Condensers / Dry coolers
### Compact

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Product</th>
<th>Capacity</th>
<th>HFC</th>
<th>NH₃</th>
<th>CO₂</th>
<th>Heat Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>GCCH</td>
<td>4 – 400 kW</td>
<td>GCCH</td>
<td>GCCH</td>
<td>GCCH</td>
<td></td>
</tr>
<tr>
<td>Vertical</td>
<td>GCVC</td>
<td>20 – 400 kW</td>
<td>GCVC</td>
<td>GCVC</td>
<td>GCVC</td>
<td></td>
</tr>
<tr>
<td>V-Shape</td>
<td>GVW</td>
<td>70 – 850 kW</td>
<td>GVW</td>
<td>GVW</td>
<td>GVW</td>
<td>GFV</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Product</th>
<th>Capacity</th>
<th>HFC</th>
<th>NH₃</th>
<th>CO₂</th>
<th>Heat Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>GVH</td>
<td>8 – 1320 kW</td>
<td>GVH</td>
<td>GVH</td>
<td>GFW</td>
<td></td>
</tr>
<tr>
<td>Vertical</td>
<td>GVV</td>
<td>8 – 1320 kW</td>
<td>GVV</td>
<td>GVV</td>
<td>GFW</td>
<td></td>
</tr>
<tr>
<td>V-Shape</td>
<td>GVD</td>
<td>30 – 2000 kW</td>
<td>GVD</td>
<td>GVD</td>
<td>GFD</td>
<td></td>
</tr>
</tbody>
</table>

### Application

The APPLICATION 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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Product</th>
<th>Capacity</th>
<th>HFC</th>
<th>NH₃</th>
<th>CO₂</th>
<th>Heat Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor-H</td>
<td>RVH</td>
<td>20 – 700 kW</td>
<td>RVH</td>
<td>RVH</td>
<td>RVH</td>
<td></td>
</tr>
<tr>
<td>Indoor-V</td>
<td>RVV</td>
<td>20 – 700 kW</td>
<td>RVV</td>
<td>RVV</td>
<td>RVV</td>
<td></td>
</tr>
</tbody>
</table>

### Controls

- **Control engineering**
  - GMM: step
  - GMM: phase cut
  - GMM: f-drive
  - GMM sincon®
  - GMM EC
  - GHM spray
  - GHM pad

**Competent. Reliable. Personal.**
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 Güntner 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 Güntner 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 Güntner 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.

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

The technologies of the Güntner Group at a glance

- **Dry coolers** in different designs
- Sprayed dry coolers with Güntner 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

GASC
Air cooler in flat design with blow-through fans
Ideal for commercial refrigeration
- Tube volume reduced by up to 37% (compared to previous model)
- CO₂ up to 80 bar
- HACCP certification by TÜV SÜD

GACC
High efficiency air cooler in compact design
Ideal for commercial refrigeration
- CO₂ up to 80 bar
- Tube volume reduced by up to 37%
- EC fans as accessory

GACV
Variable air cooler in cubic design
Ideal for industrial refrigeration
- Hinged inner tray for easy access
- CO₂ up to 80 bar
- HACCP certification by TÜV SÜD

GCHC
Compact design
Ideal for commercial refrigeration
- CO₂ up to 120 bar
- TÜV approval for propane
- Optimised for all „new“ refrigerants

GCHV
Robust and variable
Ideal for industrial refrigeration
- CO₂ up to 120 bar
- Greatest variability (heat exchanger, casing, fan)
- EC fans 0 – 10 V

GAIL
Insulated unit cooler
Optimised for logistics applications
- Best defrosting performance
- EC centrifugal fans
- Energy-efficient
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.

Sustainable Innovation
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.
Empfehlungen zur Materialauswahl

Güntner Wissen für verschiedene Einsatzfälle und Umgebungsbedingungen

Korrosion vermeiden durch optimale Materialauswahl

Vario CUBIC Luftkühler GACV

Variabler Luftkühler in kubischer Bauart

Optimal für Industriekälte

HFKW, CO₂, Propan, NH₃, Wasser/Glykol – 335 kW

Ein Luftkühler – alle Anwendungen

The Most Important Information at www.guentner.eu

Specialist information/ Application tips

Product photos

Product properties - All product benefits at a glance

Your worldwide contact partners

Information brochures - Data sheets - Operating instructions

Zertifikate zum jeweiligen Produkt

Complementary Products

GPC download - Free configuration software
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
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: GASC, DHF, GACC
Condensers: GVM, GVH, GV, GVX, 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 fulfill our customers’ expectations in this respect.
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
Advantages
- Compact design
- Ideal for commercial refrigeration
- Innovative heat exchanger technology
- Up to 120 bar for CO2
- High power density
- Low weight
- Low refrigerant charge
- TÜV approval for hydrocarbons (propane)

Energy-saving operation
- Efficient heat exchanger for small 4T
- Reduced operating costs when selecting
  EC fans with GMM

Montage- und Servicefreundlichkeit
- Ventilation: vertically mounted
- Geringes Gewicht
- Reinigung des microox-Wärmeübertragers
  mit 50 bar möglich
- Kompakte Bauart

Suitable Applications
- Walls / roofs with low load-bearing capacity
- Operation with flammable refrigerants
- High power density

Refrigerant / capacity

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Nominal capacity</th>
<th>Sound pressure level acc. to EN13487 at a distance of 10 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condenser HFC</td>
<td>4 – 400 kW*</td>
<td>27 – 70 dB(A)</td>
</tr>
<tr>
<td>Propane</td>
<td>4 – 380 kW*</td>
<td>27 – 70 dB(A)</td>
</tr>
<tr>
<td>Gas cooler CO₂</td>
<td>5 – 600 kW**</td>
<td>27 – 70 dB(A)</td>
</tr>
</tbody>
</table>

Fluid Nominal capacity Sound pressure level

<table>
<thead>
<tr>
<th>Acc. to EN13487 at a distance of 10 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 – 70 dB(A)</td>
</tr>
</tbody>
</table>

Dry cooler
- Water/glycol 5 – 325 kW* 27 – 70 dB(A)
- Water/glycol 90/70 °C 20 – 1,000 kW 27 – 70 dB(A)

Available accessories
- Multiple circuit coil
- Subcooler
- Controls
- Other

- GMM EC
- GMM sincon
- GMM phase cut
- GMM step
- GMM control

- Switch cabinet
- Repair switch
- Fans wired
- AC or EC fans
- Vibration dampers
- Extended legs
- Flange connection
- Threaded connection
- Empty casings
- Ventilation, emptying with ball valve
- Special varnishing

Available materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Tube</th>
<th>micro-channel</th>
<th>Fin</th>
<th>Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIKg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Aluminium, epoxy-resin coated</td>
<td></td>
<td></td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Steel, hot-dip galvanised</td>
<td></td>
<td></td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Steel sheet, galvanized</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td></td>
</tr>
</tbody>
</table>

Options
- Fans wired at factory

Options
- Fans wired at factory

Fans
1 – 6
450 / 500 / 750 / 800 mm

Heat Exchanger
- microox-technology
- Staggered tube pattern
- Special copper tubes for HFC, CO2 and heat carrier
- Surface-corrugated aluminium fins for high heat transfer

- finoox-technology
- Staggered tube pattern
- Special copper tubes for HFC, CO2 and heat carrier
- Surface-corrugated aluminium fins for high heat transfer

Frame and casing
- Galvanized steel sheet
- RAL 7035 coating

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)
GCVC
Condenser/fluid cooler for vertical set-up
Innovative heat exchanger technology

4 – 400 kW

Advantages
- Compact design
- Ideal for commercial refrigeration
- Innovative heat exchanger technology
- Up to 120 bar for CO2
- High power density
- Low weight
- Low refrigerant charge
- TÜV approval for hydrocarbons (propane)

Energy-saving operation
- Efficient heat exchanger for small dT
- Reduced operating costs when selecting EC fans with GMM

Montage- und Servicefreundlichkeit
- Ventilation and wiring integrated
- Geringes Gewicht
- Reinigung des microox-Wärmeübertragers
- mit 50 bar möglich
- Kompakte Bauart

Set-up

vertical

Fans

1 – 6
450 / 500 / 730 / 800 mm

Refrigerant / capacity

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Nominal capacity</th>
<th>Sound pressure level acc. to EN334/87 at a distance of 10 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condenser</td>
<td>HFC</td>
<td>4 – 400 kW*</td>
</tr>
<tr>
<td>Propane</td>
<td>4 – 380 kW*</td>
<td>27 – 70 dB(A)</td>
</tr>
<tr>
<td>Gas cooler</td>
<td>CO₂</td>
<td>5 – 600 kW**</td>
</tr>
<tr>
<td>Dry cooler</td>
<td>Water/glycol</td>
<td>5 – 325 kW*</td>
</tr>
<tr>
<td></td>
<td>90/70 °C</td>
<td>20 – 1,000 kW</td>
</tr>
</tbody>
</table>

Available accessories

- Multiple circuit coil
- Subcooler
- Controls
- Other

- Upon request
- Integrated for finoox
- GMM EC
- GMM sincon
- GMM phase cut
- GMM step
- Switch cabinet
- Repair switch
- Fans wired
- AC or EC fans
- Vibration dampers
- Extended legs
- Flange connection
- Threaded connection
- Empty casings
- Ventilation, emptying with ball valve
- Special varnishing

Available materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Tube</th>
<th>micro-channel</th>
<th>Fin</th>
<th>Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlMg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium, epoxy-resin coated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel, hot-dip galvanized</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheet steel, galvanized</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Options

- fans wired at factory

Suitable Applications

- Low to medium capacities
- Walls / roofs with low load-bearing capacity
- Operation with flammable refrigerants
- High power density
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, 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
Vertical

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

<table>
<thead>
<tr>
<th>Sound Level</th>
<th>Refrigerant</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVW N</td>
<td>HFC</td>
<td>159.0 – 852 kW</td>
</tr>
<tr>
<td>GVW M</td>
<td>HFC</td>
<td>144.0 – 766 kW</td>
</tr>
<tr>
<td>GVW L</td>
<td>HFC</td>
<td>131.0 – 500 kW</td>
</tr>
<tr>
<td>GVW S</td>
<td>HFC</td>
<td>89.0 – 514 kW</td>
</tr>
<tr>
<td>GVW E</td>
<td>HFC</td>
<td>81.0 – 437 kW</td>
</tr>
<tr>
<td>GFW N</td>
<td>NH₃</td>
<td>132.0 – 647 kW</td>
</tr>
<tr>
<td>GFW M</td>
<td>NH₃</td>
<td>128.0 – 578 kW</td>
</tr>
<tr>
<td>GFW L</td>
<td>NH₃</td>
<td>108.0 – 420 kW</td>
</tr>
<tr>
<td>GFW S</td>
<td>NH₃</td>
<td>76.4 – 373 kW</td>
</tr>
<tr>
<td>GFW E</td>
<td>NH₃</td>
<td>69.2 – 369 kW</td>
</tr>
</tbody>
</table>

Available Accessories

- Liquid Receiver
- Controls
- Other

- Horizontal
- Vertical
- GMM EC
- GMM sincon®
- GMM phase cut
- GMM step
- Switch cabinet
- Repair switch
- Epoxy-resin coated fins
- Special varnishing
- EC fans
- Max. operating pressure
- 41 bar
- Empty casing (fitted at the side)
- Vibration dampers

Available material

- Material
- Tube
- Fin
- Casing

- AlMg
- Aluminium
- Copper
- Aluminium, epoxy-resin coated
- Steel, hot-dip galvanized
- Sheet steel, galvanized
- Stainless steel

- Suitable Applications
- Space-saving combined-positioning set-up
- Small set-up areas

GVW / GFW
V condenser with compact design for airconditioning and commercial refrigeration
70 – 850 kW
**GVH / GFH**

Condenser/Fluid Cooler in Horizontal 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...)
- Tension-resistant casing due to side plates with 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 NH₃
- Surface-corrugated aluminum 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

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

### Weight
- 70 – 3000 kg

### Heat Exchanger
- Fin geometry: H
  - Staggered tube pattern
  - Fin spacing: 2.2 / 2.4 mm

- Fin geometry: F
  - Staggered tube pattern
  - Fin spacing: 2.2 / 2.4 mm

### Available Accessories
- Epoxy-resin coated fins
- Special varnishing
- EC fans
- Max. operating pressure
- 41 bar
- Empty casing
- Inspection cover
- Vibration dampers
- Flange connection
- Extended legs

### Available Material
- Standard version
- Aluminum, epoxy-resin coated
- Sheet steel, galvanized
- Stainless steel

### Available Controls
- GMM EC
- GMM sincon®
- GMM phase cut
- GMM step

### Product Types / Refrigerant / Capacity

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Nominal Capacity</th>
<th>Sound Pressure Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFC</td>
<td>19.8 – 1180 kW</td>
<td>47 – 67 dB(A)</td>
</tr>
<tr>
<td>M</td>
<td>70.2 – 1126 kW</td>
<td>45 – 64 dB(A)</td>
</tr>
<tr>
<td>L</td>
<td>14.6 – 961 kW</td>
<td>36 – 60 dB(A)</td>
</tr>
<tr>
<td>S</td>
<td>11.7 – 681 kW</td>
<td>31 – 48 dB(A)</td>
</tr>
<tr>
<td>E</td>
<td>13.8 – 624 kW</td>
<td>28 – 49 dB(A)</td>
</tr>
<tr>
<td>HFC</td>
<td>47.8 – 1310 kW</td>
<td>54 – 67 dB(A)</td>
</tr>
<tr>
<td>M</td>
<td>76.0 – 1158 kW</td>
<td>45 – 64 dB(A)</td>
</tr>
<tr>
<td>L</td>
<td>34.4 – 986 kW</td>
<td>47 – 60 dB(A)</td>
</tr>
<tr>
<td>S</td>
<td>23.8 – 704 kW</td>
<td>40 – 52 dB(A)</td>
</tr>
<tr>
<td>E</td>
<td>21.5 – 652 kW</td>
<td>35 – 49 dB(A)</td>
</tr>
<tr>
<td>NH₃</td>
<td>24.3 – 929 kW</td>
<td>49 – 67 dB(A)</td>
</tr>
<tr>
<td>M</td>
<td>60.8 – 965 kW</td>
<td>45 – 63 dB(A)</td>
</tr>
<tr>
<td>L</td>
<td>17.9 – 732 kW</td>
<td>39 – 60 dB(A)</td>
</tr>
<tr>
<td>S</td>
<td>14.1 – 585 kW</td>
<td>31 – 52 dB(A)</td>
</tr>
<tr>
<td>E</td>
<td>14.1 – 527 kW</td>
<td>31 – 49 dB(A)</td>
</tr>
</tbody>
</table>

* at 10 m distance in acc. with EN 13487

### Inspection and Cleaning
- Fans easily accessible
- Cleaning cover as an accessory

### 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 Exchanger
- Fin geometry: H
  - Up to type 065: 25 x 22 mm
- Staggered tube pattern
- Fin spacing: 2.2 / 2.4 mm

- Fin geometry: F
  - From type 080: 50 x 25 mm
  - Staggered tube pattern
  - Fin spacing: 2.2 / 2.4 mm

### Suitable Applications
- Universally applicable
- Especially sound-sensitive applications

### Dimensions
- Length 0.9 m – 12.0 m
- Width 0.8 m – 2.3 m
- Weight 70 – 3000 kg
**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
- Facility-fitted modules (switch cabinets, empty casing...)
- Tension-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 NH₃
- 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**
- Vertical

**Fin spacing**
- 4 / 7 mm

**Product Types / Refrigerant / Capacity**

<table>
<thead>
<tr>
<th>Sound Level</th>
<th>Refrigerant</th>
<th>Nominal Capacity</th>
<th>Sound Pressure Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVV N</td>
<td>HFC</td>
<td>19.8 – 1184 kW</td>
<td>47 – 67 dB(A)</td>
</tr>
<tr>
<td>M</td>
<td>HFC</td>
<td>70.2 – 1126 kW</td>
<td>45 – 64 dB(A)</td>
</tr>
<tr>
<td>L</td>
<td>HFC</td>
<td>14.6 – 961 kW</td>
<td>36 – 60 dB(A)</td>
</tr>
<tr>
<td>S</td>
<td>HFC</td>
<td>11.7 – 681 kW</td>
<td>31 – 48 dB(A)</td>
</tr>
<tr>
<td>E</td>
<td>HFC</td>
<td>13.8 – 624 kW</td>
<td>28 – 49 dB(A)</td>
</tr>
</tbody>
</table>

**AGVV N**
- NH₃: 47.8 – 1310 kW
- NH₃: 76.0 – 1158 kW
- NH₃: 34.4 – 986 kW
- NH₃: 23.8 – 704 kW
- NH₃: 21.5 – 652 kW

**GFV**
- Heat Carrier: 24.3 – 929 kW
- Heat Carrier: 60.8 – 965 kW
- Heat Carrier: 17.9 – 732 kW
- Heat Carrier: 14.1 – 585 kW
- Heat Carrier: 14.1 – 527 kW

---

**Available Accessories**

<table>
<thead>
<tr>
<th>Liquid Receiver</th>
<th>Controls</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>GMM EC</td>
<td>Epoxy-resin coated fins</td>
</tr>
<tr>
<td>Vertical</td>
<td>GMM sincon®</td>
<td>Special varnishing</td>
</tr>
<tr>
<td></td>
<td>GMM phase cut</td>
<td>EC fans</td>
</tr>
<tr>
<td></td>
<td>GMM step</td>
<td>Max. operating pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Empty casing</td>
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<td></td>
<td>Inspection cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vibration dampers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flange connection</td>
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</tbody>
</table>

**Available material**

<table>
<thead>
<tr>
<th>Material</th>
<th>Tube</th>
<th>Fin</th>
<th>Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIMg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium, epoxy-resin coated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless steel</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**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 NH₃
- 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

---

**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
- Facility-fitted modules (switch cabinets, empty casing...)
- Tension-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**
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- Cleaning cover as an accessory

**Heat Exchangers up to Construction Size 065**
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- 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
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 crane 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 Günther 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 NH₃
- 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
- Suction

Product Types / Refrigerant / Capacity

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Nominal Capacity</th>
<th>Sound Pressure Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVD HFC</td>
<td>50 – 2000 kW</td>
<td>38 – 60 dB(A)</td>
</tr>
<tr>
<td>GFD Heat Carrier</td>
<td>30 – 1850 kW</td>
<td>32 – 60 dB(A)</td>
</tr>
</tbody>
</table>

Available Accessories

- Liquid Receivers
  - Horizontal
  - Vertical
  - Subcooler
    - Circuit breakdown
    - Separate heat exchanger

- 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

- Available material
  - AIMg
  - Aluminium
  - Copper
  - Aluminium, epoxy-resin coated
  - Steel, hot-dip galvanised
  - Stainless steel, V2A 304
  - Stainless steel, V2A 316

Available material

- Tube
- Fin
- Casing

- GVD
- GFD

Suitable Applications

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

GVD / GFD
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 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 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
Suction

Available Accessories
- Circuit breakers
- Separate heat exchanger
- GMM silcon®
- Switch cabinet
- Repair switch
- Epoxy-resin coated fins
- Max. operating pressure 41 bar
- Vibration dampers
- Check valves

Product Types / Refrigerant / Capacity

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Nominal capacity</th>
<th>Sound pressure level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFC</td>
<td>20 – 700 kW</td>
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<tr>
<td>CO₂</td>
<td>on request</td>
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Material

<table>
<thead>
<tr>
<th>Material</th>
<th>Tube</th>
<th>Fin</th>
<th>Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td>AllMg</td>
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<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Aluminium, epoxy-resin coated</td>
<td></td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Steel, hot-dip galvanized</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless steel, V2A 304</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, V2A 316</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Stainless steel, galvanized</td>
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<tr>
<td>Standard version</td>
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</tbody>
</table>
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

Fin Spacing
- 4 / 7 mm

Product Types / Refrigerant / Capacity

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Nominal capacity</th>
<th>Sound pressure level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFC</td>
<td>20 – 700 kW</td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>on request</td>
<td></td>
</tr>
</tbody>
</table>

Available Accessories

- Liquid Receiver
- Controls
- Other
- ✓ Horizontal
- ✓ Vertical
- ✓ GMM sincon®
- ✓ Switch cabinet
- ✓ Repair switch
- ✓ Epoxy-resin coated fins
  - Max. operating pressure
- ✓ 41 bar
- ✓ Vibration dampers
- ✓ Check valves

Available material

<table>
<thead>
<tr>
<th>Material</th>
<th>Tube</th>
<th>Fin</th>
<th>Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIMg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium</td>
<td>✓</td>
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<td></td>
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<tr>
<td>Copper</td>
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<tr>
<td>Aluminium, epoxy-resin coated</td>
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<td>Steel, hot-dip galvanised</td>
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<tr>
<td>Stainless steel, V2A 304</td>
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<tr>
<td>Stainless steel, V2A 316</td>
<td>✓</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Energy efficiency</th>
<th>GMM step</th>
<th>GMM phase cut</th>
<th>GMM f-drive</th>
<th>GMM sincon®</th>
<th>GMM EC</th>
<th>GMM EC spray basic</th>
<th>GMM EC spray professional</th>
<th>GMM EC pad</th>
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<td>not so good</td>
<td>not so good</td>
<td>not so good</td>
<td>not so good</td>
<td>not so good</td>
</tr>
</tbody>
</table>

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

EC fans

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

Spraying / Humidifying

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

The GMM phase cut is used for voltage-controllable AC external rotor motors. This is the most cost-effective way of realizing 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.

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.

The GMM sincon® is a speed controller for external rotor motors with a frequency converter as the power unit. This product's specialty 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.

Utilization 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.
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 anticlockwise 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.

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.

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.
Our experts provide competent advice for your particular application!

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