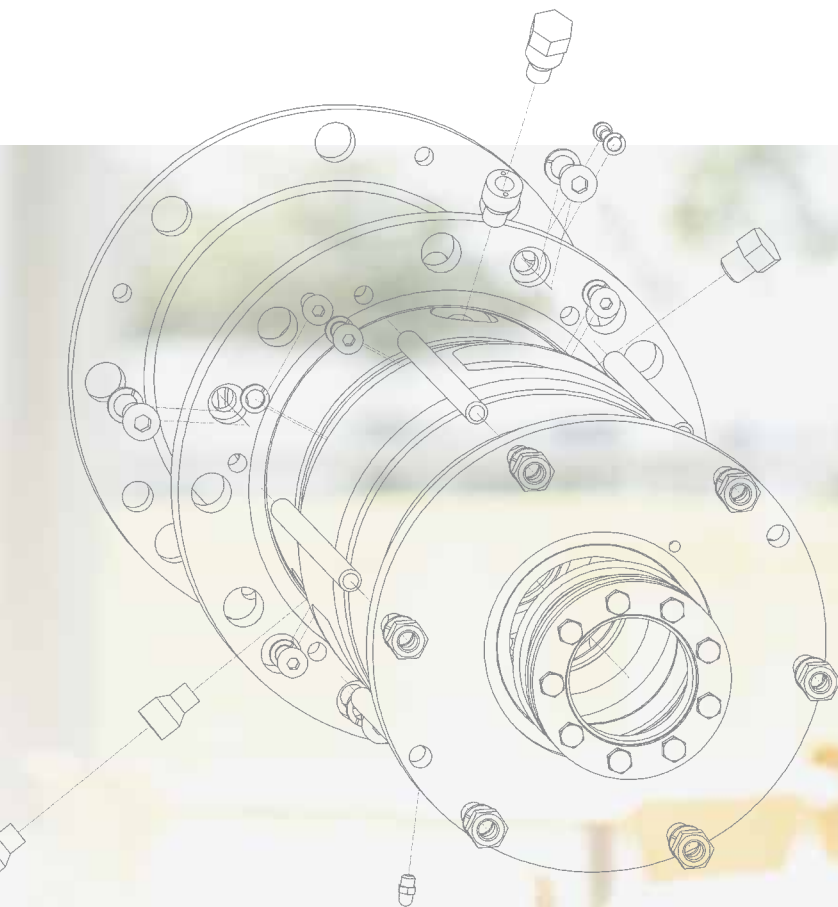


For safe and successful production.
The patented interseal dry9000® seal
for agitators and mixers.





The interseal dry9000® on an enamelled agitator.



Finally! The weakest link in the production process becomes a key success factor.

Every year, high losses and thus costs continue to arise due to interruptions to the production processes in agitators and mixers. These unnecessary costs are often caused by the shaft seals. At the interface between the atmosphere and the product, they have always been the weak link in the mixing process.

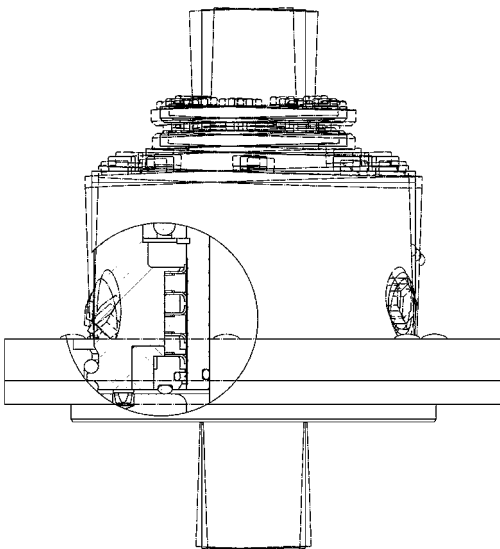
With the patented dry9000®, interseal has developed a technically and economically mature shaft seal that is not just able to accommodate the characteristic lurching movements of shafts, but also avoids any contamination of the finished product as it runs dry. The dry9000® is the better alternative to a mechanical seal or a packing, finally converting the weakest link in the production process to a genuine factor for success.



Runs dry, is 100% leak-proof and keeps people and the environment safe.

The specially developed tribological system between the shaft protection sleeve and the sealing lips ensures that no liquid or gas has to be used – the dry9000® runs completely dry. This is why the interseal dry9000® system has no need of any supply systems such as a thermosiphon tank and systems to pressurise blocking media.

Due to the patented arrangement of compensation parts, the dry9000® sealing lips are completely free of forces. The result is the first shaft seal that remains completely leak-proof, whatever the forces that occur during the production process are. In this way, the risk for people and the environment is reduced to an absolute minimum.



One of the decisive advantages of the dry9000® is that the axial and radial movements of the agitator or mixer shaft have no effect on the sealing system.



Whether motion is abrupt, vibrating or lurching, the interseal dry9000® always keeps pace.

One characteristic of conventional agitator and mixer seals is the axial and radial movement deflection of the shaft. The forces applied to the seal lead to gaps on the sealing surfaces, resulting in leaks and abrasion.

The advantage of the patented dry9000® results from the fact that it follows the movements of the shaft. Abrupt, vibrating or lurching shaft movements, which can be caused by a change in the viscosity of the material being mixed, or by a change in the filling level, can be completely compensated by the sealing system. As the interseal dry9000® follows the movements of the shaft, there is no relative movement of the actual sealing components. This means that no medium can penetrate the sealing zone.

DIN, ATEX, TA Luft, GMP and FDA. Standards you can rely on.

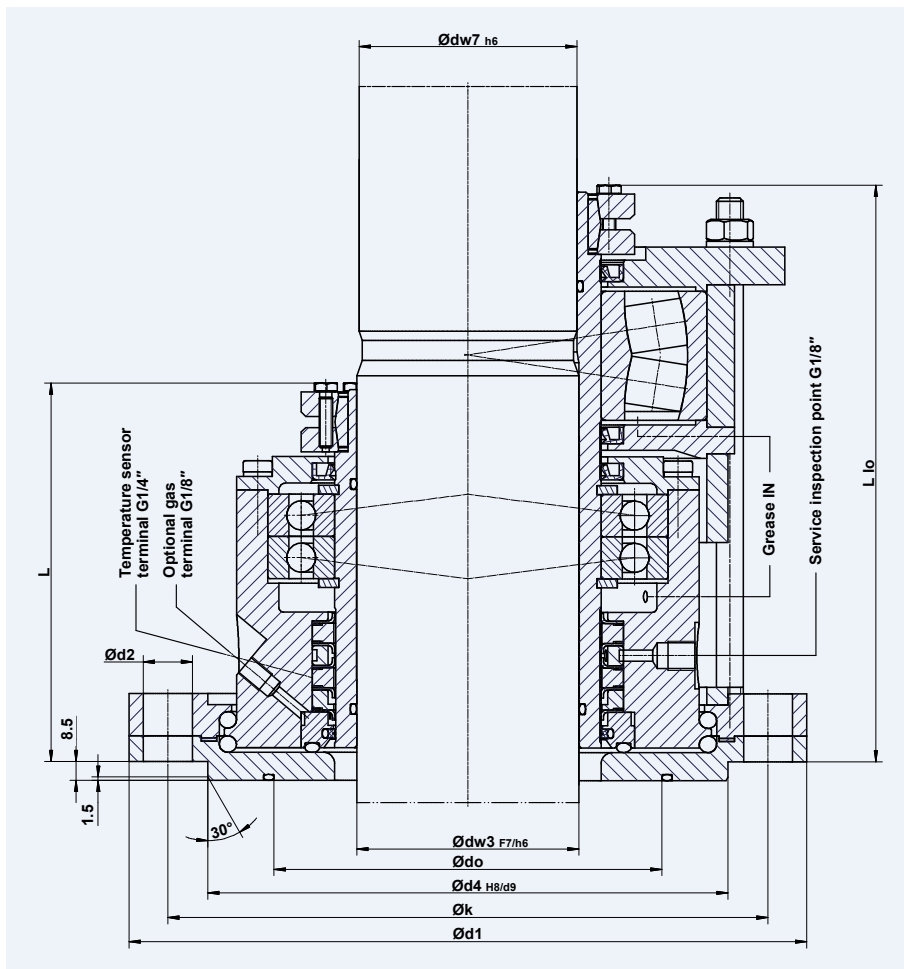
This is a matter of course for us. The dry9000® complies with all significant safety and environmental standards. It thus complies with the requirements of the German technical instruction on air pollution prevention, known as TA Luft.

The plug & play dry9000® cartridge also conforms to DIN standards, and it can replace all existing DIN shaft seals. It meets all of the safety requirements summarised in the ATEX product guidelines, and all of the parts in contact with the product are available in a quality conforming to FDA standards.



The patented interseal dry9000®. One basis for all sorts of applications.

Over the following pages, we would like to present the various types of dry9000® in detail. They are designed for a great variety of requirements, and ensure a 100% leak-tightness for agitators, mixers, dryers, filters and worm conveyors – whether the material being mixed is a product of the chemical or petrochemical industry, of the pharmaceutical industry or of the food industry.



dry9000® twin, dry9000® twin+

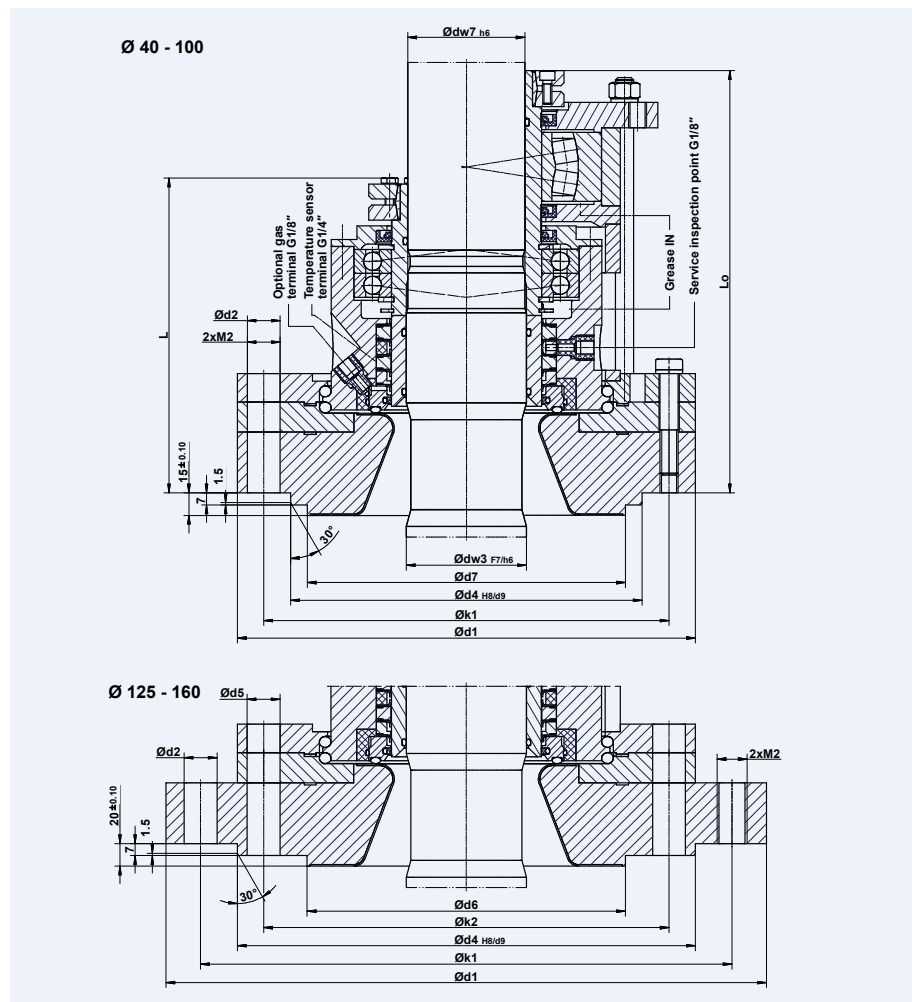
Patented seal that is both axially and radially flexible with dual O-rings (dry9000® twin) and integrated floating bearing for the machine shaft (dry9000® twin+).

$\text{Ødw}_3^{1)}$	$\text{Ødw}_7^{1)}$	d_1	$n \times d_2$	d_4	Ød_0	Øk	L	L_{10}
40	38	175	4 x 18	110	92	145	147	203
50	48	240	8 x 18	176	117	210	148	211
60	58	240	8 x 18	176	117	210	149	212
80	78	275	8 x 22	204	152	240	159	235
100	98	305	8 x 22	234	174	270	172	260
125	120	330	8 x 22	260	174	295	195	305
140	135	395	12 x 22	313	250	350	200	316
160	150	395	12 x 22	313	267	350	215	357
180	170	445	12 x 22	364	276	400	222	358
200	190	445	12 x 22	364	276	400	224	358
220	210	505	16 x 22	422	340	460	231	371

1) Shaft diameter dw_3 and dw_7 , to DIN 28 154, flange size to DIN 28 154

dry9000® twin E, dry9000® twin E+

Patented shaft lip seal that is both axially and radially flexible with dual O-rings in an enamelled design (dry9000® twin E) and integrated floating bearing for the machine shaft (dry9000® twin E+).



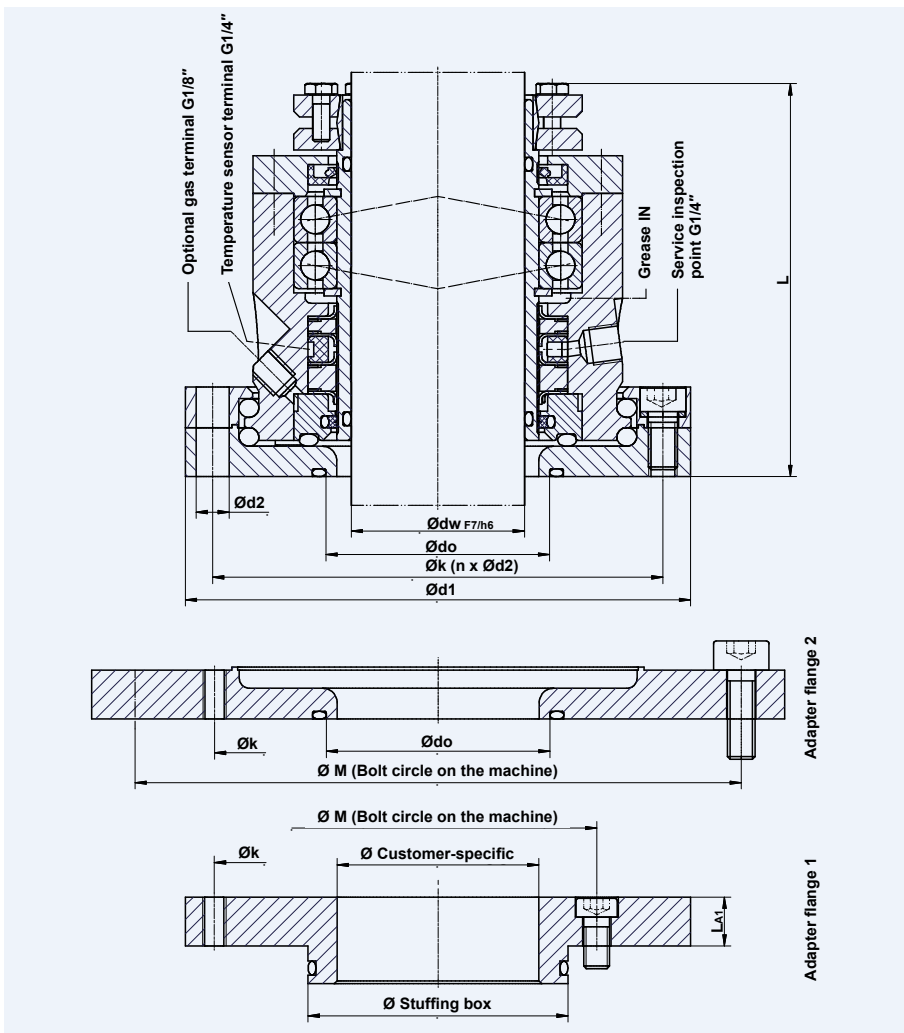
$\text{Ø}dw_3$ ¹⁾	$\text{Ø}dw_7$ ¹⁾	Flange size ²⁾	d_1	$n \times d_2$	d_4	$n \times d_5$	$\text{Ø}d_6$	$\text{Ø}d_7$	$\text{Ø}k_1$	$\text{Ø}k_2$	L	L_0	M_2
40	38	E 125	175	4 x 18	110	-	-	102	145	-	160	234.5	M16
50	48	E 200	240	8 x 18	176	-	-	138	210	-	165	245.8	M16
60	58	E 250	275	8 x 22	204	-	-	188	240	-	175	260.0	M20
80	78	E 300	305	8 x 22	234	-	-	212	270	-	185	284.2	M20
100	98	E 400	395	12 x 22	313	-	-	268	350	-	195	309.2	M20
100	98	E 500	395	12 x 22	313	-	-	268	350	-	195	309.2	M20
125	120	E 700	505	4 x 22	422	12 x 22	320	-	460	350	195	360.7	M20
140	135	E 700	505	4 x 22	422	12 x 22	320	-	460	350	240	368.7	M20
160	150	E 900	505	4 x 22	422	12 x 22	320	-	460	350	240	408.1	M20
160	150	E 901	565	4 x 26	474	12 x 22	370	-	515	400	240	408.1	M24

1) Shaft diameter dw_3 and dw_7 to DIN 28 159

2) Flange size to DIN 28 137 T2

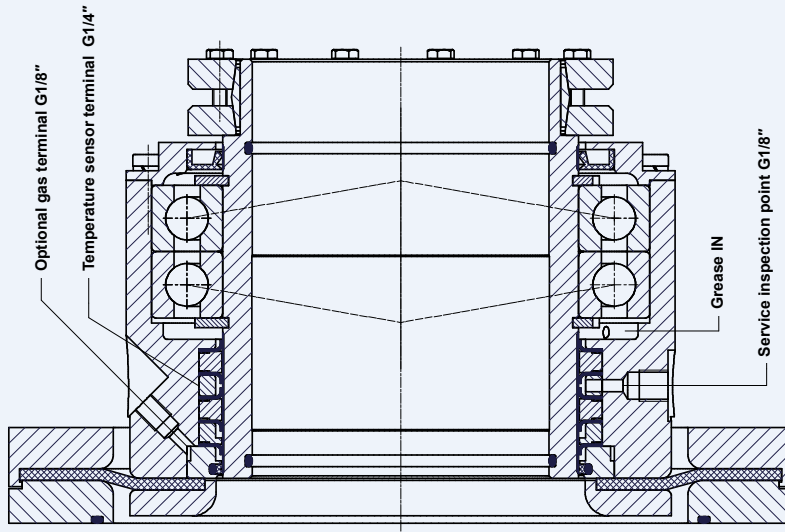
dw	L ³⁾	L ₂ ¹⁾	k ²⁾	nxd ₂ ²⁾	d ₁	d ₀
40	100	113	135.0	4 x 13	155.0	57.5
50	102	115	145.0	4 x 13	165.0	67.5
60	102	122	155.0	4 x 13	175.0	77.5
70	104	123	165.0	4 x 13	185.0	89.2
80	108	126	175.0	4 x 13	195.0	97.7
90	123	130	190.0	6 x 13	210.0	108.2
100	125	131	200.0	6 x 13	220.0	117.5
110	125	135	215.0	6 x 13	235.0	127.3
120	126	139	227.5	6 x 13	247.5	137.5
130	126	139	240.0	6 x 13	260.0	146.3
140	134	147	260.0	6 x 13	280.0	155.8

- 1) $L_2 = L + L_{A1}$, where L_{A1} depends on the size of the screw with which the adapter flange 1 is fixed to the machine.
 For the values in the table, a connection screw size of M12 is presumed. For smaller screws, L_{A1} becomes correspondingly smaller and vice versa.
- 2) These values can be individually modified.
- 3) Specifications without shrink-fit disc, version with grub screws.



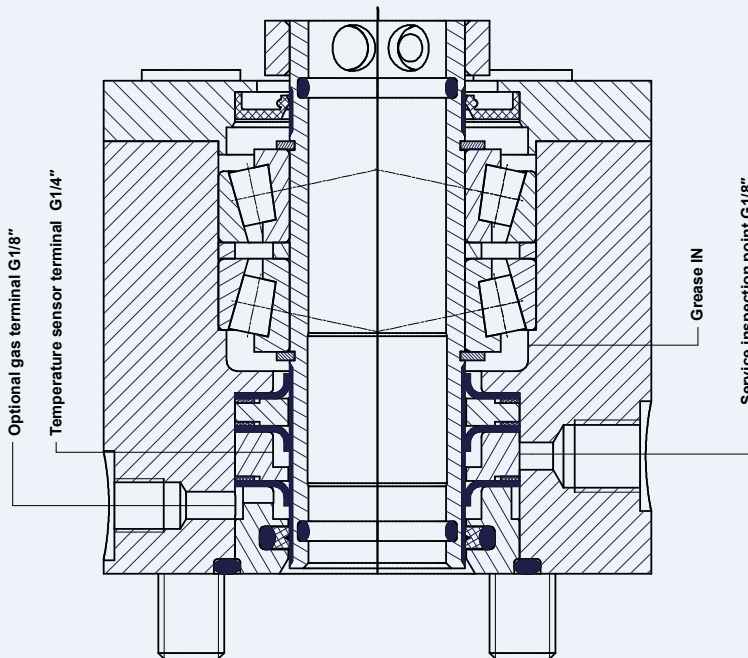
dry9000® twin S

Patented seal that is both axially and radially flexible with dual O-rings in a compact design.



dry9000® extend

Seal that is both axially and radially flexible with compensation using an expansion disc or metal bellows for machines with a larger shaft expansion.



dry9000® steep

Seal with integrated machine shaft bearing. Can either be equipped with a floating or fixed bearing.



The five most convincing arguments for the interseal dry9000® at a glance:

- » Measurable reduction of operating costs as supply systems are not required
- » 100% leak-proof due to patented technology
- » Plug & play cartridge
- » Simplified service inspection
- » Meets all important safety and environmental standards

Temperatures, pressures and what keeps the interseal dry9000® together inside.

Operating parameters	
Pressure (p)	vacuum to 25 bar
Temperature (t)	-40 °C bis +350 °C
Slip speed (v_g)	7.5 m/s



Materials		
	Standard materials ¹⁾	Special materials ¹⁾
Metal parts in contact with the product	1.4571/SiC/Emaille	Hastelloy/SiC/1.4404/1.4539/Titan
O-rings	Viton/FEP	Paroflon (PTFE jacket, closed) FFKM/EPDM
Sealing parts	PTFE-PPS-compound	White sealing parts (FDA-compliant)

1) FDA-compliant on request

And last but not least: other innovative products from interseal.

As a supplier of innovative products for sealing technology, interseal has concentrated on the manufacture of seals, sealing components and valves for applications in the chemical, petrochemical, pharmaceutical and food industries. We also specialise in the solution of individual sealing problems in the areas of design and engineering.

Apart from the patented dry9000® seal, we are currently offering the following products:

Valves:

- » Two-way ball valves
- » Three-way ball valves
- » Base drain valves
- » Sample extraction valves

Sealing systems:

- » Metal sealing systems
- » Carbon sealing systems
- » Sealing systems made of PTFE and high-temperature compounds

Accessories:

- » Pure graphite
- » PTFE compounds
- » Paroflon O-rings (PTFE completely closed O-rings)
- » Milk pipe seals
- » Kamlok seals
- » Tanker truck seals





The interseal service and sales network

Well prepared: with our services and training courses.

To be able to guarantee the optimum use of the interseal dry9000® right from the start, as well as to support uninterrupted use on site, we offer our customers compact training courses as well as a comprehensive maintenance and repair service. We are also ready to provide expert assistance for development and engineering.

You can rely on interseal:

- » Off-the-shelf availability for all DIN seals
- » Individual service concepts
- » 24-hour hotline, seven days a week
- » On-site support for installation
- » Seminars and training
- » Consulting and engineering

www.interseal.de

interseal Dipl.-Ing. Rolf Schmitz GmbH
Rudolf-Diesel-Straße 1
65719 Hofheim-Wallau
Germany

Phone: +49-(0)6122-53588-0

Fax: +49-(0)6122-53588-69

Service hotline: +49-(0)6122-53588-55

Email: info@interseal.de

