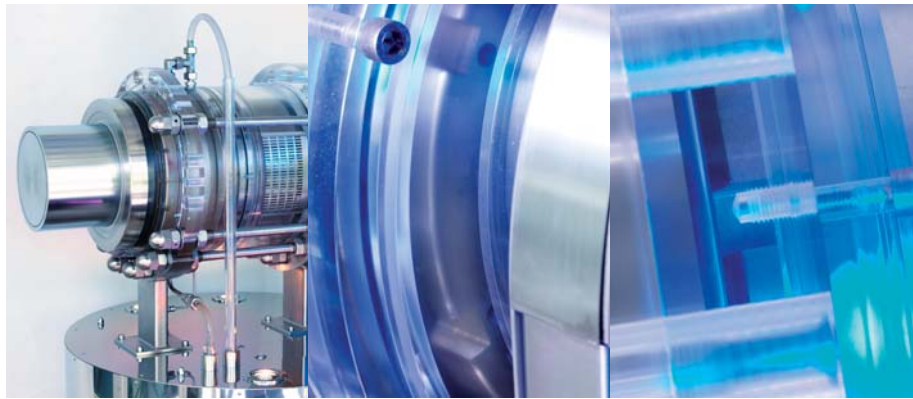


Design series **E S D 4 4 Z**



Product Information

Technical Data

- Double-acting mechanical seal, liquid lubricated with carb-bearing for mixers and dryers

Quality

The shaft seal type ESD44Z is supplied ready for installation as a cartridge unit. Prior to delivery every mechanical seal is dynamically tested under process conditions according to an internal QM System that conforms to DIN EN ISO 9001:2000, and receives a test certificate.

Function

Mechanical seals in horizontal mixers for bulk goods and dryers are subject to special conditions when used for dry often sticky and abrasive materials. In particular for solid materials it is important to protect the seal rings from caking and to keep them flexible. The seal ring geometry of the ESD44Z was further developed from the standard program of the ESD44 for agitators. The minimum gap design and the selection of materials for the product-wetted parts make a reliable application possible, even if abrasive materials are used. The seal rings are greased and cooled by a circulating seal liquid which is kept under pressure. In order to cool the product-wetted seal rings sufficiently, a sleeve is attached at the front which guides the seal liquid past the seal rings. The ESD44Z is operated with a water-cooled 6l-storage tank with a circulation pump.

The sealing unit is designed in such a way that all mixer forces are guided into the vessel. The advantage is that a lantern is not necessary. The drive motor is directly mounted to the mechanical seal.

Bearing

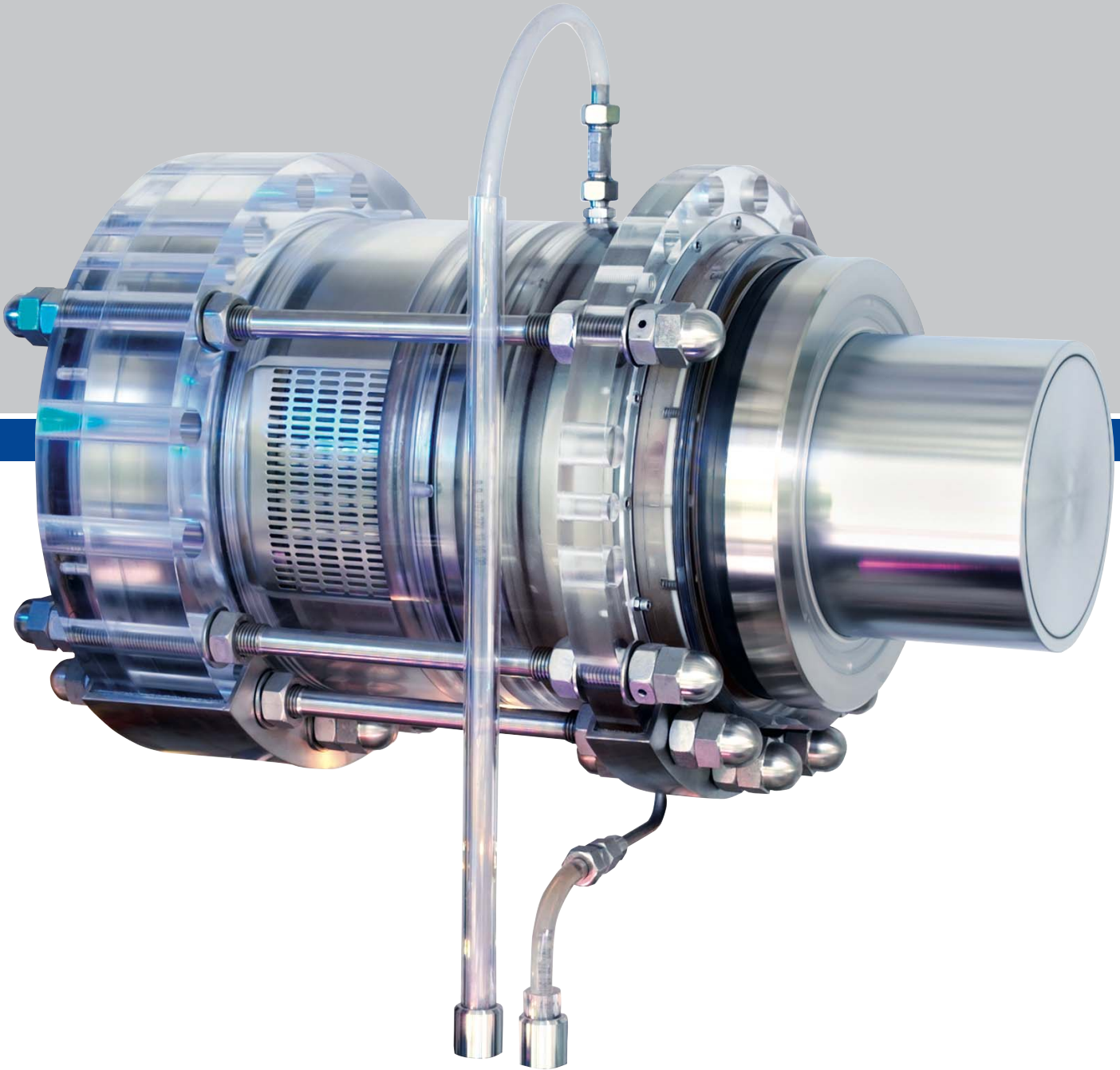
Because of the high demands on the bearings, a special bearing unit (Carb-bearing) was developed. The Carb-bearing on the trust bearing side is, in the mounting process of the seal, directly linked with the shaft and designed to absorb any radial force. The torque transfer from the shaft to the bushing as well as the axial positioning is achieved by a clamp ring which is a special purpose design for the trust bearing side.

For the radial bearing side an identical bearing concept is used. In contrast to the trust bearing side, the clamp ring is designed in such a way that through heat expansion the shaft can change axial position by ± 30 mm.



Simple assembly
of the mechanical seal ESD44Z.





Gap Free Design

The product side seal ring pair extends into the vessel space. The gap free design makes a reliable application possible, even in contact with abrasive materials.



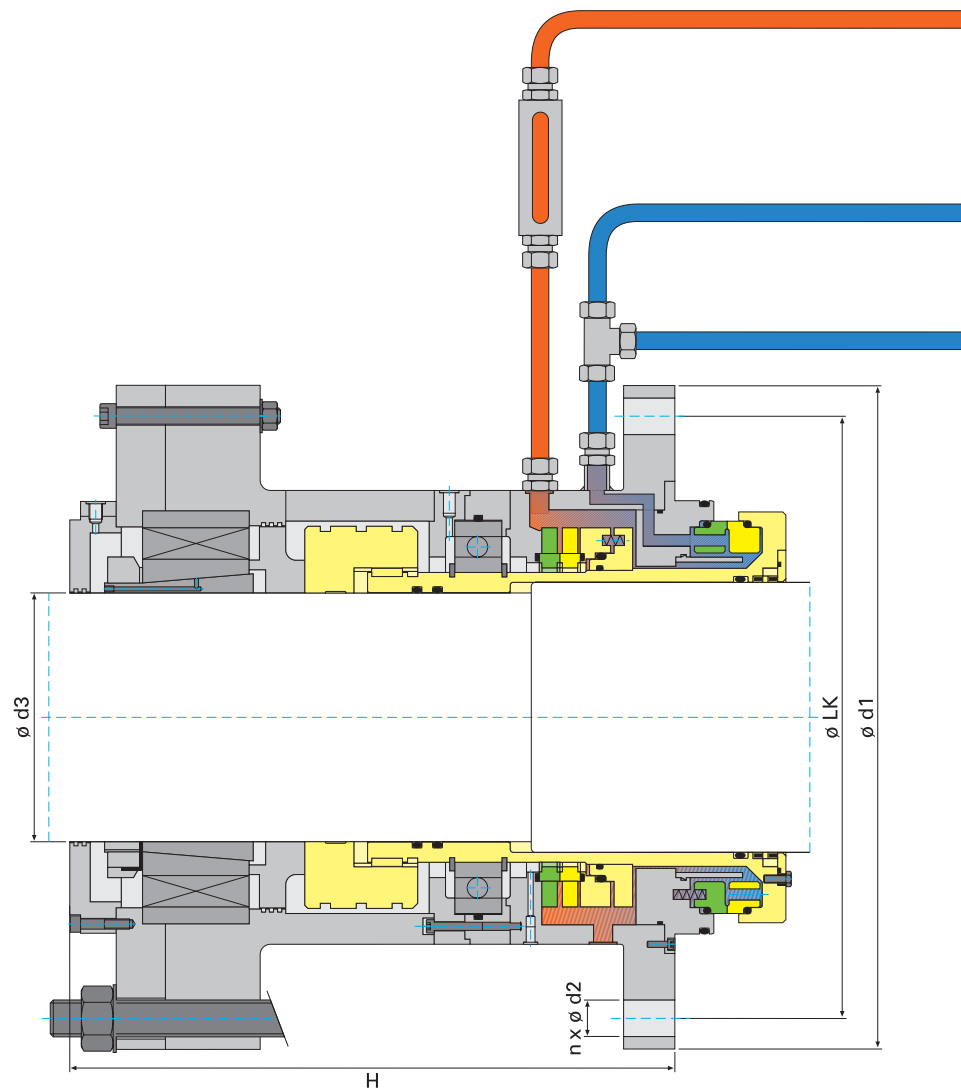
Carb-Bearing

The special design of the bearing allows axial movement of the shaft caused by a heat expansion of ± 30 mm.



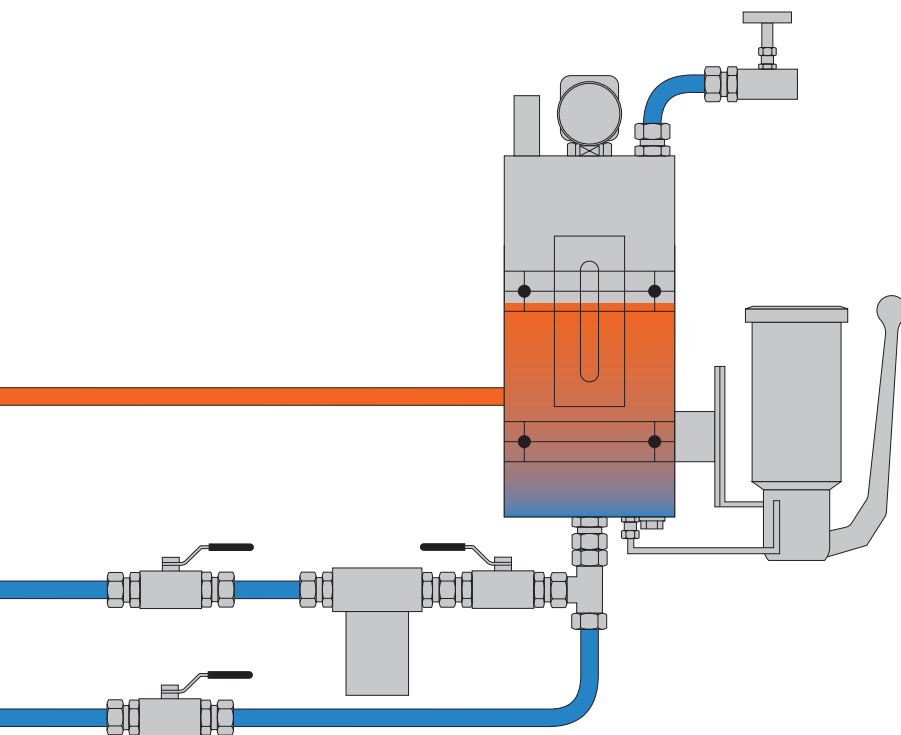
Mechanical Seal ESD44Z with Carb-Bearing and Installation

Design Details ESD44Z





Installation



Application Limits

Vessel pressure

Vacuum ... 16 bar (abs.)

Vessel temperature

-50 ... +200° C

Shaft size

140 ... 300 mm

Sliding speed

0 ... 5 m/s

Materials

Housing

Stainless steel

Product-wetted parts

Stainless steel, Hastelloy, Titanium, other special materials

Seal rings

Carbon, Silicon Carbide, Tungsten Carbide etc.

O-rings

FKM, EPDM, Perfluor elastomers, special elastic materials

FDA approval

Possible for all product-wetted parts

Dimensions

Seal type / σ	d1	d3	LK	n x d2	H
ESD44Z/140	395	140	350	12 x 27	530
ESD44Z/160	395	160	350	12 x 27	545
ESD44Z/180	445	180	400	12 x 27	560
ESD44Z/200	475	200	425	12 x 34	570
ESD44Z/220	500	220	450	16 x 34	580
ESD44Z/260	540	260	497	16 x 34	590
ESD44Z/300	600	300	540	16 x 40	600

all dimensions in mm; additional sizes on request; subject to change without notice

ESD GmbH

EKATO Sicherheits-
und Dichtungstechnik
Schönauer Strasse 66
79669 Zell i.W.
Germany

Phone

+49 (0) 7625 / 9282-0

Fax

+49 (0) 7625 / 9282-11

E-mail

Info@esd-gmbh.de

Internet

www.ekato.com

EKATO ESD