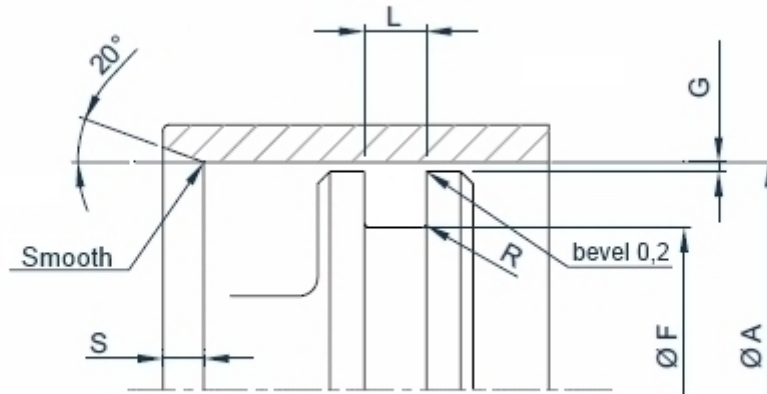


Slipper ptfé Composite seals |Steplock®

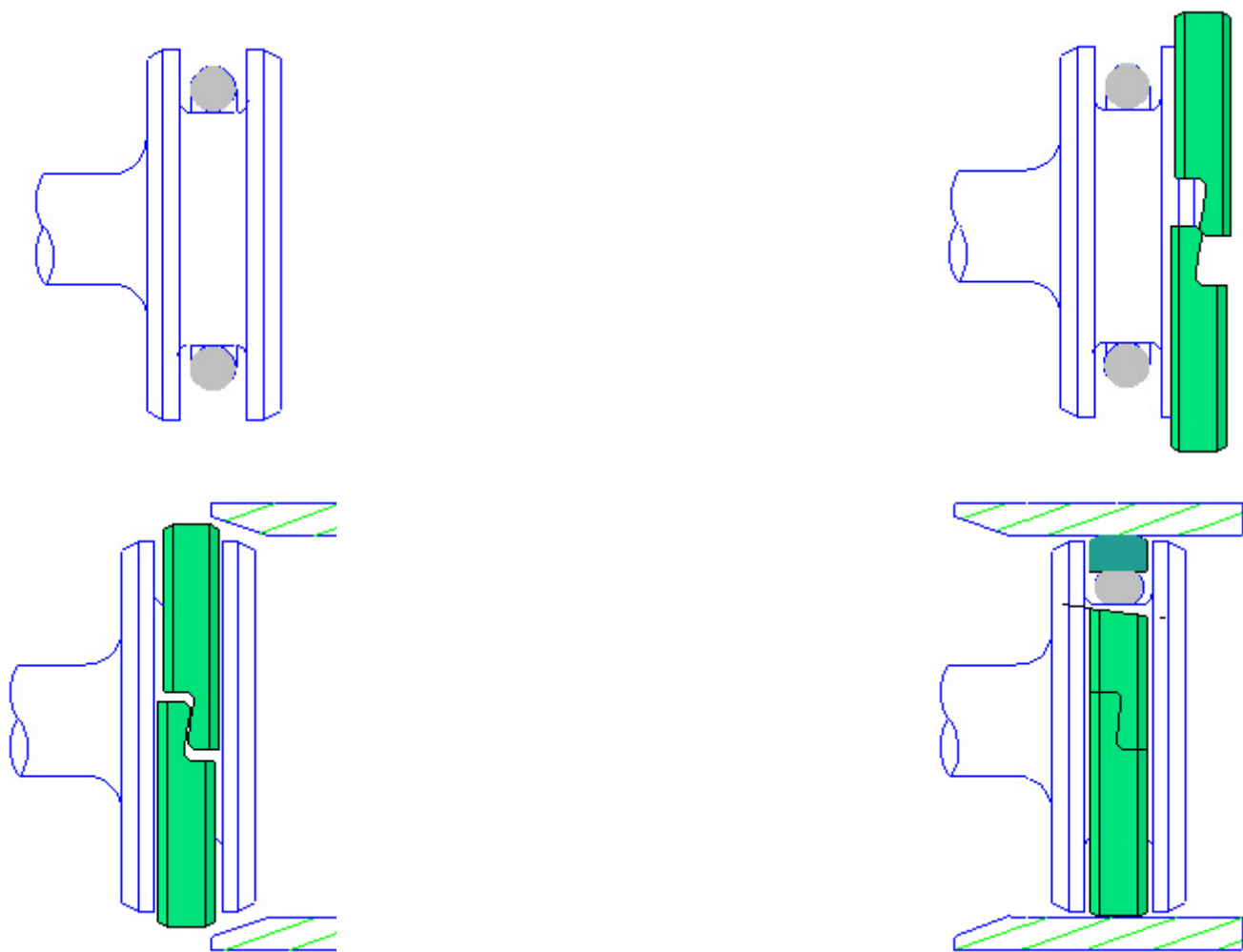


Steplock® Composite Slipper piston seals

Steplock® are interchangeable with NPS series in double-acting applications. The special Steplock® split design allows easy assembly with no equipment, keeps the Slipper in place, and ensures a perfect sealing. No resizing required.

ASSEMBLY

STEPLOCK® ASSEMBLING RESIZING NOT REQUIRED





FINISHES

SURFACE FINISH ACCORDING WITH FLUID		
application	max Ra µm dynamic surface	max Ra µm static surface
CRYOGENICS	0,1	0,2
FREON HELIUM HYDROGEN	0,2	0,3
AIR NITROGEN ARGON METHANE FUELS	0.2	0.4
WATER OIL	0.3 - 04	0.6
ROTARY SEALS		
Shaft surface Ra 0.2 - 0.3 micron max. Rz 1.0 - 2.5 micron max. R max. < 4 micron	Shaft hardness 55 HRC min. for pressure up to 5 bar 60 HRC min. for pressure > di 5 bar 60 HRC for speed > 4m/sec	Surface treating deep 0.3 mm min.



MATERIALS

Click compound's code to download the .PDF data sheet. Registration required.

HD Slippers code	Composition	Color	Approvals	ΔT °C	Description
N-020	Virgin PTFE	white	FDA NORSOK	-268 +260	All pourpose, low friction coefficient, extrusion withstanding.
N-009	Ptfe-oxides	blue	FDA	-268 +260	All pourpose on soft surfaces
N-031	Ptfe-bronze	green-blue		-268 +260	High wear resistance, hidraulic seals
N-032	Ptfe-carbon	black		-268 +260	High wear resistance, pneumatic and hydraulic seals
N-059	Ptfe-carbographite	black		-268 +260	High wear resistance, hydraulic and pneumatic seals, hard surfaces
N-197	Ptfe-carbographite	black	NORSOK	-268 +260	High wear resistance, hydraulic and pneumatic seals
N-043	Ptfe-graphite	black	FDA	-268 +260	High wear resistance, low friction coefficient.
N-103	Ptfe-carbon fibre	black	FDA	-268 +260	High wear resistance, low friction coefficient, hard surfaces.
N-077	Ptfe-glass fibre-MoS ₂	gray		-268 +260	Of general use, in lubricated applications, rotary seals
N-060	Ptfe-glass fibre	blue	FDA	-268 +260	All pourpose on hard surfaces
N-067	Ptfe-glass fibre	white	FDA NORSOK	-268 +260	High wear and creep resistance
N-102	Ptfe-Liquid crystal polymer	beige	FDA - EU	-268 +260	Food & Pharma, soft surfaces
N-088	Ptfe-poliimide	yellow		-268 +260	High wear resistance. Soft surfaces
N-074	PEHMW	white	FDA	-140 +80	High wear and extrusion resistance
P95-A252	Polyurethane	blue	FDA	-50 +105	Extrusion and wear withstanding, low friction coefficient
P95-VI251	Polyurethane	violet	FDA	-30 +115	CIP (clean in place) fluids compatible
P95-R198	Polyurethane	red		-30 +125	Extrusion and wear withstanding, low friction coefficient, high temperatures
P95-AR255	Polyurethane	orange		-30 +135	Extrusion and wear withstanding, low friction coefficient, higher temperatures
P95-G253	Polyurethane MoS	gray		-30 +105	Extrusion and wear withstanding, lower friction coefficient

CHOOSING Neuflon-ptfe compound ACCORDING WITH FLUID AND SURFACE

SURFACES					
	Steel HEC>=30-45 Temp. Mart. Inox Steel Cast Iron HRB<=200 Steel HRC>=45 Cast Iron HRB>200	Galvanic or chemical surfacing HV>=700 Chromium Bronze	Bronze Brass	Treated Aluminium	Aust. Inox Steel Glass
FLUIDS	NEUFLON-ptfe compounds (standard in bold)				
Hydraulic oil Transmission oil Fire resistant syntetic hydraulic oil	N-031 N-032 N-060 N-077 P95-A112	N-031 N-032 N-060 N-077 P95-A112	N-009 N-043 N-032 P95-A112	N-032 N-074 P95-A112	N-009 N-032 N-074 P95-A112
Water and oil/water	N-032	N-032	N-009	N-032	N-009



emulsions	N-060 N-077 N-074	N-060 N-077 N-074	N-043 N-074	N-074	N-032 N-074
Drugs and food	N-009 N-102 N-020 N-043 N-060 N-074 N-088 P95-B113	N-009 N-074 P95-B113	N-102 N-009 P95-B113	N-009 N-074 P95-B113	N-009 N-074 P95-B113
Air	N-032 N-031 N-043 N-074 P95-A112	N-032 N-043 P95-A112	N-032 N-009 N-043 N-074 P95-A112	N-032 N-074 P95-A112	N-032 N-009 N-043 N-074 P95-A112
Steam	N-032 N-043	N-032	N-009 N-032 N-043		N-032 N-009 N-043
Acids and Bases	N-032 N-059 N-074	N-032 N-043 N-074			N-009 N-032 N-043 N-074

ELASTOMER ACCORDING WITH FLUID

FLUID	ELASTOMER
HYDRAULIC OIL - TRANSMISSION OIL	NBR
FIRE RESISTANT SYNTETIC HYDRAULIC OIL	EPDM
WATER AND WATER/OIL EMULSIONS	NBR
FOOD AND DRUG	MVQ
AIR	NBR
STEAM	EPDM - FFKM
ACIDS AND BASES	FKM - FFKM



SEAT

Housing class	A		F		L	R	S	G*				
	cylinder bore range		groove diameter					min	max. radial gap			
	suggested	available	hydraulics	pneumatics					Bar 50	100	200	400
N2	35-39,9	35-250	A- 7,5	A- 8,0	3,2	0,6	2,2	0,8	0,6	0,5	0,3	
N3	40-79,9	35-450	A- 11	A- 11,5	4,2	0,8	2,6	1,2	0,7	0,5	0,3	
N4	80-132,9	40-650	A- 15,5	A- 16,5	6,3	1	5,6	1,4	0,7	0,6	0,4	
N5	133-400	130-1200	A- 21	A- 22,3	8,1	1,5	8,2	1,5	0,8	0,6	0,4	
G*=G1+G2+G3		G1 = Max. initial clearence G2 = Clearence by elastic deformation of the components under pressure G3 = Clearence due to the forseen wear of the guiding elements										

Coding example	
profile code StepLock bore 100 housing class N4 materials: Neuflon 031 O-Ring NBR	StepLock 100 N4 N-031 NBR