



■ Orkot® Slydring® for Piston and Rod

DESCRIPTION

Orkot® Slydring® are manufactured from fabric-reinforced composite material using a woven fabric and thermoset resins, incorporating evenly dispersed solid lubricants. Orkot® is recommended for use in hydraulic cylinders exposed to high loads, such as in mobile hydraulics or presses. High compressive strength, good sliding behavior and exceptional wear resistance ensure a long service life.

DESIGN

Orkot® Slydring® is manufactured from either tubular or strip material cut to the right size, including an angle cut gap with the necessary width. For large diameters, > 300 mm, rings can be cut from Orkot® C320, C380 or C480 strip material. This offers economical solutions for non-standard diameters or when quantities are limited.

ADVANTAGES

- Dimensionally stable
- Vibration absorbing
- Even distribution of high radial forces
- Good sliding and dry running properties
- High wear resistance
- Long service life
- Versatile
- Can be used with wide range of media
- Stock availability

APPLICATION EXAMPLES

Orkot® Slydring is widely used as a bearing element for heavy duty hydraulic equipment, such as:

- Hydraulic actuators
- Mobile hydraulics
- Excavators
- Construction equipment
- Forestry machinery
- Mining

- Steel mills
- Presses
- Water locks
- Marine engineering
- Oil and gas

MATERIALS

Orkot® C380

Orkot® C380 is a turquoise colored, versatile Slydring® material with enhanced sliding properties in various hydraulic media, such as mineral or synthetic oils, as well as water based fluids. It is good at damping vibrations, it offers long service life, low friction and is suitable for all commonly used counter surfaces. C380 is the first choice for most applications.

Orkot® C480

Orkot® C480 is an evolutionary development of the established C380. A finely dispersed mix of solid lubricants improve the static and dynamic coefficient of friction therefore reducing or removing the effect of stick-slip. A strong affinity with hydraulic fluid improves its potential to operate when marginally lubricated.

Orkot® C320

Orkot® C320 has been the historic choice for hydraulic applications. The woven fabric reinforced thermoset composite with lubricant additives has a very high resistance to wear, good dry-running properties and dampens vibrations.

Orkot® C932

Orkot® C932 is a composite made from a fine weave cotton fabric impregnated with a phenolic resin. The material stiffness is greater than other Orkot® Slydring materials. Use of C932 in water-based fluids is not recommended.

Table 223: Orkot® Grade and Color

Orkot Grade	Color
C380	Turquoise
C480	White
C320	Dark gray
C932	Yellow-brown



OPERATING CONDITIONS

Velocity:	Exceeding 1m/s with reciprocating movements
Temperature:	-40 °C to +120 °C
Pressure Under Dynamic Conditions:	max. 100 N/mm ² at +25 °C max. 50 N/mm ² > +60 °C
Ultimate Compressive Strength:	max. > 300 N/mm ² (C380, C480, C320) max. 260 N/mm ² (C932)

IMPORTANT NOTE

The above stated limits for pressure and speed are maximum values. Friction heat generated by the combination of pressure and speed may cause local heat build-up. Care should be taken not to apply high values for pressure and speed at the same time.

Table 224: Serial Numbers for Orkot® Slydring®, ready-to-fit

Piston Serial No.	Rod Serial No.	Groove Width	Ring Thickness
GP41	GR41	2.5	1.55
GP43	GR43	4.0	1.55
GP47	GR47	6.3	2.00
GP48	GR48	8.1	2.00
GP49	GR49	9.7	2.00
GP51	GR51	10.0	2.00
GP53	GR53	15.0	2.00
GP64	GR64	4.2	2.50
GP65	GR65	5.6	2.50
GP67	GR67	6.3	2.50
GP68	GR68	8.1	2.50
GP69	GR69	9.7	2.50
GP73	GR73	15.0	2.50
GP74	GR74	20.0	2.50
GP75	GR75	25.0	2.50
GP76	GR76	30.0	2.50
GP77	GR77	35.0	2.50
GP93	GR93	15.0	3.00
GP94	GR94	20.0	3.00
GP95	GR95	25.0	3.00
GP96	GR96	30.0	3.00
GP99	GR99	9.7	4.00
GPL2	GRL2	15.0	4.00
GPL3	GRL3	20.0	4.00
GP98	GR98	25.0	4.00
GPL5	GRL5	30.0	4.00
GPL7	GRL7	40.0	4.00
GPL9	GRL9	50.0	4.00

Note that customer specific sizes can be supplied without tooling costs.

**Table 225: Part numbers for Orkot® Slydring® Coiled Strip, to cut to length**

Ring Thickness	Groove Width	Part Number			
		2 meter	3 meter	5 meter	10 meter
2.50	5.6	GM65A2000-C380	-	-	-
2.50	9.7	GM69A2000-C380	GM69A3000-C380	GM69A5000-C380	GM69X0010-C380
2.50	15.0	GM73A2000-C380	GM73A3000-C380	GM73A5000-C380	GM73X0010-C380
2.50	20.0	GM74A2000-C380	GM74A3000-C380	GM74A5000-C380	GM74X0010-C380
2.50	25.0	GM75A2000-C380	GM75A3000-C380	GM75A5000-C380	GM75X0010-C380
2.50	30.0	GM76A2000-C380	GM76A3000-C380	GM76A5000-C380	GM76X0010-C380
2.50	35.0	GM77A2000-C380	GM77A3000-C380	GM77A5000-C380	GM77X0010-C380
2.50	40.0	GM78A2000-C380	GM78A3000-C380	GM78A5000-C380	GM78X0010-C380
2.50	45.0	GM79A2000-C380	GM79A3000-C380	GM79A5000-C380	GM79X0010-C380
3.00	20.0	GM94A2000-C380	GM94A3000-C380	GM94A5000-C380	GM94X0010-C380
3.00	25.0	GM95A2000-C380	GM95A3000-C380	GM95A5000-C380	GM95X0010-C380
3.00	30.0	GM96A2000-C380	GM96A3000-C380	GM96A5000-C380	GM96X0010-C380
4.00	15.0	GML2A2000-C380	GML2A3000-C380	GML2A5000-C380	GML2X0010-C380
4.00	20.0	GML3A2000-C380	GML3A3000-C380	GML3A5000-C380	GML3X0010-C380
4.00	25.0	GM98A2000-C380	GM98A3000-C380	GM98A5000-C380	GM98X0010-C380
4.00	30.0	GML5A2000-C380	GML5A3000-C380	GML5A5000-C380	GML5X0010-C380
4.00	40.0	GML7A2000-C380	GML7A3000-C380	GML7A5000-C380	GML7X0010-C380
4.00	50.0	GML9A2000-C380	GML9A3000-C380	GML9A5000-C380	GML9X0010-C380

Standard available grades: C380 and C480. Replace material code to C480, for example: GM73X0010-C480.

Strip with a thickness of 2.50 mm is coiled with an outer diameter of 300 mm, 3 and 4 mm is coiled with a diameter of 700 mm.

INSTALLATION RECOMMENDATION

In order to protect the seal and guide system against ingress of foreign particles, we recommend the use of Turcite® Slydring® in combination with Orkot® Slydring®. The larger face area of these rings (Series GP99 from Table 189) embeds the contaminant particles, when present in the system, and keeps them away from the actual guides and seals (Figure 220). Reducing the piston diameter at both ends allows the particles to become embedded on the face side.

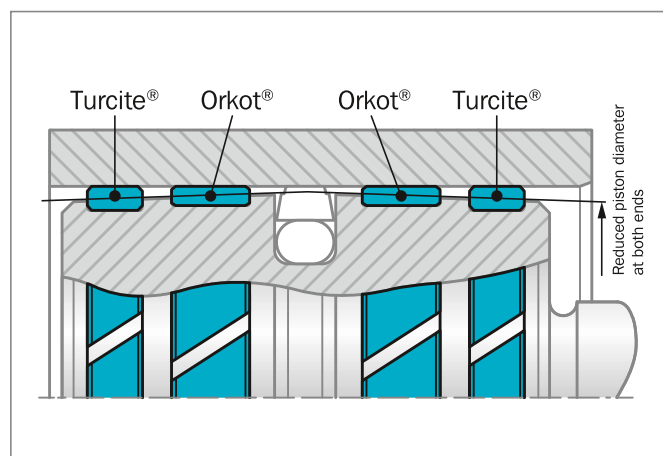


Figure 220: Arrangement of the Slydring® on the piston



■ Installation Recommendation, Orkot® Slydring® for Piston According to ISO 10766 Groove Dimension

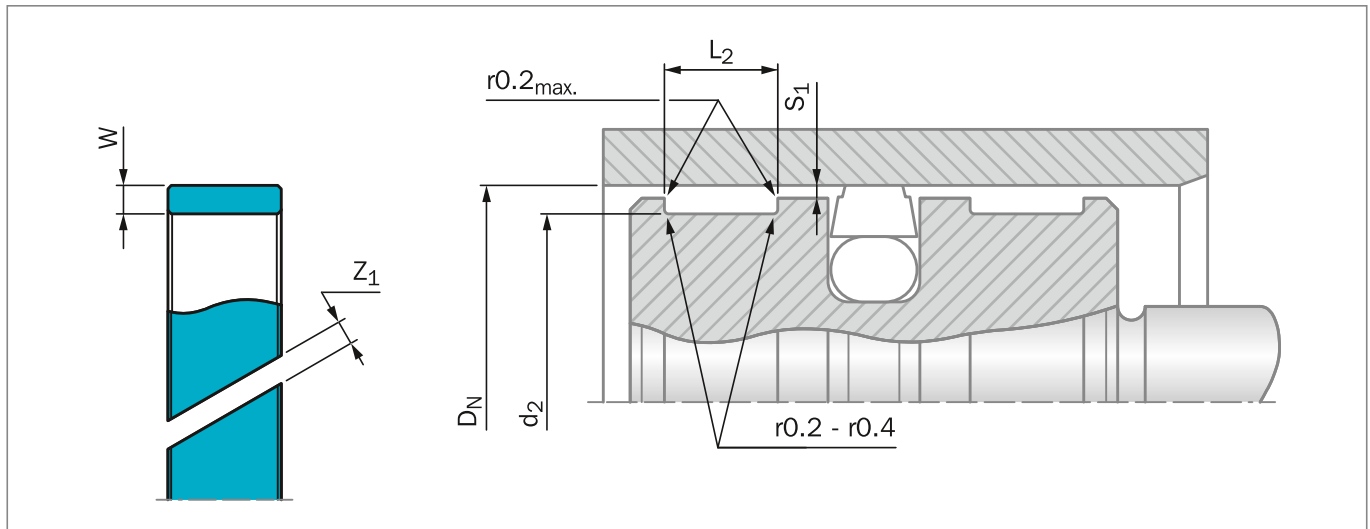


Figure 221: Installation Drawing

Table 226: Installation Dimensions

Serial No.	Bore Diameter*	Groove Diameter	Groove Width	Ring Thickness	Ring Gap**
	D_N H9	d_2 h8	L_2 +0.2	W	Z_1
GP43	16 - 50.0	$D_N - 3.10$	4.00	1.55	1 - 3
GP65	16 - 125.0	$D_N - 5.00$	5.60	2.50	2 - 6
GP69	25 - 250.0	$D_N - 5.00$	9.70	2.50	2 - 9
GP73	80 - 500.0	$D_N - 5.00$	15.00	2.50	4 - 17
GP75	125 - 999.9	$D_N - 5.00$	25.00	2.50	6 - 33
GP75X	1,000 - 1,500.0	$D_N - 5.00$	25.00	2.50	33 - 48
GP98	280 - 999.9	$D_N - 8.00$	25.00	4.00	10 - 33
GP98X	1,000 - 1,500.0	$D_N - 8.00$	25.00	4.00	33 - 48

* Recommended diameter ranges.

** see Figure 222

For Slydring® to other standards, for example French standard NF E 48-037, please contact your local Customer Solution Center.

RADIAL CLEARANCE S_1

The minimum radial gap is calculated taking into account:

- The fitting tolerances of the hardware
- The tolerance on the ring thickness
- An allowance for wear
- In case of high radial loads an allowance for elastic deformation
- A safety margin to avoid metal-to-metal contact

The gaps S_1 can be chosen larger than near to the seal (attention: take care of gap dimension for the seal) thus allowing slight tilting of the piston, still without metal-to-metal contact.

It also allows foreign particles to be wiped away by the Slydring® rather than being squeezed between the metal components. The slot ' Z_1 ' allows fluid to pass across the ring thus preventing fluid pressure build-up which might cause extrusion of the guide ring. To ensure the ring cannot escape out of the groove it is recommended to observe the following radial gap sizes as maximum values:

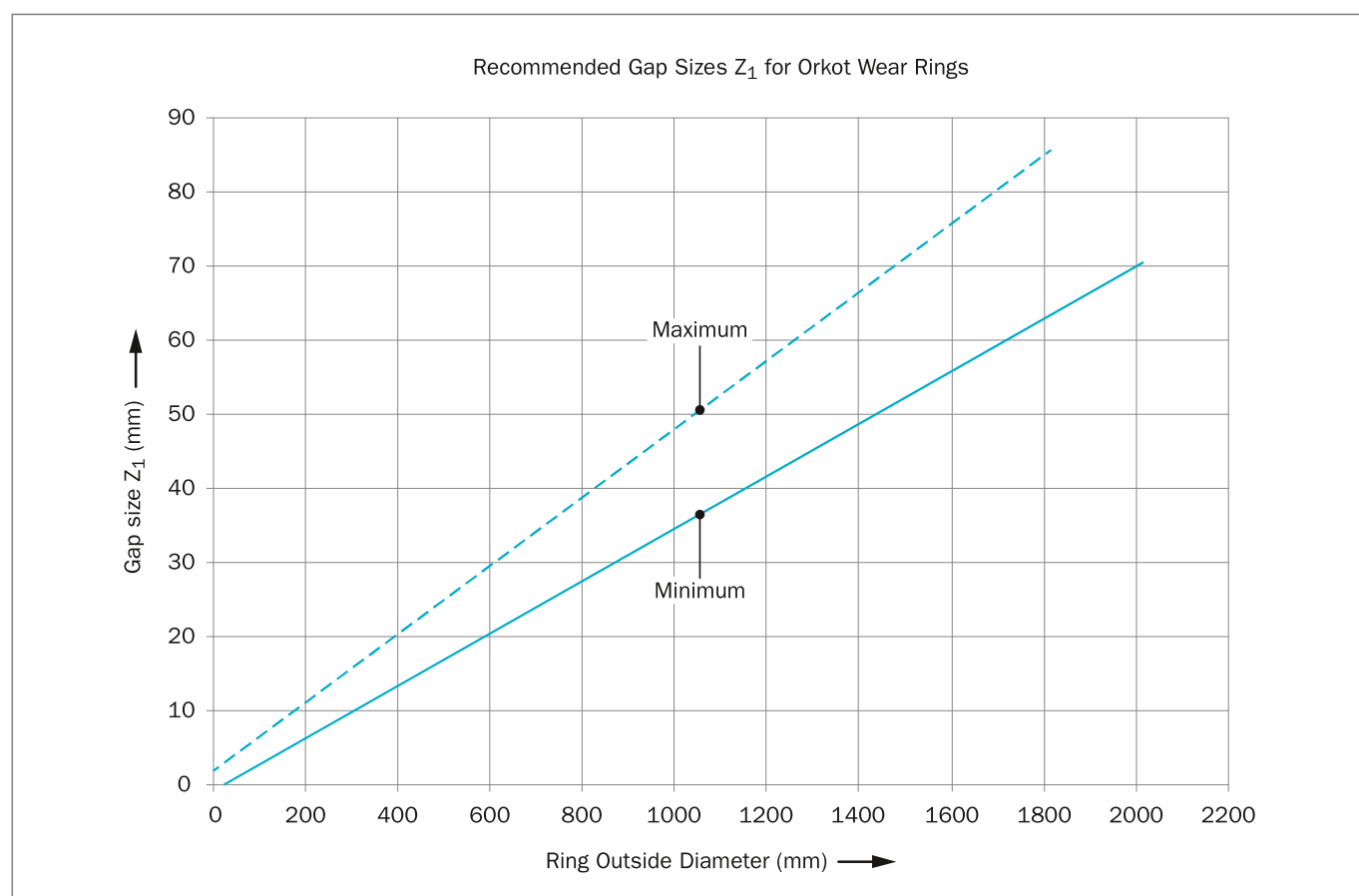
- 0.50 mm for GP43 (1.55 mm thickness)
- 0.90 mm for GP65 to GP75 (2.50 mm thickness)
- 1.50 mm for GP98 and GP98X (4.00 mm thickness)

**Table 227: Recommended Radii for Groove**

D_N	r_{\max}
8 - 250	0.2
> 250	0.4

Table 228: Surface Roughness

Parameter	Mating Surface μm	Groove Surface μm
R_{\max}	1.00 - 4.00	< 16.0
R_z	0.63 - 2.50	< 10.0
R_a	0.10 - 0.40	< 2.5

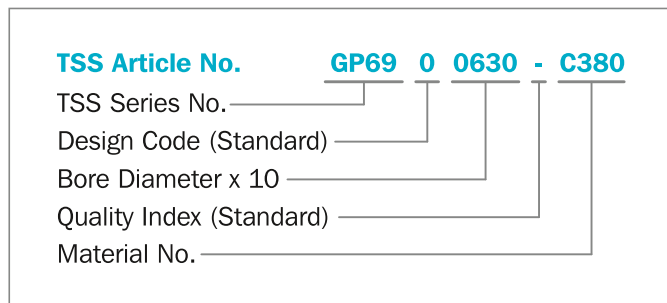
Figure 222: Recommended Gap Sizes Z_1 for Orkot Wear Ring



ORDERING EXAMPLE

Slydring® for bore diameter $D_N = 63.0$ mm
Series GP69 from Table 226

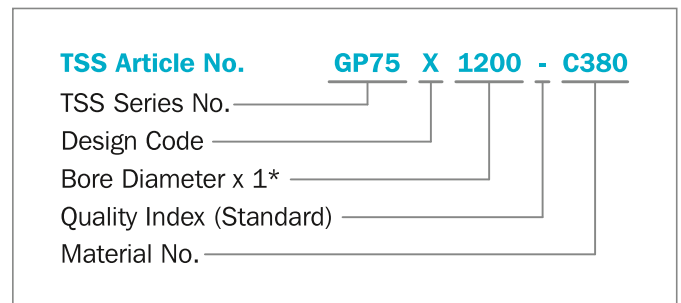
Groove Width:	9.70 mm
Ring Thickness:	2.50 mm
Material:	Orkot® C380 other materials see Table 186
Standard Design:	With angle cut Design code: 0
TSS Part No.:	GP6900630 from Table 229



ORDERING EXAMPLE FOR DIAMETER > 1000 MM

Slydring® for bore diameter $D_N = 1,200.0$ mm
Series GP75X from Table 226

Groove Width:	25.00 mm
Ring Thickness:	2.50 mm
Material:	Orkot® C380 other materials see Table 186
Standard Design:	With angle cut Design code: X
TSS Part No.:	GP75X1200 from Table 229



* For diameters $\geq 1,000$ mm multiply only by factor 1.

Please Note

Orkot® Slydring® for pistons can be used as rod guide ring, taking in account that the part number references the piston or rod diameter.

Example:

GP69 0 1000 - C380

is identical and can be replaced with

GR69 0 0950 - C380

Table 229: Slydring® for Piston

Dimensions				TSS Part No.
Bore Diameter	Groove Diameter	Groove Width	Thickness	
D_N H9	d_2 h8	L_2 +0.2	W	
16.0	11.0	5.6	2.50	GP6500160
18.0	13.0	5.6	2.50	GP6500180
20.0	15.0	5.6	2.50	GP6500200
22.0	17.0	5.6	2.50	GP6500220
25.0	20.0	5.6	2.50	GP6500250
25.0	20.0	9.7	2.50	GP6900250



Dimensions				TSS Part No.
Bore Diameter	Groove Diameter	Groove Width	Thickness	
D _N H9	d ₂ h8	L ₂ +0.2	W	
27.0	22.0	5.6	2.50	GP6500270
28.0	23.0	5.6	2.50	GP6500280
30.0	25.0	9.7	2.50	GP6900300
32.0	28.9	4.0	1.55	GP4300320
32.0	27.0	5.6	2.50	GP6500320
32.0	27.0	9.7	2.50	GP6900320
33.0	28.0	5.6	2.50	GP6500330
35.0	30.0	5.6	2.50	GP6500350
35.0	30.0	9.7	2.50	GP6900350
36.0	31.0	5.6	2.50	GP6500360
36.0	31.0	9.7	2.50	GP6900360
37.0	32.0	9.7	2.50	GP6900370
40.0	36.9	4.0	1.55	GP4300400
40.0	35.0	5.6	2.50	GP6500400
40.0	35.0	9.7	2.50	GP6900400
41.0	36.0	5.6	2.50	GP6500410
41.0	36.0	9.7	2.50	GP6900410
42.0	37.0	5.6	2.50	GP6500420
44.0	39.0	5.6	2.50	GP6500440
45.0	40.0	5.6	2.50	GP6500450
45.0	40.0	9.7	2.50	GP6900450
46.0	41.0	9.7	2.50	GP6900460
48.0	43.0	5.6	2.50	GP6500480
50.0	45.0	5.6	2.50	GP6500500
50.0	45.0	9.7	2.50	GP6900500
51.0	46.0	9.7	2.50	GP6900510
51.0	46.0	15.0	2.50	GP7300510
52.0	47.0	5.6	2.50	GP6500520
53.0	48.0	5.6	2.50	GP6500530
55.0	50.0	5.6	2.50	GP6500550
55.0	50.0	9.7	2.50	GP6900550
58.0	53.0	5.6	2.50	GP6500580
60.0	55.0	5.6	2.50	GP6500600
60.0	55.0	9.7	2.50	GP6900600
61.0	56.0	5.6	2.50	GP6500610
62.0	57.0	5.6	2.50	GP6500620
62.0	56.0	9.7	2.50	GP6900610
63.0	58.0	5.6	2.50	GP6500630
63.0	58.0	9.7	2.50	GP6900630
65.0	60.0	5.6	2.50	GP6500650



Dimensions				TSS Part No.
Bore Diameter	Groove Diameter	Groove Width	Thickness	
D _N H9	d ₂ h8	L ₂ +0.2	W	
65.0	60.0	9.7	2.50	GP6900650
68.0	63.0	5.6	2.50	GP6500680
68.0	63.0	9.7	2.50	GP6900680
70.0	65.0	5.6	2.50	GP6500700
70.0	65.0	9.7	2.50	GP6900700
74.0	69.0	5.6	2.50	GP6500740
75.0	70.0	5.6	2.50	GP6500750
75.0	70.0	9.7	2.50	GP6900750
80.0	75.0	5.6	2.50	GP6500800
80.0	75.0	9.7	2.50	GP6900800
80.0	75.0	25.0	2.50	GP7500800
85.0	80.0	5.6	2.50	GP6500850
85.0	80.0	9.7	2.50	GP6900850
90.0	85.0	5.6	2.50	GP6500900
90.0	85.0	9.7	2.50	GP6900900
95.0	90.0	5.6	2.50	GP6500950
95.0	90.0	9.7	2.50	GP6900950
100.0	95.0	5.6	2.50	GP6501000
100.0	95.0	9.7	2.50	GP6901000
100.0	95.0	15.0	2.50	GP7301000
100.0	95.0	25.0	2.50	GP7501000
105.0	100.0	5.6	2.50	GP6501050
105.0	100.0	9.7	2.50	GP6901050
110.0	105.0	9.7	2.50	GP6901100
115.0	110.0	9.7	2.50	GP6901150
120.0	115.0	9.7	2.50	GP6901200
120.0	115.0	15.0	2.50	GP7301200
125.0	120.0	5.6	2.50	GP6501250
125.0	120.0	9.7	2.50	GP6901250
125.0	120.0	15.0	2.50	GP7301250
125.0	120.0	25.0	2.50	GP7501250
130.0	125.0	9.7	2.50	GP6901300
130.0	125.0	15.0	2.50	GP7301300
135.0	130.0	9.7	2.50	GP6901350
135.0	130.0	15.0	2.50	GP7301350
140.0	135.0	9.7	2.50	GP6901400
140.0	135.0	15.0	2.50	GP7301400
140.0	135.0	25.0	2.50	GP7501400
145.0	140.0	25.0	2.50	GP7501450
150.0	145.0	9.7	2.50	GP6901500



Dimensions				TSS Part No.
Bore Diameter	Groove Diameter	Groove Width	Thickness	
D _N H9	d ₂ h8	L ₂ +0.2	W	
150.0	145.0	15.0	2.50	GP7301500
150.0	145.0	25.0	2.50	GP7501500
160.0	155.0	9.7	2.50	GP6901600
160.0	155.0	15.0	2.50	GP7301600
170.0	165.0	15.0	2.50	GP7301700
175.0	170.0	25.0	2.50	GP7501750
180.0	175.0	9.7	2.50	GP6901800
180.0	175.0	15.0	2.50	GP7301800
180.0	175.0	25.0	2.50	GP7501800
190.0	185.0	9.7	2.50	GP6901900
190.0	185.0	15.0	2.50	GP7301900
200.0	195.0	9.7	2.50	GP6902000
200.0	195.0	15.0	2.50	GP7302000
200.0	195.0	25.0	2.50	GP7502000
205.0	200.0	15.0	2.50	GP7302050
210.0	205.0	15.0	2.50	GP7302100
220.0	215.0	9.7	2.50	GP6902200
220.0	215.0	15.0	2.50	GP7302200
220.0	215.0	25.0	2.50	GP7502200
230.0	225.0	9.7	2.50	GP6902300
230.0	225.0	15.0	2.50	GP7302300
230.0	225.0	25.0	2.50	GP7502300
240.0	235.0	9.7	2.50	GP6902400
240.0	235.0	15.0	2.50	GP7302400
240.0	235.0	25.0	2.50	GP7502400
250.0	245.0	9.7	2.50	GP6902500
250.0	245.0	15.0	2.50	GP7302500
250.0	245.0	25.0	2.50	GP7502500
270.0	265.0	25.0	2.50	GP7502700
280.0	275.0	9.7	2.50	GP6902800
280.0	275.0	15.0	2.50	GP7302800
280.0	272.0	25.0	4.00	GP9802800
300.0	295.0	15.0	2.50	GP7303000
300.0	295.0	25.0	2.50	GP7503000
300.0	292.0	25.0	4.00	GP9803000
310.0	302.0	25.0	4.00	GP9803100
320.0	315.0	15.0	2.50	GP7303200
320.0	315.0	25.0	2.50	GP7503200
320.0	312.0	25.0	4.00	GP9803200
340.0	335.0	25.0	2.50	GP7503400



Dimensions				TSS Part No.
Bore Diameter	Groove Diameter	Groove Width	Thickness	
D_N H9	d_2 h8	L_2 +0.2	W	
340.0	332.0	25.0	4.00	GP9803400
350.0	345.0	25.0	2.50	GP7503500
360.0	355.0	15.0	2.50	GP7303600
360.0	355.0	25.0	2.50	GP7503600
360.0	352.0	25.0	4.00	GP9803600
400.0	395.0	15.0	2.50	GP7304000
400.0	395.0	25.0	2.50	GP7504000
400.0	392.0	25.0	4.00	GP9804000
420.0	415.0	25.0	2.50	GP7504200
440.0	432.0	25.0	4.00	GP9804400
450.0	445.0	15.0	2.50	GP7304500
450.0	445.0	25.0	2.50	GP7504500
450.0	442.0	25.0	4.00	GP9804500
500.0	495.0	15.0	2.50	GP7305000
500.0	495.0	25.0	2.50	GP7505000
500.0	492.0	25.0	4.00	GP9805000
600.0	595.0	25.0	2.50	GP7506000
600.0	592.0	25.0	4.00	GP9806000
700.0	692.0	25.0	4.00	GP9807000
1,000.0	995.0	25.0	2.50	GP75X1000
1,000.0	992.0	25.0	4.00	GP98X1000
1,200.0	1,195.0	25.0	2.50	GP75X1200
1,500.0	1,495.0	25.0	2.50	GP75X1500

All sizes printed in **bold** type conform to ISO 10766 and should be preferred for use.

Additional sizes not covered by this list are also held in stock. Also please note that customer specific sizes can be supplied without tooling costs.



■ Installation Recommendation, Orkot® Slydring® for Rod According to ISO 10766 Groove Dimension

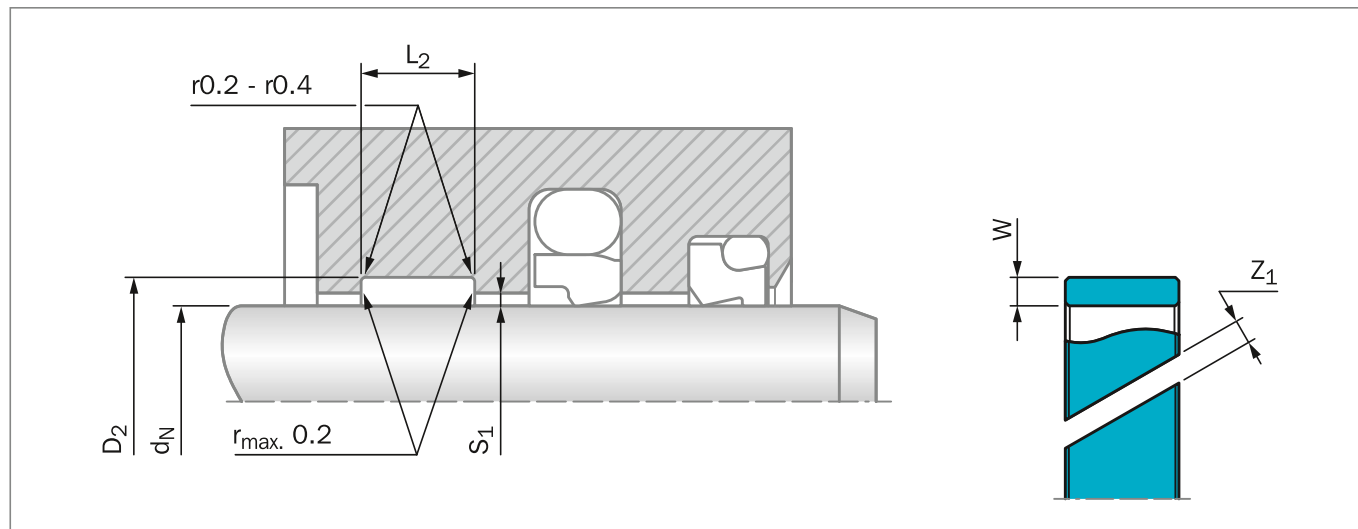


Figure 223: Installation Drawing

Table 230: Installation Dimensions

Serial No.	Rod Diameter*	Groove Diameter	Groove Width	Ring Thickness	Ring Gap**
	d_N f8/h9	D_2 H8	L_2 +0.2	W	Z_1
GR43	8 - 100.0	$d_N + 3.10$	4.00	1.55	1 - 4
GR65	11 - 120.0	$d_N + 5.00$	5.60	2.50	1 - 6
GR69	15 - 250.0	$d_N + 5.00$	9.70	2.50	2 - 12
GR73	20 - 999.0	$d_N + 5.00$	15.00	2.50	2 - 39
GR75	20 - 999.9	$d_N + 5.00$	25.00	2.50	2 - 39
GR75X	1,000 - 3,000.0	$d_N + 5.00$	25.00	2.50	39 - 60
GR98	75 - 999.9	$d_N + 8.00$	25.00	4.00	6 - 39
GR98X	1,000 - 3,000.0	$d_N + 8.00$	25.00	4.00	39 - 60

* Recommended diameter ranges. ** see Figure 224.

For Slydring® to other standards, for example French standard NF E 48-037, please contact your local Customer Solution Center.

RADIAL CLEARANCE S_1

The minimum radial gap is to be calculated taking into account.

- The fitting tolerances of the hardware
- The tolerance on the ring thickness
- An allowance for wear
- In case of high radial loads, an allowance for elastic deformation
- A safety margin to avoid metal-to-metal contact

The gaps S_1 can be chosen larger than near to the seal (attention: take care of gap dimension for the seal) thus allowing slight bending of the rod, still without metal-to-metal contact.

It also allows foreign particles to be wiped away by the Slydring® rather than being squeezed between the metal components (see page 573). The slot " Z_1 " allows fluid to pass across the ring thus preventing fluid pressure build-up which might cause extrusion of the guide ring. To ensure the ring cannot escape out of the groove, it is recommended to observe the following radial gap sizes as maximum values:

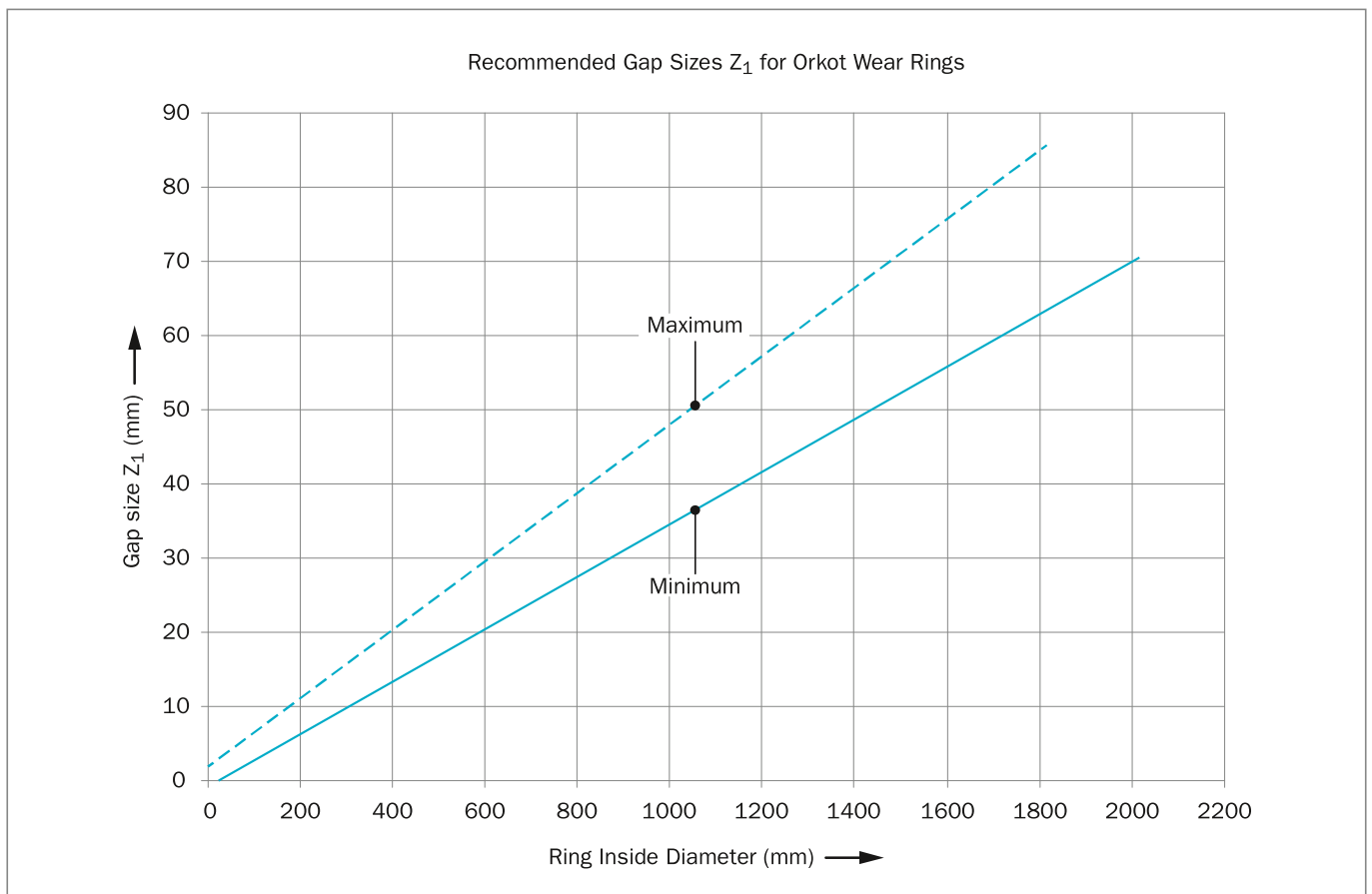
- 0.50 mm for GR43 (1.55 mm thickness)
- 0.90 mm for GR65 to GR75 (2.50 mm thickness)
- 1.50 mm for GR98 and GR98X (4.00 mm thickness)

**Table 231: Recommended Radii for Groove**

d_N	r_{\max}
8 - 250	0.2
> 250	0.4

Table 232: Surface Roughness

Parameter	Mating Surface μm	Groove Surface μm
R_{\max}	1.00 - 4.00	< 16.0
R_z	0.63 - 2.50	< 10.0
R_a	0.10 - 0.40	< 2.5

Figure 224: Recommended Gap Sizes Z_1 for Orkot Wear Ring



ORDERING EXAMPLE

Slydring® for rod diameter $d_N = 65.0$ mm

Series GR65 from Table 230

Groove Width:	5.60 mm
Ring Thickness:	2.50 mm
Material:	Orkot® C380 other materials see Table 186
Standard Design:	With angle cut Design code: 0
TSS Part No.:	GR6500650 from Table 233

TSS Article No. **GR65 0 0650 - C380**

TSS Series No. _____
Design Code (Standard) _____
Rod Diameter x 10 _____
Quality Index (Standard) _____
Material No. _____

ORDERING EXAMPLE FOR DIAMETER > 1000 MM

Slydring® for rod diameter $d_N = 1,200.0$ mm

Series GR75X from Table 230

Groove Width:	25.00 mm
Ring Thickness:	2.50 mm
Material:	Orkot® C380 other materials see Table 186
Standard Design:	With angle cut Design code: X
TSS Part No.:	GR75X1200 from Table 233

TSS Article No. **GR75 X 1200 - C380**

TSS Series No. _____
Design Code (Standard) _____
Rod Diameter x 1* _____
Quality Index (Standard) _____
Material No. _____

* For diameters $\geq 1,000$ mm multiply only by factor 1.

Please Note

Orkot® Slydring® for rods can be used as rod guide ring, taking in account that the part number references the piston or rod diameter.

Example:

GR65 0 0650 - C380

is identical and can be replaced with

GP69 0 0700 - C380



Table 233: Slydring® for Rod

Dimensions				TSS Part No.
Rod Diameter	Groove Diameter	Groove Width	Thickness	
d_N f8/h9	D_2 H8	L_2 +0.2	W	
11.0	14.1	4.0	1.55	GR4300110
15.0	18.1	4.0	1.55	GR4300150
16.0	21.0	5.6	2.50	GR6500160
18.0	23.0	5.6	2.50	GR6500180
20.0	25.0	5.6	2.50	GR6500200
20.0	25.0	9.7	2.50	GR6900200
22.0	27.0	5.6	2.50	GR6500220
25.0	30.0	5.6	2.50	GR6500250
25.0	30.0	9.7	2.50	GR6900250
27.0	32.0	9.7	2.50	GR6900270
28.0	31.1	4.0	1.55	GR4300280
28.0	33.0	5.6	2.50	GR6500280
28.0	33.0	9.7	2.50	GR6900280
30.0	35.0	5.6	2.50	GR6500300
30.0	35.0	9.7	2.50	GR6900300
32.0	37.0	5.6	2.50	GR6500320
32.0	37.0	9.7	2.50	GR6900320
35.0	40.0	9.7	2.50	GR6900350
36.0	41.0	5.6	2.50	GR6500360
36.0	41.0	9.7	2.50	GR6900360
36.0	41.0	15.0	2.50	GR7300360
40.0	45.0	5.6	2.50	GR6500400
40.0	45.0	9.7	2.50	GR6900400
40.0	45.0	15.0	2.50	GR7300400
40.0	45.0	25.0	2.50	GR7500400
42.0	47.0	5.6	2.50	GR6500420
43.0	48.0	5.6	2.50	GR6500430
45.0	50.0	5.6	2.50	GR6500450
45.0	50.0	9.7	2.50	GR6900450
45.0	50.0	15.0	2.50	GR7300450
48.0	53.0	5.6	2.50	GR6500480
48.0	53.0	9.7	2.50	GR6900480
50.0	55.0	5.6	2.50	GR6500500
50.0	55.0	9.7	2.50	GR6900500
50.0	55.0	15.0	2.50	GR7300500
52.0	57.0	5.6	2.50	GR6500520
52.0	57.0	9.7	2.50	GR6900520
55.0	60.0	9.7	2.50	GR6900550
55.0	60.0	15.0	2.50	GR7300550
55.0	60.0	25.0	2.50	GR7500550



Dimensions				TSS Part No.
Rod Diameter	Groove Diameter	Groove Width	Thickness	
d_N f8/h9	D_2 H8	L_2 +0.2	W	
56.0	61.0	5.6	2.50	GR6500560
56.0	61.0	9.7	2.50	GR6900560
56.0	61.0	15.0	2.50	GR7300560
58.0	63.0	5.6	2.50	GR6500580
58.0	63.0	9.7	2.50	GR6900580
60.0	65.0	5.6	2.50	GR6500600
60.0	65.0	9.7	2.50	GR6900600
60.0	65.0	15.0	2.50	GR7300600
60.0	65.0	25.0	2.50	GR7500600
63.0	68.0	9.7	2.50	GR6900630
63.0	68.0	15.0	2.50	GR7300630
65.0	70.0	5.6	2.50	GR6500650
65.0	70.0	9.7	2.50	GR6900650
65.0	70.0	15.0	2.50	GR7300650
70.0	75.0	5.6	2.50	GR6500700
70.0	75.0	9.7	2.50	GR6900700
70.0	75.0	15.0	2.50	GR7300700
70.0	75.0	25.0	2.50	GR7500700
75.0	80.0	5.6	2.50	GR6500750
75.0	80.0	9.7	2.50	GR6900750
75.0	80.0	15.0	2.50	GR7300750
80.0	85.0	5.6	2.50	GR6500800
80.0	85.0	9.7	2.50	GR6900800
80.0	85.0	15.0	2.50	GR7300800
80.0	85.0	25.0	2.50	GR7500800
85.0	90.0	9.7	2.50	GR6900850
85.0	90.0	15.0	2.50	GR7300850
90.0	95.0	5.6	2.50	GR6500900
90.0	95.0	9.7	2.50	GR6900900
90.0	95.0	15.0	2.50	GR7300900
90.0	95.0	25.0	2.50	GR7500900
95.0	100.0	5.6	2.50	GR6500950
95.0	100.0	9.7	2.50	GR6900950
95.0	100.0	15.0	2.50	GR7300950
100.0	105.0	5.6	2.50	GR6501000
100.0	105.0	9.7	2.50	GR6901000
100.0	105.0	15.0	2.50	GR7301000
100.0	105.0	25.0	2.50	GR7501000
105.0	110.0	15.0	2.50	GR7301050
105.0	110.0	25.0	2.50	GR7501050



Dimensions				TSS Part No.
Rod Diameter	Groove Diameter	Groove Width	Thickness	
d_N f8/h9	D_2 H8	L_2 +0.2	W	
110.0	115.0	9.7	2.50	GR6901100
110.0	115.0	15.0	2.50	GR7301100
110.0	115.0	25.0	2.50	GR7501100
115.0	120.0	9.7	2.50	GR6901150
115.0	120.0	15.0	2.50	GR7301150
120.0	125.0	15.0	2.50	GR7301200
125.0	130.0	15.0	2.50	GR7301250
125.0	130.0	25.0	2.50	GR7501250
130.0	135.0	15.0	2.50	GR7301300
140.0	145.0	9.7	2.50	GR6901400
140.0	145.0	15.0	2.50	GR7301400
140.0	145.0	25.0	2.50	GR7501400
150.0	155.0	15.0	2.50	GR7301500
150.0	155.0	25.0	2.50	GR7501500
155.0	160.0	15.0	2.50	GR7301550
155.0	160.0	25.0	2.50	GR7501550
160.0	165.0	9.7	2.50	GR6901600
160.0	165.0	15.0	2.50	GR7301600
160.0	165.0	25.0	2.50	GR7501600
170.0	175.0	15.0	2.50	GR7301700
170.0	175.0	25.0	2.50	GR7501700
180.0	185.0	15.0	2.50	GR7301800
190.0	195.0	15.0	2.50	GR7301900
190.0	195.0	25.0	2.50	GR7501900
200.0	205.0	15.0	2.50	GR7302000
200.0	205.0	25.0	2.50	GR7502000
200.0	208.0	25.0	4.00	GR9802000
210.0	215.0	15.0	2.50	GR7302100
220.0	225.0	15.0	2.50	GR7302200
220.0	225.0	25.0	2.50	GR7502200
230.0	235.0	25.0	2.50	GR7502300
240.0	245.0	25.0	2.50	GR7502400
240.0	248.0	25.0	4.00	GR9802400
250.0	255.0	25.0	2.50	GR7502500
270.0	275.0	15.0	2.50	GR7302700
280.0	285.0	15.0	2.50	GR7302800
280.0	285.0	25.0	2.50	GR7502800
280.0	288.0	25.0	4.00	GR9802800
300.0	305.0	25.0	2.50	GR7503000
320.0	325.0	25.0	2.50	GR7503200



Dimensions				TSS Part No.
Rod Diameter	Groove Diameter	Groove Width	Thickness	
d_N f8/h9	D_2 H8	L_2 +0.2	W	
320.0	328.0	25.0	4.00	GR9803200
350.0	355.0	25.0	2.50	GR7503500
360.0	365.0	25.0	2.50	GR7503600
360.0	368.0	25.0	4.00	GR9803600
400.0	405.0	25.0	2.50	GR7504000
400.0	408.0	25.0	4.00	GR9804000
800.0	805.0	25.0	2.50	GR7508000
800.0	808.0	25.0	4.00	GR9808000
1,000.0	1,005.0	25.0	2.50	GR75X1000
1,000.0	1,008.0	25.0	4.00	GR98X1000
1,200.0	1,205.0	25.0	2.50	GR75X1200
1,500.0	1,505.0	25.0	2.50	GR75X1500

All sizes printed in **bold** type conform to ISO 10766 and should be preferred for use.

Additional sizes not covered by this list are also held in stock. Also please note that customer specific sizes can be supplied without tooling costs.