# Heat Exchanger

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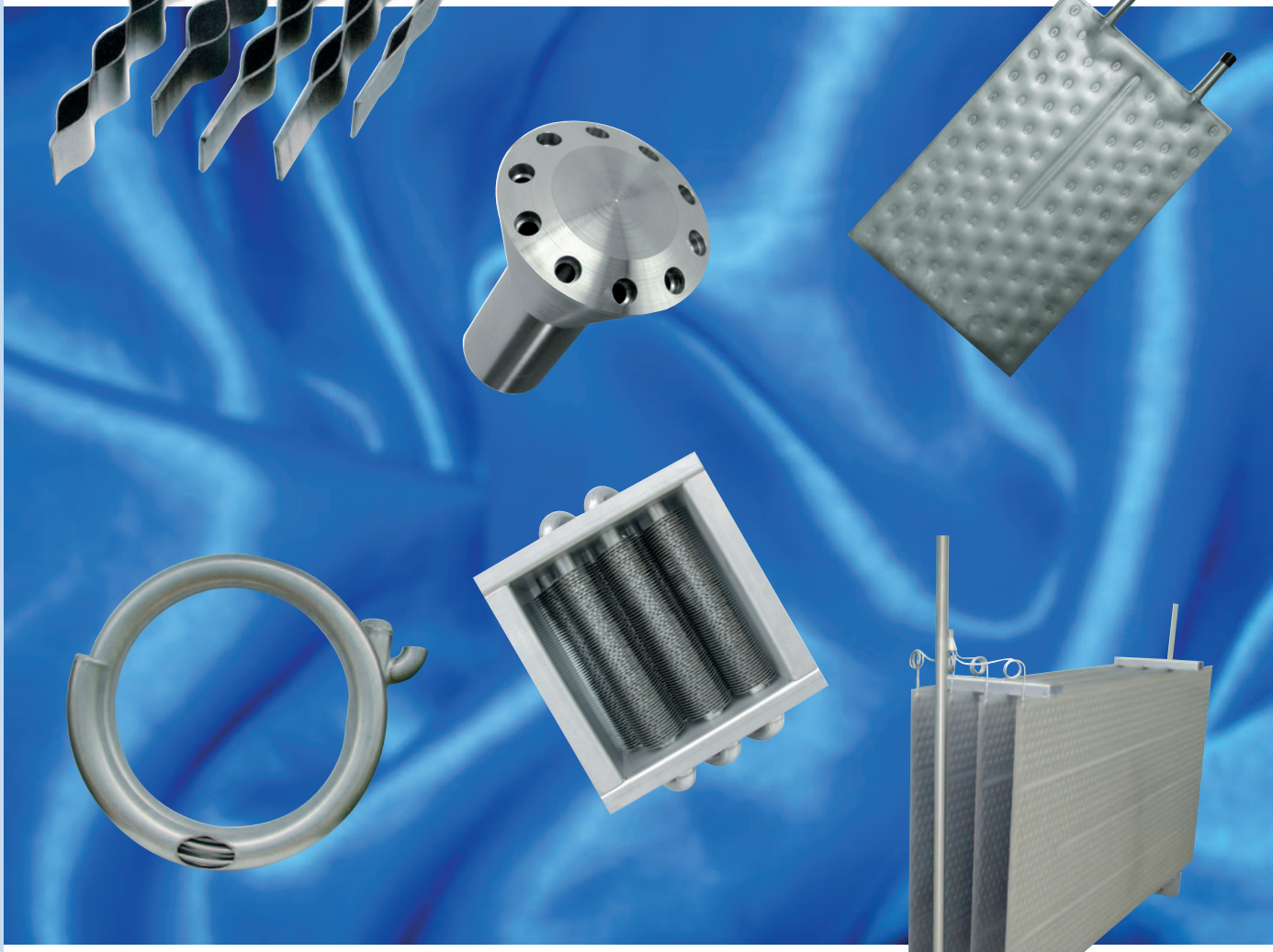
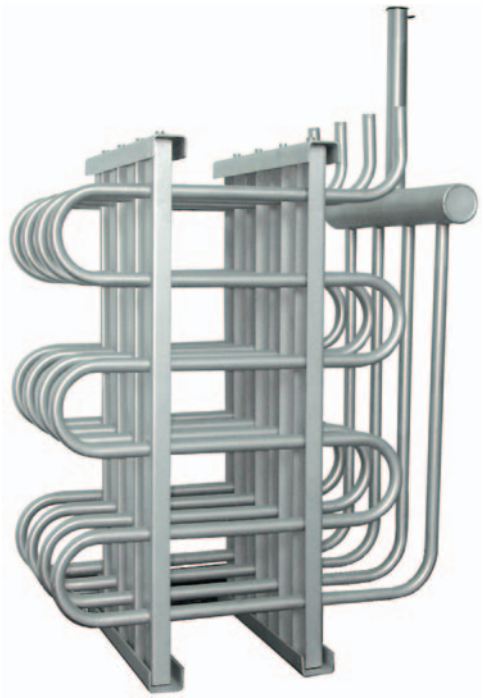
Process for your application





**We are eager to fulfil your requirements**

ANTHERMO® Heat Exchanger

# Experience and expertise in heat exchangers

## For many years, G.S.ANDERSON has been suppliying heat exchangers

With our long-term experience we are able to offer our customers a profound know how and an expert technical consultation all around heat exchangers.

Our findings in the dimensioning and production of heat exchangers enable us to correctly advise our customers on the selection of appropriate heat exchanger models for their specific demand.

A properly selected heat exchanger will reduce the asset cost and economise operating costs.

### Field of Application

The fields of application of our heat exchangers are multifaceted. Whether in chemical engineering, food industry, mechanical engineering or air-conditioning technology, our heat exchangers can be applied in numerous ways. More and more, heat exchangers are used in heat recovery systems, which saves the environment and economises cost of energy.

### Worldwide Contacts

Our international contractors and production facilities with modern manufacturing plants grant attractive manufacturing cost as well as optimum quality.

We are certified according to DIN 9001:2000 and our processes of production are subject to strictest standards of quality.

### We supply

- Various models of liquid heat exchangers
- Air/gas heat exchangers
- Ice banks/trickle coolers
- Individual parts and components

### Standard materials

- 1.4301
- 1.4307
- 1.4404
- 1.4571
- Special materials upon request

### Certification according to DIN ISO 9001:2000

ZERTIFIKAT

G.S.Anderson GmbH
Heßlingsweg 71, 44309 Dortmund
Deutschland

DIN EN ISO 9001:2000

Entwicklung und Herstellung von Armaturen und Wärmeaustauschern für industrielle Anwendungen. Handel mit Armaturen, Wärmeaustauschern und Rohrleitungszubehör für industrielle Anwendungen.

CERTIFICATE OF APPROVAL

G.S.Anderson GmbH
Heßlingsweg 71, 44309 Dortmund
Germany

DIN EN ISO 9001:2000

Design and manufacture of valves and heat exchangers for industrial application. Trade with valves, heat exchangers and pipe accessories for industrial application.

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ANTHERMO® Heat Exchanger

# Plate Vaporisation Systems

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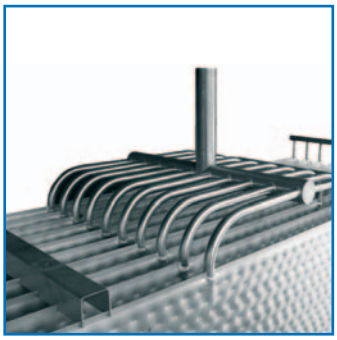
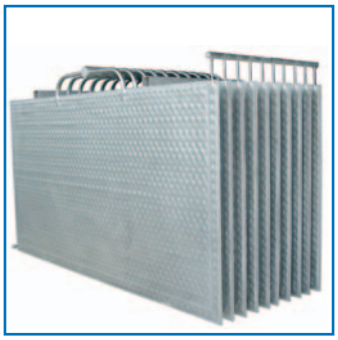
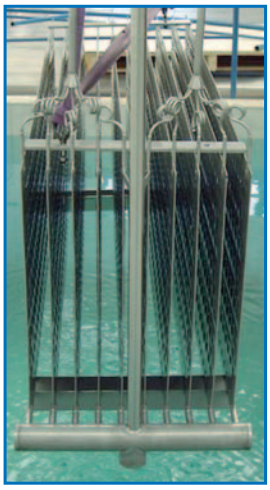
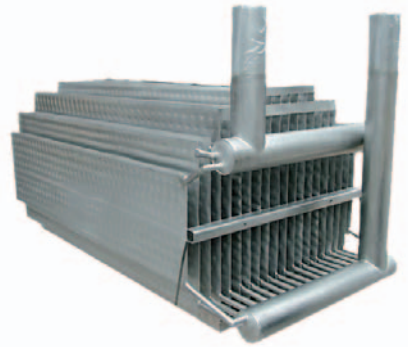



## The right heat exchanger for each application

**Plate vaporisation systems are employed where fluids are to be tempered. Depending on the purpose the fluids can be heated up or cooled down.**





Because of such broad field of application vaporisation systems are employed in the refrigeration technology, chemical engineering or industrial and building systems of many branches. More and more these systems are also used in heat recovery and drying plants.

The large surface of the plates results in an intense temperature exchange between the medium in the plates and the medium outside the plates.

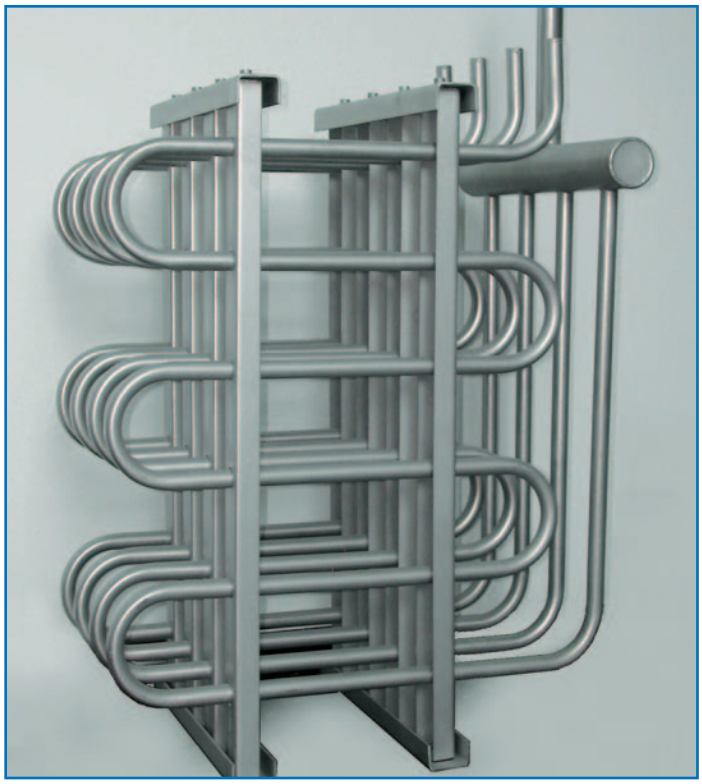
## Technical Data

| | |
|---|---|
| Materials | 1.4301 (AISI 304) |
| | 1.4404 (AISI 316 L) |
| | 1.4571 (AISI 316 Ti) |
| | Special materials upon request |
| Plates | S = 0,8-5 mm, PA from 1 to 50 bar |
| Surfaces | Pickled, passivated (e-polished upon request) |
| Manufacture/approval | Pressure equipment directive 97/23/EG |

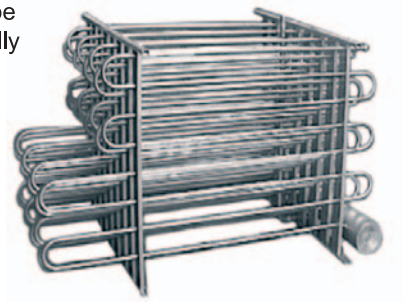
By means of modern welding machines spot weld and rolling seam patterns are generated on the evaporator plate thus enabling a specific and individual channel formation in the plate and thus granting the control of the medium circulation in the plate between flow and return line.
By means of modern CAD and EDP systems the plate vaporisators are individually designed and dimensioned.

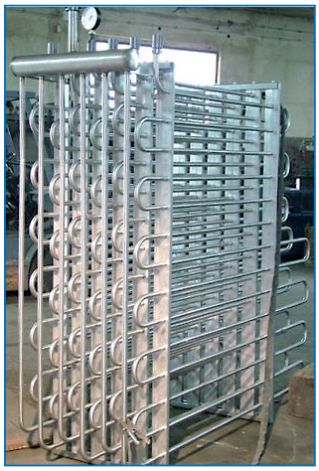
# Pipe Coil Vaporisation Systems

## The classic version



Pipe coil vaporisator systems are normally used for the tempering of fluids. Also with these systems fluids can be heated up or cooled down. The simple and strong construction enables an employment in economic applications. Pipe coil vaporisators are especially suited for brine and glycol applications.





## Technical Data

| | |
|---|---|
| Materials | 1.4301 (AISI 304) |
| | 1.4404 (AISI 316 L) |
| | 1.4571 (AISI 316 Ti) |
| | Special materials upon request |
| Standard Pipe | Ø = 21,3 x 1,5 mm, Pa from 1 to 50 bar |
| Surfaces | Pickled, passivated (e-polished upon request) |
| Manufacture/approval | Pressure equipment directive 97/23/EG |

# Coaxial Heat Exchanger

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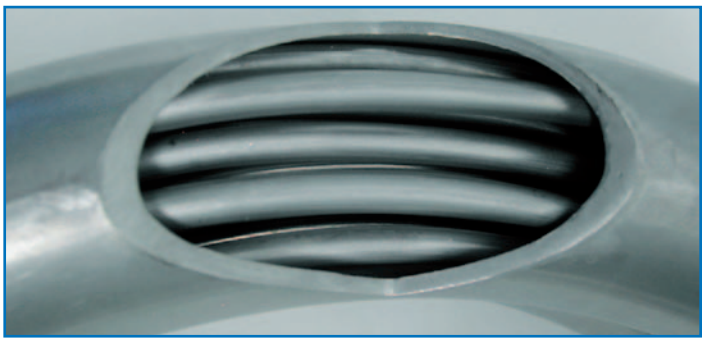
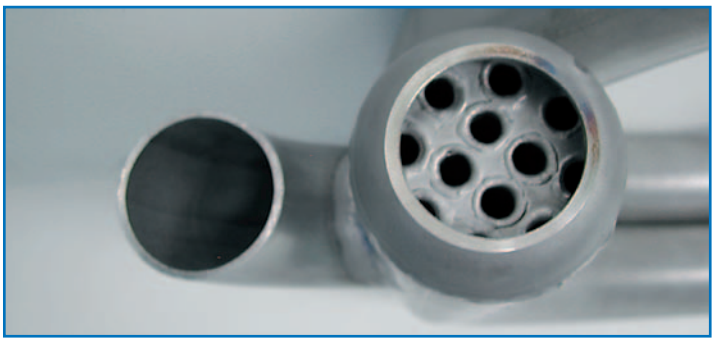




## Coaxial heat exchangers offer undreamt-of possibilities

**Wherever fast temperature exchange must take place in narrow space coaxial heat exchangers are employed.**

### Technical Data

| | |
|---|---|
| Materials | Standard Cu / Fe or stainless steel |
| | Special metals upon request |
| Model | Condenser, evaporator, |
| | heat exchanger, heat recovery |
| Surface | Pickled and passivated |
| Pressure test | In a water bath |
| Metrics | 1/2"-2.1/2", special sizes upon request |
| Types of connection | According to customer's requirement |
| Pressure range | max. 50 bar |
| Dimensions/construction | According to customer's requirement |

The coaxial heat exchanger consists of two or more pipe coils conducted through each other and wound in a spiral form. The primary medium runs in the opposite direction to the secondary medium thus achieving a fast temperature transition between the media with high efficiency.

Another advantage is the isolation of the fluids from ambient influences. No cleaning or maintenance is required because there is no contamination from outside.

Further, the coaxial heat exchanger does not need seals to be exchanged.

The coaxial heat exchangers can be used as condensers or evaporators.

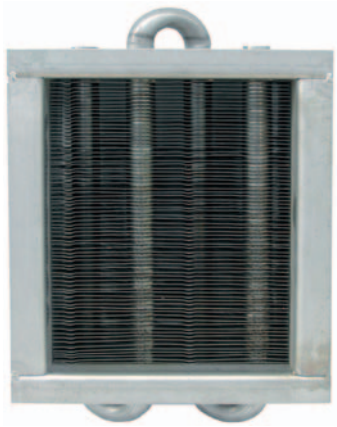
# Air Heat Exchanger

**Cutting the cost of energy and saving the environment ... ... please contact us!**

**With the air heat exchangers a temperature exchange takes place between a gas (normally air) and a liquid. In order to grant a large exchange space between the air and the medium (liquid) inside the heat exchanger the pipes are equipped with thin plates in the form of lamellas or finned tubes.**

This heat exchanger is mainly employed in the process and the air-conditioning technology. Quite often the air heat exchanger is used for heat recovery.

Finned tube design



Lamella design

Warm exhaust air frequently wasted unused can effectively be used for heat recovery by means of air heat exchangers thus saving the environment and economising the cost of energy.

## Technical Data

| | |
|---|---|
| Materials: Pipes, frame and body | 1.4301 (AISI 304) |
| | 1.4404 (AISI 316 L) |
| | 1.4571 (AISI 316 Ti) |
| | Galvanised steel upon request |
| | Special materials upon request |
| Materials: Lamellas | Aluminium + stainless steel, s = 0,15-0,4 mm, |
| | gap between lamellas: 2 - 12 mm |
| Surface | Pickled, passivated |
| Manufacture / approval | Pressure equipment directive 97/23/EG |
| Design | Lamella or finned tube, smooth bore |

# Components and Accessories

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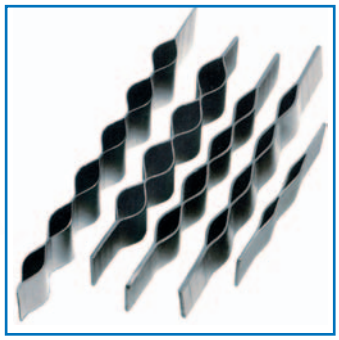
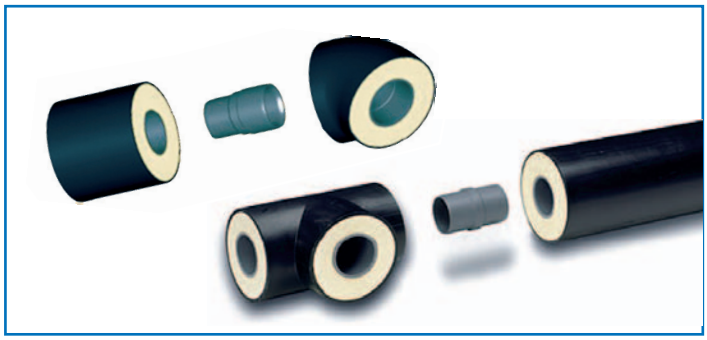




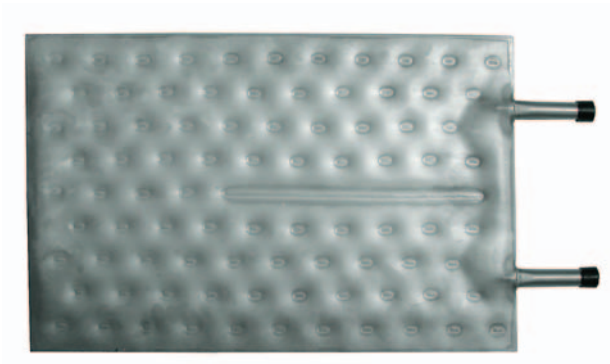
## Comprehensive assortment of components and accessories

**Apart from complete heat exchangers we also deliver parts and components for heat exchanger systems. The parts will then be inserted into the plants of our customers.**

### Heat exchanger plates

We manufacture individual heat exchanger plates to be employed in various applications and we consult our customers on the sizing and design of the heat exchanger plates. The plates are available in dimensions of 3.00 m x 4.00 m maximum. Up to these measures we can deliver any size wanted.

With our modern production plants we are able to provide the plates with spot, step or rolling weld patterns thus achieving a precise channel and medium conduct in the plate.



## Technical Data Venturi Distributor

| Capillary tubes | | Number of connections | Diameter of connections |
|---|---|---|---|
| 6 mm | 8 mm | 3 | 16 mm |
| 6 mm | 8 mm | 4 | 16 mm |
| 6 mm | 8 mm | 5 | 16 mm |
| 6 mm | 8 mm | 6 | 16 mm |
| 6 mm | 8 mm | 7 | 16 mm |
| 6 mm | 8 mm | 8 | 24 mm |
| 6 mm | 8 mm | 9 | 24 mm |
| 6 mm | 8 mm | 10 | 24 mm |
| 6 mm | 8 mm | 11 | 24 mm |
| 6 mm | 8 mm | 12 | 24 mm |
| 6 mm | 8 mm | 13 | 24 mm |
| 6 mm | 8 mm | 14 | 28 mm |
| 6 mm | 8 mm | 15 | 28 mm |
| 6 mm | 8 mm | 16 | 28 mm |
| 6 mm | 8 mm | 17 | 28 mm |
| Or as required | | | |

## Following components are available

| | |
|---|---|
| Pipe system Cool-Fit | Venturi distributor |
| Ice differential control | Conductimeter |
| Thermistor | Flow control |
| Lateral canal compressor | PH analyser |
| Ripped pipes | Pumps |

### Venturi distributor

The Venturi distributor is suitable for all gaseous and liquid refrigerants and the oils dissolved and carried along therein.

The fluid distributors type VE are made of one piece (stainless steel) and are working according to the Venturi principle. The plug of the inlet tube as well as the boring of the distributing tubes are calculated so that optimum soldering conditions are achieved.

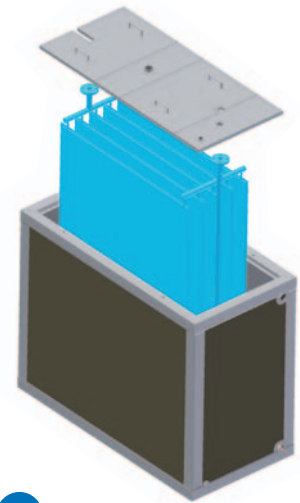
# Ice Banks

## Universal employment for versatile technical applications

**Ice banks are employed in many technical fields. Besides the classical application in the refrigeration, air-conditioning and canteen technologies ice banks are increasingly installed in process engineering plants.**

## Technical Data

| | |
|---|---|
| Materials | 1.4301 (AISI 304) |
| | 1.4571 (AISI 316 Ti) |
| | Special material upon request |
| Air injection by lateral canal compressor | 230/400 V, 50 Hz |
| | with PE distributor system |
| Optional | Thermistor, ice water pump, |
| | float valve, ice differential control |
| Storage capacity and dimensions | See data sheets |
| | or upon request |
| Design | Ice differential control type „Ranco“ |
| | Pre-installed sensor |
| | Control for switch panel installation |

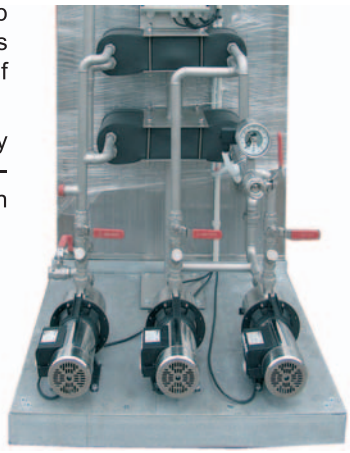


The ice production may be served with pipe coils or heat exchanger plates.

Depending on the operating conditions we help our customers with the selection of the appropriate system.

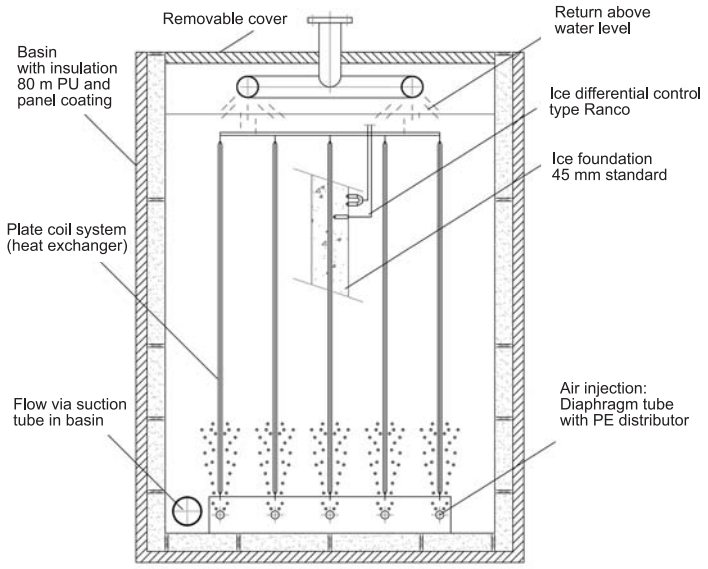
With the ice bank technology cheap overnight rates can be utilized thus noticeably reducing the cost of energy.

The ice banks are designed by means of latest production techniques and finished completely in stainless steel.



## Dimensions and performance data

| | |
|---|---|
| Case | Strong stainless steel construction 1.4301 (AISI 304) |
| | Strong stainless steel construction 1.4571 (AISI 316 Ti) |
| | Or entirely plastic |
| Insulation | Approx. 80 mm PU insulation for environmental protection |
| Casing | In stainless steel |
| Blower | 230/400 V, 50 Hz with PE distributor |
| Evaporator | Plate or pipe coil system |
| | in stainless steel 1.4031, 1.4571 |
| Cover | Removable insulated panels |
| Accessories | Ice differential control type „Ranco“ |
| | Pre-installed sensor |
| | Control for switch panel installation |

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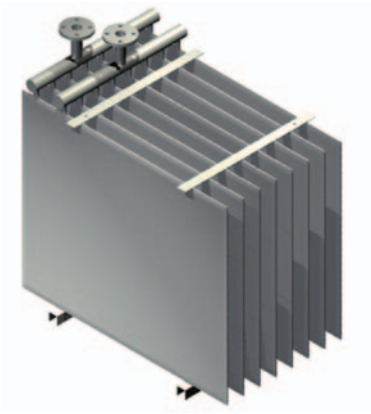

## Suitable for all refrigerants, in flooded as well as direct vaporising operation

### Ice bank with pipe coils

Pipe coil systems are the best-known systems in ice bank technology. The heat exchange system is manufactured using pipe coils inserted in a case filled with water. The refrigerant in the pipe produces ice on the pipe outside.

### Ice bank with plates

Plates fabricated as heat exchangers using modern methods have volume-dependent channel formations. That means when being operated with refrigerants the pressure drop is lower than in pipe systems. Likewise, a larger heat exchanging surface can be achieved with the same dimensions. With their larger surfaces ice banks with plate vaporization also ensure significantly higher deposition efficiencies or cold supply.

| Type | Storage power Kcal | KWh | Ice accretion mm | ATA $m^2$ | Ice amount kg | Plate dimensions | Plates | Dimensions L | W | H |
|---|---|---|---|---|---|---|---|---|---|---|
| APM50 | 43000 | 50 | 45 mm | 13,5 | 546,75 | 1500 x 1500 | 3 | 2160 | 660 | 1880 |
| APM100 | 86000 | 100 | 45 mm | 27,0 | 1093,50 | 1500 x 1500 | 6 | 2160 | 1060 | 1880 |
| APM150 | 129000 | 150 | 45 mm | 40,5 | 1640,25 | 1500 x 1500 | 9 | 2160 | 1460 | 1880 |
| APM200 | 172000 | 200 | 45 mm | 54,0 | 2187,00 | 1500 x 1500 | 12 | 2160 | 1860 | 1880 |
| APM250 | 215000 | 250 | 45 mm | 67,5 | 2733,75 | 1500 x 1500 | 15 | 2160 | 2360 | 1880 |
| APM350 | 301000 | 350 | 45 mm | 93,0 | 3766,50 | 1500 x 1500 | 20 | 2980 | 2160 | 1880 |
| APM450 | 287000 | 450 | 45 mm | 120,0 | 4860,00 | 1500 x 1500 | 26 | 3820 | 2160 | 1880 |
| APM550 | 473000 | 550 | 45 mm | 146,0 | 5913,00 | 1500 x 1500 | 32 | 4660 | 2160 | 1880 |
| APM600 | 516000 | 600 | 45 mm | 160,0 | 6480,00 | 1500 x 1500 | 36 | 5180 | 2160 | 1880 |

# Sample applications

## Heat exchanger for a broad field of application

Trickle coolers can be employed in many applications, amongst others for the production of crushed ice in the food industry.

### Examples of installation

Heat exchangers can be used in varied installations. They can be employed for cold as well as heat generation. And they are not restricted to a few industries but can be found in almost every industry.

Whether in the food industry, process technology or mechanical engineering, heat exchangers are used in many branches.

# Sample applications

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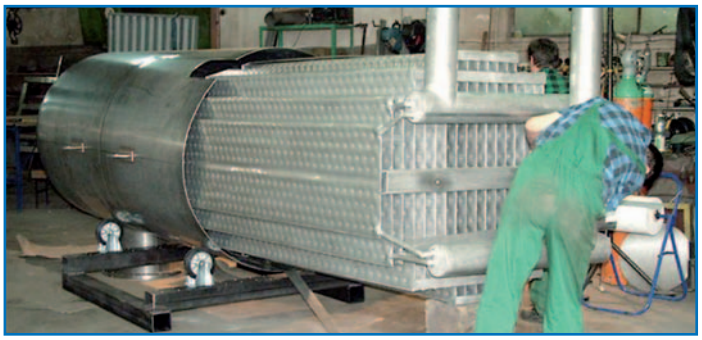
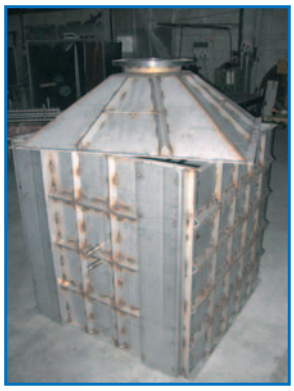


## Stainless steel heat exchangers in their element

Heat exchangers play an important part in the heat recovery sector and the field of application is unexhausted for years to come.

Escalating energy cost and increasing ecological awareness will keep this sector growing.



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# The G.S. ANDERSON Product Range

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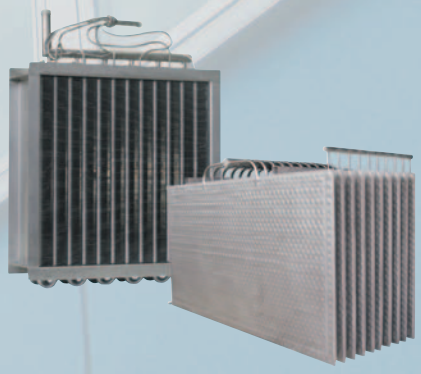
ANTHERMO® Heat Exchanger



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