

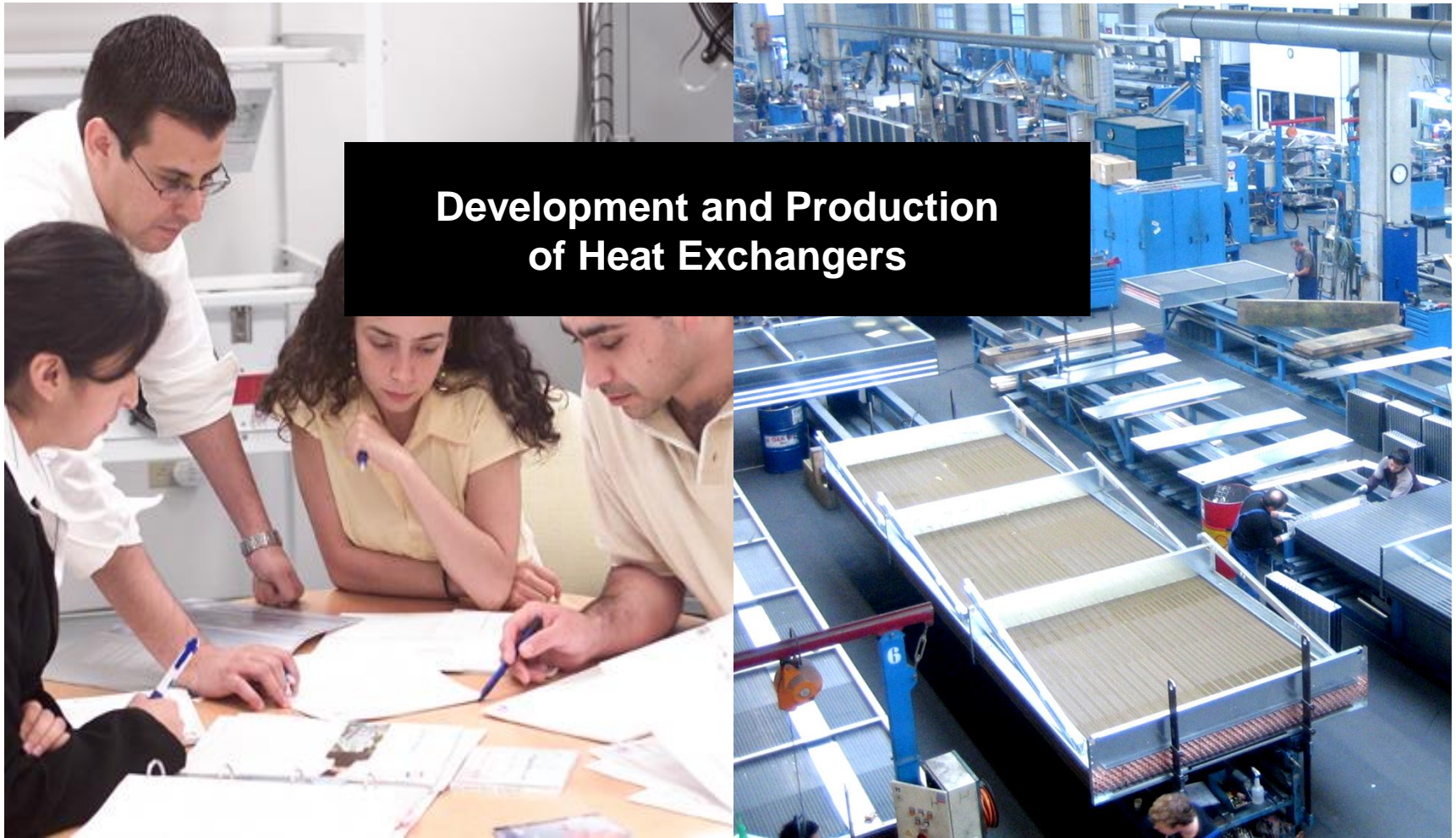
# *Güntner Introduction*



10/17/2014

- 
1. Company Overview
  2. Product Portfolio
  3. Features





# Lines of Business



## Industrial Refrigeration



## Commercial Refrigeration



## Air Conditioning



## Power and Process



# Worldwide Presence



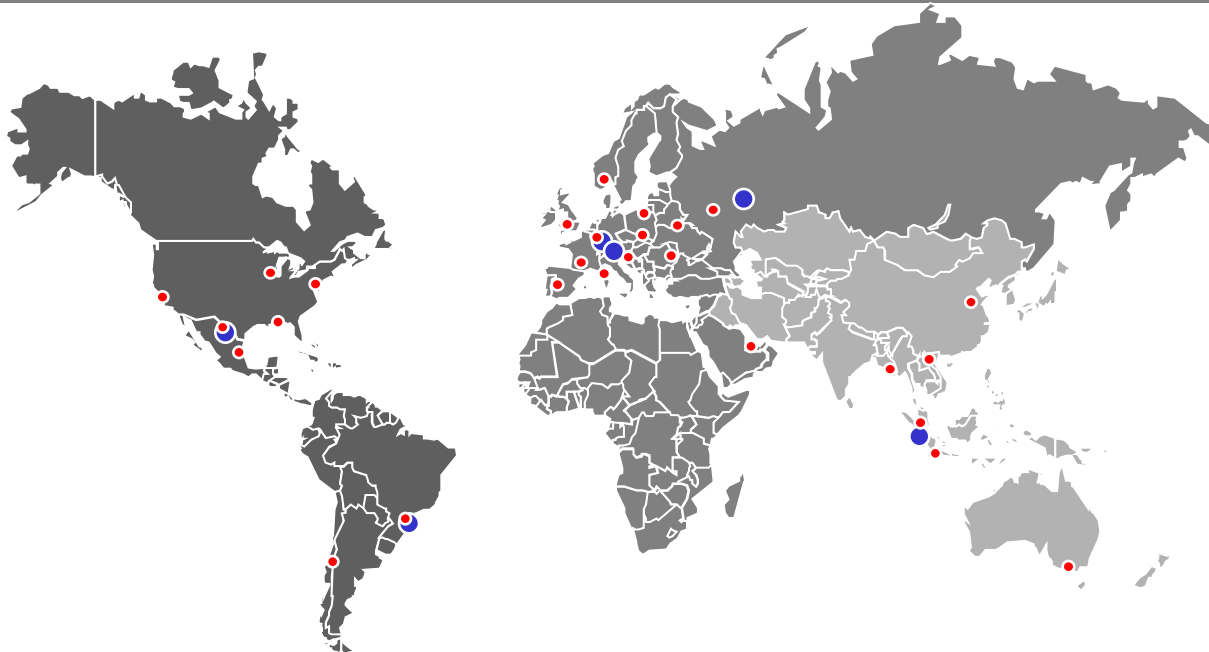
## Americas



## Europe, Middle East, Africa



## Asia



# Company Data Worldwide



- 3,000 Employees
- 53 Subsidiaries and Sales Offices
- 915,000 ft<sup>2</sup> Production Area
- 7 Production Plants
- € 255M turnover



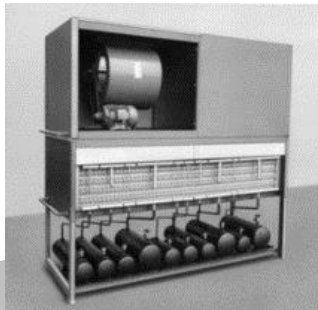
# Milestones

1931  
Foundation of  
Company



Munich

1972  
Centrifugal  
Fan Condensers



Germany

1978  
High Efficiency  
Axial Fan  
Evaporators



Europe

1982  
High Efficiency  
Axial Fan  
Condensers



Asia

America

2014 ECOSS



Worldwide

# Our Growth – Your Benefit

Quality  
Products



Extensive  
Customer  
Consulting



Innovative  
Research  
+ Special  
Know-how



Wide Range  
of Different  
Products



Delivery  
Reliability



Service  
Culture



System  
and Control  
Technology





# Guaranteed Performance Data



All new products, ranges and coils are tested at different conditions in the Güntner test laboratory.



# Product Portfolio

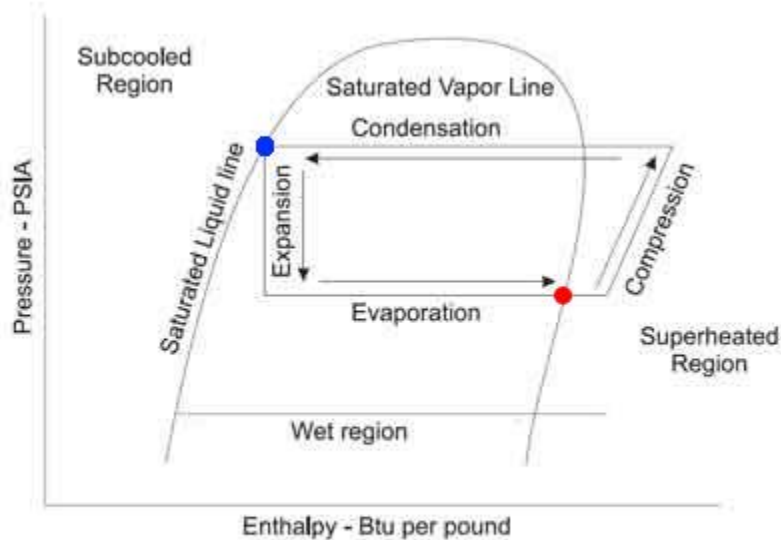
## Diverse, Modular Heat Exchange Solutions



- Evaporators
- Air Coolers
- Condensers
- Dry Coolers
- Hybrids
- ECOSS
- Controls
- Bare Coils

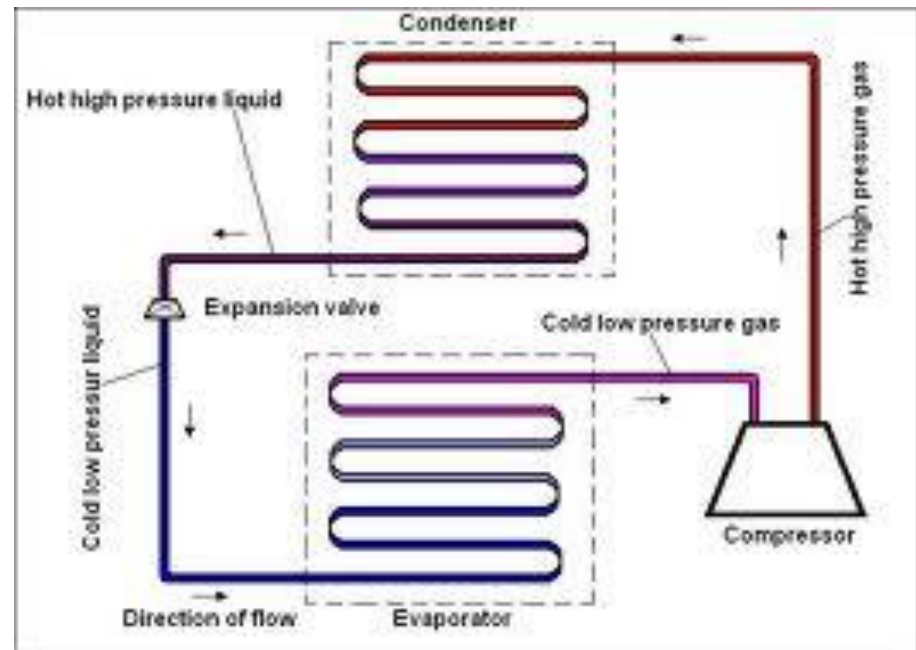


# Mechanical Refrigeration Requires Heat Rejection



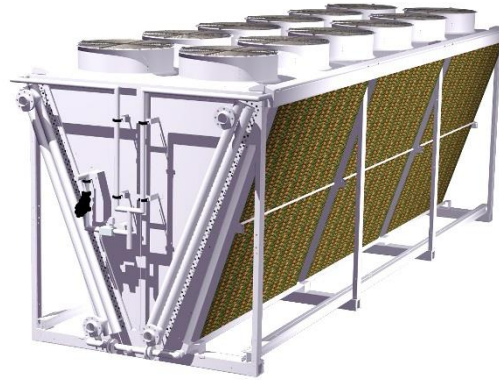
● Bubble Point      ● Dew Point

Type of equipment varies upon application, energy use and water use requirements.



# *Güntner Company Position*

- ECROSS completes the spectrum of dry-to-wet solutions
- Güntner solutions optimize use of energy & water:  
Dry -- Adiabatic – Evaporative



Energy Use

Water Use

# Coolers

## Diverse, Modular Heat Exchange Solutions



Product	Capacity	Mode of Operation
GFH	2 – 390 Tons	Horizontal, Dry
GFV	2 – 390 Tons	Vertical, Dry
GFW	10 – 200 Tons	“V” Coils, Dry
GFD	70 – 350 Tons	“V” Coils, Dry
ACS	90 – 600 Tons	“V” Coils, Dry, Adiabatic
ECOSS	150-1500 Tons	Evaporative Cooling

# Dry Coolers

## Diverse, Modular Heat Exchange Solutions



### GFH Horizontal Dry Cooler

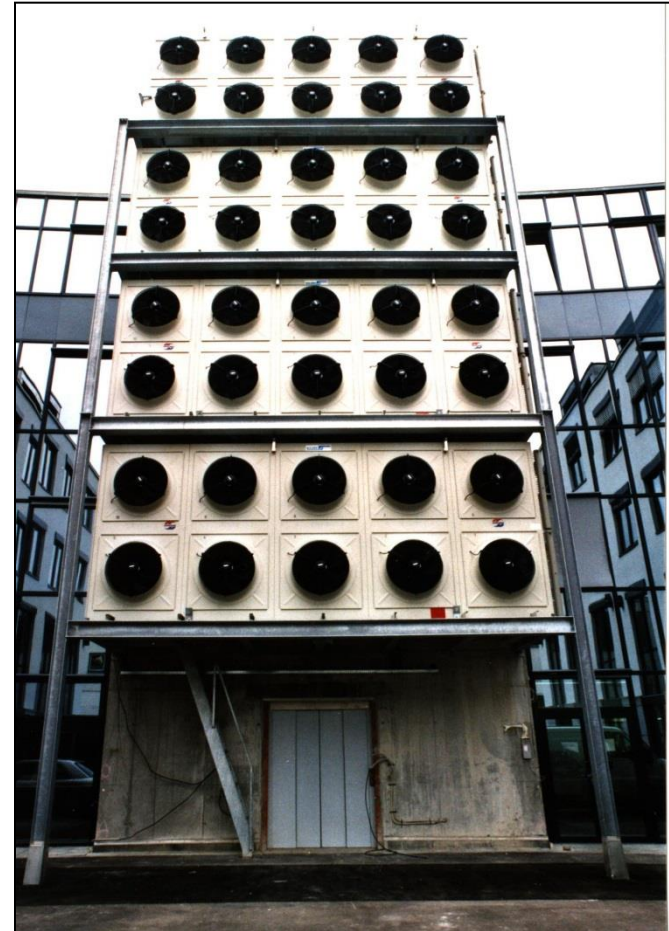


# *Dry Coolers*

## *Diverse, Modular Heat Exchange Solutions*



### GFV Vertical Dry Cooler



# Dry Coolers

## Diverse, Modular Heat Exchange Solutions



### GFD "V" Dry Cooler



### GFW "V" Dry Cooler





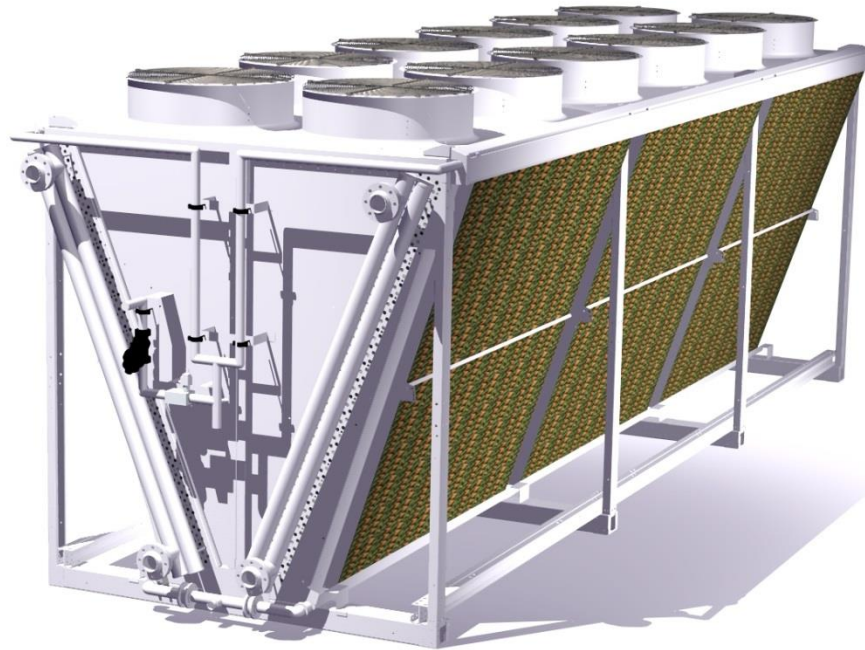
# *Dry and Hybrid Coolers*

## *Diverse, Modular Heat Exchange Solutions*



## ACS

Dry and Adiabatic  
Cooling Modes



# *Evaporative Coolers*

## *Diverse, Modular Heat Exchange Solutions*



**Güntner raises the standard in evaporative cooling**

**Stainless is better**

**Güntner makes it affordable**



*The*  
**A New Choice in Evaporative Cooling**

- 
- Industrial Robust Construction
  - Coil Construction
  - Fan Motor Assembly
  - Options / Accessories

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## Dry and Hybrid Coolers

- Painted galvanized steel casings
- Sparse fin density (12.7 fpi or less)
- Aluminum fins with full drawn collars
  - No split fin

## ECOSS

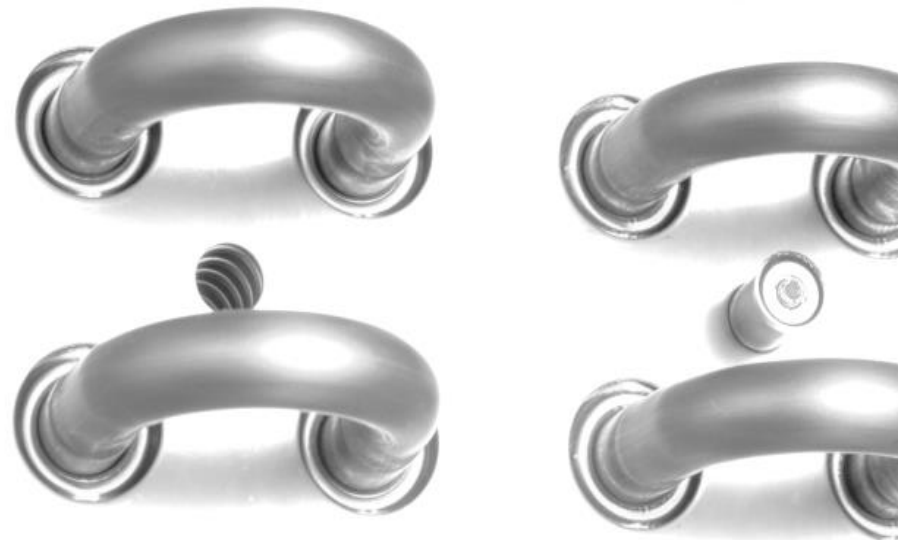
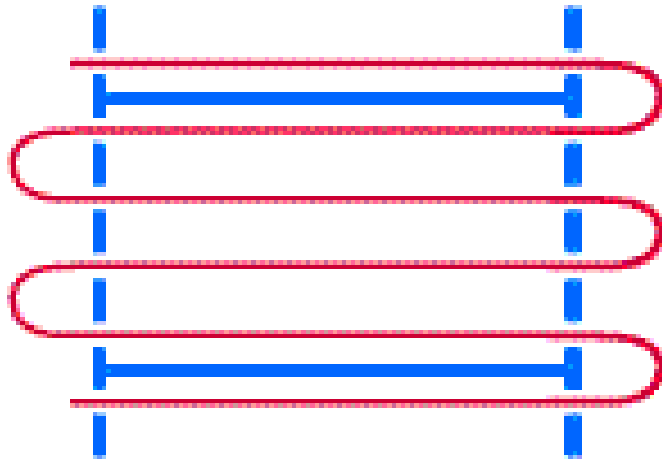
- Stainless Steel Construction

# Reliability

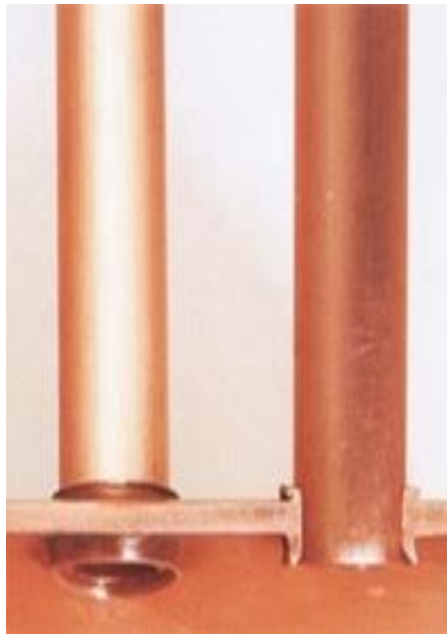
## “Floating coil” principle



- Tubes can move freely without any direct contact with the tube sheets.
- The danger of leaks caused by thermal expansion and contraction is reduced significantly.



- Flow formed header connections
- Ensures leak proof soldered junction
- Refrigerant distribution is even within the coil



# Reliability Quality Standards



All Güntner Manufacturing Facilities Guarantee Quality.

Every coil which is produced by Güntner has to pass a pressure test.

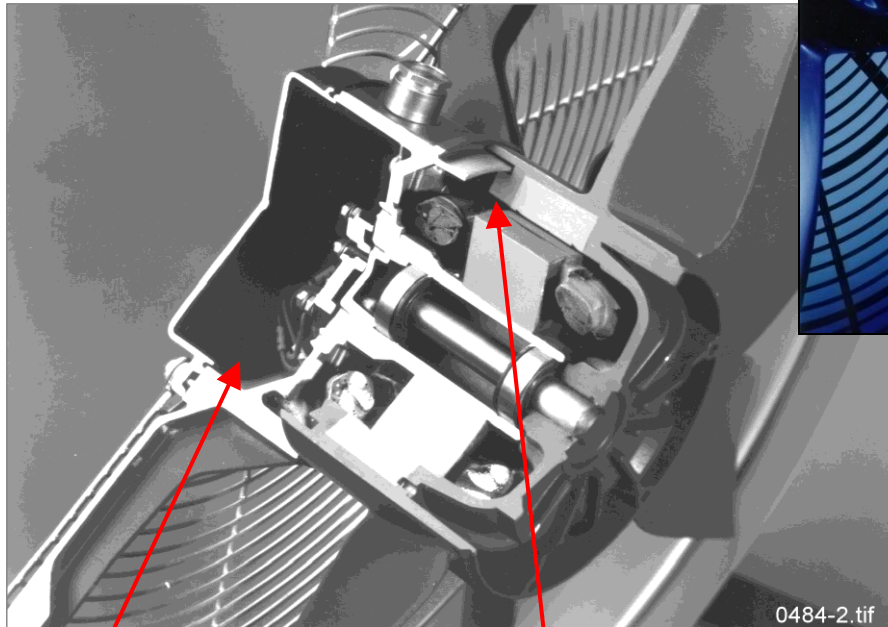
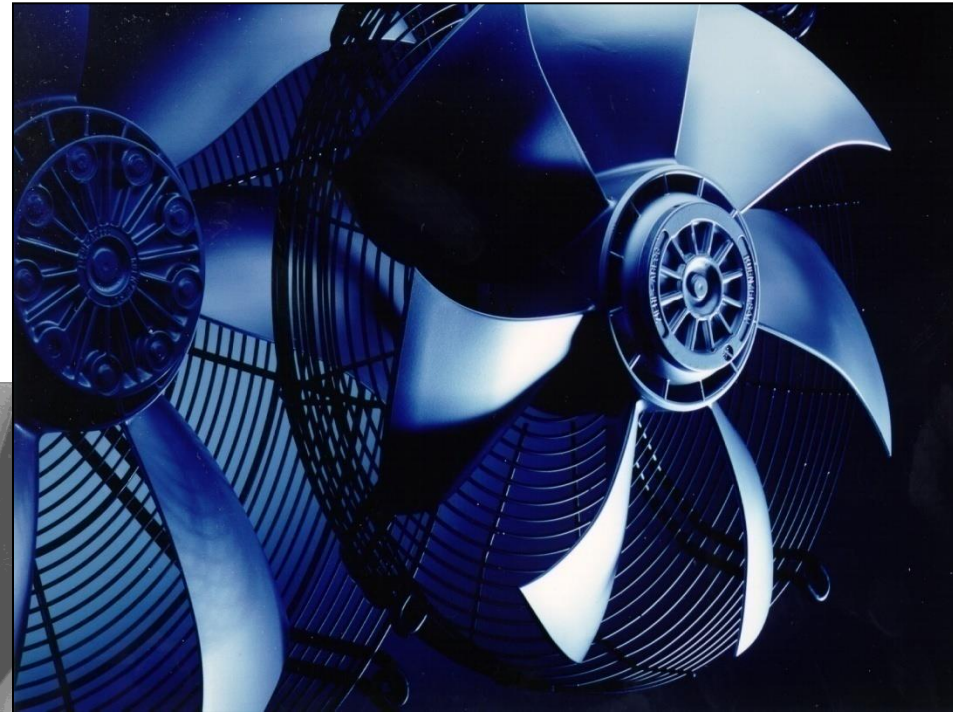


# Reliability

## External Rotor Motors



- External rotor motor
- Sickle shaped blades
- Maximum efficiency
- Low noise



*Stator*

*Rotor*

- *Maintenance Free*

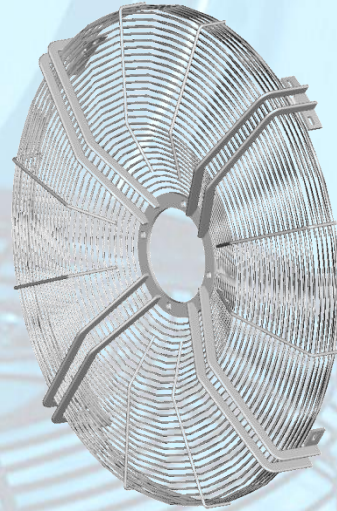


# Reliability

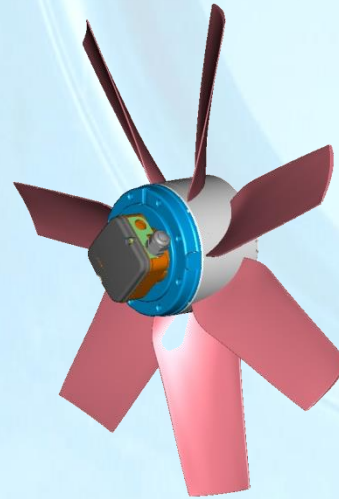
## Complete fan motor assembly



Guardgrill &  
Suspension



*Fan*

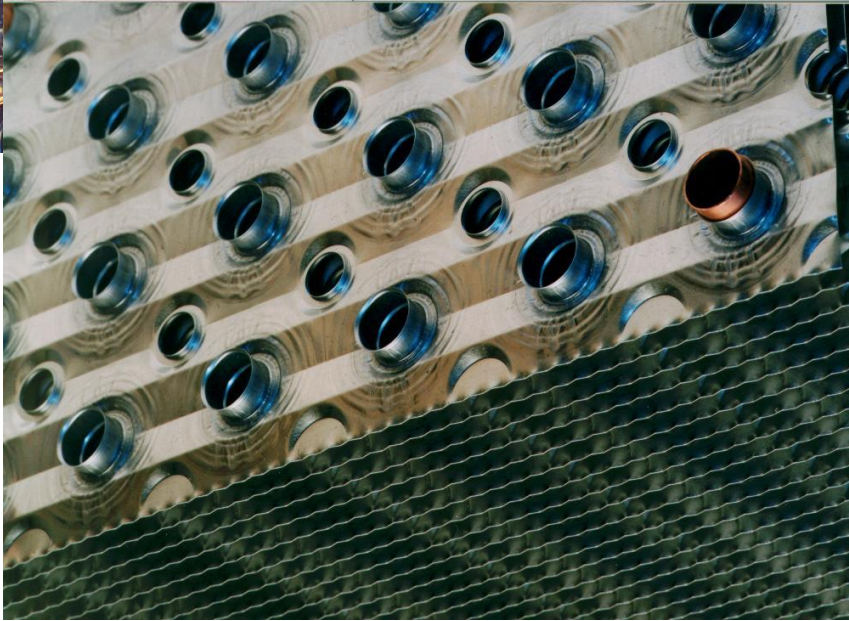
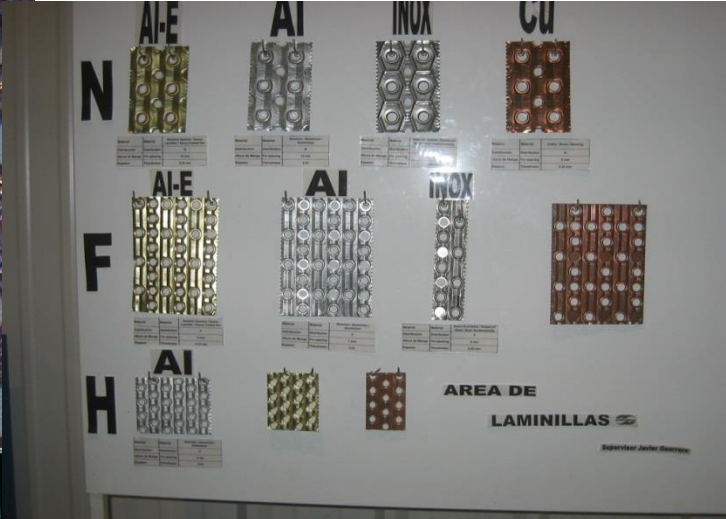
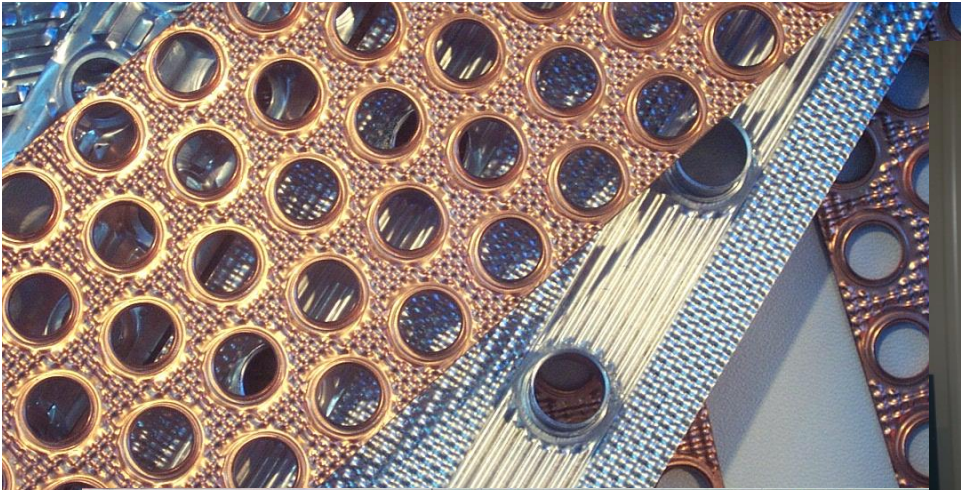


Nozzle

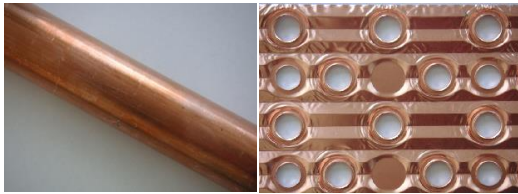


Complete Integrated Solution from One Source

# Wide Spectrum of Fin and Tube Combinatons



# Material Combinations



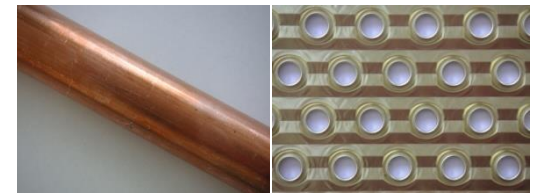
CU

CU



CU

AL



CU

AL Epoxy

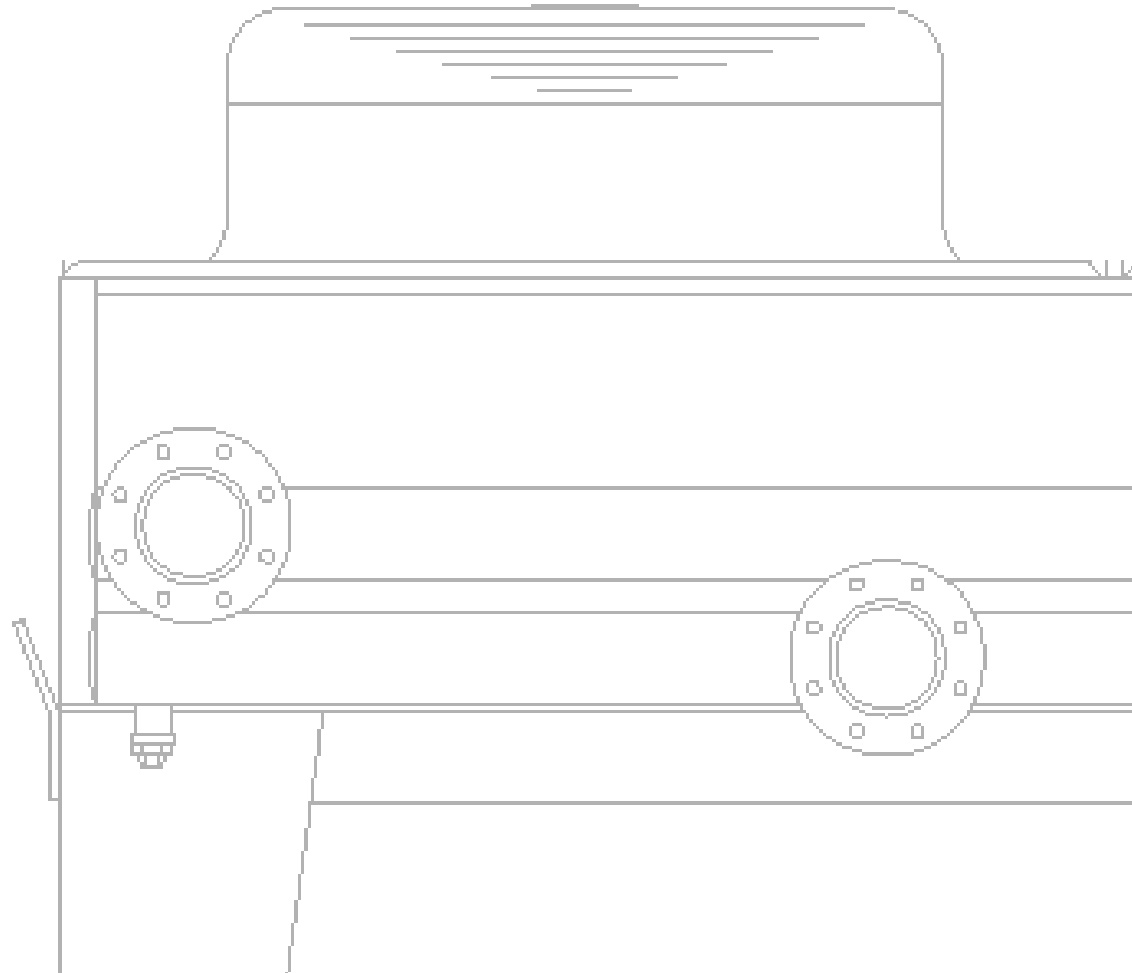
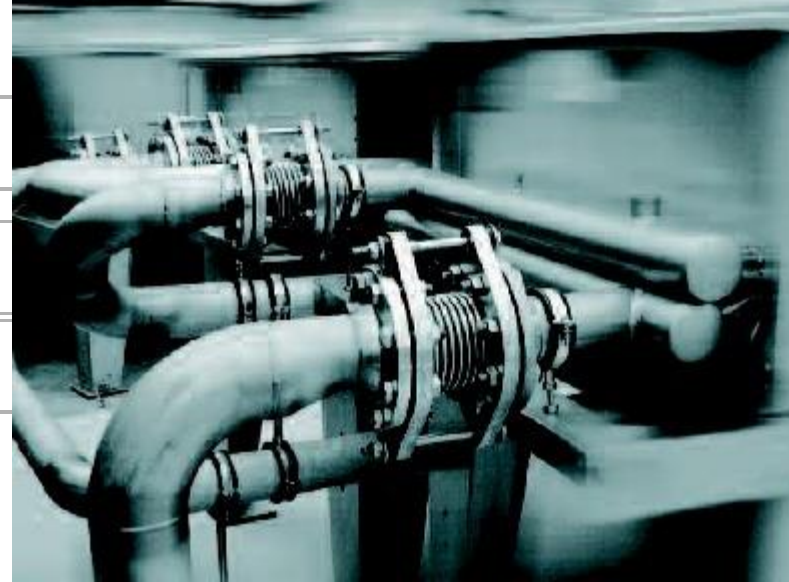
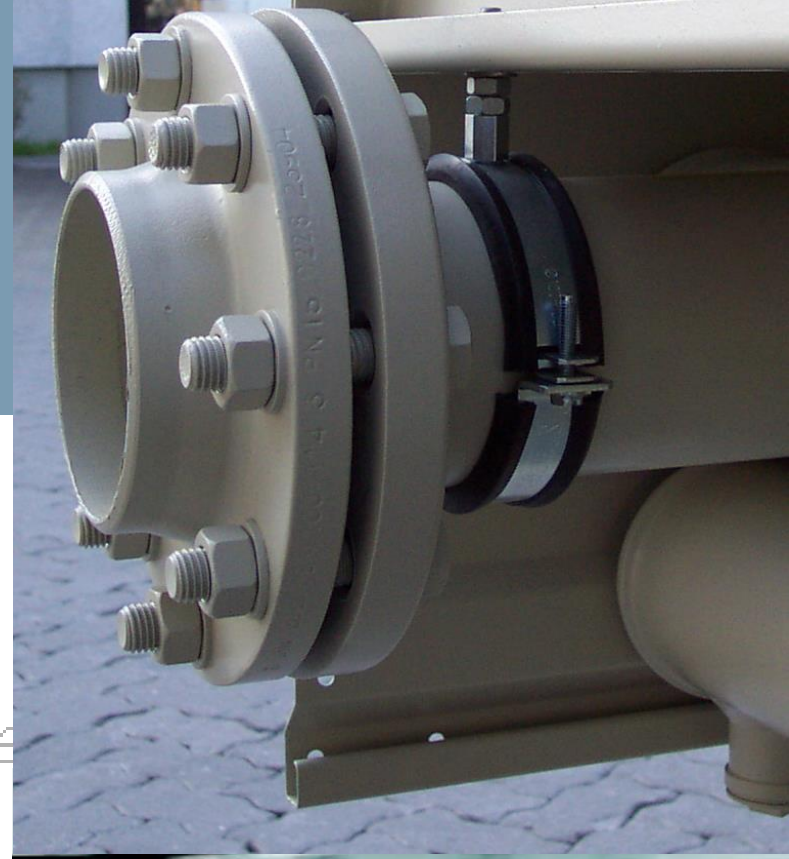


SST Tubes / SST, AL Epoxy, AL Fins

- quality raw material
- ISO 9001 (2000)



# Flanges



# Vibration Dampers

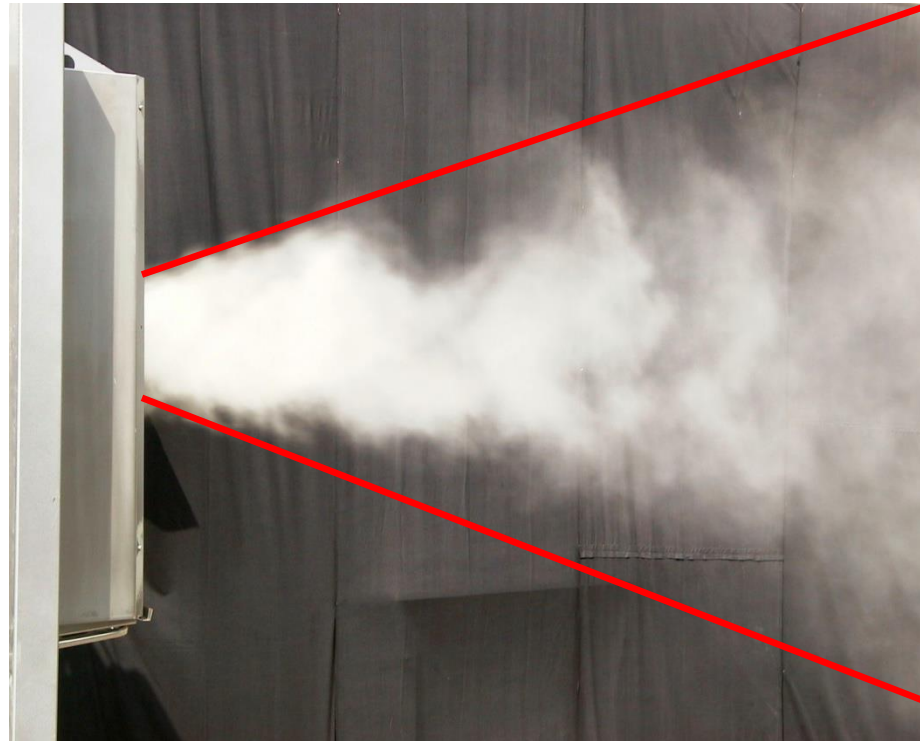


# Repair Switches

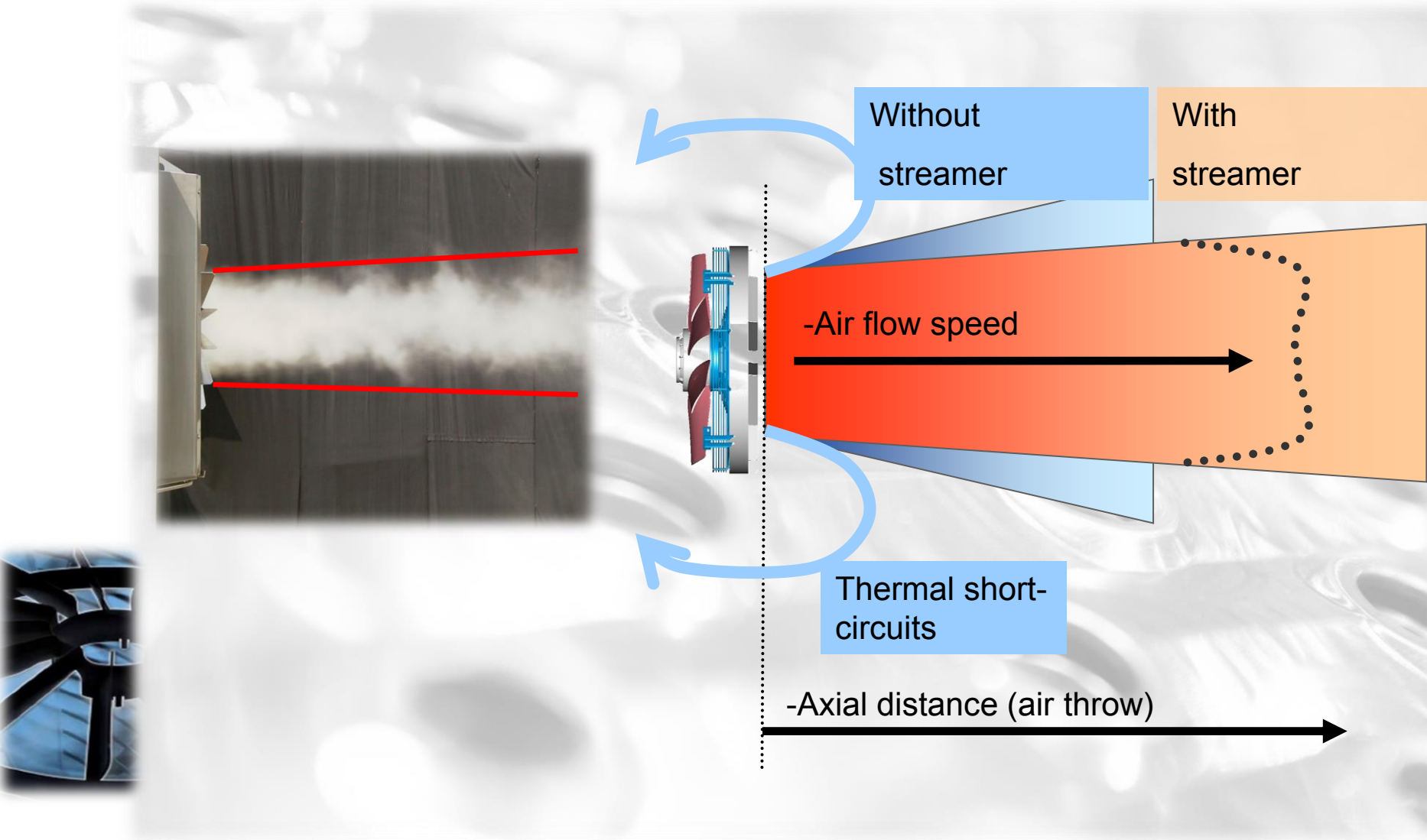


# *Güntner Streamer*

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# Product Advantage Güntner Streamer





## Best Selection Tool for Heat Exchangers:

- Freeware
- Exact thermodynamic calculation
- Fast calculation / saves time
- Reliable project design
- Cut sheet with dimensions



# Available for all Types of Refrigerants



All CFCs



Water glycol mixture



Ammonia



Carbon dioxide



Calculation mode: State fixed capacity (adjust sui

Capacity: 34120 Btu/h  Fr

Sensible heat only

Refrigerant

Medium: R134a

Evaporation t

Superhe

Cond. t

Subco

- CO2 (R744)
- NH3 (R717)
- R124
- R125
- R134a**
- R22
- R227
- R23
- R404A
- R407C
- R410a
- R502
- R507A
- R723