

FiPur®
Fietz Thermoplast GmbH

High-Performance Polyurethane

FiPur® Products



VIDEO

Sealings for hydraulics
resilient and wear resistant

FiPur® is a registered trademark of Fietz Group

for hydraulics · mobile hydraulics · pneumatics · power
transmission · gas springs · industrial applications

www.fipur.de

High **Versatility**



Mobile Hydraulics

Pneumatics

Gas Springs

Industry

Piston Seals



Rod Seals



Valve Seals



Seal/Wiper Ring Profiles



Wipers



Special Seals



Cushioning Rings



O-Rings



Back-Up Rings



Guiding Rings



Diaphragms



Multifunctional Solutions



 FiPur® 100

 FiPur® 150

 FiPur® 200

 Engineering Plastics

 FiPur® 105

 FiPur® 180

 PTFE

 Special Materials

 FiPur® 110

 FiPur® 190



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Materials

Excellent basic properties for FiPur®

- High abrasion resistance, lowest wear values
- Outstanding pressure resistance (up to 400 bar)
- Very low permanent deformation
- Good dynamic properties: higher safety against leakage
- Sustainable solutions: by reducing maintenance costs, improved environmental protection and more favourable plant availability
- FiPur® materials are tailor-made for optimal installation conditions
- FiPur® polyurethane seals have the best prerequisites for problem-free snapping into the given installation spaces



FiPur® – High-Performance in many ways

For the optimal design of the individual products, it is necessary to use or develop the right material with the properties specified for the application.

Because the synthesis of this TPU is carried out entirely at Fietz, the structure and property profile can be precisely controlled.

FiPur® Technical Center – the crucial difference

Tailor made High-Performance TPUs are developed and manufactured in the FiPur Technical Center. Adjacent to the series production, there is a development laboratory where new materials are created in small-scale laboratory reactors. Individual material solutions to support customers with unique requirements are made here as well.

Material Laboratory – Competence in material durability

In addition to comprehensive physical property profiles, we determine both the thermo-mechanical and the thermo-caloric properties.

Resistance in all market-relevant media such as hydraulic fluids, lubricating greases, cleaning agents and process fluids can be analyzed. Using different measuring stations, the chemical stability of polyurethanes can be evaluated in a meaningful way.

In total, this results in comprehensive, precisely documented material property profiles, which are indispensable as a basis for meeting customer requirements.

FiPur® meets the requirements

- WEEE (Waste Electrical and Electronic Equipment 2012/19/EU)
- RoHS EC Directive 2011/65/EU
- GADSL (Global Automotive Declarable Substance List)
- LABS-free on request



**FiPur®
100** *

- Hardness 94 Shore A
- Tailored to very low swellings in mineral oils
- Temperature range from -30 °C to 110 °C
- Suitable for mobile hydraulic, pneumatic and other applications

**also available as reduced friction version*



**FiPur®
105**

- Hardness 94 Shore A
- Tailored to very low swellings in mineral oils
- Temperature range from -30 °C to 110 °C
- Applications: Wipers for hydraulics



**FiPur®
110**

- Hardness 94 Shore A
- Outstanding deep temperature flexibility without reduction in wear behaviour
- Temperature range from -50 °C to 110 °C
- Suitable for mobile hydraulic, gas springs or automotive applications



**FiPur®
150**

- Hard TPU material (Hardness 55 Shore D)
- Excellent compatibility in mineral oils (HL, HLP, HLPD etc.)
- Temperature range from -30 °C to 110 °C
- Outstanding extrusion resistance by high pressure impact of the sealing elements
- Good resilience, despite high degree of hardness, the ring can be snap-fit assembled
- Applications as piston seals and wiper elements in element in hydraulic and gas spring technology



**FiPur®
180**

- Soft polyurethane (82 Shore A) with very good dynamic
- Outstanding wear values with very good dynamic tightness, allow very low leakage
- Temperature range from -40 °C to 90 °C
- Due to the soft character low friction coefficients can be generated
- Applications primarily in pneumatic cylinders and valves



**FiPur®
190**

- Hardness 90 Shore
- Very high wear resistance and good cold behaviour
- Temperature range from -35 °C to 110 °C
- Good resistance to mineral oils and greases
- Developed for pneumatics and low-pressure hydraulics as well as for gas springs



**FiPur®
200**

- Hardness 94 Shore A
- Excellent stability under influence of hydrolysing media
- Temperature range from -30 °C to 110 °C
- Ideal solution when tropical humidity causes material degradation
- Very good stability when using alkaline thickened greases in pneumatic cylinders
- Good resistance in contact with alkaline / acidic cleaners
- Suitable for hydraulic and gas spring applications in the field of critical media such as bio-fluids, synthetic esters, water-based liquids like HFA, HFC etc ...



Made in Germany

From FiPur® polymerization to the finished sealing – everything under one roof.

In order to provide the maximum flexibility, know-how and cost-efficiency for our customers, Fietz made sure that the **entire value chain is in own hands**.

From the polymerisation of the high-performance polyurethane to the tool, which is produced in the own tool shop, from metal-cutting rapid prototyping to series production using injection moulding. All processes are under constant control.

The finishing of the extremely sharp sealing lips for dynamic seals as well as the **100% visual checks with highly efficient automated testing machines** close the loop.

All processes are controlled so that Fietz remain highly flexible and reduce lead times in a way to meet customer demands.

Thanks to our **high degree of vertical integration**, we are virtually independent of external suppliers or trade restrictions.

Toolmaking
Tool Design &
Manufacturing



Seal Production
Injection Molding
Process
(SPC-control)



Finishing
Cutting of seal lips
(SPC-control)



Automated
100% check



Warehousing



Packaging
and shipping



Incoming goods
Check of single
components



Polymerization FiPur®



Batch-Approval
according to
Specification



Rapid Prototyping
Small-series
production





Wipers / Double lip-wipers for ISO Grooves

The dirt guard, for protecting the environment

- Outstanding abrasion and extrusion resistance
- Wide range of compatibilities
- For the extended resistance requirements in food technology and biodegradable hydraulic media, a number of suitable materials are available
- Easy to assemble
- Excludes environmental containments
- Many dimensions can be delivered quickly by lathe cutting capabilities

The FiPur® preferred wiper dimensions *SW fit in standard grooves according to DIN ISO 6195 type F. Like all sealing elements of the FiPur® product family, the components are extremely robust and offer the user maximum functional reliability, even under aggressive operating conditions. The primary task of this profile is to shield the cylinder against contamination such as sand, dirt, ice, etc., as well as to protect effectively against liquids.

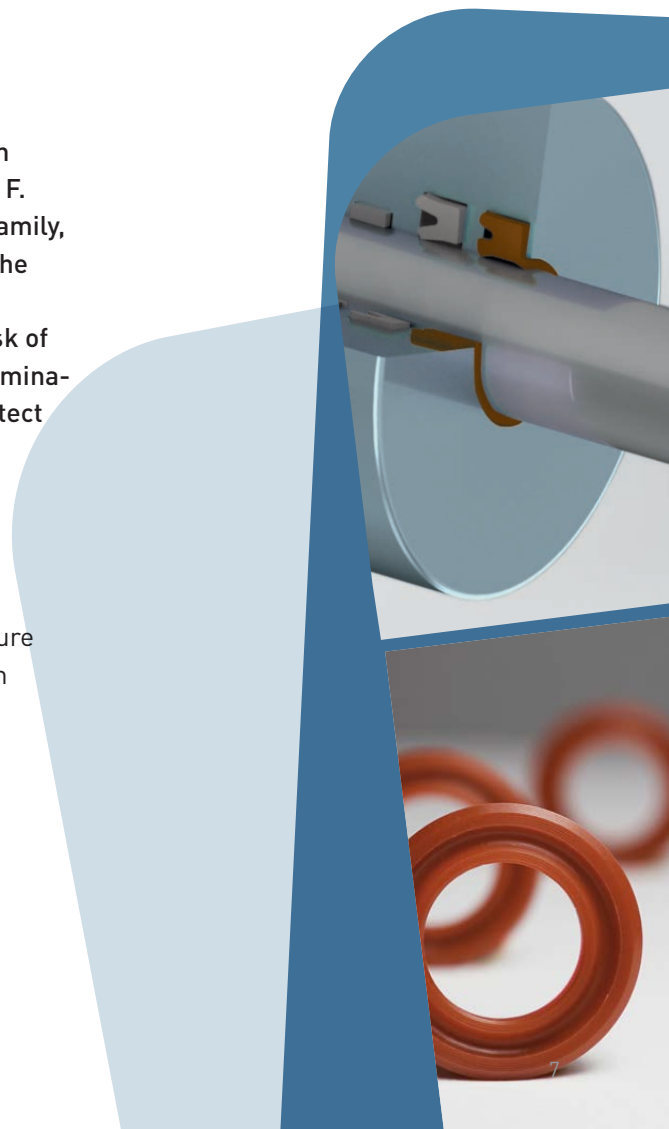
All materials are extremely robust and the user maximum functional reliability, even under tough operating conditions. For severe contamination, other compounds can be used. For special exposure to contamination, other engineering solutions can be involved.

Application examples

FiPur® wipers are primarily used to protect the entire system against external influences:

- Mobile and stationary hydraulics
- Various types of hydraulic valves
- Gas springs

* SW Single Wiper





Installation instructions

The profile fits into the standardized grooves according to DIN ISO 6195, type F. We recommend that the wiper lip is always positioned outside of the cylinder housing. In this way the stripped media can be kept away from the system effectively.

Avoid running the wiper over sharp edges while assembling. Sharp edges can result in damage of the wiper lips.

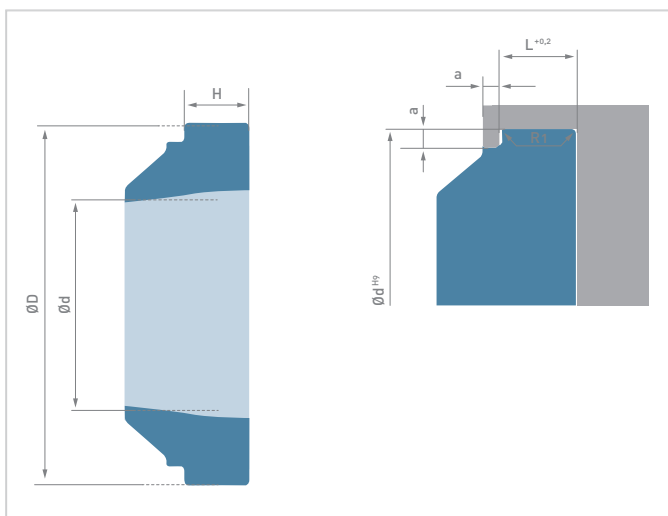


Abb. 1: Cross section of the wiper

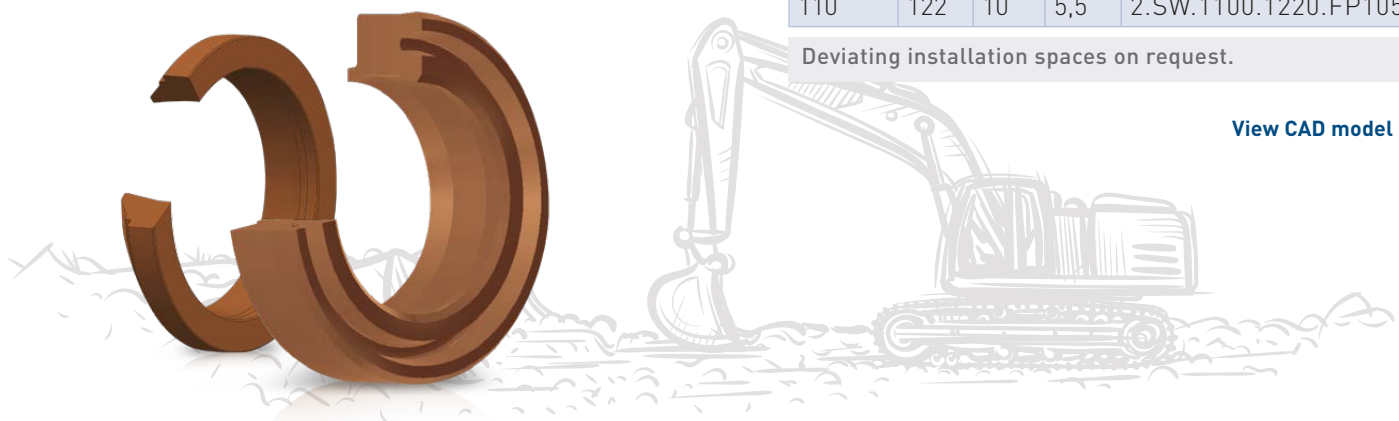
Abb. 2: Cross-section of the installation situation

Wipers for ISO grooves

Installation space				Item
d	D	H	L	
12	20	7	4	2.SW.0120.0200.FP105
16	24	7	4	2.SW.0160.0240.FP105
18	26	7	4	2.SW.0180.0260.FP105
20	28	7	4	2.SW.0200.0280.FP105
22	30	7	4	2.SW.0220.0300.FP105
25	33	7	4	2.SW.0250.0330.FP105
28	36	7	4	2.SW.0280.0360.FP105
30	38	7	4	2.SW.0300.0380.FP105
32	40	7	4	2.SW.0320.0400.FP105
35	43	7	4	2.SW.0350.0430.FP105
36	44	7	4	2.SW.0360.0440.FP105
38	46	7	4	2.SW.0380.0460.FP105
40	48	7	4	2.SW.0400.0480.FP105
45	53	7	4	2.SW.0450.0530.FP105
50	58	7	4	2.SW.0500.0580.FP105
50	62	7	4	2.SW.0500.0620.FP105
55	63	7	4	2.SW.0550.0630.FP105
56	64	7	4	2.SW.0560.0640.FP105
60	68	7	4	2.SW.0600.0680.FP105
63	71	7	4	2.SW.0630.0710.FP105
65	73	7	4	2.SW.0650.0730.FP105
70	78	7	4	2.SW.0700.0780.FP105
75	83	7	4	2.SW.0750.0830.FP105
80	88	7	4	2.SW.0800.0880.FP105
85	93	7	4	2.SW.0850.0930.FP105
90	98	7	4	2.SW.0900.0980.FP105
95	103	7	4	2.SW.0950.1030.FP105
100	108	7	4	2.SW.1000.1080.FP105
105	117	10	5,5	2.SW.1050.1170.FP105
110	122	10	5,5	2.SW.1100.1220.FP105

Deviating installation spaces on request.

[View CAD model](#)





The FiPur® preferred dimensions of the double wiper profile * DW fit in the grooves according to DIN ISO 6195 type C. By the combination of wiper lip and secondary sealing lip a very thin residual lubricating film is achieved on the rod, which leads to extremely low leakage.

Whenever special requirements in addition to the primary function of dirt protection are needed, FiPur® double wipers come for use. The wiper lip of the double wiper reduces the oil film on the piston rod, which is important for low-wear operation to an absolute minimum and prevents undesirable drag leakage.

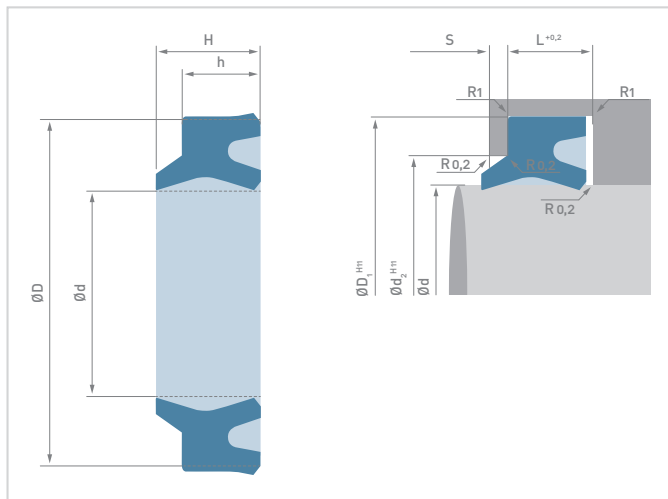


Fig. 1: Cross section of the wiper

Fig. 2: Cross-section of the installation situation

Application examples

- Forklifts in the food processing industry
- Agricultural and forestry machines
- Earth moving machines
- Industrial hydraulic cylinders that require clean operation
- Use in water protection areas

Technical Data

Operating Temperature - 35 °C bis + 110 °C
 Sliding Speed ≤ 2 m/s
 Media Hydraulic oils based on mineral oil
 ** biodegradable media

Installation instructions

The profile fits into the standardized grooves according to DIN ISO 6195, type C.

Fietz recommends that the wiper lip is always positioned outside of the cylinder housing. In this way the stripped media can be kept away from the system effectively.

Avoid running the wiper over sharp edges while assembling. Sharp edges can result in damage of the wiper lips.

Double wipers for ISO grooves

Installation space				Item
d	D	H	L	
10	16	4,8	4	2.DW.0100.0160.FP105
12	18	4,8	4	2.DW.0120.0180.FP105
14	20	4,8	4	2.DW.0140.0200.FP105
16	22	4,8	4	2.DW.0160.0220.FP105
18	24	4,8	4	2.DW.0180.0240.FP105
20	26	4,8	4	2.DW.0200.0260.FP105
22	28	4,8	4	2.DW.0220.0280.FP105
25	31	4,8	4	2.DW.0250.0310.FP105
28	36	5,8	5	2.DW.0280.0360.FP105
32	40	5,8	5	2.DW.0320.0400.FP105
36	44	5,8	5	2.DW.0360.0440.FP105
40	48	5,8	5	2.DW.0400.0480.FP105
45	53	5,8	5	2.DW.0450.0530.FP105
50	58	5,8	5	2.DW.0500.0580.FP105
56	66	6,8	6	2.DW.0560.0660.FP105
63	73	6,8	6	2.DW.0630.0730.FP105
70	80	6,8	6	2.DW.0700.0800.FP105
80	90	6,8	6	2.DW.0800.0900.FP105
90	100	6,8	6	2.DW.0900.1000.FP105
100	110	6,8	6	2.DW.1000.1100.FP105
110	125	9,5	8,5	2.DW.1100.1250.FP105

Deviating installation spaces on request.

[View CAD model](#)



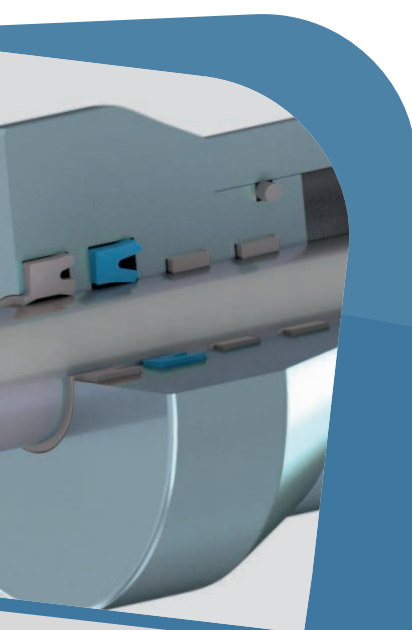
* DW Double Wiper ** when using FiPur® 200



Rod Seals for ISO grooves

What matters is the tightness

- Outstanding abrasion and extrusion resistance
- Wide range of media resistances
- For the extended resistance requirements of food processing technology and biodegradable hydraulic medias, a number of suitable materials are available
- Excellent assembly ability
- Many dimensions can be delivered quickly by lathe cutting



The FiPur® preferred dimensions of the rod seal profile *RS fit in the grooves according to ISO 5597. Like all sealing elements of the FiPur® product family, the components are extremely robust and offer the user maximum functional reliability, even under rough operating conditions.

The primary task of this sealing profile is to keep the cylinder free of leakage even under the influence of changing ambient temperatures, diverse working conditions and acting lateral forces.

As a result, the environment will be protected against contamination from escaping pressure fluid.

The standard material FiPur® 100 used here is a highly wear-resistant polyurethane, tailor-made for applications in mobile and stationary hydraulics.

Application examples

The primary task of the FiPur® Rod Seal is to protect the hydraulic cylinder against leakage and they are used in:

- Mobile and stationary hydraulics
- Piston pumps
- Gas springs

* RS = Rod Seal ** when using FiPur® 200

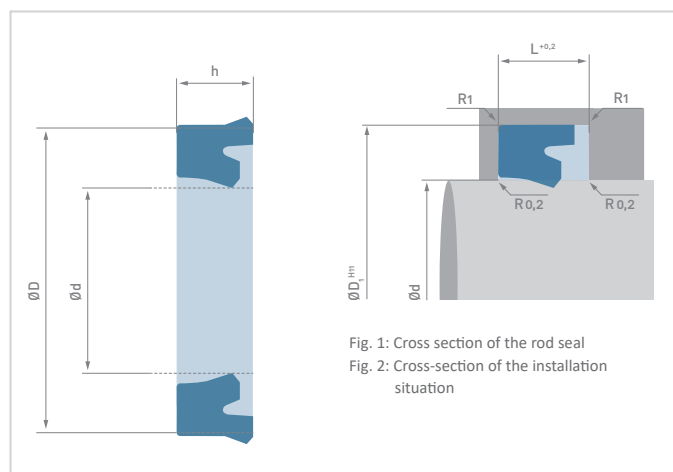


The highest requirements for leak-free hydraulic systems exist in the following areas:

- Hydraulic systems in the food processing industries
- Hydraulic cylinders in critical industrial areas
- Agricultural and forestry machines
- Earth moving machines

Installation instructions

The profile snaps into the standardized installation spaces according to ISO 5597. For fully functionality rod seals always need axial clearance.



Avoid running the wiper over sharp edges while assembling. Non-observance can result in damage of the trimmed seal lips.

The seals are suitable for mounting in closed grooves.

Please note that the assembly forces increase considerably with large profile cross-sections and assembly aids are therefore needed. If required you can obtain design information on this.

Technical Data

Pressure	≤ 400 bar
Operating Temperature	- 35 °C - + 110 °C
Sliding Speed	≤ 0,5 m/s
Media	Hydraulic oils based on mineral oil ** biodegradable media

Rod Seals for ISO grooves				
Installation space				Item
d	D	H	L	
8	16	4,5	6,3	2.RS.0080.0160.FP100
10	16	5	5,7	2.RS.0100.0160.FP100
10	18	5,7	6,3	2.RS.0100.0180.FP100
12	19	5	5,6	2.RS.0120.0190.FP100
12	20	5,7	6,3	2.RS.0120.0200.FP100
14	21	5	5,6	2.RS.0140.0210.FP100
14	24	7,3	8	2.RS.0140.0240.FP100
16	24	5,7	6,3	2.RS.0160.0240.FP100
18	25	5	5,6	2.RS.0180.0250.FP100
20	28	5,7	6,3	2.RS.0200.0280.FP100
22	30	5,7	6,3	2.RS.0220.0300.FP100
22	32	7,3	8	2.RS.0220.0320.FP100
25	33	5,7	6,3	2.RS.0250.0330.FP100
25	35	7,3	8	2.RS.0250.0350.FP100
28	36	5,7	6,3	2.RS.0280.0360.FP100
32	42	7,3	8	2.RS.0320.0420.FP100
36	44	5,7	6,3	2.RS.0360.0440.FP100
36	46	7,3	8	2.RS.0360.0460.FP100
40	50	7,3	8	2.RS.0400.0500.FP100
45	55	7,3	8	2.RS.0450.0550.FP100
50	65	11,4	12,5	2.RS.0500.0650.FP100
56	66	6,5	7,5	2.RS.0560.0660.FP100
56	71	11,4	12,5	2.RS.0560.0710.FP100
63	78	11,4	12,5	2.RS.0630.0780.FP100
70	85	11,4	12,5	2.RS.0700.0850.FP100
80	95	11,4	12,5	2.RS.0800.0950.FP100
90	100	6,5	7,5	2.RS.0900.1000.FP100
90	105	11,4	12,5	2.RS.0900.1050.FP100
100	120	14,5	16	2.RS.1000.1200.FP100
110	125	9,6	10,6	2.RS.1100.1250.FP100

Deviating installation spaces on request.

[View CAD model](#)

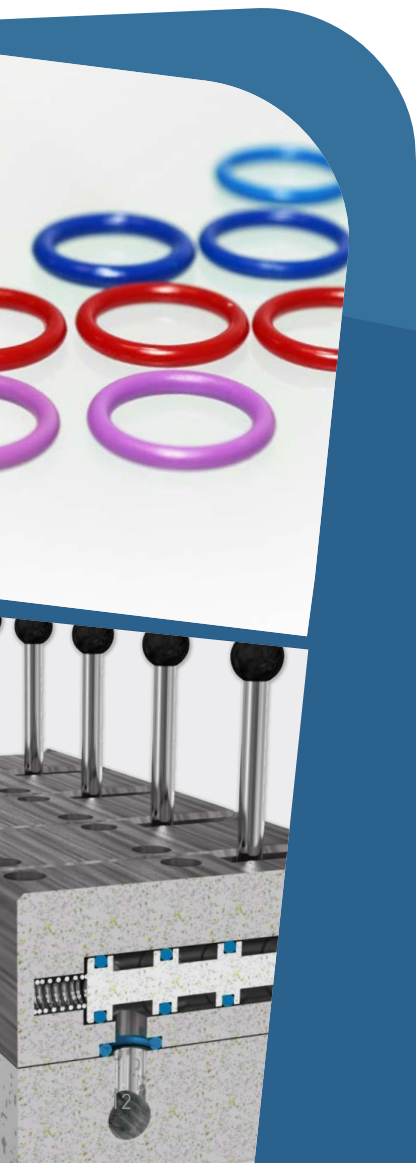




O-rings

Completely tight

- Outstanding sealing ability
- Wide range of fluid compatibility
- Lowest values for permanent set (compression set)
- Robust and wear-resistant
- High resistance to explosive decompression in gas applications
- Excellent assembly ability
- For extended requirements in food technology, a suitable material solution is available
- Custom dimensions can be delivered quickly using our turning capabilities



FiPur® O-rings are very extrusion-resistant in most applications without using a back-up ring. The sum of all properties offers the user a maximum of functional reliability and product service life, even under aggressive operating conditions.

The robust material also enables the use of FiPur® O-rings in dynamic applications such as valves and separated pistons.

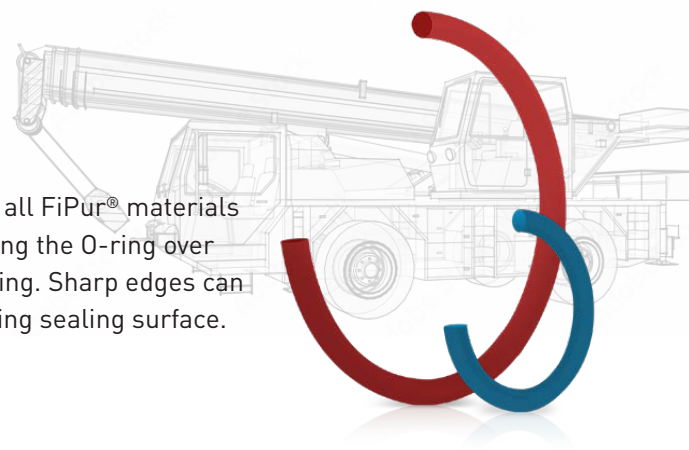
Application examples

Static sealing from cylinder to cylinder head and cylinder base, valve housings, flange connections in:

- Mobile and stationary hydraulics
- Piston pumps
- Industrial gas springs
- Lockable gas spring

Installation instructions

Although the geometry and all FiPur® materials are very robust. Avoid running the O-ring over sharp edges while assembling. Sharp edges can result in damage to the O-ring sealing surface.



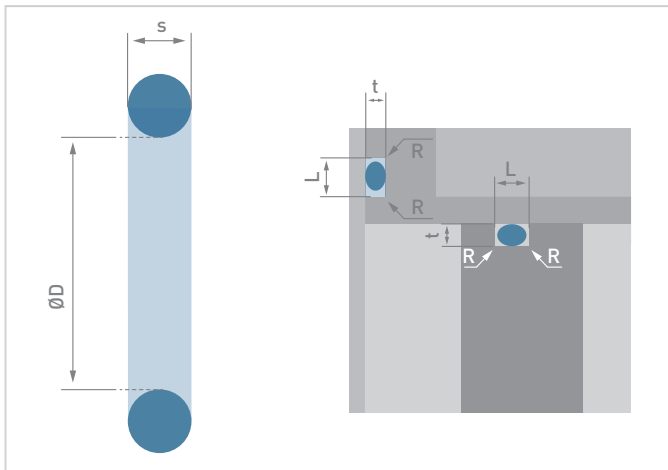


Fig. 1: Cross section of the O-ring

Fig. 2: Cross-section of the installation situation

O-rings - groove depth t (mm)				
S (mm)	R (mm)	Static	Dynamic Hydraulic	Dynamic Pneumatic
2	0,2	1,5+0,05	1,65+0,05	1,75+0,05
2,5	0,2	2,1+0,05	1,65+0,05	1,95+0,05
3	0,3	2,4+0,05	2,55+0,05	2,7+0,05
5	0,3	4,15+0,05	4,45+0,05	4,65+0,05

Technical Data

Operating Temperature - 30°C bis + 110°C - FiPur®100
 - 50°C bis + 110°C - FiPur®110

Pressure max. 600 bar

Sliding Speed ≤ 0,5 m/s

Media Hydraulic oils based on mineral oil
 Aqueous pressure media

Example: Nomenclature O-rings

Market segment	Hydraulics (3)
Article	O-ring
Inner diameter	12,87 mm
Cord thickness	2,67 mm
Material	FiPur® 100
Fietz Article-No.	3.OR.01287.267.FP100
	Market segment Article Inner diameter Cord thickness Material

On request, we can also produce complete sealing sets for your cylinders, consisting of

- O-rings for cylinders and pistons
- Rod seals
- Piston seals
- Guide rings

O-rings

ID	S	Item
8	2	3.OR.00800.200.FP100
10	2	3.OR.01000.200.FP100
12	2	3.OR.01200.200.FP100
14	2	3.OR.01400.200.FP100
15	2,5	3.OR.01500.250.FP100
16	2,5	3.OR.01600.250.FP100
18	2,5	3.OR.01800.250.FP100
20	2,5	3.OR.02000.250.FP100
22	2,5	3.OR.02200.250.FP100
25	2,5	3.OR.02500.250.FP100
27	2,5	3.OR.02700.250.FP100
28	3	3.OR.02800.300.FP100
32	3	3.OR.03200.300.FP100
34	3	3.OR.03400.300.FP100
38	3	3.OR.03800.300.FP100
40	2	3.OR.04000.200.FP100
42	2	3.OR.04200.200.FP100
44	2	3.OR.04400.200.FP100
45	2	3.OR.04500.200.FP100
50	2,5	3.OR.05000.250.FP100
56	2,5	3.OR.05600.250.FP100
57	2,5	3.OR.05700.250.FP100
63	2,5	3.OR.06300.250.FP100
70	2,5	3.OR.07000.250.FP100
74	2,5	3.OR.07400.250.FP100
80	2,5	3.OR.08000.250.FP100
90	3	3.OR.09000.300.FP100
100	3	3.OR.10000.300.FP100
110	3	3.OR.11000.300.FP100
115	3	3.OR.11500.300.FP100
120	3	3.OR.12000.300.FP100

Deviating installation spaces on request.

View CAD model



*when using FiPur® 200



Single-acting Piston Seals

Movement under pressure

- Outstanding abrasion and extrusion resistance
- Wide range of fluid compatibilities
- Materials available for extended fluid compatibility required in food technology and biodegradable hydraulic media
- Ease of installation and assembly
- Pistons do not have to be divided for assembly of the seal
- Custom dimensions can be delivered quickly by lathe cutting capabilities



The FiPur® preferred dimensions of the piston profile
*PS fit in the installation spaces according to DIN ISO 5597.

Like all sealing elements of the FiPur® family the piston seals provide maximum functional reliability, even under aggressive operating conditions.

Piston seals separate the two pressure chambers of the working piston in the cylinder from each other (rod side and bottom side).

If the return stroke of hydraulic cylinders is controlled by compression springs or simply as a result of the available gravity, the piston seal in this process step must have extremely low frictional forces during this process step. For such tasks, the FiPur® PS piston ring profile, which has proven itself millions of times is predestined for such challenges.

All materials are extremely robust and offer the user a maximum functional reliability even under tough operating conditions. For special contamination exposures other materials are available.

* PS Piston Seal single acting

** when using FiPur® 200



Application examples

FiPur® piston seals are used in long-lasting, low-maintenance hydraulic cylinders:

- Mobile and stationary hydraulics
- Construction machinery, agricultural and forestry machines, cranes, pumps, industrial trucks, etc.
- Presses, lifting tables, injection moulding machines

Installation instructions

The seals require axial clearance to function fully. The specific dimensions are shown in the columns H and L of the dimension tables.

The profiles snap into the standardized installation spaces according to ISO 5597 and ISO 7425-1.

We recommend to avoid mounting the piston seal over sharp edges.

Sharp edges can result in damage of the sealing lips. Please note that the assembly forces with large profile cross-sections increase sharply and therefore assembly aids are needed.

Technical Data

Operating Temperature	- 30°C bis + 110°C
Permissible Pressure	≤ 400 bar
Sliding Speed	≤ 0,5 m/s
Media	Hydraulic oils based on mineral oil
	** biodegradable media

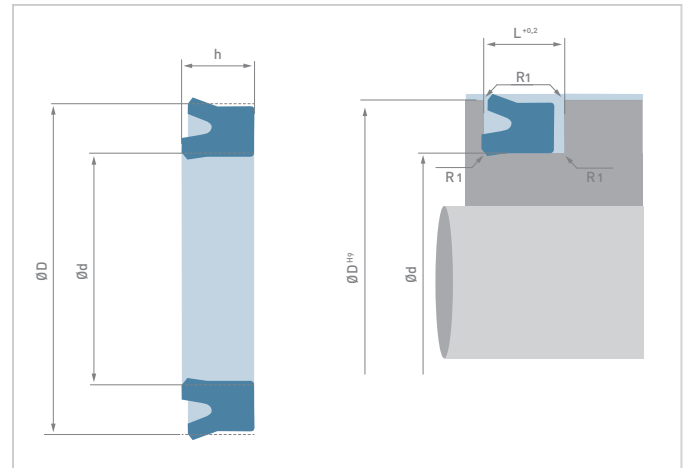


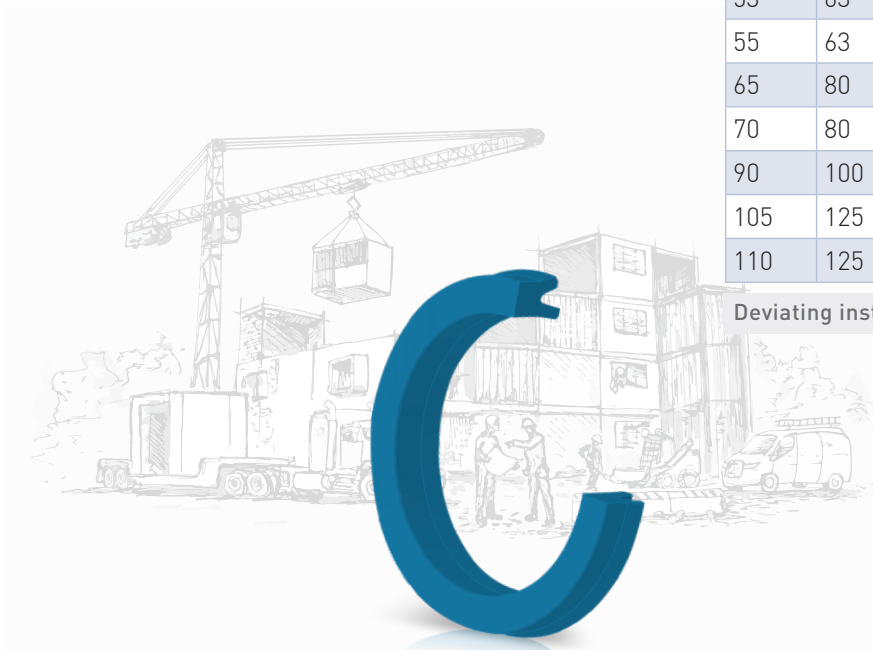
Fig. 1: Cross section of the single-acting piston seal Fig. 2: Cross-section of the installation situation

Single-acting Piston Seals for ISO grooves

Installation space				Item
d	D	H	L	
8	16	5,7	6,3	2.PS.0080.0160.FP100
12	20	5,7	6,3	2.PS.0120.0200.FP100
17	25	5,7	6,3	2.PS.0170.0250.FP100
18	25	5	5,6	2.PS.0180.0250.FP100
22	32	7,3	8	2.PS.0220.0320.FP100
24	32	5,7	6,3	2.PS.0240.0320.FP100
30	40	7,3	8	2.PS.0300.0400.FP100
32	40	5,7	6,3	2.PS.0320.0400.FP100
40	50	7,3	8	2.PS.0400.0500.FP100
42	50	5,7	6,3	2.PS.0420.0500.FP100
48	63	8,6	9,5	2.PS.0480.0630.FP100
53	63	7,3	8	2.PS.0530.0630.FP100
55	63	5,7	6,3	2.PS.0550.0630.FP100
65	80	8,6	9,5	2.PS.0650.0800.FP100
70	80	6,7	7,5	2.PS.0700.0800.FP100
90	100	6,7	7,5	2.PS.0900.1000.FP100
105	125	14,5	16	2.PS.1050.1250.FP100
110	125	9,6	10,6	2.PS.1100.1250.FP100

Deviating installation spaces on request.

[View CAD model](#)

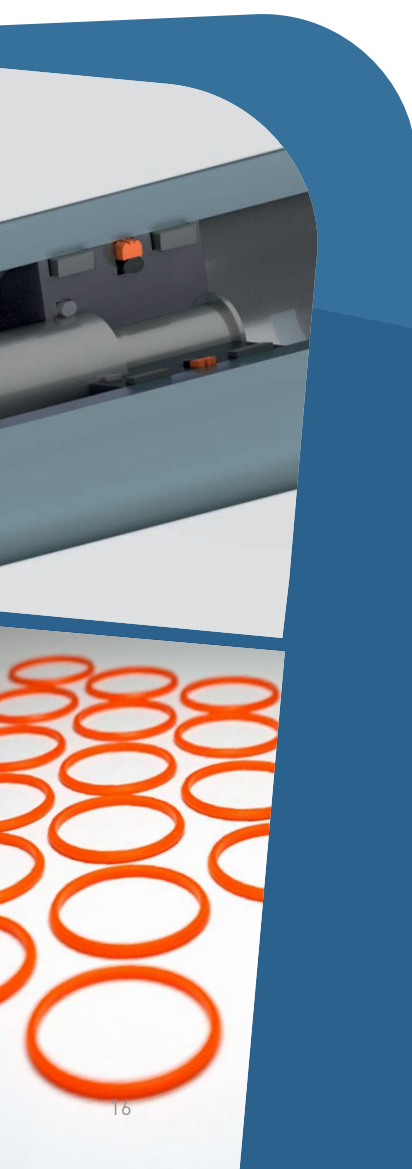




Double-acting Piston Seals

Movement under pressure

- Outstanding abrasion and extrusion resistance
- Wide range of fluid compatibilities
- Materials available for extended fluid compatibility required in food technology and biodegradable hydraulic media
- Ease of installation and assembly
- Pistons do not have to be divided for assembly of the seal
- Custom dimensions can be delivered quickly by lathe cutting capabilities



FiPur® preferred series of the double-acting piston seal profile *PD fit into the installation spaces according to DIN ISO 7425-1. Through the combination of a sliding ring of FiPur® 100 (up to 250 bar) or FiPur® 150 (up to 400 bar) and an elastomeric O-ring made of NBR as the preload element offers the user not only excellent low friction, it also offers the user cost advantages due to the easy assembly in grooves of a one-piece piston.

All materials are extremely robust and offer the user a maximum functional reliability even under tough operating conditions. For special contamination exposures other materials are available.

Application examples

FiPur® piston seals are used in long-lasting, low-maintenance hydraulic cylinders:

- Mobile and stationary hydraulics
- Construction machinery, agricultural and forestry machines, cranes, pumps, industrial trucks, etc.
- Presses, lifting tables, injection moulding machines

* PS Piston Seal single acting

** when using FiPur® 200

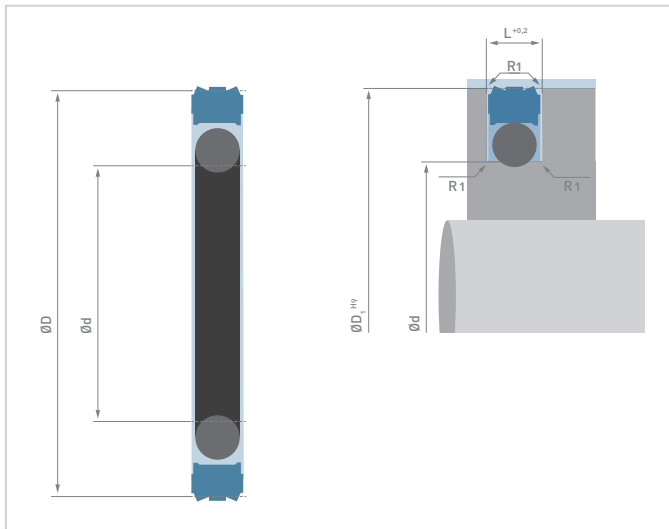


Fig. 1 Cross section of the double-acting piston seal Fig. 2 Cross-section of the installation situation

Einbauhinweise

The seals require axial clearance to function fully. The specific dimensions are shown in the columns H and L of the dimension tables.

The profiles snap into the standardized installation spaces according to ISO 5597 and ISO 7425-1. We recommend to avoid mounting the piston seal over sharp edges.

Sharp edges can result in damage of the sealing lips. Please note that the assembly forces with large profile cross-sections increase sharply and therefore assembly aids are needed.

Technical Data

Operating Temperature - 30°C bis + 110°C
 Permissible Pressure ≤ 400 bar
 Sliding Speed ≤ 0,5 m/s
 Media Hydraulic oils based on mineral oil
 ** biodegradable media

Double-acting Piston Seals

Installation space			Item	fitting O-ring
d	D	L		
12,5	20	3,2	2.PD.0125.0200.FP100	12,37 x 2,62
17,5	25	3,2	2.PD.0175.0250.FP100	17,12 x 2,62
21	32	4,2	2.PD.0210.0320.FP100	20,22 x 3,53
29	40	4,2	2.PD.0290.0400.FP100	28,14 x 3,53
39	50	4,2	2.PD.0390.0500.FP100	37,69 x 3,53
49	60	4,2	2.PD.0490.0600.FP100	47,22 x 3,53
52	63	4,2	2.PD.0520.0630.FP100	50,39 x 3,53
54	65	4,2	2.PD.0540.0650.FP100	53,57 x 3,53
59	70	4,2	2.PD.0590.0700.FP100	56,52 x 3,53
59,5	75	6,3	2.PD.0595.0750.FP100	59,69 x 5,33
64,5	80	6,3	2.PD.0645.0800.FP100	62,87 x 5,33
69	80	4,2	2.PD.0690.0800.FP100	66,27 x 3,53
69,5	85	6,3	2.PD.0695.0850.FP100	69,22 x 5,33
74,5	90	6,3	2.PD.0745.0900.FP100	72,39 x 5,33
79,5	95	6,3	2.PD.0795.0950.FP100	78,70 x 5,33
84,5	100	6,3	2.PD.0845.1000.FP100	81,92 x 5,33
89,5	105	6,3	2.PD.0895.1050.FP100	88,27 x 5,33
99,5	115	6,3	2.PD.0995.1150.FP100	97,79 x 5,33
109,5	125	6,3	2.PD.1095.1250.FP100	107,32 x 5,33

Deviating installation spaces on request.

[View CAD model](#)





Customer Specific parts

We bring polyurethane into shape

- Highly wear-resistant
- Very good tensile strength and tear resistance
- Highly pressure resistant
- Very good oxidation resistance
- Low permeation rate

Diaphragms are used in applications where a hermetic seal is required, for example in pumps and valves.

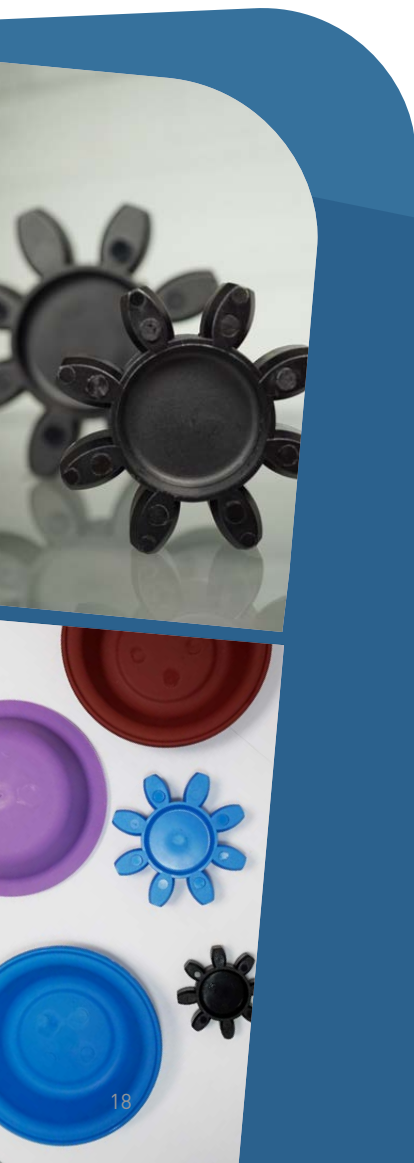
NBR is often used as the industry standard material.

However, Fipur® materials are far superior in terms of mechanical properties and wear.

Moulded High-performance polyurethane parts can be found in a wide variety of applications.

Fietz is your development partner for moulded parts according to customer specifications and provides support with:

- Layout and design of the moulded seal /moulded part engineering
- Material design
- Evaluation of the moulded seal (moulded part) within the entire assembly
- Support in the validation of the moulded seal
- Improvement of existing applications





FiPur® Nomenclature

Example: Nomenclature O-rings	
Market segment	Hydraulics (3)
Article	O-ring
Inner diameter	12,87 mm
Cord thickness	2,67 mm
Material	FiPur® 100
Fietz Article-No.	3.OR.01287.267.FP100
	Market segment Article Inner diameter Cord thickness Material

Example: Nomenclature Single Wiper	
Market segment	Hydraulics (3)
Article	Single Wiper
Inner diameter	12,0 mm
Cord thickness	20,0 mm
Material	FiPur® 100
Fietz Article-No.	2.SW.0120.0200.FP100
	Market segment Article Inner diameter Cord thickness Material

*Market segment	
1	Pneumatics
2	Hydraulics
3	O-rings
4	Others
5	Gas spring applications

**Article description	
Article	Shortcut
Single Wiper	SW
Double Wiper	DW
Formed Part	FP
Piston Seal	PS
Piston Seal Double-acting	PD
Piston Wear Ring	PR
Customer Specific Sealing	CS
O-Ring	OR
Rod Seal	RS
Rod Wear Ring	RR



VIDEO

[Sealings for hydraulics](#)
[resilient and wear resistant](#)

Fietz Group

Consulting, development and production –
everything from one source



High Performance Polyurethane

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