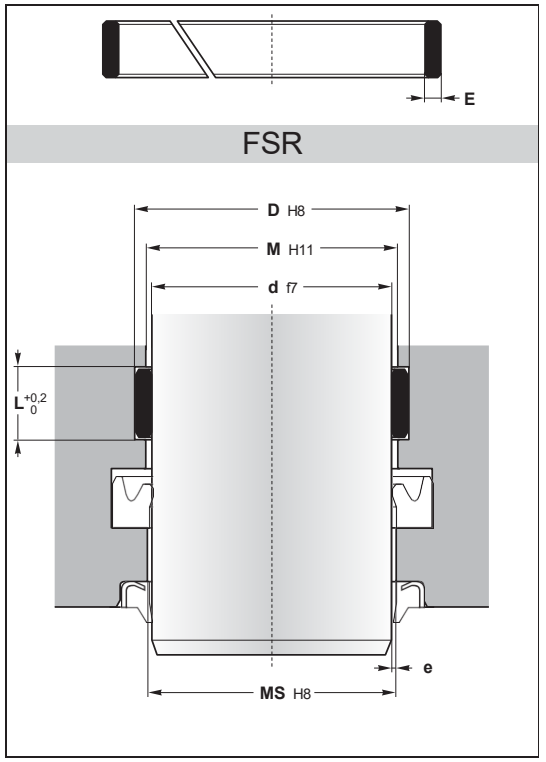
FSR

Acetal resin rod guide ring



The **FSR** has been developed to substitute tradi- tional bronze guides in hydraulic cylinders. They guide the rod and prevent metallic contact with the cylinder when radial forces act perpendicular to the direction of movement.

Chamfered edges prevent splintering of the material during assembly and make the installation into the groove easier. The compound used for these guides is a medium viscosity glass fibre reinforced acetal resin characterised by high strength, rigidity, hardness, impact resistance, resilience and excellent stability to high and low temperature.

Operating conditions

Max. permissible radial load	at 25°C : ≤ 40 N/mm² 60°C : ≤ 25 N/mm²
Temperature	-40°C to 110°C
Speed	< 0,8 m/s

Materials

Guide ring	POM + glass fibers

Assembly

Install in the groove

Advantages

Simple groove design, easy fitting
Low break-out and low coefficient of friction
Excellent wear resistance
Good load capacity
Reduce vibrations
Available in many sizes

Please contact us for applications approaching maximum values.

The diameter **M** is only valid in the area of the guide ring and not in the extrusion area of the seal.
The diameter **MS** in the seal area must be calculated with the **e value** of the seal used.

d (mm)	**M** (mm)
8 - 20	**d** + 0,5
21 - 100	**d** + 0,7
101 - 250	**d** + 0,9
251 - 300	**d** + 1,2

Calculation of the permissible radial force

F = (p x d x L x n) / s

F	= maximum radial force (N)
p	= maximum permissible loading for material (N/mm²)
d x L	= diameter x width of the ring (mm²)
n	= number of rings
s	= safety factor

d	D	L	Reference
12	16	9,6	**FSR-12-2-9.6**
14	18	9,6	**FSR-14-2-9.6**
16	20	9,6	**FSR-16-2-9.6**
18	22	9,6	**FSR-18-2-9.6**
20	24	9,6	**FSR-20-2-9.6**
22	26	9,6	**FSR-22-2-9.6**
24	28	9,6	**FSR-24-2-9.6**
25	29	9,6	**FSR-25-2-9.6**
26	30	9,6	**FSR-26-2-9.6**
28	32	9,6	**FSR-28-2-9.6**
30	34	9,6	**FSR-30-2-9.6**
	36	9,6	**FSR-30-3-9.6**
32	36	9,6	**FSR-32-2-9.6**
	38	10	**FSR-32-3-10**
34	38	9,6	**FSR-34-2-9.6**
35	39	8,7	**FSR-35-2-8.7**
	39	9,6	**FSR-35-2-9.6**
	39	12,8	**FSR-35-2-12.8**
	41	9,6	**FSR-35-3-9.6**
36	40	9,6	**FSR-36-2-9.6**
	42	9,6	**FSR-36-3-9.6**
38	42	9,6	**FSR-38-2-9.6**
40	44	8,7	**FSR-40-2-8.7**
	44	9,6	**FSR-40-2-9.6**
	46	9,6	**FSR-40-3-9.6**
	46	12,8	**FSR-40-3-12.8**
42	46	9,6	**FSR-42-2-9.6**
44	50	9,6	**FSR-44-3-9.6**
45	51	9,6	**FSR-45-3-9.6**
	51	12,8	**FSR-45-3-12.8**
46	52	9,6	**FSR-46-3-9.6**

d	D	L	Reference
48	52	12,8	**FSR-48-2-12.8**
	54	9,6	**FSR-48-3-9.6**
50	56	9,6	**FSR-50-3-9.6**
	56	12,8	**FSR-50-3-12.8**
53	59	9,6	**FSR-53-3-9.6**
55	61	9,6	**FSR-55-3-9.6**
	61	12,8	**FSR-55-3-12.8**
56	62	12,8	**FSR-56-3-12.8**
60	66	12,8	**FSR-60-3-12.8**
63	69	12,8	**FSR-63-3-12.8**
65	71	12,8	**FSR-65-3-12.8**
70	76	12,8	**FSR-70-3-12.8**
	76	19,2	**FSR-70-3-19.2**
	76	20	**FSR-70-3-20**
72	78	12,8	**FSR-72-3-12.8**
75	81	12,8	**FSR-75-3-12.8**
	81	19,2	**FSR-75-3-19.2**
76	82	12,8	**FSR-76-3-12.8**
78	84	12,8	**FSR-78-3-12.8**
80	86	12,8	**FSR-80-3-12.8**
	86	19,2	**FSR-80-3-19.2**
85	91	12,8	**FSR-85-3-12.8**
86	92	12,8	**FSR-86-3-12.8**
90	96	12,8	**FSR-90-3-12.8**
	96	19,2	**FSR-90-3-19.2**
95	101	12,8	**FSR-95-3-12.8**
100	106	12,8	**FSR-100-3-12.8**
105	111	12,8	**FSR-105-3-12.8**
110	116	12,8	**FSR-110-3-12.8**
	116	25,75	**FSR-110-3-25.75**
115	121	12,8	**FSR-115-3-12.8**

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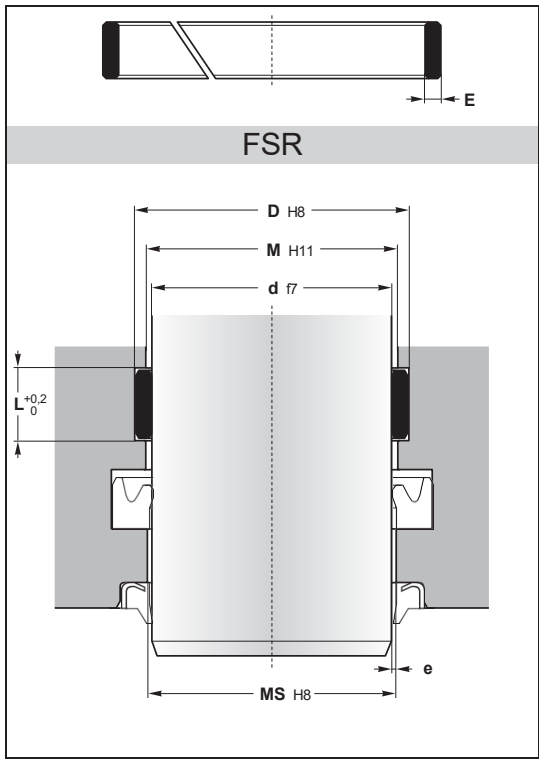

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n = number of rings
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116	122	19,2	**FSR-116-3-19.2**
120	126	12,8	**FSR-120-3-12.8**
	126	19,2	**FSR-120-3-19.2**
	126	25,4	**FSR-120-3-25.4**
125	131	12,8	**FSR-125-3-12.8**
	131	19,2	**FSR-125-3-19.2**
130	136	12,8	**FSR-130-3-12.8**
	136	25,75	**FSR-130-3-25.75**
135	141	12,8	**FSR-135-3-12.8**
140	146	12,8	**FSR-140-3-12.8**
142	148	12,8	**FSR-142-3-12.8**
145	151	12,8	**FSR-145-3-12.8**
150	156	12,8	**FSR-150-3-12.8**
155	161	19,2	**FSR-155-3-19.2**
160	166	19,2	**FSR-160-3-19.2**
165	171	19,2	**FSR-165-3-19.2**
170	176	19,2	**FSR-170-3-19.2**
175	181	19,2	**FSR-175-3-19.2**
180	186	19,2	**FSR-180-3-19.2**
185	191	19,2	**FSR-185-3-19.2**

d	D	L	Reference
190	196	19,2	**FSR-190-3-19.2**
195	201	19,2	**FSR-195-3-19.2**
200	206	19,2	**FSR-200-3-19.2**
205	211	19,2	**FSR-205-3-19.2**
210	216	19,2	**FSR-210-3-19.2**
215	221	19,2	**FSR-215-3-19.2**
220	226	19,2	**FSR-220-3-19.2**
225	231	19,2	**FSR-225-3-19.2**
230	236	19,2	**FSR-230-3-19.2**
235	241	19,2	**FSR-235-3-19.2**
240	246	19,2	**FSR-240-3-19.2**
245	251	19,2	**FSR-245-3-19.2**
250	256	19,2	**FSR-250-3-19.2**
260	266	19,2	**FSR-260-3-19.2**
265	271	19,2	**FSR-265-3-19.2**
270	276	19,2	**FSR-270-3-19.2**
275	281	19,2	**FSR-275-3-19.2**
280	286	19,2	**FSR-280-3-19.2**
290	296	19,2	**FSR-290-3-19.2**