

# Graphite Annular Groove Quench Q Series

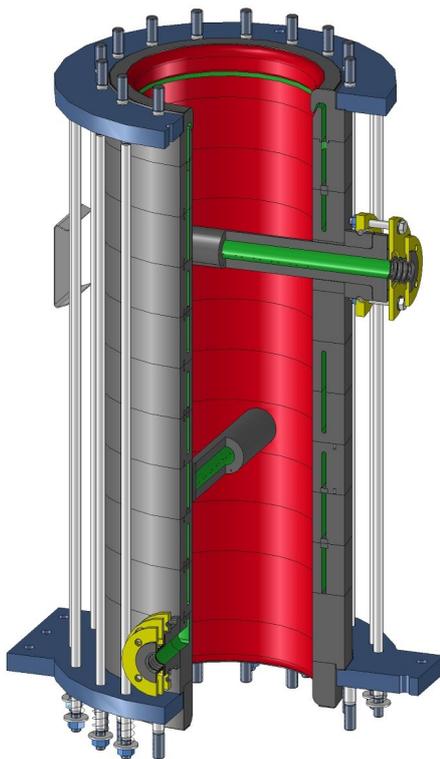
## Product Information (RN-S2)

### Graphite Annular Groove Quench

- Impregnated graphite spray quench for the cooling of corrosive tail gases
- Resistant against virtually any common acids, acid mixtures, solvents, and halogenated chemicals
- Suitable for gases with significant halogen compounds (e.g. Cl<sub>2</sub>, Br<sub>2</sub>) and NO<sub>x</sub>
- Spray lances facilitate ideal cooling, even with large gas volume variations
- Also applicable in processes with solid content

### Design

- Cylindrical, cooled graphite rings with straight flow channel for gas cooling
- Cooling media overflow device for increased corrosion protection using liquid film, even when oxidizing gases
- If the quenching water contains some solids, shell-side cooling can also be carried out in a closed circuit (for example with cooling water) to prevent fouling and clogging in the long-term
- Spray lances with special nozzle design for increased interphase
- Impingement elements preventing abrasion effects in processes with solid content (optional)
- Carbon fiber reinforcement of main body (optional)
- Max. nominal dia.: DN1200 (48")
- Max. volume flow: 35.000 m<sup>3</sup>/h  
20000 N.cfm.



Graphite annular groove quench  
(cross section)

### Potential Applications

- Quenching of HCl, HBr, or Cl<sub>2</sub> containing flue gases from multipurpose plants
- Quenching in ore refining processes with significant inorganic solid content
- Quenching of CFC vent gas containing PTFE dust

### Features

Optimal resistance to corrosion

Treatment of highly oxidizing gases

No corrosive wear on highly stressed components, therefore low maintenance requirements

Suitable even with large gas volume variations

Short distance / duration for achieving wet bulb temperature

Small overall height, compact design

Low maintenance cost

High plant availability

### Design Parameters

-1 bar to +3 bar  
max. allowable pressure

Full Vacuum to 43 psi

-30 (-60)°C to +1.300°C  
-22°F (-74°F) to +2372°F  
max. allowable temperature

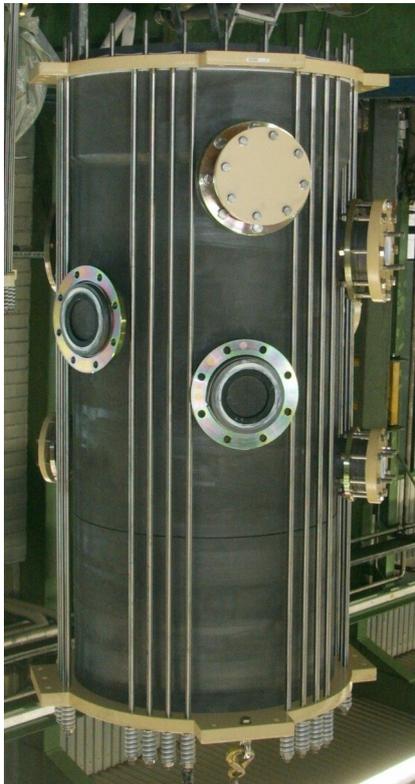
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## Materials Used and Material Options

Graphite	Phenolic formaldehyde resin-impregnated graphite GAB GPX1 / GPX1T resp. GAB GPX2 with low resin content (optional)
Reinforcement	Carbon fiber fabric (optional)
Spray lances	Graphite GX1 (optional with impingement elements CX)
Steel parts	Pressure plates and flanges: carbon steel (optional stainless steel) Rods, nuts, springs: stainless steel

## 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 quench Q80-20-3  
Nominal diameter DN800

## Additional information

- Further precisions and complementary information (brochures, corrosion resistance charts, product information, data sheets,... ) are available for download at [www.gab-neumann.de](http://www.gab-neumann.de).

## Advantages

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

## Technical 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