EBARA

SHINWA
COOLING TOWER

Model CDW

# EBARA
# OPEN CIRCUIT TYPE COOLING TOWER

# INTRODUCTION OF EBARA CORPORATION

EBARA CORPORATION is the biggest manufacturer specialized in pump, HVAC (heating, ventilation and air conditioning) and refrigeration equipment in the world. The business has run for more than one hundred years since 1912, and has contributed to the environment to the utmost as well. EBARA is the most famous and top quality in refrigeration business field. Sales figure is more than 7 thousand million US Dollars per year, which puts EBARA in the world machinery's top 500 ranking. In Japan, there are 4 large factories, 37 branch companies and a comprehensive research institute. There are 56 subsidiary companies overseas.

## History of EBARA Chillers & SHINWA Cooling Towers

In 1930, **EBARA** is a pioneer of the chiller industry in Japan that has turned out centrifugal chiller of the first domestic.

On the other hand, starting from product of cooling tower of cross flow square type, we have come a half-century as a leading company regarding cooling towers.

We began the study of centrifugal chiller in the 1920s, it was rolled out its first domestically produced in 1930 then.

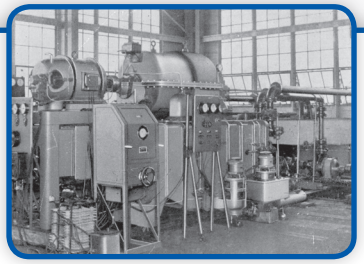
In order to proceed with the globalization of **EBARA chillers** and **SHINWA cooling towers**. as a base for sale and maintenance of Southeast Asia, **EBARA THERMAL SYSTEMS (THAILAND) CO., LTD.** was established in April 2013 as a subsidiary of **EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD.**

**EBARA THERMAL SYSTEMS (THAILAND) CO., LTD.** provides sale and maintenance service for Thailand and Southeast Asia business market.


**FUJISAWA FACTORY (JAPAN)**

**SODEGAURA FACTORY (JAPAN)**

**YANTAI FACTORY (CHINA)**



**Centrifugal chiller first domestic**

SHINWA COOLING TOWER

**1930** Commencement of production & sales for the first centrifugal chiller in Japan

1950

Establishment of SHINWA SANGYO CO., LTD. **1952**

Commencement of production & sales for the first Cross Flow Square Type Cooling Tower in Japan **1955**

**1959** Commencement of mass production for centrifugal chiller

1960

Commencement of production & sales for the first FRP Counter Flow Bottle Type Cooling Tower in Japan **1963**

**1963** Commencement of production & sales for absorption chiller (LiBr/water)

Commencement of mass production for small range FRP Counter Flow Bottle Type Cooling Tower in Japan **1965**

**1964** Estabishment of EBARA SERVICE CO., LTD. for chiller maintenance

1970

**1970** Commencement of production & sales direct-fired absorption chiller-heater

Establishment of SHINWA SERVICE CE., LTD. Japan for cooling tower maintenance **1972**

Commencement of production & sales for Closed Circuit Type Cooling Tower **1973**

**1979** Commencement of production & sales for low temperature screw chiller

1980

**1980** Supply of energy saving large centrifugal chiller

Commencement of design, production & sales for 1st Plume Prevention Type Cooling Tower in japan **1988**

**1989** Commencement of production & sales for semi-hermetic screw chiller

1990

**1991** Commencement of production & sales for CFC Countermeasure HCFC-123 Centrifugal Chiller

40th anniversary of foundation and change company name to EBARA SHINWA LTD. **1992**

Establishment of ASIA SHINWA ENGINEERING CO., LTD. in Bangkok Thailand **1995**

**1996** Establishment of YANTAI EBARA AIR CONDITIONING EQUIPMENT CO., LTD. in Shandong China for the purpose of chiller production invested by EBARA CORPORATION & YANTAI MOON CO.,LTD.

2000

**2002** Establishment of EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD. and organize for consistent operation of manufacturing, sales and maintenance service

**2006** Awarded of Japan Machinery Federation Chairman's prize 2006 years excellent energy saving equipment for RFW Type Chiller

Merged of EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD. and EBARA SHINWA LTD. and Commencing of business of Chiller & Cooling Tower as new EBARA REFRIGERATION EQUIPMENT & SYSTEMS CO., LTD. **2010**

**2010** Awarded of Japan resource energy director general's prize 2010 years excellent energy saving equipment for RTVF Type Chiller evaluated as it's high performance and new technology

**2013** Establishment new organized company, EBARA THERMAL SYSTEMS (THAILAND) CO., LTD. merged ASIA SHINWA ENGINEERING CO., LTD. and commencing business of Ebara Chiller & Shinwa Cooling Tower

# CONTENTS



# FEATURES OF CDW MODELS

## SUPERIOR MATERIAL, EXCELLENT PERFORMANCE IN ANTI-CORROSION

- Cooling tower main body is anti-seismic structure; the steel material meets the JISG3101-SS400 standard. And as the steel is hot-dip galvanized, they are completely rust and corrosion resistant.
- Fan casing and lower water basin are made of FRP material which is anti-corrosion, chemical resistant and impact resistant. Moreover, fan casing's surface is durable, stable and also physically good look.

## HIGH EFFICIENT LOW NOISE AXIAL FAN SYSTEM

- Owing to EBARA SHINWA's advanced technology, the applying of motor specially designed for cooling tower and belt drive system can make the fan system to be super low noise.
- Fan casing is designed as a cone shape. Consequently, it can reduce energy consumption, and has a remarkable result in energy saving.
- Fan's material is high quality aluminium alloy which is anti-corrosion and durable. Meanwhile, fan blade and wheel hub are cut into the right angle so it's able to adjust angle by scale.

## HIGH EFFICIENT COMPACT BELT DRIVE SYSTEM

- SRS model belt drive system is EBARA SHINWA's original. It is compact and very effective.
- Durable V-Belt and pulley are easy to adjust. Besides, strong belt cover, which is made of FRP, is easy to dismantle and reassemble. Belt cover keeps the system safe and well operated as it safeguards the system against foreign objects carried from the outside.

## HIGH QUALITY FILL

- The fill is designed in ripple pattern, used as hanging sheets.
- Maximizes heat exchange efficiency between water and air, as well as slow down water flow rate.
- The unique designed fill can be modified. It is not only sturdy and durable but also easy and fast to clean.

## UNIQUE WATER DISTRIBUTION SYSTEM

- Gravity water distribution system is EBARA SHINWA's original. It is well-distributed, and maximizes efficiency of the fill.

## EASY TO MAINTAIN

- Belt cover is used with wing bolts, so it's very convenient to dismantle and reassemble by hands.
- Lower water basin is sloped for the purpose of better performance in water flowing and cleaning.
- As there are inspection door, cat walk and ladder, it's convenient to inspect and maintain a cooling tower.

## SHORT INSTALLATION TIME

- By separating cooling tower main body and fan casing in transportation (CDW-100 ~ CDW-200), it's easier to transport, assemble at a work site, and consume less installation time as well.

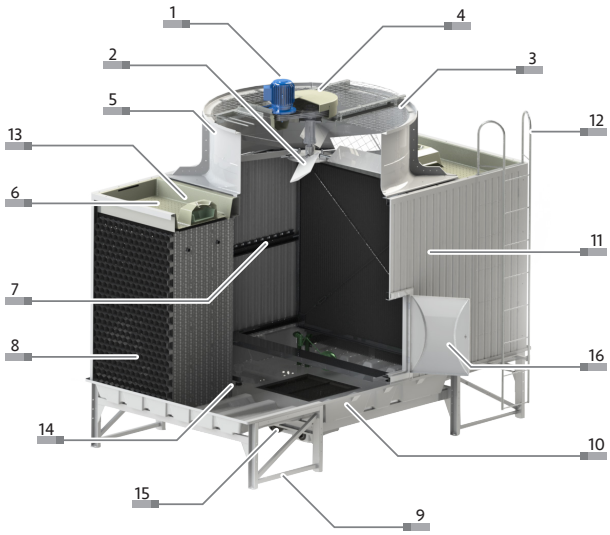
# STRUCTURES OF CDW MODELS

## MODEL

CDW-100AS-*1 ~ CDW-250AS-*1

| NO. | PARTS NAME | MATERIALS | Q'TY | REMARKS |
|---|---|---|---|---|
| 1 | Motor | | 1 Pc | Total Enclosed Outdoor |
| 2 | Fan | Alum. Alloy Cast | 1 Set | |
| 3 | Fan Guard | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 4 | Belt Cover | F.R.P. | 1 Set | |
| 5 | Fan Casing | F.R.P. | 1 Set | |
| 6 | Upper Water Basin | F.R.P. | 2 Pcs | |
| 7 | Framework | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 8 | Fill | P.V.C. | 1 Set | |
| 9 | Lower Frame | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 10 | Lower Water Basin | F.R.P. | 1 Set | Inclined |
| 11 | Casing Panel | F.R.P. | 2 Sides | |
| 12 | Ladder | H.D.G.Steel | 1 Pc | Hot Dip Galvanized |
| 13 | Sprinkler Cover | F.R.P. | 2 Pcs | |
| 14 | Overflow Pipe | P.V.C. | 1 Set | |
| 15 | Outlet Pipe | E.P.T. (CDW-100 ~ CDW-200) | 1 Set | |
| | | H.D.G.Steel (CDW-250) | 1 Set | Hot Dip Galvanized |
| 16 | Inspection Door | F.R.P. | 1 Pc | |

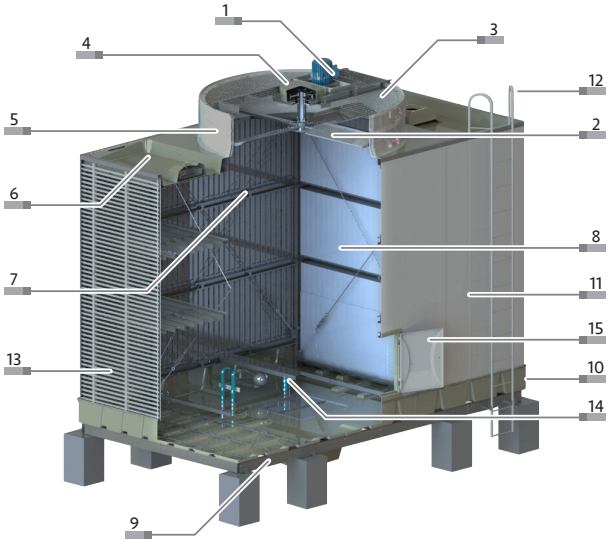
STANDARD COLOR : **GRAY OR WHITE**




* Above structure drawing is an external piping type.

## MODEL

CDW-300AS-*1 ~ CDW-350AS-*1




| NO. | PARTS NAME | MATERIALS | Q'TY | REMARKS |
|---|---|---|---|---|
| 1 | Motor | | 1 Pc | Total Enclosed Outdoor |
| 2 | Fan | Alum. Alloy Cast | 1 Set | |
| 3 | Fan Guard | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 4 | Belt Cover | F.R.P. | 1 Set | |
| 5 | Fan Casing | F.R.P. | 1 Set | |
| 6 | Upper Water Basin | F.R.P. | 2 Pcs | |
| 7 | Framework | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 8 | Fill | P.V.C. | 1 Set | |
| 9 | Lower Frame | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 10 | Lower Water Basin | F.R.P. | 1 Set | |
| 11 | Casing Panel | F.R.P. | 2 Sides | |
| 12 | Ladder | H.D.G.Steel | 1 Pc | Hot Dip Galvanized |
| 13 | Louver | P.V.C. | 2 Sides | |
| 14 | Overflow Pipe | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 15 | Inspection Door | F.R.P. | 1 Pc | |

STANDARD COLOR : **GRAY OR WHITE**

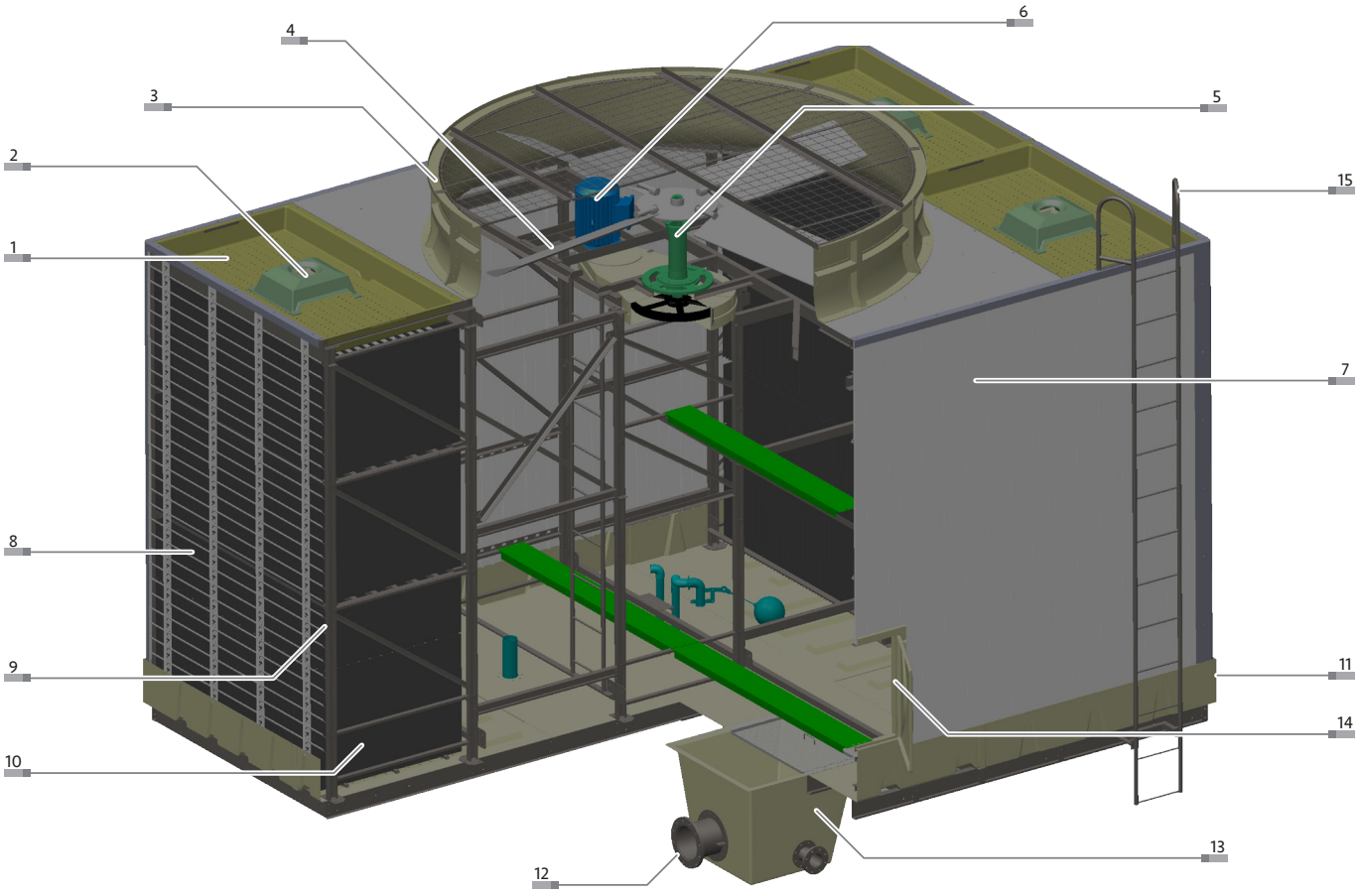
* Above structure drawing is an external piping type.

## MODEL

CDW-400AS-*1 ~ CDW-800AS-*1

| NO. | PARTS NAME | MATERIALS | Q'TY | REMARKS |
|---|---|---|---|---|
| 1 | Upper Water Basin | F.R.P. | 4 Pcs | |
| 2 | Sprinkler Cover | F.R.P. | 4 Pcs | |
| 3 | Fan Casing | F.R.P. | 1 Set | |
| 4 | Fan | Alum. Alloy Cast | 1 Set | |
| 5 | Speed Reducer | | 1 Pc | |
| 6 | Motor | | 1 Pc | Total Enclosed Outdoor |
| 7 | Casing Panel | F.R.P. | 2 Sides | |
| 8 | Louver | P.V.C. | 2 Sides | |
| 9 | Framework | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 10 | Fill | P.V.C. | 1 Set | |
| 11 | Lower Water Basin | F.R.P. | 1 Set | |
| 12 | Outlet Pipe | H.D.G.Steel | 1 Set | Hot Dip Galvanized |
| 13 | Suction Tank | F.R.P. | 1 Pc | |
| 14 | Inspection Door | F.R.P. | 1 Pc | |
| 15 | Ladder | H.D.G.Steel | 1 Pc | Hot Dip Galvanized |
| STANDARD COLOR : **GRAY OR WHITE** | | | | |

* Below structure drawing is an external piping type.



# SPECIFICATION OF CDW MODELS SHOWN IN PARAMETER TABLES

## CDW-ASY-X

Standard Condition

Water Temp : Inlet = 37°C, Outlet = 32°C, W.B. = 28°C

| MODEL | VOLUME OF OUTLET COLD WATER ($m^3/h$) | | DIMENSION (mm) | | | MOTOR POWER | FAN DIAMETER | HEAD LOSS | SHIPPING WEIGHT | OPERATION WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.B.28°C | W.B.27°C | L | W | H | kW | mm | m | kg | kg |
| CDW-100ASY-X*1 | 100 | 115 | 3770 | 1750 | 2770 | 3.7 | 1500 | 4 | 880 | 2490 |
| CDW-125ASY-X*1 | 125 | 140 | 3770 | 1950 | 2770 | 3.7 | 1500 | 4 | 910 | 2520 |
| CDW-135ASY-X*1 | 135 | 155 | 4070 | 2150 | 2770 | 3.7 | 1800 | 4 | 990 | 2900 |
| CDW-150ASY-X*1 | 150 | 170 | 4070 | 2150 | 2770 | 5.5 | 1800 | 4 | 1010 | 2920 |
| CDW-175ASY-X*1 | 175 | 200 | 4370 | 2350 | 2770 | 5.5 | 2100 | 4 | 1140 | 3250 |
| CDW-200ASY-X*1 | 200 | 225 | 4370 | 2450 | 2770 | 7.5 | 2100 | 4 | 1180 | 3330 |
| CDW-250ASY-X*1 | 250 | 286 | 4370 | 2450 | 3925 | 11.0 | 2200 | 6 | 1420 | 3800 |
| CDW-135ASY-X*2 | 270 | 310 | 4070 | 4300 | 2770 | 3.7 * 2 | 1800 | 4 | 1940 | 5760 |
| CDW-150ASY-X*2 | 300 | 340 | 4070 | 4300 | 2770 | 5.5 * 2 | 1800 | 4 | 1980 | 5800 |
| CDW-175ASY-X*2 | 350 | 400 | 4370 | 4700 | 2770 | 5.5 * 2 | 2100 | 4 | 2240 | 6460 |
| CDW-200ASY-X*2 | 400 | 450 | 4370 | 4900 | 2770 | 7.5 * 2 | 2100 | 4 | 2320 | 6620 |
| CDW-250ASY-X*2 | 500 | 572 | 4370 | 4900 | 3925 | 11.0 * 2 | 2200 | 6 | 2800 | 7560 |
| CDW-150ASY-X*3 | 450 | 510 | 4070 | 6450 | 2770 | 5.5 * 3 | 1800 | 4 | 2950 | 8680 |
| CDW-175ASY-X*3 | 525 | 600 | 4370 | 7050 | 2770 | 5.5 * 3 | 2100 | 4 | 3340 | 9670 |
| CDW-200ASY-X*3 | 600 | 675 | 4370 | 7350 | 2770 | 7.5 * 3 | 2100 | 4 | 3460 | 9910 |
| CDW-250ASY-X*3 | 750 | 858 | 4370 | 7350 | 3925 | 11.0 * 3 | 2200 | 6 | 4180 | 11320 |
| CDW-175ASY-X*4 | 700 | 800 | 4370 | 9400 | 2770 | 5.5 * 4 | 2100 | 4 | 4440 | 12880 |
| CDW-200ASY-X*4 | 800 | 900 | 4370 | 9800 | 2770 | 7.5 * 4 | 2100 | 4 | 4600 | 13200 |
| CDW-250ASY-X*4 | 1000 | 1144 | 4370 | 9800 | 3925 | 11.0 * 4 | 2200 | 6 | 5560 | 15080 |

**NOTES:**

1. Not all of the cooling tower models are shown in this catalog due to the limited space. The drawing of more than five cells assembled together can be provided separately by contacting our windows.
2. Parameter table is subject to change without notice due to more advanced technology. The dimension in this catalog is only a reference, please use the drawing specifically provided for your project in practical site work.
3. Our company can provide other special forms of cooling tower to meet your requirements. And please contact us.
4. Internal piping type is also available on request (Model CDW-100ASW-X*1 ~ CDW-250ASW-X*4).

## CDW-ASY-C

### Standard Condition

Water Temp : Inlet = 37°C, Outlet = 32°C, W.B. = 28°C

| MODEL | VOLUME OF OUTLET COLD WATER ($m^3/h$) | | DIMENSION (mm) | | | MOTOR POWER | FAN DIAMETER | HEAD LOSS | SHIPPING WEIGHT | OPERATION WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.B.28°C | W.B.27°C | L | W | H | kW | mm | m | kg | kg |
| CDW-100ASY-C*1 | 100 | 115 | 3770 | 1750 | 2770 | 5.5 | 1500 | 4 | 900 | 2510 |
| CDW-125ASY-C*1 | 125 | 140 | 3770 | 1950 | 2770 | 5.5 | 1500 | 4 | 930 | 2540 |
| CDW-135ASY-C*1 | 135 | 155 | 4070 | 2150 | 2770 | 5.5 | 1800 | 4 | 1010 | 2920 |
| CDW-150ASY-C*1 | 150 | 170 | 4070 | 2150 | 2770 | 7.5 | 1800 | 4 | 1030 | 2950 |
| CDW-175ASY-C*1 | 175 | 200 | 4370 | 2350 | 2770 | 7.5 | 2100 | 4 | 1160 | 3270 |
| CDW-200ASY-C*1 | 200 | 225 | 4370 | 2450 | 2770 | 11.0 | 2100 | 4 | 1200 | 3350 |
| CDW-250ASY-C*1 | 250 | 286 | 4370 | 2450 | 3925 | 15.0 | 2200 | 6 | 1440 | 3820 |
| CDW-135ASY-C*2 | 270 | 310 | 4070 | 4300 | 2770 | 5.5 * 2 | 1800 | 4 | 1980 | 5800 |
| CDW-150ASY-C*2 | 300 | 340 | 4070 | 4300 | 2770 | 7.5 * 2 | 1800 | 4 | 2020 | 5860 |
| CDW-175ASY-C*2 | 350 | 400 | 4370 | 4700 | 2770 | 7.5 * 2 | 2100 | 4 | 2280 | 6500 |
| CDW-200ASY-C*2 | 400 | 450 | 4370 | 4900 | 2770 | 11.0 * 2 | 2100 | 4 | 2360 | 6660 |
| CDW-250ASY-C*2 | 500 | 572 | 4370 | 4900 | 3925 | 15.0 * 2 | 2200 | 6 | 2840 | 7600 |
| CDW-150ASY-C*3 | 450 | 510 | 4070 | 6450 | 2770 | 7.5 * 3 | 1800 | 4 | 3010 | 8770 |
| CDW-175ASY-C*3 | 525 | 600 | 4370 | 7050 | 2770 | 7.5 * 3 | 2100 | 4 | 3400 | 9730 |
| CDW-200ASY-C*3 | 600 | 675 | 4370 | 7350 | 2770 | 11.0 * 3 | 2100 | 4 | 3520 | 9970 |
| CDW-250ASY-C*3 | 750 | 858 | 4370 | 7350 | 3925 | 15.0 * 3 | 2200 | 6 | 4240 | 11380 |
| CDW-175ASY-C*4 | 700 | 800 | 4370 | 9400 | 2770 | 7.5 * 4 | 2100 | 4 | 4520 | 12960 |
| CDW-200ASY-C*4 | 800 | 900 | 4370 | 9800 | 2770 | 11.0 * 4 | 2100 | 4 | 4680 | 13280 |
| CDW-250ASY-C*4 | 1000 | 1144 | 4370 | 9800 | 3925 | 15.0 * 4 | 2200 | 6 | 5640 | 15160 |

**NOTES:**

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3. Our company can provide other special forms of cooling tower to meet your requirements. And please contact us.
4. Internal piping type is also available on request (Model CDW-100ASW-C*1 ~ CDW-250ASW-C*4).

# SPECIFICATION OF CDW MODELS SHOWN IN PARAMETER TABLES

## CDW-ASY-S

Standard Condition

Water Temp : Inlet = 37°C, Outlet = 32°C, W.B. = 28°C

| MODEL | VOLUME OF OUTLET COLD WATER ($m^3/h$) | | DIMENSION (mm) | | | MOTOR POWER | FAN DIAMETER | HEAD LOSS | SHIPPING WEIGHT | OPERATION WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.B.28°C | W.B.27°C | L | W | H | kW | mm | m | kg | kg |
| CDW-300ASY-S*1 | 300 | 344 | 5570 | 3100 | 3900 | 7.5 | 2600 | 6 | 2430 | 6820 |
| CDW-350ASY-S*1 | 350 | 401 | 5570 | 3100 | 3900 | 11.0 | 2600 | 6 | 2450 | 6840 |
| CDW-400ASY-S*1 | 400 | 458 | 5870 | 3800 | 3900 | 11.0 | 3000 | 6 | 2840 | 7040 |
| CDW-500ASY-S*1 | 500 | 573 | 6470 | 4600 | 3900 | 15.0 | 3500 | 6 | 3280 | 11400 |
| CDW-600ASY-S*1 | 600 | 688 | 6470 | 4600 | 4425 | 18.5 | 3500 | 8 | 3640 | 12200 |
| CDW-700ASY-S*1 | 700 | 802 | 6870 | 5400 | 4425 | 22.0 | 4000 | 8 | 4320 | 14200 |
| CDW-800ASY-S*1 | 800 | 917 | 6870 | 5800 | 4425 | 30.0 | 4000 | 8 | 5420 | 16540 |
| CDW-300ASY-S*2 | 600 | 688 | 5570 | 6100 | 3900 | 7.5 * 2 | 2600 | 6 | 4760 | 13540 |
| CDW-350ASY-S*2 | 700 | 802 | 5570 | 6100 | 3900 | 11.0 * 2 | 2600 | 6 | 4800 | 13580 |
| CDW-400ASY-S*2 | 800 | 916 | 5870 | 7500 | 3900 | 11.0 * 2 | 3000 | 6 | 5580 | 13980 |
| CDW-500ASY-S*2 | 1000 | 1146 | 6470 | 9100 | 3900 | 15.0 * 2 | 3500 | 6 | 6460 | 22700 |
| CDW-600ASY-S*2 | 1200 | 1376 | 6470 | 9100 | 4425 | 18.5 * 2 | 3500 | 8 | 7230 | 24300 |
| CDW-700ASY-S*2 | 1400 | 1604 | 6870 | 10700 | 4425 | 22.0 * 2 | 4000 | 8 | 8540 | 28350 |
| CDW-800ASY-S*2 | 1600 | 1834 | 6870 | 11500 | 4425 | 30.0 * 2 | 4000 | 8 | 10740 | 32980 |
| CDW-300ASY-S*3 | 900 | 1032 | 5570 | 9100 | 3900 | 7.5 * 3 | 2600 | 6 | 7090 | 20260 |
| CDW-350ASY-S*3 | 1050 | 1203 | 5570 | 9100 | 3900 | 11.0 * 3 | 2600 | 6 | 7150 | 20320 |
| CDW-400ASY-S*3 | 1200 | 1374 | 5870 | 11200 | 3900 | 11.0 * 3 | 3000 | 6 | 8320 | 20920 |
| CDW-500ASY-S*3 | 1500 | 1719 | 6470 | 13600 | 3900 | 15.0 * 3 | 3500 | 6 | 9640 | 34000 |
| CDW-600ASY-S*3 | 1800 | 2064 | 6470 | 13600 | 4425 | 18.5 * 3 | 3500 | 8 | 10720 | 36400 |
| CDW-700ASY-S*4 | 2100 | 3208 | 6870 | 16000 | 4425 | 22.0 * 3 | 4000 | 8 | 12760 | 42400 |
| CDW-800ASY-S*4 | 2400 | 3668 | 6870 | 17200 | 4425 | 30.0 * 3 | 4000 | 8 | 16060 | 49420 |

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3. Our company can provide other special forms of cooling tower to meet your requirements. And please contact us.
4. Internal piping type is available only CDW - 300 ~ 400.

## CDW-ASY-C

### Standard Condition

Water Temp : Inlet = 37°C, Outlet = 32°C, W.B. = 28°C

| MODEL | VOLUME OF OUTLET COLD WATER ($m^3/h$) | | DIMENSION (mm) | | | MOTOR POWER | FAN DIAMETER | HEAD LOSS | SHIPPING WEIGHT | OPERATION WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.B.28°C | W.B.27°C | L | W | H | kW | mm | m | kg | kg |
| CDW-300ASY-C*1 | 300 | 344 | 5570 | 3100 | 3900 | 11.0 | 2600 | 6 | 2450 | 6840 |
| CDW-350ASY-C*1 | 350 | 401 | 5570 | 3100 | 3900 | 15.0 | 2600 | 6 | 2490 | 6880 |
| CDW-400ASY-C*1 | 400 | 458 | 5870 | 3800 | 3900 | 15.0 | 3000 | 6 | 2880 | 7080 |
| CDW-500ASY-C*1 | 500 | 573 | 6470 | 4600 | 3900 | 18.5 | 3500 | 6 | 3320 | 11440 |
| CDW-600ASY-C*1 | 600 | 688 | 6470 | 4600 | 4425 | 22.0 | 3500 | 8 | 3680 | 12240 |
| CDW-700ASY-C*1 | 700 | 802 | 6870 | 5400 | 4425 | 30.0 | 4000 | 8 | 4360 | 14240 |
| CDW-800ASY-C*1 | 800 | 917 | 6870 | 5800 | 4425 | 37.0 | 4000 | 8 | 5460 | 16580 |
| CDW-300ASY-C*2 | 600 | 688 | 5570 | 6100 | 3900 | 11.0 * 2 | 2600 | 6 | 4800 | 13580 |
| CDW-350ASY-C*2 | 700 | 802 | 5570 | 6100 | 3900 | 15.0 * 2 | 2600 | 6 | 4880 | 13660 |
| CDW-400ASY-C*2 | 800 | 916 | 5870 | 7500 | 3900 | 15.0 * 2 | 3000 | 6 | 5660 | 14060 |
| CDW-500ASY-C*2 | 1000 | 1146 | 6470 | 9100 | 3900 | 18.5 * 2 | 3500 | 6 | 6540 | 22780 |
| CDW-600ASY-C*2 | 1200 | 1376 | 6470 | 9100 | 4425 | 22.0 * 2 | 3500 | 8 | 7310 | 24380 |
| CDW-700ASY-C*2 | 1400 | 1604 | 6870 | 10700 | 4425 | 30.0 * 2 | 4000 | 8 | 8620 | 28430 |
| CDW-800ASY-C*2 | 1600 | 1834 | 6870 | 11500 | 4425 | 37.0 * 2 | 4000 | 8 | 10820 | 33060 |
| CDW-300ASY-C*3 | 900 | 1032 | 5570 | 9100 | 3900 | 11.0 * 3 | 2600 | 6 | 7170 | 20340 |
| CDW-350ASY-C*3 | 1050 | 1203 | 5570 | 9100 | 3900 | 15.0 * 3 | 2600 | 6 | 7270 | 20440 |
| CDW-400ASY-C*3 | 1200 | 1374 | 5870 | 11200 | 3900 | 15.0 * 3 | 3000 | 6 | 8440 | 21040 |
| CDW-500ASY-C*3 | 1500 | 1719 | 6470 | 13600 | 3900 | 18.5 * 3 | 3500 | 6 | 9760 | 34120 |
| CDW-600ASY-C*3 | 1800 | 2064 | 6470 | 13600 | 4425 | 22.0 * 3 | 3500 | 8 | 10840 | 36520 |
| CDW-700ASY-C*4 | 2100 | 3208 | 6870 | 16000 | 4425 | 30.0 * 3 | 4000 | 8 | 12880 | 42520 |
| CDW-800ASY-C*4 | 2400 | 3668 | 6870 | 17200 | 4425 | 37.0 * 3 | 4000 | 8 | 16180 | 49540 |

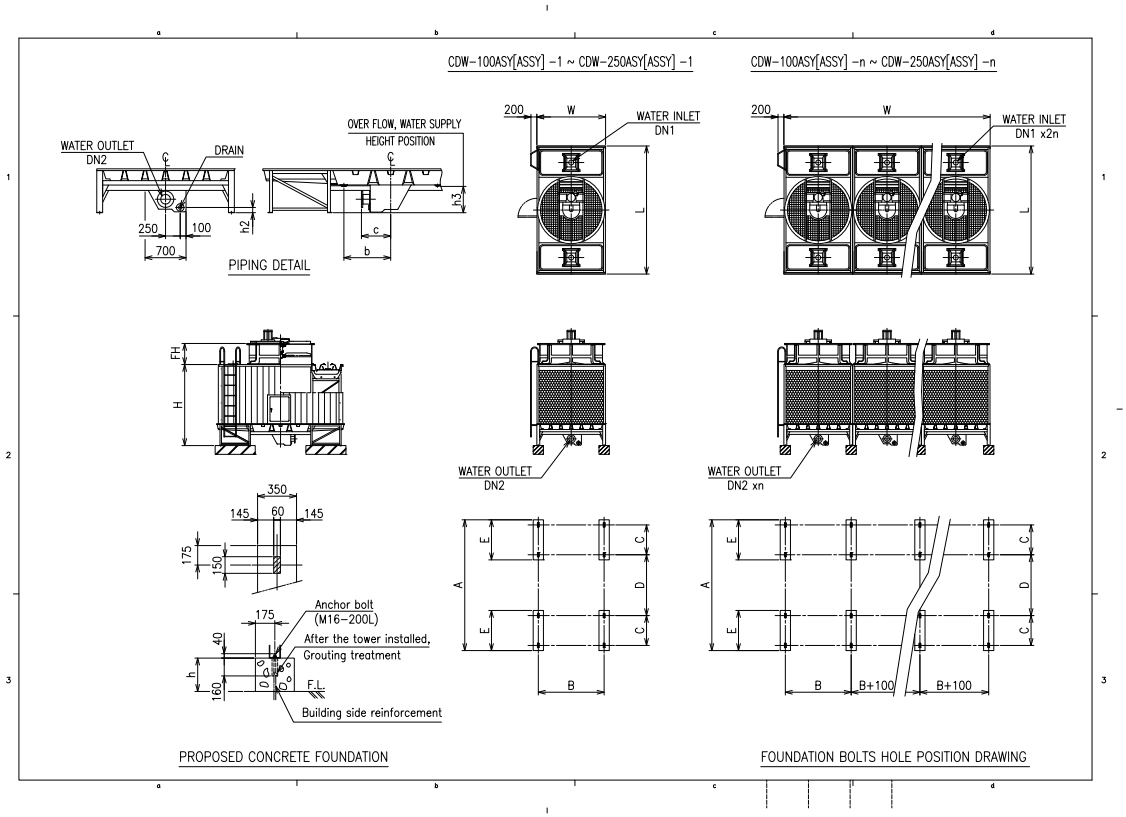
**NOTES:**

1. Not all of the cooling tower models are shown in this catalog due to the limited space. The drawing of more than five cells assembled together can be provided separately by contacting our windows.
2. Parameter table is subject to change without notice due to more advanced technology. The dimension in this catalog is only a reference, please use the drawing specifically provided for your project in practical site work.
3. Our company can provide other special forms of cooling tower to meet your requirements. And please contact us.
4. Internal piping type is available only CDW - 300 ~ 400.

# DIMENSION & FOUNDATION DRAWINGS OF CDW MODELS

## MODEL

CDW-100ASY[ASSY]-X*1 ~ CDW-250ASY[ASSY]-X*1



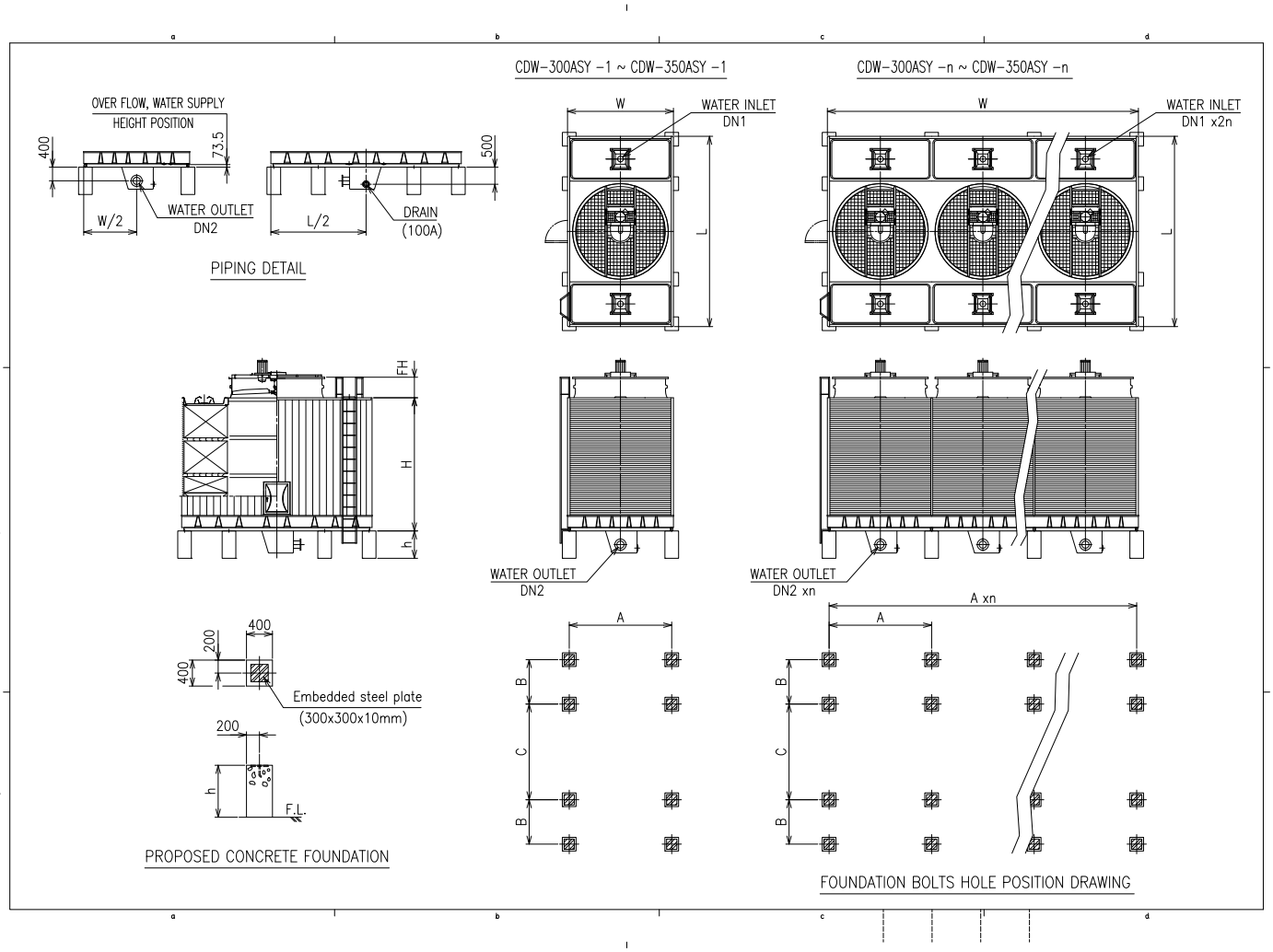

| CDW | L | W | H | h1 | h2 | h3 | FH | a | b | c | A | B | C | D | E | DN1 (A) | DN2 (A) | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100*1 | 3770 | 1750 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1650 | 1020 | 1480 | 1370 | 100 x 2 | 125 x 1 | 3.7 |
| 125*1 | 3770 | 1950 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1850 | 1020 | 1480 | 1370 | 100 x 2 | 125 x 1 | 3.7 |
| 135*1 | 4070 | 2150 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 2 | 150 x 1 | 3.7 |
| 150*1 | 4070 | 2150 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 2 | 150 x 1 | 5.5 |
| 175*1 | 4370 | 2350 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2250 | 1020 | 2080 | 1370 | 100 x 2 | 150 x 1 | 5.5 |
| 200*1 | 4370 | 2450 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2350 | 1020 | 2080 | 1370 | 100 x 2 | 150 x 1 | 7.5 |
| 250*1 | 4370 | 2450 | 3925 | 310 | 170 | 530 | 720 | 120 | 800 | 570 | 4470 | 2350 | 1020 | 2080 | 1370 | 125 x 2 | 200 x 1 | 11 |

| CDW | L | W | H | h1 | h2 | h3 | FH | a | b | c | A | B | C | D | E | DN1 (A) | DN2 (A) | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100*2 | 3770 | 3500 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1650 | 1020 | 1480 | 1370 | 100 x 4 | 125 x 2 | 3.7 |
| 125*2 | 3770 | 3900 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1850 | 1020 | 1480 | 1370 | 100 x 4 | 125 x 2 | 3.7 |
| 135*2 | 4070 | 4300 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 4 | 150 x 2 | 3.7 |
| 150*2 | 4070 | 4300 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 4 | 150 x 2 | 5.5 |
| 175*2 | 4370 | 4700 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2250 | 1020 | 2080 | 1370 | 100 x 4 | 150 x 2 | 5.5 |
| 200*2 | 4370 | 4900 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2350 | 1020 | 2080 | 1370 | 100 x 4 | 150 x 2 | 7.5 |
| 250*2 | 4370 | 4900 | 3925 | 310 | 170 | 530 | 720 | 120 | 800 | 570 | 4470 | 2350 | 1020 | 2080 | 1370 | 125 x 4 | 200 x 2 | 11 |

* Internal piping type is also available on request (CDW-100ASW ~ CDW-250ASW).
* ASSY means super low noise.
* Foundation (h) is customer's scope.

## MODEL

CDW-300ASY-S*1 ~ CDW-350ASY-S*1




| CDW | L | W | H | FH | A | B | C | DN1 | DN2 | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|
| 300*1 | 5570 | 3100 | 3900 | 600 | 3000 | 1300 | 2800 | 150 x 2 | 200 x 1 | 7.5 |
| 350*1 | 5570 | 3100 | 3900 | 600 | 3000 | 1300 | 2800 | 150 x 2 | 200 x 1 | 11 |

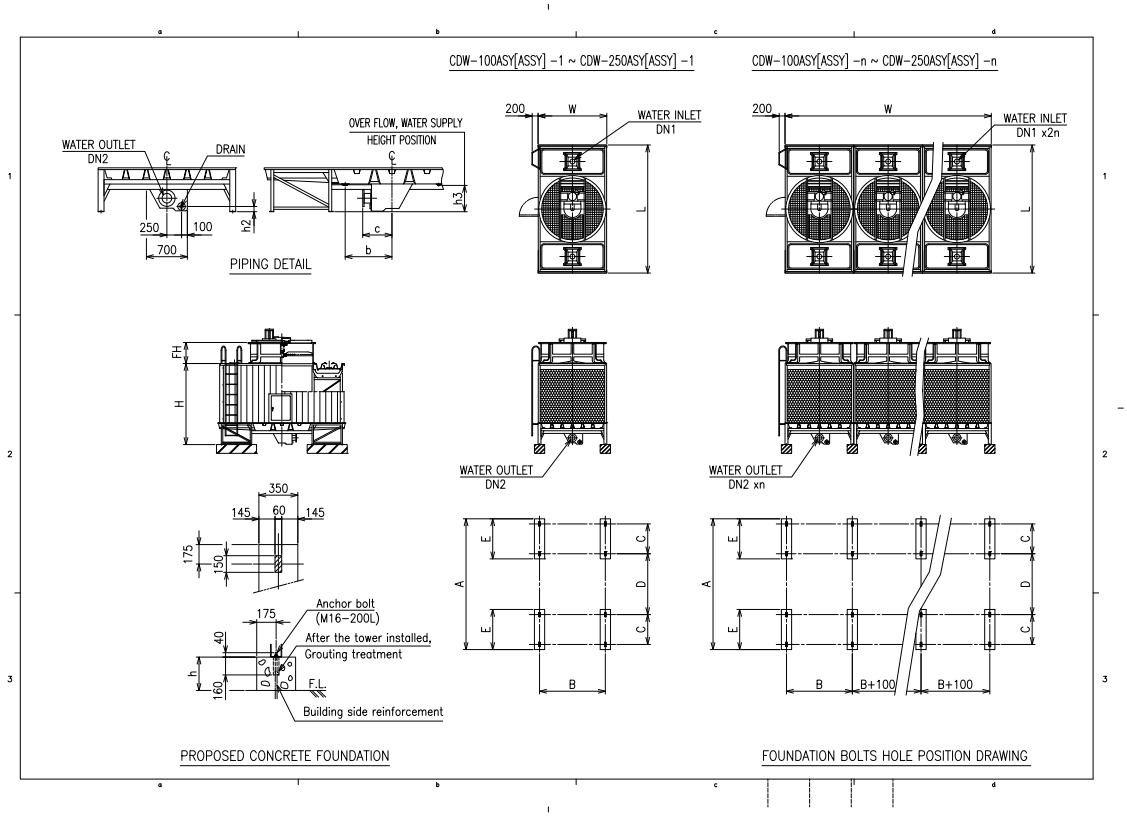
| CDW | L | W | H | FH | A | B | C | DN1 | DN2 | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|
| 300*n | 5570 | 3100 X n-100(n-1) | 3900 | 600 | 3000 | 1400 | 2600 | 150 x 2n | 200 x n | 7.5 |
| 350*n | 5570 | 3100 X n-100(n-1) | 3900 | 600 | 3000 | 1400 | 2600 | 150 x 2n | 200 x n | 11 |

* Internal piping type is also available on request (CDW-300ASW ~ CDW-350ASW).

# DIMENSION & FOUNDATION DRAWINGS OF CDW MODELS

## MODEL

CDW-100ASY[ASSY]-C*1 ~ CDW-250ASY[ASSY]-C*1 (CTI CERTIFICATE MODEL)



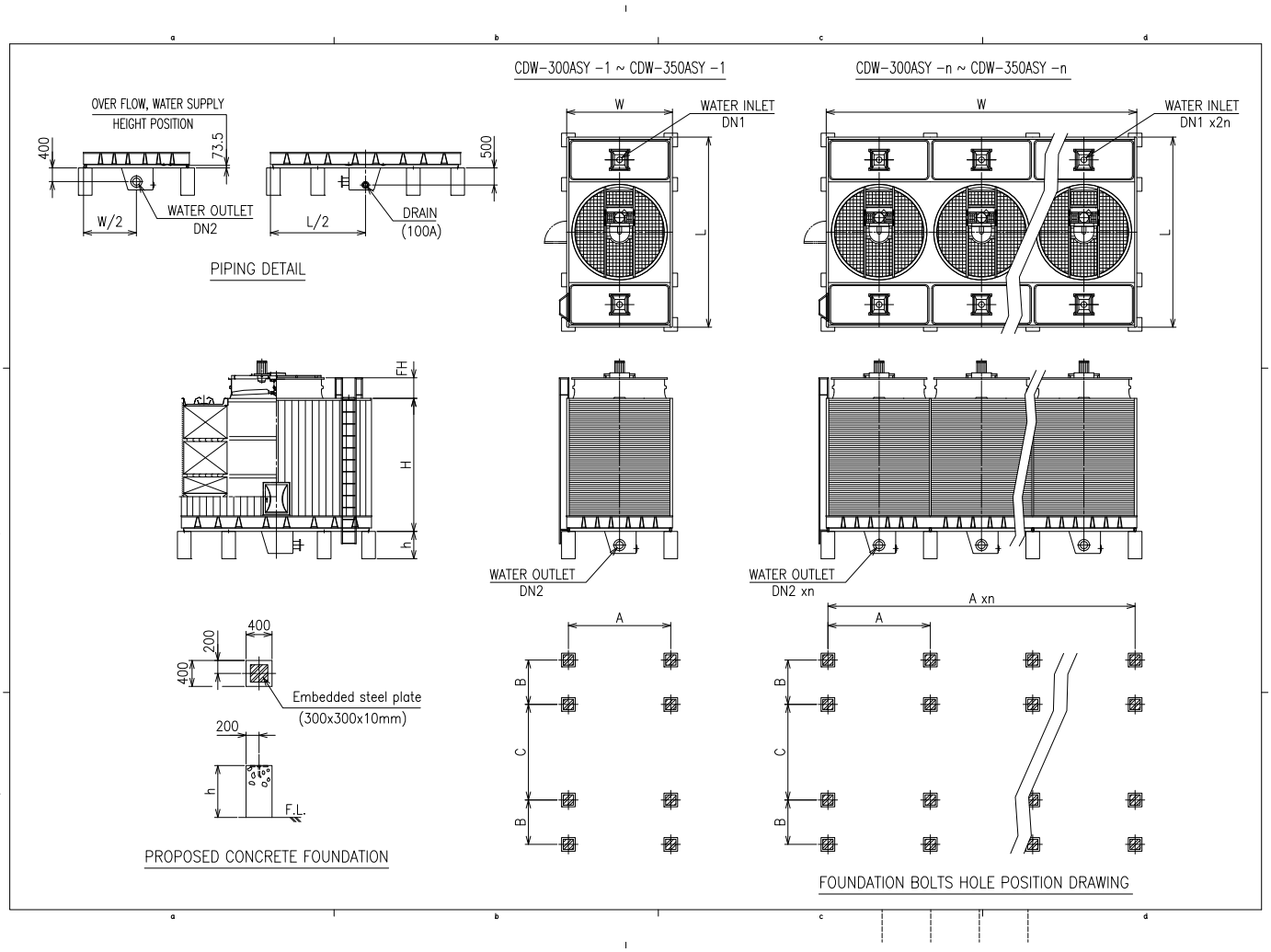

| CDW | L | W | H | h1 | h2 | h3 | FH | a | b | c | A | B | C | D | E | DN1 (A) | DN2 (A) | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100*1 | 3770 | 1750 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1650 | 1020 | 1480 | 1370 | 100 x 2 | 125 x 1 | 5.5 |
| 125*1 | 3770 | 1950 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1850 | 1020 | 1480 | 1370 | 100 x 2 | 125 x 1 | 5.5 |
| 135*1 | 4070 | 2150 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 2 | 150 x 1 | 5.5 |
| 150*1 | 4070 | 2150 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 2 | 150 x 1 | 7.5 |
| 175*1 | 4370 | 2350 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2250 | 1020 | 2080 | 1370 | 100 x 2 | 150 x 1 | 7.5 |
| 200*1 | 4370 | 2450 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2350 | 1020 | 2080 | 1370 | 100 x 2 | 150 x 1 | 11 |
| 250*1 | 4370 | 2450 | 3925 | 310 | 170 | 530 | 720 | 120 | 800 | 570 | 4470 | 2350 | 1020 | 2080 | 1370 | 125 x 2 | 200 x 1 | 15 |

| CDW | L | W | H | h1 | h2 | h3 | FH | a | b | c | A | B | C | D | E | DN1 (A) | DN2 (A) | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100*2 | 3770 | 3500 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1650 | 1020 | 1480 | 1370 | 100 x 4 | 125 x 2 | 5.5 |
| 125*2 | 3770 | 3900 | 2770 | 230 | 90 | 450 | 615 | 120 | 500 | 460 | 3870 | 1850 | 1020 | 1480 | 1370 | 100 x 4 | 125 x 2 | 5.5 |
| 135*2 | 4070 | 4300 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 4 | 150 x 2 | 5.5 |
| 150*2 | 4070 | 4300 | 2770 | 230 | 90 | 450 | 645 | 120 | 650 | 500 | 4170 | 2050 | 1020 | 1780 | 1370 | 100 x 4 | 150 x 2 | 7.5 |
| 175*2 | 4370 | 4700 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2250 | 1020 | 2080 | 1370 | 100 x 4 | 150 x 2 | 7.5 |
| 200*2 | 4370 | 4900 | 2770 | 230 | 90 | 450 | 715 | 120 | 800 | 500 | 4470 | 2350 | 1020 | 2080 | 1370 | 100 x 4 | 150 x 2 | 11 |
| 250*2 | 4370 | 4900 | 3925 | 310 | 170 | 530 | 720 | 120 | 800 | 570 | 4470 | 2350 | 1020 | 2080 | 1370 | 125 x 4 | 200 x 2 | 15 |

* ASSY means super low noise.
* Foundation (h) is customer's scope.

## MODEL

CDW-300ASY-C*1 ~ CDW-350ASY-C*1 (CTI CERTIFICATE MODE)




| CDW | L | W | H | FH | A | B | C | DN1 | DN2 | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|
| 300*1 | 5570 | 3100 | 3900 | 600 | 3000 | 1300 | 2800 | 150 x 2 | 200 x 1 | 11 |
| 350*1 | 5570 | 3100 | 3900 | 600 | 3000 | 1300 | 2800 | 150 x 2 | 200 x 1 | 11 |

| CDW | L | W | H | FH | A | B | C | DN1 | DN2 | Motor (kW) |
|---|---|---|---|---|---|---|---|---|---|---|
| 300*n | 5570 | 3100 X n-100(n-1) | 3900 | 600 | 3000 | 1400 | 2600 | 150 x 2n | 200 x n | 11 |
| 350*n | 5570 | 3100 X n-100(n-1) | 3900 | 600 | 3000 | 1400 | 2600 | 150 x 2n | 200 x n | 11 |

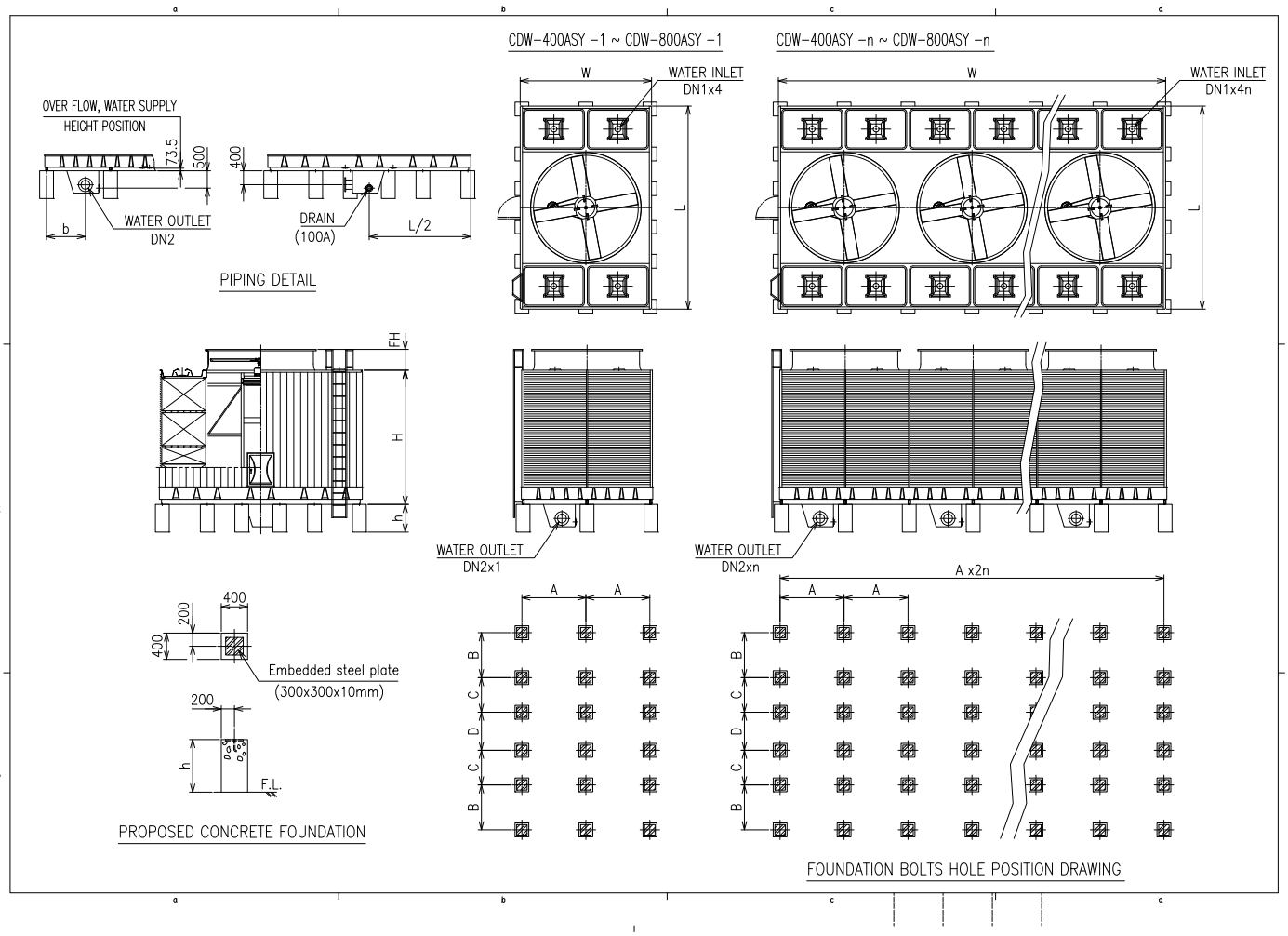
* Internal piping type is also available on request (CDW-300ASW ~ CDW-350ASW).
* Foundation (h) is customer's scope.

# DIMENSION & FOUNDATION DRAWINGS OF CDW MODELS

## MODEL

DRAWING OF ONE CELL: CDW-400ASY-C*1 ~ CDW-800ASY-C*1

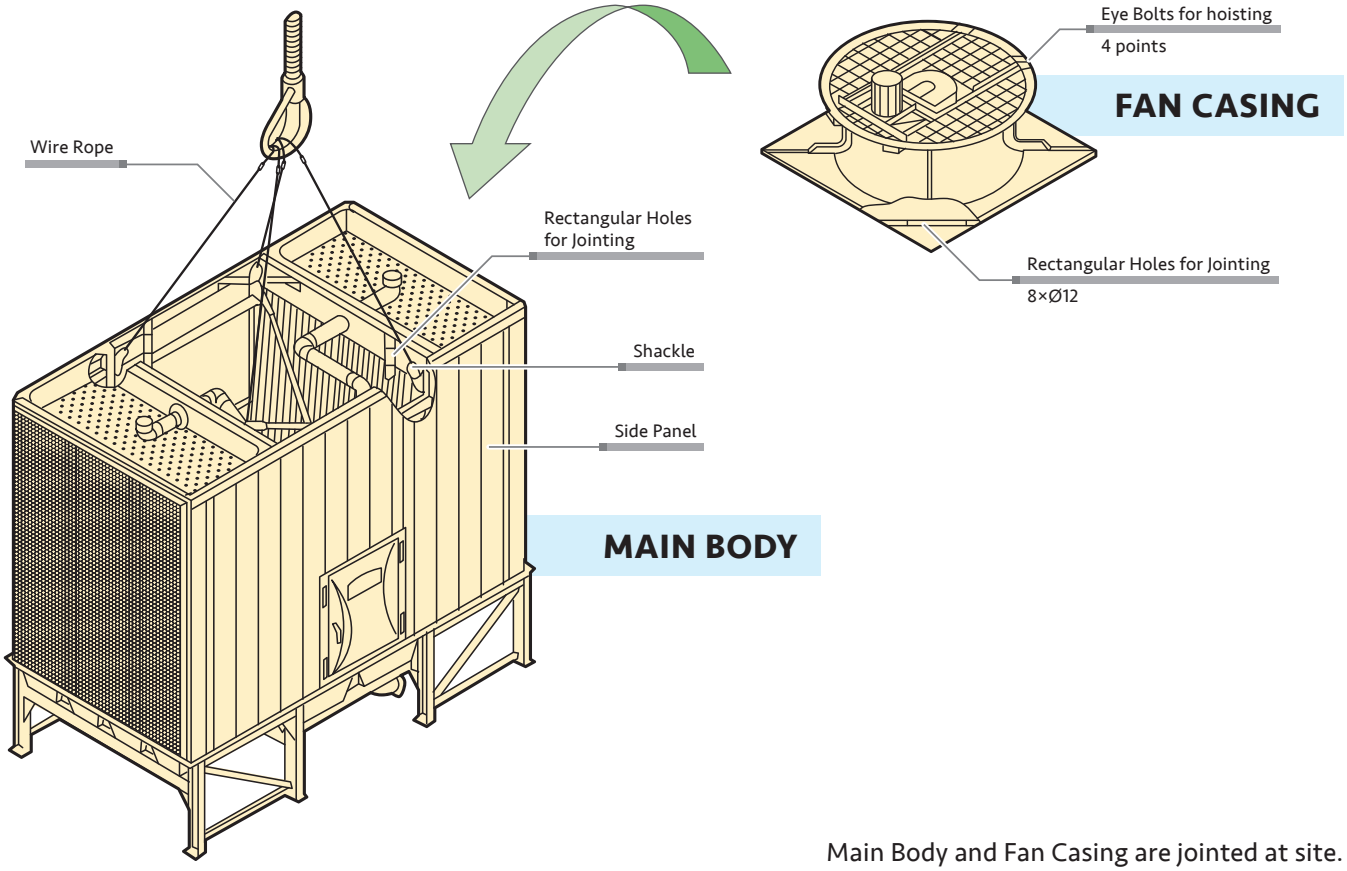
ASSEMBLY DRAWING: CDW-400ASY-C*n ~ CDW-800ASY-C*n




| CDW | L | W (1 cell) | W (n cell) | H | FH | A | B | C | D | DN1 | DN2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 400*n | 5870 | 3800 | 3800 X n-100(n-1) | 3900 | 600 | 1850 | 1300 | 1000 | 1100 | 125 x 4n | 250 x n |
| 450*n | 5870 | 3800 | 3800 X n-100(n-1) | 3900 | 600 | 1850 | 1300 | 1000 | 1100 | 125 x 4n | 250 x n |
| 500*n | 6470 | 4600 | 4600 X n-100(n-1) | 3900 | 600 | 2250 | 1300 | 1300 | 1100 | 125 x 4n | 250 x n |
| 550*n | 6470 | 4600 | 4600 X n-100(n-1) | 3900 | 600 | 2250 | 1300 | 1300 | 1100 | 125 x 4n | 250 x n |
| 600*n | 6470 | 4600 | 4600 X n-100(n-1) | 4425 | 600 | 2250 | 1300 | 1300 | 1100 | 150 x 4n | 300 x n |
| 650*n | 6470 | 4600 | 4600 X n-100(n-1) | 4425 | 600 | 2250 | 1300 | 1300 | 1100 | 150 x 4n | 300 x n |
| 700*n | 6870 | 5400 | 5400 X n-100(n-1) | 4425 | 600 | 2650 | 1300 | 1500 | 1100 | 150 x 4n | 300 x n |
| 750*n | 6870 | 5400 | 5400 X n-100(n-1) | 4425 | 600 | 2650 | 1300 | 1500 | 1100 | 150 x 4n | 300 x n |
| 800*n | 6870 | 5800 | 5800 X n-100(n-1) | 4425 | 600 | 2850 | 1300 | 1500 | 1100 | 150 x 4n | 300 x n |

* Foundation (h) is customer's scope.

# DELIVERY AND LIFT UP ARRANGEMENT (CDW-100 ~ CDW-200)



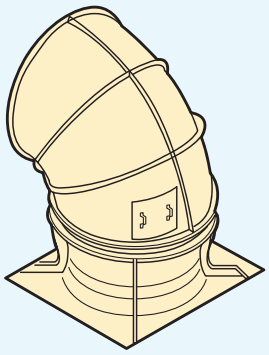

Main Body and Fan Casing are jointed at site.

| CDW-X CDW-C | MAIN BODY | | | FAN CASING | | |
|---|---|---|---|---|---|---|
| | MASS (kg) | | Q'TY | MASS (kg) | | Q'TY |
| | CDW-X | CDW-C | | CDW-X | CDW-C | |
| 100 | 680 | 680 | 1 | 200 | 220 | 1 |
| 125 | 710 | 710 | 1 | 200 | 220 | 1 |
| 135 | 720 | 720 | 1 | 270 | 290 | 1 |
| 150 | 740 | 740 | 1 | 270 | 290 | 1 |
| 175 | 810 | 810 | 1 | 330 | 350 | 1 |
| 200 | 850 | 850 | 1 | 330 | 350 | 1 |
| 135 | 1400 | 1400 | 2 | 270 | 290 | 2 |
| 150 | 1440 | 1440 | 2 | 270 | 290 | 2 |
| 175 | 1580 | 1580 | 2 | 330 | 350 | 2 |
| 200 | 1660 | 1660 | 2 | 330 | 350 | 2 |
| 150 | 2140 | 2140 | 3 | 270 | 290 | 3 |
| 175 | 2350 | 2350 | 3 | 330 | 350 | 3 |
| 200 | 2470 | 2470 | 3 | 330 | 350 | 3 |
| 175 | 3120 | 3120 | 4 | 330 | 350 | 4 |
| 200 | 3280 | 3280 | 4 | 330 | 350 | 4 |

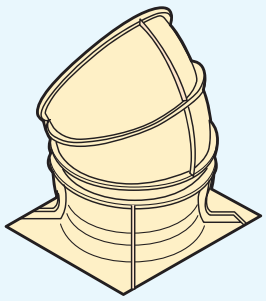
# OPTIONS FOR COOLING TOWER

## FRP DUCT

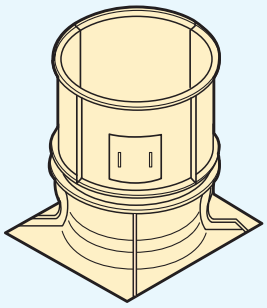
Avoid air short circuiting
Reduce noise level



90°Elbow Duct



60°Elbow Duct

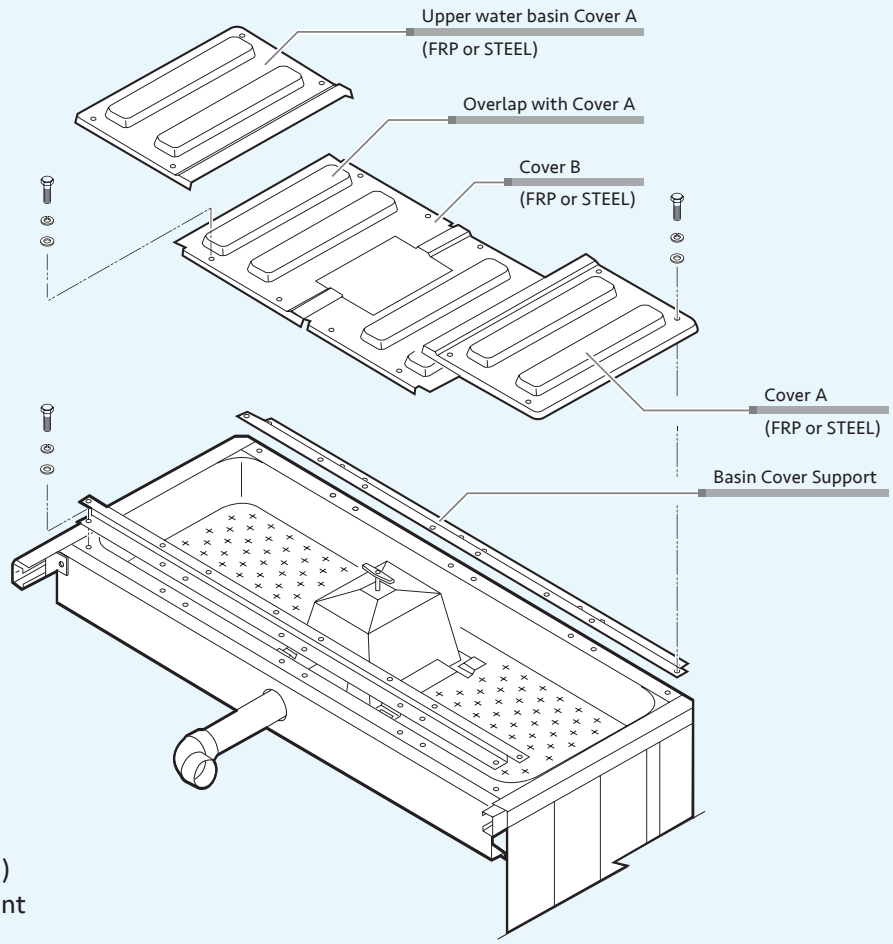


Straight Duct (1mH, 2mH)

* CDW-250 above matches 45° Elbow Duct.

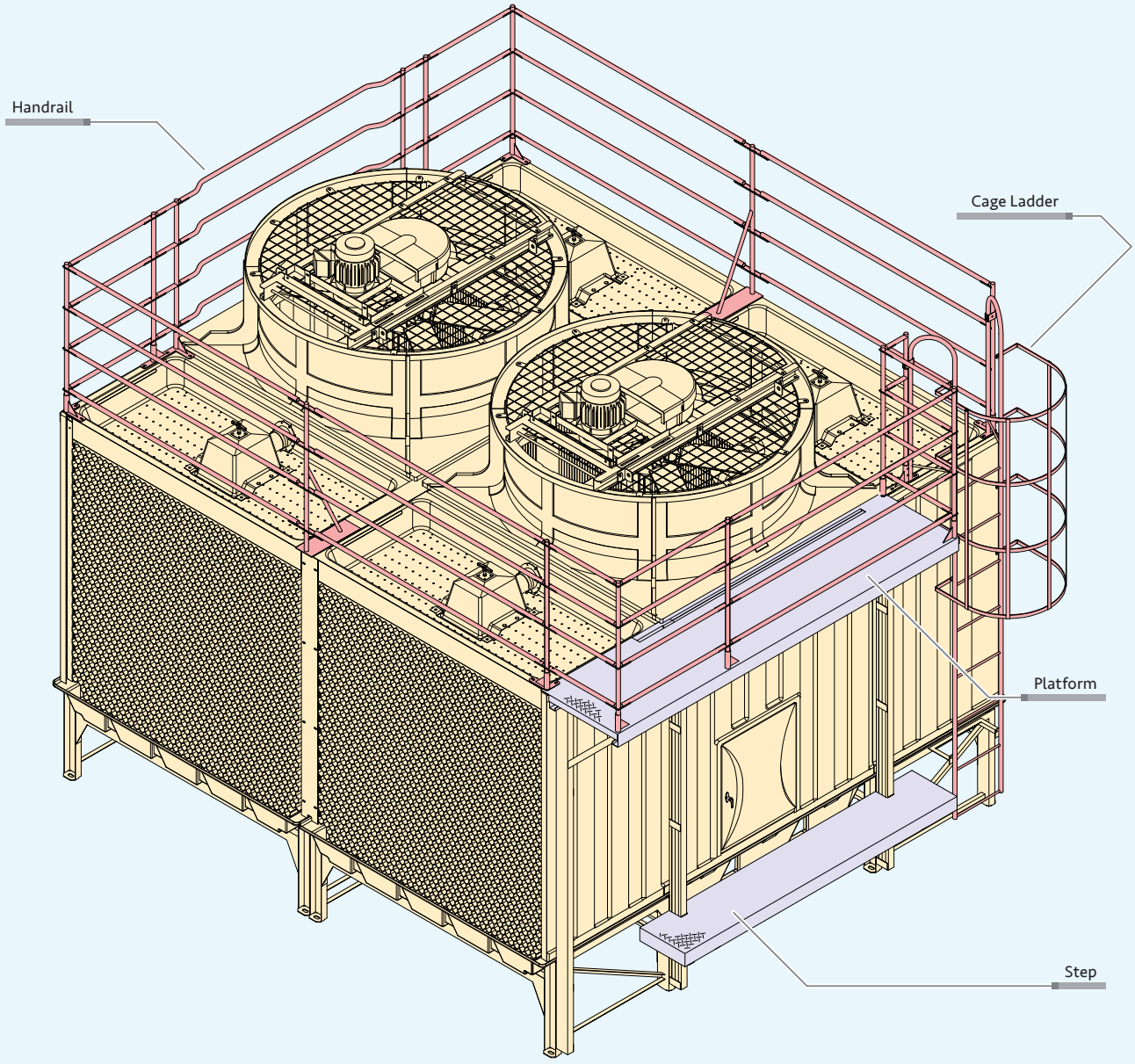
## UPPER WATER BASIN COVER (FRP OR STEEL)

Protect from invasion of dust into the upper basin
Interrupt sunlight which causes algae growth
Possible to walk on the cover

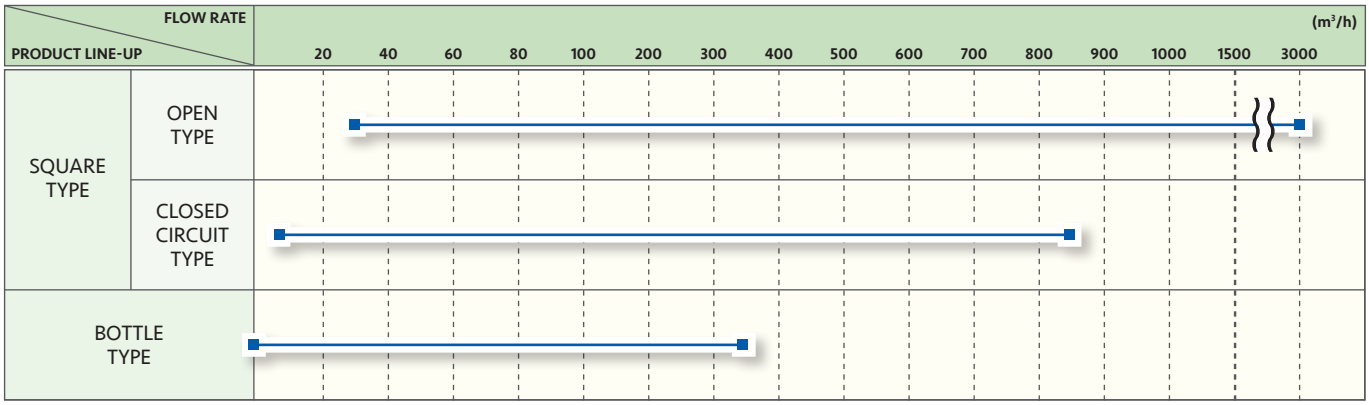



Other Option Items
Partition
High Temp Fill (Less then 80°C)
Vibration Absorption Equipment
Water Treatment Equipment

## HANDRAIL, CAGE LADDER, PLATFORM AND STEP



# COOLING TOWER PRODUCT LINE-UP




## COOLING TOWER'S OTHER TYPICAL MODELS

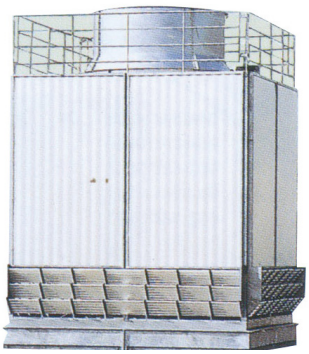
Open cross flow square type cooling tower
**SDC-U & SNC-U model**

Closed circuit type cross flow cooling tower
**MXC-UW model**

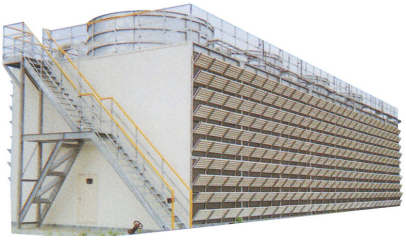
Open bottle type cooling tower
**SBC model**

Cross flow cooling tower for large capacity
**SDF model**

Counter flow Cooling tower for large capacity
**SCC model**



Cross flow Cooling tower for large capacity
**SLC model**



## CAUTIONS FOR INSTALLATION WORKS

**1. SCOPE OF WORKS (STANDARD)**

The following works at site shall be out of our scope.

1. Lift up and carry works
2. Foundation works (incl. installation of anchor bolts, mortar filled works and installation of steel frame stand)
3. Piping works
4. Electric (wiring) works

**2. SELECTION OF INSTALLATION PLACE**

Select an installation place based on the Building Standards Act or Regulations.

1. A place with good ventilation where discharged air from cooling tower will not recirculate.
2. Avoid places with much dust, dirt or smoke and places near heat sources.
3. If the walls will be placed around the cooling tower, at least the cooling tower louver height space needed between them. The wall should be lower than the cooling tower.
4. Select a place where the noise is not magnified by echoes. Avoid the vicinity of windows of neighboring houses as much as possible.
5. Avoid a place where has no fresh air intake for air conditioning.

**3. OTHER CAUTIONS**

1. Foundation level should be horizontally.
2. Foundation bolts should be furnished before cooling towers are delivered to the site.

## OPERATIONAL CAUTIONS

**1. OPERATION**

1. The specified water flow must be maintained to obtain and hold the rated capacity.
2. As V-Belt may stretch at the early stage of operation, make the first check the day after the operation commissioning to adjust, if any. Thereafter, the periodic checks and adjustment are necessary.
3. During the operation always watch for the vibration, noise, the electric current and the cooling water temperature. Vibration and noise primarily originates from the moving parts such as belt speed reducer, motor and fan. Do not overlook even slightest abnormalities.

**2. MAINTENANCE**

1. Regularly drain water and clean the lower water basin and strainer.
2. Water quality control are recommended to prevent poor water quality, scale and algae growth.
3. Consumption parts such as V-Belts and bearings are required to replace periodically (estimated timing for exchanging a V-Belt is roughly 7000 – 8000 hours).

## PRECAUTIONS FOR SAFETY

Cooling towers described in this catalogue are of our standard specifications.

**BEFORE USE**

- Before Use, read the "Instruction Manual" carefully and use the towers correctly.

**BEFORE INSTALLATION**

- Request installation from the distributor or professional agency.
- Improper installation work may cause toppling, water leakage, electric shocks or fire which will endanger operations.
- Make sure to use extra-cost options such as an electric heater designated by us.
- Space is required for maintenance work around the machine. Lack of space may obstruct safety work and cause injuries.

**LOCATIONS FOR USE**

- Do not install in places where combustible gases leak or flammables exist. Fire may occur in places where flammable gases are generated, flow in or are retained, and carbon fibers are floated.

**MAINTENANCE AND INSPECTION**

- Periodic maintenance and inspection are required other than inspections for daily operation. Improper maintenance and inspection may cause a fire, electric shocks and burns. As maintenance and inspection require special skills, consult manufacturer or distributor.

*** NOTICE FOR WATER QUALITY CONTROL**

If the circulating water is left as it is, slime deposits in the water bath and piping will develop. The slime is formed from many kinds of algae and fungi, particularly; metabolic products from algae sometimes help fungi grow.
Disease-causing bacteria among bacteria may also exist, therefore, please be advised to clean or control the water quality at least once a month to prevent algae from forming.

- **YOUR CONTACT**

**EBARA THERMAL SYSTEMS (THAILAND) CO., LTD. (HEAD OFFICE)**
3rd Floor, 125 Petchburi Road, Thung Phaya Thai,
Rajthevee, Bangkok 10400, Thailand
Tel: (+66)-2612-0314-6
Fax: (+66)-2612-0309
Website: www.ers.ebara.com

Specifications listed in this brochure are subject to change without notice due to technical improvement on our products. The products described here in fall under "the goods listed in row 16 of the appended table 1 of the Export Trade Control Order of Japan", so in case of export of such products, you need to confirm "use" and "purchaser and/or end-user" and as case may be obtain the approval of the Ministry of Economy, Trade and Industry. (Please confirm these conditions on your own.)
Please contact local agents for more information.
*Model xxx in this catalogue is our model code.