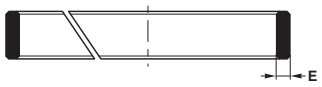
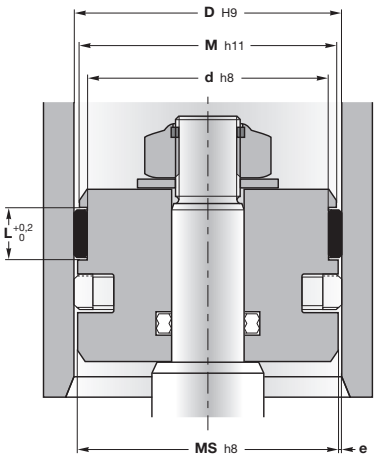
Acetal resin piston guide ring



10WR



Machining of housings: see pages 45-49

The **10WR** has been developed to substitute traditional bronze guides in hydraulic cylinders. They guide the piston 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	**see page 8**
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
Fluids	**see pages 22-45**

Materials	**see pages 10-19**
Guide ring	POM + glass fibers

Assembly	**see pages 54-59**
Install in the groove	

Advantages

- Suitable for rod and piston
- 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.

see pages 50-53

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

$$F = (p \times D \times L \times n) / s$$

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

References **10WR** and **10WR.../P** are exactly the same guide rings.

D	d	L	ISO 10766	Reference
25	20	5,6	•	**10WR 20**
	20	9,7		**10WR 20/1**
27	22	5,6		**10WR 22**
	22	9,7		**10WR 22/1**
30	25	5,6		**10WR 25**
	25	9,7		**10WR 25/1**
32	27	5,6	•	**10WR 27**
	27	9,7		**10WR 27/1**
33	28	5,6		**10WR 28**
	28	9,7		**10WR 28/1**
35	30	5,6		**10WR 30**
	30	9,7		**10WR 30/1**
37	32	5,6		**10WR 32**
	32	9,7		**10WR 32/1**
	32	15		**10WR 32/2**
38	33	5,6		**10WR 33**
40	35	5,6	•	**10WR 35**
	35	9,7		**10WR 35/1**
	35	19,7		**10WR 35/2**
41	36	5,6		**10WR 36**
	36	9,7		**10WR 36/1**
45	40	5,6		**10WR 40**
	40	9,7		**10WR 40/1**
	40	15		**10WR 40/2**
48	43	5,6		**10WR 43**
50	45	5,6	•	**10WR 45**
	45	9,7		**10WR 45/1**
	45	15		**10WR 45/2**
52	47	5,6		**10WR 47**
	47	9,7		**10WR 47/1**
55	50	5,6		**10WR 50**
	50	9,7		**10WR 50/1**
	50	15		**10WR 50/2**
	50	20		**10WR 50/3**
57	52	9,7		**10WR 52/1**

D	d	L	ISO 10766	Reference
60	55	5,6		**10WR 55**
	55	9,7		**10WR 55/1**
	55	15		**10WR 55/2**
61	56	5,6		**10WR 56**
	56	9,7		**10WR 56/1**
63	58	5,6	•	**10WR 58**
	58	9,7	•	**10WR 58/1**
	58	15		**10WR 58/2**
65	60	5,6		**10WR 60**
	60	9,7		**10WR 60/1**
	60	15		**10WR 60/2**
	60	20		**10WR 60/3**
68	63	5,6		**10WR 63**
	63	9,7		**10WR 63/1**
70	65	5,6	•	**10WR 65**
	65	9,7	•	**10WR 65/1**
	65	15		**10WR 65/2**
72	67	5,6		**10WR 67**
75	70	5,6		**10WR 70**
	70	9,7		**10WR 70/1**
	70	15		**10WR 70/2**
80	75	5,6	•	**10WR 75**
	75	9,7	•	**10WR 75/1**
	75	15	•	**10WR 75/2**
85	80	5,6		**10WR 80**
	80	9,7		**10WR 80/1**
	80	15		**10WR 80/2**
	80	25		**10WR 80/4**
90	85	5,6		**10WR 85**
	85	9,7		**10WR 85/1**
	85	15		**10WR 85/2**
95	90	5,6		**10WR 90**
	90	9,7		**10WR 90/1**
	90	15		**10WR 90/2**

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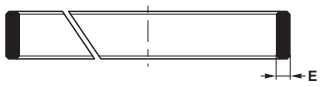
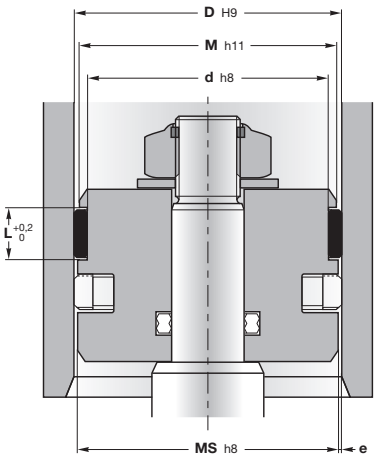


10WR



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D	d	L	ISO 10766	Reference
100	95	5,6	•	**10WR 95**
	95	9,7	•	**10WR 95/1**
	95	15	•	**10WR 95/2**
	95	20		**10WR 95/3**
	95	25		**10WR 95/4**
105	100	5,6		**10WR 100**
	100	9,7		**10WR 100/1**
	100	15		**10WR 100/2**
	100	20		**10WR 100/3**
	100	25		**10WR 100/4**
110	100	20		**10WR 105/3**
	105	9,7		**10WR 105/1**
	105	15		**10WR 105/2**
	105	25		**10WR 105/4**
115	110	9,7		**10WR 110/1**
	110	15		**10WR 110/2**
	110	20		**10WR 110/3**
	110	25		**10WR 110/4**
120	115	9,7		**10WR 115/1**
	115	15		**10WR 115/2**
	115	20		**10WR 115/3**
	115	25		**10WR 115/4**
125	120	5,6	•	**10WR 120**
	120	9,7	•	**10WR 120/1**
	120	15	•	**10WR 120/2**
	120	20		**10WR 120/3**
	120	25		**10WR 120/4**
130	125	15		**10WR 125/2**
	125	20		**10WR 125/3**
	125	25		**10WR 125/4**
135	130	15		**10WR 130/2**
	130	20		**10WR 130/3**
	130	25		**10WR 130/4**
140	135	15	•	**10WR 135/2**
	135	20		**10WR 135/3**
	135	25		**10WR 135/4**

D	d	L	ISO 10766	Reference
145	140	15		**10WR 140/2**
	140	20		**10WR 140/3**
	140	25		**10WR 140/4**
150	145	15		**10WR 145/2**
	145	20		**10WR 145/3**
	145	25		**10WR 145/4**
160	155	15	•	**10WR 155/2**
170	165	15		**10WR 165/2/**
175	170	25		**10WR 170/4**
180	175	9,7		**10WR 175/1**
	175	15		**10WR 175/2**
	175	25		**10WR 175/4**
200	195	15	•	**10WR 195/2**
205	200	15		**10WR 200/2**
	200	25		**10WR 200/4**
215	210	15		**10WR 210/2**
220	215	20		**10WR 215/3**
230	225	15		**10WR 225/2**
	225	25		**10WR 225/4**
240	235	15		**10WR 235/2**
250	245	15		**10WR 245/2**
	245	25		**10WR 245/4**
255	250	15		**10WR 250/2**
265	260	15		**10WR 260/2**
280	275	15		**10WR 275/2**
287	282	15		**10WR 282/2**
330	325	15		**10WR 325/2**