



BURGMANN®

Leakproof for a Clean Environment...



Mechanical Seals



Static Seals



Stuffing Box Packings



Expansion Joints



Service

**Magnetic Couplings
Seal Supply Systems
Radial Shaft Seals**

**... all you need
for reliable
sealing solutions**

Our static seals are strong enough for even the toughest application!

Burgmann static seals, designed for all forms of gasketing and sealing, are suitable for extreme temperature and pressure conditions. We use the most modern materials, such as pure graphite, aramid, elastomers and PTFE. Our production tooling enables us to offer made-to-measure solutions whatever the quantities required, all with excellent leadtimes. Please do not hesitate to contact us!



Burasil® 9544-U

Aramid and mineral fibres with elastomer binder. Non-stick treatment on one side.

- Flexible
- BAM and KTW approved
- Widely-used product
- Wide range of thicknesses

Applications

Cold water, saline solutions, gas, petrol, alcohol, solvents, hydrocarbons, oils

Operating limits

Max. pressure: 100 bar
Max. temperature: 180 °C

Thicknesses

0.5 – 1 – 1.5 – 2 – 2.5 – 3 mm

Buratherm® 9544-T

Aramid and graphite fibres. Non-stick treatment on both sides.

- Ideal for standardisation
- High temperature
- Easy to cut

Applications

Steam, hydrocarbons, low concentration acids and chemicals

Operating limits

Max. pressure: 100 bar*
Max. temperature: 340 °C

Thicknesses

1.5 – 2 – 3 mm

Statotherm® 9593/...

Expanded graphite available in rings, bushes, tape, and sheet.

- Tolerates high temperatures
- Permanent elasticity

Applications

Chemical industry, paper manufacturing, petrochemicals, iron and steel making.

Operating limits

Max. pressure: 100 bar*
Max. temperature:
-200 ... +550 °C

Thicknesses

1 – 1.5 – 2 – 3 mm

Burachem® 9655/R

A modified reinforced PTFE gasket material. Very good resistance to cold flow and creep.

- Resistant to most chemicals
- BAM approved
- Conforms to FDA regulations 21 CFR 177.1550
- Wide range of thicknesses

Applications

Pharmaceutical, Food, Chemical and Petro-chemical industries:
Type R - general flange applications

Type B - glass-lined reactors and pipe connections
Type W - extreme chemical resistance e.g. chlorine, solvents.

Operating limits

Max. pressure: 80 bar
Max. temperature:
-200 °C ... +260 °C

Thicknesses

0.5 – 0.75 – 1 – 1.5 – 2 – 3 mm

Spiraltherm® 9594/...

Universal flat gasket of sectional stainless-steel tape with pure graphite filling, spirally wound for flanges, covers, manholes and the like in load-bearing and non-load-bearing condition.

- Permanent elasticity in hot/cold cycles
- Usable under rough conditions.
- Available for different shapes of flanges

Operating limits

Temperature:
-200 °C ... +550 °C,
Pressure: ... 400 bar (2,500 lbs)
for flanges to DIN or ASME
Helium leakage: $1.7 \cdot 10^{-9}$ mbar • l/s can be attained
pH: 0 – 14

Materials

Gasketing tape: pure graphite
Nuclear quality >99.8 %,
Industrial quality >98 %
Metal spiral: Standard 1.4541
(AISI 321)
Inner ring: as for metal spiral.
Outer ring: Steel, galvanized

More and detailed information on Static Seals:
www.burgmann.com

The solution for pumps and valves

Burgmann Stuffing Box Packings

The stuffing box packing is without doubt an extremely reliable method of sealing your pumps, valves and fittings. The materials that we use mean that a wide range of applications can be covered. Only Burgmann packings have the benefit of the AK-profile braiding technology which guarantees optimum durability along with considerably reduced leak rates.



Isartherm®-Flex 6050

Universal low-chloride packing made of expanded pure graphite with structural textile fibres. For high pressure and high temperature applications. Highly flexible and adaptable. Wear resistant yet gentle on valve stems and pump shafts. Suited e.g. for power stations and chemical plants.

Operating limits

Temp: -200 °C ... +550 °C
Pressure: 20 bar (pumps),
500 bar (valves)
pH: 0 - 14
Density: 1.1 ... 1.2 g/cm³

Isartherm®-Flex 6050 KIN

Valve packing made of same materials as Isartherm®-Flex but with additional Inconel® wire reinforcement and a corrosion inhibitor. Increased pressure stability. Ideal for bridging large gaps or to apply as a counter seal to prevent extrusion of other packing types.

Approval

Fire safe according API 589

Operating limits

Same as Isartherm®-Flex, specific weight approx. 17% greater.

Thermoflon®-SL 6230/SL

Graphite/PTFE compound packing with lubricant. Very good thermal conductivity, highly flexible and stable. No slip-stick effect. Resistant to a wide range of chemicals. Does not embrittle or age. Universal application in all types of industry. Suitable for hot water up to 120 °C uncooled at 10 m/s and 16 bar.

Approvals

FMPA Stuttgart, Germany for foodstuffs

Operating limits

Temp: -200 °C ... +280 °C
Pressure: 25 bar (pumps),
100 bar (valves)
pH: 2 - 12

Buratex® 4003

Cotton packing with light colored special grease impregnation. A preferred choice for clean media. Pre-impregnated twisted cotton yarns, intensively re-impregnated during braiding. An economical packing.

Operation limits

Temp: 100 °C
Pressure: 10 bar (pumps),
60 bar (valves)
pH: 6-8
Speed: 1,450 min⁻¹

Buraflon® 5846

Ramie fibre packing with light-colored special PTFE impregnation to prevent product contamination. A flexible low maintenance and easy-to-control packing. Resistant to abrasive media and sea water.

For pumps, refiners, filters and valves in the food and pharmaceutical industry, marine industry and others.

Approval

FMPA Stuttgart, Germany for foodstuffs.

Operating limits

Temp: -50 °C ... +140 °C
Pressure: 25 bar (pumps),
100 bar (valves)
pH: 2 - 12

Burasoft® 6225/L

Flexible PTFE packing with lubricating additive and good emergency running properties. For universal application in centrifugal pumps, control valves and special applications in chemical, pharmaceutical and foodstuff industry.

Operating limits

Temp: -200 °C ... +280 °C
Pressure: vacuum ... 15 bar
pH: 0 - 14 (static),
0 - 12 (dynamic)

Araflon® 6435

High quality smooth aramide packing with PTFE impregnation and lubricant. Due to extreme wear resistance suited for abrasive media. A universal packing for pumps and valves in all branches of industry, e.g. paper, sewage, chemical and petrochemical.

Operating limits

Temp: -100 °C ... +280 °C
Pressure: 15 bar (pumps),
100 bar (valves)
pH: 1 - 13

Chemstar®-L 6226/L

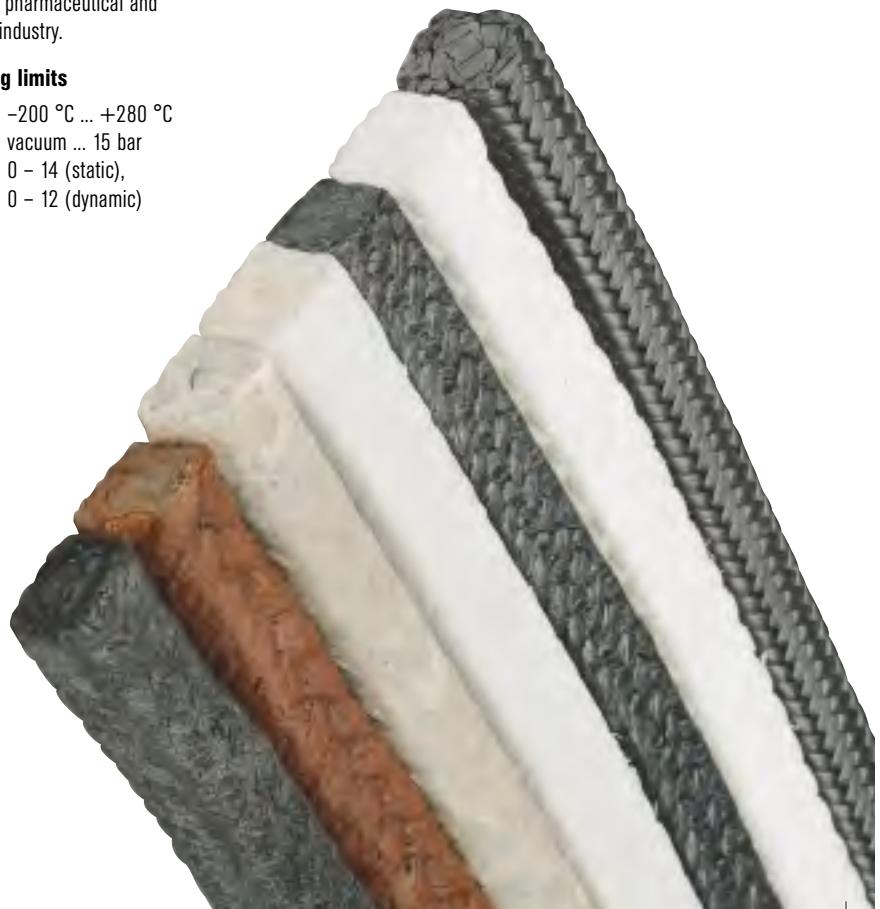
Universal packing preferably for chemical applications. Made of sintered, expanded PTFE filament yarns with PTFE impregnation. Resistant to compression and extrusion. High structural and cross-sectional strength. For valves (high pressure), plunger pumps, agitators, mixers, kneaders (up to 2 m/s dry running)

Approvals

FMPA Stuttgart, Germany for foodstuffs, BAM certificate for gaseous oxygen up to 150 °C and 40 bar, >150 °C to 200 °C and 30 bar.

Operating limits

Temp: -200 °C ... +290 °C
Pressure: 500 bar
pH: 0 - 14



More and detailed information on Packings:
www.burgmann.com

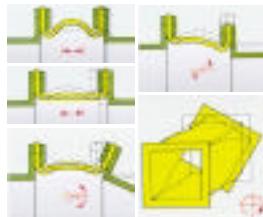
The solution for flue gas ducts and piping systems

KE-Burgmann Expansion Joints

Fabric and rubber expansion joints

Expansion joints are installed as flexible connections in piping and duct systems, transporting air, flue gases or liquids, in order to take up or compensate for pressure and thermal expansion, vibrations and misalignments. We offer a complete range of expansion joints to suit all your requirements:

Fabric, metal and rubber expansion joints.

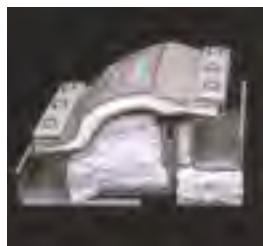


Fabric Expansion Joints

Combine-X®

- Multi-layer
- Application: gas turbine and combined cycle plants
- Temperature: ... 700 °C

Especially designed for use in gas turbine and combined cycle plants with high operating temperatures, very high gas velocities and pulsating gas flows.



Flex-Gen®

- Single or multi-layer
- Application: for air or dry flue gas
- Temperature: ... 575 °C



Simple, yet durable and strong. With unique thermal, chemical and mechanical properties, manufactured from our own reinforced PTFE-based laminates.

Advantages

- Exceptional flexibility and strength: the fabric is laminated with PTFE on two sides
- Exceptional mechanical resistance
- Elimination of heat pockets
- Excellent chemical resistance on all surfaces
- Gastight and non-permeable

Rubber expansion joints

KE-Masterflex®

Application areas

- Liquids, gas, slurry
- Temperature: ... 200 °C max.
- Pressure: -0.5 bar ... +16 bar max.



KE-Masterflex rubber expansion joints are available in two main types:

D-types - high quality standard. Sphere moulded design. DN 20 ... DN 750 mm.

DFS-types - special customised. Handmade spool arch design. DN 50 ... DN 2,400 mm.

Materials: EPDM, Neoprene, Nitrile, Hypalon®, FKM fluoroelastomers, Nitrile, Butyl HT, other materials available on request.



T-Max®

Special design options include the T-MAX rubber expansion joint with integrated PTFE lining, which covers all surfaces in the arch and flange areas as well. Exceptional resistance to almost all chemicals within the temperature range of the elastomeric body construction.

Fluachem®

- Single layer
- Application: aggressive media or wet condensate
- Temperatures: up to 300 °C

Single layer expansion joints based on (fluoro-)elastomers and (fluoro-)polymers, specially developed to withstand high chemical loads. For use in flue gas cleaning systems, incineration plants and other plants with very aggressive media.

Metal expansion joints



Bredan®

Connex®

All types of metal expansion joints in all possible configurations can be supplied:

- Round and rectangular, single or multi-layer, two-ply testable, externally pressurised, PTFE lined, clamshells etc.
- Axial, lateral, angular, universal, pressure-balanced, inline pressure balanced, double expansion joints etc.
- With corners as camera, single mitre, double mitre or radius corners for rectangular joints
- With or without flanges, tie rods, hinges, gimbals, internal sleeve, outside protective cover etc.

We use three manufacturing technologies

Roll forming
(DN 150 ... DN 1,200 mm)
Elastomer forming
(DN 40 ... DN 150 mm)
Punch forming
(DN 15 ... DN 5,000 mm)

More and detailed information on Expansion Joints:
www.ke-burgmann.com



Espey Seals



Espey Burgmann shaft seals

Sealing solutions for your fans, centrifuges and compressors.

- Space-saving
- Maximum sealing
- Ease of installation/removal

Radial sealing thanks to the use of graphite rings, specially adapted for fans, compressors, centrifuges and turbines.

Applications

Energy, incinerators, iron and steelworking, cement working, paper manufacture, petrochemicals. All types of gas.

Magnetic Couplings

... for hermetically sealing

Burgmann Magnetic Couplings are hermetically sealed permanent drives for pumps, agitators, compressors, fans and similar. The surest way to convey and mix without leakage and without maintenance.



MAK66 series

The standard magnetic coupling range

Universal magnetic coupling in modular design with a product lubricated bearing unit. A reliable and cost-effective solution for hermetic sealed systems. Easy to adapt.

Suitable for all dangerous, toxic or environmental sensitive organic and inorganic fluids e.g. in chemical industry and refineries.

Operating limits

Temperature: -40 °C ... +250 °C
Pressure: 16 bar (316SS), 24 bar (Hastelloy® C)
Torque: up to 445 Nm
Power: up to 100 kW at 3,000 min⁻¹

NMB series

The high efficiency magnetic coupling

Engineered magnetic coupling with patented containment shell in laminated design provides excellent efficiency for various applications. Best available technology at excellent life cycle costs.

Suitable for all dangerous or temperature sensitive fluids requiring hermetic sealing at high pressure, speed or power levels e.g. in chemical and petrochemical applications.

Operating limits

Temperature: -125 °C ... +250 °C
Pressure: 45 bar (316SS), 100 bar (Hastelloy® C)
Torque: up to 1,342 Nm
Power: up to 300 kW at 3,000 min⁻¹

Your Partner for Sealing Technology

Burgmann Worldwide

Burgmann is international

With 16 sales offices in Germany, more than 50 subsidiaries and joint ventures on all continents, over 3,100 employees and a turnover of about 298 mill. € worldwide in 2003 Burgmann Industries GmbH & Co. KG are one of the leading seal manufacturers.

With effect of March 2004 the

company with head offices in Wolfratshausen is one of ten independent operative Business Groups in the Freudenberg group, Weinheim/Germany.

Burgmann is quality

As one of Europe's very first seal manufacturers to do so Burgmann set up an independent quality system which is recognised by many international organisations and has contributed significantly to the company's global success. Burgmann products guarantee the very highest standards in terms of safety, efficiency and reliability and are employed in virtually all sectors of industry.

ISO 9001
ISO 14001



QHD

Qualified Hygienic Design
VDMA

DIN/EN 729-2
HPO

Certified

KTA 1401

Certified for Nuclear Power Plants

Quality Management System
QS 9000



More and detailed information on Espey Seals:
www.espey-burgmann.com

More and detailed information on Magnetic Couplings:
www.burgmann.com
www.novamagnetics.ca

Mechanical Seals from Burgmann

... for clean media



BT AR/FN series

Mass production, reduced costs

- Economical
- Excellent value for money

Applications

- Domestic applications
- Clean water, swimming pool water, domestic pumps

Description

Simple, single spring mechanical seal. Two versions available:

- with elastomer bellows (short AR version)
- with conical spring (long FN version)

Operating limits

Temp: -20 °C ... +140 °C
Pressure: 6 bar
Diameter: 6 - 60 mm

MG9

The modular option

- Interchangeability
- Modular length

Applications ...for hermetically sealing

- Water distribution, food processing, dairy industry
- Water, all types of clear fluids

Description

Simple mechanical seal, cylindrical spring, elastomer bellows. Suitable for all pumps.

Operating limits

Temp: -20 °C ... +90 °C
Pressure: 8 (12) bar
Diameter: 10 - 100 mm
Available in imperial sizes

MG1

The original

- Independent of the direction of rotation
- Excellent adaptability

Applications

- Food processing, water treatment, dairy industry
- Water, charged water, milk

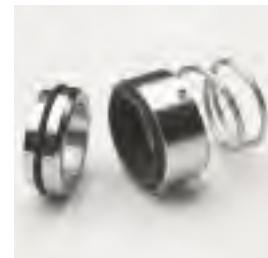
Description

Simple mechanical seal with elastomer bellows. Wide combination of possible materials

Operating limits

Temp: -20 °C ... +120 °C
Pressure: 12 (16) bar
Diameter: 10 - 100 mm

... for industrial processes



M3/H12 series

Added simplicity

- Robust
- Easy to install

Applications

- All industries
- Water, hot water, waste water

Description

Simple, standardised mechanical seal, single conical spring. Dependent on direction of rotation, wide range of materials.

Operating limits

Temp: -20 °C ... +180 °C
Pressure: 10 bar (M3)
25 bar (H12)
Diameter: 6 - 80 mm



H7/M7 series

The universal seal

- Ideal for standardisation

Applications

- Chemical, power, petrochemical
- Paint, solvents, acids, all clear fluid, aggressive liquids - will accommodate limited solids

Description

Universal mechanical seal, specially adapted for chemical fluids. Wide variation of friction face materials.

Operating limits

Temp: -50 °C ... +220 °C
Pressure: 40 bar (H series)
16 (25) bar (M series)
Diameter: 14 - 100 mm

Total Seal Care® – the Burgmann Service made to measure

Their design and function make mechanical seals technically high-quality and sophisticated products, and they require an equally high degree of service quality in order to ensure perfect operation. However, service from your point of view as customer is no longer merely a matter of repairing your seals, and today you expect a comprehensive package of services instead. We at Burgmann can provide you with a concept that is custom-tailored to your specific needs and requirements.

Engineering

We draw up standardization concepts for you, aimed at reducing the number of variants you have among your seals. Technical improvements and conversion proposals, especially for bad actors, are just as much essential components of our engineering services concept as the attentive processing of critical applications.

Maintenance

Repairs, maintenance and conversion work on seal systems are performed on the spot or at service facilities near your premises by qualified engineers and fitters. The recording and documenting of your seal's functional data is computer-

assisted with special software, so maintenance costs can be continuously assessed and reduced.

Storage management

We offer you optimized, cost-effective storage management. Direct storage at your plant or at the nearest service facility assures you of fast access to spare parts and complete seals.

Seminars and training courses

Under the motto „Practical training for practical application“, our seminars and training courses are designed to provide specifically orientated further and advanced training for your maintenance and service personnel, plant foremen and

process engineers in the various industrial sectors such as refineries, chemicals, power stations, paper and valve technology.

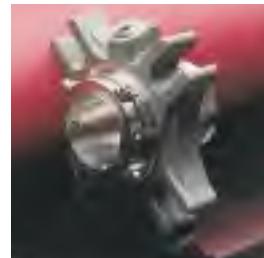
Modular service concept

We first carry out an analysis of all installed seals to gain a picture of the current situation in terms of population, condition, variety, functioning and operational requirements. We then use this analysis as the basis for offering you a standardization concept, aimed at minimizing the number of different systems, sizes and materials, analysis of bad actors and critical applications while taking account of the relevant technical regulations and plant-specific requirements.



... for special applications

Standard cartridge seals



HJ series

Difficult conditions
Easy solutions

- Excellent reliability and service life

Applications

- Sugar industry, paper, water treatment
- Heavy solids content, viscous, or crystallising liquids

Description

Mechanical seal with protected spring

Operating limits

Temp: -50 °C ... +220 °C
Pressure: 25 bar
Diameter: 18 – 100 mm

MFL series

The solution for extreme service conditions

- Not sensitive to deposits on the shaft
- High-speed capability

Applications

- Petrochemical, power industries
- Paints, solvents, bitumen. Heat transfer fluids

Description

Mechanical seal with metal bellows, no semidynamic O-ring. Particularly suitable for extreme conditions.

Operating limits

Temp: -20 °C ... +220 °C
Pressure: 25 bar
Diameter: 16 – 200 mm

HR/HRZ series

For heavy slurries (mining, paper industry)

SH series

State-of-the-art seals for hot water applications (boiler feed water pumps...)

Applications

Description

Mechanical seal with metal bellows, no semidynamic O-ring. Particularly suitable for extreme conditions.

Operating limits

Cartex®

The ultimate cartridge mechanical seal

Universal Cartex® cartridge seals for your centrifugal pumps replace conventional stuffing box seals, or are installed as first fit.

The modular system allows you to obtain different single and double versions, and to choose the most suitable model for your installation. The interchangeable components ensure a quick and economical turn-round.

Operating limits

Temp: -40 °C ... +220 °C
Pressure: 25 bar
Diameter: 25 – 100 mm
1" – 4"

Unitex®

The easiest way to fit a mechanical seal

Unitex® mechanical seals are completely pre-assembled, elastomeric bellows units for use in medium pressure and load ranges in conventional stuffing boxes in common circulating pumps.

Unitex® is an ideal substitute for gland packings without the need for complicated adaptation or preparation.

Operating limits

Temperature:
-20 °C ... +120 (140) °C
Pressure: 12 (16) bar
Diameter: 20 – 75 mm
1" – 2.625"

A computer-assisted maintenance concept subsequently raises seal service life and cuts error and failure rates.

In conjunction with correspondingly trained personnel this in turn makes for significantly reduced maintenance costs.

Our seals can be relied upon to ensure that - even under the most difficult conditions - hazardous substances remain where they are supposed to, irrespective of whether in pumps, compressors or agitators, or in sewage systems, or in applications and systems in the chemical, petroleum, paper and sugar industries, or in power stations.



Splitex®

The splitting one

Splitex®, the fully split cartridge seal in the size of a flange. There's no easier or faster approach when time really does mean money. Suitable for pumps in applications such as water, waste water, pulp and paper, mining and shipping.

Operating limits

$d_1 = 50 \dots 150 \text{ mm}$
 $t = \dots 150 \text{ °C}$
 $v_g = 10 \text{ m/s}$
 $p_1 = 6 \dots 10 \text{ bar}$
Axial movement: $\pm 1.5 \text{ mm}$

Mtex®

The multitalent

Mtex®, the multitalent among cartridge seals: Metal bellows technology tried-and-tested in service with a wide range of operating temperatures. State-of-the-art sealing technology, also available in a gaslubricated version.

Operating limits

$d_1 = 25 \dots 100 \text{ mm}$
 $t = -40 \text{ °C} \dots +250 (280) \text{ °C}$
 $v_g = 15 \text{ m/s}$
 $p_1 = 25 \text{ bar}$





Your contact

Agitator seals



The reliable and ideal solution for mixers, dryers, kneaders and reactors - for top, bottom and side entry. For application on carbon steel, stainless steel and glass-lined vessels in chemical, petrochemical and foodstuff industry as well as refineries.

M48/M461

Double seal cartridges with connection according DIN or to customer specification.

MR range

Cartridge seals with rotating seat on the product side. CIP / SIP resistant, in accordance with FDA guidelines. For sticky, pasty and dry media, sterile processes.

HSH range

Double seals, unbalanced, for high pressure up to 250 bar

AGS/AGSR

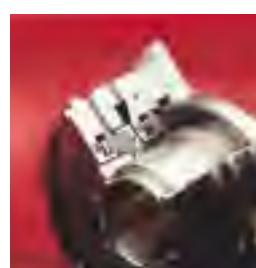
Gas-lubricated agitator seals. Dry Gas Seals with unique groove technology for a stable gas film between the sliding faces even at low sliding velocities.



SeccoMix®

Single cartridge seal for dry running applications. To seal all agitators where leakage is allowed to the atmosphere.

Compressor seals



Burgmann Compressor Seals are gas-lubricated, operate contact and wear-free.

DGS

Cartridge seals for turbo compressors.

Operating limits:

Shaft size: 25 ... 355 mm
Temperature: -30 °C ... +200 °C
Pressure: 1 ... 120 bar
Velocity: 200 m/s

PDGS

Elastomer-free design for high pressure and deep temperature applications.

Operating limits:

Shaft size: 25 ... 355 mm
Temperature: -170 °C ... +230 °C
Pressure: 1 ... 450 bar
Velocity: 200 m/s

TDGS

Metal bellows seal for single stage steam turbines

Operating limits:

Shaft size: 20 ... 180 mm
Temperature: -50 °C ... +450 °C
Pressure: 25 bar
Velocity: 130 m/s

CSR/CSE

Carbon ring oil barrier seal for Dry Gas Seals. Bidirectional segmented carbon rings in double arrangement with buffer gas pressurization. Available as aerodynamic and aerostatic type.

Operating limits:

Shaft size: 25 ... 320 mm
Buffer gas pressure: dynamic 2.2 bar, static 11 bar
Temperature: -20 °C ... +200 °C
Velocity: 200 m/s

Supply systems



TS 1016



TS 3000

„Well supplied“ for longer service life and protection of the environment

Burgmann seal supply systems - from the simple quench vessel to the most sophisticated lubrication system, tailored to your requirements. Depending on duty requirements, they cool or lubricate, provide circulation, and pressurise. They ensure more reliable and durable operation of a mechanical seal and protect the environment.

Burgmann® INDUSTRIES

Burgmann Industries

GmbH & Co. KG

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The worldwide
Alliance for Sealing Technology

Your local distributor:

All technical specifications are based on extensive tests and our many years of experience. The diversity of possible applications means, however, that they can serve only as guide values. We must be notified of the exact conditions of application before we can provide any guarantee for a specific case. Subject to change.