

# Complete line of sealing products and services



## Our products – as varied as our customers.

EagleBurgmann products deliver safe, reliable sealing performance in any application including oil pumping and cracking, gas compression, process gas containment, phase separation or synthesis of chemical substances, pipeline sealing, dairy product filling or compensation of temperature expansion in flue gas systems.

Our challenge is to design seals that are able to withstand a wide range of media, different aggregate states and varying pressure and temperature and to provide special solutions for small installation up to seal contact areas of several meters. Every application has its own special requirements profile, and our job is to provide the best sealing solution.

### **The EagleBurgmann portfolio: A product range with an unlimited horizon.**

EagleBurgmann is one of the world's leading manufacturer of industrial sealing solutions. Our extensive portfolio includes everything from standard seals to one-off application-specific designs:

- Mechanical seals
- Magnetic couplings
- Seal supply systems
- Carbon floating-ring seals
- Compression packings
- Gaskets
- Expansion joints
- Special products
- TotalSealCare Services

### **Total commitment to quality excellence.**

Outstanding quality is the top priority at EagleBurgmann. Our products are designed for user-friendly installation, optimal functionality and long service life. Our R&D activities, advanced quality management system, in-house test facilities and in-depth engineering expertise ensure that our seals meet the most demanding customer expectations. Starting right back in the development phase, our employees continually verify the quality of our products, and we carry out systematic inspection and testing to guarantee that customers are getting top quality.

### **Proud of the trust which our customers place in us.**

EagleBurgmann is a dependable, competent partner. Our customers are always in total control of the media in their pumps, agitators, compressors, blowers, turbines, valves and pipeline systems even when operating conditions are extremely harsh. There is good reason why customers in the oil & gas, refinery, chemical, energy, food processing, paper, water, marine, aerospace, mining and other industries choose EagleBurgmann as their sealing solutions supplier.





### **EagleBurgmann at a glance.**

- More than 125 years of experience in sealing technology
- More than 6,000 highly-skilled and highly-motivated employees
- Comprehensive range of products and services
- 250 locations and service centers in close proximity to our customers
- TotalSealCare – the modular seal service to meet the individual needs of our customers in any industry

## Mechanical seals



### Mechanical seals for pumps

EagleBurgmann offers a complete range of liquid and gas-lubricated pump shaft seals including standard and engineered seals in single and multi-seal versions. We also offer a complete range of solutions for all API 682 categories and arrangements. The portfolio includes a broad selection of material and surface technologies such as DiamondFaces coatings.

### Cartridge seals

- Easy to install
- Inboard/outboard variants
- For all standard modes of operation
- O-ring, metal bellows and elastomer bellows seals
- Gas-lubricated versions
- Special versions, e.g. for sterile applications
- Split versions available
- Diameter: 25 ... 100 mm (1 ... 4")
- Pressure: ... 25 bar (... 362 PSI)
- Temperature: -40 ... +220 °C (-40 ... +428 °F)

### Elastomer bellows seals

- Compact design
- Straight forward installation
- Stationary and rotating designs
- Approvals: FDA, WRAS, KTW, ACS, W270, NST
- Diameter: 6 ... 100 mm (0.24 ... 4")
- Pressure: ... 25 bar (... 362 PSI)
- Temperature: ... +140 °C (... +284 °F)

### Component seals

- Designed for universal applications
- Versions for high-viscosity media and media containing solids
- Versions for high-performance pumps
- Diameter: ... 400 mm (... 16")
- Pressure: ... 150 bar (... 2,176 PSI)
- Temperature: -50 ... +220 °C (-58 ... +428 °F)

### Metal bellows seals

- For extreme temperature ranges
- For high-viscosity media and media containing solids
- Diameter: 16 ... 100 mm (0.62 ... 4")
- Pressure: vacuum ... 25 bar (... 363 PSI)
- Temperature: -100 ... +400 °C (-148 ... +752 °F)

### Typical applications:

Centrifugal pumps, positive displacements pumps, high-performance pumps, multi-phase and slurry pumps, circulation pumps, hydraulic pumps



### Mechanical seals for agitators

Sealing solutions for normal and sterile applications. The design and selection of materials ensure that the seals are rugged enough to deliver outstanding cost and engineering performance in everyday applications.

### Dry-running agitator seals

- Dry-running, contacting seal faces
- No seal supply system needed
- FDA-approved face materials
- Diameter: 25 ... 200 mm (1 ... 7.87")
- Pressure: vacuum ... 6 bar (... 87 PSI)
- Temperature: -20 ... +200 °C (-4 ... +392 °F)

### Gas-lubricated agitator seals

- For steel and glass lined vessels
- DIN connections or according to customer request
- FDA-approved face materials
- Non-contacting operation
- Versions for sterile applications
- Diameter: 40 ... 320 mm (1.58 ... 12.60")
- Pressure: vacuum ... 14 bar (... 203 PSI)
- Temperature: -20 ... +200 °C (-4 ... +392 °F)

### Liquid-lubricated agitator seals

- For steel and glass lined vessels
- DIN connections or according to customer request
- FDA-approved face materials
- Designed for all applications
- Diameter: 15 ... 500 mm (0.59 ... 19.69")
- Pressure: vacuum ... 250 bar (... 3,626 PSI)
- Temperature: -80 ... +350 °C (-112 ... +662 °F)

### Typical applications:

Agitators, mixers, dryers, kneaders, reactors, separators, filters



### Mechanical seals for compressors

A complete range of products for process gas compressors from a single source. Single, double and tandem versions and tandem seals with intermedia labyrinths. Rugged, non-wearing, non-contact seals designed to deliver outstanding performance and long service life.

### DGS/NF series

- Standard product series with a proven track record
- Diameter: 29 ... 264 mm (1.14 ... 10.39")
- Pressure: 0 ... 100 bar (0 ... 1,450 PSI)
- Temperature: -20 ... +200 °C (-4 ... +392 °F)
- Sliding velocity: 0.6 ... 200 m/s (2 ... 656 ft/s)

### PDGS high-pressure version

- Good chemical resistance, no elastomer
- DLC-coated sliding faces
- Diameter: 29 ... 435 mm (1.14 ... 17.13")
- Pressure: 0 ... 450 bar (0 ... 6,526 PSI)
- Temperature: -170 ... +230 °C (-274 ... +446 °F)
- Sliding velocity: 0.6 ... 200 m/s (2 ... 656 ft/s)

### MDGS series for screw compressors

- Face materials: ductile steel with DM-TiN coating
- Diameter: 40 ... 280 mm (1.57 ... 8.66")
- Pressure: 0 ... 50 bar (0 ... 725 PSI)
- Temperature: -20 ... +200 °C (-4 ... +392 °F)
- Sliding velocity: 0.6 ... 200 m/s (2 ... 656 ft/s)

### TDGS series for steam turbines

- Metal bellows
- Diameter: 40 ... 140 mm (1.5 ... 5.5")
- Pressure: ... 10 bar (... 145 PSI)
- Temperature: -50 ... +450 °C (-58 ... +842 °F)
- Sliding velocity: ... 130 m/s (... 427 ft/s)

### Oil barrier seals CSR/CSE

- Ideal for small seal chambers
- Very low gas consumption
- Diameter: 29.5 ... 379.5 mm (1.16 ... 14.94")

### CobaSeal oil barrier seal

- Oil tight in all operating modes
- Low buffer gas consumption
- Face materials: ductile steel with patented DM-TiN coating and silicon carbide with DLC coating
- Diameter: 29.5 ... 159.5 mm (1.16 ... 6.280")
- Pressure: 0 ... 10 bar (0 ... 145 PSI)
- Temperature: -20 ... +50 °C (-4 ... +122 °F)
- Sliding velocity: 0 ... 150 m/s (0 ... 492 ft/s)

### Typical applications:

Centrifugal compressors, expanders, turbines, integrally geared compressors, screw compressors, roots compressors, special machines

## Magnetic couplings



Uncompromising sealing technology for very demanding applications. Hermetically sealed magnetic couplings guarantee leakage-free and maintenance-free pumping and mixing. The media remains within closed system circulation loops.

### MAK series

- Modular design
- Integrated sliding bearing
- Compact dimensions
- Torque transmission ... 462 Nm
- Speed: 3,600 min<sup>-1</sup>
- Pressure: ... 40 bar (... 580 PSI)
- Temperature: ... +250 °C (... +482 °F)
- Versions for sterile agitator applications
- Optional ceramic or carbon PEEK can

### NMB high-efficiency series

- Patented laminated can
- Reduced eddy current losses
- Optional sliding bearing
- Torque transmission: ... 1,879 Nm
- Pressure: ... 1,000 bar (... 14,504 PSI)
- Temperature: ... +250 °C (... +482° F)

### Typical applications:

Centrifugal pumps, positive displacements pumps, vacuum pumps, agitators, mixers, compressors, blowers, special machines

## Seal supply systems



Depending on the design, application and mode of operation, supply systems are needed to flush, cool and pressurize mechanical seals and magnetic couplings and provide leakage compensation. EagleBurgmann supplies a complete range of solutions from a single source including design, production, commissioning and service. The portfolio includes a complete line of API compliant supply systems.

### Quench systems

- Thermosiphon principle or forced circulation
- Versions with polyethylene or stainless steel tanks
- API 682 versions

### Thermosiphon systems

- Extensive standard range
- Sterilizable versions
- API 682 versions for Plan 52 and 53A

### Heat exchangers

- Extensive standard range
- Extremely efficient cooling
- Compact design
- API 682 versions

### SPO closed-circuit buffer fluid systems

- Suitable for applications with variable pressure
- No connection to nitrogen supply necessary
- API 682 versions

### SPA open-circuit buffer fluid systems

- High cooling capacity
- Supply for multiple seals

### SPN refill units

- Manual, automatic and mobile versions

### Gas supply systems

- Customized versions for all types and requirements in gas-lubricated mechanical seal applications
- Seal management system
- API 614

### RoTechBooster

- Compact gas supply unit for compressor seals during the slow-roll or shut-down phase

### Typical applications:

Liquid and gas lubricated mechanical seals, magnetic couplings



### Important note

All the technical specifications are based on extensive tests and our many years of experience. However, the diversity of possible applications means that they can serve as guide values only.

It should be noted that the extremal values of each operating parameter cannot be applied at the same time because of their interaction. Furthermore, the operating range of each specific product depends on the respective shaft diameter, materials used, mode of operation and on the medium to be sealed.

A guarantee can only be given in the individual case if the exact conditions of application are known and these are confirmed in a special agreement. When critical conditions of operation are involved, we recommend consulting with our specialist engineers.

Subject to change.

# sealing solutions to meet any challenge.

## Carbon floating ring seals



Carbon floating ring seals are supplied as maintenance free compact labyrinth cartridge seals with low leakage. The floating self-adjusting sealing rings provide radial sealing on the shaft with a very small gap. The seal requires no additional lubrication, and it is designed for dry running. Besides pure gas, carbon floating ring seals are also suitable for Atex applications, toxic media, media containing solids, flue gas, dust, powder, vapor, liquid mist, oil mist and penetrating oil.

### WD series (two part housing)

- Designed for all applications
- Special versions based on customer specification available
- Split rings and housing for easy installation
- Pressure: vacuum ... 20 bar (... 290 PSI)
- Shaft diameter: 40 ... 340 mm (1.57 ... 13.39")
- Radial clearance: max.  $\pm$  5.0 mm (0.2")
- Axial movement: theoretically no limit
- Temperature: -120 ... +800 °C (-184 ... +1,472 °F)

### Special WD series variants

- Versions for bulkhead sealing, resistant to seawater, approved and certified, shaft diameter: ... 800 mm (... 31.5")
- Versions for top-drive agitators and DIN seal chambers, no cooling required
- Blast furnace versions, shaft ... 4,000 mm (... 157.48")
- Versions for mill and centrifuge inlet heads

### WKA series (chamber version)

- Designed for all applications
- Special versions based on customer specification available
- Modular chamber components – can be supplied with housing and cover
- Pressure: vacuum ... 250 bar (... 3,626 PSI)
- Shaft diameter: 20 ... 340 mm (0.79 ... 13.39")
- Radial clearance: max.  $\pm$  2.0 mm (0.08")
- Axial movement: theoretically no limit
- Temperature: -120 ... +500 °C (-184 ... +932 °F)

### Shaft sleeves

- Metallic or ceramic coating
- One-piece or split design
- Shaft diameter: 45 ... 340 mm (1.77 ... 13.39")
- Temperature: ... +1,000 °C (... +1,832 °F)

### Typical applications:

Blowers, compressors, turbines, centrifuges, exhaust vapor machines, mills, agitators, dryers, bulkheads, steam turbines, throttle/control valves, gear units, motors

## Compression packings



A cost effective and reliable method for sealing pump shafts, valve spindles and rotating shafts in process equipment. Manufactured from a range of material combinations – traditional and innovative- using state-of-the-art production techniques. Supplied in boxed lengths or pre-cut rings. Approvals/certification includes BAM, DVGW, FDA, API, ISO, TA-Luft. Fire-safe, low leakage and nuclear grades are available with full documentation and certification.

### Rotatherm graphite rings

An accepted industry-standard for valves and pumps in high pressure and high temperature service. Manufactured as moulded rings (with and without steel reinforcement) or special seals. Suits all industry applications including the power and nuclear industries. Approvals/certification includes: BAM, DVGW, API, ISO, TA-Luft.

### BuraTAL Fugitive emission products

A comprehensive range of low leakage packing sets manufactured in graphite or our unique non-woven materials. All current fugitive emission standards are met with outstanding performance, low friction, ease of installation, and a long service life. Approvals/certification includes: API 622, ISO 15848, TA-Luft.

### Burajet Injectable packings

The Burajet Injectable packing system offers a wide range of injectable compounds for pumps, valves, and process equipment. An ideal product for the mining and paper & pulp industries. Approvals/Certification includes: FDA

### Buraglas Glass packings

Manufactured from non-ceramic materials and fibres, BuraGlas packings are suitable for sealing of vessels, coal mills, industrial furnaces, oven doors, hatches and covers. Produced in lengths in sizes up to 150 mm section. Approvals/Certification: Hydrolytische Klasse 1; DIN 12111.

### Packing cartridges

Packing cartridges combine quick and easy installation with robust simple construction to provide minimum downtime and maximum reliability in critical process applications. Manufactured to individual requirements to fit into DIN/ASME standard equipment e.g. agitators. Cartridges can be supplied with live-loading and additional bellows containment for maximum environmental safety.

### Typical applications:

Pumps, agitators, mixers, kneaders, dryers, fans, blowers, filters, refiners, pulpers, mills, valves

## Gaskets



### Fibre gasket sheets

**Burasis-Basic, -Universal and Buratherm N** gasket sheets for service in low to medium pressure and temperature applications for process equipment and pipework in industry and for utility applications like gas and water supply. Approvals/certification includes: DVGW, KTW, HTB, WRAS, WRC, TA-Luft, BAM (Oxygen max. = 120 °C / 130 bar)

### PTFE gasket sheets and tapes

**Burachem** is a highly chemical resistant modified PTFE gasket material range offering varying properties of mechanical strength and chemical resistance depending upon application. Approvals/certification includes: DVGW, KTW, HTB, WRAS, WRC, BAM (Oxygen max. = 120 °C / 130 bar), TA-Luft.

**Quick-Seal** MultiTex tape is the latest development in the field of expanded PTFE sealing materials for in-place sealing of vessel and pipe flanges.

### Graphite seals and tapes

#### Statotherm Graphite gasket sheets, tapes

Soft, flexible, graphite gasket sheets ideal for pump, valve, and equipment gaskets.

**Statotherm R Profile rings** for static sealing in high temperature applications, e.g. in heat exchangers, valves or pumps.

**Statotherm V and V-Flex cover seals** are used as self-sealing gaskets in high-pressure valves e.g. for power plants at high temperatures. Statotherm V-Flex is supplied by the meter.

### Metal gaskets

Approvals/certification include BAM, DVGW, TA-Luft

**Spiraltherm spiral wound gaskets.** Available to suit all international flange standards and in a wide choice of materials.

**Corratherm corrugated gaskets** are for heavy duty applications.

**Kammprofile serrated gaskets** are for applications with high demands for operating safety and tightness.

**Buralloy metal jacketed gaskets** are produced in a wide variety of different materials (in various combinations), in many styles for heat exchangers, pipe flanges, boilers, and process equipment.

**Buralloy ring type joints** are available to suit all ASME and DIN flanges from stock. Sizes: 15 ... 900 mm (0.5 ... 36"); manufactured to ASME B16.20 and to API 6A.

### Typical applications:

Stationary machine parts, flanges, flange-like joints, bulkheads

## Expansion joints



Flexible expansion joints in pipes and duct systems neutralize the effects of pressure and temperature fluctuation, vibration and misalignment at the joint. They must also be leakproof and resistant to media. Customized expansion joints made of fabric, metal or rubber are the solution of choice.

### Fabric expansion joints

- Single and multi layer designs
- Temperature:  $-60 \dots +1,200 \text{ }^\circ\text{C}$  ( $-76 \dots +2,192 \text{ }^\circ\text{F}$ )
- Pressure:  $\pm 250 \text{ mbar}$  ( $25 \text{ kPa}$ )
- Versions with wiremesh reinforcement
- Versions with high chemical resistance

### Metal expansion joints

- Temperature:  $-215 \dots +1,200 \text{ }^\circ\text{C}$  ( $-355 \dots +2,192 \text{ }^\circ\text{F}$ )
- Pressure: vacuum  $\dots 70 \text{ bar}$  ( $\dots 1,015 \text{ PSI}$ )
- Materials: stainless steel, Incoloy<sup>®</sup>, Inconel<sup>®</sup>, Hastelloy<sup>®</sup>, titanium, special materials
- Versions with PTFE lining

### Rubber expansion joints

- Standard series DN 20  $\dots$  750 mm ( $3/4 \dots 30''$ )
- Engineered series DN 50  $\dots$  3,600 mm ( $2 \dots 144''$ )
- Multiple arch designs
- PTFE versions with good chemical resistance: 0  $\dots$  14 pH
- Variants with drinking water approvals

### Typical applications:

Air and flue gas ducts, pipelines, sewer systems

## Special products



For particular applications, innovative, customized solutions are the only answer. The supplier must have a wealth of in-depth expertise, many years of experience and above all the willingness and ability to translate ideas into solutions that work in practical application.

### Contoured diaphragm couplings

For demanding rotating equipment such as turbines and compressors in the oil and gas industries as well as petrochemicals, conventional and nuclear power generation, marine applications and the aerospace industry.

They are lightweight, easy to install and maintain, and demonstrate high reliability in stress analysis. Low bearing load, best dynamic balance repeatability and no fretting or wearing are advantages of the coupling. Uniquely shaped flexible elements in the metal diaphragms located at each end of the spacers attain optimum performance. Additional features:

- Couplings acc. to API 671 / ISO10441 or API 610 / ISO13709
- Multi diaphragms, compensation for large misalignments
- Low (reduced) moment
- Electrically insulatet
- Spark resistant materials
- Tuned for rotor dynamics
- Torque overload releasing device
- Torque measuring system

Operating range: Max. torque: 2,700 kNm,  
max. speed: 100,000 min<sup>-1</sup>

### High-grade metal bellows

for specialized applications in the nuclear power, semi conductor and medical equipment industries, etc.

### Dynamic and static sealing elements

for the aerospace industry which meet extremely demanding quality requirements

### Stern tube and marine seals

with various approvals and certifications, for marine outfitters and users

### Rotary kiln sealing systems

as single and double seals in drying, calcination, combustion and pyrolysis applications

### Typical applications:

Engineered solutions designed to meet customer requirements

## TotalSealCare



Flexible, transparent service modules tailored to specific requirements and business environment. Full service from installation, commissioning and total maintenance of all installed seals including electronic documentation right through to inventory management and staff training.

Our customers choose only the services that they really need, putting together a service package which is tailored to their exact on-site needs.

### The modules at a glance

- Consulting & engineering
- Maintenance and repair
- On-site service
- Inventory management
- Seminars & training
- Engineering analysis & support
- Service agreements

### Typical applications:

Oil & gas, refinery, petrochemical, chemical, pharmaceutical, energy, food, paper, water, etc.

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EagleBurgmann is one of the internationally leading companies for industrial sealing technology. Our products are used everywhere where safety and reliability are important: in the oil and gas industry, refining technology, the petrochemical, chemical and pharmaceutical industries, food processing, power, water, mining, pulp & paper, aerospace and many other spheres. Every day, more than 6,000 employees contribute their ideas, solutions and commitment towards ensuring that customers all over the world can rely on our seals. Our modular TotalSealCare service underlines our strong customer orientation and offers tailor-made services for every application.

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# **EagleBurgmann®**

**Rely on excellence**