

# Series 3000E and XE-Series Open Cooling Towers

The NEW Series 3000 Cooling Tower once again redefines the cooling tower industry with expanded selection flexibility and capacity increases of up to 16%. The NEW Series 3000 Cooling Tower provides an extremely efficient solution for all your application needs, and also provides 5-year motor and drive warranty. Transcending an already superior product the NEW XE-Series 3000 is tailored for projects that require extreme efficiency from the cooling tower. The XE-Series units are at least two times more efficient than the minimum requirements established in ASHRAE Standard 90.1 - 2013.











# BAC's Series 3000: The Industry Standard

Large Range of CTI Certified Capacities 171 to 1,352 Nominal Tons in a Single Cell Up to 4,500 USGPM for Process Applications

Industry Leading Energy Efficiency

Most Reliable Year-Round Operation

Easiest to Maintain Variety of Materials of Construction

Flexible Configurations







## **Series 3000 Benefits**

### **> Low Environmental Impact**

### **ENERGY EFFICIENT**

- Meets or exceeds ASHRAE Standard 90.1 energy efficiency requirements
- Premium efficient/inverter duty fan motors
- Gravity distribution system with low pump head requirements

### **SOUND REDUCTION OPTIONS**

- · Standard fan is high efficiency and low sound
- For further reduced sound levels, Low Sound Fans, Whisper Quiet Fans, and sound attenuation are available options

### Durable Construction

- Meets wind and seismic requirements of the International Building Code (IBC)
- Designed to withstand wind loads up to 60 psf, upgraded units designed to withstand 82 psf
- Seismically verified through dynamic shake table testing up to a S<sub>22</sub> of 3.10g
- Listed on California's Office of Statewide Health Planning and Development (OSHPD) pre-approved equipment list
- Casing panels constructed of corrosion resistant galvanized steel with rigid frame construction
- Enhanced longevity with a variety of durable materials of construction

### Reliable Year-Round Operation

Separate air intake louvers for easy visual inspection of the air-water interface

### ▶ BALTIDRIVE® POWER TRAIN FAN SYSTEM

- Backed by BAC's comprehensive 5-year motor and drive warranty
- Corrosion resistant cast aluminum sheaves with specially designed powerband belts
- · Cooling tower duty motors designed for hostile environments



Shake Table Tested Series 3000



**Durable Frame Construction** 



BALTIDRIVE® Power Train Fan System



### **> Easy Maintenance**

- Crossflow configuration provides direct access for easy maintenance
- ▶ BALTIDRIVE® Power Train uses state-of-the-art technology to ease maintenance
- Patented hygienic cold water basin is sloped at the air intakes to eliminate stagnant water and reduce biological growth
- Fill surface is elevated above the sloped cold water basin floor to facilitate flushing of dirt and debris
- Hinged access doors provide easy access to the cold water basin and fan drive system
- Combined inlet shields block sunlight, reducing the potential for algae growth in the cold water basin (option)
- Factory assembled louver face platforms, internal service platforms, and internal walkways simplify maintenance (option)



- Rigging guides ensure proper alignment and reduce rigging time
- Flexible inlet/outlet piping connection locations ensure proper fit for any application
- Adaptable steel support configuration options, utilizing pre-existing support steel
- Knockdown units available for field assembly
- ▶ EASY CONNECT® Piping Arrangement reduces installation costs by eliminating overhead piping and piping support requirements (option)
- Basinless construction ability, ideal for installations using a common sump for multiple tower cells (option)



Internal Walkway and Large Access Door for Easy Maintenance



Factory Assembed Louver Face Platforms



Flexible Piping Arrangement

# Series 3000 **Construction Details**

### Heavy-Duty Construction

- ► Heavy-gauge G-235 (Z700 Metric) hot-dip galvanized steel frame
- ► Meets wind and seismic requirements of the International Building Code (IBC)
- ► Shake table tested and verified with seismic ratings up to a S<sub>ps</sub> of 3.10g
- ▶ Designed to withstand wind loads of up to 82 psf

### Casing Panels

- ▶ Corrosion resistant
- Maintenance free
- UV-resistant finish

### **BALTIDRIVE® Power Train**

- ▶ Premium quality, solid backed, multi-groove belt
- ▶ Corrosion resistant cast aluminum sheaves
- Heavy-duty bearings with a minimum L<sub>10</sub> of 80,000 hours
- ► Cooling tower duty fan motors
- ► 5-year motor and drive warranty

### 4 Low Horsepower Axial Fan

- Quiet operation
- ▶ High efficiency
- Corrosion resistant

### Water Distribution System

- ▶ Steel covers in easy to remove sections
- ▶ Low pump head gravity distribution basins
- ▶ Large orifice, non-clog nozzles
- Weir dams provided to create even distribution that will accommodate a flow range of 50% to 100% of the design flow.

### Suction Strainer

- ▶ Designed to offer optimum system protection while still offering a full 50% free area to allow efficient system pump operation
- Anti-vortexing design built into all BAC strainers
- Strainer can removed with the flip of a single latch for easy cleaning and maintenance

### Air Intake Louvers

- Corrosion resistant
- Maintenance free
- UV-resistant finish

# BACross® Fill with Integral Drift Eliminators

- ► High efficiency heat transfer surface
- Polyvinyl chloride (PVC)
- Impervious to rot, decay and biological attack
- ► Flame spread rating of 5 per ASTM E84
- ▶ Elevated off of the cold water basin

### Hygienic Cold Water Basin

- ▶ Sloped at the air intake face to eliminate stagnant water
- ▶ Sloped toward a depressed sump for easy cleaning

### Two Large Access Doors (Not Shown)

- ▶ Inward hinged door on each end wall
- ▶ Easy safe access to the interior of the unit

### Materials of Construction

Determining the appropriate material of construction for a project depends on several factors, including water quality, climate and environmental conditions, availability of time and manpower for maintenance, unit lifetime requirements, and budget. BAC provides the widest variety of material of construction options in the industry and has the ability to provide a solution to meet all conditions and budgets.



### STANDARD CONSTRUCTION

G-235 mill galvanized steel is the heaviest commercially available galvanized steel, universally recognized for its strength and corrosion resistance. To assure long-life, a G-235 mill galvanized steel frame, casing panels and louvers is used as the standard material of construction. The structural integrity of the unit is provided by its strong steel frame. Series 3000 standard construction has been seismically verified by shake table testing in an independent laboratory up to an  $\rm S_{DS}$  of 1.40g and can withstand wind loads of up to 60 psf, proving its frame construction is designed for extreme durability. With proper maintenance and water treatment, G-235 galvanized steel will provide an excellent service life under the operating conditions normally encountered in comfort cooling and industrial applications.



Standard Construction Installation

### > STAINLESS STEEL (OPTION)

Several Type 304 stainless steel material of construction options are available.

### WELDED TYPE 304 STAINLESS STEEL COLD WATER BASIN

A Type 304 welded stainless steel cold water basin is available. All steel panels and structural members of the cold water basin are constructed from Type 304 stainless steel. Seams between panels inside the cold water basin are welded, providing an advantage over bolted stainless steel cold water basins for minimizing susceptibility to leaks at basin seams. The basin is leak tested at the factory.

### • STAINLESS STEEL HOT WATER BASIN

The hot water basin and basin covers are constructed of Type 304 stainless steel.



Welded Type 304 Stainless Steel Cold Water Basin



### **BASINLESS UNIT CONSTRUCTION (OPTION)**

The basinless unit construction option enables Series 3000 Cooling Towers to be directly installed on new or existing cold water basins. This custom feature reduces maintenance costs by eliminating the integral basin from traditional units. It simplifies piping and pumping requirements of multi-cell installations, eliminates concern for basin corrosion, and provides a cost-effective solution for many field-erected replacement projects. BAC is the only leading evaporative cooling equipment manufacturer to provide basinless construction for factory assembled equipment.



Select steel panels and structural members are upgraded for higher seismic and wind load applications. An upgraded Series 3000 is certified to withstand up to an  $S_{\rm DS}$  of 3.10g and wind loads of 82 psf. All BAC upgraded units are shake table tested by an independent laboratory to certify the most accurate seismic ratings ensuring that the unit will remain operable following a seismic event.

### > STANDARD STEEL CASING PANELS AND LOUVERS

Used with BAC's durable frame construction, galvanized steel casing panels and louvers offer a more durable corrosion resistant unit.

STAINLESS STEEL / FRP CASING PANELS AND LOUVERS (OPTION)

Stainless steel / FRP casing panels and louvers are also available in G235 galvanized steel construction.



**Basinless Construction** 



Seismic/Wind Upgraded Structure with Fiberglass Reinforced (FRP) Casing Panels

### Drive System Options

The fan drive system provides the cooling air necessary to reject unwanted heat from the system to the atmosphere. All BAC drive systems use premium efficient cooling tower duty motors. Cooling tower duty motors are specially designed for the harsh environment inside a cooling tower and have permanently lubricated bearings, drastically decreasing the maintenance requirement of the motor. BAC belt drive systems are the most durable and maintenance friendly drive systems on the market, including single nut adjustment for belt tensioning to make belt tensioning simple.





### STANDARD BALTIDRIVE® POWER TRAIN

The BALTIDRIVE® Power Train utilizes special corrosion resistant materials of construction and state-of-the-art technology to ensure ease of maintenance and reliable year-round performance. This BAC engineered drive system consists of a specially designed powerband and two cast aluminum sheaves located at minimal shaft centerline distances to maximize belt life. As compared to a gear drive system, this specially engineered belt drive system provides many advantages. The BALTIDRIVE® Power Train requires only periodic inspection of components and belt tensioning, which is simple with a single nut adjustment, and requires less downtime. Only fan bearing lubrication is required for routine maintenance. Belt drive systems also have the added advantage of being suitable for variable frequency drive (VFD) applications without requiring expensive optional accessories.



BALTIDRIVE® Power Train Fan System



### BALTIGUARD™ FAN SYSTEM (OPTION)

The BALTIGUARD™ Fan System consists of two standard single-speed fan motor and drive assemblies. One drive assembly is sized for full speed and load, and the other is sized approximately 2/3 speed and consumes only 1/3 the design horsepower. This configuration provides the reserve capability of a standby motor in the event of failure. As a minimum, approximately 70% capacity will be available from the low horsepower motor, even on a design wet-bulb day. Controls and wiring are the same as those required for a two-speed, two-winding motor. Redundant motors are available by increasing the size of the standby fan motor of the BALTIGUARD™ Fan System to the size of the main motor. This provides 100% motor redundancy and the greatest level of reliability.



BALTIGUARD™ Fan System Provides Built in Redundancy

### ▶ GEAR DRIVE SYSTEM, CLOSE-COUPLED MOTOR

(OPTION, STANDARD ON S3E-1222-14T, S3E-1424-12T, S3E-1424-13T, AND S3E-1424-14T)

A gear drive system is available as a fan drive option on the Series 3000. Both the gear drive and couplings are selected with a 2.0 service factor. Gear construction includes a nickel-alloy steel shaft, casehardened gears, self lubrication, and a single piece, gray iron housing. This drive system ships completely installed and aligned.



### ▶ GEAR DRIVE SYSTEM, EXTERNALLY MOUNTED MOTOR (OPTION)

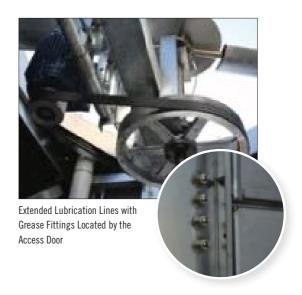
A gear drive system with a TEFC motor mounted outside the airstream is also available on the Series 3000. A non-corrosive carbon-fiber composite drive shaft with stainless steel hubs is selected with a 2.0 service factor. The motor and drive shaft ship separately for easy field installation.

### VIBRATION CUTOUT SWITCH (OPTION)

A factory mounted vibration cutout switch is available to effectively protect against rotating equipment failure. BAC can provide either a mechanical or solid-state electronic vibration cutout switch in a NEMA 4 enclosure to ensure reliable protection. Additional contacts can be provided on either switch type to activate an alarm. Remote reset capability is also available on either switch type.

### **EXTENDED LUBRICATION LINES (OPTION)**

Extended lubrication lines are available for lubrication of the fan shaft bearings. Fittings are located on the exterior casing panel next to the access door.



### > Cold Water Basin

The cooling tower water collects in the cold water basin which provides the required head pressure for the cooling system pump. The Series 3000 cold water basin includes BAC's patented hygienic cold water basin design. During operation, BAC's patented hygienic cold water basin eliminates any stagnant water zones, which are susceptible to biological growth.

### > STANDARD MECHANICAL WATER LEVEL CONTROL

Mechanical make-up valves must operate continuously in the moist and turbulent environment existing within evaporative cooling equipment. Due to this environment, the operation of the valve must be simple, and the valve must be durable. BAC's high quality mechanical water level control assembly is standard with all units, and has been specially designed to provide the most reliable operation while being easy to maintain. This accessory is omitted for remote sump applications.



Mechanical Water Level Control



### **ELECTRIC WATER LEVEL CONTROL (OPTION)**

BAC's Electric Water Level Control (EWLC) is a state-of-the-art conductivity actuated, probe type liquid level control. The EWLC option replaces the standard mechanical make-up valve, and includes a slow closing, solenoid activated valve in the make-up water line to minimize water hammer. EWLC is recommended when more precise water level control is required and in areas that experience sub-freezing conditions.

### ► SIDE OUTLET DEPRESSED SUMP BOX (OPTION)

A side outlet depressed sump box is available for field installation below the base of the tower. This option facilitates horizontal piping below the basin, and is a compact alternative to using an elbow in the piping arrangement, saving on both installation time and cost. The outlet connection is designed to mate with an ASME Class 150 flat face flange.



**Electric Water Level Control** 



### **BASIN HEATERS (OPTION)**

Evaporative cooling equipment exposed to below freezing ambient temperatures require protection to prevent freezing of the water in the cold water basin when the unit is idle. Factory-installed electric immersion heaters, which maintain 40°F (4.4°C) water temperature, are a simple and inexpensive way of providing such protection.

### HEATER KW DATA

	0°F (-17.8°C) Ambient Heaters		-20°F (-28.9°C) Ambient Heaters	
Model Number	Number of Heaters	kW per Heater	Number of Heaters	kW per Heater
S3E/S3XE-8518	2	6	2	9
\$3E/\$3XE-1020	2	8	2	12
S3E/S3XE-1222-06x, 1222-07x	2	10	2	14
\$3E/\$3XE-1222-10x, 1222-12x, 1222-13x, 1222-14x	2	12	2	15
S3E/S3XE-1424-07x	2	14	2	18
S3E/S3XE-1424-12x, 1424-13x, 1424-14x	2	14	2	20



Basin Heater



### **BASIN SWEEPER PIPING (OPTION)**

Basin sweeper piping is an effective method of reducing sediment that may collect in the cold water basin of the unit. A complete piping system, including nozzles, is provided in the cold water basin to connect to side stream filtration equipment (provided by others).

### LOW AND HIGH LEVEL ALARM FLOAT SWITCHES (OPTION)

Low and high level alarm float switches are available to provide added control to your equipment operation. Level alarms can alert operators to an abnormal operating condition to ensure the highest system efficiency with minimal water usage.



Basin Sweeper Piping

### > Multi-Cell Unit Options

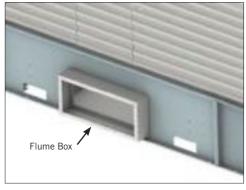
Special care must be taken for multi-cell installations to ensure balanced water levels in the cold water basins across cells. If measures are not put in place to ensure balanced basin water levels, a potential exists that one basin may overflow and dump water, while the water level in another tower goes low and requires make-up. This leads to unnecessary water waste. To prevent this from occurring, BAC provides two options for balancing water levels and recommends that the installation be designed to ensure balanced flows to and from each tower.



A flume box is provided as standard for multi-cell units to balance the water level in the cold water basins.

### ► EQUALIZER (OPTION)

Equalizer connections are available as an option for multi-cell cooling towers in lieu of a flume box. Use of an equalizer allows for easy isolation of a cell for winter operation, maintenance, or inspection while continuing system operation.



Flume Box

### Water Distribution System

The Series 3000 Cooling Tower utilizes a low pump head gravity distribution system with large orifice non-clogging nozzles that requires less pump energy than a pressurized distribution system.

### > STANDARD TOP INLET CONNECTIONS

The Series 3000 comes standard with top inlet connections to each of the hot water basins. Hot water basin covers matching the unit material of construction come in easy to handle sections for easy access and inspection of the distribution system. The use of gravity distribution minimizes pump head requirements and allows for maintenance during unit operation. BAC's patented non-clog nozzles ensure even flow over the fill area and are simple to remove for maintenance.



Ton Inlet Connections



### EASY CONNECT® PIPING ARRANGEMENT (OPTION)

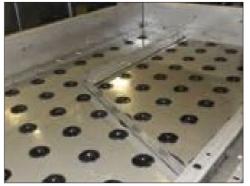
The EASY CONNECT® Piping Arrangement simplifies water inlet piping on the Series 3000 by automatically balancing the flow within each cell, eliminating the need for flow balancing valves. A single water inlet connection, located on the side or bottom of each unit, eliminates the need for overhead piping and piping supports. It reduces installation costs and reduces potential for errors during field piping fabrication.

### > STANDARD WEIR DAMS

Reducing water flow through a unit below the recommended level may potentially create uneven water distribution through the heat transfer section, causing scale build up, splash out/drift, and icing. To successfully modulate the water flow while avoiding potential complications, weir dams may be installed in the hot water basin. With a weir dam, the hot water basin can accommodate a flow range of 50% to 100% of the design flow.



EASY CONNECT® Piping Arrangement



Weir Dams



### > Fill

BACross® Fill, BAC's patented crossflow hanging fill, was developed after years of extensive research. BACross® Fill is made of PVC and is optimized to provide the most efficient thermal capacity. PVC is virtually impervious to rot, decay, and biological attack. The fill is elevated above the cold water basin floor to facilitate cleaning and maintenance. The integral eliminators effectively strip entrained moisture from the leaving air stream with minimum pressure drop to prevent water loss with negligible impact on efficiency.



### STANDARD FILL

Standard fill can be used in applications with entering water temperature up to  $130^{\circ}\text{F}$  (54.4°C). The fill and drift eliminators are formed from self-extinguishing PVC having a flame spread rating of 5 per ASTM E84.



An optional high temperature fill material is available which increases the maximum allowable entering water temperature to  $140^{\circ}F$  ( $60^{\circ}C$ ).



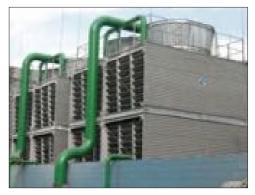
BACross® Fill Manufacturing

### Capacity Enhancement

The need to enhance the capacity of a unit may be necessary when layout is restricted or if capacity requirements have increased and exceed an existing unit's capabilities. By enhancing the capacity of a unit, it may be possible to use a smaller foot print while still meeting thermal requirements of the installation.

### VELOCITY RECOVERY (VR) STACKS (OPTION)

A VR stack is a conical fan cowl extension that reduces the discharge pressure the fan has to work against, allowing the fan to move more air for the same energy input. By moving more air through the same unit, the cooling capacity is increased without increasing horsepower



Velocity Recovery (VR) Stacks

or footprint. Effectively, the amount of energy required for each ton of cooling capacity is reduced. VR stacks are factory assembled, CTI certified, and can be configured during initial unit purchase to reduce energy requirements or through the aftermarket to increase capacity.

### Shipping and Rigging

BAC units are factory-assembled to ensure uniform quality with minimum field assembly. Each unit has been designed with rigging and assembly in mind and includes features to minimize the number of tools required and installation time.



Rigging Guides Ensure Alignment

### > STANDARD FACTORY-ASSEMBLED UNITS

BAC units are factory-assembled to ensure uniform quality with minimum field assembly. Each unit has been designed with rigging and assembly in mind and includes features to minimize the number of tools required and installation time.

### **KNOCKDOWN UNITS (OPTION)**

Knockdown units are available for jobs where access to the cooling tower location is limited by elevators, doorways, or similar obstacles, where lifting methods impose very strict weight limits, or where the shipping cost of a fully assembled tower is excessive. All materials of construction and design features are the same as those of a factory assembled unit. Welded Type 304/316 stainless steel cold water basins are excluded due to the need for in-plant assembly.



Knockdown Unit Installation

### > RIGGING GUIDES

Rigging guides allow for the upper and lower section of units with a two piece rig to align and engage. The guides ensure proper placement of the top section for multi-cell installations, making rigging much simpler and reducing the time required. This is especially critical during multi-cell installations when units are rigged side-by-side.



### Sound Options

Recognition of the importance of sound reduction is growing and can be a very important design criterion for any project. BAC maintains the widest selection of sound mitigating options in the market place and can provide the most cost effective option to meet any requirement.



### STANDARD FAN

The fan provided for all Series 3000 Cooling Towers is selected to optimize low sound levels and maximize thermal performance.



The Low Sound Fan option reduces sound up to 9 dBA. Adding a high solidity fan decreases fan speeds, which proportionally decreases sound levels. The thermal performance with the Low Sound Fan has been certified in accordance with CTI Standard STD-201.

### WHISPER QUIET FAN (OPTION)

For the most extreme sound limitations, BAC's Whisper Quiet Fan is CTI-certified and reduces sound up to 19 dBA. The axial fan blades are constructed of high grade marine alloy aluminum for light weight construction and corrosion resistance. These heavy duty aluminum fans require minimal maintenance, making them well suited for use in cooling tower applications that benefit from extremely low sound operation.

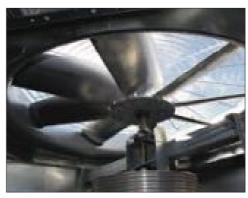
### **SOUND ATTENUATION (OPTION)**

Factory designed, tested, and rated sound attenuation options are available for both the air intake and discharge. Consult your local

# BAC Representative regarding available options.

### **Air Intake Options**

In a cooling tower, airborne debris can be entrained in the water through the unit's air intake. The Series 3000 has several options for air intake accessories that prevent debris from entering the system and maintain even unobstructed flow through the unit. Reducing the amount of debris that enters the tower lowers maintenance requirements and helps to maintain thermal efficiency.



Low Sound Fan



Whisper Quiet Fan

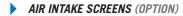
### STANDARD LOUVERS

Air intake louvers matching the material of construction of the unit casing panels are standard. Scale formation and icing on the louvers and fill sheets can damage the fill and reduce thermal performance. The Series 3000 louvers are specially designed with greater spacing between louvers and are completely separate from the fill section. This reduces scale and ice accumulation and allows for unobstructed air flow through the unit.



### COMBINED INLET SHIELDS (CIS) (OPTION)

The Combined Inlet Shields' (CIS) bent flow path blocks sunlight from the cold water basin and fill section and acts as a screen to prevent debris from entering the unit. These benefits result in a significant reduction in algae growth, debris accumulation, and scale build-up. CIS are constructed from corrosion and UV resistant PVC, are CTI certified, and are installed in easy to handle sections that are separate from the fill section to facilitate removal, inspection, and replacement. The use of CIS results in lower maintenance costs and ease of maintenance over the life of the unit.



 $1" \times 1"$  wire mesh screens are available factory-installed over the air intake louvers to prevent debris from entering the tower and are CTI certified.



Combined Inlet Shields (CIS)

### Access Options

BAC provides a broad offering of access options. Our evaporative equipment is designed to be the most easily maintained for sustaining capacity over a longer life. All BAC platforms and ladders are OSHA compliant to ensure personnel safety and code compliance.

### MOTOR REMOVAL SYSTEM (OPTION)

All motor removal system options include modular davit arm(s) to facilitate motor replacement. There are three types of motor removal systems available on the Series 3000.



Motor Removal System with Davit Arm, Motor Access Platform, and Handrail Package





**NOTE:** Platforms, ladders, handrails, safety gates, and safety cages can be added at the time of order or as an aftermarket item.



### STANDARD INTERNAL WALKWAY

An internal walkway is standard, allowing access to the spacious plenum area for maintenance and inspection of the cold water basin, make-up, fill, and drive system.



### EXTERNAL PLATFORMS AND LADDER PACKAGES (OPTION)

External platforms and ladder packages (now factory assembled prior to shipping) are available to provide safe access to key components of the unit for maintenance. Multiple configurations are available, including louver face platforms to gain access to the distribution system and motor access platforms for externally mounted gear drive motors.



An access door platform is available to allow access to the unit when installed on elevated supports (these are now factory assembled prior to shipping). This option allows for safe access to the unit, as well as a working platform to stage tools for maintenance.

### HANDRAIL PACKAGES (OPTION)

Handrail packages are available to provide safe access to the top of the unit for maintenance to the distribution system. Fan deck extensions are available for passage around the fan on units designed with maximized fan diameters, Velocity Recovery (VR) Stacks, or discharge sound attenuation. The specially designed handrail packages are secured for compact shipping in the cold water basin to minimize shipping costs and are ready for field assembly.

### ► INTERNAL SERVICE PLATFORM AND LADDER PACKAGES (OPTION FOR TWO PIECE UNITS)

For access to the motor and drive assemblies, an internal ladder and upper service platform with handrails is available on larger units. Safety gates are available for all handrail openings, and all components are designed to meet OSHA requirements.



External Ladder and Platform



External Ladder, Safety Cage, and Handrail



Internal Ladder, Service Platform, and Walkway



### **COOLING TOWERS**

**CLOSED CIRCUIT COOLING TOWERS** 

ICE THERMAL STORAGE

**EVAPORATIVE CONDENSERS** 

**HYBRID PRODUCTS** 

PARTS & SER VICES







www.BaltimoreAircoil.com

Rm.2204, CITIC Plaza Shen Hong, No.1350 North Sichuan Rd., Shanghai, PRC, 200080 Telephone: (86-21) 6072 3600 Fax: (86-21) 6072 3610