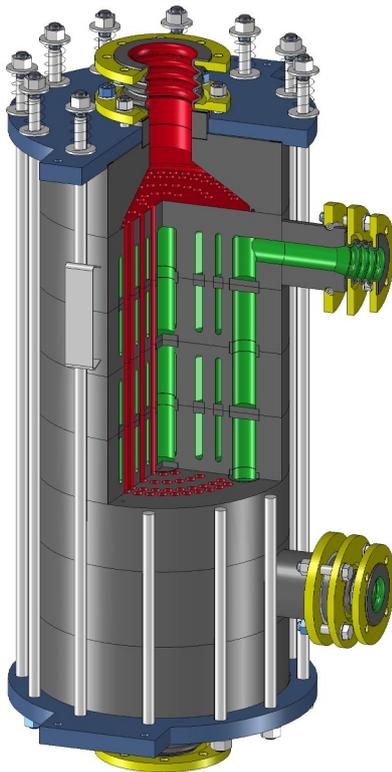


Graphite Annular Groove Condenser GN/GH Series

Product Information (GN-1)

Graphite annular groove condenser

- Heat exchanger made of impregnated graphite for condensing corrosive media
- Resistant to nearly all acids, acid mixtures, halogen compounds and solvents
- Optimized design as post-condenser or for media with very different heat transfer coefficients.
- Corrosion-resistant on the product and service side (optional), so that it can also be used as an equipment for heat recovery in corrosive processes
- Vertical (GN) or horizontal version (GH)



Cross section of a graphite annular groove condenser type GN

Design

- Cylindrical graphite discs with axial flow for the condensing product
- Drillings on product side large heat transfer areas and large cross sections
- Annular grooves on the service side for high turbulence even with viscous media
- Gasket-free thanks to fully cemented annular groove discs
- Compensation of thermal expansion through tie rods and springs
- Removable headers available as an option
- GMP-design as an option
- (Sight glass, Cleaning in Place, depending on equipment size)
- Heat transfer areas: up to 100 m² (product side)
- Disc diameter: up to 900 mm

Potential Applications

- Cooling of exhaust gases or condensation of corrosive vapors, e.g. to comply with VOC regulations
- Condensation and separation of vapors before and after dry running vacuum pumps
- Heat recovery by cooling / condensation of exhaust gases

Advantages and special features

High corrosion resistance to acids, halogen compounds and solvents
 Large flow cross section on the product side
 Excellent exchange capacity (high heat transfer coefficients)
 Self cleaning effect is high
 No cross-contamination
 No gaskets
 Compact design
 No swelling stresses caused by organic solvents
 Low maintenance requirements
 Low maintenance and spare parts costs
 High operational reliability

Design parameters

Allowable pressure:
 -1 bar to +6 (+10) bar
 Full vacuum to 90 psig (150 psig)

Allowable temperature:
 -30 (-60)°C to +180 (+200)°C
 -22°F (-74°F) to 356°F (392°F)

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GN/GH Series

Materials Used and Material Options

Graphite	Phenolic resin-impregnated graphite GAB GPX1 / GPX1T or GAB GPX2 with low resin content (option)
Reinforcement	Carbon fiber fabric (optional)
Gaskets	None (cemented discs) Flat gaskets (with removable headers as an option)
Steel parts	Pressure plates and flanges: carbon steel (stainless steel as an option) Rods, nuts, springs: stainless steel

FDA conformity declaration for all product-side MOC (GMP-compliant design) as an option

Design and Inspection

- Annular groove heat exchangers are designed, manufactured and inspected according to AD 2000 Merkblatt (in compliance with the European Pressure Equipment Directive, PED)
- Other designs and codes upon request



Specifications and offer preparation

We need the following information to prepare a complete offer:

- Flowrates and physical properties of the process and service media
- Inlet and outlet temperatures
- Operational pressure and allowable pressure drops
- Further process details if suitable
- Please fill in our WS1550 form

Graphite annular groove condenser
GN3-06-9/GMP

Additional Information

- Data sheets GN and GH include information on terminology and dimensions
- Additional piece of information (brochures, corrosion charts, product information, data sheets,...) can be found on our web site at <https://www.gab-neumann.com/>

Advantages

- Sturdy and modular design
- Operational safety and reliability
- No risk of cross-contamination

Technical Perfection

- High thermal efficiency
- Long lifetime

Economically Outstanding

- Low-cost alternative to shell & tube exchangers for small and intermediate heat transfer areas
- Low maintenance cost