

PTFE Sealing System





The safe choice for seals and moulded parts used in hydraulics, pneumatics, precision engineering and food/medical industries.

About M Seals

M Seals was established in 1963 and has been a trusted provider of sealing solutions for over six decades. We have built a strong global presence, which enables us to efficiently serve customers worldwide. With over 80,000 standard products in our portfolio, we are confident in our ability to provide the best sealing solutions to meet our customers' specific requirements.

Furthermore, we have 10 CNC Machines and our own in-house CAD/CAM production software to enhance the accuracy and efficiency of our manufacturing processes. Additionally, we operate advanced laboratories and a quality assurance department equipped with the latest technology. These valuable resources ensure that our sealing components consistently meet the highest standards of quality.

Knowledge

We offer an extensive range of products with over 50,000 item numbers in stock, making us a comprehensive provider of seals and gaskets for both domestic and international companies.

Since 1963, we have developed a wide selection of seals that meet the most demanding industry requirements, and we specialize in creating sealing solutions tailored to our customers' requirements, ensuring they meet the specific needs of a particular application. We customize and adjust our products accordingly and can also develop new seals and gaskets through close collaboration with our customers. M Seals possesses extensive knowledge in technical process solutions. All our gaskets and seals are OEM compatible across materials and operating conditions, manufactured in accordance with ISO9001. We meticulously conduct our own quality control to ensure the delivery of high-quality sealing components.

We stay updated on the latest regulations, and our products and services comply with applicable legal requirements, including EU Regulation 1935/2004. This means our products adhere to regulations, and full traceability is maintained throughout the product lifecycle.

Our product range includes hydraulic seals, pneumatic seals, rotary seals, mechanical axial seals, O-rings, gaskets, Kalrez seals, and a wide selection of static seals. If a customer have specific requirements beyond our standard offerings, we can collaborate closely with the customer to develop a tailored solution for their application.



Quality and inspection – a keystone

Today M Seals has at its disposal advanced equipment for testing all parameters that are important for the function of our rubber and PTFE parts, such as hardness, spec. gravity and compression set. To ensure that the rubber compounds consistently meet specification requirements, sampling is made and tested using our Netzsch TGA machine or PerkinElmer FT-IR Spectrophotometer.

For dimensional checking, we have a Micro-Vu high precision 3-D measuring machine using non contact technique, which is superior for measuring softer materials. Often we agree special inspection schemes, incoming or outgoing, with our customers. Our lab is equipped to carry out different tests for our customers, like volume swell in different liquids.

M Seals have been working in accordance with ISO9000 Quality Management systems since 1996, currently ISO9001:2008. Following our growing involvement in the Automotive Industry, we are raising our management system to TS16949 level. A number of our suppliers are currently working with TS16949.

Our UK branch, M Seals NCL Ltd., as a distributor to the Aerospace, Defence and Offshore sectors, are working in accordance with BS EN 9120:2010/ ISO 9001:2008.



Logistics and key accounts

At M Seals, we consider it to be of the utmost importance to offer the best logistic solutions, based on mutual agreements regarding deliveries at scheduled dates and agreed quantities. When such agreements are signed with our key account customers, it will ensure that deliveries are on time, and agreed frame orders will be followed up. In general, key account customers will be assigned to a dedicated contact person who will get to know the customers special needs and wishes.

Static seals

- O-rings
- O-rings in Kalrez®
- X-rings
- Sanitary gaskets/TC gaskets
- Bonded seals
- Expanded PTFE
- Expanded graphite

Shaft seals

- Radial shaft seals
- Heavy duty shaft seals
- V-rings
- Mechanical seals
- Braided packing

PTFE sealing systems

- M-FLEX™
- M-GLIDE™
- M-STEP™
- M-TURN™
- M-WIPE™
- M-CAP™
- M-GUIDE™

Hydraulic seals

- Rod and piston seals
- Guide rings
- Wipers
- Repair kits for earth moving equipment

Custom moulded parts

- Rubber bonded
- Rubber/metal bonded

Accessories

- Back-up rings
- Circlips
- Speedi Sleeves
- O-ring assortments
- End covers





PTFE SEALING SYSTEMS

M Seals' program of PTFE seals consists of a variety of high-performance static and dynamic seals, designed for applications where high mechanic and chemical loads exceed the performance of traditional sealing materials.

PTFE seals are manufactured in processes that make the possible applications multiple, PTFE seals can be supplied according to standard programs, or adapted to existing housings, often without additional tooling cost.

PTFE seals are commonly used within chemical, food and drug, petrochemical, offshore and hydraulic industries.

Concept

PTFE is a relatively inelastic material. To secure surface contact prior to system pressure, a PTFE seal must be equipped with an elastic element. This can be either a stainless steel spring (Fig.1) or an elastomer O-ring (Fig.2).



Each application determines whether one or the other is the most optimal type, often based upon working temperature or demand of chemical resistance.

Materials

The basic material in these seals is PTFE, but in order to assure an optimal function, a variety of fillers like carbon, carbon-fibre, glass, bronze etc. can be added.

Advantages of PTFE












- resistant to a large number of chemicals and do not react with the fluid.
- can be used within a wide temperature range, (-269° to +280°C) with considerations to the design.
- good wear property and the elastic elements' low setting, secure a long service life.
- has unlimited stock life, but considerations must be taken to lifetime of an eventual elastomer element.
- has extremely low friction and does not bond to the contact surface.
- high resistance to extrusion.
- high surface speeds can be obtained up to 15m/s reciprocating and 4m/s for rotating.

Types

PTFE seals can be supplied as either single acting or double acting and can be adapted to AS568 O-ring grooves.

O-rings activated piston and rod seals acc. to ISO7425/1 and 7425/2.

Range of seals Standard working parameters















	Profile	Application			Working parameters			Speed		Page
		Static	Dynamic	Rotary	Max. pressure Dynamic Bar	Max. pressure Static Bar	Temperature °C	Dynamic m/sec.	Rotary m/sec.	
M-FLEX	I90 E90  	B	A	B	250	450	-70° to +260°	15	1	9 + 10
M-FLEX	I94 E94  	A	B	B	250	450	-70° to +260°	10	0,5	9 + 10
M-FLEX	I99 	B	B	A	250	250	-70° to +260°	15	4	11
M-FLEX	I96 E96  	A	B	(B)	400	600	-200° to +260°	5	0,1	12 + 13
M-FLEX	F92 F93  	A	C	C	400	600	-200° to +260°	-	-	14
M-FLEX	F90 F91  	A	C	C	250	450	-70° to +260°	-	-	14
	Materials									8
	General information									2 - 5

A: Very good
B: Good
C: Not recommended

Not all maximum characteristics can be obtained at the same time.

Range of seals

Standard working parameters

	Profile	Application			Working parameters			Speed		Page
		Static	Dynamic	Rotary	Max. pressure Dynamic Bar	Max. pressure reduced gap Bar	Temperature °C x	Dynamic m/sec.	Rotary m/sec.	
M-GLIDE	D70 D80  	B	A	C	450	600	-54° to +200°	15	-	15 + 16
M-STEP	I70 E80  	B	A	(C)	450	600	-54° to +200°	15	0,1	15 + 16
M-TURN	D74 D84  	B	A	A	250	250	-54° to +200°	5	1	17
M-CAP	D78 D88  	B	A	C	250	250	-54° to +200°	5	-	18 + 19
M-GLIDE	D76 D86  	B	A	C	450	600	-54° to +200°	15	-	15 + 16
M-GUIDE	G10 G12 G14 G16 	A	A	B	-	-	-54° to +200°	15	0,1	20
M-WIPE	W54 	C	A	B	-	-	-54° to +200°	15	0,1	21
M-WIPE	W52 	C	A	B	-	-	-54° to +200°	15	0,1	21
M-WIPE	W50 	C	A	B	-	-	-54° to +200°	15	0,1	21

x Note: Working temperature is depending on O-ring material see page 23

A: Very good
B: Good
C: Not recommended

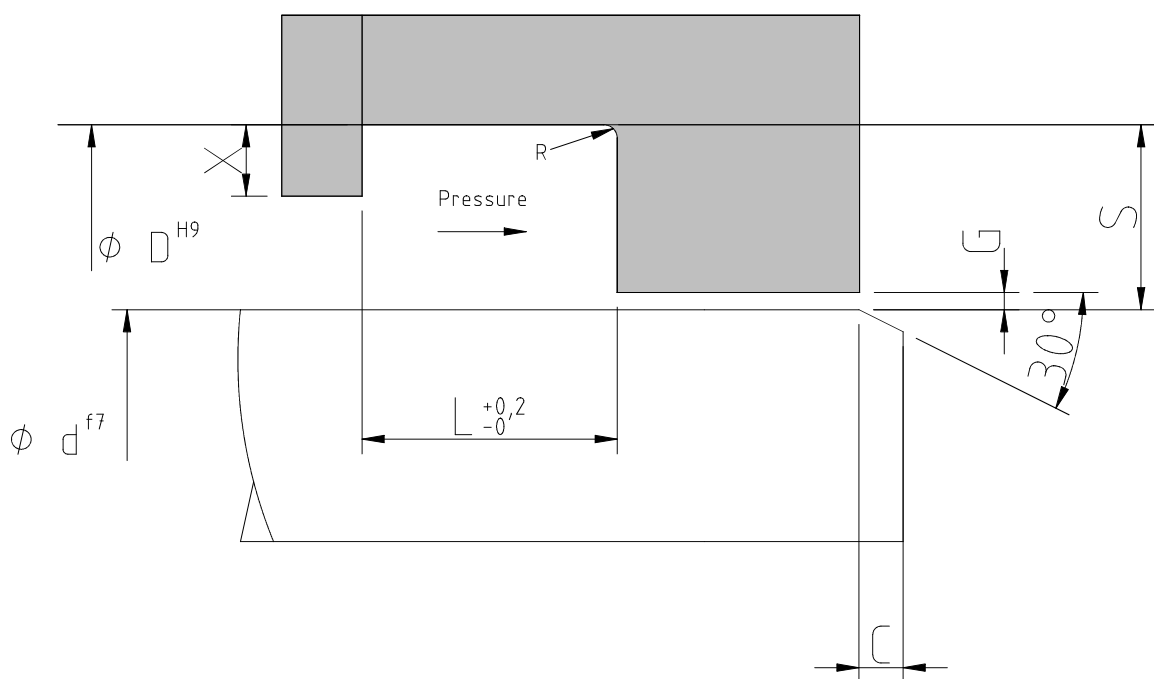
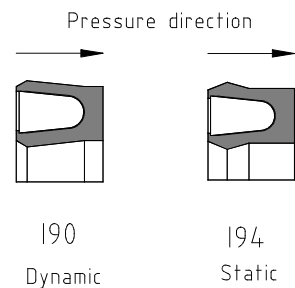
Not all maximum characteristics can be obtained at the same time.

GENERAL MATERIAL CHARACTERISTICS

MATERIAL CODE	CHARACTERISTIC	APPLICATION	TYPICAL PRODUCTS	RUNNING SURFACES
501 Virgin PTFE White	High chemical resistance Low friction Limited wear resistance	Chemical industry Food industry Pharmaceutic industry	Back-up rings Washers Spring activated seals	Aluminum Stainless steel Chromed steel Bronze
502 Virgin TFM White	High chemical resistance Low friction Limited wear resistance High mechanical strength	Chemical industry Food industry Pharmaceutic industry	Spring activated seals Valve seats	Aluminum Stainless steel Chromed steel Bronze
504 Modified PTFE Greenish/blueish	High chemical resistance Low friction Improved wear resistance	Chemical industry Light hydraulics	Spring activated seals O-ring activated seals	Hardened steel Chromed steel
510 PTFE/Car/Graphite Black	Good chemical resistance High mechanical strength Good wear resistance	Hydraulic industry Pneumatics Water/glycol solutions	O-ring activated seals Guide tape Spring activated seals	Hardened steel Chromed steel Stainless steel
511 PTFE/Carbon Black	Good chemical resistance Good mechanical strength Good wear resistance	General	Spring activated seals	Hardened steel Chromed steel Stainless steel
514 PTFE/Bronze Brownish	High mechanical strength High wear resistance	Hydraulic industry Hydraulic oils	O-ring activated seals Guide tape	Hardened steel Chromed steel Cast iron
518 PTFE/Econol Beige	Good mechanical strength Good wear resistance Non-wearing Low friction	Rotary applications	Spring activated seals O-ring activated seals	Aluminum Stainless steel
519 PTFE/Carbonfibre Greyish	High wear resistance High mechanical strength Good characteristic in water High chemical resistance	Water hydraulics Saltwater applications	Spring activated seals O-ring activated seals	Hardened steel Chromed steel Aluminum Ceramic coating Stainless steel
507 PTFE/Glass Grey/Green	High chemical resistance Good mechanical strength Good wear resistance High mechanical strength	Hydraulic industry	O-ring activated seals Guide tape	Hardened steel Chromed steel Cast iron
526 UHMW-PE White Maxtemp. +80°C	High wear resistance High mechanical strength Good characteristic in water Good dry running properties Good chemical resistance	Pneumatics Food industry Pharmaceutic industry	Spring activated seals O-ring activated seals Guide tape	Hardened steel Chromed steel Aluminum Ceramic coating Stainless steel
527 PUR57sh Transp.Yellow	Good mechanical strength Good wear resistance	Hydraulic industry	O-ring activated seals Wipers	Hardened steel Chromed steel Cast iron Ceramic coating Stainless steel

Other material composition available on request.

Above mentioned working conditions are guidelines and it is the end users responsibility to prove the product in his application.



SECTION	HOUSING DIMENSION			d min.	C min.	X Min.	R Max	G Max	RECOMMENDED DIAMETER RANGE
	S	L	L1						
A	1,45	2,40	3,80	3,00	2,00	0,50	0,40	0,065	3,00 - 9,99
B	2,25	3,60	4,65	8,00	2,20	0,60	0,40	0,065	10,00 - 19,99
C	3,10	4,80	5,70	12,00	2,40	0,70	0,60	0,075	20,00 - 39,99
D	4,70	7,10	8,50	20,00	3,80	0,90	0,80	0,085	40,00 - 119,99
E	6,10	9,50	11,20	35,00	5,50	0,90	0,80	0,125	120,00 - 629,99

Groove width L is standard. L1 is for seals with extended heel

Assembly in split groove.
For assembly in semi open groove see p. 22

Ordering example:

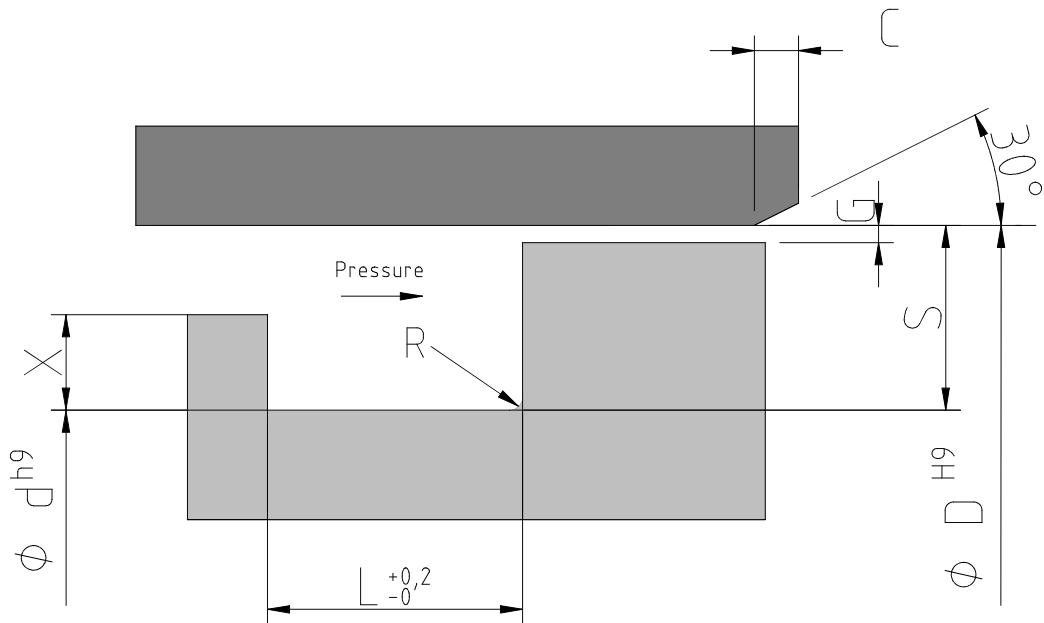
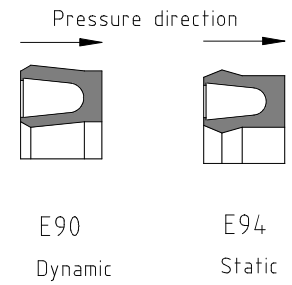
190/ 511 80,00-89,40-7,10 - S

— Spring material (see note)

— Housing dimension

— Material acc. to table p. 8

— Profile code



SECTION	HOUSING DIMENSION			d min.	C min.	X Min.	R Max.	G Max.	RECOMMENDED DIAMETER RANGE
	S	L	L1						
A	1,45	2,40	3,80	6,00	2,00	0,50	0,40	0,065	6,00 - 13,99
B	2,25	3,60	4,65	13,00	2,20	0,60	0,40	0,065	14,00 - 24,99
C	3,10	4,80	5,70	18,00	2,40	0,70	0,60	0,075	25,00 - 45,99
D	4,70	7,10	8,50	28,00	3,80	0,90	0,80	0,085	46,00 - 124,99
E	6,10	9,50	11,20	45,00	5,50	0,90	0,80	0,125	125,00 - 629,99

Groove width L is standard. L1 is for seals with extended heal

Assembly in split groove.
For assembly in semi open groove see p. 22

Ordering example:

E90/511 80,00-70,60-7,10 - S

Spring material (see note)

Housing dimension

Material acc. to table p. 8

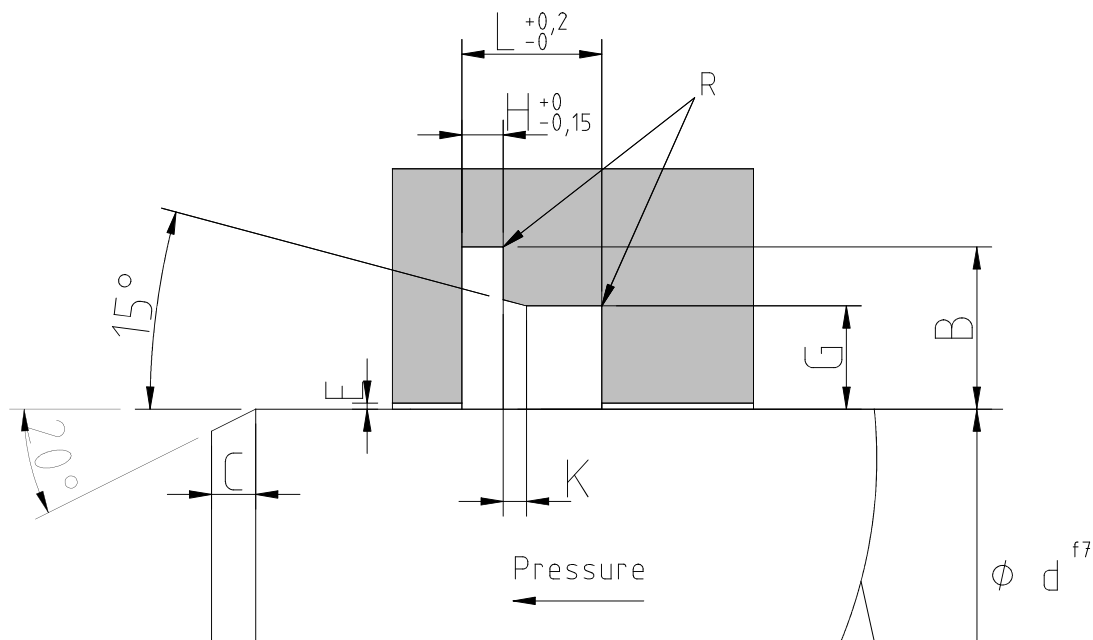
Profile code

Note: S for standard stainless steel spring.
E for Elgiloy spring.
H for Hasteloy (on request)

Pressure



199



SECTION	HOUSING DIMENSION			d min.	C min.	B	R Max.	E Max.	K	RECOMMENDED DIAMETER RANGE
	G	L	H							
B	2,50	3,60	0,85	8,00	2,20	4,50	0,30	0,13	0,80	8,00 - 19,99
C	3,50	4,80	1,35	12,00	2,40	6,25	0,40	0,13	1,10	20,00 - 39,99
D	5,25	7,10	1,80	20,00	3,80	8,75	0,50	0,15	1,40	40,00 - 119,99
E	7,00	9,50	2,80	35,00	5,50	11,00	0,50	0,17	1,60	120,00 -

Assembly in split groove

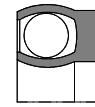
Ordering example:

199/511 80,00-90,50-7,10 - S

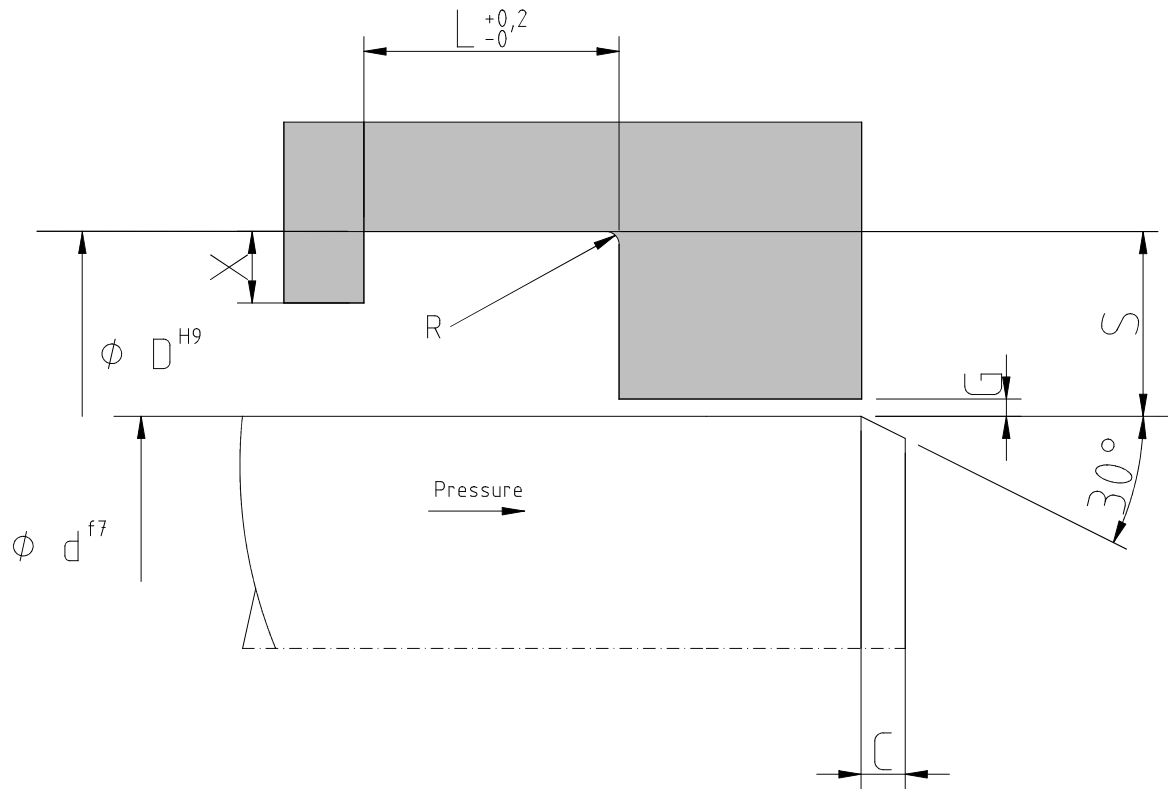
199/511: Profile code
 80,00-90,50: Housing dimension
 7,10: Material acc. to table p. 8
 S: Spring material (see note)

Note: S for standard stainless steel spring.
 E for Elgiloy spring.
 H for Hasteloy (on request)

Pressure



196



SECTION	HOUSING DIMENSION			d min.	C min.	X Min.	R Max.	G Max.	RECOMMENDED DIAMETER RANGE
	S	L	L1						
A	1,45	2,40	3,80	3,00	2,00	0,50	0,40	0,065	3,00 - 9,99
B	2,25	3,60	4,65	10,00	2,20	0,60	0,40	0,065	10,00 - 19,99
C	3,10	4,80	5,70	20,00	2,40	0,70	0,60	0,075	20,00 - 39,99
D	4,70	7,10	8,50	40,00	3,80	0,90	0,80	0,085	40,00 - 119,99
E	6,10	9,50	11,20	120,00	5,50	0,90	0,80	0,125	120,00 - 629,99

Groove width L is standard. L1 is for seals with extended heel

Assembly in split groove.
For assembly in semi open groove see p. 22

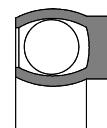
Ordering example:

196/511 80,00-89,40-7,10 - S

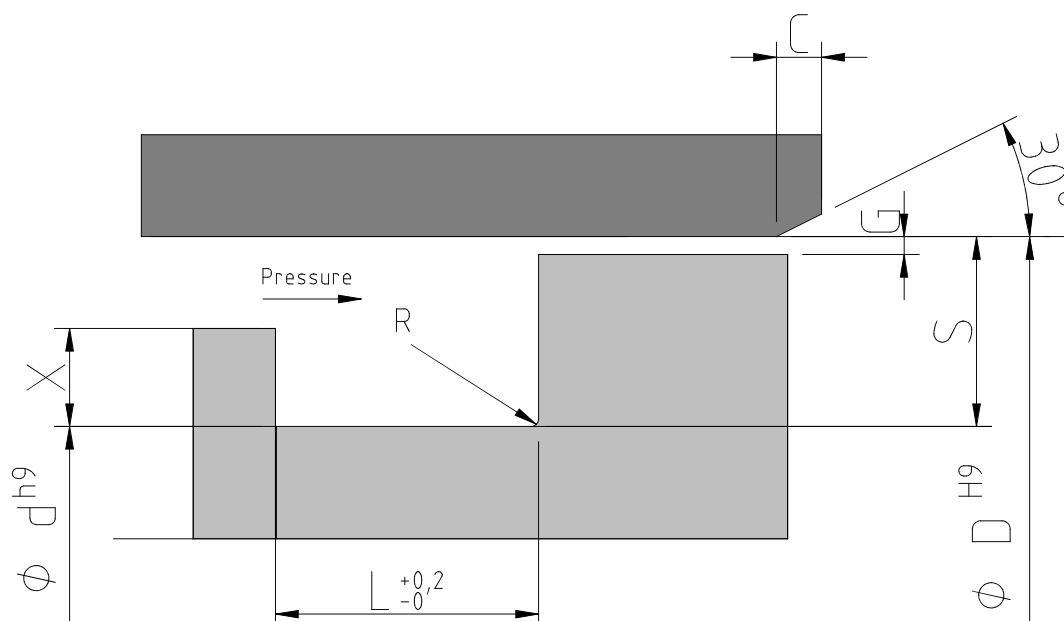
196/511: Profile code
 80,00-89,40: Material acc. to table p. 8
 7,10: Housing dimension
 S: Spring material (see note)

Note: S for standard stainless steel spring.
E for Elgiloy spring.
H for Hasteloy (on request)

Pressure →



E96



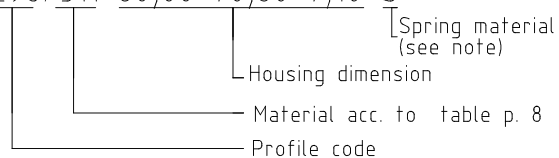
SECTION	HOUSING DIMENSION			d min.	C min.	X Min.	R Max.	G Max.	RECOMMENDED DIAMETER RANGE
	S	L	L1						
A	1,45	2,40	3,80	6,00	2,00	0,50	0,40	0,065	6,00 - 13,99
B	2,25	3,60	4,65	14,00	2,20	0,60	0,40	0,065	14,00 - 24,99
C	3,10	4,80	5,70	25,00	2,40	0,70	0,60	0,075	25,00 - 45,99
D	4,70	7,10	8,50	46,00	3,80	0,90	0,80	0,085	46,00 - 124,99
E	6,10	9,50	11,20	125,00	5,50	0,90	0,80	0,125	125,00 - 629,99

Groove width L is standard. L1 is for seals with extended heel

Assembly in split groove.
For assembly in semi open groove see p. 22

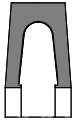
Ordering example:

E96/511 80,00-70,60-7,10-S



Note: S for standard stainless steel spring.
E for Elgiloy spring.
H for Hasteloy (on request)

F91



Pressure ↑

F93

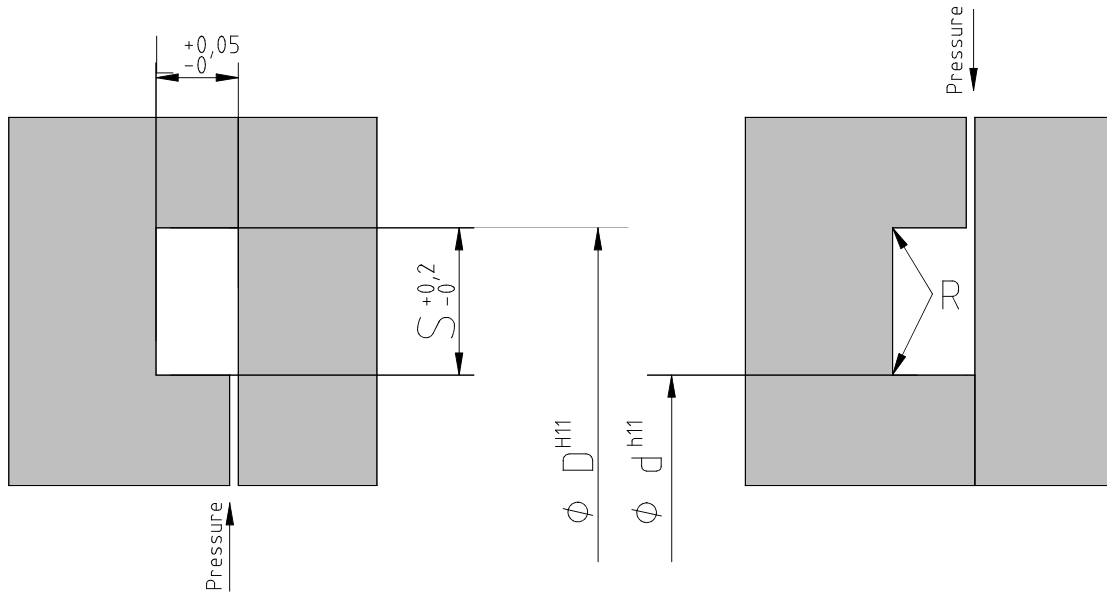


F90



Pressure ↓

F92



SECTION	HOUSING DIMENSION		F90 d min.	F91 D min.	F92 d min.	F93 D min.	R Max.	
	S	L						
A	2,4	1,45			5,00	12,00	0,40	
B	3,6	2,25	40,00	32,00	10,00	20,00	0,40	
C	4,8	3,10	45,00	45,00	15,00	30,00	0,60	
D	7,1	4,70	80,00	80,00	22,00	40,00	0,80	
E	9,5	6,10	110,00	110,00	30,00	50,00	0,80	

Ordering example:

F93/511 80,00-94,20-4,70 -S

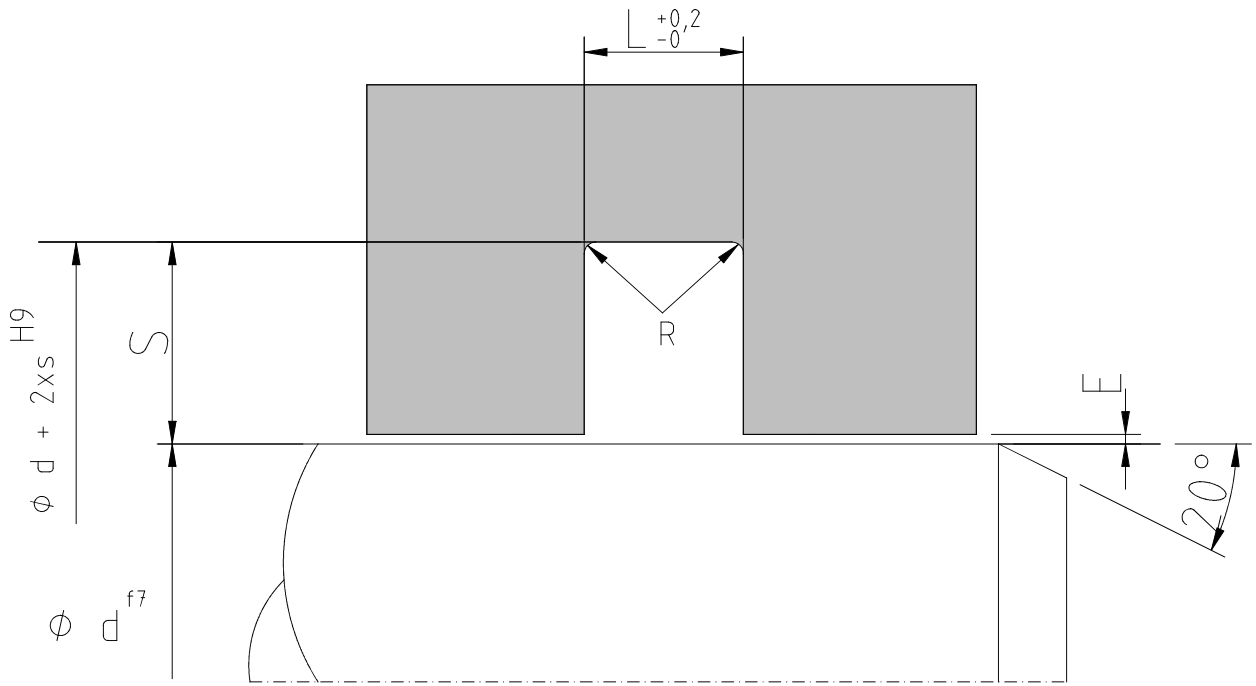
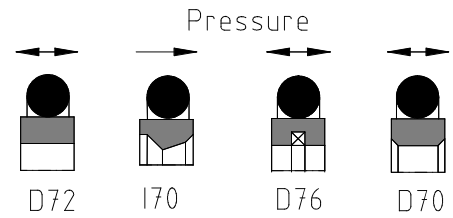
[Spring material
(see note)]

Housing dimension

Material acc. to table p. 8

Profile code

Note: S for standard stainless steel spring.
E for Elgiloy spring.
H for Hasteloy (on request)



SECTION	ϕd	S	L	MAXIMUM GAP E		O-RING	R max.
				0-200 bar	200-400 bar		
A	4 - 7,9	2,45	2,20	0,40	0,20	1,78	0,4
B	8-18,9	3,75	3,20	0,50	0,30	2,62	0,6
C	19-37,9	5,50	4,20	0,50	0,30	3,53	0,8
D	38-199,9	7,75	6,30	0,60	0,40	5,33	1,3
E	200-255,9	10,50	8,10	0,70	0,50	6,99	1,5
F	256-649,9	12,25	8,10	0,70	0,50	6,99	1,5

ϕd is recommended standard diameter range

Any section can be ordered different from standard diameter range

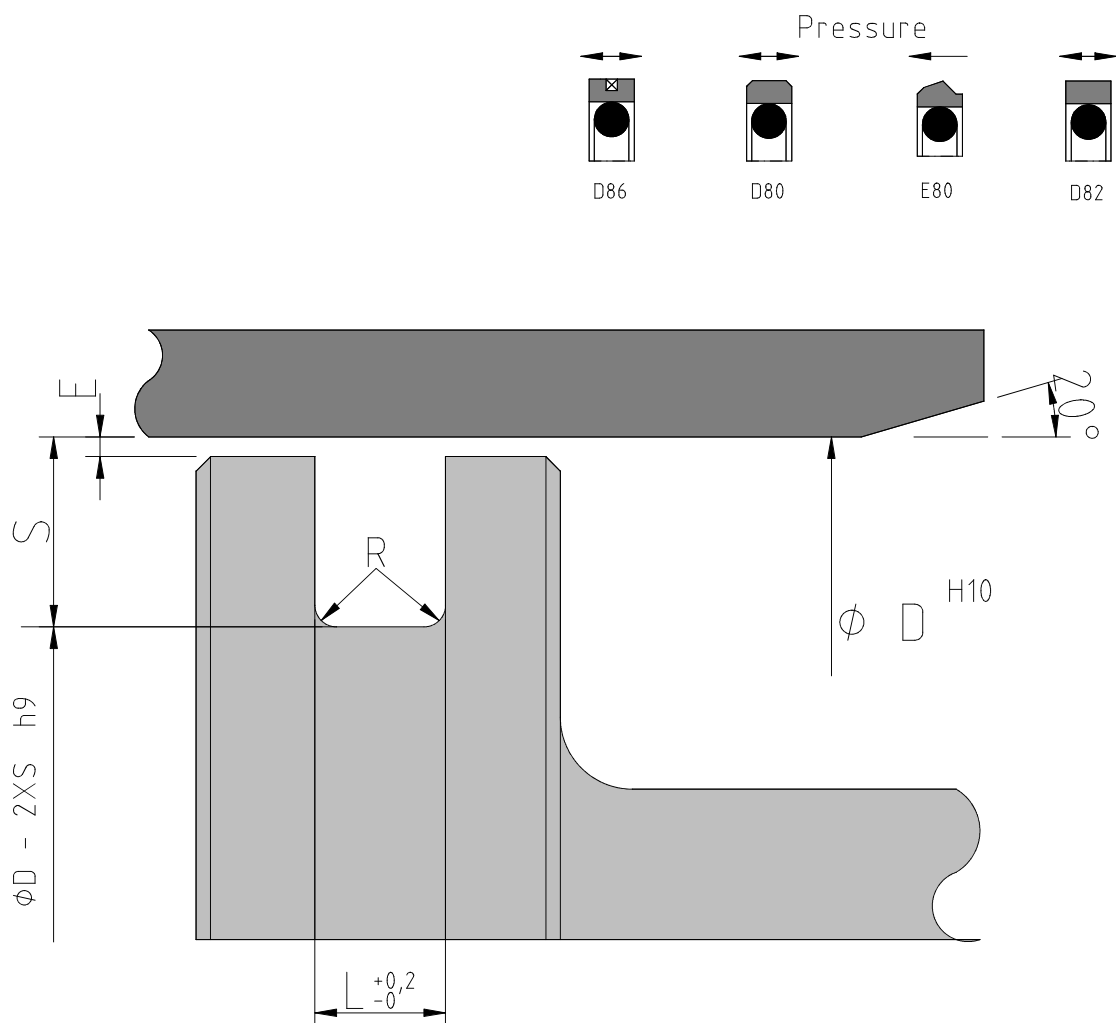
Ordering example:

D70/514 80,00-95,50-6,30

Housing dimension

Material acc. to table p. 8

Profile code



SECTION	ϕ D	S	L	MAXIMUM GAP E		O-RING	R max.
				0-200 bar	200-400 bar		
A	8-14,9	2,45	2,20	0,40	0,20	1,78	0,4
B	15-39,9	3,75	3,20	0,50	0,30	2,62	0,6
C	40-79,9	5,50	4,20	0,50	0,30	3,53	0,8
D	80-132,9	7,75	6,30	0,60	0,40	5,33	1,3
E	133-329,9	10,50	8,10	0,70	0,50	6,99	1,5
F	330-669,9	12,25	8,10	0,70	0,50	6,99	1,5

ϕ d is recommended standard diameter range

Any section can be ordered different from standard diameter range

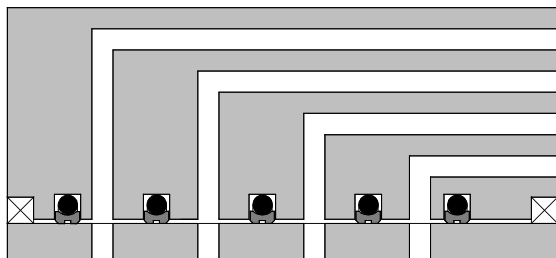
Ordering example:

D80/514 80,00-64,50-6,30

Housing dimension

Material acc. to table p. 8

Profile code



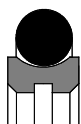
Example.

Double acting seal for slow turning applications such as swivel joints, rotary distributors etc.

Velocity: up to 1 m/sec.

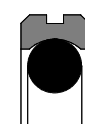
$P \times V < 40$ (pressure x velocity)

Pressure

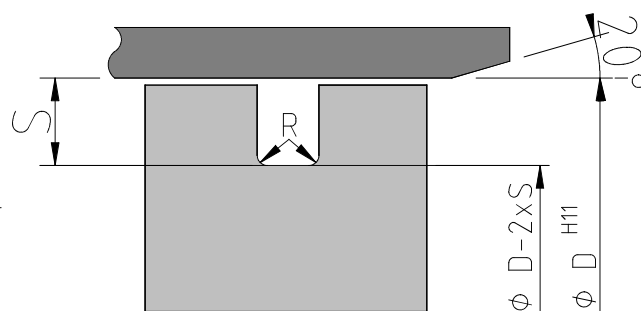
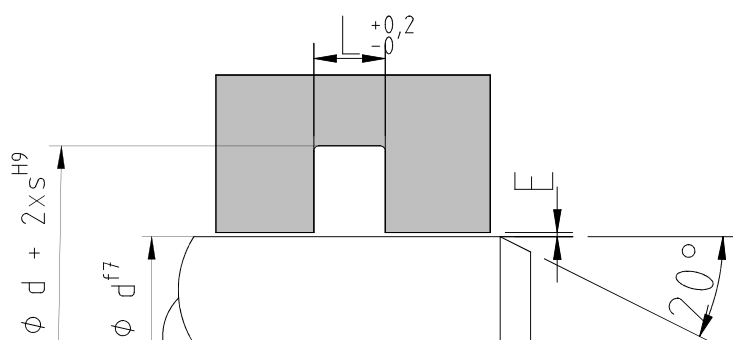


D74

Pressure



D84



SECTION	ϕd TYPE D74	ϕD TYPE D84	S	L	MAXIMUM GAP E		O-RING	R max.
					0-200 bar	200-400 bar		
A	6 - 18,9	8 - 39,9	2,45	2,20	0,40	0,20	1,78	0,4
B	19 - 37,9	40 - 79,9	3,75	3,20	0,50	0,30	2,62	0,6
C	38 - 199,9	80 - 132,9	5,50	4,20	0,50	0,30	3,53	0,8
D	200 - 255,9	133 - 329,9	7,75	6,30	0,60	0,40	5,33	1,3
E	256 - 649,9	330 - 669,9	10,50	8,10	0,70	0,50	6,99	1,5
F	650 - 999,9	670 - 999,9	12,25	8,10	0,70	0,50	6,99	1,5

ϕd is recommended standard diameter range

Any section can be ordered different from standard diameter range.

D84 is not recommended for new design

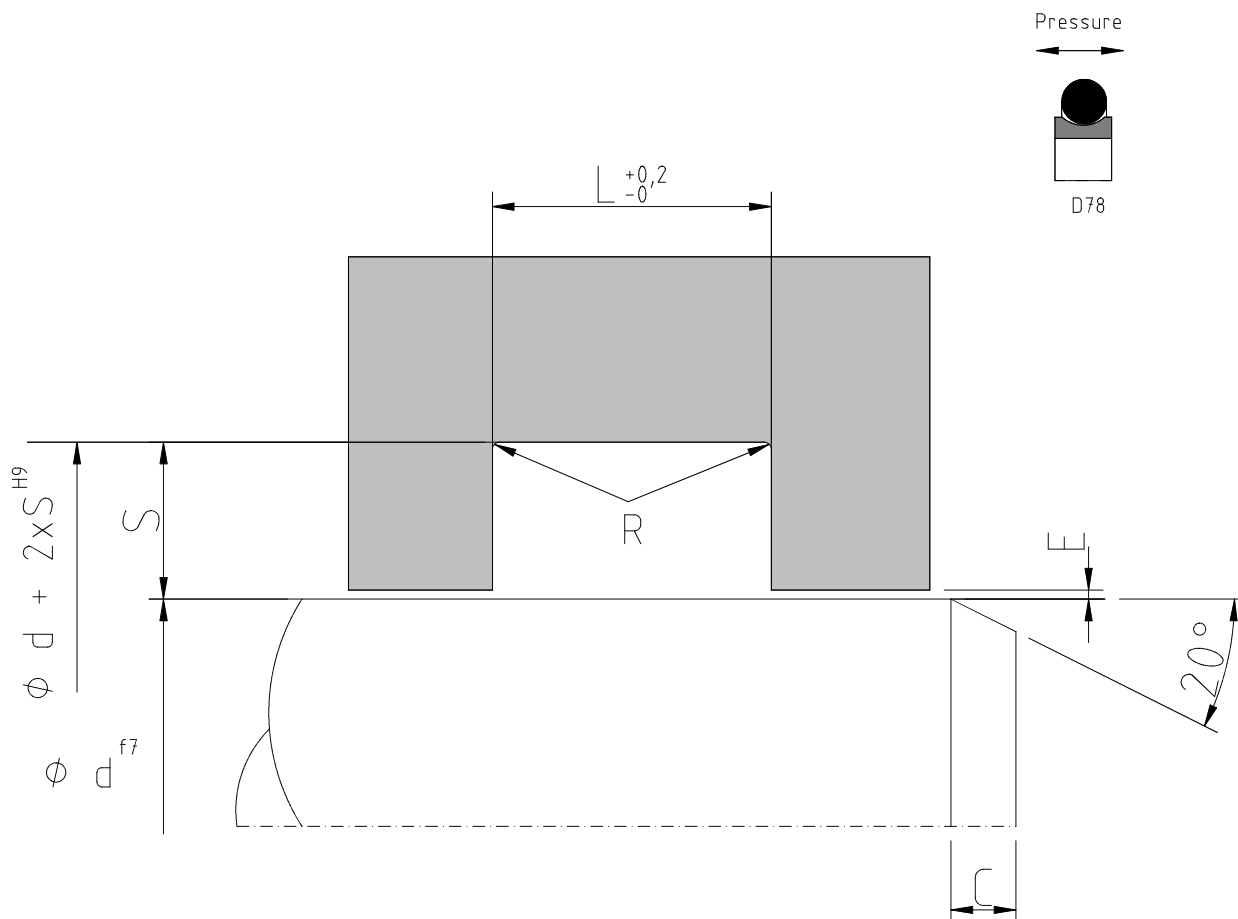
Ordering example:

D74/510 40,00-51,00-4,20

— Housing dimension

— Material acc. to table p. 8

— Profile code



SECTION	ϕd	S	L	L1	L2	O-RING	R max.	E max.	C
A	4 - 9,9	1,45	2,40	3,80	5,30	1,78	0,4	0,08	2,50
B	10 - 19,9	2,25	3,60	4,60	6,20	2,62	0,5	0,10	2,70
C	20 - 39,9	3,10	4,80	5,70	7,70	3,53	0,6	0,12	2,90
D	40 - 119,9	4,70	7,10	8,50	10,80	5,33	0,7	0,15	4,30
E	120 - 400,9	6,10	9,50	11,20	14,70	6,99	0,8	0,15	6,00
F	4 - 19,9	2,00	3,20	4,60	6,00	2,40	0,5	0,08	2,70
K	20 - 45,9	2,50	4,00	5,40	6,80	3,00	1,0	0,10	2,90
L	46 - 145,9	5,00	7,50	9,30	11,10	5,70	1,0	0,12	4,50
M	146 - 250,9	7,50	11,00	13,20	15,40	8,40	1,0	0,15	7,00

ϕd is recommended standard diameter range

Any section can be ordered different from standard diameter range

Groove width L is standard. L1 is for existing O-ring groove with 1 back-up ring

L2 is for existing O-ring groove with 2 back-up rings

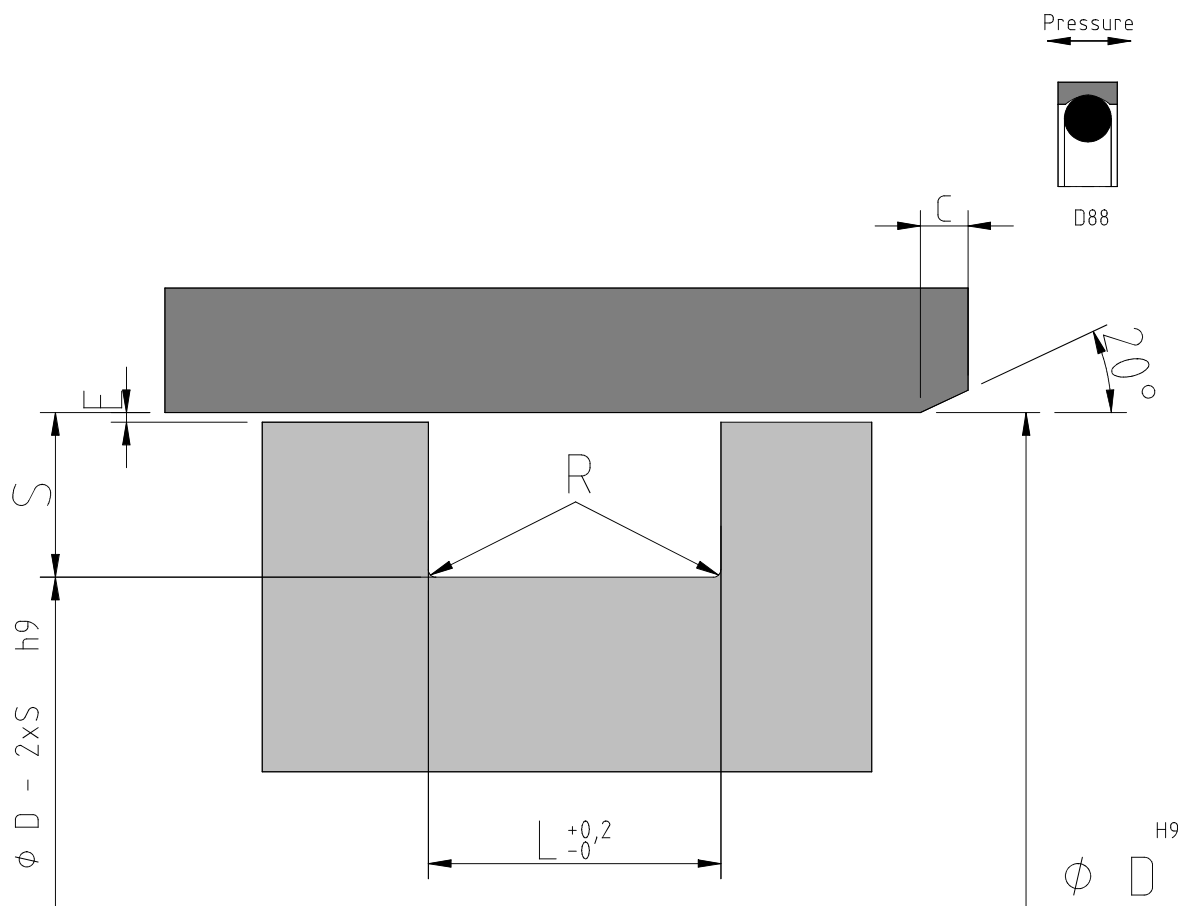
Ordering example:

D78/501 80,00-89,40-7,10

— Housing dimension

— Material acc. to table p. 8

— Profile code



SECTION	ϕ D	S	L	L1	L2	O-RING	R max.	E	C
A	8 - 13,9	1,45	2,40	3,80	5,30	1,78	0,4	0,08	2,50
B	14 - 24,9	2,25	3,60	4,60	6,20	2,62	0,5	0,10	2,70
C	25-45,9	3,10	4,80	5,70	7,70	3,53	0,6	0,12	2,90
D	46-124,9	4,70	7,10	8,50	10,80	5,33	0,7	0,15	4,30
E	125-400,9	6,10	9,50	11,20	14,70	6,99	0,8	0,15	6,00
F	8 - 24,9	2,00	3,20	4,60	6,00	2,40	0,5	0,08	2,70
K	25 - 54,9	2,50	4,00	5,40	6,80	3,00	1,0	0,10	2,90
L	55-159,9	5,00	7,50	9,30	11,10	5,70	1,0	0,12	4,50
M	160-265,9	7,50	11,00	13,20	15,40	8,40	1,0	0,15	7,00

ϕ D is recommended standard diameter range

Any section can be ordered different from standard diameter range

Groove width L is standard. L1 is for existing O-ring groove with 1 back-up ring
L2 is for existing O-ring groove with 2 back-up rings

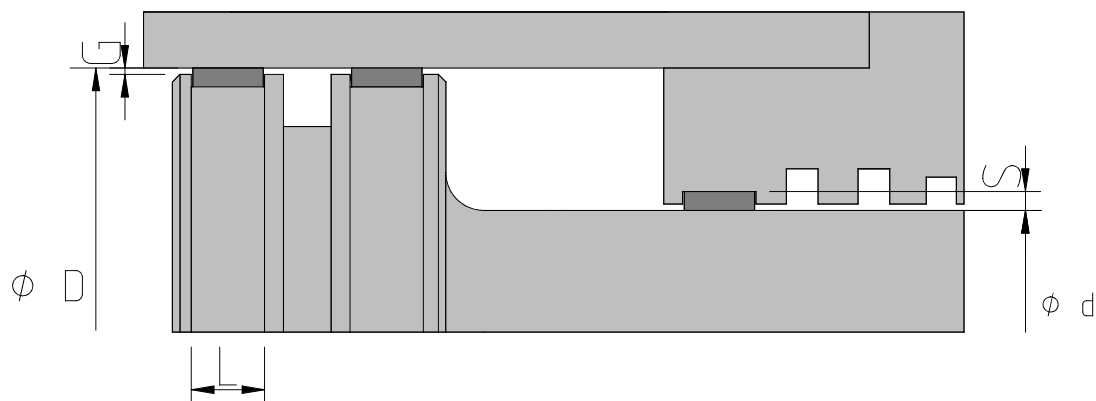
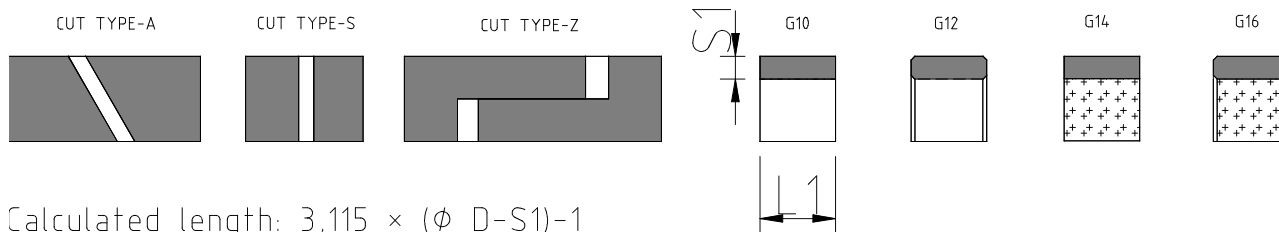
Ordering example:

D88/501 80,00-70,60-7,10

Housing dimension

Material acc. to table p. 8

Profile code



SIZE	S	$L^{+0,2}_{-0}$	S1	L1	ϕD H10	ϕd h9	R max.	G
15-032	1,5	3,2	1,5	3,0	$\phi d + 3$	$\phi d - 3$	0,3	See gap for corresponding seal
15-063	1,5	6,3	1,5	6,1	$\phi d + 3$	$\phi d + 3$	0,3	
16-025	1,55	2,5	1,55	2,4	$\phi d + 3,1$	$\phi d + 3,1$	0,3	
16-040	1,55	4,0	1,55	3,9	$\phi d + 3,1$	$\phi d + 3,1$	0,3	
20-042	2,0	4,2	2,0	4,0	$\phi d + 4,0$	$\phi d + 4,0$	0,3	
20-063	2,0	6,3	2,0	6,1	$\phi d + 4,0$	$\phi d + 4,0$	0,3	
20-081	2,0	8,1	2,0	7,9	$\phi d + 4,0$	$\phi d + 4,0$	0,3	
20-097	2,0	9,7	2,0	9,5	$\phi d + 4,0$	$\phi d + 4,0$	0,3	
20-150	2,0	15,0	2,0	14,8	$\phi d + 4,0$	$\phi d + 4,0$	0,3	
25-042	2,5	4,2	2,5	4,0	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-056	2,5	5,5	2,5	6,1	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-063	2,5	6,3	2,5	6,1	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-081	2,5	8,1	2,5	7,9	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-097	2,5	9,7	2,5	9,5	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-150	2,5	15,0	2,5	14,8	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-200	2,5	20,0	2,5	19,5	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-250	2,5	25,0	2,5	24,5	$\phi d + 5,0$	$\phi d + 5,0$	0,3	
25-300	2,5	30,0	2,5	29,5	$\phi d + 5,0$	$\phi d + 5,0$	0,3	

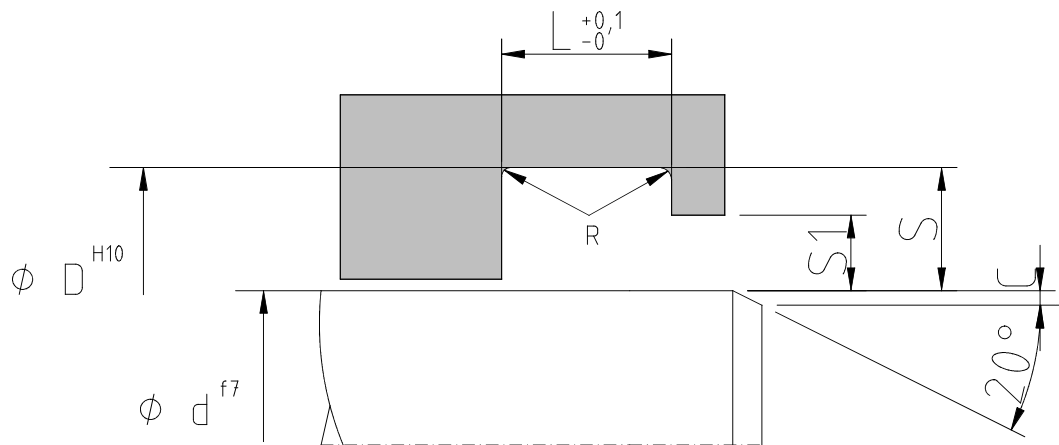
Other sizes is available on request

Ordering example in pieces
G10/514 80,00-85,00-9,7-A

— Groove dimension + cut type
— Material acc. to table p. 8
— Profile code

Ordering example by the meter
G10/514 25-097

— Groove dimension
— Material acc. to table p. 8
— Profile code



W54

SECTION	HOUSING DIMENSION			d min.	ϕD	C Min.	R Max.	O-RING
	S	L	S1					
A	2,40	3,70	1,35	6,00	$\phi d + 4,80$	0,75	0,40	1,78
B	3,40	5,00	1,75	12,00	$\phi d + 6,80$	1,00	0,40	2,62
C	4,40	6,00	2,00	65,00	$\phi d + 8,80$	1,30	0,60	3,53
D	6,10	8,40	2,25	250,00	$\phi d + 12,20$	2,00	0,80	5,33
E	8,00	11,00	2,60	420,00	$\phi d + 16,00$	2,50	1,00	7,00
	10,00	14,00	3,30	650,00	$\phi d + 20,00$	2,80	1,30	8,40



W52

SECTION	HOUSING DIMENSION			d min.	ϕD	C Min.	R Max.	O-RING
	S	L	S1					
A	2,40	3,70	0,75	6,00	$\phi d + 4,80$	0,75	0,40	1,78
B	3,40	5,00	0,75	12,00	$\phi d + 6,80$	1,00	0,40	2,62
C	4,40	6,00	1,00	65,00	$\phi d + 8,80$	1,30	0,60	3,53
D	6,10	8,40	1,00	250,00	$\phi d + 12,20$	2,00	0,80	5,33
E	8,00	11,00	1,25	420,00	$\phi d + 16,00$	2,50	1,00	7,00
	10,00	14,00	1,25	650,00	$\phi d + 20,00$	2,80	1,30	8,40



W50

SECTION	HOUSING DIMENSION			d min.	ϕD	C Min.	R Max.	O-RING
	S	L	S1					
A	3,80	4,20	0,50	8,00	$\phi d + 7,60$	1,00	0,40	2,62
B	4,40	6,30	0,75	40,00	$\phi d + 8,80$	1,00	0,40	2,62
C	6,10	8,10	1,00	70,00	$\phi d + 12,20$	1,30	0,60	3,53
D	8,00	9,50	1,25	140,00	$\phi d + 16,00$	2,00	0,80	5,33
E	12,00	14,00	1,25	400,00	$\phi d + 12,00$	2,50	1,00	7,00
	14,00	16,00	1,75	650,00	$\phi d + 28,00$	2,80	1,30	8,40

ϕd is recommended standard diameter range

Any section can be ordered different from standard diameter range

Ordering example:

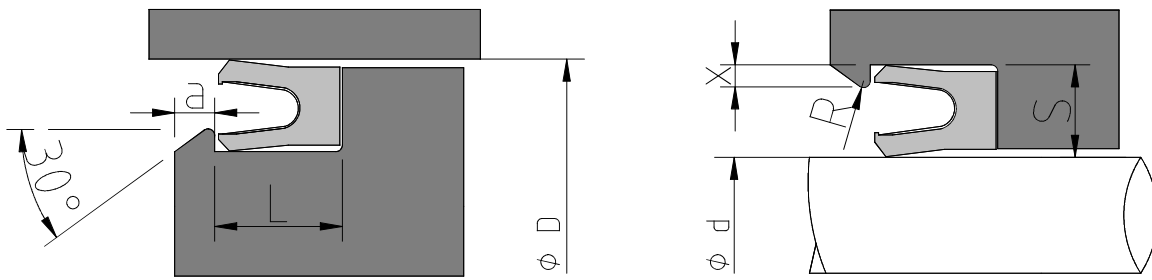
W52/514 80,00-88,80-6,00

— Housing dimension

— Material acc. to table p. 8

— Profile code

Groove dimension for M-FLEX, snap-in design

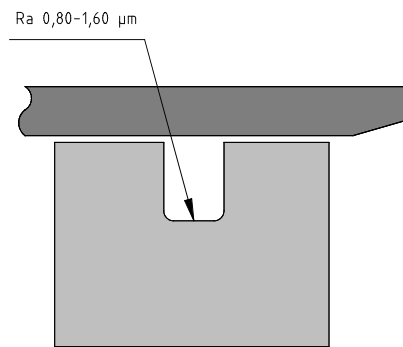
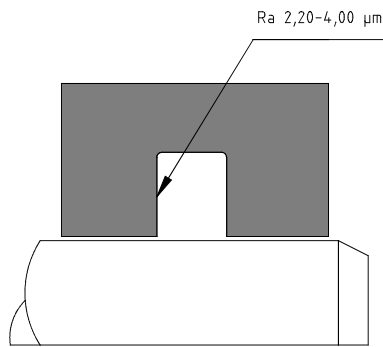


Profile	GROOVE DIMENSION		ϕ d min.	ϕ D min.	X +0,1	R	a
	S	L					
A	1,45	2,20	12,00	15,00	0,50	0,40	2,00
B	2,25	3,60	20,00	21,00	0,60	0,40	2,00
C	3,10	4,80	30,00	25,00	0,70	0,60	2,50
D	4,70	7,10	40,00	30,00	0,90	0,80	3,00
E	6,10	9,50	60,00	50,00	0,90	0,80	3,00

Recommended surface finish for dynamic and static surfaces

Media	Static	Dynamic	Rotary
Low molecular gases and fluids Fluids with low surface tension Low temperature	$Ra \leq 0,3$ $Rt \leq 1,2$	$Ra \leq 0,2$ $Rt \leq 0,8$	$Ra \leq 0,1$ $Rt \leq 0,4$
Low viscosity fluids High molecular gases Air and natural gas	$Ra \leq 0,6$ $Rt \leq 2,4$	$Ra \leq 0,3$ $Rt \leq 1,2$	$Ra \leq 0,2$ $Rt \leq 0,8$
Normal and high viscosity fluids Water, oils and phosphate esters	$Ra \leq 0,8$ $Rt \leq 3,2$	$Ra \leq 0,4$ $Rt \leq 1,6$	$Ra \leq 0,2$ $Rt \leq 0,8$

Surface roughness for static surfaces on O-ring activated seals



Determination of O-ring inside diameter.

Type: D80/D82/D84/D88/E80:

Nominal ϕ d +3% / -5%

Type: D78:

Nominal ϕ d+1mm +3% / -5%

Type: D70/D72/D74/I70

section A: ϕ d+2,0mm +3% / -5%

section B: ϕ d+3,4mm +3% / -5%

section C: ϕ d+5,1mm +3% / -5%

section D: ϕ d+6,9mm +3% / -5%

section E: ϕ d+9,5mm +3% / -5%

section F: ϕ d+13 mm +3% / -5%

Type: W50/W52/W54

section A: ϕ d+2,0mm +3% / -5%

section B: ϕ d+3,5mm +3% / -5%



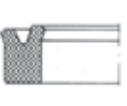
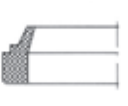
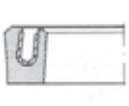


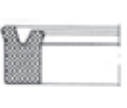
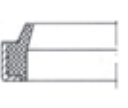


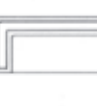
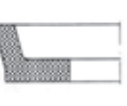
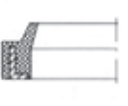


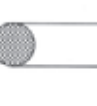
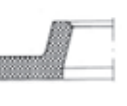
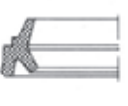


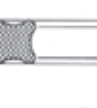
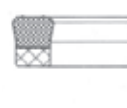
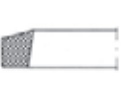



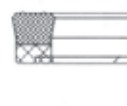





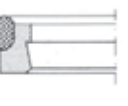
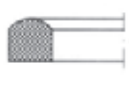


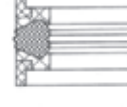
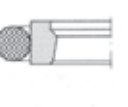
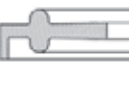


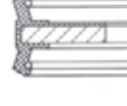
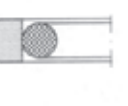








section C: ϕ d+4,0mm +3% / -5%

section D: ϕ d+5,0mm +3% / -5%

section E: ϕ d+6,0mm +3% / -5%

Working temperature with NBR: -30°C to +100°C

Working temperature with FPM: -20°C to +200°C

	Type A+AI		Type BP		E01-02		W07		M Flex™ E90
	Type B+BI		Type DR		I01-02		W30		M Guide™
	Type C+CI		BD		E41		W35		DO
	Type AE		OR		I41		W20		DOC
	Type AS+ASI		X		S50		W10		CIRCLIP J
	Type BS+BSI		VA		I52		W34		CIRCLIP A
	Type CS+CSI		VS		S64-66		M Wipe™ W50		UNP UNION
	Type ADUO		VE		D16		M Step™ I70		UNP CLAMP
	Type AUF		VL		D91		M Glide™ D80		
	Type BUF		VRB		D90		M Turn™ D74		
	Type ATS		S01-02		W01		M Flex™ I99		

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