Cooling tower
CDW-ON7J

EBARA

SERIES CROSS-FLOW
TYPE COOLING TOWER

EBARA- ALWAYS BENEFITING THE EARTH

EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD.

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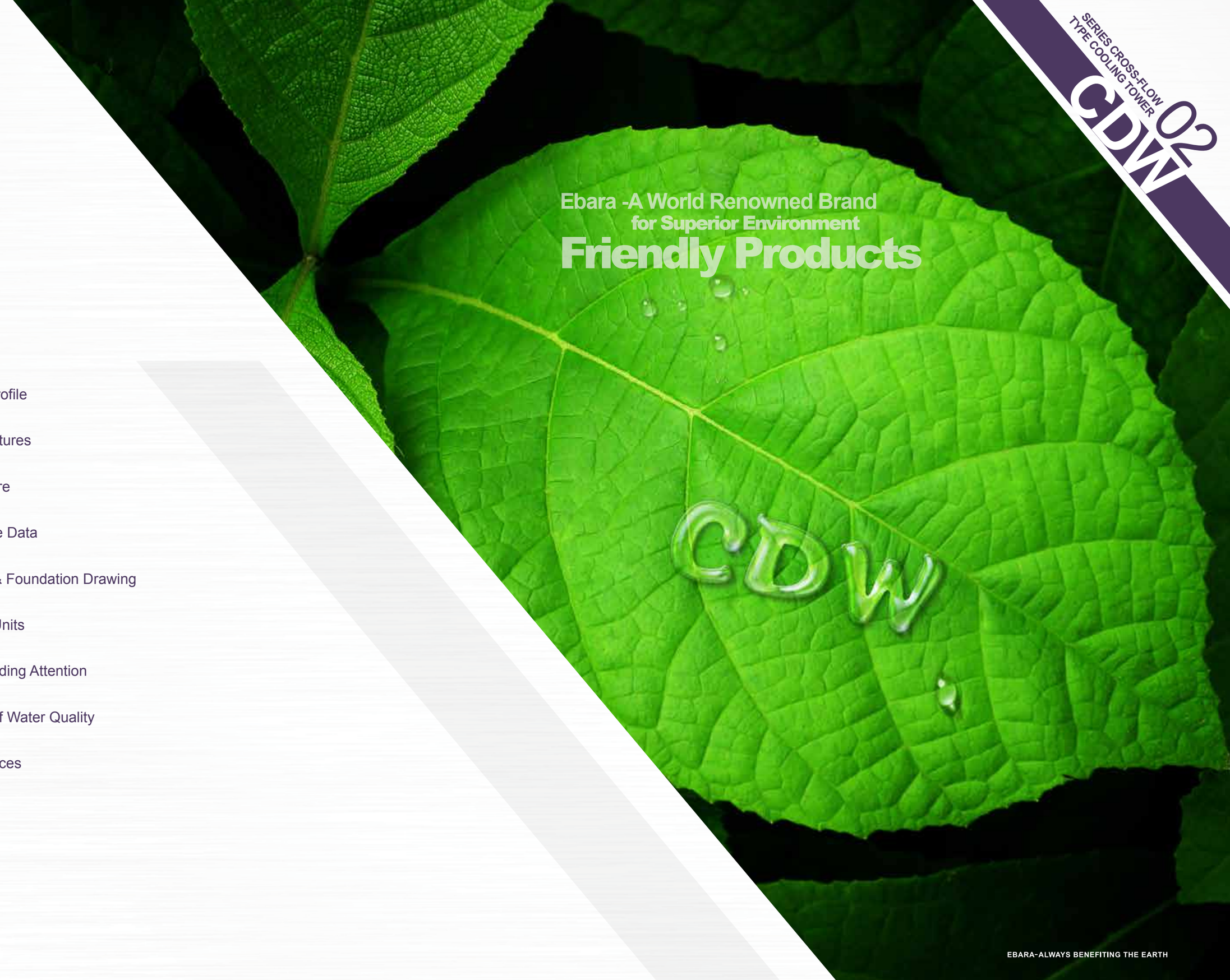


EBARA
ALL AROUND THE WORLD

AN ENVIRONMENTALLY FRIENDLY COMPREHENSIVE ENGINEERING COMPANY

Ebara All Around The World

EBARA Corporation

Ebara Corporation is one of the world's largest manufacturers of pumps, compressors, fans, heat pumps and other HVAC and refrigeration equipment. Since its establishment in 1912, Ebara Corporation has been fully dedicated to protecting the environment with a comprehensive and contemporary commitment. “Ebara-Always Benefiting the Earth” is the philosophy that guides Ebara corporate strategy.

Yantai EBARA Company Profile

Yantai Ebara Air Conditioning Equipment Co., Ltd. established in 1996, is the only overseas production base of Ebara Japan for manufacturing air conditioning equipment including absorption heat pump, centrifugal heat pump, screw heat pump, cross-flow (closed) type cooling tower,evaporative condenser, etc. Its products are exported to JAPAN and all over the world. Yantai Ebara always keeps up with the products and technology development of Ebara Japan.

TRUST & EXPECTATION

BEYOND BOUNDARIES

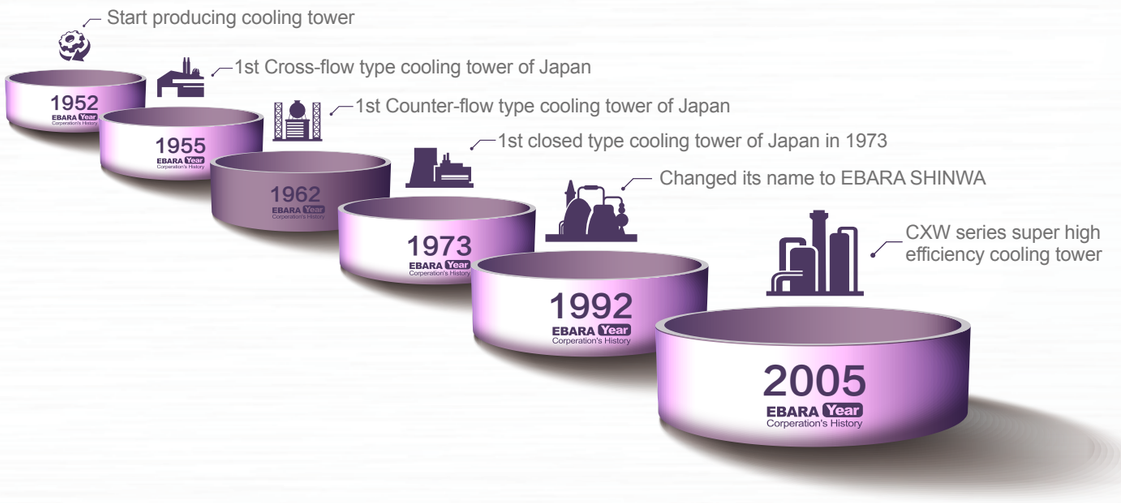
Product Development Mile Stones

1952
Start producing cooling tower in 1952. known as the Japan cooling tower industry's leading

1989
1st Cross-flow type cooling tower of Japan in 1989

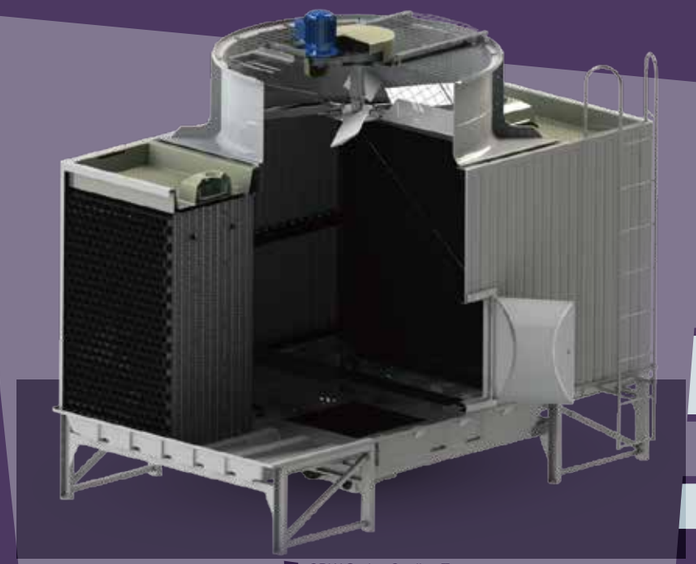
1973
1st closed type cooling tower of Japan in 1973

1999
CXW series super high efficiency cooling tower in 1999.



CDW PRODUCT FEATURES

Product Features

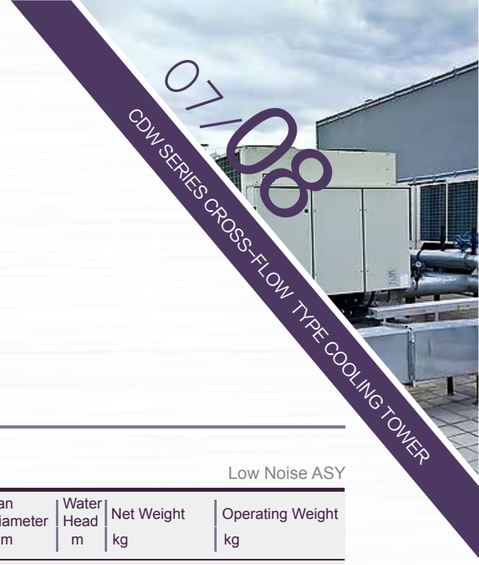


CDW Series Cooling Tower

Superior Materials, Excellent Performance in Anti-corrosion	Cooling tower body is anti-vibration design, the steel material meet the standard of JISG3101-SS400, the cooling tower surface is hot-dip galvanized to avoid rusting & corrosion.
High Quality Filling	The filling is whole piece hanging design, and patented corrugated sheet, which can maximize the heat transfer efficiency of water and air, water floating rate is low.
Unique Water Distribution Structure	Gravity dropping type water distribution design, originated in the Ebara Japan Shinwa design, which can maximize the filling performance.
High Performance & Low Noise Axial Flow Fan System	The Axial flow fan is designed by Ebara Japan Shinwa advanced technology. Use the low noise motor specially designed from cooling tower, and combine with the belt driven system, realize the super low noise level.
High Efficient & Compact Belt Driven System	Use the SRS model belt driven system designed by Ebara Japan Shinwa unique technology, high efficiency. Durable V type belt and belt wheel, easy adjustment, high safety.
Short Construction Period	Each module can be made as a whole unit or split into two parts at factory.Cooling tower is designed as modules and easy for shipment and installation.
Simple Maintenance	The speed reduction belt wheel is 4 holes bushing design, easy dismounting for maintenance. Motor and speed reduction wheel gears are both original imported and maintenance free.

Nomenclature

CDW	–150	ASY	(ASSY)	×n
Square Cross-flow Open Cooling Tower	Model	Low Noise	Super Low Noise	Module Quantity



CDW TECHNICAL DATA SHEET

Performance Data

Low Noise ASY

Model(CDW-)	Cooling Water Flowrate (m³/h) W.B.28℃	W.B.27℃	Dimension L(mm)	W(mm)	H(mm)	Fan Power kW	Fan Diameter mm	Water Head m	Net Weight kg	Operating Weight kg
CDW-100ASY-X	100	115	3770	1750	2770	3.7	1500	4	880	2490
CDW-125ASY-X	125	140	3770	1950	2770	3.7	1500	4	910	2520
CDW-135ASY-X	135	155	4070	2150	2770	3.7	1800	4	990	2900
CDW-150ASY-X	150	170	4070	2150	2770	5.5	1800	4	1010	2920
CDW-175ASY-X	175	200	4370	2350	2770	5.5	2100	4	1140	3250
CDW-200ASY-X	200	225	4370	2450	2770	7.5	2100	4	1180	3330
CDW-250ASY-X	250	286	4370	2450	3925	11	2200	6	1420	3800
CDW-300ASY-S	300	344	5570	3100	3875	7.5	2600	6	2675	7650
CDW-350ASY-S	350	401	5570	3100	3875	11	2600	6	2700	8010
CDW-400ASY-S	400	458	5870	3800	3875	11	3000	6	3700	9975
CDW-450ASY-S	450	512	5870	3800	3875	15	3000	6	3730	10340
CDW-500ASY-S	500	573	6470	4600	3875	15	3500	6	4240	12110
CDW-550ASY-S	550	624	6470	4600	3875	18.5	3500	6	4290	12360
CDW-600ASY-S	600	688	6470	4600	4425	18.5	3500	8	5060	13940
CDW-650ASY-S	650	743	6470	4600	4425	22	3500	8	5080	14160
CDW-700ASY-S	700	802	6870	5400	4425	22	4000	8	5765	16360
CDW-750ASY-S	750	855	6870	5400	4425	30	4000	8	5900	16840
CDW-800ASY-S	800	917	6870	5800	4425	30	4000	8	6250	17940
CDW-100ASY-X×n	100×n	115×n	3770	1750×n	2770	3.7×n	1500×n	4	880×n−40×(n−1)	2490×n−60×(n−1)
CDW-125ASY-X×n	125×n	140×n	3770	1950×n	2770	3.7×n	1500×n	4	910×n−40×(n−1)	2520×n−60×(n−1)
CDW-135ASY-X×n	135×n	155×n	4070	2150×n	2770	3.7×n	1800×n	4	990×n−40×(n−1)	2900×n−60×(n−1)
CDW-150ASY-X×n	150×n	170×n	4070	2150×n	2770	5.5×n	1800×n	4	1010×n−40×(n−1)	2920×n−60×(n−1)
CDW-175ASY-X×n	175×n	200×n	4370	2350×n	2770	5.5×n	2100×n	4	1140×n−40×(n−1)	3250×n−60×(n−1)
CDW-200ASY-X×n	200×n	225×n	4370	2450×n	2770	7.5×n	2100×n	4	1180×n−40×(n−1)	3330×n−60×(n−1)
CDW-250ASY-X×n	250×n	286×n	4370	2450×n	3925	11×n	2200×n	6	1420×n−40×(n−1)	3800×n−60×(n−1)
CDW-300ASY-S×n	300×n	344×n	5570	3100×n−100(n−1)	3875	7.5×n	2600×n	6	2675×n−440×（n−1）	7650×n−375×（n−1）
CDW-350ASY-S×n	350×n	401×n	5570	3100×n−100(n−1)	3875	11×n	2600×n	6	2700×n−440×（n−1）	8010×n−375×（n−1）
CDW-400ASY-S×n	400×n	458×n	5870	3800×n−100(n−1)	3875	11×n	3000×n	6	3700×n−470×（n−1）	9975×n−550×（n−1）
CDW-450ASY-S×n	450×n	512×n	5870	3800×n−100(n−1)	3875	15×n	3000×n	6	3730×n−470×（n−1）	10340×n−550×（n−1）
CDW-500ASY-S×n	500×n	573×n	6470	4600×n−100(n−1)	3875	15×n	3500×n	6	4240×n−480×（n−1）	12110×n−580×（n−1）
CDW-550ASY-S×n	550×n	624×n	6470	4600×n−100(n−1)	3875	18.5×n	3500×n	6	4290×n−480×（n−1）	12360×n−580×（n−1）
CDW-600ASY-S×n	600×n	688×n	6470	4600×n−100(n−1)	4425	18.5×n	3500×n	8	5060×n−535×（n−1）	13940×n−625×（n−1）
CDW-650ASY-S×n	650×n	743×n	6470	4600×n−100(n−1)	4425	22×n	3500×n	8	5080×n−535×（n−1）	14160×n−625×（n−1）
CDW-700ASY-S×n	700×n	802×n	6870	5400×n−100(n−1)	4425	22×n	4000×n	8	5765×n−560×（n−1）	16360×n−650×（n−1）
CDW-750ASY-S×n	750×n	855×n	6870	5400×n−100(n−1)	4425	30×n	4000×n	8	5900×n−560×（n−1）	16840×n−650×（n−1）
CDW-800ASY-S×n	800×n	917×n	6870	5800×n−100(n−1)	4425	30×n	4000×n	8	6250×n−580×（n−1）	17940×n−670×（n−1）

Notes:
1.Standard design condition is inlet water temperature 37℃, outlet water temperature 32℃, outdoor wet bulb temperature 28℃.
2.The cooling tower is multi-module design, N means the quantity;
3.All module are water tank connected, to balance the water level;
4.Please contact with Ebara for non-standard design conditions.

Performance Data

Low Noise ASY

Model(CDW-)	Cooling Water Flowrate (m³/h) W.B.28℃	W.B.27℃	Dimension L(mm)	W(mm)	H(mm)	Fan Power kW	Fan Diameter mm	Water Head m	Net Weight kg	Operating Weight kg
CDW-100ASSY-X	100	115	3770	1750	2770	3.7	1500	4	900	2510
CDW-125ASSY-X	125	140	3770	1950	2770	3.7	1500	4	930	2540
CDW-135ASSY-X	135	155	4070	2150	2770	3.7	1800	4	1010	2920
CDW-150ASSY-X	150	170	4070	2150	2770	5.5	1800	4	1030	2940
CDW-175ASSY-X	175	200	4370	2350	2770	5.5	2100	4	1160	3270
CDW-200ASSY-X	200	225	4370	2450	2770	7.5	2100	4	1200	3350
CDW-250ASSY-X	250	286	4370	2450	3925	11	2200	6	1440	3820
CDW-100ASSY-X×n	100×n	115×n	3770	1750×n	2770	3.7×n	1500×n	4	900×n−4×(n−1)	2510×n−60×(n−1)
CDW-125ASSY-X×n	125×n	140×n	3770	1950×n	2770	3.7×n	1500×n	4	930×n−4×(n−1)	2540×n−60×(n−1)
CDW-135ASSY-X×n	135×n	155×n	4070	2150×n	2770	3.7×n	1800×n	4	1010×n−4×(n−1)	2920×n−60×(n−1)
CDW-150ASSY-X×n	150×n	170×n	4070	2150×n	2770	5.5×n	1800×n	4	1030×n−4×(n−1)	2940×n−60×(n−1)
CDW-175ASSY-X×n	175×n	200×n	4370	2350×n	2770	5.5×n	2100×n	4	1160×n−4×(n−1)	3270×n−60×(n−1)
CDW-200ASSY-X×n	200×n	225×n	4370	2450×n	2770	7.5×n	2100×n	4	1200×n−4×(n−1)	3350×n−60×(n−1)
CDW-250ASSY-X×n	250×n	286×n	4370	2450×n	3925	11×n	2200×n	6	1440×n−4×(n−1)	3820×n−60×(n−1)

Notes:
1.Standard design condition is inlet water temperature 37℃, outlet water temperature 32℃, outdoor wet bulb temperature 28℃;
2.The cooling tower is multi-module design, N means the quantity;
3.All module are water tank connected, to balance the water level;
4.Please contact with Ebara for non-standard design conditions.

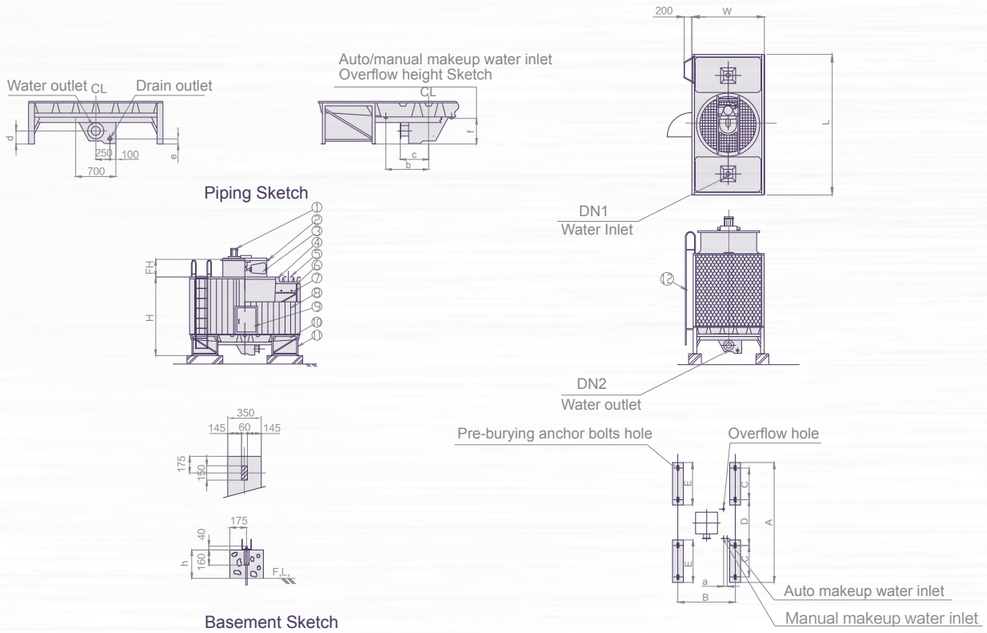
For special conditions, please fill in below table and consult Ebara

Inlet Water Temperature	℃		Set Condition	L: m	W: m	H: m
Outlet Water Temperature	℃		Noise Level	dB(A)		
Outdoor Wet Bulb Temperature	℃		Water Quality	from tap water, reclaimed water, industrial water		
Circulating Water Flowrate	m³/h		Application	Air conditioning use, industrial use, etc		
Power	Voltage: V	Frequency: Hz	Special Requirements			

CDW DIMENSION & FOUNDATION

DRAWING

Dimension & Foundation

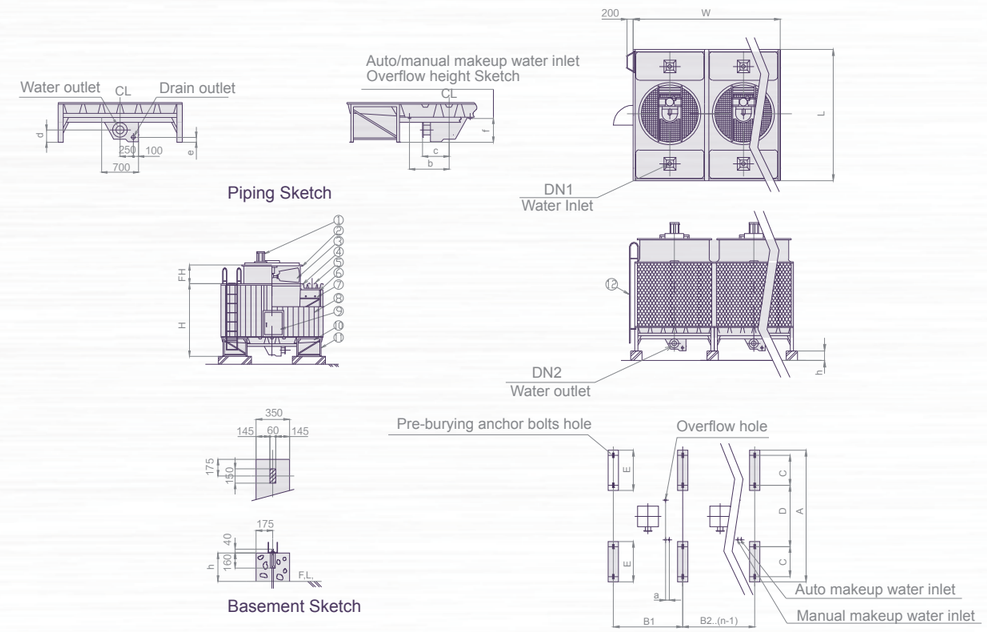


1.Motor 2.Fan shell 3.Fan 4.Upper bulk tank 5.Bulk tank 6.Frame 7.Filling
8.Shell plate 9.Maintenance door 10. Bottom bulk tank 11.Bottom frame 12.Ladder

CDW	L	W	H	FH	a	b	c	d	e	f	A	B	C	D	E	DN1	DN2
100	3770	1750	2770	615	120	500	460	230	90	450	3870	1650	1020	1480	1370	100×2	125
125	3770	1950	2770	615	120	500	460	230	90	450	3870	1850	1020	1480	1370	100×2	125
135	4070	2150	2770	645	120	650	500	230	90	450	4170	2050	1020	1780	1370	100×2	150
150	4070	2150	2770	645	120	650	500	230	90	450	4170	2050	1020	1780	1370	100×2	150
175	4370	2350	2770	715	120	800	500	230	90	450	4470	2250	1020	2080	1370	100×2	150
200	4370	2450	2770	715	120	800	500	230	90	450	4470	2350	1020	2080	1370	100×2	150
250	4370	2450	3925	720	120	800	570	310	170	530	4510	2350	1040	2080	1390	125×2	200

Notes: 1.The Height of the basement is depend on pipe distribution, margin is +/- 5mm;
2.The basement should be horizontal;
3.The basement can be steel structure according to the field conditions.

Dimension & Foundation



1.Motor 2.Fan shell 3.Fan 4.Upper bulk tank 5.Bulk tank 6.Frame 7.Filling
8.Shell plate 9.Maintenance door 10. Bottom bulk tank 11.Bottom frame 12.Ladder

CDW	L	W	H	FH	a	b	c	d	e	f	A	B1	B2	C	D	E	DN1	DN2
100×n	3770	1750×n	2770	615	120	500	460	230	90	450	3870	1650	1750	1020	1480	1370	100×2n	125×n
125×n	3770	1950×n	2770	615	120	500	460	230	90	450	3870	1850	1950	1020	1480	1370	100×2n	125×n
135×n	4070	2150×n	2770	645	120	650	500	230	90	450	4170	2050	2150	1020	1780	1370	100×2n	150×n
150×n	4070	2150×n	2770	645	120	650	500	230	90	450	4170	2050	2150	1020	1780	1370	100×2n	150×n
175×n	4370	2350×n	2770	715	120	800	500	230	90	450	4470	2250	2350	1020	2080	1370	100×2n	150×n
200×n	4370	2450×n	2770	715	120	800	500	230	90	450	4470	2350	2450	1020	2080	1370	100×2n	150×n
250×n	4370	2450×n	3925	720	120	800	570	310	170	530	4510	2350	2450	1040	2080	1390	125×2n	200×n

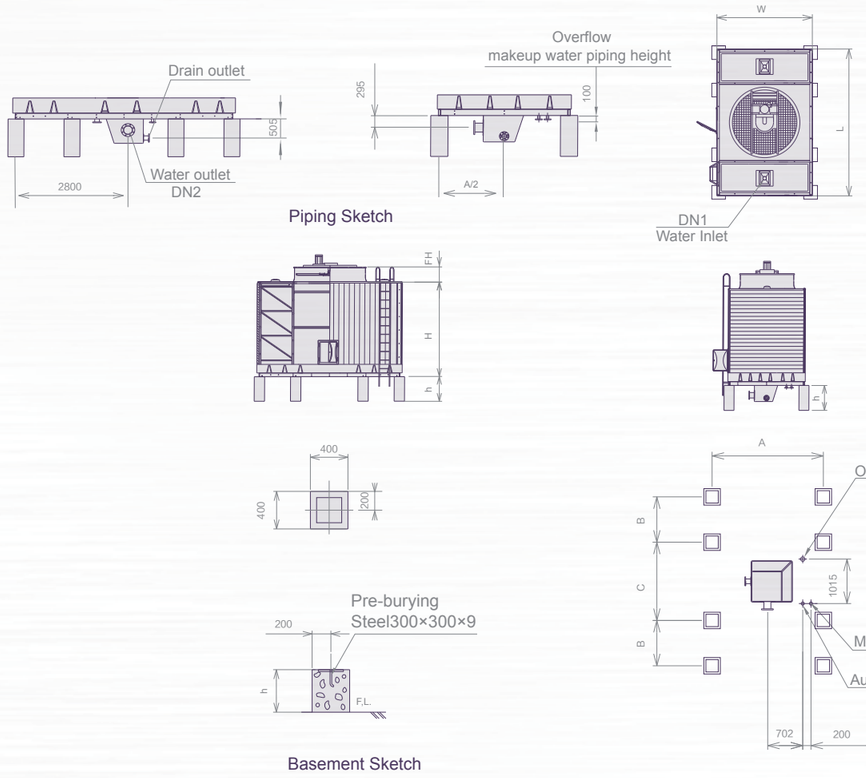
Notes: 1.The Height of the basement is depend on pipe distribution, margin is +/- 5mm;
2.The basement should be horizontal;
3.The basement can be steel structure according to the field conditions.

CDW

DIMENSION & FOUNDATION

DRAWING

Dimension & Foundation

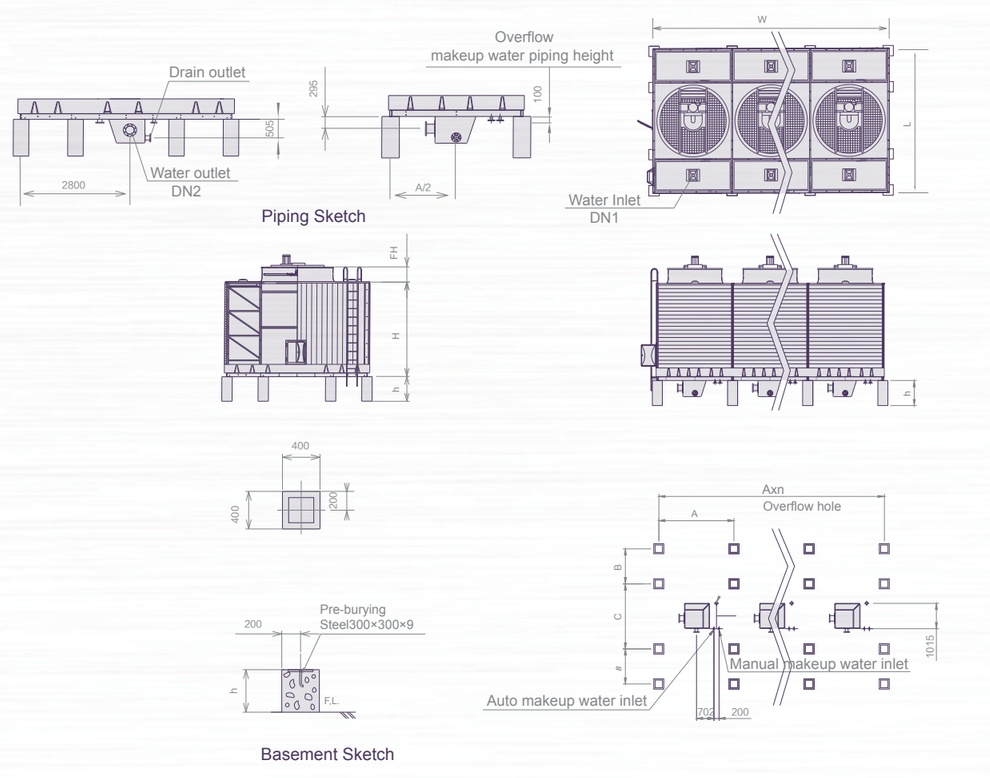


Basement Sketch

CDW-ASY	L	W	H	FH	A	B	C	DN1	DN2
300	5570	3100	3875	600	3000	1400	2600	150×2	200

Notes:
1.The basement should be horizontal;
2.The water outlet flange should be 1 MPa, other pipe connection is screw connection;
3.The height of the basement should be no less than 500mm plus the height of the water outlet,margin is +/- 5mm;
4.The basement can be steel structure according to the field conditions.

Dimension & Foundation



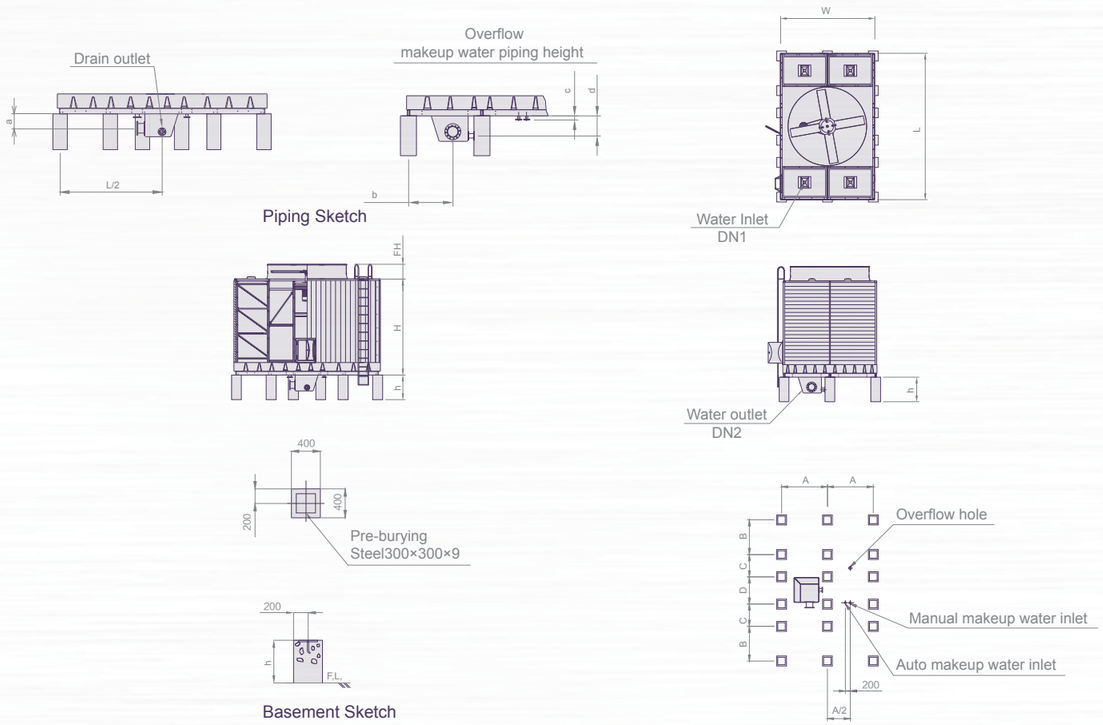
Basement Sketch

CDW-ASY×n	L	W	H	FH	A	B	C	DN1	DN2
300×n	5570	3100×n−100(n−1)	3875	600	3000	1400	2600	150×2n	200×n

Notes:
1.The basement should be horizontal;
2.The water outlet flange should be 1 MPa, other pipe connection is screw connection;
3.The height of the basement should be no less than 500mm plus the height of the water outlet,margin is +/- 5mm;
4.The basement can be steel structure according to the field conditions.

CDW
DIMENSION & FOUNDATION
DRAWING

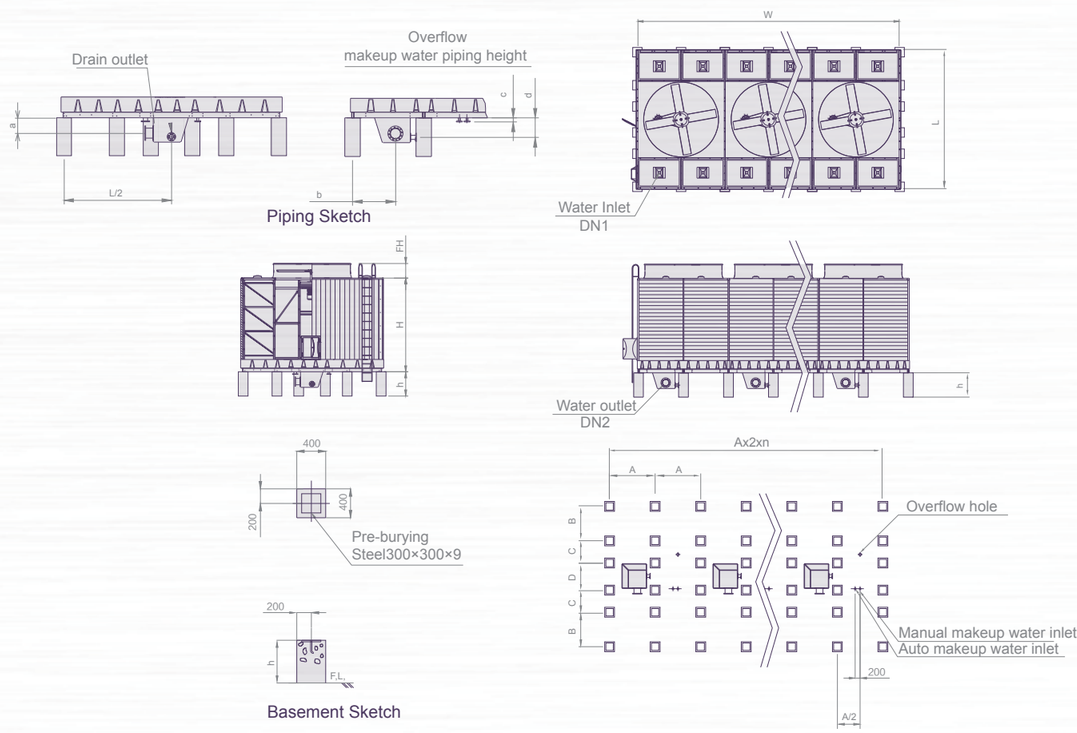
Dimension & Foundation



CDW-ASY	L	W	H	FH	A	B	C	D	a	b	c	d	DN1	DN2
400	5870	3800	3875	600	1850	1400	900	1100	405	1120	100	505	125×4	250
500	6470	4600	3875	600	2250	1400	1200	1100	405	1128	100	505	125×4	250
600	6470	4600	4425	600	2250	1400	1200	1100	365	1125	100	505	150×4	300
700	6870	5400	4425	600	2650	1400	1400	1100	365	1325	100	505	150×4	300
800	6870	5800	4425	600	2850	1400	1400	1100	365	1425	100	505	150×4	350

Notes:
1.The basement should be horizontal;
2.The water outlet flange should be 1 MPa, other pipe connection is screw connection;
3.The height of the basement should be no less than 500mm plus the height of the water outlet,margin is +/- 5mm;
4.The basement can be steel structure according to the field conditions.

Dimension & Foundation



CDW-ASY×n	L	W	H	FH	A	B	C	D	a	b	c	d	DN1	DN2
400×n	5870	3800×n−100(n−1)	3875	600	1850	1400	900	1100	405	1120	100	505	125×4n	250×n
500×n	6470	4600×n−100(n−1)	3875	600	2250	1400	1200	1100	405	1128	100	505	125×4n	250×n
600×n	6470	4600×n−100(n−1)	4425	600	2250	1400	1200	1100	365	1125	100	505	150×4n	300×n
700×n	6870	5400×n−100(n−1)	4425	600	2650	1400	1400	1100	365	1325	100	505	150×4n	300×n
800×n	6870	5800×n−100(n−1)	4425	600	2850	1400	1400	1100	365	1425	100	505	150×4n	350×n

Notes:
1.The basement should be horizontal;
2.The water outlet flange should be 1 MPa, other pipe connection is screw connection;
3.The height of the basement should be no less than 500mm plus the height of the water outlet,margin is +/- 5mm;
4.The basement can be steel structure according to the field conditions.

CDW SELECTABLE UNITS

Option

Control system

User can purchase control cabinet with on/off function or purchase PLC/VFD type control cabinet.

Electric heater

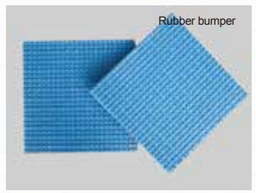
To avoid damaging piping &water basin in winter, User can equip electric heater.

Silencing tube

User can equip silencing tube by request.

Lightning rod

User can equip lightning rod by request.



Shock absorber

Operating shock will effect foundation, even the building. To reduce the shock & noise , User can equip shack absorber.

Attention

How to operate & maintain

1、Operation

- Please maintain the specified amount of circulating water. Otherwise, Capacity will reduce and fog will happen;
- Belt will be extended in the beginning of operation. Please check& adjust regularly;
- Please pay attention to abnormal shock& noise.

2、Maintenance

- Please clean Water basin & filter ;
- Water quality is important and need managed strictly;
- Please replace belt and bearing regularly.

MATTERS NEEDING ATTENTION

Attention

Safety

1、Installation

- Please contact our company before installation and commissioning;
- Please purchase our recommended optional parts for freezing protection & heating system.

2、Maintenance

- Regular maintenance is necessary except for the daily checking;
- Please contact our service department for professional maintenance.

Construction

1、Construction scope

Place of delivery is Yantai Ebara factory .The following is out of our scope:

- Unloading, Hoisting and movement;
- Foundation(Including bolt, cement mortar and steel frame);
- Site piping and electric wiring.

2、Installation location

- Please select installation location according to local law;
- Well ventilation to avoid humid air return;
- No dust and soot;
- No heat source nearby;
- The wall need have ventilating window if there is a wall around the cooling tower. The height of the window should be lower than the cooling tower's air intake;
- No outdoor air inlet for air condition system.

3、Other requirement

- Foundation's plane need be horizontal;
- Please install bolt before assembling the cooling tower.

MATTERS NEEDING ATTENTION

Maintenance management

Part	Checking Item	Hour	Day	Week	Month	3 Months	6 Months	Year	Replacing Time
Fan	Damage, abrasion, deformation, degradation					—			
	Inspection of foreign body					—			
	Bolt's situation					—			
Shell	Damage, deformation, gap between of fans							—	
Bearing	Strange noise		—						
Belt	Belt's tightness				—				
	Abrasion				—				
Shell	Damage, deformation, pollution inspection							—	
Spry basin	Inspection for Water level. blockage of water hole		—						
※1	Inspection for damage and deformation					—			
Window-blinds	Inspection for foreign body, damage and degradation					—			
Fill	Inspection for fouling , residue					—			
	Inspection and cleaning of air holes							—	
Ball valve	Confirmation		—						
Water basin	Checking water level and makeup water		—						
※1	Leakage and clean				—				
Filter※1	Hole leakage		—						
	Clean					—			
Body frame	Inspection for corrosion & bolts situation							—	

Reference Of Water Quality

Item	Cooing water system		Chilled water system		Effect to chiller	
	Circulating water	Make-up water (below 20 ℃)	Circulating water	Make-up water	Corrosion	Scaling
[25℃]	6.5~8.0	6.0~8.0	6.8~8.0	6.8~8.0	—	—
[25℃](μS/cm)	800	200	400	300	—	—
Cl^-(mgCl^-/L)	200	50	50	50	—	
SO_4^{2-}(mg/L)	200	50	50	50	—	
[PH4.8] (mg$CaCO_3$ /L)	100	50	50	50		—
(mg$CaCO_3$/L)	200	70	70	70		—
(mg$CaCO_3$/L)	150	50	50	50		—
(mgSiO_2/L)	50	30	30	30		—

JOB REFERENCE

Job Reference


Beijing Benz Dalmlerchrysler Automotive Co.Ltd


ShouGang Group

Foxconn Group


The Beijing Olympic Games Shooting Range


Juneng Special Steel Co.Ltd


The Ministry Of Commerce Of The State Council Office Building


GAC-TOYOYA


Xi'an Xianyang International Airport


Beijing Dongzhimen hub project