

Graphite Annular Groove Reboiler UB Series

Product Information (RN-13)

Graphite Annular Groove Reboiler

- Impregnated graphite heat exchanger for evaporation of liquid corrosive media
- Resistant against corrosion by virtually all leaches, acids, solvents and halogen compounds
- Both forced and thermosyphon circulation available
- Heating with either steam or liquid heat transfer
- Product and utility sides both resistant to corrosion
- Detachable headers and distributors for easy mechanical cleaning according to GMP process conditions (optional)

Features

Highest resistance to corrosion

Variable flow sections

Excellent heat transfer performance

Self-cleaning

No cross-contamination

No gaskets and therefore no risk of leakage

GMP-compliant design, suitable for API production

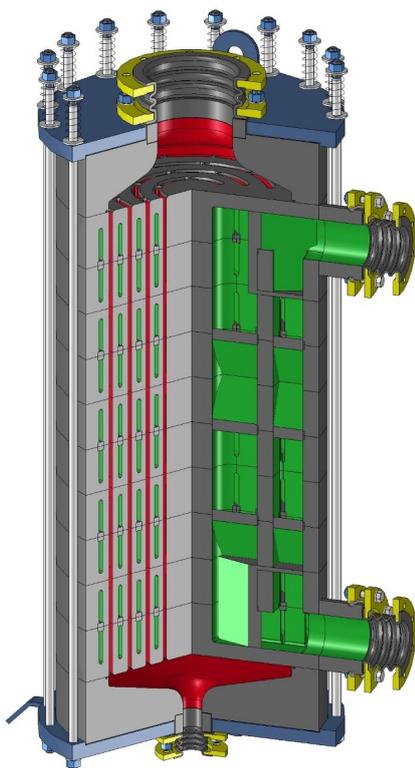
Small overall height, compact design

Low maintenance cost

High plant availability

Design

- Cylindrical graphite discs with straight channels for product evaporation
- Evaporation channels of different widths / cross sections
- Gasket-free, completely fused annular groove discs
- Thermal expansion compensation using tie rods and helical springs
- Carbon fiber reinforcement of main body
- Detachable headers for easy cleaning (optional)
- GMP-compliant design (optional)
- Max. transfer area: 55 m² (592 ft²)
- Max. disc diameter: 900 mm (36")



Graphite annular groove reboiler (cross section)

Potential Applications

- Liquid organic media in evaporation in continuous or discontinuous processes (distillation, rectification), e.g. column sump reboiler
- Diluted sulphuric or hydrochloric acid concentration
- Hydrochloric acid desorption

Design parameters

-1 bar to +6 (+10) bar
max. allowable pressure

Full vacuum to 90 psig
(150 psig)

-30 (-60)°C to +180 (+200)°C
-22°F (-74°F) to 356°F (392°F)
max. allowable temperature

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Materials Used and Material Options

Graphite	Phenolic formaldehyde resin-impregnated graphite GAB GPX1 / GPX1T resp. GAB GPX2 with low resin content (optional)
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Reinforcement	Carbon fiber fabric (standard)
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Gaskets	None (fused discs) Optional flat gaskets (with detachable headers and distributors)
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Steel parts	Pressure plates and flanges: carbon steel (optional stainless steel) Rods, nuts, springs: stainless steel
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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 design and manufacturing standards available upon request



Specifications and Price Quotes

For a detailed offer, please provide the following data:

- Quantity and physical properties of the process and service medium
- Required inlet and outlet temperatures
- Operational pressure and allowed pressure drops
- Further process details (optional)
- Please fill out our questionnaire: WS 1550

Graphite annular groove reboiler UB7-10-C

Additional Information

- Data sheet RN-13 includes information on terminology and main dimensions
- Further precisions and complementary information (brochures, corrosion resistance charts, product information, data sheets,...) are available for download at www.gab-neumann.de.

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Advantages

- Robust design
- Modular setup
- Easy assembly
- High operational safety
- Easy mechanical cleaning

Technical Perfection

- Application preferred in single-purpose and mono plants
- Best thermal performance at compact dimensions
- Long lifetime

Economically Outstanding

- Low-cost alternative to shell & tube exchangers for small and medium-sized transfer areas
- Low maintenance and spare part cost
- Best price level
- Short lead times



Graphite and SiC Heat Exchangers and Process Equipment