Graphite Falling Film Evaporator **FB** Series

Graphite Falling Film Evaporator

- Impregnated graphite heat exchanger for evaporation of liquidcorrosive media
- Resistant against corrosion by virtually all leaches, acids, solvents and halogen compounds
- Incudes special falling film distributor to ensure controlled evaporation within a large range of flow conditions
- Heating with steam or liquid heat transfer media
- Corrosion resistant on both sides (product and utility)
- Optional detachable headers and distributors for easy mechanical cleaning according to GMP process conditions

Design

- Cylindrical graphite discs with straight channels for the product evaporation
 - Two stage liquid distributor (with detachable option)
 - 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 bodv
 - Detachable headers for easy cleaning (optional)
 - GMP-compliant design (optional)
 - Max. transfer area: 55 m² (592 ft²)
 - Max. disc diameter: bis 900 mm (36'')

Graphite falling film evaporator (cross section)

Potential Applications

- Evaporation of liquid organic media in continous or discontinous processes (distillation, rectification)
- Concentration of diluted sulphuric or hydrochloric acid _
- Solvent recovery processes

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Product Information (RN-14)

Features

Optional corrosion resistance

Equal and constant liquid distribution for optimized evaporation

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 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



Graphite and SiC Heat Exchangers and Process Equipment



Graphite Falling Film Evaporator FB Series

Material Used and Material Options

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

Specifications and Price Quotes

To receive 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



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 upon request

Detail view on distributor (detachable)

Advantages

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

Technically Perfection

Application preferred in single-purpose and mono plants

Optimal 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

Competitive pricing

Short lead times

Additional information

- Data sheet RN-14 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.



Graphite and SiC Heat Exchangers and Process Equipment