



®

Bulletin 370-E

for LIFE

Product Range

Counterflow Closed Circuit Coolers

Induced Draft with Axial Fans
Forced Draft with Centrifugal Fans




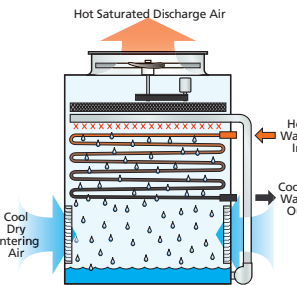
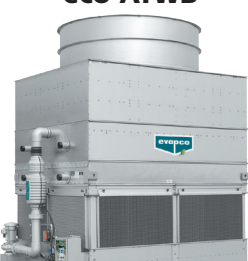
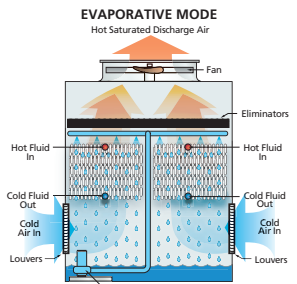

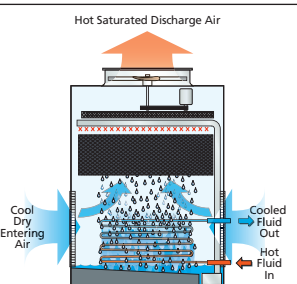

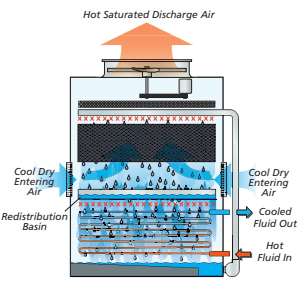
Better Choices • Easy Solutions • Advanced Technology • Certified EN ISO 9001

Specialists in Heat Transfer Products and Services

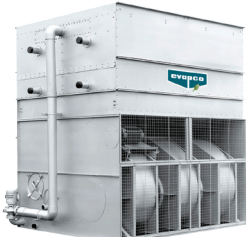
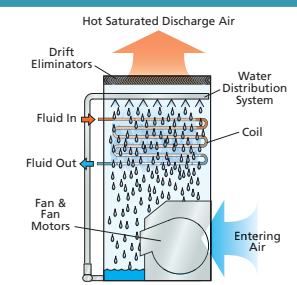
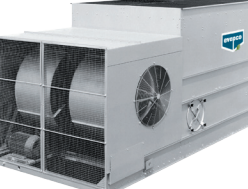
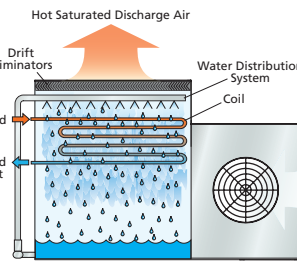
Delivering Quality... Focused on Perfection

Counterflow Closed Circuit Cooler Designs

Induced Draft with Axial Fans

ATW 	ATW 9-2C-2 to ATW 866-6O 25 to 6206 kW 377 Models Thermal-Pak® CROSScool™	<ul style="list-style-type: none"> • Low energy • Low risk for recirculation • Easy maintenance • Dry operation possible • IBC Compliant 	
eco-ATWB 	eco-ATWB 3-2C3-Z eco-ATWB 24-6P40 42 to 10810 kW 704 Models Ellipti-fin® CROSScool™	<ul style="list-style-type: none"> • Low energy • Low risk for recirculation • Easy maintenance • Extended surface coil • Good dry switch points • IBC Compliant • Eurovent-CTI Certified 	
ESWA 	ESWA 72-23H ESWA 216-46S 264 to 5420 kW 179 Models Sensi-Coil® EVAPAK® CROSScool™	<ul style="list-style-type: none"> • Low energy • Low risk for recirculation • Easy maintenance • Optimized technology for increased energy efficiency • IBC Compliant • Eurovent-CTI Certified 	
ESWB 	ESWB 9-22F6 ESWB 12-46P18 171 to 2129 kW 559 Models Sensi-Coil® EVAPAK® CROSScool™	<ul style="list-style-type: none"> • Low energy • Low risk for recirculation • Easy maintenance • Optimized technology for increased energy efficiency • IBC Compliant • Eurovent-CTI Certified 	

Forced Draft with Centrifugal Fans

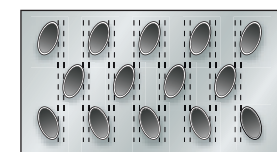
LSWA 	LSWA 20AA to LSWA 348D 73 to 2673 kW 50 Models Thermal-Pak® CROSScool™	<ul style="list-style-type: none"> • Low sound • Small footprint • Dry operation possible • Indoor installation possible 	
LRW 	LRW 18-2E to LRW 96-6N 43 to 580 kW 38 Models Thermal-Pak® CROSScool™	<ul style="list-style-type: none"> • Low sound • Low height • Dry operation possible • Indoor installation possible • TOP-TOP execution possible: Vertical air inlet and outlet 	

Design Features

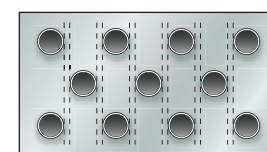
Coil Technologies

Evapco's coils are manufactured within the most stringent of quality control procedures. Each circuit consists of high quality steel tubing formed into a continuous serpentine circuit. Each circuit is then inspected and tested prior to being welded into a framed coil assembly. The coil assembly is then pneumatically tested at 15 bar under water to ensure its integrity in accordance with the European Pressure Equipment Directive (PED) 97/23/EC. The entire coil assembly is then hot-dip galvanized for industrial strength corrosion protection.

Thermal-Pak®: Evapco's patented **Thermal-Pak®** Cooling Coil design assures greater operating efficiency. The elliptical tube allows for closer tube spacing, resulting in greater surface area per plan area than round-tube coil designs. In addition, it's staggered design has lower resistance to air-flow and also permits greater water loading, making the **Thermal-Pak®** coil the most effective design available.

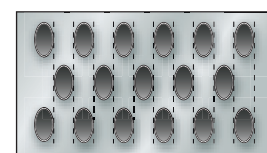


Thermal-Pak® Coil by EVAPCO



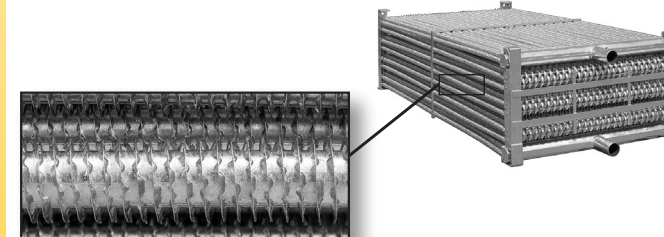
Round Tube Coil by Others

Sensi-Coil®: Also patented, an exclusive on the ESWA / ESWB coolers, **Sensi-Coil®** features the maximum amount of elliptical tubes packed closely together in a coil arrangement designed with over 20% / 50% additional coil surface area.



Sensi-Coil®

Ellipti-fin®: Now Evapco has developed the most efficient closed circuit cooling coil in the HVAC industry! All coil rows feature patented finned **Thermal-Pak®** elliptical tubes. The **Ellipti-fin®** lowers airflow resistance more than typical finned round tubes. This design increases evaporative and dry cooling capacity thereby saving both energy and water.



CROSScool™: Evapco's dedication to continuous improvements led to a new exclusive **CROSScool™** Technology, which enhances the interior of elliptical tube. The heat exchange surface is increased and the embossing provokes a better turbulent flow. The heat transfer is significantly improved and results in a performance gain of the cooler.

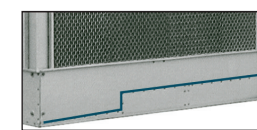


Maintenance Friendly Basin Design

Easy Access: The cold water basin section on induced draft units is easily accessible from ground level from all four sides of the unit. This open basin design enables the unit to be easily cleaned.



Clean Pan: EVAPCO units feature a completely sloped design from the upper to the lower pan section. This "Clean Pan" design allows the water to be completely drained from the basin.



Reliable Drive System

All Evapco closed circuit coolers come standard with IE3 motors that can be used with variable frequency drive (VFD) systems for precise capacity control.

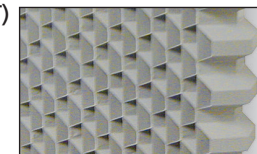


The mechanical drive systems are easy to access and easy to maintain. Bearing lubrication and belt adjustment can be performed from outside the unit.

All units with fan motors located outside of the unit are protected with a removable motor cover or fan screen. Motors located inside the fan casing are mounted on a swing-out motor mount on an adjustable base for easy removal.

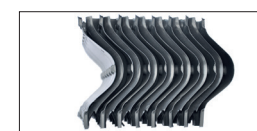
Patented WST Air Inlet Louver

Evapco's water and sight tight (WST) louvers keep water in and sunlight out of induced draft products. The unique non-planar design is made from light-weight framed PVC sections which have no loose hardware, enabling easy unit access. The louver's air channels are optimized to block all line-of-sight paths into the basin eliminating splash-out. Additionally, algae growth is minimized by blocking all sunlight.



Patented Efficient Drift Eliminators

An extremely efficient PVC drift eliminator system is standard on all Evapco units. The system removes water droplets from the air stream to limit the drift rate to less than 0.001% of the recirculating water rate. Evapco's drift eliminators are EUROVENT Certified.



Pressurized Water Distribution System

The water distribution system is made of PVC piping which is easily removable for cleaning. The spray branches have threaded end caps for debris removal. Closed circuit coolers are equipped with **ZM®II** nozzles: these ABS plastic water diffusers are threaded into the PVC header pipe at proper orientation and have a large orifice to prevent clogging.



ZM®II Nozzle

Low Sound Solutions

Induced Draft Options

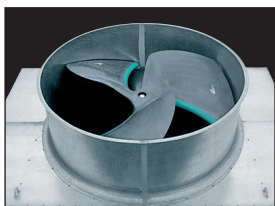
Low Sound Fan

The Low Sound Fan utilizes a wide chord blade design for sound sensitive applications where low sound levels are desired. This fan is capable of reducing the unit sound pressure levels 4 to 7 dB(A).



Super Low Sound Fan

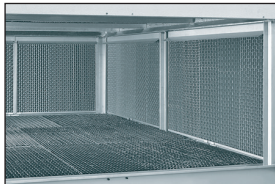
The Super Low Sound Fan utilizes an extremely wide chord blade design applied for sound sensitive applications where the lowest sound levels are required. This fan is capable of reducing the unit sound pressure levels 9 to 15 dB(A).



Water Silencer

(not available on ESWA and ESWB units)

Reduces the high frequency noise associated with the falling water and is capable of reducing overall sound levels 4 to 7 dB(A) measured at 1.5 m from the side or end of the unit.



Offset Sound Attenuation Walls

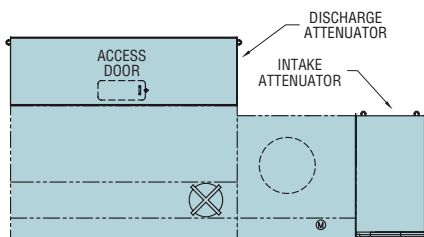
Offset Sound Attenuation Walls are EVAPCO's newest attenuation option for even greater levels of sound reduction when used in combination with the Super Low Sound Fan and Water Silencer options. These devices will reduce the 15 m free field sound level by an additional 3 dB(A). The walls are constructed of Z-725 galvanized steel (stainless steel construction also available) lined with acoustical padding on the inside of the walls. This option requires external support by others.



Forced Draft Centrifugal Fan Options

The centrifugal fan design of Evapco's forced draft closed circuit coolers operates at lower sound levels which make these units preferable for installations where noise is a concern.

For extremely noise sensitive applications, these centrifugal fan models may be supplied with various optional stages of intake and/or discharge attenuation packages, which greatly reduce sound levels even further.



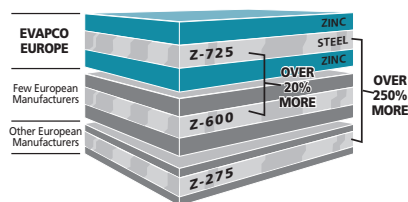
Corrosion Protection

EVAPCOAT:

The Z-725 Mill Hot-Dip Galvanized Steel

Construction is the heaviest level of galvanizing available for manufacturing closed circuit coolers and

has more zinc protection than competitive designs using Z-275 and Z-600 steel. EVAPCO was the first to standardize on Z-725 galvanized steel which means a minimum of 725 g zinc/m². Today Evapco remains the only European closed circuit cooler manufacturer using this heavy grade galvanized steel as per standard.

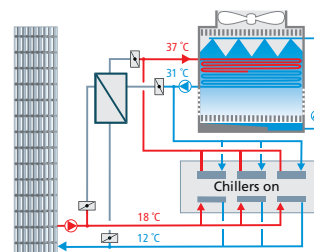


Stainless Steel Options: A variety of stainless steel construction upgrade options are available in both 304L and 316L stainless steel, including stainless steel cold water basins and complete stainless steel units. All factory seams in the cold water basin of induced draft units are **welded** as standard to ensure watertight assembly.

Application - Circulation Scheme

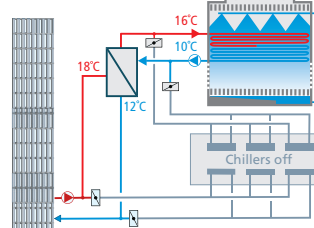
Standard Operation:

Heat rejection is transferred via fluid in the closed circuit of the evaporative cooler to the atmosphere. Inlet / Outlet: 37/31°C. The chillers supply the building with cold water which warms up from 12 to 18°C.



Free Cooling:

In the cold season the demand for cooling is falling. Chillers are off and shut valves are closed. The fluid circulates only between the cooler and the building. From approximately 5°C wet bulb down economically produced cold water is available for air conditioning in the building.



Eurovent-CTI Certified - Standard 201

Evapco has closed circuit coolers independently certified by the Cooling Technology Institute (CTI). This certification guarantees that the unit will meet the rated capacities, eliminating the need for costly field performance tests.

As Eurovent and CTI established a "Memorandum of Understanding", a common "Eurovent-CTI" certification program has become the European Standard for independent thermal performance rating of evaporative coolers.



www.eurovent-certification.com



Mark owned by the Cooling Technology Institute
www.cti.org

www.evapco.eu / www.mrgoodtower.eu

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