

### Industries Served

Agriculture  
Chemical  
Food  
Marine  
Petroleum  
Pharmaceutical

### Applications

- Suitable for general application and for slightly corrosive chemical products.
- Water containing oil and slightly diluted acids and all applications that call for an elastomer bellows seal for secondary containment.

### Operating conditions

- **Temperature :**  
-40°C to +180°C  
depending on material choice
- **Pressure :**  
Up to 15 bar (NAP).  
Up to 20 bar (NAR).
- **Speed :**  
Up to 15 m/s.
- **Diameter :**  
Ø 10 to 70mm  
Conform to DIN 24960, NFE 29991,  
ISO 3069.
- **Seats**  
Interchangeable compatible seats :  
IN Type seats.

### Benefits

#### ▪ Positive drive

The bellows is compressed onto the shaft that prevents movement, and any premature wear of the bellows.

The NAP & NAR types have a positive drive mechanism consisting of a castellated tag system that allows free axial movements (for keeping the faces in contact, in spite of a possible axial play of the shaft) and avoids any torsional stress on the bellows.

#### ▪ Construction

One-piece construction for rapid installation.

NAR type incorporates a bellows ring that allows operation at elevated pressure and temperature.

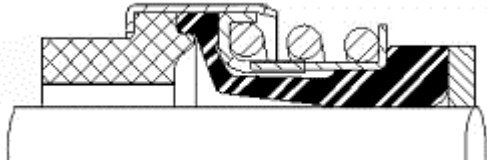
#### ▪ Reliability

Self-aligning by design :

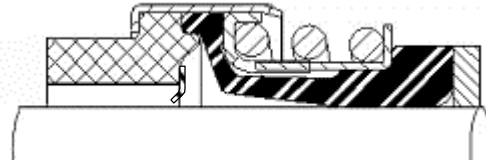
Compensation des jeux, vibrations et défauts de perpendicularité arbre/siège par la souplesse de sa membrane.

A large diameter coil spring avoids clogging.

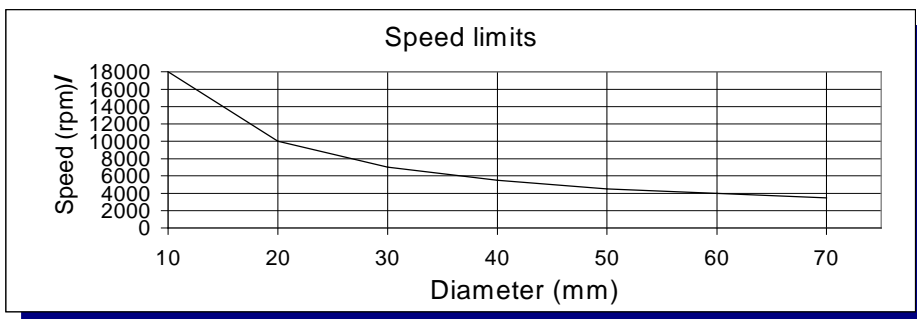
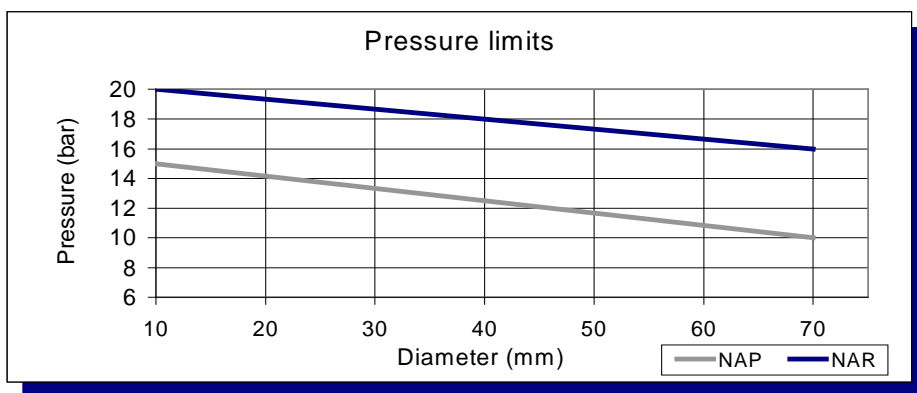
### NAP



### NAR



### Pressure and speed limits



### Coefficient de correction de résistance à la pression et la vitesse

	Selection consideration	Multiplier factor
Sealed fluid	Petrol, kerosene	x 1
	Water, Aqueous solution	x 1
	Lighter hydrocarbons	x 0.75
Face and seat materials	Carbon on silicon carbide	x 1
	Carbon on Aluminium oxide	x 0.8
	Silicon carbide on silicon carbide	x 0.6
Sealed fluid temperature	T < 80°C	x 1
	80°C < T < 120°C	x 0.8
	120°C < T < 180°C	x 0.4
Speed	< 3000 R.P.M.	x 1
	> 3000 R.P.M.	x 0.85

To know the maximum operating conditions, look at the limit curve in the abacus and multiply by the factor corresponding to the application.

### Typical arrangement for internal fitting

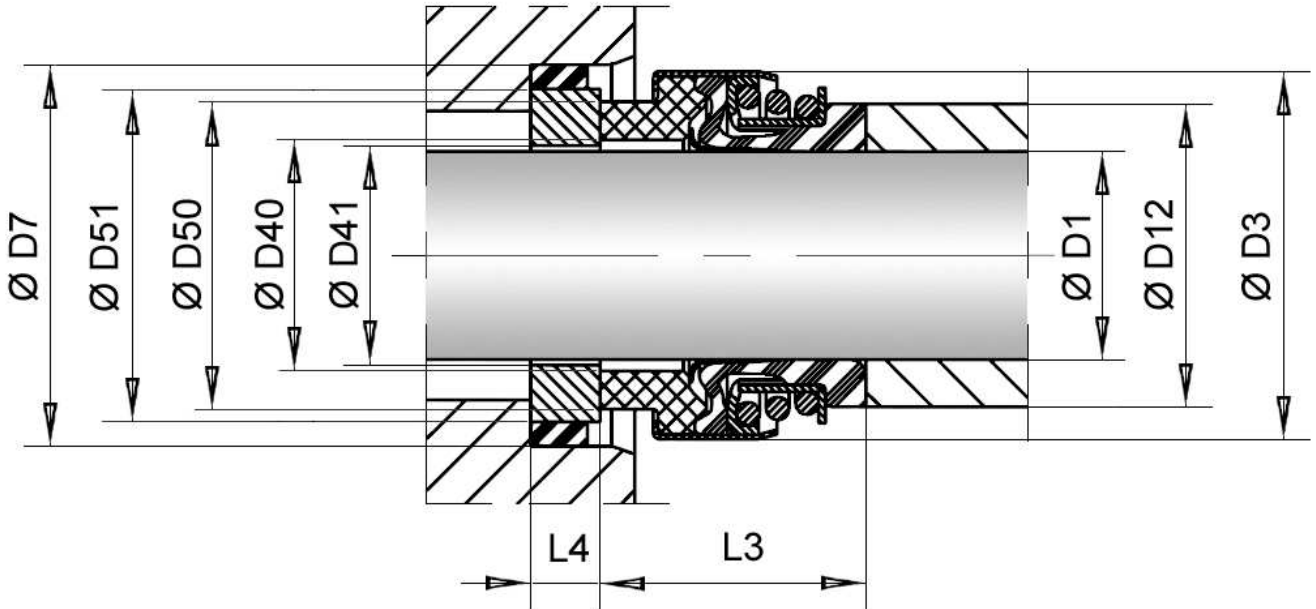
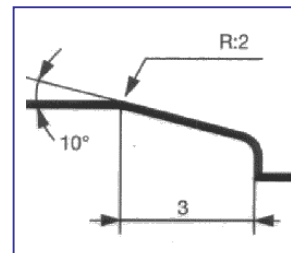
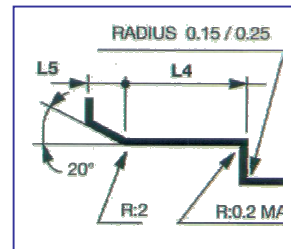


Table 1. Dimensions for NAP or NAR type seals and IN type seats (mm)

D1 shaft	Dim. Code	Seal head					Seat			
		D3	L3 ±0.5	D12 ±1	D40	D50	D7 (H8)	L4	D41	D51
10	0100	20	19	16	12	16.2	21	5	12.1	17
12	0120	22	21	18	13.8	18.2	23	6	13.7	19.3
14	0140	24	21	20	15.8	20.2	25	6	15.7	21.3
15	0150	26	21	22	17.8	22.2	27	6	17.7	23.3
16	0160	26	21	22	17.8	22.2	27	6	17.7	23.3
17	0170	32	23	26	19.8	26.6	33	6	19.7	28.1
18	0180	32	23	26	19.8	26.6	33	6	19.7	28.1
20	0200	34	23	28	21.8	28.8	35	6	21.7	30.1
22	0220	36	23	30	24.3	31	37	6	23.9	32
24	0240	38	25	32	25.8	33	39	6	25.7	34.2
25	0250	39	26	33	26.8	34	40	6	26.7	35.3
28	0280	42	26	36	29.8	37	43	6	29.7	38.2
30	0300	44	26	38	32.3	39	45	7	32.2	40.1
32	0320	46	27	40	34.3	41	48	7	33.9	43.1
35	0350	49	29	43	37.3	44	50	8	36.9	45.1
38	0380	54	32	47	40.3	48.1	56	8	39.9	51.1
40	0400	56	32	49	42.3	50.1	58	8	41.9	53.2
45	0410	61	34	54	47.3	55.1	63	8	46.9	58.1
48	0420	64	35	57	50.5	58.5	66	10	49.9	61.2
50	0420	66	36	59	52.2	60.2	70	10	51.9	65.1
55	0430	71	37	64	57.2	65.2	75	10	56.9	70.2
60	0440	80	40	71	62.2	72.2	80	12	61.9	73.3
65	0450	85	40	76	67.2	77.4	85	12	66.9	78.3
70	0460	90	47	81	72.2	82.4	92	12	71.9	85.3



Detail of end of shaft. To facilitate the fitting of the seal to the shaft, the assembly instructions must be observed.



Detail of housing for IN type seat.

**Table 2. Material Identification codes**

COMPONENTS	MATERIAL			
	Name	Material	Cyclam Code	DIN Code
<b>Face</b>	resin carbon		26	B5
	Carbographite		52 or 54	(B)
	Resin impregnated carbon		51*	B
	Silicon carbide		67	Q1
	Tungsten carbide (option)		68	U2
	Metal impregnated carbon (option)		53	A
	Glass filled PTFE (option)		23	Y1
<b>Bellows &amp; Seat ring</b>	Nitrile		01	P
	Ethylene propylene		10	E
	Viton (heat resistant)		14	V
	Viton (acid resistant) (option)		15	V1
<b>Metal components and spring</b>	Molybdenum stainless steel		31	G
<b>Seat (counterface)</b>	Molybdenum stainless steel		31	G
	Aluminium oxide 99% (option)		41(ou42)	V
	Porous Silicon Carbide		64	Q1
	Solid Silicon Carbide (option)		67	Q1
	Tungsten carbide (option)		68	U2

\* For machined carbon, this code will become 50.

