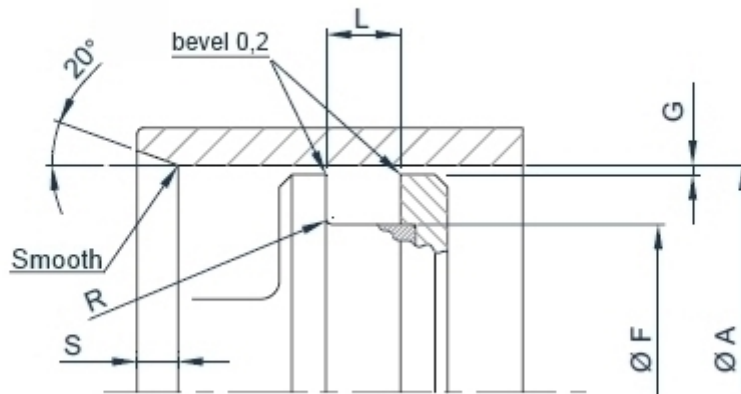


## Enerseal® Spring Energized Seals |Energized Piston Seals



**Spring Energized Seals Enerseal®**, custom and standard dimensions available. Jacket in PTFE compound, PEEK, UHMW-PE, PU. Jackets and electro-welded springs are designed and realized within the company, so that HD has the complete control of the production process. Spring are available in Aisi 301 302, Hastelloy, **NACE approved Inconel X750 and Elgiloy for cryogenics.**

**For the "V" shaped cross sections an optional EU-FDA approved Silicone Filling is available.**

Enerseal® Spring Energized Seals for on piston housing

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Seals  
Homepage](#)



## AVAILABILITY

**To check the availability:**

- choose profile and compound from the drop-down menu
- input the desired housing class
- input the desired diameter

Once obtained the availability, a request for quotation can be sent.



## MATERIALS

Click compound's code to download the .PDF data sheet (login requested)

HD Slippers code	Composition	Color	Approvals	$\Delta T$ °C	Description
<a href="#">N-009</a>	Ptfe-oxides	blue	FDA	-268 +260	All pourpose on soft surfaces
<a href="#">N-095</a>	Tfm	white		-268 +260	Low creep, better strength.
<a href="#">N-031</a>	Ptfe-bronze	green-blue		-268 +260	High wear resistance, hidraulic seals
<a href="#">N-032</a>	Ptfe-carbon	black	NORSOK	-268 +260	High wear resistance, pneumatic and hydraulic seals
<a href="#">N-197</a>	Ptfe-carbographite	black		-268 +260	High wear resistance, hydraulic and pneumatic seals
<a href="#">N-043</a>	Ptfe-graphite	black		-268 +260	High wear resistance, low friction coefficient.
<a href="#">N-060</a>	Ptfe-glass fibre	blue	FDA	-268 +260	All pourpose on hard surfaces
<a href="#">N-067</a>	Ptfe-glass fibre	white	FDA NORSOK	-268 +260	High wear and creep resistance
<a href="#">N-033</a>	Ptfe-glass fibre MoS2	gray	FDA	-268 +260	Fit for hard surfaces
<a href="#">N-103</a>	Ptfe-Carbon fibre	black		-268 +260	Fit for hard surfaces
<a href="#">N-102</a>	Ptfe-Liquid crystal polymer	beige	FDA - EU	-268 +260	Food & Pharma, fit for soft surfaces
<a href="#">N-088</a>	Ptfe-polyimide	yellow		-268 +260	Fit for soft surfaces
<a href="#">N-074</a>	PEHMW	white	FDA	-140 +80	High wear and extrusion resistance
<a href="#">N-155</a>	PVDF	white	FDA	-30 +140	High modulus
<a href="#">P95-A252</a>	Polyurethane	blue	FDA	-50 +105	Extrusion and wear withstanding, low friction coefficient
<a href="#">P95-VI251</a>	Polyurethane	violet	FDA	-30 +115	CIP (clean in place) fluids compatible
<a href="#">P95-R198</a>	Polyurethane	red		-30 +125	Extrusion and wear withstanding, low friction coefficient, high temperatures
<a href="#">P95-AR255</a>	Polyurethane	orange		-30 +135	Extrusion and wear withstanding, low friction coefficient, higher temperatures
<a href="#">P95-G253</a>	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 P95-A112

**N-031**  
N-032 N-060 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  
emulsions

**N-032**  
N-060 N-074

**N-032**  
N-060 N-074

**N-009**  
N-043 N-074

**N-032**  
N-074

**N-009**  
N-032 N-074

Drugs and food

**N-074**  
N-102 N-043 N-060 N-095  
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-032**

**N-032**

**N-032**

**N-032**



	N-031 N-043 N-074 P95-A112	N-043 P95-A112	N-009 N-043 N-074 P95-A112	N-074 P95-A112	N-009 N-043 N-074 P95-A112
Steam	<b>N-032</b> N-043	<b>N-032</b>	<b>N-009</b> N-032 N-043		<b>N-032</b> N-009 N-043
Acids and Bases	<b>N-032</b> N-074	<b>N-032</b> N-043 N-074			<b>N-009</b> N-032 N-043 N-074



## SEAT

housing class	A	F	L	L*	L**	R	S	G			
	dimensional range	groove diameter	standard	heavy	BK			max. diametral gap			
	H8	h9		H12				Bar/20	100	200	400
GP	6 - 20	A - 2.9	2.4	3.8	5.3	0.3	2.5	0,20	0,10	0,08	0,05
LP	10 - 240	A - 4.5	3.6	4.65	6.2	0.4	2.5	0,25	0,15	0,10	0,07
HP	16 - 400	A - 6.2	4.8	5.7	7.7	0.6	3	0,35	0,20	0,15	0,08
NP	28 - 650	A - 9.4	7.1	8.5	10.8	0.8	5.5	0,50	0,25	0,20	0,10
MP	45 - 1100	A - 12.2	9.5	11.2	14.7	0.8	8.5	0,60	0,30	0,25	0,10
RP	150 - 1200	A - 18.75	13.4	15.8	20.5	0.8	8.5	0,80	0,30	0,25	0,10

\*Always choose heavy (reinforced) heel when pressure exceeds 200 bar

\*\* Backup version for higher pressure and/or temperature

### Coding example

housing class NP  
 profile code 022  
 bore 100  
 materials: jacket Neuflon 020 spring Aisi 314

**Enerseal NP - 022 - 100 - N-020 - 314**

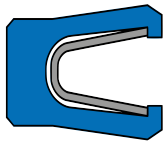
## ASSEMBLY

Spring energized seals are suitable for assembling in closed groove starting from a minimum rod diameter according with dimensional class and spring's shape.

Assembling requires skill and can be more or less difficult according with the position of the groove.

**FOR THESE REASONS THE OPEN GROOVE ASSEMBLING IS ALWAYS STRONGLY RECOMMENDED**

### Enerseal V

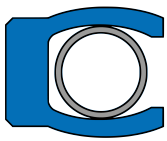


#### dimensional class

#### Minimum bore diameter

GP	35
LP	50
HP	70
NP	105
MP	140
RP	200

### Enerseal Omega

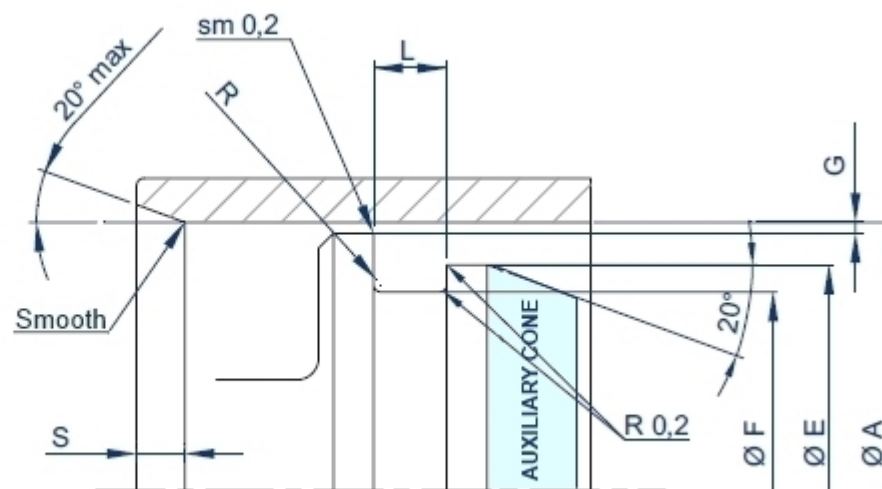
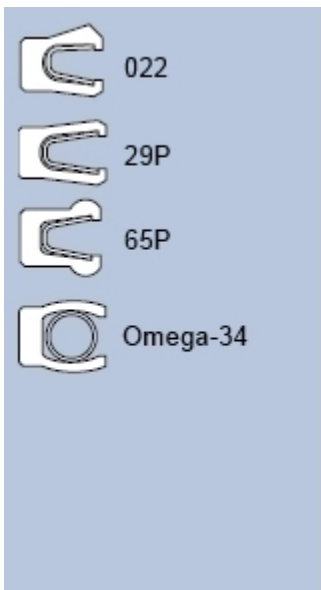


#### dimensional class

#### Minimum bore diameter

GP	20
LP	35
HP	50
NP	75
MP	95
RP	120

## Spring Energized Seals can also be installed in SEMI-OPEN GROOVE



The assembling cone can be manufactured out of PA6 or POM. If needed pre-heat the seal in water or oil (max 100°C). Snap the seal in



to the groove as quick as possible, then resize.

Housing class	A dimensional range	F groove diameter	L standard	L* reinforced heel	E step diameter	R	S	G max clearance			
								Bar/20	100	200	400
	H8	h9		H12	h12			Bar/20	100	200	400
GP	6 - 20	A - 2,9	2.4	3.8	F + 0.8	0.3	2.5	0,20	0,10	0,08	0,05
LP	15 - 240	A - 4.5	3.6	4.65	F + 1.2	0.4	2.5	0,25	0,15	0,10	0,07
HP	25 - 400	A - 6.2	4.8	5.7	F + 1.4	0.6	3	0,35	0,20	0,15	0,08
NP	45 - 650	A - 9.4	7.1	8.5	F + 1.6	0.8	5.5	0,50	0,25	0,20	0,10
MP	80 - 1100	A - 12.2	9.5	11.2	F + 1.8	0.8	8.5	0,60	0,30	0,25	0,10
RP	150 - 1200	A - 18,75	13,4	15,8	F + 2,5	0,8	10	0,80	0,30	0,25	0,10

\*Always choose reinforced heel when pressure exceeds 200 bar



## FINISHES

SURFACE FINISH ACCORDING WITH FLUID		
application	max Ra $\mu\text{m}$ dynamic surface	max Ra $\mu\text{m}$ 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		
<b>Shaft surface</b> Ra 0.2 - 0.3 micron max. Rz 1.0 - 2.5 micron max. R max. < 4 micron	<b>Shaft hardness</b> 55 HRC min. for pressure up to 5 bar 60 HRC min. for pressure > di 5 bar 60 HRC for speed > 4m/sec	<b>Surface treating deep</b> 0.3 mm min.