Angst+Pfister

APSOseal®

Rotary Seals

The right rotary seals for every application

The job of rotary seals is to separate spaces containing differing pressures and different operating substances. The media to be sealed off can be pasty, liquid or gaseous – lubricating oils or greases are usually the substances involved. Rotary seals also prevent foreign contaminants from penetrating the operating media and prevent lubricants from escaping from systems.

Consulting and engineering

Angst + Pfister stocks an extensive inventory assortment of standard rotary seals. Items in this standard product range can be used for a vast array of applications. Our specialists will be happy to advise you on selecting the right rotary seal for your application, taking into account operating parameters such as rotational speed, pressure, type of medium, surface roughness and installation circumstances.

Further information is available on our website at www.angst-pfister.com. Rotary seals can also be ordered through Angst + Pfister's APSOparts® online shop at www.angst-pfister.com/shop.

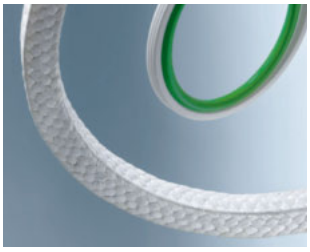
Prototyping service

Angst + Pfister stocks more than 2,500 different rotary seals. But if you are nonetheless unable to find the right seal in our extensive product range or if you need a seal in a special size or with a special cross-section, we are always capable of supplying you with customized lathe-cut seals within ten workdays for diameters up to 700 mm.

Dependable logistics and quality management

It takes a comprehensive logistics infrastructure to be able to supply the right products at the right time. Our logistics center functions fully automatically with electronic order tracking. Our international presence enables us to provide our customers with just-in-time delivery whenever and wherever they need it. And our ISO 9001:2000-certified complete quality assurance system enables you to greatly simplify your incoming goods inspection procedure. In addition, Angst + Pfister makes an important contribution to trouble-free production processes as well as end-product reliability and safety for you as our customer.

Product overview

	Type	Deployment area	Rotational motion in application
	Radial shaft seal	Mechanical engineering, transmission construction	
	Radial shaft seal with diaphragm	Mechanical engineering, transmission construction	
	PTFE radial shaft seal	Chemical industry	
	Shaft protection sleeve	Repairs	–
	V-ring	Mechanical engineering, drive technology	
	Gamma ring	Mechanical engineering, drive technology	
	HIRSCHMANN axial shaft seal	Mechanical engineering, drive technology	
	Mechanical seal	Pump engineering, household appliances	
	LUBROSEAL® Roto-Ring	Mechanical engineering, rotary transmission leadthrough	
	Stuffing box packing	Mechanical engineering, valve stem packing, chemical industry	

rotary oscillating helix

The information on these pages is based on findings gained through years of experience in manufacturing and utilizing sealing elements. Despite this longstanding experience, unknown factors arising in practical use can considerably constrict the accuracy of this generally valid technical data. The technical data provided describe the maximum operating parameters for the respective seal types.

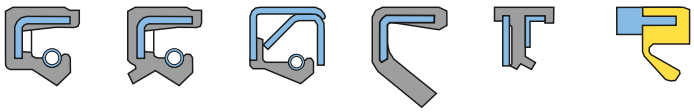
Radial shaft seals

Radial shaft seals are used to seal rotating shafts. The seal works radially and is fixed inside the housing bore by means of a retaining ring, and at the same time seals statically. The dynamic sealing lip works radially against the rotating shaft.

Standard types (deliverable from stock)

Profile type	Designation	Material	Operating temperature °C	Peripheral speed m/s	Pressure rating bars
A	A+P RWDR	NBR AP 70.12	-40 to +120	14	< 0.5
A	A+P RWDR	FKM AP 80.12	-30 to +200	37	< 0.5
AS	A+P RWDR	NBR AP 70.12	-40 to +120	14	< 0.5
C	A+P RWDR	NBR AP 70.12	-40 to +120	14	< 0.5
SA	A+P RWDR	NBR AP 70.12	-40 to +120	14	< 0.5
BSB	RWDR VR	FKM VR2	-30 to +220	40	< 15.0
HTS II	RADIAMATIC	PTFE-carbon MT12	-70 to +200	18	< 6.0

A AS C SA BSB HTS II



Special types (deliverable on request)

Profile type	Designation	Material	Operating temperature °C	Peripheral speed m/s	Pressure rating bars
B	A+P RWDR	NBR/FKM	*	*	< 0.5
B	BYDRO	NBR	-40 to +120	14	< 0.5
BS	A+P RWDR	NBR/FKM	*	*	< 0.5
CS	A+P RWDR	NBR/FKM	*	*	< 0.5
SAB	A+P RWDR	NBR/FKM	*	40	< 15.0
DUO	A+P RWDR	NBR/FKM	*	*	< 0.5
D	A+P RWDR	Pure PTFE	-70 to +200	18	< 6.0
MHX 2000	A+P RWDR	PTFE-carbon	-70 to +200	40	< 1.0

* depends on the seal material (see standard types)

B BS CS SAB DUO D MHX 2000

Shaft protection and repair sleeves

Shaft protection sleeves are an especially economical way to prevent abrasive wear of shafts and axles by means of contact seals. The shaft repair sleeves renovate groove-damaged running surfaces easily and within minutes in just a few simple steps.

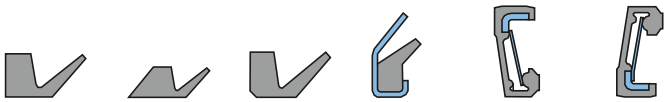
Axial shaft seals

Axial shaft seals are used to seal rotating shafts. The low-friction and wear-resistant seals work axially and are usually mounted securely on the shaft, i.e. the seals rotate with the shaft.

Standard types (deliverable from stock)

Profile type	**Designation**	**Material**	**Operating temperature** °C	**Peripheral speed** m/s	**Pressure rating** bars
A	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
A	A+P V-ring	FKM AP VN6	-20 to +150	12	< 0.2
S	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
S	A+P V-ring	FKM AP VN6	-20 to +150	12	< 0.2
L	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
RB	Gamma ring	NBR	-30 to +100	12	< 0.2
VI	HIRSCHMANN	NBR	-30 to +120	20	< 0.1
VA	HIRSCHMANN	NBR	-30 to +120	20	< 0.1

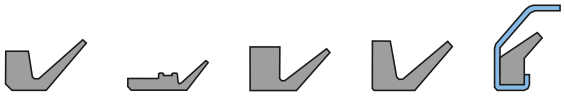
A S L RB VI VA



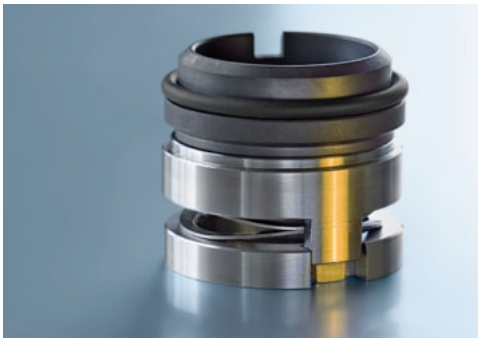
Special types (deliverable on request)

Profile type	**Designation**	**Material**	**Operating temperature** °C	**Peripheral speed** m/s	**Pressure rating** bars
E	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
RM	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
AX	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
LX	A+P V-ring	NBR AP 601	-40 to +100	12	< 0.2
9RB	Gamma ring	NBR	-30 to +100	12	< 0.2

E RM AX LX 9RB



Mechanical seals

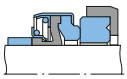


Mechanical seals are used to seal rotating shafts against a stationary housing (e.g. in pumps). The stationary part of the seal (stator) is mounted on the housing and the rotating part (rotor) is fastened on the shaft. The high-precision flat-machined seal faces of both parts rotate axially in opposition. Integrated springs press the sliding faces against each other, thus preventing leakage even under static unpressurized conditions. The seal faces are statically sealed against the housing and the shaft by means of secondary seals (O-rings, molded gaskets). A minimal lubricating film on the sliding faces creates a sealing effect. The seal faces are made of carbon, tungsten carbide, ceramic, graphite or plastic, depending on the sealed medium.

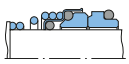
Standard types (deliverable from stock)

Designation	**Operating temperature** °C	**Peripheral speed** m/s	**Max. pressure** bars	**Matches with**
CYKARO® Rotor A	-25 to +100	10	6	Stator B
CYKARO® Stator B	-25 to +100	10		Rotor A, O, P
CYKARO® Rotor M	-25 to +100	20	10	Stator N
CYKARO® Stator N	-25 to +100	20		Rotor M
CYKARO® Rotor O	-25 to +100	10	12	Stator B
CYKARO® Rotor P	-25 to +100	10	7	Stator B
CYKARO® Kompakt 33	-25 to +180	20	20	
SUPRAPLAN Kompakt 11	-5 to +80	10	10	
CYKARO® drive seal DF	-50 to +100	3.5	3.5	

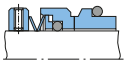
Rotor A
Stator B



Rotor M
Stator N

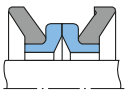


Kompakt 33



Kompakt 11

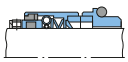
DF



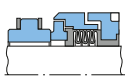
Special types (deliverable on request)

Designation	**Operating temperature** °C	**Peripheral speed** m/s	**Max. pressure** bars
NORMAPLAN	-20 to +220	20	25
CHEMOPLAN	-20 to +160	15	11
DUOPLAN	-15 to +200	20	11

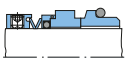
NORMAPLAN



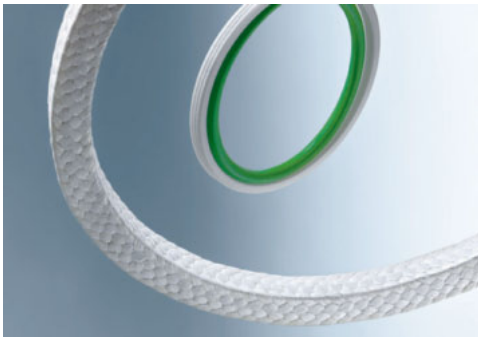
CHEMOPLAN



DUOPLAN



Rotary seals for rotary transmission leadthroughs



These double-acting seals consist of a sealing element made of modified PTFE combined with an energizing O-ring and are ideal for applications in rotary transmission leadthroughs. A variety of additional special shapes and material pairings are also available on request.

Special types (deliverable on request)

Designation	Material	Operating temperature* °C	Peripheral speed m/s	Max. pressure bars
LUBROSEAL® LRGC	LC 030 (carbon)	-50 to +200	1	300
LUBROSEAL® LRGC	LC 070 (bronze)	-50 to +200	1	300
LUBROSEAL® LRGP	LC 030 (carbon)	-50 to +200	1	300
LUBROSEAL® LRGP	LC 070 (bronze)	-50 to +200	1	300

* depends on O-ring material

LRGC LRGP

Stuffing box packings

Stuffing box packings are employed as an economical sealing solution in pumps and agitators, and as stem seals in regulator and control valves. The crocidolite and chrysotile asbestos used previously has been replaced by modern materials such as aramid, graphite, PTFE, etc. Stuffing box packings are generally machine-braided with the in clusion of various lubricant and impregnation additives.

Standard types (deliverable from stock)

Designation	Material	Operating temperature °C	Peripheral speed m/s	Max. pressure bars
A+P 6375	Pure PTFE	-200 to +280	2	500*
A+P 6313	Pure PTFE	-100 to +250	8	15
A+P 7000	PTFE/graphite	-30 to +250	6	160*
A+P 6323	PTFE/graphite	-100 to +280	20	250
A+P 6330	PTFE/graphite	-30 to +280	20	20
A+P 6575	PTFE/graphite	-60 to +300	25	320
A+P 6555	Carbon/graphite	-30 to +400	2	300
A+P 4586	Ramie/PTFE	-30 to +120	12	1000*
A+P 6215	Aramid/PTFE	-50 to +280	26	100
A+P 6226	Aramid/graphite	-10 to +150	10	16
iso-KERAM®	Ceramic/glass	-200 to +1100	–	–
GRAFOIL®	Graphite	-200 to +550	2	1000*

* encased assembly

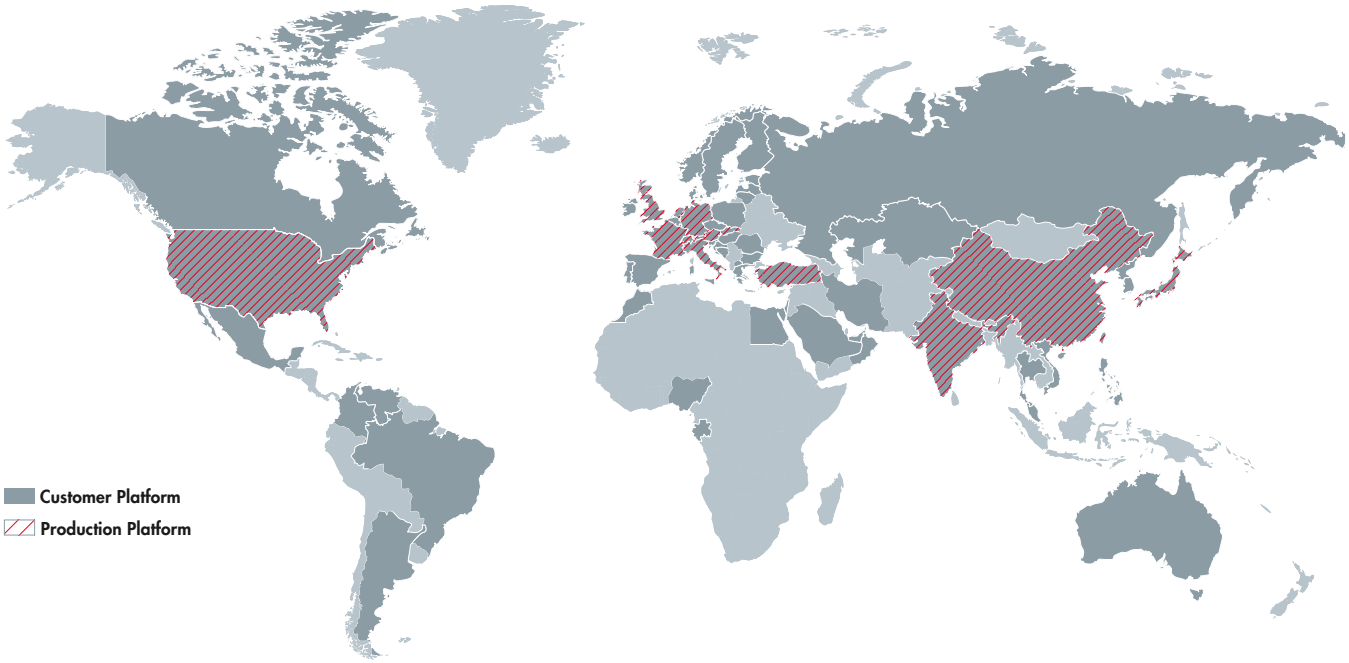
Services from Angst + Pfister Group

Customer Platform

The Angst + Pfister Group supplies its services to every corner of the globe. We are offering solutions tailored to the customer's specific needs with our local application specialists. We are providing engineering-lead solutions to thousands of original equipment manufacturers in over 50 countries.

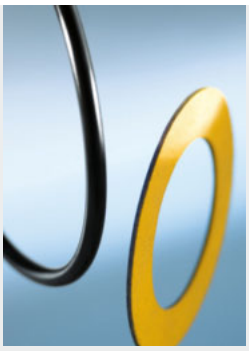
Production Platform

Angst + Pfister's global production platform spans across 15 countries. In addition to our own state-of-the-art manufacturing, we have reserved capacity with internationally renowned production partners. This allows us to always select the best production location based on our customers' quality, quantity and delivery requirements.



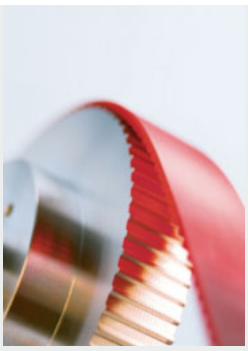
Core product divisions of Angst + Pfister

APSOplast®
Engineering Plastics
Technology

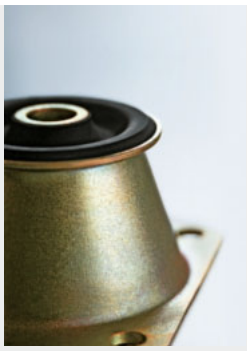


APSOseal®
Sealing
Technology

APSOfluid®
Fluid Handling
Technology



APSOdrive®
Drive
Technology



APSOvib®
Antivibration
Technology

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