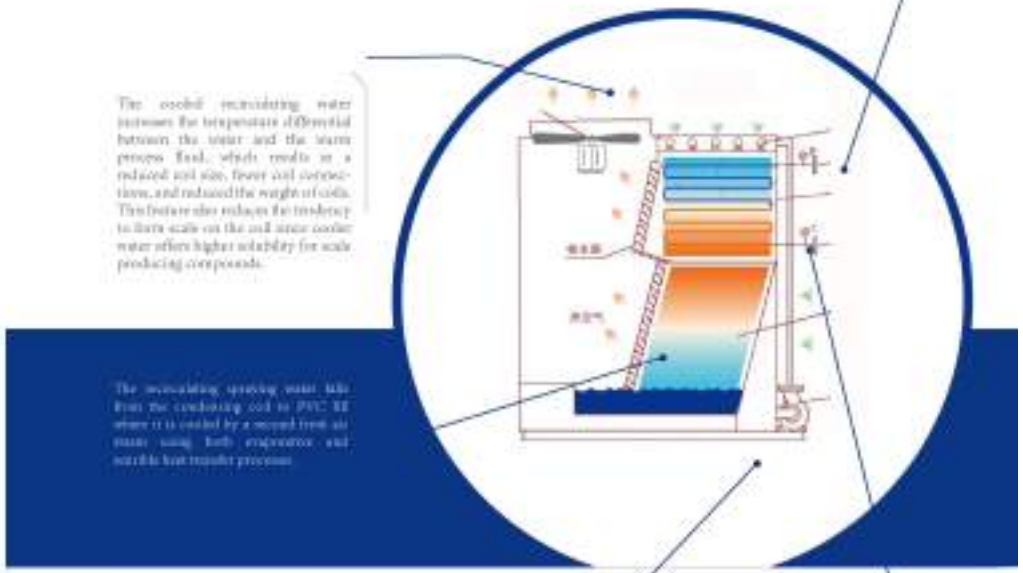
The Evaporative condenser is designed to be standard upper body part and bottom body part, making it is able to be shipped separately and saves transportation and installation cost.

(4)Steps Water Basin Design

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



蒸发式冷凝器工作原理图

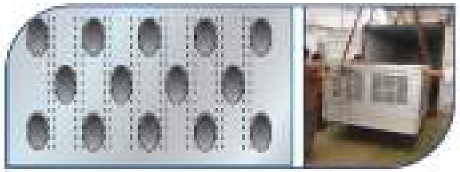


Working principle

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 and heat rejection area, more compact structure and inexpensive footprint.

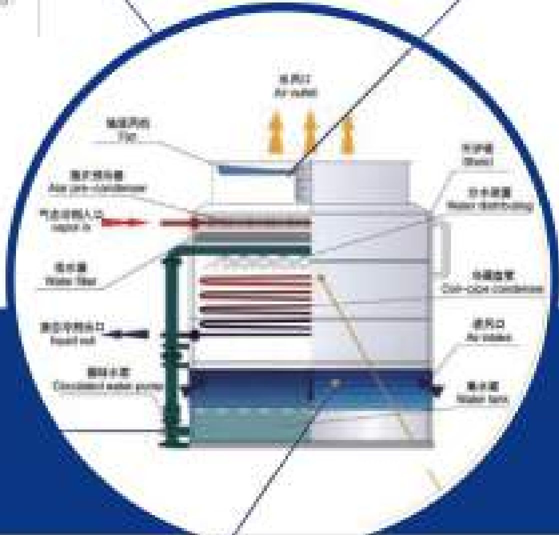
Advantage :

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.



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

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 ≤0.001%.



Spraying water is pumped over coil surface at a speed no less than 6 l/s, and keep coil at continuous wake state, which effectively improves heat transfer efficiency and reduce scaling.

Removable air inlet grille with two 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.

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 "B" by lookup correction coefficient table.

4. Determine Corrected Heat Rejection Capacity: Corrected Heat Rejection Capacity = Total System Heat Rejection Capacity * "B" (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 ℃, Wet Bulb Temperature 28 ℃.

3. Lookup "Correction Coefficient Table for R717", and get the correction coefficient 1.35.

4. Determine Corrected Heat Rejection Capacity: 1200kw × 1.35 = 1620kw

5. According to ZHX model table of HAC evaporative condenser, select model ZHX-1680 as it's the smallest one in those 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 total heat rejection capacity in the datasheet is calculated based on following design conditions: Condensing Temperature:37℃, Maximum Wet bulb Temperature=28℃.

Heat rejection correction index for R717

Condensing temperature	(℃) 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	1.29	1.41	1.55	1.76	1.99	2.30	/	/	/	/	/
31	0.71	0.76	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	1.06	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	2.06
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	1.38	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	0.86	0.93	1.00	1.09	1.18	1.34	1.46
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	1.02
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	0.66	0.71	0.74	0.79	0.84	0.90
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	0.45	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	(℃) Air inlet wet bulb temperature																	
℃	10	12	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
29	0.98	1.08	1.19	1.32	1.44	1.50	1.62	1.79	1.96	2.20	2.53	2.97	3.60	/	/	/	/	/
30	0.93	1.01	1.11	1.21	1.30	1.42	1.48	1.58	1.74	1.93	2.19	2.40	2.83	/	/	/	/	/
31	0.88	0.93	1.02	1.13	1.19	1.25	1.33	1.43	1.54	1.66	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	2.78	/	/
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	2.56	/
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	1.82	2.10
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	0.86	0.90	0.95	0.99	1.04	1.13	1.21	1.32	1.43	1.64
39	0.58	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	0.86	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	0.66	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	0.86	0.93	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	0.66	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

MODEL	CAPACITY (M3/h)	FAN			WATER SPRAYING PUMP			INLET OUTLET	WEIGHT		DIMENSION		
		QTY	POWER (KW)	AIR VOLUME PER SET (M3/h)	QTY	POWER (KW)	WATER VOLUME PER SET (M3/h)	DN (mm)	SHIPPING (KG)	OPERATING (KG)	LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)
ZHX-320	320	1	3	35000	1	1.1	36	DN80	2300	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	2700	4340	1925	2580	4220
ZHX-595	595	1	5.5	75000	1	1.5	65	DN100	3280	5140	1925	2980	4220
ZHX-700	700	1	7.5	87000	1	1.5	65	DN100	3680	5530	1925	2980	4865
ZHX-800	800	2	4	45000	1	2.2	84	DN100	4230	7650	3770	2280	4220
ZHX-870	870	2	4	45000	1	2.2	84	DN125	4510	7930	3770	2280	4720
ZHX-980	980	2	4	45000	1	2.2	84	DN125	4620	8040	3770	2280	4865
ZHX-1100	1100	3	3	40000	1	3	120	DN125	6170	10170	4240	2280	4720
ZHX-1250	1250	3	4	45000	1	3	120	2-DN100	6510	10510	4240	2280	4865
ZHX-1380	1380	4	3	40000	1	3	120	2-DN100	7100	11950	5610	2280	4220
ZHX-1520	1520	4	3	40000	1	3	120	2-DN100	7310	12160	5610	2280	4720
ZHX-1680	1680	4	4	45000	1	3	120	2-DN100	7590	12440	5610	2280	4865
ZHX-1840	1840	4	4	45000	1	4	170	2-DN125	8920	15500	7450	2280	4220
ZHX-2010	2010	4	4	45000	1	5.5	230	2-DN125	9330	15900	7450	2280	4720
ZHX-2245	2245	4	4	45000	1	5.5	230	2-DN125	9550	16210	7450	2280	4865
ZHX-2450	2450	5	4	45000	1	5.5	230	4-DN100	11690	19890	9300	2280	4720
ZHX-2600	2600	5	4	45000	1	5.5	230	4-DN100	12190	19790	9300	2280	4865
ZHX-2820	2820	6	4	45000	1	5.5	230	4-DN100	12490	19890	9300	2280	4865

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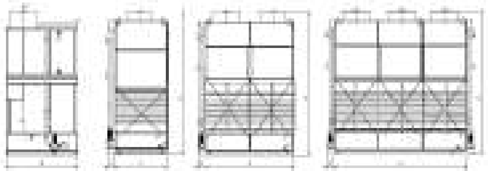
2.All location dimensions for coil connections are approximate and should not be used for prefabrication of connecting piping.



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	3800	1785	2380	4220
ZHX-380	380	4	58000	1.5	45	DN80	3150	4590	1785	2380	4220
ZHX-475	475	4	60000	1.5	45	DN100	3680	5100	1025	2380	4220
ZHX-595	595	5.5	75000	2.2	65	DN100	3850	5500	1025	2980	4240
ZHX-735	735	7.5	87000	2.2	65	DN100	4900	7080	1025	2980	4870
ZHX-830	830	2-5.5	2-60000	3	100	DN100	5280	6020	3490	2380	4240
ZHX-1050	1050	2-7.5	2-73000	3	100	DN100	5580	6900	3490	2380	4240
ZHX-1286	1286	2-5.5	2-73000	4	130	2-DN100	5750	9100	3770	2580	4670
ZHX-1490	1490	2-7.5	2-87000	4	150	2-DN100	6550	9650	3770	2980	4670
ZHX-1766	1766	3-7.5	3-65000	5.5	180	2-DN100	6900	10900	5610	2590	4910
ZHX-2010	2010	3-7.5	3-65000	5.5	180	2-DN100	7350	11200	5610	2580	4910
ZHX-2245	2245	3-7.5	3-87000	5.5	180	2-DN100	7880	11900	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	13000	5610	3420	4910
ZHX-2850	2850	3-7.5	3-100000	2-3	2-100	2-DN100	9650	13350	5610	3420	4910
ZHX-3000	3000	4-7.5	4-870000	2-4	2-130	4-DN100	10600	13900	7000	2980	4910
ZHX-3400	3400	4-7.5	4-100000	2-4	2-130	4-DN100	12300	13900	7450	2980	4910
ZHX-3800	3800	4-7.5	4-100000	2-4	2-150	4-DN100	13250	17000	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	16600	23900	8600	3520	4910

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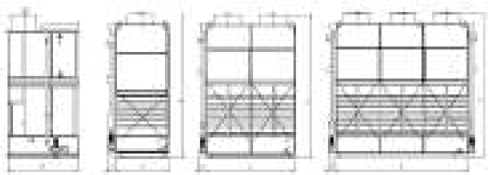

MODEL	CAPACITY (KW/H)	FAN			WATER SPRAYING PUMP			INLET/OUTLET	WEIGHT		DIMENSION		
		QTY	POWER (KW)	AIR VOLUME PER SET (M³/H)	QTY	POWER (KW)	WATER VOLUME PER SET (M³/H)	DN (MM)	SHIPPING (KG)	OPERATING (KG)	LENGTH (MM)	WIDTH (MM)	HEIGHT (MM)
ZNX-180	180	1	1.5	18000	1	0.55	23	DN50	890	1580	1250	1150	3440
ZNX-280	280	1	2.2	28000	1	0.75	28	DN50	1370	2480	1825	1150	3630
ZNX-320	320	1	3	33000	1	0.75	28	DN50	1490	2630	1825	1640	3830
ZNX-430	430	1	4	60000	1	1.1	45	DN80	2120	3790	1825	1640	4120
ZNX-525	525	1	5.5	75000	1	1.5	65	DN80	2420	4490	2470	1640	4120
ZNX-595	595	1	7.5	87000	1	1.5	65	DN80	2650	4760	2470	1600	4450
ZNX-700	700	1	7.5	100000	1	2.2	84	DN100	3495	6080	2790	1600	4450
ZNX-800	800	2	4	65000	1	2.2	84	DN100	4170	7480	3770	1640	4120
ZNX-870	870	2	4	65000	1	2.2	84	DN100	4480	8000	3770	1640	4450
ZNX-980	980	2	4	65000	1	2.2	84	DN125	3120	8430	3775	1640	4450
ZNX-1100	1100	2	5.5	75000	1	3	120	DN125	7560	9430	3770	2300	4370
ZNX-1250	1250	2	5.5	75000	1	3	120	2-DN100	7880	10000	3770	2300	4450
ZNX-1380	1380	2	5.5	80000	1	4	170	2-DN100	6230	11270	4846	2300	4450
ZNX-1520	1520	2	7.5	100000	1	4	170	2-DN100	6560	11580	4846	2300	4650
ZNX-1680	1680	3	4	65000	1	4	170	3-DN100	7890	13790	5610	2300	4450
ZNX-1840	1840	3	5.5	75000	1	4	170	3-DN125	8450	14530	5610	2300	4650
ZNX-2010	2010	3	5.5	75000	1	4	170	4-DN80	9180	15580	5846	2300	4650
ZNX-2195	2195	3	7.5	87000	1	5.5	230	4-DN80	9780	17340	7230	2300	4650
ZNX-2450	2450	4	5.5	75000	2	3	120	4-DN100	10800	19130	7450	2300	4650
ZNX-2580	2580	4	5.5	75000	2	4	170	4-DN100	11480	20080	7650	2300	4945
ZNX-2820	2820	4	5.5	75000	2	4	170	4-DN100	11730	21120	9840	2300	4945

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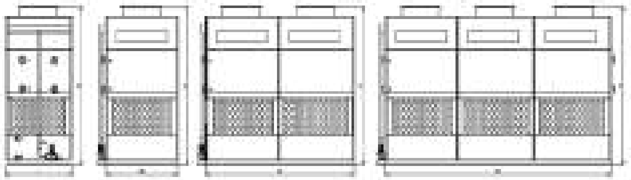

MODEL	CAPACITY	FAN MOTOR (KW)	AIR FLOW (M³/h)	PUMP MOTOR (KW)	AMOUNT OF WATER (M³/h)	INLET/OUTLET (DN MM)	WEIGHT (KG)		DIMENSION		
							SHIPPING	OPERATING	LENGTH	WIDTH	HEIGHT
ZNX-320	320	4	63000	0.75	26	DN80	1610	2420	1825	1840	3650
ZNX-380	380	4	63000	1.1	38	DN80	1730	2580	1825	1840	3650
ZNX-475	475	5.5	73000	1.1	53	DN80	2250	3360	1825	1840	3900
ZNX-595	595	7.5	87000	1.5	70	DN80	2890	3820	2470	1840	4100
ZNX-745	745	11	125000	2.2	84	DN100	3490	5480	2470	2380	4100
ZNX-830	830	2-5.5	2-73000	3	130	DN100	4890	7320	3770	1840	4310
ZNX-1058	1058	2-5.5	2-73000	3	150	DN100	5120	7750	3770	1840	4310
ZNX-1288	1288	2-5.5	2-98000	3	150	2-DN100	6320	9020	3770	2380	4310
ZNX-1488	1488	2-11	2-125000	3	150	2-DN100	6490	9190	2270	2380	4510
ZNX-1765	1765	3-5.5	3-73000	5.5	233	2-DN100	8490	12450	5610	2380	4650
ZNX-2018	2018	3-5.5	3-98000	5.5	233	4-DN100	9420	13480	6846	2380	4520
ZNX-2245	2245	3-5.5	3-98000	5.5	233	4-DN100	9790	13820	6846	2380	4650
ZNX-2456	2456	2-11	2-125000	2-3	2-150	4-DN100	12268	18170	6846	2980	4850
ZNX-2688	2688	2-11	2-125000	2-3	2-150	4-DN100	13788	19870	6846	2980	4850
ZNX-2888	2888	2-11	2-140000	2-3	2-150	4-DN100	13880	11030	6846	2980	4850
ZNX-3088	3088	2-15	2-180000	2-3	2-150	4-DN100	14328	20210	6846	2980	4850
ZNX-3488	3488	3-11	3-125000	2-4	3-180	4-DN100	16218	24650	7240	2980	4850
ZNX-3888	3888	3-11	3-125000	2-4	2-180	4-DN100	17818	25680	7830	2980	4850
ZNX-4288	4288	3-11	3-140000	2-5.5	2-233	4-DN100	20228	28680	9630	3490	4970
ZNX-4688	4688	3-11	3-140000	2-5.5	2-233	4-DN125	22488	32280	9630	3490	4970
ZNX-5088	5088	3-15	3-180000	2-5.5	2-233	4-DN125	24758	35730	9630	3490	4970

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.