

# Condensers / Dry coolers



## Compact



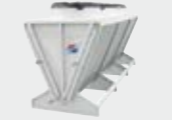

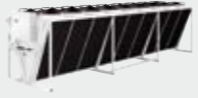




The COMPACT product line offers readily available standard units for standard applications at a fair price-performance ratio.

## Vario

The VARIO product line comprises series which can be customised quickly and accurately for individual projects by means of the GÜntner Product Calculator. Customers are able to choose specific equipment to meet their individual requirements from a variety of different material combinations, variants and accessories.

## Special

The SPECIAL product line consists of series configured for special applications, e. g. for the cooling of agricultural products or storage centers. Customised adaptations and customer series are available for special applications.

Name	Product	Capacity	HFC	NH <sub>3</sub>	CO <sub>2</sub>	Heat Carrier
Flat		15 – 350 kW	GVHX	GVHX	GVHX	
Sky		15 – 350 kW	GVVX	GVVX	GVVX	
Twin		70 – 850 kW	GVW	GVW	GVW	GFW
Flat		8 – 1320 kW	GVH	AGVH	GVH	GFH
Sky		8 – 1320 kW	GVV	AGVV	GVV	GFV
Twin		30 – 2000 kW	GVD	GVD	GVD	GFD
Supermarket-V		15 – 350 kW	GVX H	GVX H		
Supermarket-H		15 – 350 kW	GVX V	GVX H		
Indoor-H		20 – 700 kW	RVH		RVH	RVH
Indoor-V		20 – 700 kW	RVV		RVV	RVV

### Controls Control engineering



Competent. Reliable. Personal.

xxx

Product available in GÜntner Product Calculator (GPC)

xxx

Product available on request



## A Strong Partner

Güntner is a leading specialist for heat exchanger systems in refrigeration and air-conditioning equipment on the international market.

Founded over 80 years ago in Germany, the company developed its market and sector-oriented solutions in close personal cooperation with its customers, right from the start. Today the Güntner Group, a modern, globally-active company, combines its unique specialist expertise with top-class technical innovations to serve you and your partners in the industry, trade and service sectors.



Robert Gerle, Managing Director

# Worldwide Network

An ultra-modern communication network enables the Group to utilise synergy effects in the fields of manufacturing, development and design, as well as practical competency gained from international large-scale projects, for the benefit of its customers and partners. Highly qualified, dynamic Guntner employees, consistent training programmes and a team spirit which spans the globe, all contribute toward providing you with the best results on all levels of cooperation.

The Guntner Group combines the best development, manufacturing and consultancy standards with an excellent local presence and outstanding Time-to-Market. The company maintains its worldwide presence with its own distribution companies and sales agencies.

An additional convenience: Your contacts at Guntner offer consultancy services for your local and international projects in your national language. Trade fairs, training and information events ensure that you are kept up-to-date with the latest developments. The result: Excellent planning reliability, punctual project execution and optimal performance due to well-engineered, quality products.

Guntner maintains long-term, successful relationships with its partners. The focus is on lively, solution-oriented dialogue, outstanding development competency and first-rate product availability.



# The Ideal Product for Each Customer-Specific Application

Based on extensive experience in the field, the Group has established an especially diverse range of products, providing you with a variety of options for all application areas.

Industrial refrigeration



Commercial refrigeration



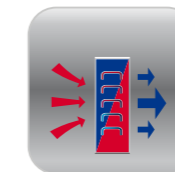
Air-conditioning



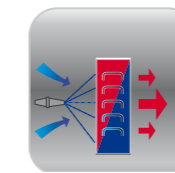
Energy and process cooling



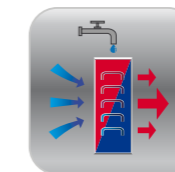
# The technologies of the Guntner Group at a glance



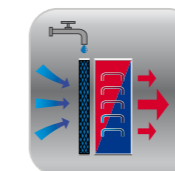
Dry coolers  
in different designs



Sprayed dry coolers with Guntner HydroSpray®  
Intelligent control and section-wise spraying



Hybrid dry cooler HTK  
Hybrid condenser HTV



Advanced Dry Cooler ADC  
Adiabatic system with humidification pads  
for pre-cooling

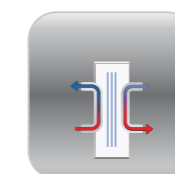


Plate heat exchangers, gasketed or module-welded  
for operating pressures up to 63 bar

# New Products

## HydroSpray® – Water as turbo booster for the performance



- Save on energy costs
- Reduce medium/condensing temperature
- Increase COP value
- Calculation with set-up point climate data

### Basic:

Spraying is switched on above a specified switching point. All fan chambers are sprayed at the same time (up to 300 h/a).

### Professional:

The unit is sprayed in sections, as required (up to 1000 h/a). Water consumption is reduced by 50 % compared with conventional systems.

## The new GFD dry cooler – optimised for container transport!



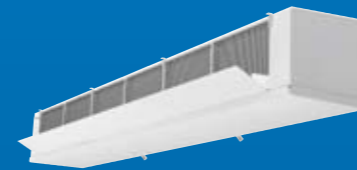
- Optimised dimensions
- High capacity
- Small footprint
- Simple loading and unloading
- Simple crane transport without cross beam
- Torsion-resistant construction, min. number of base feet

## GACC – the universal solution for commercial refrigeration



- Highly efficient air cooler with staggered tube pattern
- 22 unit types for capacities of 1.5 – 80 kW
- Compact casing
- Reduced transport costs due to optimised packaging dimensions
- Casing made of aluminium, powder-coated
- Fold-out drip tray and drip plate
- Bend cover with hinges

## The Güntner Agri cooler – the air cooler for agricultural products



- Low moisture loss due to optimised heat exchanger
- High air volume flow
- Forced draught fans with air guiding sheet
- Compact casing for maximum stacking height
- Up to 6 fans
- Easy to clean with hinged tray and hinged drip plate

## Variable air cooler for industrial refrigeration



- Proven Güntner quality
- Large capacity range (10 – 120 kW)
- All refrigerants (HFC, NH<sub>3</sub>, CO<sub>2</sub>, fluids)
- All defrosting types
- Versatile material combinations
- Various fan concepts
- Various casing types

## microox® – now also for flammable refrigerants



The GVHX's low refrigerant volume makes it an ideal condenser for applications with flammable refrigerants.

Güntner microox® is approved for hydrocarbons such as propane and propene.

- TÜV (German certification authority) approval for fluid group 1 refrigerants

microox® technology for condensers

- Up to 30 % lighter
- Up to 75 % less refrigerant charge volume
- Environment-friendly and recyclable



## Sustainable Innovation

The Güntner Group continuously invests the practical and strategic expertise gained over decades into future-oriented new developments.

This goal demands a sustained effort in terms of innovation amid heightened awareness of ecological challenges in the cooling and air-conditioning sectors worldwide. The Güntner Group responds to these demands by consistent further development of their product and service portfolios on the basis of state-of-the-art technologies.

Customers can rest assured that the Güntner systems they are using successfully today will remain available in future – enhanced to meet the most up-to-date technical standards, while continuously being adapted to market needs: from efficient refrigerants, energy saving and noise reduction, down to low operating costs. Güntner's innovations benefit from the Group's dynamic, highly qualified network of top-performance partners from the commerce, research and science sectors.

## Ideally Tailored Components for Each Application Ensure Efficient Operation.

On a technical level, this combination flexibility facilitates solutions which achieve high efficiency: Güntner's electronic control components offer reliability and save time.

A comprehensive range of accessories allow for optimal adjustment to local operating conditions. Specialised Güntner solutions are tailored to individual markets on all continents on the basis of systematic needs analyses and consistent product management. The Güntner Group implements quality management across the globe, thereby fulfilling the high quality

and performance requirements specified in the best and most recent relevant standards, such as: DIN EN ISO 9001; DIN EN ISO 14001; EUROVENT CERTIFY ALL; ASME B31.5; ARI; ASHRAE and UL.

Regular audits are conducted in the Group's seven production sites worldwide to ensure optimal material quality and manufacturing processes.





# The Most Important Information at [www.guentner.eu](http://www.guentner.eu)



GPC download  
Free configuration software



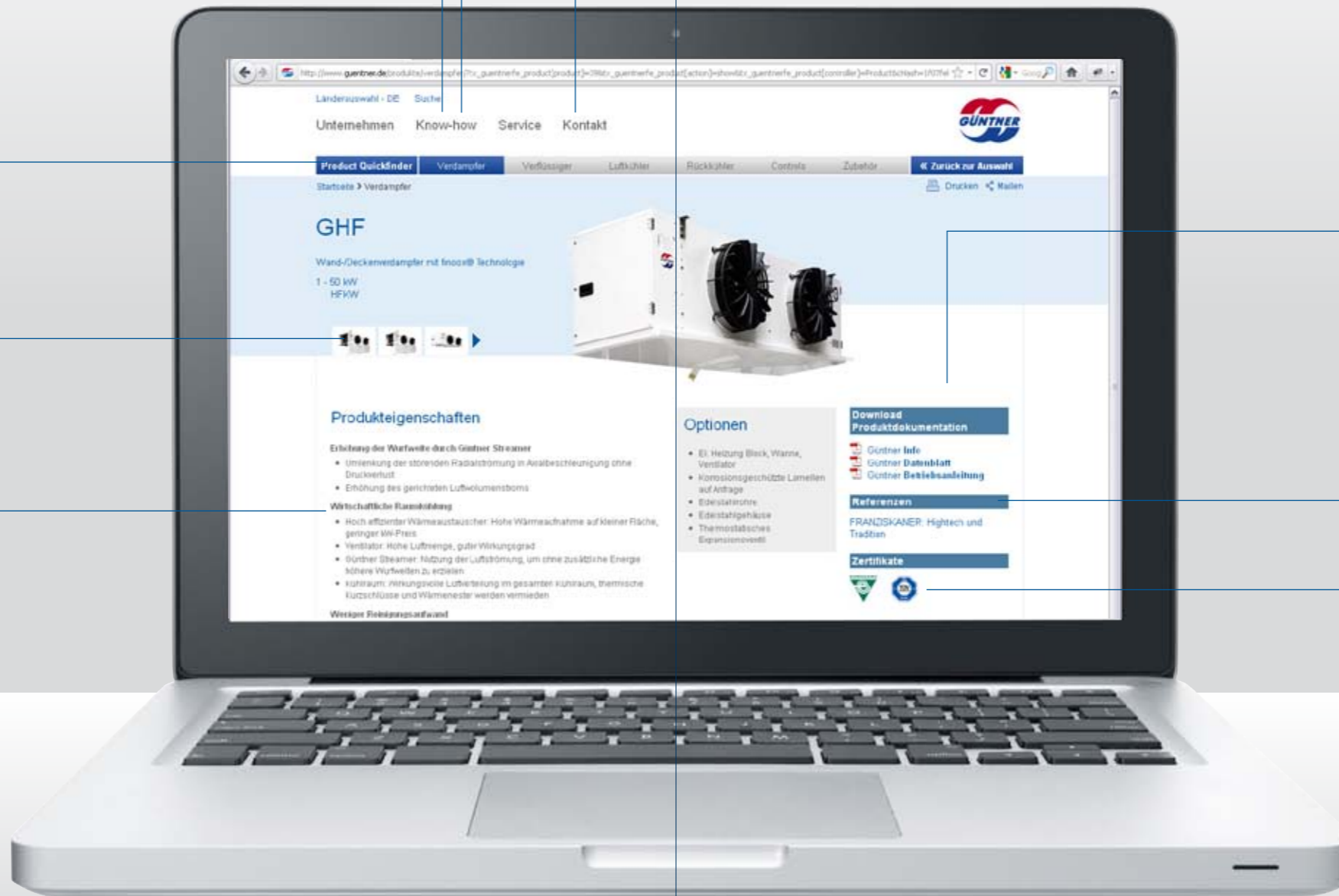
Specialist information/  
Application tips

Your worldwide contact partners

Swift product selection  
Quick access to the product you want

Product photos

Product properties  
All product benefits at a glance



Information brochures  
Data sheets  
Operating instructions



Available references  
on the respective product

Certificates  
for the respective product

## Perform Thermodynamic Configurations and Generate Quotes Quickly and Safely

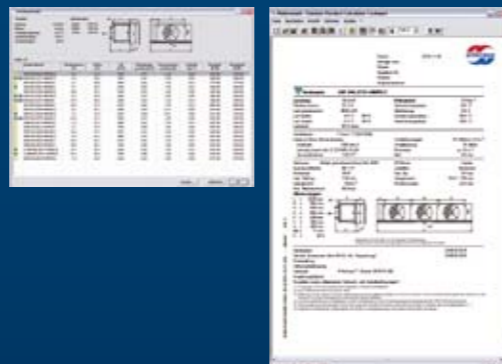
The Güntner Product Calculator GPC configuration software allows you to quickly and easily configure the right unit for your individual application. Simply enter the required parameters in the convenient entry screen on the GPC.

An exact thermodynamic configuration is performed and a selection of suitable units is provided, while taking into account the operating conditions and accessories you have selected. After selecting the optimum unit, the GPC generates a data sheet with technical data, dimensions, weights and prices for you.

Use our GPC for swift and precise selection of heat exchangers, control units and switch cabinets!

### Your benefits at a glance:

- Precise thermodynamic calculation, even with uncommon usage areas
- Quick and reliable design work
- Individual setting of different units possible for each entry field
- 15 languages
- Current prices and delivery times can be called up
- Shows units in stock with short delivery times
- Night limit, fans in accordance with intended use and energy efficiency



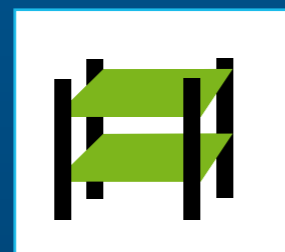
Your free  
Güntner Product Calculator (GPC) to download:

[www.guentner.eu](http://www.guentner.eu)



## Short Delivery Times for Units Kept in Stock

When performing a search, the GPC configuration software indicates which items are in stock and can be delivered in just 4 days. The storage symbol appears on these units.



### Readily Available Units kept in Stock

Evaporators: GDF, DHF, GHF, GACC

Condensers: GVM, GVH, GVV, GVVX, GVHX

Rapid availability and reliable delivery are the be-all and end-all of customer satisfaction.

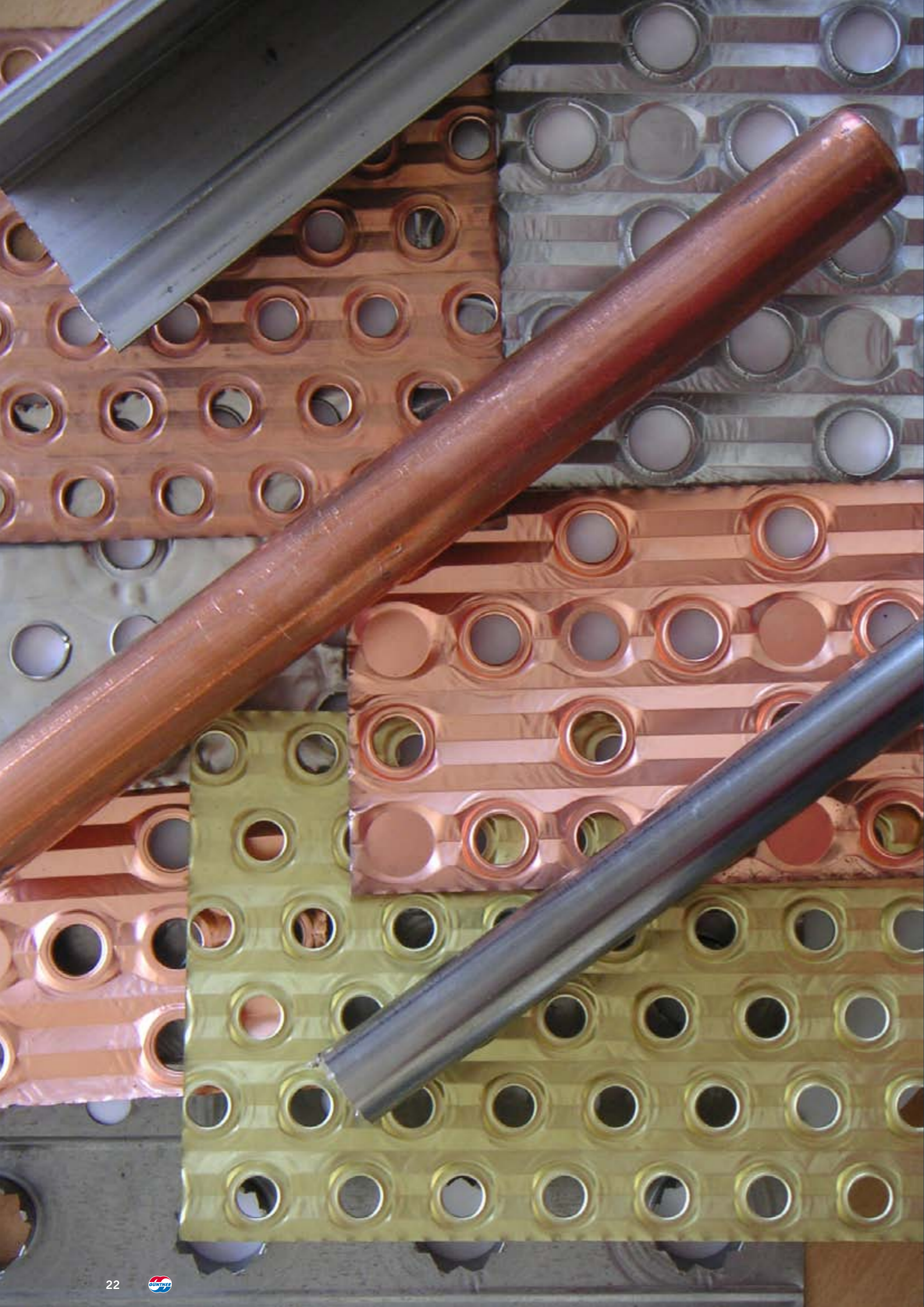
Our in-house logistics department enables us to amply fulfil our customers' expectations in this respect.

Teil	Abmessungen				
180.0 VV	Länge: 2410 mm				
RHOA	Breite: 1145 mm				
45.0 °C	Höhe: 960 mm				
32.0 °C					
40 %					

Träger: 20	Gerätebezeichnung	condensatorstufen	Fläche [m²]	LWR [m/s]	Schallleistungspegel [dB(A)]
●	S-GH 365.1B2ND.E	46.3	166.2	2890	61
●	GH 050.1G2AD.E	45.9	225.9	2610	51
●	S-GH 365.1B2PAL.E	45.5	166.2	3080	59
●	GH 045.1G2AD.E	45.1	196.4	2900	61
●	GH 045.1B2AD.E	44.8	251.2	2740	51
●	GH 045.1B2AW.E	44.8	251.2	2740	61
●	GH 045.1G2AD.E	44.2	196.4	3280	59
●	GH 045.1B2AD.E	45.4	251.2	2610	49
●	GH 045.1A2ADND.E	44.9	207.2	2970	54
●	GH 045.1A2ADND.E	44.8	207.2	2970	54
●	GH 045.1A2ADND.E	44.6	207.2	3090	53
●	GH 045.1G2AD.E	46.4	246.5	2740	45
●	GH 045.1G2AW.E	43.8	246.5	2830	51
●	GH 045.1G2AD.E	43.8	246.5	2830	51
●	GH 045.1A2ADND.E	45.2	216.4	2980	57
●	GH 045.1B2ADND.E	43.5	256.1	3170	54
●	GH 045.1B2ADND.E	45.2	256.1	2420	49
●	GH 045.1B2ADND.E	43.5	256.1	3170	54
●	GH 045.1A2ADND.E	43.2	256.1	3020	54
●	GH 045.1A2ADND.E	44.9	255.9	3040	59





## Material Diversity for Each and Every Application

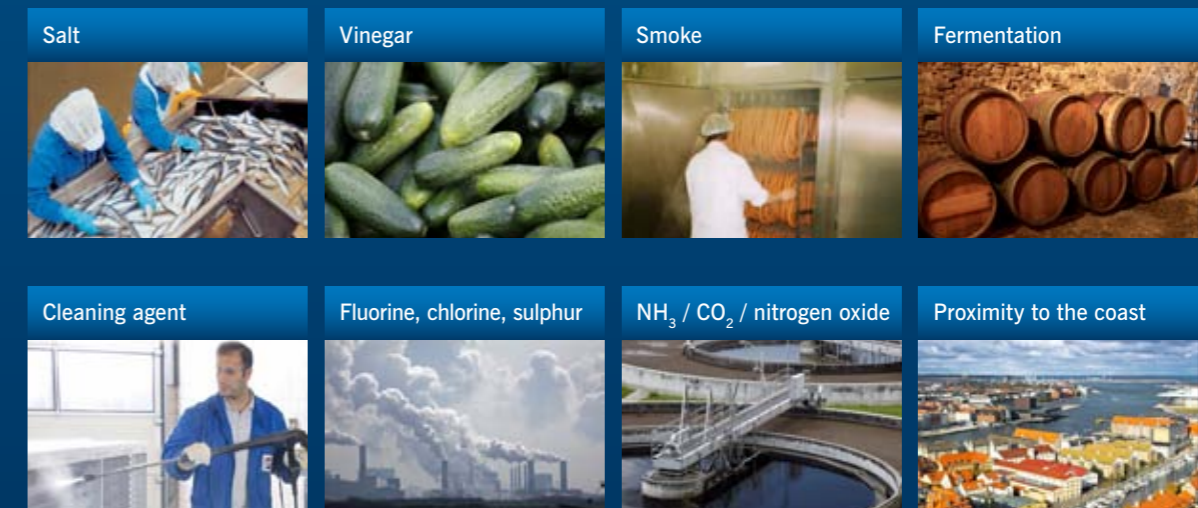
The resistance of a material in a heat exchanger is put to the test both internally and externally. From the inside, the chemical properties, pressure and temperature of the refrigerant exert an influence on the tubes or profiles, while the more or less aggressive ambient air (ammonia, sulphuric acid, salt, vinegar, etc.) exerts an influence from the outside.

The versatile material combination options are based on experience and comprehensive tests and analyses. Güntner heat exchangers can be configured for customised applications by selecting the appropriate materials.

Just ask us – we'll be happy to advise you!

Different applications with aggressive atmosphere require targeted material selection. We have compiled a brochure with recommendations for material selection (sorted according to applications).

[www.guentner.eu/know-how/application-tips](http://www.guentner.eu/know-how/application-tips)



Flat Compact

# GVHX

Condenser  
with microox® technology  
for horizontal set-up

15 – 350 kW



### Advantages

- Condenser with microchannel heat exchanger
- High power density
- Light weight
- Low refrigerant charge volume
- TÜV (German certification authority) approval for hydrocarbons (propane)

### Energy-Saving Operation

- Efficient heat exchanger at low  $\Delta t$
- Reduced operating costs when EC fans with GMM are selected

### Installation and Service Friendly

- Fans wired at the factory
- Light weight
- Cleaning possible at 50 bar
- Compact construction

### Highly Efficient Fans

- Optimal unit in terms of air and sound technology
- Available in AC and EC technology
- Fan diameter 450 / 500 / 710 / 800 mm
- Economical operation at controlled speed with Güntner Motor Management (GMM)

### Heat Exchanger

- Compact heat exchanger made of aluminium profiles and high-performance fins
- Soldered to form a stable unit
- Low refrigerant charge volume; high power density

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

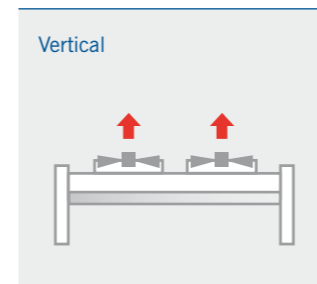
### Fans

- Available in AC and EC technology
- Low-noise fans
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter of 500 mm)

### Options

- Fans wired at the factory

### Airflow direction



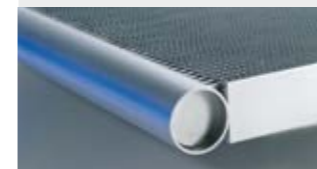
### Fans

1 – 6  
450 / 500 / 710 / 800 mm



### Heat Exchanger

microox® technology



### Product Types / Refrigerant / Capacity

Sound level	Refrigerant	Nominal Capacity	Sound Pressure Level*
N	HFC	15.8 – 355 kW	45 – 66 dB(A)
M	HFC	51.6 – 341 kW	53 – 60 dB(A)
L	HFC	11.2 – 261 kW	35 – 47 dB(A)
S	HFC	9.4 – 205 kW	30 – 38 dB(A)
E	HFC	9.0 – 135 kW	28 – 35 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

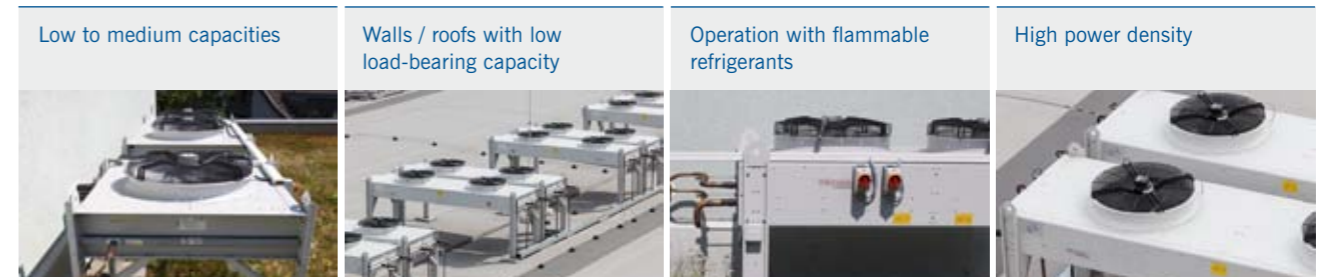
Liquid Receiver	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon®</li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> </ul>	<ul style="list-style-type: none"> <li>✓ EC fans</li> <li>✓ Max. operating pressure 41 bar</li> <li>✓ Vibration dampers</li> <li>✓ Extended legs</li> </ul>
Subcooler		
<ul style="list-style-type: none"> <li>✓ Separate heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	

### Material

The new microox® technology is based on the use of aluminium: light, stable and recyclable. The main advantages of this technology are the excellent stability, lightness of the material and the low refrigerant charge volume.

All Güntner microox® heat exchangers can be supplied for operation with fluid group 1 (e.g. R290) and fluid group 3 with TÜV certificate.

### Suitable Applications



# GVVX

Condenser  
with microox® technology  
for vertical set-up

15 – 350 kW



### Advantages

- Condenser with microchannel heat exchanger
- High power density
- Light weight
- Low refrigerant charge volume
- TÜV (German certification authority) approval for hydrocarbons (propane)

### Energy-Saving Operation

- Efficient heat exchanger at low  $\Delta t$
- Reduced operating costs when EC fans with GMM are selected

### Installation and Service Friendly

- Fans wired at the factory
- Light weight
- Cleaning possible at 50 bar
- Compact construction

### Highly Efficient Fans

- Optimal unit in terms of air and sound technology
- Available in AC and EC technology
- Fan diameter 450 / 500 / 710 / 800 mm
- Economical operation at controlled speed with Güntner Motor Management (GMM)

### Heat Exchanger

- Compact heat exchanger made of aluminium profiles and high-performance fins
- Soldered to form a stable unit
- Low refrigerant charge volume; high power density

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

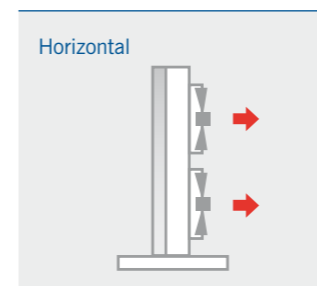
### Fans

- Available in AC and EC technology
- Low-noise fans
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter of 500 mm)

### Options

- Fans wired at the factory

### Airflow Direction



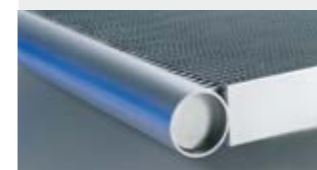
### Fans

1 – 6  
450 / 500 / 710 / 800 mm



### Heat Exchanger

microox® technology



### Product Types / Refrigerant / Capacity

Sound level	Refrigerant	Nominal Capacity	Sound Pressure Level*
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\* at 10 m distance in acc. with EN 13487

### Available Accessories

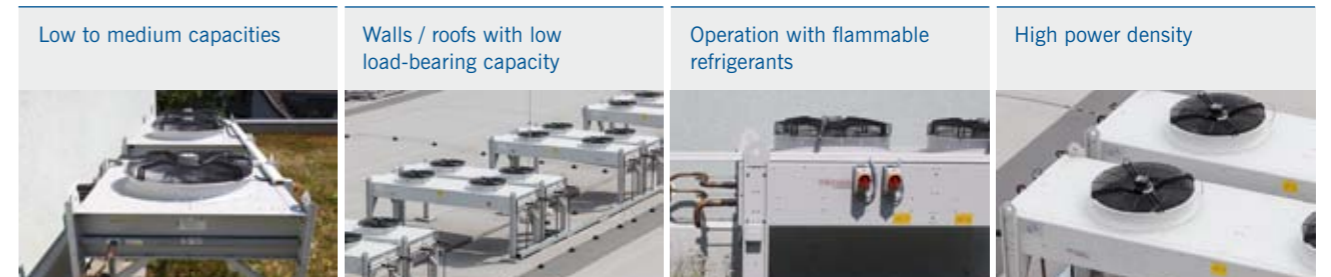
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<ul style="list-style-type: none"> <li>✓ Separate heat exchanger in acc. with EN 13487</li> </ul>	<ul style="list-style-type: none"> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	

### Material

The new microox® technology is based on the use of aluminium: light, stable and recyclable. The main advantages of this technology are the excellent stability, lightness of the material and the low refrigerant charge volume.

All Güntner microox® heat exchangers can be supplied for operation with fluid group 1 (e.g. R290) and fluid group 3 with TÜV certificate.

### Suitable Applications



**Twin Compact**

# GVW / GFW

V condenser with compact design for airconditioning and commercial refrigeration

70 – 850 kW



### Advantages

- Small set-up area; low height
- Fans, single row with upward air discharge
- When accommodating high outputs, combined positioning of several units saves space
- With combined positioning of units, a steel frame must be placed under the units to ensure an adequate air supply

### Easy to Install

- Crane lugs to simplify transport by crane

### Space-Saving Construction

- Low installation height
- Small width
- Small set-up space

### Suitable for Sound-Sensitive Areas

- 5 sound levels available
- Standard with two speeds

### Inspection and Cleaning

- Fans easily accessible
- Cleaning flap under the heat exchangers

### High Operational Reliability and Leak-Safety

- Proven Güntner floating coil principle (refrigerant-carrying tubes do not make contact with the casing; increasing the heat exchanger's service life)

### Heat Exchanger

- Staggered tube pattern 50 x 25 mm
- Special copper pipes for HFC and heat carrier
- Surface-corrugated aluminium fins for high heat transfer

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

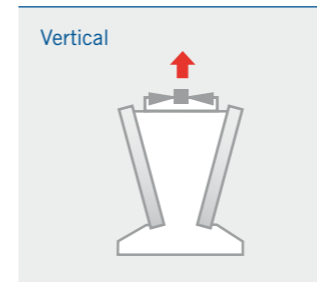
### Fans

- Low-noise fans
- Standard with two speeds
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter of 500 mm)

### Options

- Corrosion-protected fins on request
- Circuit breakdown
- EC fans with Motor Management
- Quiet fans

### Airflow Direction



### Fans

2 – 8  
800 / 900 mm



### Heat Exchanger

Fin geometry: F  
50 x 25 mm  
Staggered tube pattern

Fin spacing  
2.0 / 2.4 mm



### Product Types / Refrigerant / Capacity

	Sound Level	Refrigerant	Nominal Capacity	Sound Pressure Level*
GVW	N	HFC	159.0 – 852 kW	48 – 65 dB(A)
	M	HFC	144.0 – 766 kW	39 – 62 dB(A)
	L	HFC	131.0 – 500 kW	43 – 51 dB(A)
	S	HFC	89.0 – 514 kW	30 – 49 dB(A)
	E	HFC	81.0 – 437 kW	23 – 45 dB(A)
GFW	N	NH <sub>3</sub>	132.0 – 647 kW	51 – 65 dB(A)
	M	NH <sub>3</sub>	128.0 – 578 kW	48 – 62 dB(A)
	L	NH <sub>3</sub>	108.0 – 420 kW	44 – 51 dB(A)
	S	NH <sub>3</sub>	76.4 – 373 kW	35 – 49 dB(A)
	E	NH <sub>3</sub>	69.2 – 369 kW	32 – 45 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

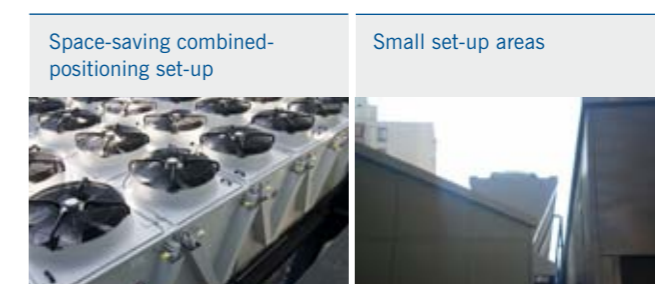
Liquid Receiver	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon®</li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	<ul style="list-style-type: none"> <li>✓ Epoxy-resin coated fins</li> <li>✓ Special varnishing</li> <li>✓ EC fans</li> <li>✓ Max. operating pressure 41 bar</li> <li>✓ Empty casing (fitted at the side)</li> <li>✓ Vibration dampers</li> </ul>
Unterkühler		
<ul style="list-style-type: none"> <li>✓ Kreislaufunterteilung</li> <li>✓ Separator Wärm austauscher</li> </ul>		

### Available material

Material	Tube	Fin	Casing
AlMg			
Aluminium		✓	
Copper	✓	✓	
Aluminium, epoxy-resin coated		✓	
Steel, hot-dip galvanized			
Sheet steel, galvanized			✓
Stainless steel	✓	✓	✓

✓ Standard version

### Suitable Applications



# GVH / GFH

Axial condenser / dry cooler,  
horizontal construction  
for all applications

8 – 1320 kW



### Advantages

- Extensive power range, large model range, different sound levels
- Can be supplied for all refrigerants
- Large selection of accessories
- With control system and switch cabinet on request

### Easy to Install

- Crane lugs to simplify transport by crane
- Factory-fitted modules (switch cabinets, empty casing...)
- Torsion-resistant casing due to side plates with profile (Güntner profiles)
- Fewer unit legs and fewer bases are required

### Low Height

- For demanding architecture
- If visual covers are planned

### Suitable for All Noise Protection Requirements

- 5 volume levels available
- Standard with two speeds
- Suitable for speed control

### High Operational Reliability and Leak-Safety

- Tried, tested and proven Güntner floating coil principle (refrigerant conduits do not make contact with the casing; increases the heat exchanger's service life)
- Stable housing (minimal bending) when transporting by crane or forklift due to side plates with profiles
- High stiffness with reduced weight

### Inspection and Cleaning

- Fans easily accessible
- Cleaning cover as an accessory

### Heat Exchangers up to Construction Size 065

- HFC: Staggered tube pattern 25 x 22 mm  
Fin spacing – 2.2 mm
- Heat Carrier: Staggered tube pattern 50 x 25 mm,  
Fin spacing – 2.4 mm

### Heat Exchangers from Construction Size 080

- Staggered tube pattern 50 x 25 mm,  
Fin spacing – 2.4 mm
- Special copper pipes for HFC and heat carrier
- Stainless steel pipes for NH<sub>3</sub>
- Surface-corrugated aluminium fins for high heat transfer

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

### Fans

- Low-noise fans
- Standard with two speeds
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter 500 mm)

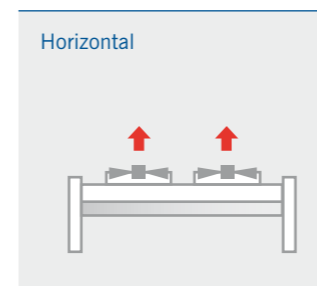
### Dimensions

- Length 0.9 m – 12.0 m
- Width 0.8 m – 2.3 m

### Weight

- 70 – 3000 kg

### Airflow Direction



### Fans

1 – 12  
450 / 500 / 650 / 800 /  
900 / 1000 mm



### Heat Exchanger

Fin geometry: H  
Up to type 065: 25 x 22 mm

Fin geometry: F  
From type 080: 50 x 25 mm  
Staggered tube pattern

Fin spacing  
2.2 / 2.4 mm



### Suitable Applications

Especially sound-sensitive applications



Universally applicable



### Product Types / Refrigerant / Capacity

	Sound Level	Refrigerant	Nominal Capacity	Sound Pressure Level*
GVH	N	HFC	19.8 – 1180 kW	47 – 67 dB(A)
	M	HFC	70.2 – 1126 kW	45 – 64 dB(A)
	L	HFC	14.6 – 961 kW	36 – 60 dB(A)
	S	HFC	11.7 – 681 kW	31 – 48 dB(A)
	E	HFC	13.8 – 624 kW	28 – 49 dB(A)
AGVH	N	NH <sub>3</sub>	47.8 – 1310 kW	54 – 67 dB(A)
	M	NH <sub>3</sub>	76.0 – 1158 kW	45 – 64 dB(A)
	L	NH <sub>3</sub>	34.4 – 986 kW	47 – 60 dB(A)
	S	NH <sub>3</sub>	23.8 – 704 kW	40 – 52 dB(A)
	E	NH <sub>3</sub>	21.5 – 652 kW	35 – 49 dB(A)
GFH	N	Heat Carrier	24.3 – 929 kW	49 – 67 dB(A)
	M	Heat Carrier	60.8 – 965 kW	45 – 63 dB(A)
	L	Heat Carrier	17.9 – 732 kW	39 – 60 dB(A)
	S	Heat Carrier	14.1 – 585 kW	31 – 52 dB(A)
	E	Heat Carrier	14.1 – 527 kW	31 – 49 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receiver	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon®</li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> </ul>	<ul style="list-style-type: none"> <li>✓ Epoxy-resin coated fins</li> <li>Special varnishing</li> <li>✓ EC fans</li> <li>✓ Max. operating pressure</li> <li>✓ 41 bar</li> </ul>
<b>Subcooler</b> <ul style="list-style-type: none"> <li>✓ Circuit breakdown</li> <li>✓ Separate heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	<ul style="list-style-type: none"> <li>✓ Empty casing</li> <li>✓ Inspection cover</li> <li>✓ Vibration dampers</li> <li>✓ Flange connection</li> <li>✓ Extended legs</li> </ul>

### Available material

Material	Tube	Fin	Casing
AlMg			
Aluminium		✓	
Copper	✓	✓	
Aluminium, epoxy-resin coated		✓	
Steel, hot-dip galvanised			
Sheet steel, galvanized			✓
Stainless steel	✓	✓	
✓ Standard version			





# GVV / GFV

Axial condenser / dry cooler with vertical design for all applications

8 – 1320 kW



### Advantages

- Extensive power range, large model range, different sound levels
- Can be supplied for all refrigerants
- Large selection of accessories
- With control system and switch cabinet on request

### Easy to Install

- Crane lugs to simplify transport by crane
- Factory-fitted modules (switch cabinets, empty casing...)
- Torsion-resistant casing due to side plates with profile (Güntner profiles)
- Fewer unit legs and fewer bases are required

### Suitable for All Noise Protection Requirements

- 5 volume levels available
- Standard with two speeds
- Suitable for speed control

### High Operational Reliability and Leak-Safety

- Tried, tested and proven Güntner floating coil principle (refrigerant conduits do not make contact with the casing; increases the heat exchanger's service life)
- Stable housing (minimal bending) when transporting by crane or forklift due to side plates with profiles
- High stiffness with reduced weight

### Inspection and Cleaning

- Fans easily accessible
- Cleaning cover as an accessory

### Heat Exchangers up to Construction Size 065

- HFC: Staggered tube pattern 25 x 22 mm  
Fin spacing – 2.2 mm
- Heat Carrier: Staggered tube pattern 50 x 25 mm,  
Fin spacing – 2.4 mm

### Heat Exchangers from Construction Size 080

- Staggered tube pattern 50 x 25 mm,  
Fin spacing – 2.4 mm
- Special copper pipes for HFC and heat carrier
- Stainless steel pipes for NH<sub>3</sub>
- Surface-corrugated aluminium fins for high heat transfer

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

### Fans

- Low-noise fans
- Standard with two speeds
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter 500 mm)

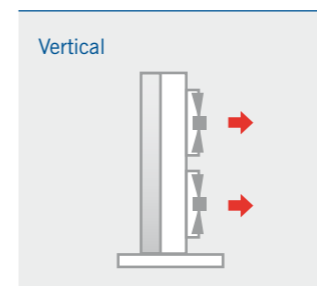
### Dimensions

- Length 0.9 m – 12.0 m
- Width 0.8 m – 2.3 m

### Weight

- 70 – 3000 kg

### Airflow Direction



### Fans

1 – 12  
450 / 500 / 650 / 800 /  
900 / 1000 mm



### Heat Exchanger

Fin geometry: H  
Up to type 065: 25 x 22 mm

Fin geometry: F  
From type 080: 50 x 25 mm  
Staggered tube pattern

Fin spacing  
2.0 / 2.4 mm



### Suitable Applications

Especially sound-sensitive applications



Universally applicable



### Product Types / Refrigerant / Capacity

	Sound Level	Refrigerant	Nominal Capacity	Sound Pressure Level*
GVH	N	HFC	19.8 – 1180 kW	47 – 67 dB(A)
	M	HFC	70.2 – 1126 kW	45 – 64 dB(A)
	L	HFC	14.6 – 961 kW	36 – 60 dB(A)
	S	HFC	11.7 – 681 kW	31 – 48 dB(A)
	E	HFC	13.8 – 624 kW	28 – 49 dB(A)
AGVH	N	NH <sub>3</sub>	47.8 – 1310 kW	54 – 67 dB(A)
	M	NH <sub>3</sub>	76.0 – 1158 kW	45 – 64 dB(A)
	L	NH <sub>3</sub>	34.4 – 986 kW	47 – 60 dB(A)
	S	NH <sub>3</sub>	23.8 – 704 kW	40 – 52 dB(A)
	E	NH <sub>3</sub>	21.5 – 652 kW	35 – 49 dB(A)
GFH	N	Heat Carrier	24.3 – 929 kW	49 – 67 dB(A)
	M	Heat Carrier	60.8 – 965 kW	45 – 63 dB(A)
	L	Heat Carrier	17.9 – 732 kW	39 – 60 dB(A)
	S	Heat Carrier	14.1 – 585 kW	31 – 52 dB(A)
	E	Heat Carrier	14.1 – 527 kW	31 – 49 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receiver	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon®</li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> </ul>	<ul style="list-style-type: none"> <li>✓ Epoxy-resin coated fins</li> <li>Special varnishing</li> <li>✓ EC fans</li> <li>✓ Max. operating pressure</li> <li>✓ 41 bar</li> <li>✓ Empty casing</li> <li>✓ Inspection cover</li> <li>✓ Vibration dampers</li> <li>✓ Flange connection</li> </ul>
<b>Subcooler</b> <ul style="list-style-type: none"> <li>✓ Circuit breakdown</li> <li>✓ Separate heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	

### Available material

Material	Tube	Fin	Casing
AlMg			
Aluminium		✓	
Copper	✓	✓	
Aluminium, epoxy-resin coated		✓	
Steel, hot-dip galvanised			
Sheet steel, galvanized			✓
Stainless steel	✓	✓	
✓ Standard version			

# GVD / GFD

V-coil condenser / dry cooler  
for air-conditioning and process cooling

30 – 2000 kW



### Advantages

- High-performance V-type condenser/dry cooler
- For medium to high capacities in process cooling and air-conditioning
- Various sound levels; many design types
- With control system and switch cabinet on request

### Easy to Install

- Transport simplified by 2 movable crane lugs
- No cross beam required
- On request factory-fitted accessories, switch cabinets, speed controllers

### Suitable for All Noise Protection Requirements

- 5 volume levels available
- Standard with two speeds
- Suitable for speed control

### High Operational Reliability and Leak-Safety

- Proven Güntner floating coil principle (refrigerant conduits do not make contact with the casing; increases the heat exchanger's service life)
- Self-supporting casing structure, withstands bending and deformation
- High stiffness with reduced weight

### Inspection and Cleaning

- Fans easily accessible
- Cleaning openings with no parts that could get lost
- Stable surface-corrugated aluminium fins

### Heat Exchanger

- Staggered tube pattern 50 x 25 mm; fin spacing 2.4 mm (Option 2.0 / 2.2 / 3.0 / 4.0 mm)
- Special copper pipes for HFC and heat carrier
- Stainless steel pipes for NH<sub>3</sub>
- Surface-corrugated aluminium fins for high heat exchange

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

### Fans

- Low-noise fans
- Standard with two speeds
- 5 sound levels
- Motor protection with thermocontacts
- 400 V, 3~, 50 Hz or 60 Hz

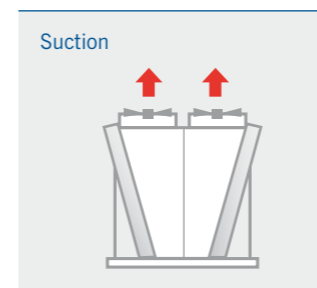
### Dimensions

- L 3284 – 12139
- B 2300
- H 2850

### Weight

- 1672 – 5690 kg

### Airflow Direction



### Fans

4 – 18  
200 / 310 / 400 / 450 / 500 mm



### Heat Exchanger

Fin geometry: F  
50 x 25 mm  
Staggered tube pattern

Fin spacing  
2.4 mm



### HydroSpray®

Basic: 300 h/a  
Professional: 1000 h/a



### Suitable Applications

Medium to large capacities	Optimised for container transport	For sound-sensitive applications	Constricted space conditions

### Product Types / Refrigerant / Capacity

	Refrigerant	Nominal Capacity	Sound Pressure Level*
GVD	HFC	50 – 2000 kW	38 – 60 dB(A)
GFD	Heat Carrier	30 – 1850 kW	32 – 60 dB(A)

Higher capacities on request

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receivers	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon®</li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> </ul>	<ul style="list-style-type: none"> <li>✓ HydroSpray® (water spraying)</li> <li>✓ Epoxy-resin coated fins</li> <li>✓ Special varnishing</li> <li>✓ EC fans</li> <li>✓ Max. operating pressure 41 bar</li> <li>✓ Empty casing (fitted at the side)</li> <li>✓ Vibration dampers</li> </ul>
Subcooler		
<ul style="list-style-type: none"> <li>✓ Circuit breakdown</li> <li>✓ Separate heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	

### Available material

Material	Tube	Fin	Casing
AlMg			
Aluminium		✓	
Copper	✓		
Aluminium, epoxy-resin coated		✓	
Steel, hot-dip galvanised			
Sheet steel, galvanized			✓
Stainless steel, V2A 304	✓	✓	
Stainless steel, V2A 316	✓	✓	

✓ Standard version

# GVX H

Condenser with microox<sup>®</sup> technology with innovative casing and large cleaning flap

15 – 350 kW



### Advantages

- Highly efficient condenser with microchannel heat exchanger
- Modular unit design; large cleaning opening
- For floor or wall mounting

### Energy-Saving Operation

- Excellent energy efficiency classification as per Eurovent
- Reduced operating costs when EC fans with GMM are selected
- Stable operating conditions with precisely controlled condensing pressure

### Installation and Service Friendly

- Excellent performance per m<sup>2</sup> set-up space
- Fans wired at the factory
- Vertical and horizontal set-up possible
- Easy wall installation
- Large cleaning flap allows simple and thorough cleaning

### Heat Exchanger

- Compact heat exchanger made of aluminium profiles and high-performance fins
- Soldered to form a stable unit
- Low refrigerant charge volume; high power density

### Casing

- Entire casing made of aluminium
- Powder coated with RAL 7035 (light grey)
- Suitable for floor or wall mounting
- Large, overhaul flap

### Fans

- Low-noise fans
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter of 500 mm)
- Available in AC and EC technology

### Modern casing design

- Reduced unit weight with aluminium casing and heat exchanger made of aluminium
- Casing powder-coated with RAL 7035 (light grey)
- Modern and modular unit design

### Airflow Direction

Horizontal



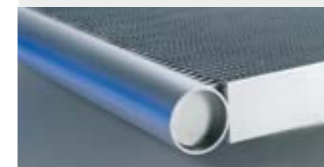
### Fans

2x2 – 2x9  
450 / 500 / 710 mm



### Heat Exchanger

microox<sup>®</sup> technology



### Product Types / Refrigerant / Capacity

Sound Level	Refrigerant	Nominal Capacity	Sound Pressure Level*
N	HFC	11.4 – 263 kW	40 – 64 dB(A)
M	HFC	25.5 – 249 kW	48 – 58 dB(A)
L	HFC	8.3 – 186 kW	27 – 49 dB(A)
S	HFC	7.0 – 141 kW	23 – 42 dB(A)
E	HFC	7.7 – 79 kW	18 – 31 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receiver	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon<sup>®</sup></li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	<ul style="list-style-type: none"> <li>✓ EC fans</li> <li>✓ Max. operating pressure 41 bar</li> <li>✓ Vibration dampers</li> </ul>

### Material

The new microox<sup>®</sup> technology is based on the use of aluminium: light, stable and recyclable. The main advantages of this technology are the excellent stability, lightness of the material and the low refrigerant charge volume.

All Güntner microox<sup>®</sup> heat exchangers can be supplied for operation with fluid group 1 (e.g. R290) and fluid group 3 with TÜV certificate.

### Suitable Applications

Commercial refrigeration



Wall mounting



Regular cleaning



Design with low Dt



# GVX V

Condenser with microox® technology with innovative casing and large cleaning flap

15 – 350 kW



### Advantages

- Highly efficient condenser with microchannel heat exchanger
- Modular unit design; large cleaning opening
- For floor or wall mounting

### Energy-Saving Operation

- Excellent energy efficiency classification as per Eurovent
- Reduced operating costs when EC fans with GMM are selected
- Stable operating conditions with precisely controlled condensing pressure

### Installation and Service Friendly

- Excellent performance per m<sup>2</sup> set-up space
- Fans wired at the factory
- Vertical and horizontal set-up possible
- Easy wall installation
- Large cleaning flap at the front allows simple and thorough cleaning

### Heat Exchanger

- Compact heat exchanger made of aluminium profiles and high-performance fins
- Soldered to form a stable unit
- Low refrigerant charge volume; high power density

### Casing

- Entire casing made of aluminium
- Powder coated with RAL 7035 (light grey)
- Suitable for floor or wall mounting
- Large, overhaul flap at the front

### Fans

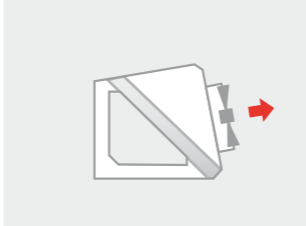
- Low-noise fans
- 5 sound levels
- Motor protection with thermocontacts
- 230 V, 1~, 50 Hz or 60 Hz
- 400 V, 3~, 50 Hz or 60 Hz (from fan diameter of 500 mm)
- Available in AC and EC technology

### Modern casing design

- Reduced unit weight with aluminium casing and heat exchanger made of aluminium
- Casing powder-coated with RAL 7035 (light grey)
- Modern and modular unit design

### Airflow Direction

Horizontal



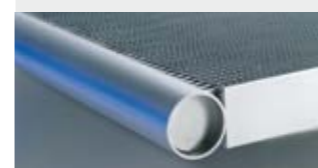
### Fans

1 – 4  
450 / 500 / 710 mm



### Heat Exchanger

microox® technology



### Product Types / Refrigerant / Capacity

Sound Level	Refrigerant	Nominal Capacity	Sound Pressure Level*
N	HFC	11.4 – 263 kW	40 – 64 dB(A)
M	HFC	25.5 – 249 kW	48 – 58 dB(A)
L	HFC	8.3 – 186 kW	27 – 49 dB(A)
S	HFC	7.0 – 141 kW	23 – 42 dB(A)
E	HFC	7.7 – 79 kW	18 – 31 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receiver	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM EC</li> <li>✓ GMM sincon®</li> <li>✓ GMM phase cut</li> <li>✓ GMM step</li> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	<ul style="list-style-type: none"> <li>✓ EC fans</li> <li>✓ Max. operating pressure 41 bar</li> <li>✓ Vibration dampers</li> <li>✓ Wall mounting beam</li> </ul>

### Material

The new microox® technology is based on the use of aluminium: light, stable and recyclable. The main advantages of this technology are the excellent stability, lightness of the material and the low refrigerant charge volume.

All Güntner microox® heat exchangers can be supplied for operation with fluid group 1 (e.g. R290) and fluid group 3 with TÜV certificate.

### Suitable Applications

Commercial refrigeration



Wall mounting



Regular cleaning



Design with low Dt



# RVH

Condenser with radial fans for indoor set-up

20 – 700 kW



### Advantages

- Air-cooled condenser with radial fans for indoor set-up
- Fans with external pressure for connecting air ducts and sound absorbers
- Module-type casing with frame and overhaul openings
- Horizontal or vertical design

### Installation

- Modules can be disassembled for installation
- Vertical or horizontal air discharge
- Separate switch cabinet, speed controller, on request

### High Operational Reliability and Leak-Safety

- Proven Guntner floating coil principle (refrigerant conduits do not make contact with the casing; increases the heat exchanger's service life)
- Robust casing construction

### Inspection

- Good accessibility through large inspection cover

### Heat Exchanger

- Staggered tube pattern 50 x 25 mm; fin spacing 2.4 mm
- Special copper pipes for HFC and heat carriers
- Surface-corrugated aluminium fins for high heat transfer

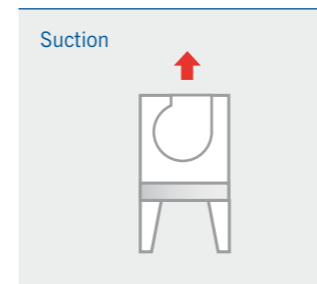
### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

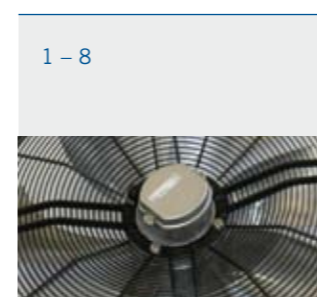
### Fans

- Radial fans with forward-curved blades
- Various external pressures
- On request, with two speeds
- 400 V, 3~, 50 Hz or 60 Hz

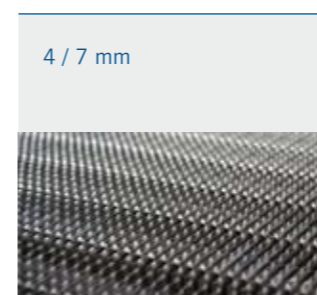
### Airflow Direction



### Fans



### Fin spacing



### Product Types / Refrigerant / Capacity

Refrigerant	Nominal capacity	Sound pressure level*
HFC CO <sub>2</sub>	20 – 700 kW on request	47 – 95 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receivers	Controls	Other
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertical</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM sincon®</li> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	<ul style="list-style-type: none"> <li>✓ Epoxy-resin coated fins</li> <li>✓ Max. operating pressure 41 bar</li> <li>✓ Vibration dampers</li> <li>✓ Check valves</li> </ul>
<b>Subcooler</b> <ul style="list-style-type: none"> <li>✓ Circuit breakdown</li> <li>✓ Separate heat exchanger</li> </ul>		

### Available material

Material	Tube	Fin	Casing
AlMg			
Aluminium		✓	
Copper	✓		
Aluminium, epoxy-resin coated		✓	
Steel, hot-dip galvanized			
Sheet steel, galvanized			✓
Stainless steel, V2A 304	✓	✓	
Stainless steel, V2A 316	✓	✓	

✓ Standard version

# RVV

Condenser with radial fans for indoor set-up

20 – 700 kW



### Description

- Air-cooled condenser with radial fans for indoor set-up
- Fans with external pressure for connecting air ducts and sound absorbers
- Module-type casing with frame and overhaul openings
- Horizontal or vertical design

### Installation

- Modules can be disassembled for installation
- Vertical or horizontal air discharge
- Separate switch cabinet, speed controller, on request

### High Operational Reliability and Leak-Safety

- Proven Güntner floating coil principle (refrigerant conduits do not make contact with the casing; increases the heat exchanger's service life)
- Robust casing construction

### Inspection

- Good accessibility through large inspection cover

### Heat Exchanger

- Staggered tube pattern 50 x 25 mm; fin spacing 2.4 mm
- Special copper pipes for HFC and heat carriers
- Surface-corrugated aluminium fins for high heat exchange

### Frame and Casing

- Sheet steel, galvanized
- Painted with RAL 7035

### Fans

- Radial fans with forward-curved blades
- Various external pressures
- On request, with two speeds
- 400 V, 3~, 50 Hz or 60 Hz

### Airflow Direction

saugend



### Fans

1 – 8



### Fin Spacing

4 / 7 mm



### Product Types / Refrigerant / Capacity

Refrigerant	Nominal capacity	Sound pressure level*
HFC CO <sub>2</sub>	20 – 700 kW on request	47 – 95 dB(A)

\* at 10 m distance in acc. with EN 13487

### Available Accessories

Liquid Receiver	Controls	Sonstiges
<ul style="list-style-type: none"> <li>✓ Horizontal</li> <li>✓ Vertikal</li> </ul>	<ul style="list-style-type: none"> <li>✓ GMM sincon®</li> <li>✓ Switch cabinet</li> <li>✓ Repair switch</li> </ul>	<ul style="list-style-type: none"> <li>✓ Epoxy-resin coated fins Max. operating pressure</li> <li>✓ 41 bar</li> <li>✓ Vibration dampers</li> <li>✓ Check valves</li> </ul>
Subcooler		
<ul style="list-style-type: none"> <li>✓ Circuit breakdown</li> <li>✓ Separate Heat Exchanger</li> </ul>		

### Available material

Material	Tube	Fin	Casing
AlMg			
Aluminium		✓	
Copper	✓		
Aluminium, epoxy-resin coated		✓	
Steel, hot-dip galvanised			
Sheet steel, galvanized			✓
Stainless steel, V2A 304	✓	✓	
Stainless steel, V2A 316	✓	✓	





✓ Standard version

# Controls

The GMM system is available for AC or EC fans. Various technologies have been implemented. There is, however, one feature common to all management systems: They are equipped with various functions which serve to enhance energy efficiency.

## AC fans


There are different application cases, and therefore various technologies are available for AC fans to cover all application possibilities.

	GMM step	GMM phase cut	GMM f-drive	GMM sincon®
<b>Energy efficiency</b>	Cooling circuit ●●○○ Speed controller ●○○○	Cooling circuit ●●●○ Speed controller ●○○○	Cooling circuit ●●●● Speed controller ●●●○	Cooling circuit ●●●● Speed controller ●●●○
<b>Control</b>	Precision ●○○○ Sound ●○○○	Precision ●●●○ Sound ●○○○	Precision ●●●● Sound ●●●○	Precision ●●●● Sound ●●●○
<b>Investment</b>	Investment costs ●○○○ Service life ●●●●	Investment costs ●●○○ Service life ●●●○	Investment costs ●●○○ Service life ●●○○	Investment costs ●●○○ Service life ●○○○
				

●○○○ not so good      ●●●● very good




## EC fans

Maximum efficiency can be achieved with EC fans and the GMM EC.

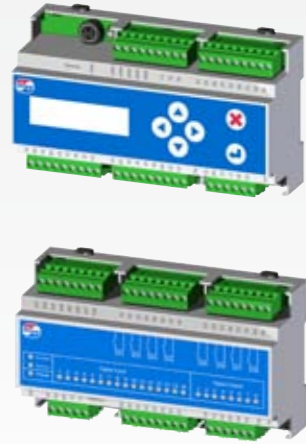
	GMM EC
<b>Energy efficiency</b>	Cooling circuit ●●●● Speed controller ●●●●
<b>Control</b>	Precision ●●●● Sound ●●●●
<b>Investment</b>	Investment costs ●●●○ Service life ●○○○
	

## Spraying / Humidifying

A spraying system or a humidifying system can be used to increase heat exchanger performance.

	GHM spray basic	GHM spray professional	GHM pad
<b>Energy efficiency</b>	Cooling circuit ●●○○ Speed controller ●●○○	Cooling circuit ●●●● Speed controller ●●●○	Cooling circuit ●●●● Speed controller ●●●●
<b>Control</b>	Precision ●○○○ Sound ●●○○	Precision ●●●○ Sound ●●●○	Precision ●●●● Sound ●●●●
<b>Investment</b>	Investment costs ●●●● Service life ●●○○	Investment costs ●●●○ Service life ●●●○	Investment costs ●●○○ Service life ●●●●
			

## GMM step



The GMM step is a step control system for AC external rotor or standard motors. Two types are available: a basic GMM step version with up to four steps, and a professional version enabling an add-on of up to nine steps. To ensure uniform utilization of the fans, there is a special “fan cycling” function whereby the fan which has the fewest operating hours is actuated. This enhances the operational reliability and service life of the fans. Additionally, functions like switch hysteresis are included as a matter of course.

## GMM phase cut



The GMM phase cut is used for voltage-controllable AC external rotor motors. This is the most cost-effective way of realising a speed controller, while achieving constant pressure conditions in the cooling circuit. Utilization is not recommended for noise-sensitive applications or applications with stringent energy efficiency requirements. High operational reliability can be achieved with this product's integrated bypass function.

## GMM f-drive



The GMM f-drive is a speed controller for standard motors with a frequency converter as the power unit. The f-drive can also be recommended for noise-sensitive applications as it does not cause any control-related noise. Up to nine power units can be used. Naturally, this product is also equipped with hardware and software bypass functions, which ensure operation even if a power unit fails. The power units are monitored by the controller module.

## GMM sincon®



The GMM sincon® is a speed controller for external rotor motors with a frequency converter as the power unit. This product's speciality is the downstream all-pole sine filter, which is an absolute necessity for external rotor motors. The GMM sincon® can also be recommended for noise-sensitive applications as it does not cause any control-related noise. Up to nine power units can be used. Naturally, this product is also equipped with hardware and software bypass functions, which ensure operation even if a power unit fails. The power units are monitored by the controller module.

Utilisation of the GMM sincon® ensures that compared with mains operation, the same or longer service lives can be achieved for the fans' motor winding insulation and the bearings.



## GMM EC



Combining the GMM EC with highly efficient EC fans offers the ideal solution with respect to energy efficiency and noise emissions. In addition to the GMM properties mentioned above, the GMM EC is equipped with further unique functions.

With the Low Capacity Motor Management (LCMM) the system can also be operated efficiently during low partial load conditions. EC fans have a minimal speed of between 8 % and 12 % of the full load. The purpose of the LCMM is to facilitate control within the lower capacity range (e.g. 5 %) of the heat exchanger. To this end, the GMM has a function whereby the control signal is recalculated as appropriate for the number of fans and their minimum speeds, and subsequently sent to the individual fans. To avoid frequent switching on and off, a hysteresis function can be activated. Based on a comparison of the fans' operating hours (fan cycling), the GMM decides which fan is to be switched on.

Due to the automatic parameterisation or the addressing of the fans, neither special software nor particular expertise is required to start-up the system. The fans are automatically set to the values entered in the system, regardless of whether this was at initial start-up or when a fan needed replacing. The fans' usage limits are thus clearly defined and, as a result, adherence to the required heat

exchanger capacity and the maximum permissible sound levels is ensured. The thermal resistance of the power electronics in the motors is also guaranteed.

A further contribution toward increased operational reliability is the tear-off function. If a fan is blocked by ice, freedom of movement is carefully restored by repeatedly running the fan clockwise and anti-clockwise with increasing torque. This function can be set via the GMM; if it is in operation, a message is displayed.

Pre-selected fans can be shut down using the selective fan shutdown function via a digital input signal (customer signal). This function is available in all operating modes: in control and slave mode. It is particularly useful for systems with two heat exchanger coils and for partial-load operation.

## Güntner Hydro Management



### GHM spray

The GHM spray system is used to control the spraying of the heat exchanger with water. It regulates the spray as a function of the capacity requirement of the heat exchanger, as well as the measured temperatures and pressures. As a result, the capacity of the heat exchanger increases. The necessary information e.g. the speed is read out by the speed controller via the bus communication. If a non-Güntner speed controller is used, the speed data can be transmitted via a digital signal.

### GHM pad

The GHM pad wetting controller controls the water applied to the wetting mats in the air inlet of the heat exchanger. It regulates the amount of water applied as a function of the load requirement (fan speed) of the heat exchanger, as well as the measured temperatures and pressures.

As a result, the capacity of the heat exchanger increases. The necessary information e.g. the speed is read out by the speed controller via the bus communication. If a non-Güntner speed controller is used, the speed data can be transmitted via a 0 – 10 volt signal.

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