

application	profile	description	temperature	max. speed	max. pressure	material			
		hydraulic, single acting asymmetric rod seal for standard applications. interference fit on outside diameter maintains stable fit in the housing. design provides ultimate sealing effect over a wide temperature range and good back pumping ability.	-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	PU			
			-20 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	HPU			
			-20 °C ... +110 °C	0,7 m/s	400 bar (5800 psi)	SPU			
			-50 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	LTPU			
			-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	GPU			
		hydraulic, single acting asymmetric rod seal for standard applications as R01, but due to design with active back-up ring suitable for larger extrusion gaps or higher pressure range. R02 for standard housing design.	-30 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	PU	seal part	back up	
			-20 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	HPU		POM / PA*	
			-20 °C ... +110 °C	0,7 m/s	700 bar (10.000 psi)	SPU		POM / PA*	
			-50 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	LTPU		POM / PA*	
			-30 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	GPU		POM / PA*	
		hydraulic, single acting asymmetric rod seal for standard applications as R01, but due to design with active back-up ring suitable for larger extrusion gaps or higher pressure range. R02-A for standard housing design.	-30 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	PU	seal part	back up	
			-20 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	HPU		POM / PA*	
			-20 °C ... +110 °C	0,7 m/s	700 bar (10.000 psi)	SPU		POM / PA*	
			-50 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	LTPU		POM / PA*	
			-30 °C ... +110 °C	0,5 m/s	700 bar (10.000 psi)	GPU		POM / PA*	
		hydraulic, single acting o-ring activated, asymmetrical rod seal. interference fit on outside diameter maintains stable fit in the housing. design provides ultimate sealing effect. especially suitable for short stroke applications (e.g. spindle seals, coupling actuators)	-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	PU	seal part	o ring	
			-20 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	HPU		NBR	
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	LTPU		NBR	
			-20 °C ... +100 °C	0,7 m/s	400 bar (5800 psi)	SPU		NBR	
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		NBR	
		PTFE rod seal, single acting o-ring activated, asymmetrical PTFE rod seal, low friction, good dry running properties and adaptation possibilities for diverse temperatures and media by selection of suitable o-ring material, almost no dead spots as required for applications in food & pharma industry.	-20 °C ... +200 °C	1,0 m/s	100 bar (1450 psi)	PTFE virgin	seal part	o ring	
			-20 °C ... +200 °C	1,0 m/s	160 bar (2300 psi)	PTFE glass		FKM	
			-25 °C ... +150 °C	1,0 m/s	100 bar (1450 psi)	PTFE virgin		HNBR	
			-25 °C ... +150 °C	1,0 m/s	160 bar (2300 psi)	PTFE glass		HNBR	
			-60 °C ... + 80 °C	0,5 m/s	200 bar (2900 psi)	UHMWPE		MVQ	
			-60 °C ... +200 °C	1,0 m/s	100 bar (1450 psi)	PTFE virgin		MVQ	
			-60 °C ... +200 °C	1,0 m/s	160 bar (2300 psi)	PTFE glass		MVQ	
		PTFE rod seal, single acting helicoil spring activated, asymmetrical PTFE rod seal, low friction and good dry running properties, excellent chemical and thermal resistance, mainly used in chemical, pharma and food industry.	-200 °C ...+260 °C	1,0 m/s	100 bar (1450 psi)	PTFE virgin	seal part	spring	14310
			-200 °C ...+260 °C	1,0 m/s	160 bar (2300 psi)	PTFE glass		14310	
			-200 °C ...+ 80 °C	0,5 m/s	200 bar (2900 psi)	UHMWPE		14310	
		hydraulic, single acting asymmetric rod seal for standard applications as R03, but due to design with active back-up ring suitable for larger extrusion gaps or higher pressure range.	-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	PU	seal part	o ring	back up
			-20 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	HPU		NBR	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	SPU		NBR	POM / PA*
			-20 °C ... +100 °C	0,7 m/s	700 bar (10.000 psi)	LTPU		NBR	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	GPU		NBR	POM / PA*



not bolded symbols: please consult our technical dpmt. for application limitations

* POM up to ø260 mm, PA above ø260 mm

** attention: not suitable for mineral oils!

application	profile	description	temperature	max. speed	max. pressure	material		
		hydraulic, single acting asymmetric rod seal for standard applications as R03, but due to design with active back-up ring suitable for larger extrusion gaps or higher pressure range.	-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	PU	seal part	o ring
			-20 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	HPU		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	SPU		
			-20 °C ... +100 °C	0,7 m/s	700 bar (10.000 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	GPU		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	PU		
			-20 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	HPU		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	SPU		
			-20 °C ... +100 °C	0,7 m/s	700 bar (10.000 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10.000 psi)	GPU		
		hydraulic, single acting asymmetric rod seal, extremely wear resistant, for use in lubricated or dry pneumatic applications. special design of sealing lip allows retention of initial lubricating film.	-30 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	PU		
			-20 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	HPU		
			-20 °C ... +110 °C	2,0 m/s	25 bar (360 psi)	SPU		
			-50 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	LTPU		
			-30 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	GPU		
			-30 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	PU		
			-20 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	HPU		
			-20 °C ... +110 °C	2,0 m/s	25 bar (360 psi)	SPU		
			-50 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	LTPU		
			-30 °C ... +110 °C	1,0 m/s	25 bar (360 psi)	GPU		
		hydraulic, single acting symmetric rod seal for simple standard applications, not recommended for new designs (profile R01 should be preferred).	-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +110 °C	0,7 m/s	400 bar (5800 psi)	SPU		
			-50 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	GPU		
			-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +110 °C	0,7 m/s	400 bar (5800 psi)	SPU		
			-50 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	GPU		
		hydraulic, single acting o-ring activated symmetric rod seal for simple standard applications, not recommended for new designs (profile R03 preferred).	-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	PU	seal part	o ring
			-20 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +100 °C	0,7 m/s	400 bar (5800 psi)	SPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +100 °C	0,7 m/s	400 bar (5800 psi)	SPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		
		hydraulic, single acting asymmetric compact rod seal with stable fit in the housing. compact design mainly used to seal high viscosity fluids or for extreme small housings, not suitable for high speed applications.	-30 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +110 °C	0,4 m/s	400 bar (5800 psi)	SPU		
			-50 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		
			-30 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +110 °C	0,4 m/s	400 bar (5800 psi)	SPU		
			-50 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		
		hydraulic, single acting asymmetric compact rod seal with stable fit in the housing. compact design mainly used to seal high viscosity fluids or for extreme small housings, not suitable for high speed applications.	-30 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +110 °C	0,4 m/s	400 bar (5800 psi)	SPU		
			-50 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		
			-30 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	PU		
			-20 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	HPU		
			-20 °C ... +110 °C	0,4 m/s	400 bar (5800 psi)	SPU		
			-50 °C ... +110 °C	0,3 m/s	400 bar (5800 psi)	LTPU		
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU		
		hydraulic, single acting o-ring activated asymmetric PTFE rod seal, low friction. in tandem design together with double acting wipers for extreme low or high speed or positioning functions. as primary seal with good resistance to pressure shocks used in mobile hydraulics, machine tools, injection moulding machines, heavy hydraulics.	-30 °C ... +100 °C	10,0 m/s	400 bar (5800 psi)		glide ring	o ring
			-20 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)	PTFE (glass, bronze, carbon)		
			-50 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			
			-60 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)			
			-60 °C ... +80 °C	10,0 m/s	400 bar (5800 psi)	UHMWPE		
			-30 °C ... +100 °C	10,0 m/s	400 bar (5800 psi)			
			-20 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)	PTFE (glass, bronze, carbon)		
			-50 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			
			-60 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)			
			-60 °C ... +80 °C	10,0 m/s	400 bar (5800 psi)	UHMWPE		

application	profile	description	temperature	max. speed	max. pressure	material			
		hydraulic, single acting o-ring activated asymmetric PU rod seal with excellent dynamic sealing capacity. used as secondary seal in tandem design to minimize residual oil film. for mobile hydraulics, injection moulding machines, heavy hydraulics.	-30 °C ... +100 °C	1,0 m/s	250 bar (3600 psi)	PU	glide ring	o ring	
			-20 °C ... +100 °C	1,0 m/s	250 bar (3600 psi)	HPU		NBR	
			-30 °C ... +100 °C	1,0 m/s	250 bar (3600 psi)	LTPU		NBR	
			-20 °C ... +100 °C	1,4 m/s	250 bar (3600 psi)	SPU		NBR	
			-30 °C ... +100 °C	1,0 m/s	250 bar (3600 psi)	GPU		NBR	
		hydraulic, single acting profile ring-activated asymmetric PTFE rod seal, with special heavy duty design for heavy industry hydraulics or for special housing dimensions.	-30 °C ... +100 °C	10,0 m/s	400 bar (5800 psi)	PTFE (glass, bronze, carbon)	glide ring	energizer	
			-20 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)			NBR	
			-50 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			FKM	
			-25 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			EPDM**	
		hydraulic, single acting o-ring activated symmetric PTFE rod seal, low friction. for extreme low or high speed, suitable for positioning functions.	-30 °C ... +100 °C	10,0 m/s	400 bar (5800 psi)	PTFE (glass, bronze, carbon)	glide ring	o ring	
			-20 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)			NBR	
			-50 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			FKM	
			-60 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)			EPDM **	
			-60 °C ... +80 °C	10,0 m/s	400 bar (5800 psi)		UHMWPE	MVQ	
		hydraulic, single acting profile ring-activated symmetric PTFE rod seal, similar to R09-D, but special heavy duty design for heavy industry hydraulics or for special housing dimensions.	-30 °C ... +100 °C	10,0 m/s	400 bar (5800 psi)	PTFE (glass, bronze, carbon)	glide ring	energizer	
			-20 °C ... +200 °C	10,0 m/s	400 bar (5800 psi)			NBR	
			-50 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			FKM	
			-25 °C ... +150 °C	10,0 m/s	400 bar (5800 psi)			EPDM**	
		hydraulic, single acting chevron sealing set, parting surface design. for heavy industry hydraulics.	-30 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)	PTFE glass	R10-A	R11-M	R12-M
			-20 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	PU	POM / PA*
			-40 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	HPU	POM / PA*
			-20 °C ... +100 °C	0,7 m/s	500 bar (7200 psi)		POM / PA*	LTPU	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	SPU	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	GPU	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	250 bar (3600 psi)		PTFE glass	NBR	PTFE glass
			-20 °C ... +200 °C	0,5 m/s	250 bar (3600 psi)		PTFE glass	FKM	PTFE glass
			-50 °C ... +150 °C	0,5 m/s	250 bar (3600 psi)		PTFE glass	EPDM**	PTFE glass
-25 °C ... +150 °C	0,5 m/s	250 bar (3600 psi)	PTFE glass	HNBR	PTFE glass				
		hydraulic, single acting chevron sealing set, parting surface design. for heavy industry hydraulics.	-30 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)	PTFE glass	R10-A	R11-T	R12-T
			-20 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	PU	POM / PA*
			-40 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	HPU	POM / PA*
			-20 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	LTPU	POM / PA*
			-20 °C ... +100 °C	0,7 m/s	500 bar (7200 psi)		POM / PA*	SPU	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	500 bar (7200 psi)		POM / PA*	GPU	POM / PA*
			-30 °C ... +100 °C	0,5 m/s	250 bar (3600 psi)		PTFE glass	NBR	PTFE glass
			-20 °C ... +200 °C	0,5 m/s	250 bar (3600 psi)		PTFE glass	FKM	PTFE glass
			-50 °C ... +150 °C	0,5 m/s	250 bar (3600 psi)		PTFE glass	EPDM**	PTFE glass
-25 °C ... +150 °C	0,5 m/s	250 bar (3600 psi)	PTFE glass	HNBR	PTFE glass				



not bolded symbols: please consult our technical dpmt. for application limitations

* POM up to ø260 mm, PA above ø260 mm

** attention: not suitable for mineral oils!

application	profile	description	temperature	max. speed	max. pressure	material			
 	 R1315	hydraulic, single acting chevron sealing set, parting surface design. for heavy industry hydraulics.	-30 °C ... +100 °C	0,5 m/s	600 bar (8700 psi)	POM / PA*	R13-T	R14-T	R15-T
			-20 °C ... +100 °C	0,5 m/s	600 bar (8700 psi)	POM / PA*	PU	POM / PA*	
			-40 °C ... +100 °C	0,5 m/s	600 bar (8700 psi)	POM / PA*	LTPU	POM / PA*	
			-20 °C ... +100 °C	0,7 m/s	600 bar (8700 psi)	POM / PA*	SPU	POM / PA*	
			-30 °C ... +100 °C	0,5 m/s	600 bar (8700 psi)	POM / PA*	GPU	POM / PA*	
 	 R16-A	hydraulic, single acting simple hat seal, usually fixed in housing with clamp flange. mainly used for replacement in old hydraulic and pneumatic cylinders or for secondary applications.	-30 °C ... +110 °C	0,5 m/s	160 bar (2300 psi)	PU			
			-20 °C ... +110 °C	0,5 m/s	160 bar (2300 psi)	HPU			
			-50 °C ... +110 °C	0,5 m/s	160 bar (2300 psi)	LTPU			
			-20 °C ... +110 °C	0,7 m/s	160 bar (2300 psi)	SPU			
			-30 °C ... +100 °C	0,5 m/s	160 bar (2300 psi)	NBR			
			-25 °C ... +150 °C	0,5 m/s	160 bar (2300 psi)	HNBR			
			-20 °C ... +200 °C	0,5 m/s	160 bar (2300 psi)	FKM			
-50 °C ... +150 °C	0,5 m/s	160 bar (2300 psi)	EPDM**						
 	 R16-B	hydraulic, single acting simple hat seal, usually fixed in housing with clamp flange. mainly used for replacement in old hydraulic and pneumatic cylinders or for secondary applications.	-30 °C ... +110 °C	0,5 m/s	160 bar (2300 psi)	PU			
			-20 °C ... +110 °C	0,5 m/s	160 bar (2300 psi)	HPU			
			-50 °C ... +110 °C	0,5 m/s	160 bar (2300 psi)	LTPU			
			-20 °C ... +110 °C	0,7 m/s	160 bar (2300 psi)	SPU			
			-30 °C ... +100 °C	0,5 m/s	160 bar (2300 psi)	NBR			
			-25 °C ... +150 °C	0,5 m/s	160 bar (2300 psi)	HNBR			
			-20 °C ... +200 °C	0,5 m/s	160 bar (2300 psi)	FKM			
-50 °C ... +150 °C	0,5 m/s	160 bar (2300 psi)	EPDM**						
 	 R17	hydraulic, single acting asymmetric rod seal with additional sealing-respectively stabilizing lip. interference fit on outside diameter maintains stable fit in the housing. design mainly used for telescopic cylinders, mobile hydraulic or for special housing dimensions.	-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	PU			
			-20 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	HPU			
			-20 °C ... +110 °C	0,7 m/s	400 bar (5800 psi)	SPU			
			-50 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	LTPU			
			-30 °C ... +110 °C	0,5 m/s	400 bar (5800 psi)	GPU			
 	 R19	hydraulic, single acting finger spring activated, asymmetrical PTFE rod seal, low friction and good dry running properties, excellent chemical and thermal resistance, mainly used in chemical, pharma and food industry.	-200 °C ... +260 °C	15,0 m/s	100 bar (1450 psi)	PTFE virgin	spring	14310	
			-200 °C ... +260 °C	15,0 m/s	160 bar (2300 psi)	PTFE glass	14310		
			-200 °C ... +260 °C	15,0 m/s	160 bar (2300 psi)	PTFE Bronze	14310		
			-200 °C ... + 80 °C	15,0 m/s	200 bar (2900 psi)	PE	14310		
 	 R20	hydraulic, single acting space saving, compact rod seal, fits standard o-ring housings. advantage compared to o-ring : integrated active back-up rings for high pressure, design with interference fit on outside diameter maintains non-twisting in dynamic applications.	-30 °C ... +100 °C	0,5 m/s	700 bar (10000 psi)	NBR	back up	POM / PA*	
			-20 °C ... +100 °C	0,5 m/s	700 bar (10000 psi)	HNBR	POM / PA*		
			-20 °C ... +200 °C	0,5 m/s	700 bar (10000 psi)	FKM	PAEK / PTFE		
			-25 °C ... +150 °C	0,5 m/s	700 bar (10000 psi)	HNBR	PAEK / PTFE		

application	profile	description	temperature	max. speed	max. pressure	material						
		hydraulic, single acting o-ring activated symmetric rod seal with sharp-edged sealing lips, good sealing effect for high viscosity fluids, not recommended for new designs (profile R03 preferred).	-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	PU	seal part	o ring	NBR 70			
			-20 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	HPU			NBR 70			
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	SPU			NBR 70			
			-20 °C ... +100 °C	0,7 m/s	400 bar (5800 psi)	LTPU			NBR 70			
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU			NBR 70			
		hydraulic, single acting symmetric rod seal with support ring for simple applications to serve repair purpose, not recommended for new designs. retainer ring in angled design possible.	-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	PU	seal part	supporting	POM / PA*			
			-20 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	HPU			POM / PA*			
			-40 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	SPU			POM / PA*			
			-20 °C ... +100 °C	0,7 m/s	400 bar (5800 psi)	LTPU			POM / PA*			
			-30 °C ... +100 °C	0,5 m/s	400 bar (5800 psi)	GPU			POM / PA*			
		hydraulic, single acting o-ring activated rod seal with additional stabilizing lips and integrated active back ring for larger extrusion gaps, mainly used in mining industry.	-30 °C ... +100 °C	0,5 m/s	700 bar (10000 psi)	PU	seal part	o ring	back up	NBR	POM / PA*	
			-20 °C ... +100 °C	0,5 m/s	700 bar (10000 psi)	HPU			NBR	POM / PA*		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10000 psi)	SPU			NBR	POM / PA*		
			-20 °C ... +100 °C	0,7 m/s	700 bar (10000 psi)	LTPU			NBR	POM / PA*		
			-30 °C ... +100 °C	0,5 m/s	700 bar (10000 psi)	GPU			NBR	POM / PA*		
		hydraulic, single acting optimized for low pressure, unequal angled chevron design results in good contact pressure even in low pressure range. external spring pretension necessary. mainly used in chemical, pharma and food industry.	-200 °C ... +260 °C	1,5 m/s	100 bar (1450 psi)	PTFE glass	R25-F	R26-F	R27-F	PTFE glass	PTFE virgin	PTFE glass



not bolded symbols: please consult our technical dpmt. for application limitations

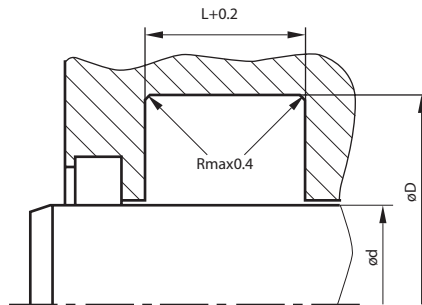
* POM up to ø260 mm, PA above ø260 mm

** attention: not suitable for mineral oils!

Rod seal housing details and recommendations

indicated dimensions
are required to process an order

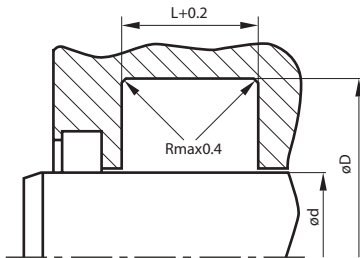
∅D outside diameter
∅d inside diameter
L groove length



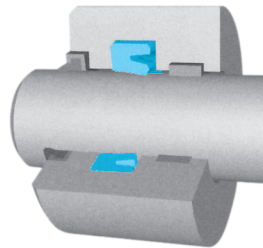
surface	R tmax	Ra
roughness	(µm)	(µm)
sliding surface for PU/RUBBER seals	≤2,5	≤0,1 - 0,5
sliding surface for PTFE seals	≤ 2	≤0,05 - 0,3
bottom of groove	≤6,3	≤1,6
groove face	≤15	≤3
bearing area Tp	50% - 95%	

seal housing tolerances	
∅ d	f8
∅ D	H10

easy ordering procedure	R01	PU	60 x 75 x 10
	profile	material	nominal housing dimensions



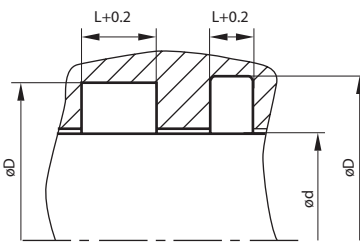
- R01 R17
- R02 R18
- R03 R19
- R04 R35
- R05
- R06
- R07
- R08



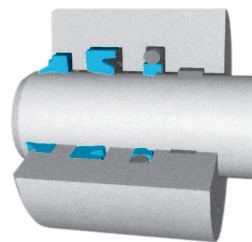
main application:
standard cylinders
light & standard hydraulic applications

advantages:
stable fit in the housing, ultimate sealing
effect, wide temperature range,
good backpumping ability

standard materials:
PU or NBR, FKM, EPDM, HNBR & MVQ



R09

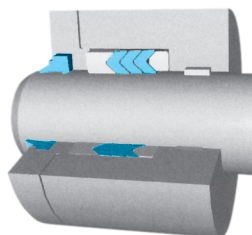
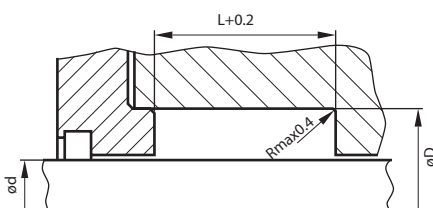


main application:
earth moving equipment,
heavy hydraulics

advantages:
excellent resistance against pressure
shocks, long lifetime

standard materials:
R09: PTFE virgin/glass/bronze/carbon/
R01: PU or NBR, FKM, EPDM, HNBR & MVQ

R1012
R1315



main application:
heavy industry hydraulics, presses

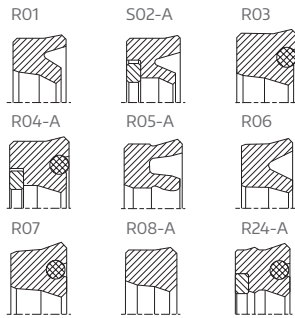
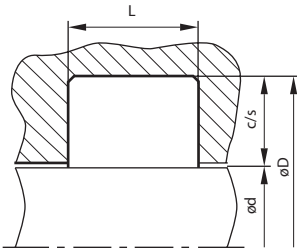
advantages:
suitable for old, worn rods,
splitted version for easy installation available

standard materials:
PTFE virgin/glass/bronze/carbon/
PU/POM

housing recommendations

- single acting rod seals
- lip type (u-cup) seals
- compact seals

the listing below is our suggestion for standard housing dimensions. please note that we are able to produce those profiles to your specific need or any non standard housing.

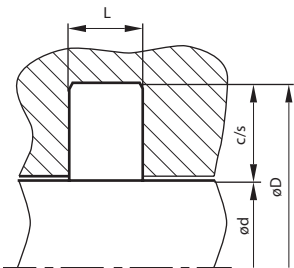


$\varnothing d$	$\varnothing D$	L	c/s
5 - 24,9 *	$\varnothing d+8$	6,3	4
25 - 49,9	$\varnothing d+10$	8	5
50 - 149,9	$\varnothing d+15$	10	7,5
150 - 299,9	$\varnothing d+20$	14	10
300 - 499,9	$\varnothing d+25$	17	12,5
500 - 699,9	$\varnothing d+30$	25	15
700 - 1.000	$\varnothing d+40$	32	20
> 1.000	$\varnothing d+40$	32	20

housing recommendations

- single/double acting rod seals
- o-ring activated PTFE (PU) seals

the listing below is our suggestion for standard housing dimensions. please note that we are able to produce those profiles to your specific need or any non standard housing.

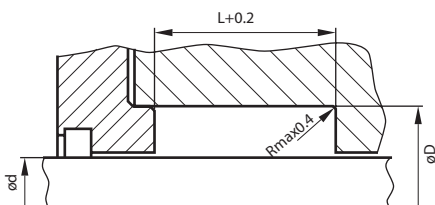


$\varnothing d$	$\varnothing D$	L	c/s
5 - 7,9	$\varnothing d+4,9$	2,2	2,45
8 - 18,9	$\varnothing d+7,3$	3,2	3,65
19 - 37,9	$\varnothing d+10,7$	4,2	5,35
38 - 199,9	$\varnothing d+15,1$	6,3	7,75
200 - 255,9	$\varnothing d+20,5$	8,1	10,25
256 - 649,9	$\varnothing d+24$	8,1	12
650 - 1.000	$\varnothing d+27,3$	9,5	13,65
> 1.000	$\varnothing d+27,3$	9,5	13,65

housing recommendations

- double acting rod seals
- compact type

the listing below is our suggestion for standard housing dimensions. please note that we are able to produce those profiles to your specific need or any non standard housing.



$\varnothing d$	$\varnothing D$	L	c/s
10 - 39,9	$\varnothing d+10$	16	5
40 - 74,9	$\varnothing d+15$	25	7,5
75 - 149,9	$\varnothing d+20$	32	10
150 - 199,9	$\varnothing d+25$	40	12,5
200 - 300	$\varnothing d+30$	40	15
> 300	$\varnothing d+40$	63	20

* restrictions in minimum diameter for profiles with back-up ring