

Design series ESD 34 N**Product Information****Technical Data**

- Double-acting mechanical seal with liquid lubrication for low pressure applications
- Standardized wear parts due to modular design

Quality

The shaft seal type ESD34N 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

The shaft seal type ESD34N is a double-acting bidirectional mechanical seal made to DIN standards. It can be applied to vessels made to DIN 28136 of steel or stainless steel with mounting flanges according to DIN 28141 fitting shaft ends made according to DIN 28154. The shaft seal type ESD34N is designed with a total of four seal rings, with two identical seal ring pairs arranged back-to-back. Product and atmospheric side seal ring pairs are hydraulically balanced via flexible secondary seals. This ensures that the position of the seal rings remains unchanged also if the pressure acting on the seal is reversed. Since the flexible secondary seals are only mechanically loaded by the force of the springs acting on the seal rings, their elasticity is retained. This principle allows high radial deflection of the shaft without any negative influence on the sealing gap and consequently on the sealing effect. Decoupled coil springs ensure a steady contact pressure at axial shaft displacements.



Applications

The shaft seal type ESD34N is the ideal mechanical seal for applications in the low pressure range up to 7 bar (abs.). Due to its modular design it can be modified to suit various needs. By having product wetted parts that are small in size, materials such as Titanium, Hastelloy or even glass-lined parts can be used economically. Because of its compact size this seal type is also highly suitable for installation in small spaces making it the ideal replacement for stuffing box seals. The seal type ESD34N can be operated with a seal supply system that is under atmospheric pressure or under a constant pressure overlay. In the first case the atmospheric side seal ring pair does not carry any load and therefore serves as an emergency seal. Leakage of the seal liquid to the atmospheric side is thus avoided. In the second case the product side seal ring pair is only loaded with the pressure difference between the pressure overlay and the vessel pressure. In contrast to this the atmospheric side seal ring pair has to bear the higher pressure difference, namely that between pressure overlay and atmospheric pressure.

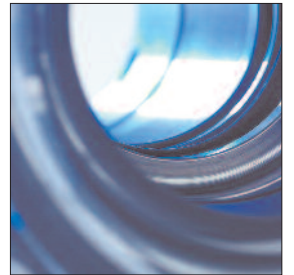
The main areas of application are:

- Chemical industry
- Hydrometallurgy
- Pharmacy
- Biotechnology





**High axial
and radial fetch**



**Double-acting
even in the low
pressure range.**



**Perfectly tight
even under the roughest
conditions. Special spring
designs ensure uniform
pretensioned conditions,
also in cases of shaft
deflection.**



Mechanical Seal ESD34N

Design Details ESD34NJ

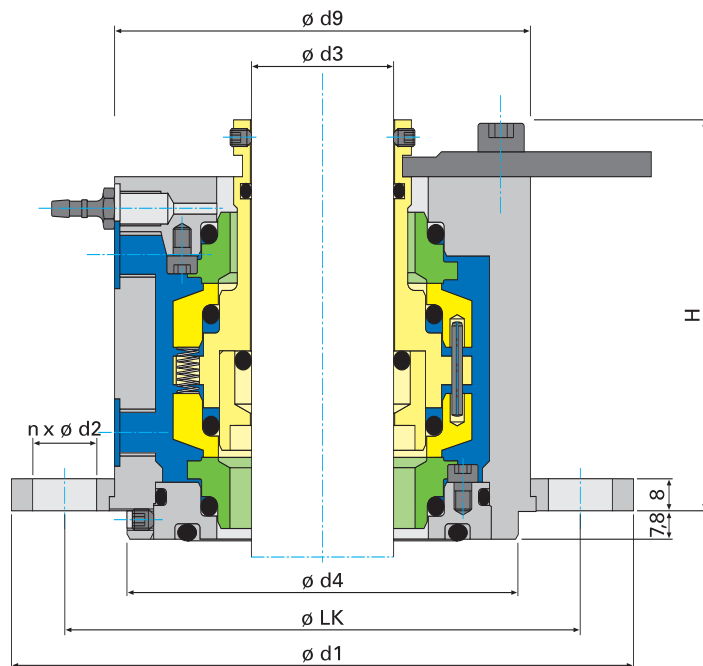
Application Limits

Vessel pressure:
Vacuum ... 7 bar (abs.)

Vessel temperature:
-50 ... +400° C

Shaft size:
40 ... 200 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:
Viton, EPDM, Perfluor elastomers, special materials

FDA approval:
Possible for all product-wetted parts

Dimensions

Seal type / size	d1	d3	n x d2	H	LK	d4	d9
ESD34NJ/040	175	40	4 x 18	110	145	110	117
ESD34NJ/060	240	60	8 x 18	110	210	176	148
ESD34NJ/080	275	80	8 x 23	110	240	204	168
ESD34NJ/100	305	100	8 x 23	110	270	234	188
ESD34NJ/120	330	120	8 x 23	110	295	260	212

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



Design Details ESD34NZ

Application Limits

Vessel pressure:

Vacuum ... 7 bar (abs.)

Vessel temperature:

-50 ... +400° C

Shaft size:

40 ... 200 mm

Sliding speed:

0 ... 5 m/s

Materials

Housing:

Stainless steel

Product-wetted parts:

Stainless steel, Hastelloy, Titanium, other special materials

Seal rings:

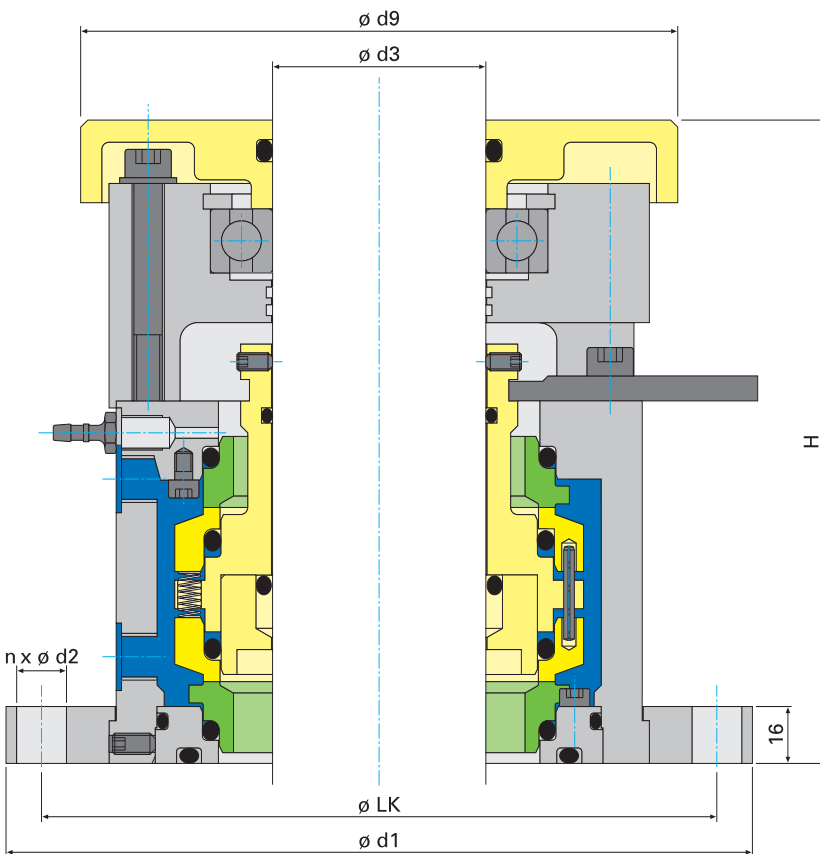
Carbon, Silicon Carbide, Tungsten Carbide, etc.

O-rings:

Viton, EPDM, Perfluor elastomers, special materials

FDA approval:

Possible for all product-wetted parts



Dimensions

Seal type / size	d1	d3	n x d2	H	LK	d9
ESD34NZ/040	175	40	4 x 18	169	145	136
ESD34NZ/060	240	60	8 x 18	173	210	168
ESD34NZ/080	275	80	8 x 23	180	240	192
ESD34NZ/100	305	100	8 x 23	181	270	208
ESD34NZ/120	330	120	8 x 23	186	295	232

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

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