



CABERO PRODUCT CATALOGUE







# AIR COOLED CONDENSERS WITH AXIAL FANS

ACH / ACV (MONO COIL)



## APPLICATION:

air conditioning and refrigeration systems

## CAPACITY RANGE:

5-1,420 kW

## REFRIGERANTS:

available for all refrigerants  
incl. NH<sub>3</sub> and CO<sub>2</sub>

## AIR DIRECTION:

vertical or horizontal

## CONSTRUCTION:

tubes: Copper, Stainless Steel, Alu  
fins: Al, Al-coated, AlMg3, Cu  
casing: galvanised steel,  
powder coated RAL 7035

## FEATURES

- very safe and long life operation;
- reliable coil construction based on sliding ring system;
- robust construction with all-around U-frame;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel and other corrosion resistant fastening parts;
- condensers with 24 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- over 33,000 different condenser models for comprehensive system optimisation;
- 2 speed or variable speed fans / motors are available for further balancing of system;
- well engineered, professional, state of the art product range designed with cutting edge technology offering energy savings, reduced installation costs and simplified selection process;
- wide and comprehensive range of pre-approved accessories suitable for individual models and applications;
- all units and options are incorporated to comprehensive and easy to use CABERO calculation software available to our proud and satisfied customers;







# AIR COOLED CONDENSERS WITH AXIAL FANS

ACD (DOUBLE COIL V-SHAPE)



## FEATURES

- compact design resulting in considerable space savings;
- relative good capital saving over the conventional units;
- very safe and long life operation;
- reliable coil construction based on sliding ring system to allow tube expansions;
- robust construction with all-around U-frame;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel and other corrosion resistant fastening parts;
- 24 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- over 16,200 different V-shape condenser models for comprehensive system optimisation;
- 2 speed or variable speed fans / motors are available for further balancing of system;
- well engineered, professional, state of the art product range designed with cutting edge technology to offer energy savings during operation, reduce installation costs and simplify selection and design process;
- wide and comprehensive range of pre-approved accessories suitable for individual models and applications;

All units and options are incorporated to comprehensive and easy to use CABERO calculation software available to our proud and satisfied customers.

## APPLICATION:

air conditioning and refrigeration systems

## CAPACITY RANGE:

5-1,600 kW

## REFRIGERANTS:

available for all refrigerants incl. NH<sub>3</sub> and CO<sub>2</sub>

## AIR DIRECTION:

vertical

## CONSTRUCTION:

tubes: Cu, Stainless Steel, Alu  
fins: Al, Al-coated, AlMg3, Cu  
casing: galvanised steel, powder coated RAL 7035







## DRY COOLER

GCH/GCV (MONO COIL)



### APPLICATION:

air conditioning and refrigeration systems

### CAPACITY RANGE:

8-1,300 kW

### COOLING MEDIUMS:

water, glycols, oils

### AIR DIRECTION:

vertical or horizontal

### CONSTRUCTION:

tubes: Copper, Stainless Steel, Alu

fins: Al, Al-coated, AlMg3, Cu

casing: galvanised steel, powder coated RAL 7035

### FEATURES

- very safe and long life operation;
- reliable coil construction based on sliding ring system;
- robust construction with all-around U-frame;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel and other corrosion resistant fastening parts;
- dry coolers with 24 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- over 33,000 different dry cooler models for comprehensive system optimisation;
- 2 speed or variable speed fans / motors are available for further balancing of system;
- well engineered, professional, state of the art product range designed with cutting edge technology offering energy savings, reduced installation costs and simplified selection process;
- wide and comprehensive range of pre-approved accessories suitable for individual models and applications;
- all units and options are incorporated to comprehensive and easy to use CABERO calculation software available to our proud and satisfied customers;







# DRY COOLER

GCD (DOUBLE COIL V-SHAPE)



## FEATURES

- compact design resulting in considerable space savings;
- relative good capital saving over the conventional units;
- very safe and long life operation;
- reliable coil construction based on sliding ring system to allow tube expansions;
- robust construction with all-around U-frame;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel and other corrosion resistant fastening parts;
- 24 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- over 16,200 different V-shape dry cooler models for comprehensive system optimisation;
- 2 speed or variable speed fans / motors are available for further balancing of system;
- well engineered, professional, state of the art product range designed with cutting edge technology offering energy savings, reduced installation costs and simplified selection process;
- wide and comprehensive range of pre-approved accessories suitable for individual models and applications;

**APPLICATION:**  
air conditioning and refrigeration systems

**CAPACITY RANGE:**  
60-1,300 kW

**COOLING MEDIUMS:**  
water, glycols, oils

**AIR DIRECTION:**  
vertical

**CONSTRUCTION:**  
tubes: Cu, Stainless Steel, Alu  
fins: Al, Al-coated, AlMg3, Cu  
casing: galvanised steel, powder coated RAL 7035







## SELF-DRAINING DRY COOLER (MONO COIL)



### APPLICATION:

air conditioning and refrigeration systems

### CAPACITY RANGE:

60-1,400 kW

### COOLING MEDIUMS:

water

### AIR DIRECTION:

vertical

### CONSTRUCTION:

tubes: Copper, Stainless Steel, Alu

fins: Al, Al-coated, AlMg3, Cu

casing: galvanised steel,  
powder coated RAL 7035

### FEATURES

- patented design with self-draining heat exchanger coil so anti-freeze solution is not necessary during low temperature periods. This patented system allows fast and effective draining of liquid from entire heat exchanger and therefore does not carry the risk of water freezing inside the unit;
- environmentally sound option as pure water can be used without glycol mixtures;
- very safe and long life operation;
- reliable coil construction based on sliding ring system;
- robust construction with all-around U-frame;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel or corrosion resistant fastening parts;
- condensers with 24 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- over 11,000 different condenser models for comprehensive system optimisation;
- 2 speed or variable speed fans / motors are available for further balancing of system;
- well engineered, professional, state of the art product range designed with cutting edge technology offering energy savings, reduced installation costs and simplified selection process;
- wide and comprehensive range of pre-approved accessories suitable for individual models and applications;
- all units and options are incorporated to comprehensive and easy to use CABERO calculation software available to our proud and satisfied customers;







# COMPACT LINE CONDENSERS AND DRY COOLERS

W-SHAPE

CABERO Compact Line W-shape units are designed for systems demanding high capacity and performance yet required to fit within restricted space.

## FEATURES

- compact design with approx. 70 % more power than conventional units over the floor space required;
- 16 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- sound level options are available from 68-31 dB(A) at 10 m;
- standard width = 1140 mm, up to 1900 mm high and up to 8800 mm long;
- lower refrigerant charge, lower transport cost, lower installation and mounting cost;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel and other corrosion resistant fastening parts;
- weight reduction utilising use of new generation materials incorporated to Reinforced CABERO Profile (RCP) construction;



W-shape units can be supplied with installed adiabatic system or post-installed and also equipped with complete controls;

Proven STES (Safety Tube Expansion System) prevents wear on tubes generally caused by thermal expansion and movement of tubes inside the coil.

## NOTE

Where multiple units are used a sub-structure is necessary to ensure continuous and adequate air supply. CABERO can supply sub-structure as an accessory ex-works, with units ready for mounting. With CABERO sub-frame you save against expensive frame construction usually used in these applications and also time and cost of obtaining building permits.

Accessory range available including high temperature or explosion proof fans.

## APPLICATION:

air conditioning and refrigeration systems

## CAPACITY RANGE:

76 kW to 1,700 kW

## REFRIGERANTS:

for all coolants and refrigerants incl. NH<sub>3</sub>, CO<sub>2</sub>, glycols

## AIR DIRECTION:

horizontal inlet, vertical outlet;

## CONSTRUCTION:

tubes: Copper, Stainless Steel, Alu  
fins: Al, Al-coated, AlMg3, Cu  
casing: galvanised steel, powder coated RAL 7035







# ADIABATIC SYSTEMS

FOR HEAT EXCHANGERS WITH HORIZONTAL, VERTICAL AND V-CONSTRUCTION



## OVERVIEW

During summer operations with higher ambient temperatures heat exchanger capacity reduces due to smaller temperature difference. Inlet temperature at which air is entering heat exchanger can be reduced 4-8 K by introducing adiabatic cooling. Entering air temperature reduction depends on heat exchanger and adiabatic system design, with air velocity and relative humidity as main design factors. Adiabatic system consists of spraying nozzles for dispersing water into air, which evaporates and cools the air before entering the heat exchanger creating higher LMTD. This means either more capacity or lower operating point for heat exchanger. It is necessary for this system to use demineralised water in order to keep the heat exchanger free of calcium deposits which would reduce capacity as well as the life of the operating unit. We recommend units with corrosion resistant and easy to clean blue fins which have been tested and operating without deterioration for over 8 years.

## ADVANTAGES

Adiabatic systems can be designed and applied in following ways:

- space saving – physically smaller units with same operating conditions as standard equipment;
- energy saving – same or physically larger units with reduced temperature difference which result in reduction of energy input into complete system and lower operating costs;

## DISADVANTAGES

- necessary use of demineralised water, hence water treatment station may be required;
- higher capital cost;

## NOTE

CABERO can offer complete adiabatic system including controls, mounted into a switch cabinet, which can regulate following system components:

- magnetic or motor shut off valves with contactors and time limit relay (spray control);
- ambient temperature sensors for automatic discharge (operating set points);
- water pumps and pumping stations (spray control);
- provides regulator signal for fan speed controller;







# HYBRID DRY COOLERS



## FEATURES

- compact design resulting in considerable space savings and relative good capital saving over the conventional units;
- very safe and long life operation;
- reliable coil construction based on sliding ring system;
- robust construction with all-around U-frame;
- casing made of galvanised sheets, Powder coated RAL 7035;
- Stainless Steel and other corrosion resistant fastening parts;
- 24 various fan speeds optimising air flow, noise level and power consumption to suit system requirements at different load levels;
- over 16,200 different models;
- 2 speed or variable speed fan / motor are available;
- well engineered, professional, state of the art product range designed with cutting edge technology offering energy savings, reduced installation costs and simplified selection process;
- wide and comprehensive range of pre-approved accessories suitable for individual models and applications;
- all units and options are incorporated to comprehensive and easy to use CABERO calculation software available to our proud and satisfied customers;

**APPLICATION:**  
air conditioning and refrigeration systems

**CAPACITY RANGE:**  
100-2,000 kW

**COOLING MEDIUMS:**  
water, glycols, oils

**AIR DIRECTION:**  
vertical

**CONSTRUCTION:**  
tubes: Cu, Stainless Steel, Alu  
fins: Al, Al-coated, AlMg3, Cu  
casing: galvanised steel, powder coated RAL 7035





## COMMERCIAL EVAPORATORS / AIR COOLERS



### APPLICATION:

refrigerated rooms of smaller size

### CAPACITY RANGE:

0.5-90 kW

### REFRIGERANT:

all Freons and brines

### AIR DIRECTION:

horizontal, vertical and inclined

### CONSTRUCTION:

tubes: Copper

fins: Al, Al-coated, AlMg3, Cu

casing: aluminium, powder coated RAL 9010 or Stainless Steel

### OTHER:

Comprehensive accessory range

### FEATURES

- same coil technology as industrial units, therefore called CABERO Professional Commercial Line;
- suitable for commercial as well as industrial applications;
- in-line tube pattern that reduces moisture removal from product = minimised product weight reduction as well as surface shrivel;
- reduced number of defrosts and increased defrost intervals due to reduced icing of heat exchanger = energy saving;
- longer cooling periods without defrost with more stable plant operation = saving in overall plant operating costs;
- Aluminium casing, powder coated RAL 9010. Stainless steel casing option is also available;

We strive to provide equipment with added values for end users as well as to contractors. Slogan we are proud of "WE SHARE YOUR GOALS" perfectly fits with unique technology of industrial coolers that we offer with commercial coolers yet with attractive pricing.

### GENERAL

**CH series:** single coil, draw through evaporators with 4 and 7 mm fin spacing;

**DH series:** double coil, blow through evaporators with, 4 and 7 mm fin spacing;

**LPC series:** single coil, low profile, blow through evaporators with 4 and 7mm fin spacing;

**BCH series:** single coil, draw through air coolers with 4 and 7 mm fin spacing;

**BCD series:** double coil, blow through air coolers with 4 and 7 mm fin spacing different fin spacing may be available on request;







## INDUSTRIAL EVAPORATORS / AIR COOLERS



### FEATURES

CABERO Professional Industrial Line of Air Cooler / Evaporator units are well suited for all industrial applications as well as large commercial installations.

Inline tube configuration optimised for long term storage of perishable products (such as meat, fish, fruit, vegetables) are designed with end user in mind, where moisture removal from storage rooms and stored product must be kept to minimum. Minimised weight loss is achieved with these units as its configuration keeps the cooling surface temperature higher and closer to inlet temperature, therefore creating lower rate of air drying and minimised icing up of heat exchanger surface. It now becomes obvious, that defrosting frequency and length are reduced creating more stable operating system which ultimately reduces energy consumption and further enhances added value for end user. Furthermore, air side pressure resistance is also lower, with minimised ice layer on heat exchanger surfaces, also reducing fan power consumption. Such conditions not only improve visual appeal of stored product, yet prolong its life inside cold room as well as on supermarket shelves.

**WE** are proud once again to **SHARE YOUR GOALS** of saving energy and keeping your product fresh and safe longer.

**IEHR series:** single coil draw through air coolers and evaporators with 4, 7, 10, 12 or 16/8 mm fin spacing;

**IDHR series:** double coil blow through air coolers and evaporators with 4, 7, 10, 12 or 16/8 mm fin spacing;

**IBHR series:** processing room air coolers and evaporators with 4, 7, 10, 12 or 16/8 mm fin spacing;



### APPLICATION:

refrigeration – processing, storage, all applications

### CAPACITY RANGE:

5-200 kW

### REFRIGERANTS:

all Freon and glycols

### AIR DIRECTION:

horizontal, vertical or inclined

### CONSTRUCTION:

tubes: Copper, Stainless or galvanised steel  
fins: Al, Al-coated, AlMg3 or galvanised steel  
casing: aluminium or galvanised, powder coated RAL 9010 or Stainless Steel

### OTHER:

Comprehensive accessory range available







## BLAST CHILLER OR FREEZER UNITS AND COILS



### APPLICATION:

Blast or shock chilling or freezing

### CAPACITY RANGE:

40-300 kW

### REFRIGERANT:

NH<sub>3</sub> or Freons

### AIR DIRECTION:

horizontal or vertical

### CONSTRUCTION:

tubes: Copper, Stainless or galvanised steel

fins: Copper, Al, Al-coated, AlMg3 or galvanised steel

casing: Galvanised or Stainless Steel

### FEATURES

CABERO blast chiller or freezer units are designed for rapid and shock cooling in rooms with fast turn around of products requiring quick temperature pull down. These units can be custom designed to suit each particular application, product and customer. Performance of each unit is optimised to achieve chilling or freezing of product in shortest possible period to ensure minimum possible removal of moisture from the product. The design ensures minimum product weight loss so it can be kept in its original state for longer time.

Reliability of these units is also carefully taken into consideration to provide our customers with piece of mind that desired product temperature is reached within shortest possible time, achieving maximum output, without overloading the system. Each unit can be fully customised to single detail.







# INDUSTRIAL AMMONIA EVAPORATORS



## FEATURES

CABERO Professional Ammonia Line Evaporators are well suited in refrigeration plants operating on Ammonia, whether they are short or long term storage, loading areas, processing plants or special application areas requiring medium or low temperature cooling. Professional Ammonia Line is designed with end user in mind offering high quality and exceptional technology individually catered for particular application. Design for each installation is optimised to best suit its operation and provide optimal cooling result and safe-guard cooled product. In line tube configuration again brings its advantages of minimised moisture removal.

Casing is made of Galvanised steel or Aluminium sheets, powder coated RAL 9010, or optional Stainless Steel sheets.

### IEHGA series:

single coil draw through evaporators, with fin spacing of 5, 8, 10, 12 or 16/8 mm made of  $\varnothing 5/8''$  or  $\varnothing 20$  mm steel tubes and steel fins all hot-dip galvanised.

### IEHSA series:

single coil draw through evaporators with fin spacing of 4, 7, 10, 12 or 16/8 mm made of stainless steel 304 or 316 tubes  $\varnothing 5/8''$  or  $\varnothing 20$  mm diameter and Aluminium, coated Al or AlMg3 fins.

### IDHGA series:

double coil blow through evaporators, with fin spacing of 5, 8, 10, 12 or 16/8 mm made of  $\varnothing 5/8''$  or  $\varnothing 20$  mm steel tubes and steel fins all hot-dip galvanised.

### IDHSA series:

double coil blow through evaporators, with fin spacing of 4, 7, 10, 12 or 16/8 mm made of stainless steel 304 or 316 tubes  $\varnothing 5/8''$  or  $\varnothing 20$  mm diameter and Aluminium, coated Al or AlMg3 fins.

## APPLICATION:

refrigeration – processing, storage, all applications

## CAPACITY RANGE:

5-140 kW

## REFRIGERANTS:

ammonia (R717), CO<sub>2</sub> (R744)

## AIR DIRECTION:

horizontal, vertical or inclined

## CONSTRUCTION:

tubes: Stainless or galvanised steel  
fins: Al, coated Al, AlMg3 or galvanised steel  
casing: aluminium or galvanised, powder coated RAL 9010 or Stainless Steel

## OTHER:

comprehensive accessory range available







## SHORT DELIVERY CONDENSERS AND DRY COOLERS

5-150 kW



### APPLICATION:

refrigeration air conditioning

### CAPACITY RANGE:

5-150 kW

### REFRIGERANT:

for all freon refrigerants except  $\text{NH}_3$

### AIR DIRECTION:

vertical / horizontal

### CONSTRUCTION:

tubes: Copper

fins: Copper, Al, Al-coated, AlMg3

casing: Galvanised, powder coated  
RAL 7035

### FEATURES

- availability in short delivery time, either by quick production time or ex-stock. High operation safety and reliability as well as long life, due to well proven sliding ring system and robust, all-around U-frame construction;
- casing made of galvanized sheets, powder-coated RAL 7035 for maximum corrosion protection;
- all fastening parts made of Stainless Steel or corrosion resistant materials;
- 8 different fan speeds and air volume stages including silent operation;
- 64 different types;
- suitable for variable fan speed operation;
- well-engineered and professional product range designed to simplify and shorten planner's and contractor's time and after all minimise operators maintenance;
- minimum material waste due to special fin design (smooth fins);
- comprehensive range of accessories available;
- all units and options are incorporated to easy to use CABERO calculation software available to our proud and satisfied customers;





## MACHINE CASINGS



### FRAME CONSTRUCTION

- solid base frame with cross sections, made of galvanized steel frame with zinc plated welds;
- complete galvanising available on request;
- cross sections inside casing, mounting plates and insulation as per customer's specification;

### CASING

- galvanized steel sheet, coated in RAL 7035;
- solid aluminium frame with cast aluminium edges;
- removable side panels on three sides with plastic handles and rapid locks;
- removable station-roof;
- width and height to match heat exchanger dimensions;
- length as per customer's demand in 300mm increments;

### ACCESSORIES

- closed casing floor;
- sound absorbing (insulated) panels with double sheets;
- side panels as hinged doors or fully removable;
- internal control panels mounting;





# CONTROL SYSTEMS, SPEED CONTROLLERS

CONTROL PANELS & ACCESSORIES



## APPLICATION:

refrigeration, air conditioning system control

## STANDARDS:

DIN VDE (German electro technical regulations) and EN standards

## FEATURES

- compact construction;
- application- and customer-oriented system solution;
- energy saving concept;
- interface-defined execution;
- control possibilities for additional components e.g. single solenoid valves, etc.;
- digital and analog input and output signals;
- LON and BUS suitable execution;
- comprehensive product range;
- particulars available with CABERO calculation program for customised solution;

## SYSTEM TYPES

- electronic voltage control units;
- transformer induced voltage controls units;
- frequency inverter with integrated sine filter;
- motor protection devices and switching units;

## PROTECTION CLASS

up to IP 66

## SUPPLY VOLTAGE

230 V and 400 V, special voltages on request





## FINNED COILS

### COIL PATTERNS

60x60 inline, with  $\varnothing$  20 mm tubes in Stainless steel, hot dip galvanised steel or Aluminum

60x30 triangular, with  $\varnothing$  20 mm tubes in Stainless steel, hot dip galvanised steel or Aluminum

55x55 inline, with  $\varnothing$  5/8" tubes in Stainless steel, hot dip galvanised steel, Copper or Aluminum

55x27.5 triangular, with  $\varnothing$  5/8" tubes in Stainless steel, hot dip galvanised steel, Copper or Aluminium

37.5x32 triangular, with  $\varnothing$  12mm tubes in Stainless steel and Copper

35x35 inline, with  $\varnothing$  12 mm tubes in Stainless steel and Copper

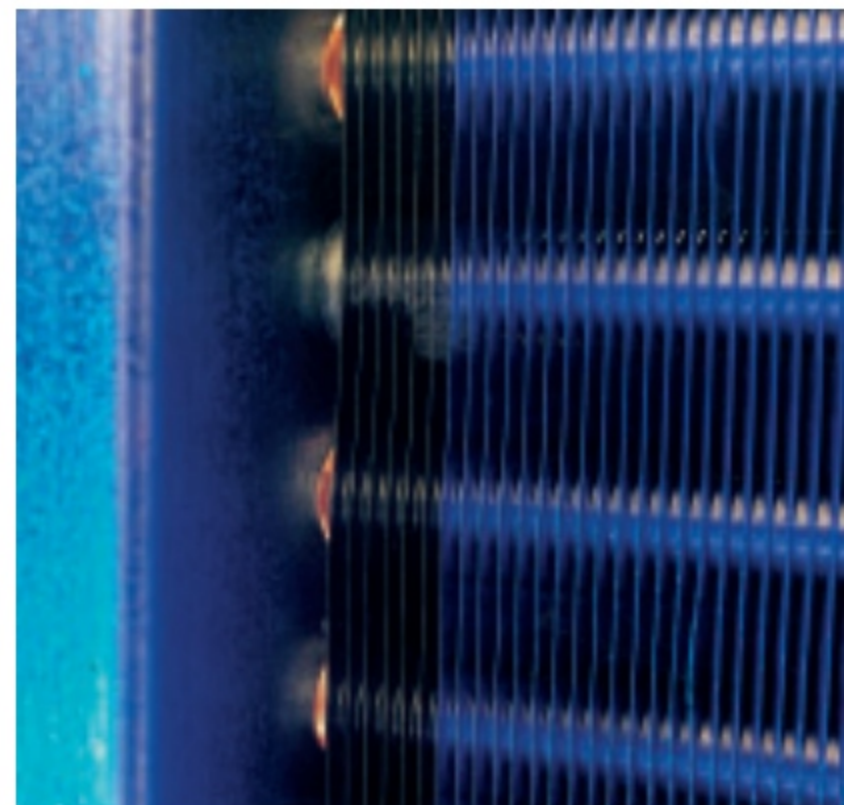
25x21.65 triangular, with  $\varnothing$  3/8" tubes in Copper

### FINNED COIL

Finned coil consists of aluminium, copper, stainless steel or hot dip galvanised steel tubes. Available fin materials are AlMg3, Aluminium, coated Aluminium, copper or steel (hot dip galv.). Uniform spacing is achieved by punching equal fin collars. Uniform bond between tubes and fins is created by mechanical or hydraulic expansion of tubes into fin collars creating minimum resistance of heat flow between tubes and fins. Tubes for hot dip galvanised steel coils are not expanded.

### FRAME

Made of strong AlMg3, galvanised or stainless steel sheet that provides good protection for finned coil and return U-bends. Drawn-collar tube holes in tube plates are designed to permit unrestricted tube movement during thermal expansion. There are also other materials for the frame in program, e.g. brass, copper, aluminium, etc.







## SHELL AND PLATE HEAT EXCHANGERS

### APPLICATION:

refrigeration, air conditioning, process engineering, facility engineering, power plants, etc.

### CAPACITY RANGE:

500-4,000 kW

### REFRIGERANTS:

all mediums and refrigerants

### CONSTRUCTION:

tubes and plates: stainless steel, titanium and special materials

### ALLOWABLE WORKING PRESSURE:

standard up to 40 bar, higher pressures on request

### ALLOWABLE WORKING TEMPERATURE:

-200 °C to 900 °C

### STANDARD:

TÜV (Germany), CE Directives (European Union)

### APPLICATION

#### Chemical:

- process cooling;
- CO<sub>2</sub> gas cooling;
- dehumidification of gasses;

#### Marine:

- cooling by sea water;
- pre-warming of petrol or engine oil with steam;

#### Power plants:

- steam applications;
- oil cooling at high temperature applications;

#### Refrigeration:

- hermetically sealed Ammonia evaporators;
- CO<sub>2</sub> cascade system heat exchanger;

#### Other:

- steam applications of all kinds;
- water / water applications including sea water;

### FEATURES

- used in applications where conventional plate heat exchangers are not suitable due to very low or very high temperatures of mediums on both sides;
- each S & P heat exchanger is custom designed and manufactured for specific conditions resulting in low weight, compact and efficient unit;
- fully welded (without gaskets) – patented design;
- excellent heat transfer coefficient;
- highest operational safety and availability;
- no wear and tear parts, low maintenance cost;
- reasonable investment costs;
- suitable for aggressive media on both sides of heat exchanger;
- highest grades of corrosion resistant materials available;
- shell available in carbon steel or different grades of Stainless steel for pressure vessels;
- plates available in Stainless steel, Nickel, Titanium, Monel, Hastelloy C-22;

### MANUFACTURING UNDER ISO 9001 : 2000

Approved CE certificates for: GOST, ASME, TÜV, R.I.N.A., SVTI, SAQ, AT, Lloyd's Register, Det Norske Veritas, ABS Europe Ltd., Bureau Veritas.





### FEATURES

- excellent heat transfer due to refined plate pattern;
- compact design, low weight;
- high design temperature and pressure;
- stainless steel and corrosion resistant components;
- numerous connecting versions;
- wide range of sealing materials;
- low internal volume;
- high quality and tested performance;
- accessories selectable with CABREO calculation program;

## PLATE HEAT EXCHANGERS

### APPLICATION:

refrigeration, air conditioning, chemical industry, heat recovery, medium heating and cooling.

### ALLOWABLE OPERATING PRESSURE:

max. 16 bar

### CAPACITY RANGE:

10 - 2,500 kW

### ALLOWABLE OPERATING TEMPERATURE:

max. 180 °C

### REFRIGERANTS AND MEDIUIMS:

all without restrictions

### STANDARD:

TÜV (Germany), ASME XIII Div 1 / U-Stamp (US), GUS (Russian -Federation) UDT (Poland) and CE Directives (European Union)

### CONSTRUCTION:

plates:  
stainless steel and special – materials  
insulation:  
depends on each application



### FEATURES

- Compact design, low weight;
- higher design pressure;
- excellent heat transfer due to custom design;
- stainless steel and corrosion resistant construction;
- easy to install and virtually maintenance free;
- patented insulation technology;
- patented "Mister" refrigerant spray;
- high quality and tested performance;
- accessories selectable with CABERO calculation program;

## BRAZED PLATE HEAT EXCHANGERS

### APPLICATION:

refrigeration, air conditioning, chemical industry, heat recovery, medium heating and cooling.

### ALLOWABLE OPERATING PRESSURE:

max. 30 bar

### CAPACITY RANGE:

0.5 - 1,000 kW

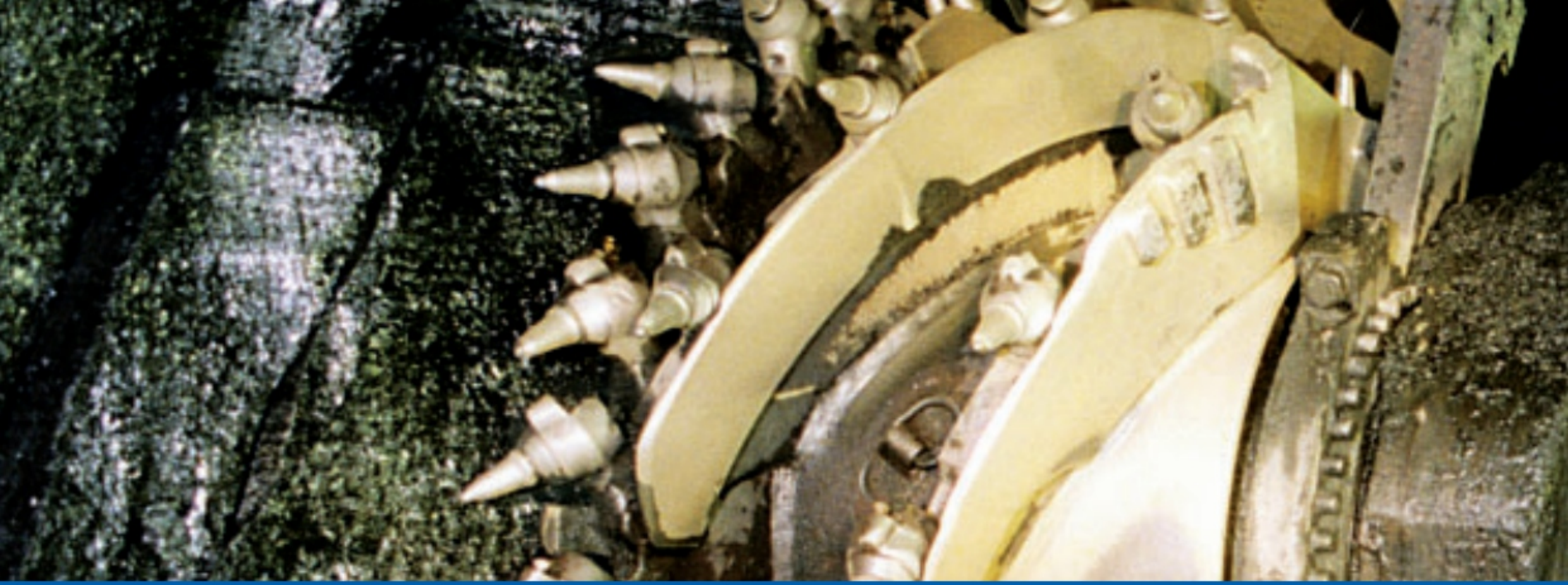
### ALLOWABLE OPERATING TEMPERATURE:

- 196 °C to 204 °C

### REFRIGERANTS AND MEDIUIMS:

all except Ammonia and sea water









## MINE COOLER

MODEL CBE (AIR CONDITIONING)

The new CBE series underground air cooler developed by CABERO features economical and compact design specially produced for mining applications. New patented internal piping system operates as so called „Cyclon Separator“, which ensures separating of condensate droplets from the air. The conventional droplet separator, which considerably reduces efficiency and increase energy consumption, is no longer necessary. Condensate collected inside CBE is self drained into piped conventional drainage system.

The CBE also guarantees longer and uniform air throw reducing fan power consumption compared with conventional existing systems. Capital cost reduction is also significant as explosion proof motors, necessary for underground use, now have lower power ratings. CBE units operate with longer cleaning cycles as its integrated spraying system inside the heat exchanger keep surfaces free of dirt longer, therefore reducing service cost and down time.

Robust casing is made of 8mm steel plate giving full protection to heat exchanger while transported and operating in underground conditions.

Important to note is that CBE unit's upper half can be completely removed to allow open acces to heat exchanger for inspection and maintenance.

CBE can be used with all refrigerants (excluding  $\text{NH}_3$ ), including water or glycol mediums.

### APPLICATION:

Underground air conditioning –  
mining sector

### CAPACITY RANGE:

100-500 kW

### REFRIGERANTS AND MEDUIMS:

for all refrigerants (except  $\text{NH}_3$ ),  
incl. water and glycol mixtures

### AIR DIRECTION:

horizontal

### CONSTRUCTION:

tubes: Cu, 304 and 316 Stainless Steel  
fins: Cu, AlMg3; Al











# WE SHARE YOUR GOALS



CABERO Wärmetauscher GmbH & Co. KG | Jesenwanger Strasse 50 | 82284 Grafrath, Germany  
Phone: +49 8144 9396-0 | Fax: +49 8144 9396-20 | E-mail: [info@cabero.de](mailto:info@cabero.de) | [www.cabero.de](http://www.cabero.de)

CABERO Version 02 / 2011

Certified by   
ISO 9001-2008