DRO Rotary kiln sealing system
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Features
- Special sealing systems for rotary kilns
- Packing rings (self-adjusting) with permanent spring-action for optimal, continuous contact with the seal disc, optical wear indicator
- Can be pressurized with buffer gas
- Optional dust extraction at the expansion joint
- Optional flush fitting to remove dust deposits at the seal disc
- Double-acting seal rings for use with process-compatible barrier gas or to drain toxic or aggressive gas
- Cutting-edge materials, supports broad range of applications

Advantages
- Reduced pollution emissions
- Clean residue combustion
- No partial temperature reduction below the residue combustion threshold due to air infiltration (no dioxin formation)
- Safe operation
- Significant reduction in primary energy consumption
- Long service life, low wear
- Predictable downtime (e.g. annual inspection)
- Available as retrofit on existing systems

Item | Description
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1 | Mounting flange (kiln shell)
2 | Seal disc (rotating)
3 | Bronze seal face
4 | Packing ring (static)
5 | Housing
6 | Expansion joint
7 | Spring system
8 | Thermal sensor fitting
9 | Flush fitting

Recommended applications
- Process industry
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Toxic, hazardous, chemical media
- Residue and waste incineration
- Cement production
- Calcination
- Reduction

Functional description
The sealing system consists of a mounting flange welded on to the kiln shell. The two connected halves of the split case engage at the seal disk which is screw mounted to the flange. Depending on requirements, two or four packing rings are provided and a thrust ring presses them against the seal disk. A spring mechanism generates the contact force for the packing rings. A specially designed expansion joint compensates for axial (thermal) expansion and change in the position of the kiln shell. A torque damper prevents rotation of the seal carrier assembly. With the exception of the seal disc, the entire sealing system is free moving and runs on roller supports in the damper. The seal is able to follow any movement by the oven with the sealing function remaining intact. The seal disc compensates for radial deflection of the rotary kiln (caused by ovality, etc.) by submerging to a greater or lesser extent into the seal housing.

Operating range
Diameter: \( d_1 = 2,000 \ldots 8,000 \text{ mm (78\" \ldots 315\")} \)
Pressure: \( p = -50 \ldots +250 \text{ mbar (-0,72 \ldots 3,62 PSI)} \)
Temperature (oven surface): \( t = \text{max.} 300 \text{ °C (572 °F)} \)
Rotational speed: \( \ldots 2.5 \text{ m/s (8.2 ft/s)} \)
Radial movement capability: \( \ldots 35 \text{ mm (1.38\")}^* \)
Axial movement capability: \( \ldots 150 \text{ mm (5.91\")}^* \)

* Greater values on request

Materials
- Metal parts: Steel S235JR (St 37-2 / 1.0037)
- CrNiMo steel (1.4571)

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

It should be noted that the elemental 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.

DRO Double seal
1 Mounting flange (kiln shell)
2 Seal disc (rotating)
3 Bronze seal face
4 Packing ring (static)
5 Housing
6 Expansion joint
7 Flush fitting
8 Spring system

Torque damper with roller support
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, energy, 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.