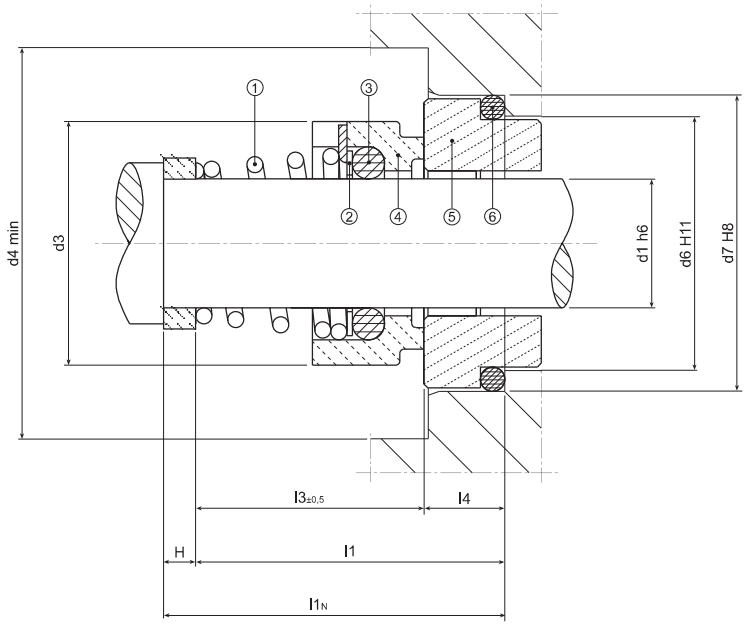
TENUTE MECCANICHE

MECHANICAL FACE SEALS

F.I.A.M.E.

In questo catalogo vengono mostrate solo le tenute meccaniche industriali per utilizzi standard;
su richiesta possiamo fornire tenute meccaniche industriali per utilizzi medi e gravosi,
tenute settore auto ed elettrodomestico.

In this catalogue we show the mechanical seals for standard duty;
on request we are able to supply also mechanical seals for medium and hi duty,
automotive and household appliances.



Tenuta singola
Senso di rotazione dipendente (fornite con molla destra standard)
Non bilanciata.
La quota L (lunghezza di lavoro) si intende
con la tenuta in posizione di lavoro (molla premuta)

Single seal
Direction of rotation dependent on (provided with standard right spring).
Unbalanced.
The dimension L (working length) is in keeping with the working position (spring down)

Limiti operativi Operational limits	
P	12 bar
V	15 m/s
T	-30 + 200°C

descrizione description	**materiali** materials				
1 Molla - Spring	Acciaio inox - Stainless steel	G	F	-	-
2 Anello - Ring	Acciaio inox - Stainless steel	G	F	-	-
3 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-
4 Anello scivolo - Slip ring	Varie opzioni - Various	B - B1	V2 - C	G - F1	U - Q X
5 Controfaccia - Counterface	Varie opzioni - Various	-	B - C4	U - Q X	-
6 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P - P	E	V	-

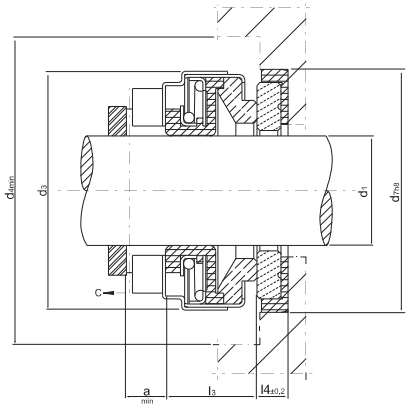
EUROPA 1 - DIN 24960

designazione - designation			d1	d3	l3	d4	d7	l4	d6	l1	l1N	H
10	20	15	10	20	15	22	21	7	17	22	40	18
12	22	18	12	22	18	24	23	7	19	25	40	15
14	24	22	14	24	22	26	25	7	21	29	40	11
16	26	23	16	26	23	28	27	7	23	30	40	10
18	32	24	18	32	24	34	33	10	27	34	45	11
20	34	25	20	34	25	36	35	10	29	35	45	10
22	36	25	22	36	25	38	37	10	31	35	45	10
24	38	27	24	38	27	40	39	10	33	37	50	13
25	39	27	25	39	27	41	40	10	34	37	50	13
28	42	29	28	42	29	44	43	10	37	39	50	11
30	44	30	30	44	30	46	45	10	39	40	50	10
32	46	30	32	46	30	48	48	10	42	40	55	15
35	49	39	35	49	39	51	50	10	44	49	55	6
38	54	42	38	54	42	58	56	13	49	55	55	-
40	56	42	40	56	42	60	58	13	51	55	55	-
43	59	47	43	59	47	63	61	13	54	60	60	-
45	61	47	45	61	47	65	63	13	56	60	60	-
48*	64	47	48	64	47	68	66	13	59	60	60	-
50	66	46	50	66	46	70	70	14	62	60	60	-
53	69	56	53	69	56	73	73	14	65	70	70	-
55*	71	56	55	71	56	75	75	14	67	70	70	-
58*	78	56	58	78	56	83	78	14	70	70	70	-
60	80	56	60	80	56	85	80	14	72	70	70	-
63*	83	56	63	83	56	88	83	14	75	70	70	-
65	85	66	65	85	66	90	85	14	77	80	80	-
68*	88	64	68	88	64	93	90	16	81	80	80	-
70	90	64	70	90	64	95	92	16	83	80	80	-

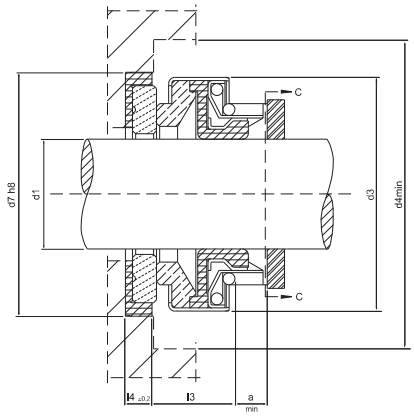
EUROPA 2

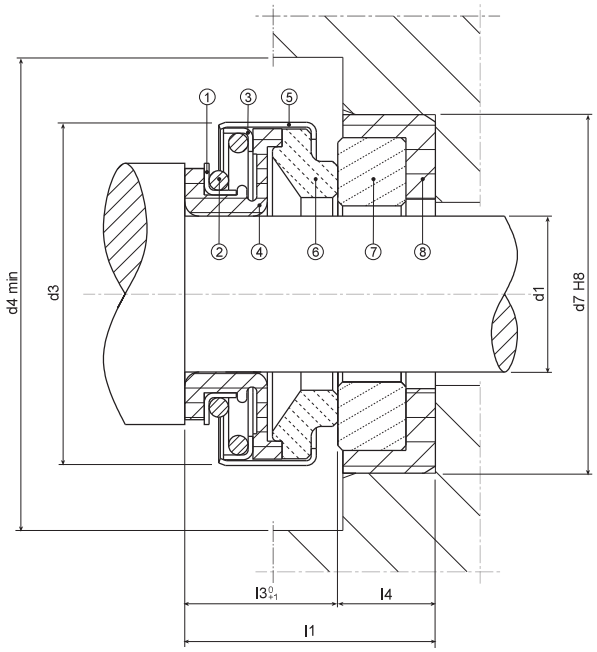
designazione - designation			d1	d3	l3	d4	d7	l4	d6	l1
10	20	15	10	20	15	21	18,1	5,5	14	20,5
11	20	18	11	20	18	24	20,6	5,5	16,5	23,5
12	22	18	12	22	18	24	20,6	5,5	16,5	23,5
13	22	22	13	22	22	27	23,1	6	19	28
14	24	22	14	24	22	27	23,1	6	19	28
15	24	22	15	24	22	31	26,9	7	21	29
16	26	23	16	26	23	31	26,9	7	21	30
17	28	23	17	28	23	31	26,9	7	21	30
18	32	24	18	32	24	36	30,9	8	25	32
19	32	25	19	32	25	36	30,9	8	25	33
20	34	25	20	34	25	36	30,9	8	25	33
22	36	25	22	36	25	41	35,4	8	30	33
23	36	27	23	36	27	41	35,4	8	30	35
24	38	27	24	38	27	41	35,4	8	30	35
25	39	27	25	39	27	45	38,2	8,5	33	35,5
28	42	29	28	42	29	50	43,3	9	38	38
30	44	30	30	44	30	50	43,3	9	38	39
32	46	30	32	46	30	50	43,3	9	38	39
35	49	39	35	49	39	60	53,5	11,5	45	50,5
38	54	39	38	54	39	68	60,5	11,5	52	50,5
40	56	39	40	56	39	68	60,5	11,5	52	50,5
43	59	41	43	59	41	68	60,5	11,5	57	52,5
44	60	41	44	60	41	72	65,5	11,5	57	52,5
45	61	41	45	61	41	72	65,5	11,5	57	52,5
48	64	41	48	64	41	72	65,5	11,5	57	52,5
50	66	45	50	66	45	80	72,5	11,5	64	56,5
55	71	47	55	71	47	80	72,5	11,5	64	58,5
60	80	49	60	80	49	87	79,3	11,5	72	60,5
65	85	51	65	85	51	92	84,5	11,5	77	62,5
70	90	51	70	90	51	97	89,5	11,5	82	62,5

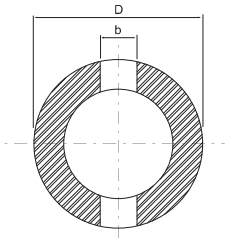
FA positive driving - Type1



FA positive driving - Type2







Tenuta singola - Senso di rotazione indipendente
Soffietto elastomero - Non bilanciata
La quota L (lunghezza di lavoro) si intende con la tenuta in posizione di lavoro (molla premuta)

Single seal - Direction of rotation independent.
Rubber bellows - Unbalanced.
The dimension L (working length) is in keeping with the working position (spring down)

Limiti operativi Operational limits	
P	6 bar
V	12 m/s
T	-30 + 200°C

descrizione description	**materiali** materials				
1 Anello colletto - Collar ring	Acciaio inox - Stainless steel	G	F	-	-
2 Molla - Spring	Acciaio inox - Stainless steel	G	F	-	-
3 Anello ritegno - Retainer ring	Acciaio inox - Stainless steel		G	F	-
4 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-
5 Contenitore - Box	Acciaio inox - Stainless steel	G	F	-	-
6 Anello di scivolo - Slip ring	Varie opzioni - Various	B1 - B2	A	-	U - Q
7 Controfaccia - Counterface	Varie opzioni - Various	V	G - F1	U - Q	X
8 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-

FA

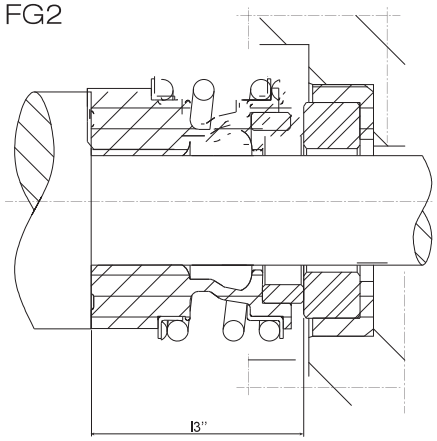
designazione - designation			d1	d3	l3	d4	d7	l4	l1
6	18	8,5	6±0,1	18	8,5±0,5	24	22	4	12,5
8	18	8,5	8±0,1	18	8,5±0,5	24	22	4	12,5
8	18	11	8±0,1	18	11±0,5	24	22	4	15
8	24	11	8±0,1	24	11	28	26	5,5/8	16,5/19
9	24	11	9±0,1	24	11	28	26	5,5/8	16,5/19
10	24	11	10±0,1	24	11	28	26	5,5/8	16,5/19
11	24	11	11±0,1	24	11	28	26	5,5/8	16,5/19
12	24	13	12±0,1	24	13	28	26	5,5/8	18,5/21
13	24	13	13±0,1	24	13	28	26	5,5/8	18,5/21
12	32	13	12±0,1	32	13	36/40	29,5/38	8	21
14	28	12,8	14±0,1	28	12,8	36	29,5/38	7,5	20,5
14	32	13	14±0,1	32	13	36/40	29,5/38	8	21
15	32	13	15±0,1	32	13	36/40	29,5/38	8	21
16	32	13	16±0,1	32	13	36/40	29,5/38	8	21
14	35	13	14±0,1	35	13	40	29,5/38	8	21
15	35	13	15±0,1	35	13	40	29,5/38	8	21
16	35	13	16±0,1	35	13	40	29,5/38	8	21
16	39	13	16±0,1	39	13	45	42	8	21
17	39	13	17±0,1	39	13	45	42	8	21
18	39	13	18±0,1	39	13	45	42	8	21
19	39	13	19±0,1	39	13	45	42	8	21
20	39	13	20±0,1	39	13	45	42	8	21
20	42	13	20±0,1	42	13	50	45	10	23
22	42	13	22±0,1	42	13	50	45	10	23
24	47	14	24±0,1	47	14	60	50	10	24
25	42	14	25±0,1	42	14	50	45	10	24
25	47	14	25±0,1	47	14	60	50	10	24
28	54	15	28±0,1	54	15	68	57	10	25
30	54	15	30±0,1	54	15	68	57	10	25
32	54	15	32±0,1	54	15	68	57	10	25
35	60	16	35±0,1	60	16	72	63	10	26
38	65	18	38±0,1	65	18	72	68	12	30
40	65	18	40±0,1	65	18	72	68	12	30
45	70	20	45±0,1	70	20	80	73	12	32
50	85	23	50±0,1	85	23	92	88	15	38
55	85	23	55±0,1	85	23	92	88	15	38
60	105	30	60±0,1	105	30	115	110	15	45
70	105	32	70±0,1	105	32	115	110	15	47

*FA POSITIVE DRIVING

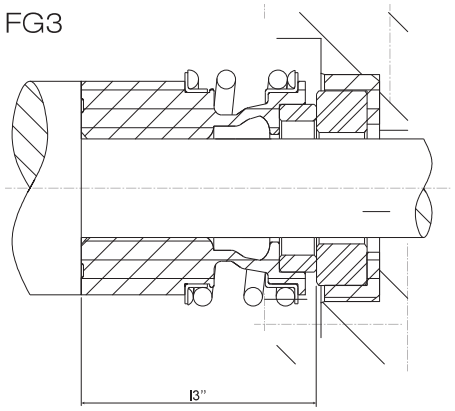
	designazione - designation			d1	d3	d	d7	l3	l4	D	a	b
TIPO 1	8	18	11	8±0,1	18	24	22	11±0,5	4	14	2,5	6
	12	32	12,8	12±0,1	32	35	38	12,8±0,5	8	24	4	10
	14	32	12,8	14±0,1	32	38	38	12,8±0,5	8	28	4	10
	15	32	12,8	15±0,1	32	38	38	12,8±0,5	8	28	4	10
	16	32	12,8	16±0,1	32	38	38	12,8±0,7	8	28	4	10
	16	39	12,8	16±0,1	39	42	42	12,8+0,7	8	32	4	10
	17	39	12,8	17±0,1	39	42	42	12,8+0,7	8	32	4	10
	18	39	12,8	18±0,1	39	42	42	12,8+0,7	8	32	4	10
	19	39	12,8	19±0,1	39	42	42	12,8+0,7	8	32	4	12
	20	39	12,8	20±0,1	39	42	42	12,8+0,7	6	32	4	12
	24	48	13,5	24±0,1	48	51	50	13,5+1	10	40	6	12
TIPO 2	25	48	13,5	25±0,1	48	51	50	13,5+1	10	40	6	12
	28	55	15	28±0,1	55	58	57	15+1	10	45	6	12
	30	55	15	30±0,1	55	58	57	15+1	10	45	6	12
	32	55	15	32±0,1	55	58	57	15+1	10	47	6	12
	35	61	16	35±0,1	61	64	63	16+1	10	52	7	12

* Disponibile a richiesta con minimo d'ordine - Available on request with minimum order quantity

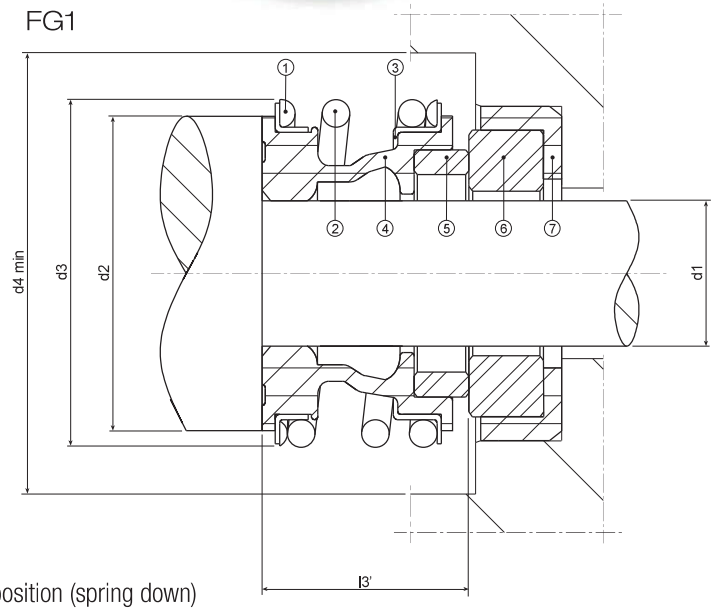
FG2



FG3



FG1

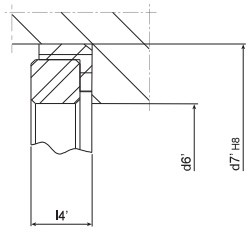


Tenuta singola - Senso di rotazione indipendente
Soffietto elastomero - Non bilanciata
La quota L (lunghezza di lavoro) si intende
con la tenuta in posizione di lavoro (molla premuta)

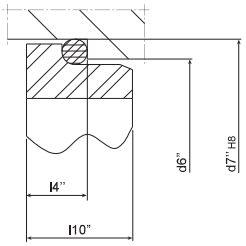
Single seal - Direction of rotation independent.
Rubber bellows - Unbalanced.
The dimension L (working length) is in keeping with the working position (spring down)

Stationary seats

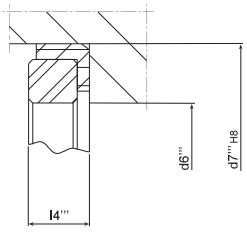
type 1



type 2



type 3



Limiti operativi Operational limits	
P	12 bar
V	10 m/s
T	-30 + 200°C

Componenti versione standard – Standard components

descrizione description	**materiali** materials				
1 Anello colletto - Collar ring	Acciaio inox - Stainless steel	G	F	-	-
2 Molla - Spring	Acciaio inox - Stainless steel	G	F	-	-
3 Anello ritegno - Retainer ring	Acciaio inox - Stainless steel	G	F	-	-
4 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-
5 Anello di scivolo - Slip ring	Varie opzioni - Various	B - B1	F	-	Q
6 Controfaccia - Counterface	Varie opzioni - Various	V	Q	-	-
7 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-

FG 1 - 2 - 3

FG 1 - 2 - 3							type1			type2				type3		
d1	d2	d3	d4	l3'	l3"	l3"'	d6'max	d7'	l4'	d6"max	d7'	l4"	l10"	d6"'max	d7"'	l4"'
10	22,5	22,5	24	14,5	25,9	33,4	14	21	6,6	17	21	6,6	9	-	-	-
12	22,5	22	26	8,3	-	-	16	23	6,6	19	23	6,6	9	18	24	3,7
12	22,5	25,5	26	15	25,9	33,4	16	23	6,6	19	23	6,6	9	18	24	3,7
14	26,5	28,5	30	17	28,4	33,4	18	25	6,6	21	25	6,6	9	22	29,5	8
15	26,5	28,5	30	17	28,4	33,4	18	25	6,6	21	25	6,6	9	22	29,5	8
16	26,5	28,5	30	17	28,4	33,4	20	27	6,6	23	27	6,6	9	22	29,5	8
17	29	32	33	19,5	-	-	26	33	7,5	27	33	7,5	10	-	-	-
18	29	32	33	19,5	30	37,5	26	33	7,5	27	33	7,5	10	-	-	-
19	33	36	38	21,5	-	-	28	35	7,5	29	35	7,5	10	-	-	-
20	33	36	38	21,5	30	37,5	28	35	7,5	29	35	7,5	10	32	42	8
22	33	36	38	21,5	30	37,5	28	37	7,5	31	37	7,5	10,5	36	45	10
24	38	41	44	22,5	32,5	42,5	32	39	7,5	33	39	7,5	10,5	36	45	10
25	38	41	44	23	32,5	42,5	32	40	7,5	34	40	7,5	10,5	36	45	10
28	44	49	50	26,5	35	42,5	35	43	7,5	37	43	7,5	10,5	-	-	-
30	44	49	50	26,5	35	42,5	35	45	7,5	39	45	7,5	10,5	49	57	10
32	46	53,5	55	27,5	3	47,5	41	48	7,5	42	48	7,5	10,5	-	-	-
33	46	53,5	55	27,5	35	47,5	41	48	7,5	42	48	7,5	10,5	-	-	-
35	50	57	59	28,5	35	47,5	43	50	7,5	44	50	7,5	10,5	-	-	-
38	53	59	61	30	36	46	49	56	9	49	56	9	11,5	-	-	-
40	55	62	64	30	36	46	50	58	9	51	58	9	11,5	-	-	-
43*	58	65,5	67	30	36	51	54	61	9	54	61	9	11,5	-	-	-
45	60	68	70	30	36	51	56	63	9	56	63	9	11,5	-	-	-
48*	63	70,5	74	30,5	36	51	59	66	9	59	66	9	11,5	-	-	-
50	65	74	77	30,5	38	50,5	62	70	9,5	62	70	9,5	11,5	-	-	-
53*	70	78,5	81	33	36,5	59	65	73	11	65	73	11	14	-	-	-
55	72	81	83	35	36,5	59	67	75	11	67	75	11	14	-	-	-
58*	75	85,5	88	37	41,5	59	70	78	11	70	78	11	14	-	-	-
60	79	88,5	91	38	41,5	59	72	80	11	72	80	11	14	-	-	-
65	84	93,5	96	40	41,5	69	77	85	11	77	85	11	14	-	-	-
68*	88	96,5	100	40	41,2	68,7	81	90	11,3	81	90	11,3	14	-	-	-
70	90	99,5	103	40	48,7	68,7	84	92	11,3	83	92	11,3	14	-	-	-
75	105	105	109	40	-	-	-	-	-	88	97	11,3	14	-	-	-
80	94	110	115	40	-	-	96	105	12	-	-	-	-	-	-	-

N.B. : Sulla serie FG la normativa DIN 29460 è rispettata solo in questi casi:
FG1 sulla sede della controfaccia
FG2 sulla sede della controfaccia + lunghezza assiale (l1k)
FG3 sulla sede della controfaccia + lunghezza assiale (l1n)
Nelle tre tipologie la normativa DIN NON E' rispettata sull'ingombro radiale della parte rotante (d3)

N.B. : In these cases of the FG series are in accordance with DIN 29460:
FG1 seat of the counterface
FG2 seat of the couterface + axial length (l1k)
FG3 seat of the couterface + axial length (l1n)
The radial dimension (d3) of the rotating part of all three types are not respected to the rules of DIN normative

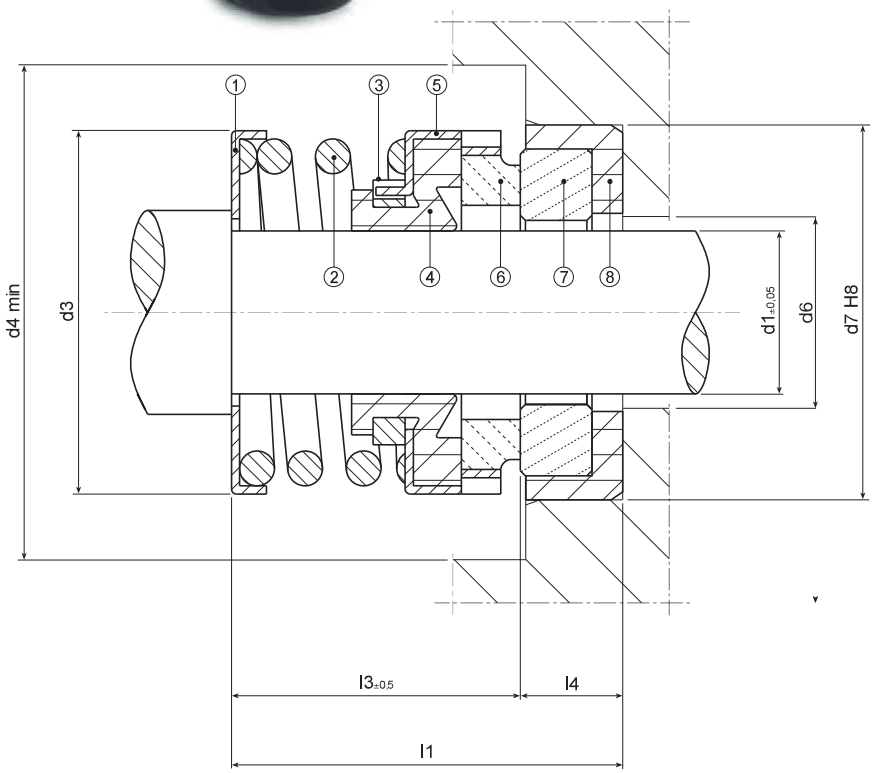
*FG in pollici / inches

d1	d1inches	d2	d3	d4	l3	d7	l4
9,52	3/8"	22	22,8	30	16,6	25,4	8
11,11	7/16"	22	22,8	30	16,6	25,4	8
12,7	1/2"	22	22,8	30	16,6	25,4	8
14,29	9/16"	26,5	28	30	17	31,75	10,3
15,87	5/8"	26,5	28	30	17	31,75	10,3
17,46	11/16"	33	36	38	19,6	34,93	10,3
19,05	3/4"	33	36	38	19,6	34,93	10,3
25,4	1"	38	41	54	20,63	41,26	11,1

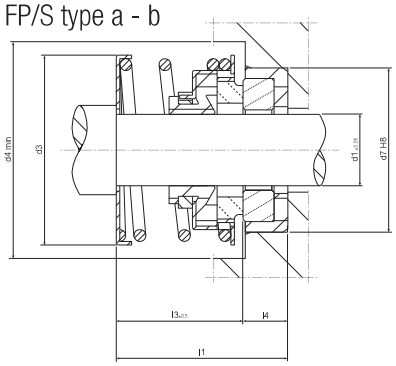
* Disponibile a richiesta con minimo d'ordine - Available on request with minimum order quantity

FP/S type a

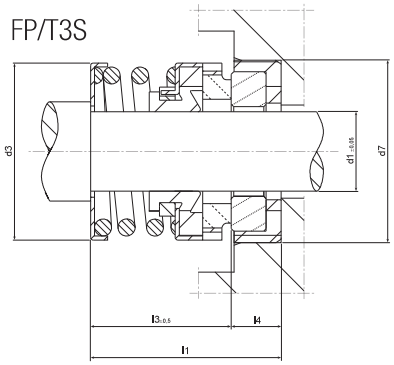
FP/S type b



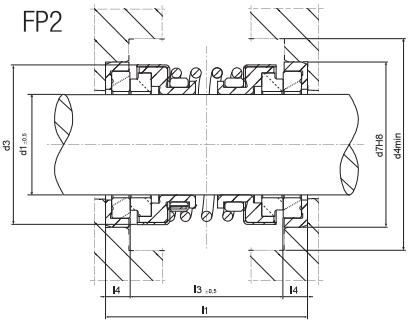
FP/S type a - b



FP/T3S



FP2



Tenuta singola - Senso di rotazione indipendente
Soffietto elastomero - Non bilanciata
La quota L (lunghezza di lavoro) si intende con la tenuta in posizione di lavoro (molla premuta)

Single seal - Direction of rotation independent.
Rubber bellows - Unbalanced.
The dimension L (working length) is in keeping with the working position (spring down)

Limiti operativi Operational limits	
P	12 bar
V	15 m/s
T	-30 + 200°C

Componenti versione standard – Standard components

descrizione - description	**materiali** - materials				
1 Anello poggiamolla - Washer	Acciaio inox - Stainless steel	G	F	-	-
2 Molla - Spring	Acciaio inox - Stainless steel	G	F	-	-
3 Anello colletto - Collar ring	Acciaio inox - Stainless steel	G	F	-	-
4 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-
5 Anello di scivolo - Slip ring	Varie opzioni - Various	B1 - B2	-	-	U - Q
6 Controfaccia - Counterface	Varie opzioni - Various	V	G-F1	U - Q	-
7 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-

FP/D DIN. 24960

designazione - designation			d1	d3	l3	d4	d7	l4	d6	l1
16	26	28	16	26	28	28	27	7	23	35
18	32	27,5	18	32	27,5	34	33	10	27	37,5
20	34	27,5	20	34	27,5	36	35	10	29	37,5
22	36	27,5	22	36	27,5	38	37	10	31	37,5
24	38	30	24	38	30	40	39	10	33	40
25	39	30	25	39	30	41	40	10	34	40
28	42	32,5	28	42	32,5	44	43	10	37	42,5
30	44	32,5	30	44	32,5	46	45	10	39	42,5
32	46	32,5	32	46	32,5	49	48	10	42	42,5
33	46	32,5	32	46	32,5	50	49	10	42	42,5
35	49	32,5	35	49	32,5	51	50	10	44	42,5
38	54	33,5	38	54	33,5	58	56	11,5	49	45
40	56	33,5	40	56	33,5	60	58	11,5	51	45
43	59	33,5	43	59	33,5	63	61	11,5	54	45
45	61	33,5	45	61	33,5	65	63	11,5	56	45
48	64	33,5	48	64	33,5	68	66	11,5	59	45
50	66	36	50	66	36	70	70	11,5	62	47,5
55	71	36	55	71	36	75	75	11,5	67	47,5

FP/S tipo - type a

designazione - designation	d1	d3	l3	d4	d7	l4	l1
FP/14a	14	31	13	33	29,5	8	21
FP/15a	15	31	13	33	29,5	8	21
FP/16a	16	31	16,5	33	29,5	8	24,5

FP/S tipo - type b

designazione - designation	d1	d3	l3	d4	d7	l4	l1
FP/10	10	22	16,5	30	23	8	24,5
FP/11	11	22	18	30	30	6	24
FP/12comp	12	22	15	26	26	5,5	20,5
FP/12	12	22	18	26	26	5,5	23,5

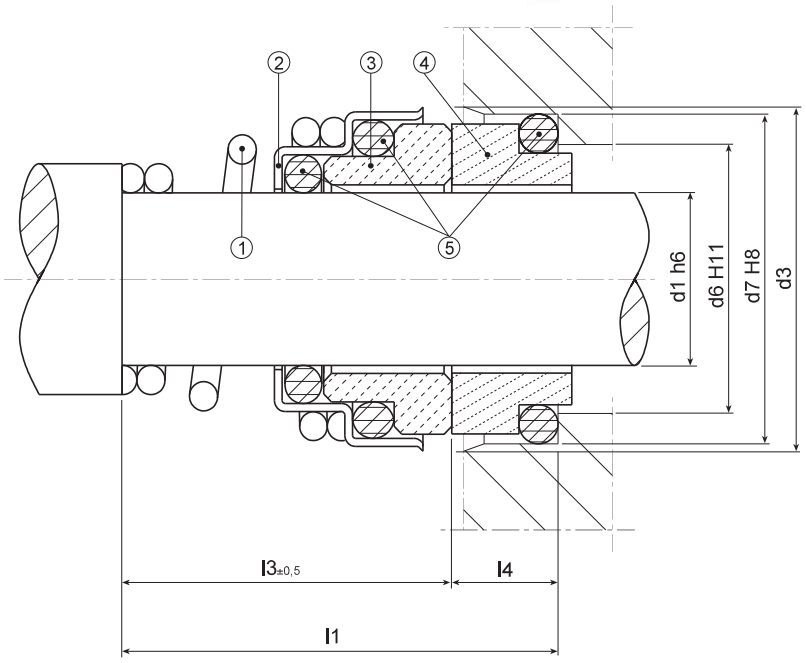
*FP/T3S

d1mm	d1inches	d3	l3	d7	l4	l1
9,53	3/8"	20,63	20,65	22,23	7,93	28,58
12,7	1/2"	23,8	20,65	25,4	7,93	28,58
15,88	5/8"	26,97	19,86	31,75	10,29	30,15
19,05	3/4"	30,15	19,86	34,93	10,29	30,15
22,23	7/8"	33,33	23,81	38,1	10,29	34,1
25,4	1"	42,85	25,4	41,26	11,1	36,5
28,58	1 1/8"	46,03	26,97	44,45	11,1	38,07
31,75	1 1/4"	49,2	26,97	47,63	11,1	38,07
34,93	1 3/8"	52,38	28,58	50,8	11,1	39,68
38,1	1 1/2"	55,55	28,58	53,98	11,1	39,68
41,28	1 5/8"	63,5	34,93	60,33	12,7	47,63
44,45	1 3/4"	66,68	34,93	63,5	12,7	47,63
47,63	1 7/8"	69,85	38,1	66,68	12,7	50,8
50,8	2"	73,03	38,1	69,85	12,7	50,8

*FP2

designazione - designation			d1	d3	l3	d4	d7	l4	l1
12	26	39	12	22	28	26	26	5,5	39
15	31	36,2	15	31	29	33	30	3,6	36,2
16	31	41,5	16	31	25,5	33	29,5	8	41,5
17	31	42	17	31	24	33	32	5	42
18	35	42,2	18	32	31	34	35	3,6	42,2
20	42	58	20	34	32	36	42	8	58
25	40	52	25	39	33	41	40	6	52
25,4	41,275	63,275	25,4	39	39	41	41,275	11	63,275
30	45	60	30	44	41,6	46	45	7,5	60
40	56	76	40	56	46	60	58	9	76

* Disponibile a richiesta con minimo d'ordine - Available on request with minimum order quantity



Tenuta singola
Senso di rotazione dipendente (fornite con molla destra standard)
Non bilanciata
La quota L (lunghezza di lavoro) si intende con la tenuta in posizione di lavoro (molla premuta)

Single seal
Direction of rotation dependent on (provided with standard right spring).
Unbalanced.
The dimension L (working length) is in keeping with the working position (spring down)

Limiti operativi Operational limits	
P	10 bar
V	20 m/s
T	-30 + 200°C

descrizione description	**materiali** materials				
1 Molla - Spring	Acciaio inox - Stainless steel	G	F	-	-
2 Contenitore - Box	Acciaio inox - Stainless steel	G	F	-	-
3 Anello scivolo - Slip ring	Allumina - Alumina	B - B1	G - F1	V	U
4 Controfaccia - Counterface	Carbone - Carbon	V	Q - U	C4 - B	X
6 Guarnizione - Gasket	Gomma - Rubber	P - P1 ♦ P3 - P4	E	V	-

SIMPLEX

designazione - designation			d1	d3	l3	d7	l4	d6	l1
10	19,5	15	10	19,5	15	18,1	5,5	14	20,5
11	22,5	18	11	22,5	18	20,6	5,5	16,5	23,5
12	22,5	18	12	22,5	18	20,3	5,5	16,5	23,5
13	24,5	22	13	24,5	22	23,1	6	19	28
14	24,5	22	14	24,5	22	23,1	6	19	28
15	29	22	15	29	22	26,9	7	21	29
16	29	23	16	29	23	26,9	7	21	30
17	29	23	17	29	23	26,9	7	21	30
18	32,5	24	18	32,5	24	30,9	8	25	32
19	32,5	25	19	32,5	25	30,9	8	25	33
20	32,5	25	20	32,5	25	30,9	8	25	33
22	37,5	25	22	37,5	25	305,4	8	30	33
24	37,5	27	24	37,5	27	35,4	8	30	35
25	40	27	25	40	27	38,2	8,5	33	35,5
28	46	29	28	46	29	43,3	9	38	38
30	46	30	30	46	30	43,3	9	38	39
32	46	30	32	46	30	43,3	9	38	39
35	50	39	35	50	39	53,5	11,5	45	50,5

*SIMPLEX DIN 24960

designazione - designation			d1	d3	l3	d7	l4	d6	l1
10	20	24	10	20	24	21	7	17	31
12	22	24	12	22	24	23	7	19	31
14	24	26,5	14	24	26,5	25	7	21	33,5
16	26	26,5	16	26	26,5	27	7	23	33,5
18	32	27,5	18	32	27,5	33	10	27	37,5
20	34	27,5	20	34	27,5	35	10	29	37,5
22	36	27,5	22	36	27,5	37	10	31	37,5
24	38	30	24	38	30	39	10	33	40
25	39	30	25	39	30	40	10	34	40
28	42	32,5	28	42	32,5	43	10	37	42,5
30	44	32,5	30	44	32,5	45	10	39	42,5
32	46	32,5	32	46	32,5	48	10	42	42,5
35	49	32,5	35	49	32,5	50	10	44	42,5

* Disponibile a richiesta con minimo d'ordine - Available on request with minimum order quantity

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world wide seals

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DE-ES-TR
Mating rings


AU
Mating rings


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Mating rings


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UK-RU-NL
Mating rings

Table of Materials DIN 24960

Primary rings		Mating rings		Secondary seals		Molle		Metal parts	
Sintered silicon carbide	Q	Ceramic	V1	NBR	P	Stainless 304	F1	Stainless 304	F1
Reaction bonded silicon carbide	Q1	Sintered silicon carbide	Q	Viton	V	Stainless 316	G	Stainless 316	G
Tungsten carbide	U	Reaction bonded silicon carbide	Q1	EPDM	E	Hastelloy	M	Hastelloy	M
Phenolic graphite	B	Tungsten carbide	U	PTFE	T	Stainless Steel	F	Stainless Steel	F
Carbon - double resin impreg	B1	Carbon - double resin impreg	B1	Aflas	K				
Carbon - Furan resin impreg	B2	Carbon - Furan resin impreg	B2						
Carbon - Antimony impreg	A	Carbon - Antimony impreg	A						
Graphite filled silicon carbide	Q4	Graphite filled silicon carbide	Q4						

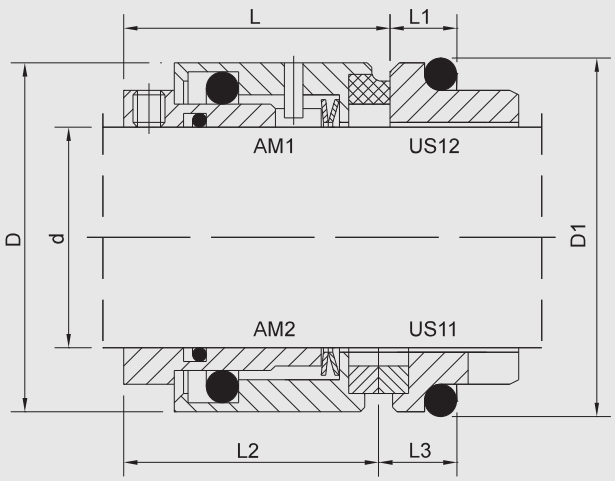
Example

Q	B1	V	M	F1
Primary Rings	Mating Rings	Secondary seals	Springs	Metal parts
Sintered silicon carbide	Carbon - double resin impreg	Viton	Hastelloy	Stainless 304

Tabella materiali in ligua italiana pagina 160

Amsterdam

Wave spring seals



d	D	AM1 L	AM2 L2	D1	US12 L1	US11 L3
18	32	30.5	28.5	33.0	7.0	9.0
20	34	30.5	28.5	35.0	7.0	9.0
22	36	30.5	28.5	37.0	7.0	9.0
24	38	33.0	31.0	39.0	7.0	9.0
25	39	33.0	31.0	40.0	7.0	9.0
28	42	35.5	33.0	43.0	7.0	9.5
30	44	35.5	33.0	45.0	7.0	9.5
32	47	35.5	33.0	48.0	7.0	9.5
33	47	35.5	33.0	48.0	7.0	9.5
35	49	35.5	33.0	50.0	7.0	9.5
38	54	37.0	34.5	56.0	8.0	10.5
40	56	37.0	34.5	58.0	8.0	10.5
43	59	37.0	34.5	61.0	8.0	10.5
45	61	37.0	34.5	63.0	8.0	10.5
48	64	37.0	34.5	66.0	8.0	10.5
50	66	38.0	35.5	70.0	9.5	12.0
53	69	38.0	35.5	73.0	9.5	12.0
55	71	38.0	35.5	75.0	9.5	12.0
58	78	42.0	39.5	78.0	10.5	13.0
60	80	42.0	39.5	80.0	10.5	13.0
63	83	42.0	39.5	83.0	10.5	13.0
65	85	42.0	39.5	85.0	10.5	13.0
68	88	41.5	39.0	90.0	11.0	13.5
70	90	48.5	46.0	92.0	11.5	14.0
75	99	48.5	46.0	97.0	11.5	14.0
80	104	48.5	46.0	105.0	11.5	14.0
85	109	48.5	46.0	110.0	11.5	14.0
90	114	52.0	49.5	115.0	13.0	15.5
95	119	52.0	49.5	120.0	13.0	15.5
100	124	52.0	49.5	125.0	13.0	15.5

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Bilanciata - Balanced
- Molla ondulata - Wave spring
- Bi-direzionale - Bi-directional
- To DIN 24960

Limiti operativi - Operating limits

P = 348 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite
Mating rings	silicon carbide, carbon graphite, tungsten carbide, ceramic
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring:

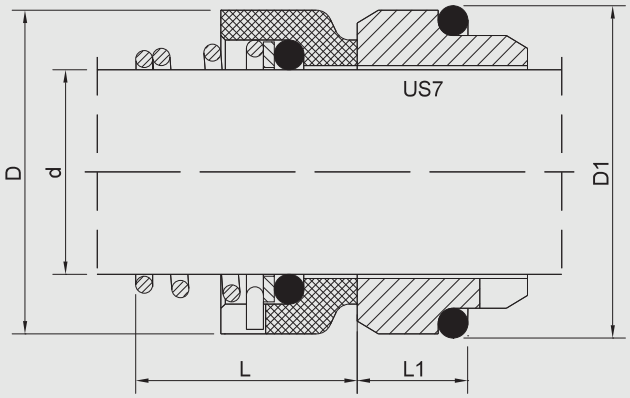
- Amsterdam 1 (AM1)
- Amsterdam 2 (AM2)

Controfaccia - Mating ring

- For AM1: US12 (to DIN 24960)
- For AM2: US11 (to DIN 24960)

Buenos Aires

Conical spring o-ring mounted seals



Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Molla conica - Conical spring
- Uni-direzionale - Uni-directional
- To DIN 24960

Limiti operativi - Operating limits

P = 145 PSI
T = -95 to 320°F
V = 49 ft/s

Description	Materials
Primary rings	carbon graphite
Mating rings	silicon carbide, staninless, ceramic
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

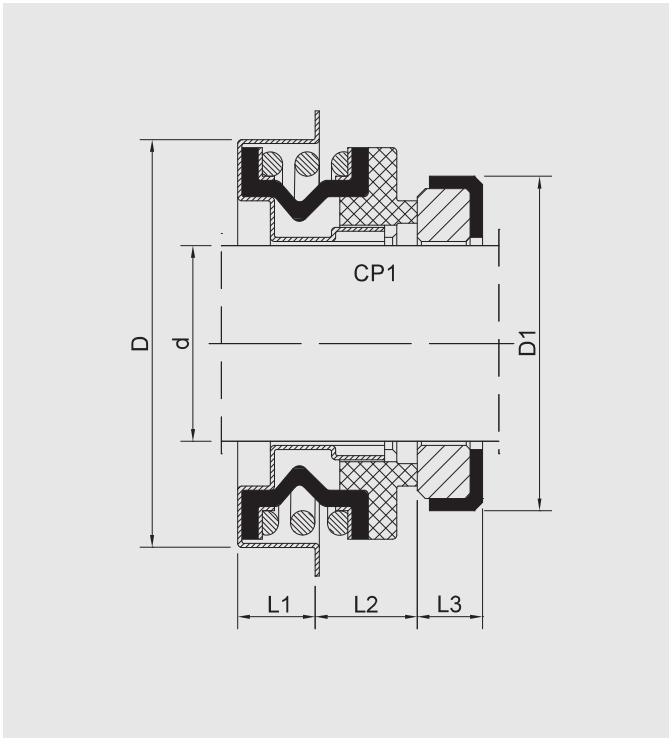
**su richiesta - upon request*

Controfaccia - Mating ring

- US7 (standard, to DIN 24960)
- US5 (to DIN 24960)
- US3

Dettagli - details pag. 153

	BA		US7	
d	D	L	D1	L1
10	20	17.5	21	10.0
12	22	17.5	23	10.0
14	25	17.5	25	10.0
15	27	18.0	27	10.0
16	27	19.5	27	10.0
18	30	20.5	33	11.5
20	32	22.0	35	11.5
22	35	23.5	37	11.5
24	38	25.0	39	11.5
25	40	26.5	40	11.5
26	41	26.5	-	-
28	43	26.5	43	11.5
30	47	26.5	45	11.5
32	48	28.5	48	11.5
35	53	28.5	50	11.5
38	56	33.5	56	14.0



Caratteristiche tecniche - Technical features

- Molla singola - Single spring
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 72 PSI
T = -95 to 320°F
V = 32 ft/s

Description	Materials
Primary rings	carbon graphite, silicon carbide, tugsten carbide
Mating rings	silicon carbide, tugsten carbide, ceramic
Secondary seals	NBR, EPDM
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

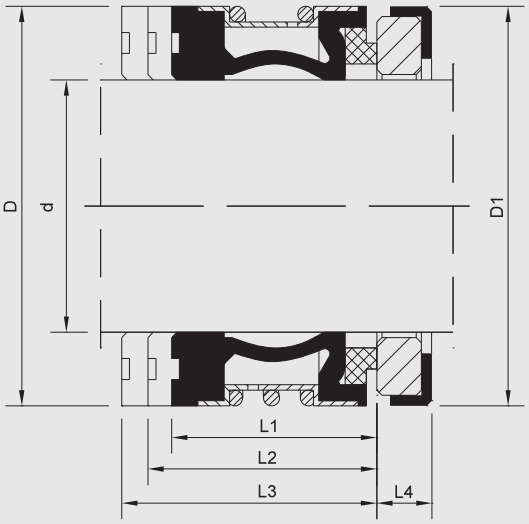
Mating ring

- BR2 (standard)

	CP			BR2	
d	D	L1	L2	D1	L3
.500	1.125	0.340	.203	1.000	.312
.625	1.437	0.340	.265	1.250	.406
.750	1.575	0.370	.235	1.375	.406
1.000	1.850	0.394	.315	1.625	.437

	CP				
d	D	L1	L2	D1	L3
20	40.0	9.5	12.0	35.0	5.0
30	52.0	10.0	12.0	48.0	8.0

Chicago
Elastomer bellows seals



Caratteristiche tecniche - Technical features

- Tenuta Singola - Single seal
- Sbilanciata - Unbalanced
- Molla singola - Single spring
- Soffietto in elastomero - Elastomer bellows
- Guida a baionetta - Bayonet drive
- To DIN 24960

Limiti operativi - Operating limits

P = 261 PSI
T = -95 to 320°F
V = 49 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite, graphite filled sic.
Mating rings	silicon carbide, ceramic, tungsten carbide
Secondary seals	Neoprene, NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

Metrica - Metric
- Chicago 1 (CG1)
- Chicago 2 (CG2)
- Chicago 3 (CG3)

Imperiale - Imperial
- Chicago 4 (CG4)
- Chicago 5 (CG5)
- Chicago 6 (CG6)

Controfaccia - Mating ring

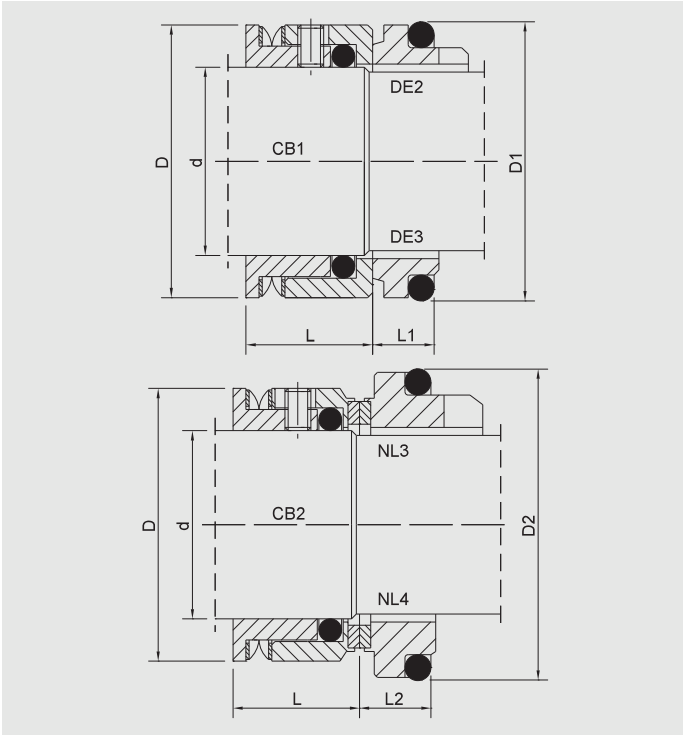
- BR2 (standard)
- BR4 (for CG1, CG2, CG3)

Dettagli - details pag. 153

		CG1	CG2	CG3	BR4				*CG4	*CG5	CG6
d	D	L1	L2	L3	D1	L4	d	D	L1	L2	L3
10	20	15	27.5	35	21	5	.500	.945	.591	.812	.656
12	22	15	26.5	34	23	6	.625	1.024	.591	.875	.718
14	24	15	29	34	25	6	.750	1.260	.787	.875	.718
15	25	15	29	34	26	6	.875	1.417	.787	.937	-
16	26	15	29	34	27	6	1.000	1.535	.787	1.000	.812
18	32	20	31.5	39	33	6	1.125	1.654	1.024	1.062	-
20	34	20	31.5	39	35	6	1.250	1.811	1.024	1.062	-
22	36	20	31.5	39	37	6	1.375	1.929	1.024	1.125	-
24	38	20	34	44	39	6	1.500	2.126	1.181	1.187	-
25	39	20	34	44	40	6	1.625	2.205	1.181	1.375	-
28	42	26	36.5	44	43	6	1.750	2.402	1.181	1.375	-
30	44	26	35.5	43	45	7	1.875	2.520	1.181	1.500	-
32	46	26	35.5	48	48	7	2.000	2.598	1.181	1.500	-
33	47	26	35.5	48	48	7	2.125	2.717	1.181	1.687	-
35	49	26	34.5	47	50	8	2.250	3.031	1.299	1.687	-
38	54	30	37	47	56	8	2.375	3.150	1.299	1.812	-
40	56	30	37	47	58	8	2.500	3.268	1.299	1.812	-
43	59	30	37	52	61	8	2.625	3.465	1.299	1.937	-
45	61	30	37	52	63	8	2.750	3.504	1.299	1.937	-
48	64	30	35	50	66	10	2.875	3.780	1.299	2.062	-
50	66	30	37.5	50	70	10	3.000	3.898	1.575	2.062	-
53	69	30	37.5	60	73	10					
55	71	30	37.5	60	75	10					
58	78	33	42.5	60	78	10					
60	80	33	4.5	58	80	12					
63	83	33	4.5	58	83	12					
65	85	33	4.5	68	85	12					
68	88	33	4.5	68	90	12					
70	90	33	48	68	92	12					
75	99	40	48	68	97	12					
80	104	40	47.5	77.5	105	12.5					
85	109	40	47.5	77.5	110	12.5					
90	114	40	52.5	77.5	115	12.5					
95	119	40	52.5	77.5	120	12.5					
100	124	40	52.5	77.5	125	12.5					

Curitiba

Compact wave spring seals



CB1-2			DE2 - DE3		NL3 - NL4	
d	D	L	D1	L1	D2	L2
10	21	18.0	18.1	5.5	21	7
12	23	18.0	20.6	5.5	23	7
14	25	18.0	23.1	6.0	25	7
15	26	19.1	26.9	7.0	27	7
16	29	19.1	26.9	7.0	27	7
18	29	19.1	30.9	8.0	33	10
19	32	19.1	30.9	8.0	35	10
20	32	19.1	30.9	8.0	35	10
22	35	19.1	35.4	8.0	37	10
24	37	19.1	35.4	8.0	39	10
25	41	19.1	38.2	8.5	40	10
28	41	19.1	43.3	9.0	43	10
30	47	19.1	43.3	9.0	45	10
32	47	19.1	43.3	9.0	48	10
33	48	19.1	53.5	11.5	48	10
35	49	19.1	53.5	11.5	50	10
38	53	21.1	60.5	11.5	56	13
40	55	21.1	60.5	11.5	58	13
43	60	21.1	60.5	11.5	61	13
45	60	21.1	65.5	11.5	63	13
48	65	21.1	65.5	11.5	66	13
50	65	21.1	72.5	11.5	70	14
53	74	22.1	72.5	11.5	73	14
55	74	22.1	72.5	11.5	75	14
58	79	25.8	79.3	11.5	78	14
60	79	25.8	79.3	11.5	80	14
63	87	25.8	84.5	11.5	83	14
65	87	25.8	84.5	11.5	85	14
68	93	25.8	89.5	11.5	90	16
70	93	25.8	89.5	11.5	92	16
75	98	25.8	94.5	11.5	97	16
80	104	25.8	99.5	11.5	105	18
85	108	25.8	105.5	13.5	110	18
90	113	25.8	111.5	13.5	115	18
95	118	25.8	116.5	13.5	120	18
100	123	25.8	119.5	13.5	125	18

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Molla protetta - Spring enclosed
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 87 PSI
T = -95 to 320°F
V = 32 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite, phenolic graphite
Mating rings	silicon carbide, ceramic, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Curitiba 1 (CB1)
- Curitiba 2 (CB2) - with face shrink fitted

Controfaccia - Mating ring

- DE3
- DE2
- NL3
- NL4
- DE1
- NL2
- NL1

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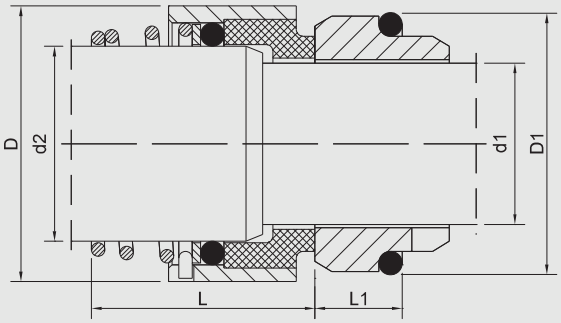
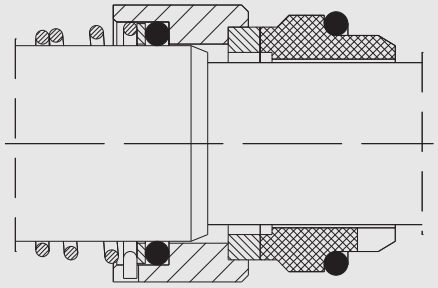
Dallas
Conical spring balanced seals



Dallas1 with US7



Dallas2 with US9

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Bilanciata - Balanced
- Molla conica - Conical spring
- Uni-direzionale - Uni-directional
- To DIN 24960

Limiti operativi - Operating limits

P = 348 PSI
T = -95 to 320°F
V = 49 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite
Mating rings	silicon carbide, ceramic, carbon graphite, stainless
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Dallas 1 (DA1)
- Dallas 2 (DA2)

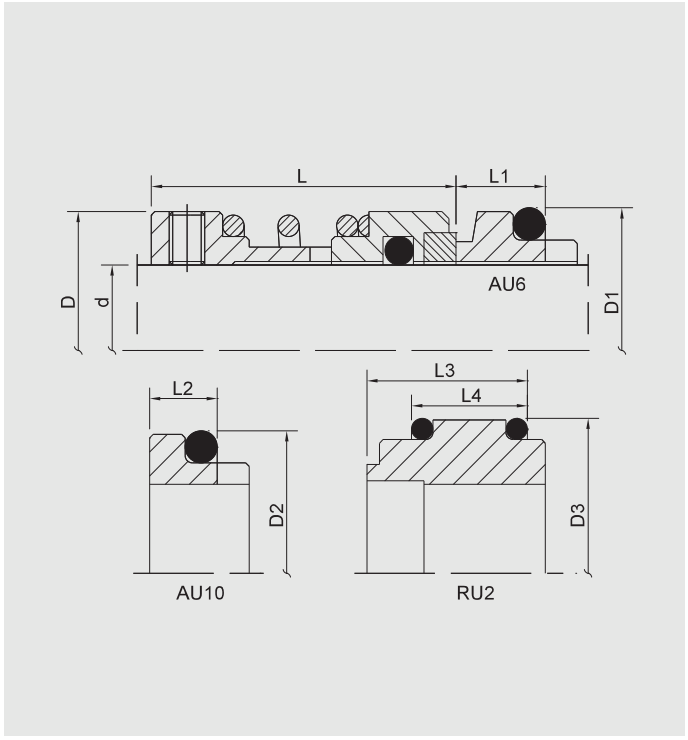
Controfaccia - Mating ring

- US7
- US9 (to DIN 24960)

		DA1 - DA2		US7 - US9	
d1	d2	D	L	D1	L1
10	14	24	25.5	21	10.0
12	16	26	26.5	23	10.0
14	18	31	29.5	25	10.0
16	20	34	31.0	27	10.0
18	22	36	32.5	33	11.5
20	24	38	32.5	35	11.5
22	26	40	32.5	37	11.5
24	28	42	32.5	39	11.5
25	30	44	33.5	40	11.5
28	33	47	35.5	43	11.5
30	35	49	35.5	45	11.5
32	38	54	39.5	48	11.5
33	38	54	39.5	48	11.5
35	40	56	43.5	50	11.5
38	43	59	46.0	56	14.0
40	45	61	48.0	58	14.0
43	48	64	51.0	61	14.0
45	50	66	55.0	63	14.0
48	53	69	55.0	66	14.0
50	55	71	58.0	70	15.0
53	58	78	60.0	73	15.0
55	60	79	60.0	75	15.0
58	63	83	60.0	78	15.0
60	65	85	60.0	80	15.0
63	68	88	60.0	83	15.0
65	70	90	61.0	85	15.0
70	75	98	63.0	92	18.0
75	80	105	68.0	97	18.0
80	85	109	68.0	105	18.2

Detroit

Single coil spring seals



		DT		AU6*		AU10*		RU2*		
d (mm)	d (inc)	D	L	D1	L1	D2	L2	D3	L3	L4
20	-	34	41	35	13	33.32	6.2	42	23	18
22	-	36	41	37	13	34.93	6.2	44	23	18
24	-	38	43	39	13	-	-	46	23	18
25	-	39	43	40	13	39.67	7.2	47	23	18
28	-	42	45	43	13	42.88	9.2	50	23	18
30	-	44	45	45	13	44.45	9.2	52	23	18
32	-	46	45	48	13	46.02	9.2	54	23	18
33	-	47	45	48	13	46.02	9.2	55	23	18
35	-	49	49	50	13	49.20	9.2	57	23	18
38	-	54	53	56	13	52.37	9.2	64	25	20
40	-	56	55	58	13	53.98	9.2	66	25	20
42	-	58	55	61	13	55.58	9.2	69	25	20
43	-	59	55	61	13	55.58	9.2	69	25	20
45	-	61	55	63	13	58.72	9.2	71	25	20
48	-	64	55	66	13	63.50	9.2	74	25	20
50	2.000	66	60	70	13	65.07	9.2	76	25	20
53	-	69	61	73	13	66.68	9.2	79	25	20
55	-	71	61	75	13	69.85	9.2	81	25	20
58	-	76	63	78	16	73.03	9.2	89	28	22
60	-	78	63	80	16	76.20	9.2	91	28	22
63	-	81	63	84	16	79.38	9.2	94	28	22
65	-	84	67	85	16	80.98	9.2	96	28	22
68	-	87	67	90	16	82.55	9.2	99	30	24
70	-	90	68	92	16	85.73	9.2	101	30	24
75	3.000	95	72	97	16	90.47	9.2	110	30	24
80	-	100	72	105	16	98.43	9.2	115	31	25
-	3.250	103	77	-	-	-	-	-	-	-
85	-	107	77	110	16	104.77	9.2	120	31	25
90	3.500	112	77	115	16	109.52	9.2	125	31	25
95	-	119	82	120	16	114.30	9.2	130	31	25
100	4.000	124	82	125	16	119.07	9.2	135	31	25

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Guida a baionetta - Bayonet drive
- To DIN 24960

Limiti operativi - Operating limits

P = 174 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide,
Mating rings	silicon carbide, carbon graphite, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Controfaccia - Mating ring

- AU6*
- AU10*
- RU2*
- AU7*
- RU3
- FR1

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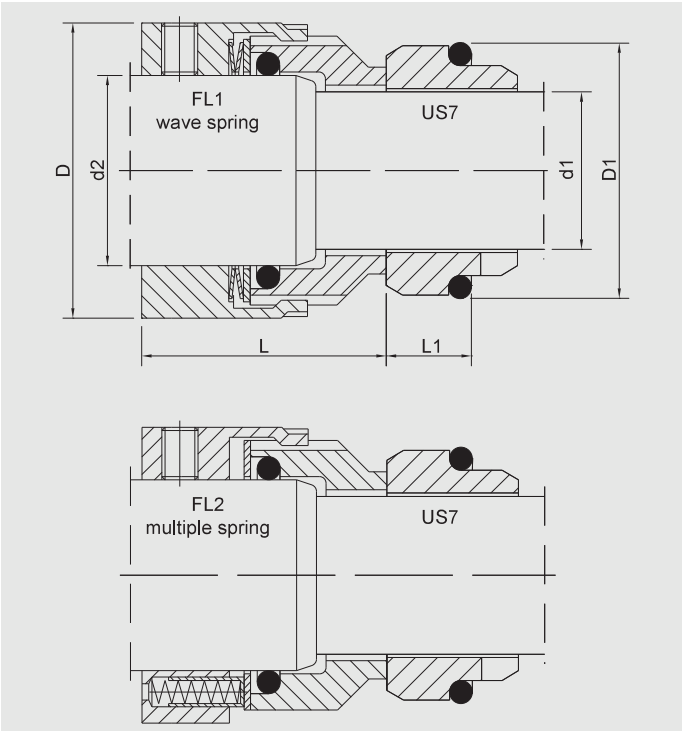
Florence

O-ring mounted balance seals



Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Molle multiple o molla ondulata - Multiple or wave spring
- Bilanciata - Balanced
- Bi-direzionale - Bi-directional
- To DIN 24960

Limiti operativi - Operating limits

P = 348 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, ceramic, carbon graphite, stainless
Mating rings	silicon carbide, carbon graphite
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Florence 1 (FL1)
- Florence 2 (FL2)

Controfaccia - Mating ring

- US7
- US9
- US8
- US3

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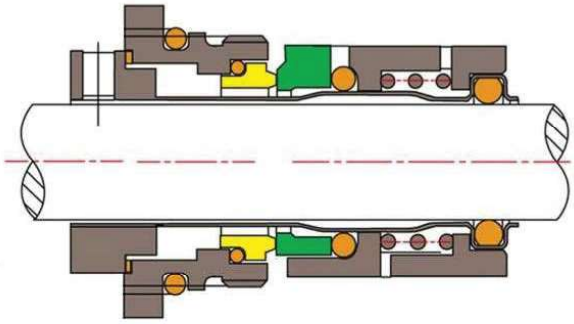
	FL1 - FL2			US7 - US9	
d1	d2	D	L	D1	L1
14	18	33	32.5	25.0	10.0
16	20	35	32.5	27.0	10.0
18	22	37	33.5	33.0	11.5
20	24	39	33.5	35.0	11.5
22	26	41	33.5	37.0	11.5
24	28	43	36.0	39.0	11.5
25	30	45	36.0	40.0	11.5
28	33	48	38.5	43.0	11.5
30	35	50	38.5	45.0	11.5
32	38	55	38.5	48.0	11.5
33	38	55	38.5	48.0	11.5
35	40	57	38.5	50.0	11.5
38	43	60	38.5	56.0	14.0
40	45	62	38.5	58.0	14.0
43	48	65	38.5	61.0	14.0
45	50	67	38.5	63.0	14.0
48	53	70	38.5	66.0	14.0
50	55	72	42.5	70.0	15.0
53	58	79	42.5	73.0	15.0
55	60	81	42.5	75.0	15.0
58	63	84	47.5	78.0	15.0
60	65	86	47.5	80.0	15.0
63	68	89	47.5	83.0	15.0
65	70	91	47.5	85.0	15.0
70	75	99	52.0	92.0	18.0
75	80	104	52.0	97.0	18.0
80	85	109	51.8	105.0	18.2
85	90	114	56.8	110.0	18.2
90	95	119	56.8	115.0	18.2
95	100	124	57.8	120.0	17.2
100	105	129	57.8	125.0	17.2

NEW

Hamburg

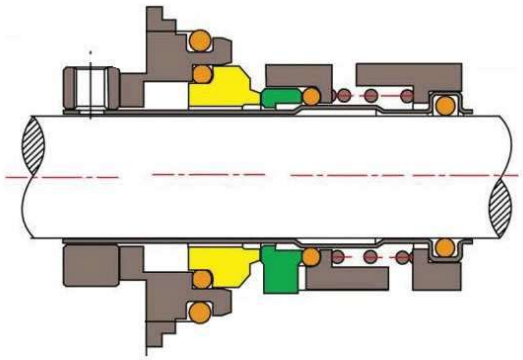
Hamburg 1

Operating Limits:
Pressure: ≤1.0MPa
Speed: ≤10m/s
Temperature: -30C°+180C°



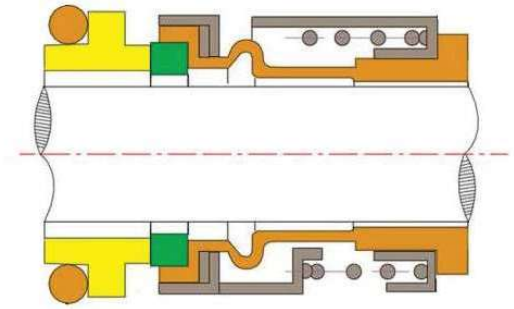
Hamburg 2

Operating Limits:
Pressure: ≤1.0MPa
Speed: ≤10m/s
Temperature: -30C°+180C°



Hamburg 3

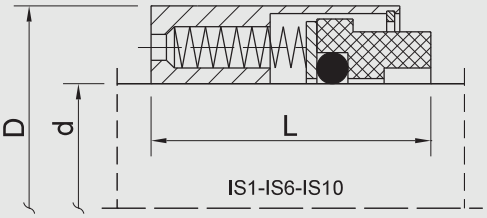
Operating Limits:
Pressure: ≤1.2MPa
Speed: ≤10m/s
Temperature: -30C°+200C°

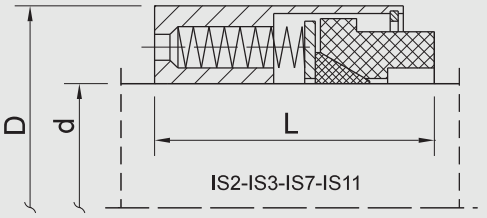


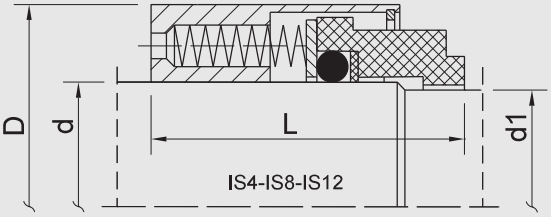
Hamburg 1				
MATERIALS	SIZE	PUMP MOD. GRUNDFOS	CITYLINE COD.	DESCRIPTION
UUE	12 mm	CR 1/3/5/8, CRN 1/3/5, CRN 1/3	HA10001	HA1012UUE
QQV	12 mm	CR 1/3/5/8, CRN 1/3/5, CRN 1/3	HA10002	HA1012QQV
UUV	12 mm	CR 1/3/5/8, CRN 1/3/5, CRN 1/3	HA10003	HA1012UUV
BUV	12 mm	CR 1/3/5/8, CRN 1/3/5, CRN 1/3	HA10004	HA1012BUV
BUE	16 mm	CR 10/15/20, CRN 10/15/20	HA10005	HA1016BUE
QQV	16 mm	CR 10/15/20, CRN 10/15/20	HA10006	HA1016QQV
UUV	16 mm	CR 10/15/20, CRN 10/15/20	HA10007	HA1016UUV
BUV	16 mm	CR 10/15/20, CRN 10/15/21	HA10008	HA1016BUV
Hamburg 2				
BUE	22 mm	CR 32/45/64/90, CRN 32/45/64/90	HA20001	HA2022BUE
UUE	22 mm	CR 32/45/64/90, CRN 32/45/64/91	HA20002	HA2022UUE
QQV	22 mm	CR 32/45/64/90, CRN 32/45/64/92	HA20003	HA2022QQV
UUV	22 mm	CR 32/45/64/90, CRN 32/45/64/93	HA20004	HA2022UUV
Hamburg 3				
QQE	12 mm	CR 2/4/8, CRN 2/4(S)	HA30001	HA3012QQE
QQV	12 mm	CR 2/4/8, CRN 2/4(S)	HA30002	HA3012QQV
UUV	12 mm	CR 2/4/8, CRN 2/4(S)	HA30003	HA3012UUV
QQE	16 mm	CR 8/16, CRN 8/16(S)	HA30004	HA3016QQE
QQV	16 mm	CR 8/16, CRN 8/16(S)	HA30005	HA3016QQV
UUV	16 mm	CR 8/16, CRN 8/16(S)	HA30006	HA3016UUV

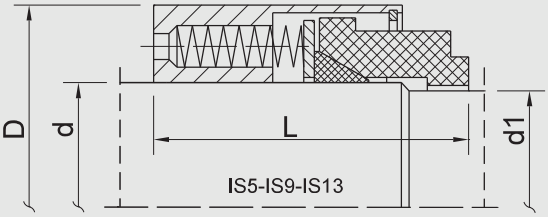
Istanbul

Multiple springs o-ring/wedge seals









Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Bilanciata/Sbilanciata - Balanced/Unbalanced
- Molle multiple - Multiple springs
- Bi-direzionale - Bi-directional

Limiti operativi - Operating limits

P = 348 to 580 PSI
T = -95 to 320°F
V = 82 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite
Mating rings	silicon carbide, tungsten carbide, ceramic
Secondary seals	NBR, EPDM, PTFE, Viton
Metal parts	Stainless 304 / Stainless 316*, Hastelloy

**su richiesta - upon request*

Tenuta rotante - Primary ring

Metrica - Metric
- Istanbul 1 (IS1)
- Istanbul 2 (IS2)
- Istanbul 3 (IS3)
- Istanbul 4 (IS4)
- Istanbul 5 (IS5)

Imperiale - Imperial
- Istanbul 6 (IS6)
- Istanbul 7 (IS7)
- Istanbul 8 (IS8)
- Istanbul 9 (IS9)
- Istanbul 10 (IS10)

Imperiale - Imperial
- Istanbul 11 (IS11)
- Istanbul 12 (IS12)
- Istanbul 13 (IS13)

Controfaccia - Mating ring

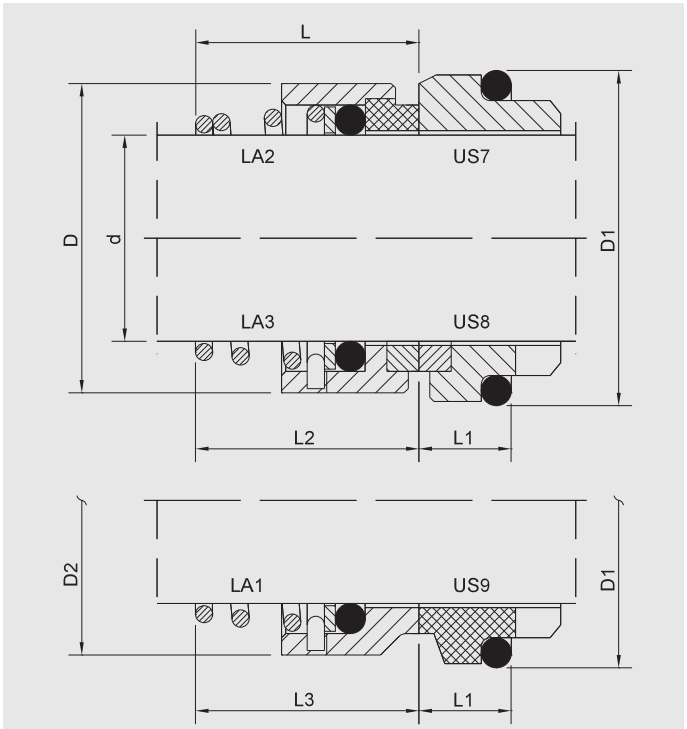
- For IS1: ES1, ES3 (O-ring), ES2 (O-ring standard)
- For IS2, IS3: ES3 (PTFE), ES2 (PTFE)
- For IS6, IS8, IS10, IS12: ES4*, ES5*, FR1 (standard), FR2, FR3
- For IS7, IS9, IS11, IS13: AU1*, AU5*, TR1*, TR2*, TR3*, TR4*

Dettagli - details pag. 153

IS1 - IS2			IS3		IS4 - IS5				IS8 - IS9				IS12 - IS13		IS6 - IS7			IS10 - IS11	
d	D	L	D	L	d	d1	D	L	d	d1	D	L	D	L	d	D	L	D	L
14	24	23.0	28.4	21	18	14	32	30.5	-	-	-	-	-	-	.500	1.031	.812	.937	.937
16	26	23.0	30.8	19	20	16	34	30.5	.625	.500	1.187	1.062	-	-	.625	1.187	.750	1.062	.937
18	32	24.0	33.8	22	22	18	36	31.5	.75	.625	1.312	1.181	-	-	.750	1.312	.875	1.187	.937
20	34	24.0	34.8	24	24	20	38	31.5	.875	.750	1.437	1.260	-	-	.875	1.437	.937	1.312	.937
22	36	24.0	35.6	24	26	22	40	31.5	1.000	.875	1.562	1.312	1.437	1.312	1.000	1.562	1.000	1.437	1.000
24	38	26.7	38.8	25	28	24	42	34.2	1.125	1.000	1.687	1.375	1.562	1.375	1.125	1.687	1.062	1.562	1.000
25	39	27.0	39.8	25	30	25	44	34.5	1.250	1.125	1.875	1.375	1.687	1.375	1.250	1.875	1.062	1.687	1.000
28	42	30.0	43.4	27	33	28	47	37.5	1.375	1.125	2.000	1.437	1.937	1.687	1.375	2.000	1.125	1.937	1.375
30	44	30.5	46.4	27	35	30	49	38.0	1.500	1.250	2.125	1.437	1.937	1.437	1.500	2.125	1.125	1.937	1.125
32	46	30.5	49.7	29	38	33	54	38.0	1.625	1.375	2.375	1.750	2.250	1.593	1.625	2.375	1.375	2.250	1.156
33	47	30.5	-	-	40	35	56	38.0	1.750	1.500	2.500	1.750	2.312	1.750	1.750	2.500	1.375	2.312	1.375
35	49	30.5	51.3	29	43	38	59	39.5	1.875	1.625	2.625	1.750	2.500	1.750	1.875	2.625	1.375	2.500	1.375
38	54	32.0	54.5	29	45	40	61	39.5	2.000	1.750	2.750	1.750	2.625	1.750	2.000	2.750	1.375	2.625	1.375
40	56	32.0	59.6	35	48	43	64	39.5	2.125	1.875	3.000	2.062	2.812	2.062	2.125	3.000	1.687	2.812	1.687
43	59	32.0	64.0	35	50	45	66	39.5	2.250	2.000	3.125	2.062	2.843	1.750	2.250	3.125	1.687	2.843	1.375
45	61	32.0	64.7	35	53	48	69	39.5	2.375	2.125	3.250	2.062	3.000	2.062	2.375	3.250	1.687	3.000	1.687
48	64	32.0	67.2	35	55	50	71	44.0	2.500	2.250	3.375	2.062	3.125	1.750	2.500	3.375	1.687	3.125	1.375
50	66	34.0	69.6	35	58	53	78	44.0	2.625	2.375	3.500	2.062	3.250	2.062	2.625	3.500	1.687	3.250	1.687
53	69	34.0	-	-	60	55	80	44.0	2.750	2.500	3.625	2.062	3.375	2.062	2.750	3.625	1.687	3.375	1.687
55	71	34.0	77.7	43	63	58	83	49.0	2.875	2.625	3.750	2.062	3.500	2.062	2.875	3.750	1.687	3.500	1.687
58	78	39.0	-	-	65	60	85	49.0	3.000	2.750	3.812	2.062	3.625	2.062	3.000	3.812	1.687	3.625	1.687
60	80	39.0	82.7	43	68	63	88	49.0	3.125	2.875	3.937	2.062	3.750	2.062	3.125	3.937	1.687	3.750	1.687
63	83	39.0	-	-	70	65	90	49.0	3.250	3.000	4.125	2.062	3.875	2.062	3.250	4.125	1.687	3.875	1.687
65	85	39.0	87.7	43	75	70	95	55.5	3.375	3.125	4.250	2.062	4.000	2.062	3.375	4.250	1.687	4.000	1.687
68	88	39.0	-	-	80	75	104	55.5	3.500	3.250	4.375	2.062	4.125	2.062	3.500	4.375	1.687	4.125	1.687
70	90	45.5	92.6	43	85	80	109	55.0	3.625	3.375	4.500	2.062	4.250	2.062	3.625	4.500	1.687	4.250	1.687
75	95	45.5	96.3	43	90	85	114	60.0	3.750	3.500	4.625	2.062	4.375	2.062	3.750	4.625	1.687	4.375	1.687
80	104	45.0	101.1	43	95	90	119	60.0	3.875	3.625	4.750	2.062	4.500	2.062	3.875	4.750	1.687	4.500	1.687
85	109	45.0	107.7	43	100	95	124	60.0	4.000	3.750	4.875	2.062	4.625	2.062	4.000	4.875	1.687	4.625	1.687
90	114	50.0	112.7	43	105	100	129	60.0											
95	119	50.0	117.7	43															
100	124	50.0	122.7	43															

Los Angeles

Conical spring o-ring mounted seals



Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Molla conica - Conical spring
- Uni-direzionale - Uni-directional
- To DIN 24960

Limiti operativi - Operating limits

P = 145 PSI
T = -95 to 320°F
V = 32 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite, stainless
Mating rings	silicon carbide, ceramic, carbon graphite, stainless
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Los Angeles 1 (LA1)
- Los Angeles 2 (LA2)
- Los Angeles 3 (LA3)

Controfaccia - Mating ring

- For LA1: US9 (standard, carbon only), US10 (carbon only)
- For LA2: US5, US7 (standard), US8 (carbide face shrink-fitted), US3
- For LA3: US5, US7 (standard), US8 (carbide face shrink-fitted), US9 (carbon only), US3, US10 (carbon only)

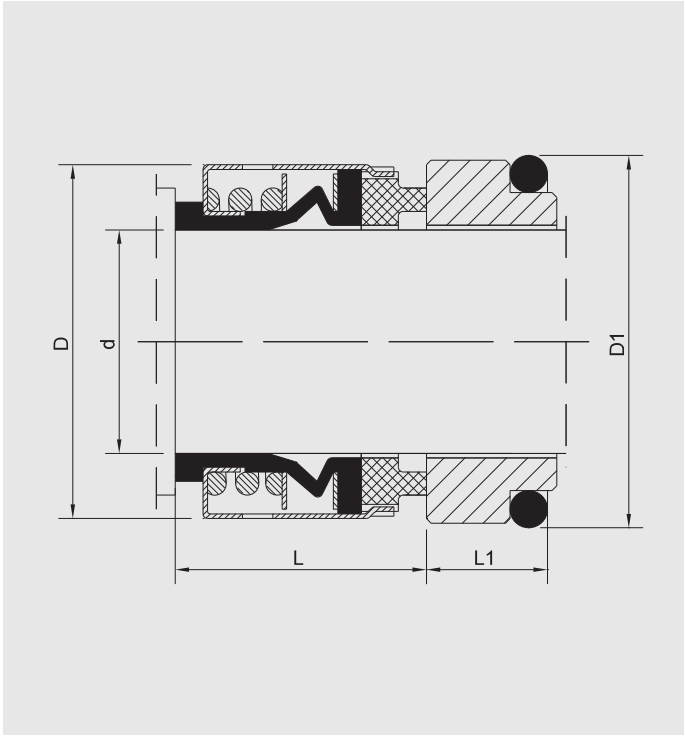
pista di scivolo inserita tramite processo termico
face shrink-fitted

Dettagli - details pag. 153

		LA2	LA3	LA1		US7 - US9		US8	
d	D	L	L2	D2	L3	D1	L1	D1	L1
10	20	16.9	16.5	19.0	15.5	21.0	10.0	21.0	10.0
12	22	17.4	16.5	21.0	16.0	23.0	10.0	23.0	10.0
14	24	17.4	16.5	23.0	16.5	25.0	10.0	25.0	10.0
15	25	17.4	16.5	24.0	18.0	27.0	10.0	27.0	10.0
16	26	19.5	16.5	26.0	18.0	27.0	10.0	27.0	10.0
18	31	20.5	18.0	29.0	19.5	33.0	11.5	33.0	11.5
20	34	22.0	19.0	31.0	22.0	35.0	11.5	35.0	11.5
22	36	23.5	20.5	33.0	21.5	37.0	11.5	37.0	11.5
24	38	25.0	22.0	35.0	23.5	39.0	11.5	39.0	11.5
25	39	26.5	23.5	36.0	26.5	40.0	11.5	40.0	11.5
28	42	26.5	24.5	40.0	26.5	43.0	11.5	43.0	11.5
30	44	25.0	24.5	43.0	26.5	45.0	11.5	45.0	11.5
32	46	28.5	28.0	46.0	28.5	48.0	11.5	48.0	11.5
33	47	28.5	28.0	47.0	28.5	48.0	11.5	48.0	11.5
35	49	28.5	28.0	49.0	28.5	50.0	11.5	50.0	11.5
38	54	32.2	31.0	53.0	33.5	56.0	14.0	56.0	14.0
40	56	34.7	34.0	56.0	36.0	58.0	14.0	58.0	14.0
42	58	37.3	35.0	59.0	37.5	61.0	14.0	61.0	14.0
43	59	37.3	36.0	59.0	38.5	61.0	14.0	61.0	14.0
45	61	39.2	36.5	61.0	39.5	63.0	14.0	63.0	14.0
48	64	44.7	42.0	64.0	46.0	66.0	14.0	66.0	14.0
50	66	45.7	43.0	66.0	45.0	70.0	15.0	70.0	15.0
53	69	49.0	43.0	69.0	47.0	73.0	15.0	73.0	15.0
55	71	49.0	47.0	71.0	49.0	75.0	15.0	75.0	15.0
58	78	52.0	50.0	76.0	55.0	78.0	15.0	78.0	15.0
60	79	53.0	51.0	78.0	55.0	80.0	15.0	80.0	15.0
63	83	54.0	51.0	83.0	55.0	83.0	15.0	83.0	15.0
65	85	54.3	52.0	84.0	55.0	85.0	15.0	85.0	15.0
68	88	55.3	52.7	88.0	55.0	90.0	18.0	90.0	18.0
70	90	56.3	54.0	90.0	57.0	92.0	18.0	92.0	18.0
75	98	56.3	54.0	98.0	62.0	97.0	18.0	97.0	18.0
80	103	59.3	58.0	100.0	61.8	105.0	18.2	105.0	18.2

Madrid

Elastomer bellows seals



	MD		ES1	
d	D	L	D1	L1
14	24	23.0	25.0	12.0
16	26	23.0	27.0	12.0
18	32	24.0	33.0	13.5
20	34	24.0	35.0	13.5
22	36	24.0	37.0	13.5
24	38	26.7	39.0	13.5
25	39	27.0	40.0	13.0
28	42	30.0	43.0	12.5
30	44	30.5	45.0	12.0
32	46	30.5	48.0	12.0
33	47	30.5	48.0	12.0
35	49	30.5	50.0	12.0
38	54	32.0	56.0	13.0
40	56	32.0	58.0	13.0
43	59	32.0	61.0	13.0
45	61	32.0	63.0	13.0
48	64	32.0	66.0	13.0
50	66	34.0	70.0	13.5
53	69	34.0	73.0	13.5
55	71	34.0	75.0	13.5
58	78	39.0	78.0	13.5
60	80	39.0	80.0	13.5
63	83	39.0	83.0	13.5
65	85	39.0	85.0	13.5
68	88	39.0	90.0	13.5
70	90	45.5	92.0	14.5
75	95	45.5	97.0	14.5
80	104	45.0	105.0	15.0
85	109	45.0	110.0	15.0
90	110	50.0	115.0	15.0
95	119	50.0	120.0	15.0
100	124	50.0	125.0	15.0

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Molla singola - Single spring
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows
- To DIN 24960

Limiti operativi - Operating limits

P = 580 PSI
T = -95 to 320°F
V = 49 ft/s

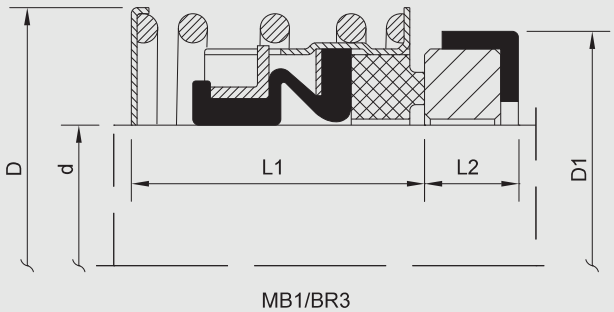
Description	Materials
Primary rings	silicon carbide, carbon graphite, tungsten carbide
Mating rings	silicon carbide, ceramic, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

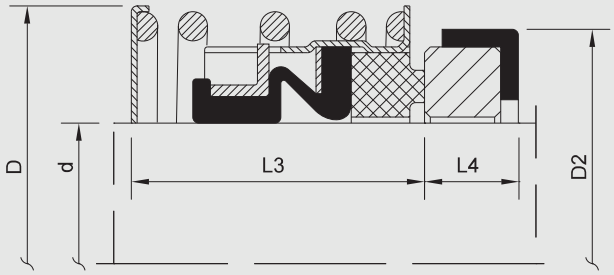
Controfaccia - Mating ring

- ES1 (to DIN 24960)

Melbourne
Elastomer bellows seals



MB1/BR3



MB2/BR2

Caratteristiche - Technical features

- Molla singola - Single spring
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 290 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite
Mating rings	silicon carbide, tungsten carbide, ceramic
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Melbourne 1 (MB1)
- Melbourne 2 (MB2)

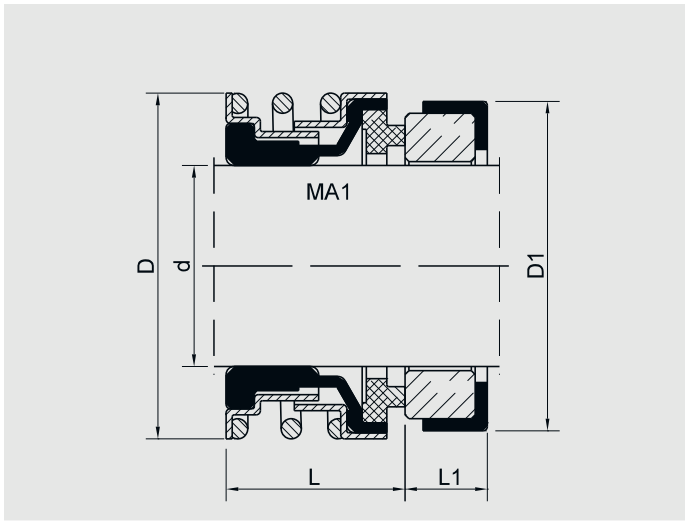
Controfaccia - Mating ring

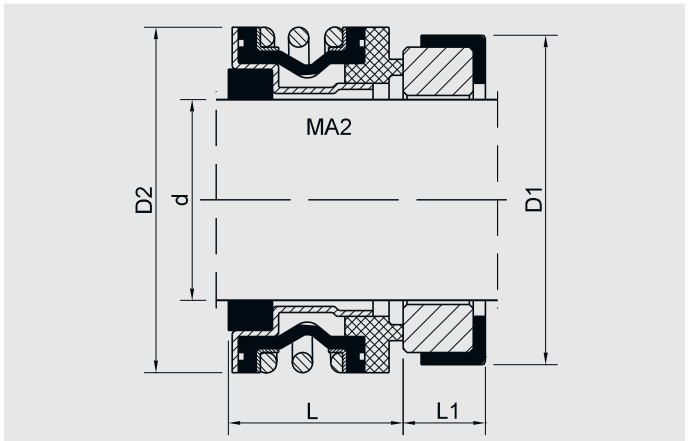
- For MB1: BR3 (standard)
- For MB2: BR2 (standard), FR1

			MB1	MB2	BR3		BR2	
d (inc)	d (mm)	D	L1	L3	D1	L2	D2	L4
.500	12	1.187	1.000	.813	1.094	.344	1.000	.312
.625	14-16	1.312	1.000	.875	1.219	.406	1.250	.406
.750	18	1.437	1.000	.875	1.344	.406	1.375	.406
.875	20-22	1.562	1.000	.937	1.469	.406	1.500	.406
1.000	24-25	1.791	1.000	1.000	1.594	.406	1.625	.437
1.125	28	1.910	1.312	1.062	1.875	.472	1.750	.437
1.250	30-32	2.061	1.312	1.062	2.000	.472	1.875	.437
1.375	33-35	2.250	1.312	1.125	2.125	.472	2.000	.437
1.500	38	2.375	1.312	1.125	2.250	.472	2.125	.437
1.625	40	2.718	1.312	1.375	2.375	.472	2.375	.500
1.750	43-45	2.750	1.594	1.375	2.500	.472	2.500	.500
1.875	48	2.875	1.594	1.500	2.625	.472	2.625	.500
2.000	50	3.000	1.594	1.500	2.750	.531	2.750	.500
2.125	53	3.250	1.615	1.687	2.875	.531	3.000	.562
2.250	55	3.375	1.615	1.687	3.000	.531	3.125	.562
2.375	60	3.500	1.615	1.812	3.125	.531	3.250	.562
2.500	63	3.625	1.615	1.812	3.250	.531	3.375	.562
2.625	65	3.875	1.929	1.937	3.625	.625	3.375	.625
2.750	70	4.000	1.929	1.937	3.750	.625	3.500	.625
2.875	73	4.125	2.047	2.062	3.875	.625	3.750	.625
3.000	75	4.250	2.047	2.062	4.000	.625	3.875	.625
3.125	80	4.562	2.208	2.187	4.375	.781	-	-
3.250	-	4.687	2.208	2.187	4.500	.781	-	-
3.375	85	4.812	2.208	2.187	4.625	.781	-	-
3.500	-	4.937	2.208	2.187	4.750	.781	-	-
3.625	90	5.125	2.323	2.312	4.875	.781	-	-
3.750	95	5.250	2.323	2.312	5.000	.781	-	-
3.875	-	5.437	2.441	2.312	5.125	.781	-	-
4.000	100	5.562	2.441	2.312	5.250	.781	-	-
4.500	110	5.315	-	2.312	-	-	-	-
4.750	120	5.709	-	2.835	-	-	-	-

Miami

Elastomer bellows seals





	MA1	MA2		BR2		BR7	
d	D	D2	L	D1	L1	D1	L1
.500	.917	1.062	.656	1.000	.312	-	-
.625a	1.185	1.218	.718	1.250	.406	1.187	.343
.750a	1.302	1.343	.718	1.375	.406	-	-
1.000	1.552	1.687	.812	1.625	.437	-	-

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 72 PSI (MA1) - 150 PSI (MA2)
T = -95 to 320°F
V = 32 ft/s

Tenuta rotante - Primary ring

- Miami 1 (MA1)
- Miami 2 (MA2)

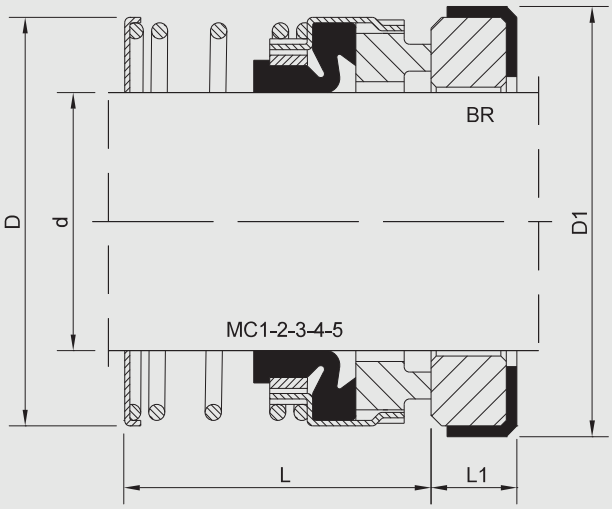
Controfaccia - Mating ring

- BR2 (standard)
- BR7*

Description	Materials
Primary rings	silicon carbide, carbon graphite, phenolic graphite, tungsten carbide
Mating rings	silicon carbide, ceramic, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Munich
Elastomer bellows seals



Caratteristiche tecniche - Technical features

- Sbilanciata - Unbalanced
- Molla singola - Single spring
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 232 PSI
T = -95 to 320°F
V = 49 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite
Mating rings	silicon carbide, tungsten carbide, ceramic
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring:

Imperiale - Imperial
- Munich 1 (MC1)
- Munich 2 (MC2)
- Munich 3 (MC3)

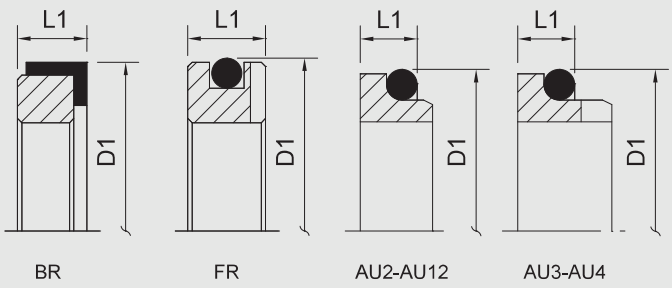
Metrica - Metric
- Munich 4 (MC4)
- Munich 5 (MC5)

Controfaccia - Mating ring

- For MC1: BR3 (standard)
- For MC2, MC3: BR2 (standard), FR1
- For MC5: BR1 (standard), AU2*, AU3*

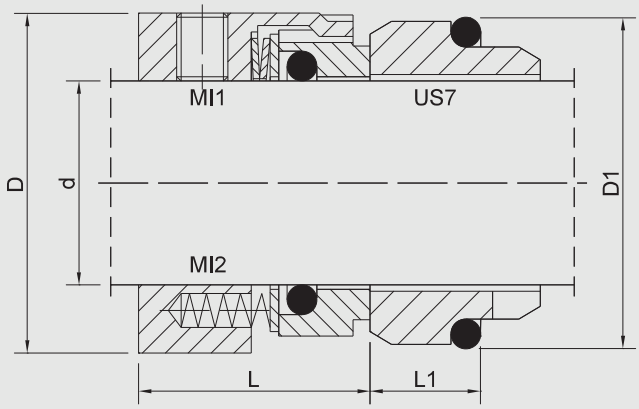
Dettagli - details pag. 153

	MC1		BR2 - FR1		AU4*	MC2		MC3	
d (inc)	D	L	D1	L1	L1	D	L	D	L
.375	.858	1.000	.875	.312	.261	.812	.812	.791	.812
.500	.898	1.000	1.000	.312	.261	.937	.812	.898	.812
.625	1.039	1.000	1.250	.406	.297	1.062	.875	1.039	.875
.750	1.161	1.000	1.375	.406	.297	1.187	.875	1.161	.875
.813	1.323	1.000	1.375	.406	.297	1.312	.937	1.323	.937
.875	1.323	1.000	1.500	.406	.297	1.312	.937	1.323	.937
1.000	1.677	1.000	1.625	.437	.297	1.687	1.000	1.539	1.000
1.125	1.803	1.312	1.750	.437	.297	1.812	1.062	1.673	1.062
1.250	1.890	1.312	1.875	.437	.297	1.937	1.062	1.795	1.062
1.375	2.063	1.312	2.000	.437	.297	2.062	1.125	1.929	1.125
1.437	2.063	1.312	2.125	.437	.297	2.187	1.125	2.047	1.125
1.500	2.189	1.312	2.125	.437	.297	2.187	1.125	2.047	1.125
1.625	2.252	1.312	2.375	.500	.335	2.500	1.375	2.252	1.375
1.750	2.559	1.594	2.500	.500	.335	2.625	1.375	2.386	1.375
1.875	2.614	1.594	2.625	.500	.335	2.750	1.500	2.512	1.500
2.000	2.701	1.594	2.750	.500	.335	2.875	1.500	2.583	1.500
2.125	2.886	1.615	3.000	.562	.375	3.000	1.687	2.819	1.687
2.250	3.079	1.615	3.125	.562	.375	3.125	1.687	3.028	1.687
2.375	3.213	1.615	3.250	.562	.375	3.250	1.812	3.087	1.812
2.500	3.319	1.615	3.375	.562	.375	3.343	1.812	3.197	1.812
2.625	3.449	1.929	3.375	.625	.375	3.500	1.937	3.327	1.937
2.750	3.630	1.929	3.500	.625	.375	3.594	1.937	3.528	1.937
2.875	3.724	2.047	3.750	.625	.473	3.875	2.062	3.701	2.062
3.000	4.031	2.047	3.875	.625	.473	4.000	2.062	3.803	2.062



	*MC1		BR3 - AU12*			MC5		MC4	BR1 - AU2* - AU3*	
d (mm)	D	L	D1	L1	d (mm)	D	L	L	D1	L1
10	21.8	25.4	24.6	8.7	10	20.1	23.9	16.0	21.0	8.6
12	22.8	25.4	27.8	8.7	12	22.8	23.9	16.5	23.0	8.6
14-16	26.4	25.4	31.0	10.3	14	22.8	26.4	16.5	25.0	8.6
18-19	29.5	25.4	34.2	10.3	16	26.4	26.4	17.6	27.0	8.6
20	33.6	25.4	35.7	10.3	18	29.5	27.5	19.6	33.0	10.0
22	33.6	25.4	37.3	10.3	19	29.5	27.5	-	35.0	10.0
24-25	42.6	25.4	40.5	10.3	20	33.6	27.5	20.6	35.0	10.0
28	45.8	33.3	47.6	12.0	22	33.6	27.5	22.1	37.0	10.0
30-32	48.0	33.3	50.8	12.0	24	38.0	30.0	23.6	39.0	10.0
33	52.4	33.3	53.9	12.0	25	39.1	30.0	25.1	40.0	10.0
35	52.4	33.3	53.9	12.0	28	42.5	32.5	26.6	43.0	10.0
38	55.6	33.3	57.2	12.0	30	44.0	32.5	26.6	45.0	10.0
40	57.2	33.3	60.3	12.0	32	45.6	32.5	30.1	48.0	10.0
42-45	65.0	40.5	63.5	12.0	33	45.6	32.5	30.1	48.0	10.0
48	66.4	40.5	66.7	12.0	35	49.0	34.0	30.4	50.0	10.0
50	68.6	40.5	69.8	13.5	38	52.0	34.0	33.6	56.0	11.0
53	73.3	41.0	73.0	13.5	40	55.8	34.0	36.6	58.0	11.0
55	78.2	41.0	76.2	13.5	42	60.6	34.0	-	61.0	11.0
58-60	81.6	41.0	79.4	13.5	43	60.6	34.0	-	61.0	11.0
63	84.3	41.0	82.5	13.5	45	60.6	34.0	41.4	63.0	11.0
65	87.6	49.0	92.1	15.9	48	63.8	34.0	46.9	66.0	11.0
70	92.2	49.0	95.2	15.9	50	65.6	34.5	47.9	70.0	13.0
73	94.6	52.0	98.4	15.9	53	71.6	34.5	52.8	73.0	13.0
75	102.4	52.0	101.6	15.9	55	71.6	34.5	55.8	75.0	13.0
-	104.0	56.1	111.1	19.8	58	78.4	39.5	-	78.0	13.0
80	104.0	56.1	114.3	19.8	60	78.4	39.5	56.8	80.0	13.0
85	108.0	56.1	117.5	19.8	63	81.2	39.5	-	83.0	13.0
					65	84.5	39.5	57.8	85.0	13.0
					68	89.6	37.2	59.5	90.0	15.3
					70	89.6	44.7	59.8	92.0	15.3
					75	96.6	44.7	60.8	97.0	15.3
					80	104.0	44.3	-	105.0	15.7
					85	107.7	44.3	-	110.0	15.7
					90	111.0	49.3	-	115.0	15.7
					95	119.0	49.3	-	120.0	15.7
					100	124.0	49.3	-	125.0	15.7

Milan
O-ring mounted seals



Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- To DIN 24960

Limiti operativi - Operating limits

P = 217 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, ceramic, carbon graphite, stainless
Mating rings	silicon carbide, carbon graphite
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Milan 1 (MI1)
- Milan 2 (MI2)

Controfaccia - Mating ring

- US7 (standard)
- US9 (carbon only)
- US8 (carbide face shrink-fitted)
- US3, US5, US10 (carbon only)

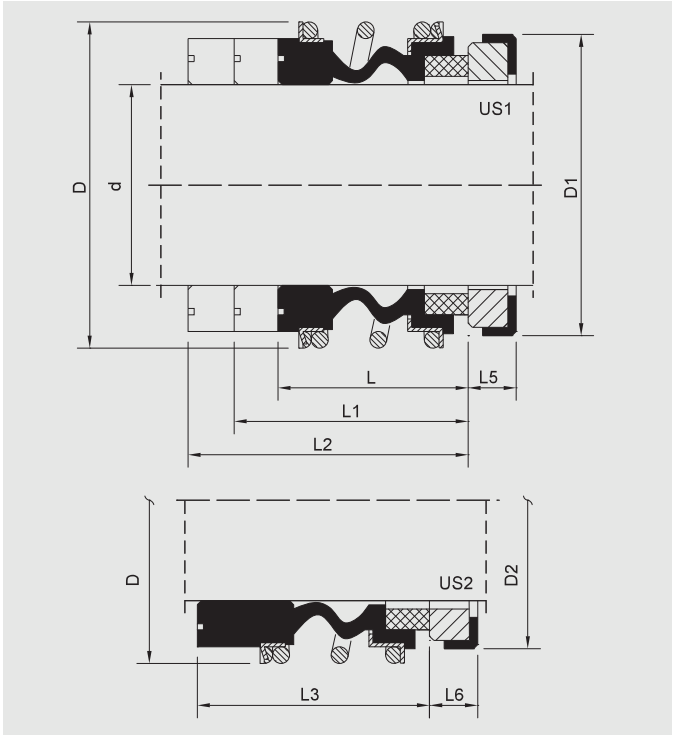
pista di scivolo inserita tramite processo termico
face shrink-fitted

Dettagli - details pag. 153

	MI1 - MI2		US7 - US9 - US8	
d	D	L	D1	L1
14	25	25.0	25.0	10.0
16	27	25.0	27.0	10.0
18	33	26.0	33.0	11.5
20	35	26.0	35.0	11.5
22	37	26.0	37.0	11.5
24	39	28.5	39.0	11.5
25	40	28.5	40.0	11.5
28	43	31.0	43.0	11.5
30	45	31.0	45.0	11.5
32	47	31.0	48.0	11.5
33	48	31.0	48.0	11.5
35	50	31.0	50.0	11.5
38	55	31.0	56.0	14.0
40	57	31.0	58.0	14.0
43	60	31.0	61.0	14.0
45	62	31.0	63.0	14.0
48	65	31.0	66.0	14.0
50	67	32.5	70.0	15.0
53	70	32.5	73.0	15.0
55	72	32.5	75.0	15.0
58	79	37.5	78.0	15.0
60	81	37.5	80.0	15.0
63	84	37.5	83.0	15.0
65	86	37.5	85.0	15.0
68	89	34.5	90.0	18.0
70	91	42.0	92.0	18.0
75	99	42.0	97.0	18.0
80	104	41.8	105.0	18.2
85	109	41.8	110.0	18.2
90	114	46.8	115.0	18.2
95	119	47.8	120.0	17.2
100	124	47.8	125.0	17.2

New York

Elastomer bellows seals



		NY1	NY2	NY3	NY4	US1		US2	
d	D	L	L1	L2	L3	D1	L5	D2	L6
10	22.5	14.5	25.9	33.4	25.0	21.0	6.6	24.6	9.0
12	25.0	15.0	25.9	33.4	25.0	23.0	6.6	27.8	9.0
14	28.5	17.0	28.4	33.4	25.0	25.0	6.6	31.0	10.5
15	28.5	17.0	28.4	33.4	25.0	27.0	6.6	31.0	10.5
16	28.5	17.0	28.4	33.4	25.0	27.0	6.6	31.0	10.5
18	32.0	19.5	30.0	37.5	25.0	33.0	7.5	34.2	10.5
20	37.0	21.5	30.0	37.5	25.0	35.0	7.5	35.7	10.5
22	37.0	21.5	30.0	37.5	25.0	37.0			
								40.5	10.5
25	42.5	23.0	32.5	42.5	25.0	40.0	7.5	40.5	10.5
28	49.0	26.5	35.0	42.5	33.0	43.0	7.5	47.7	12.0
30	49.0	26.5	35.0	42.5	33.0	45.0	7.5	50.8	12.0
32	53.5	27.5	35.0	47.5	33.0	48.0	7.5	50.8	12.0
33	53.5	27.5	35.0	47.5	33.0	48.0	7.5	54.0	12.0
35	57.0	28.5	35.0	47.5	33.0	50.0	7.5	54.0	12.0
38	59.0	30.0	36.0	46.0	33.0	56.0	9.0	57.2	12.0
40	62.0	30.0	36.0	46.0	33.0	58.0	9.0	60.4	12.0
42	65.5	30.0	36.0	51.0	41.0	61.0	9.0	63.5	12.0
43	65.5	30.0	36.0	51.0	41.0	61.0	9.0	63.5	12.0
45	68.0	30.0	36.0	51.0	41.0	63.0	9.0	63.5	12.0
48	70.5	30.5	36.0	51.0	41.0	66.0	9.0	66.7	12.0
50	74.0	30.5	38.0	50.5					
55	81.0	35.0	36.5	59.0	41.0	75.0	11.0	76.2	13.5
58	85.5	37.0	41.5	59.0	41.0	78.0	11.0	79.4	13.5
60	88.5	38.0	41.5	59.0	41.0	80.0	11.0	79.4	13.5
65	93.5	40.0	41.5	69.0	49.0	85.0	11.0	92.1	16.0
68	96.5	40.0	41.5	68.7	49.0	90.0	11.3	95.3	16.0
70	99.5	40.0	48.7	68.7	49.0	92.0	11.3	95.3	16.0
75	107.0	40.0	48.7	68.7	52.0	97.0	11.3	101.6	16.0
80	112.0	40.0	48.0	78.0	56.0	105.0	12.0	114.3	20.0
85	120.0	41.0	46.0	76.0	56.0	110.0	14.0	117.5	20.0
90	127.0	45.0	51.0	76.0	59.0	115.0	14.0	123.9	20.0
95	132.0	46.0	51.0	76.0	59.0	120.0	14.0	127.0	20.0
100	137.0	47.0	51.0	76.0	62.0	125.0	14.0	133.4	20.0

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Molla protetta - Spring enclosed
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 174 PSI
T = -95 to 320°F
V = 32 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite
Mating rings	silicon carbide, ceramic, carbon graphite, stainless
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

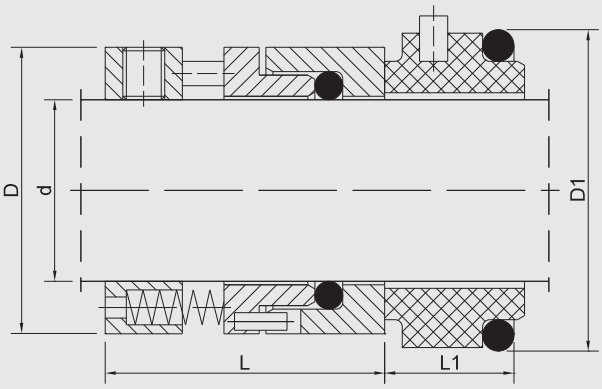
- New York 1 (NY1)
- New York 2 (NY2)
- New York 3 (NY3)
- New York 4 (NY4)

Controfaccia - Mating ring

- US1 (to DIN 24960, standard for NY1, NY2, NY3)
- US2 (standard for NY4)
- US5, US6, US7 (to DIN 24960)
- US3

Dettagli - details pag. 153

Paris
Multiple springs seals



Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Molle multiple - Multiple springs

Limiti operativi - Operating limits

P = 174 PSI
T = -95 to 320°F
V = 82 ft/s

Description	Materials
Primary rings	silicon carbide, ceramic, tungsten carbide
Mating rings	silicon carbide, carbon graphite, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

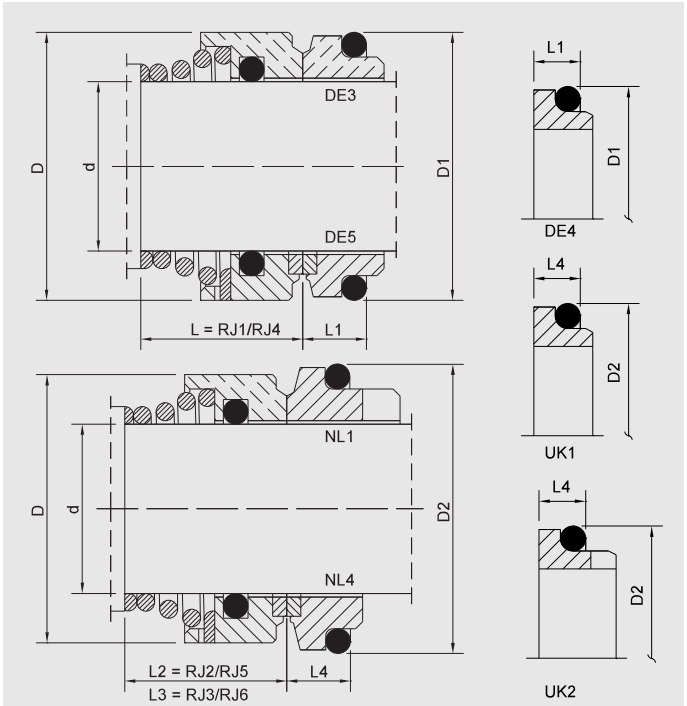
Controfaccia - Mating ring

- RU1* (standard)

	PS		RU1*	
d	D	L	D1	L1
1.000	1.563	1.625	1.500	.81
1.125	1.687	1.625	1.875	.81
1.187	1.750	1.625	1.937	.81
1.250	1.812	1.625	2.000	.81
1.375	1.937	1.625	2.125	.81
1.437	2.000	1.625	2.187	.81
1.500	2.062	1.625	2.250	.81
1.625	2.312	1.750	2.375	.81
1.750	2.375	1.750	2.500	.81
1.875	2.562	1.750	2.625	.81
2.000	2.687	1.750	2.750	.81
2.125	2.812	1.750	2.875	.81
2.250	2.937	1.750	3.000	.81
2.375	3.062	1.750	3.125	.81
2.500	3.187	1.750	3.250	.81
2.625	3.312	1.750	3.375	.81
2.750	3.437	1.750	3.500	.81
2.875	3.562	1.750	3.625	.81
3.000	3.687	1.750	3.750	.81
3.125	4.000	1.750	4.062	.81
3.250	4.125	1.750	4.187	.81
3.375	4.250	1.750	4.312	.81
3.500	4.375	1.750	4.437	.81
3.625	4.500	1.750	4.562	.81
3.750	4.625	1.812	4.687	.81
3.875	4.750	1.812	4.812	.81
4.000	4.875	1.812	4.937	.81
4.250	5.125	2.062	5.187	.81
4.500	5.375	2.062	5.437	.81

Rio

Conical spring o-ring mounted seals



		RJ1 - RJ4	RJ2 - RJ5	RJ3 - RJ6	DE3 - DE4 - DE5		UK* - NL	
d	D	L	L2	L3	D1	L1	D2	L4
8	16	15	-	-	17.1	5.5	-	-
10	20	15	15	25.5	18.1	5.5	21	7
12	22	18	18	25.5	20.6	5.5	23	7
14	24	22	22	28.0	23.1	6.0	25	7
15	24	22	-	-	26.9	7.0	-	-
16	26	23	23	28.0	26.9	7.0	27	7
17	26	23	-	-	26.9	7.0	-	-
18	32	24	24	27.5	30.9	8.0	33	10
19	32	25	-	-	30.9	8.0	-	-
20	34	25	25	27.5	30.9	8.0	35	10
22	36	25	25	27.5	35.4	8.0	37	10
24	38	27	27	30.0	35.4	8.0	39	10
25	39	27	27	30.0	38.2	8.5	40	10
26	39	27	-	-	38.2	8.5	-	-
28	42	29	29	32.5	43.3	9.0	43	10
30	44	30	30	32.5	43.3	9.0	45	10
32	46	30	30	32.5	43.3	9.0	48	10
33	47	39	39	32.5	53.5	11.5	48	10
35	49	39	39	32.5	53.5	11.5	50	10
38	54	39	42	32.0	60.5	11.5	56	13
40	56	39	42	32.0	60.5	11.5	58	13
42	57	39	-	-	60.5	11.5	-	-
43	57	39	47	32.0	60.5	11.5	61	13
45	61	41	47	32.0	65.5	11.5	63	13
48	64	41	47	32.0	65.5	11.5	66	13
50	66	45	46	33.5	72.5	11.5	70	14
53	69	45	56	33.5	72.5	11.5	73	14
55	71	47	56	33.5	72.5	11.5	75	14
58	76	47	56	38.5	-	11.5	78	14
60	80	49	56	38.5	79.3	11.5	80	14
63	81	49	56	38.5	-	11.5	83	14
65	85	51	66	38.5	84.5	11.5	85	14
68	87	51	64	36.5	-	11.5	90	16
70	90	51	64	44.0	89.5	11.5	92	16
75	99	57	64	44.0	94.5	11.5	97	16
80	104	59	72	44.0	99.5	11.5	105	18
85	109	59	72	44.0	105.5	13.5	110	18
90	114	62	72	47.0	111.5	13.5	115	18
95	119	62	72	47.0	116.5	13.5	120	18
100	124	75	72	47.0	119.5	13.5	125	18

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Uni-direzionale - Uni-directional

Limiti operativi - Operating limits

P = 145 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, stainless
Mating rings	silicon carbide, carbon graphite, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Rio 1 (RJ1)
- Rio 2 (RJ2)
- Rio 3 (RJ3)
- Rio 4 (RJ4) - with face shrink-fitted
- Rio 5 (RJ5) - with face shrink-fitted
- Rio 6 (RJ6) - with face shrink-fitted

pista di scivolo inserita tramite processo termico
face shrink-fitted

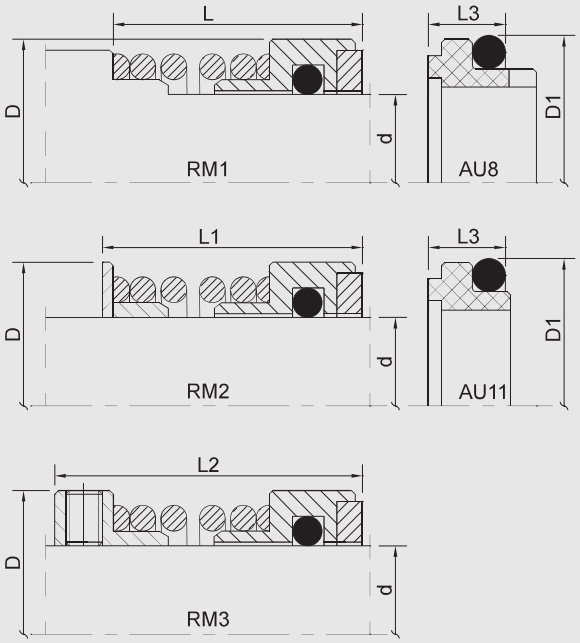
Controfaccia - Mating ring

- UK1*
- UK2*
- DE3
- DE4
- DE5
- DE2
- DE1
- NL2
- NL1
- NL4
- NL3

Dettagli - details pag. 153

Rome

Single coil spring o-ring mounted seals



Caratteristiche tecniche - Technical features

- Molla a spira singola - Single coil spring seal
- Sbilanciata - Unbalanced
- Uni-direzionale - Uni-directional

Limiti operativi - Operating limits

P = 145 PSI
T = -95 to 320°F
V = 52 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, stainless
Mating rings	silicon carbide, tungsten carbide, carbon graphite
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Rome 1 (RM1)
- Rome 2 (RM2)
- Rome 3 (RM3)

Controfaccia - Mating ring

- For RM1, RM2, RM3 : AU8 (standard), AU11*
- AU9 (carbide face shrink-fitted)

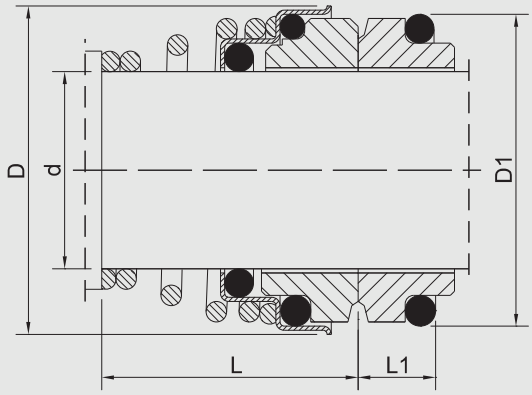
pista di scivolo inserita tramite processo termico
face shrink-fitted

Dettagli - details pag. 153

			RM1	RM2	RM3	AU8 - AU11*	
d	d (inc)	D	L	L1	L2	D1	L3
16	-	29.0	24.5	26.0	32.5	28.6	9.0
18	-	32.5	24.5	26.0	32.5	31.8	9.0
20	-	34.5	27.5	29.0	35.5	33.3	9.0
22	-	35.0	26.0	27.5	35.5	34.9	9.0
25	-	38.1	30.0	31.5	39.0	39.7	10.0
28	-	42.9	31.5	33.0	41.0	42.9	10.0
30	-	45.5	31.5	33.0	41.0	44.4	10.0
32	-	47.0	34.5	36.0	44.0	46.0	10.0
33	-	49.0	34.5	36.0	44.0	46.0	10.0
35	-	50.0	37.5	39.0	47.0	49.2	10.0
38	-	53.0	37.5	39.0	47.0	52.4	10.0
40	-	55.0	37.5	39.0	47.0	54.0	10.0
42	-	55.5	37.5	39.0	47.0	55.6	10.0
43	-	55.5	37.5	39.0	47.0	55.6	10.0
45	-	60.0	37.5	39.0	47.0	58.7	10.0
48	-	62.0	42.5	44.0	55.0	63.5	10.0
50	-	66.0	45.5	47.0	58.5	65.1	10.0
-	2.000	66.7	45.5	47.0	58.5	66.7	10.0
55	-	71.0	47.0	48.5	60.0	69.9	10.0
58	-	73.0	47.0	48.5	60.0	73.0	10.0
60	-	77.0	50.5	52.0	63.0	76.2	10.0
63	-	79.4	50.5	52.0	63.0	79.4	10.0
65	-	82.0	53.5	55.0	66.0	81.0	10.0
68	-	82.6	53.5	55.0	66.0	82.6	10.0
70	-	87.0	53.5	55.0	66.0	85.7	10.0
73	-	90.0	56.5	60.0	71.0	88.9	10.0
75	-	91.5	56.5	60.0	71.0	90.5	10.0
-	3.000	95.3	63.0	66.0	77.5	95.3	10.0
80	-	99.5	63.0	66.0	77.5	98.4	10.0
-	3.250	101.6	63.0	66.0	77.5	101.6	10.0
85	-	105.5	63.0	66.0	77.5	104.8	10.0
-	3.500	108.0	63.0	66.0	77.5	108.0	10.0
90	-	110.5	68.0	71.0	82.0	109.5	10.0
95	-	115.5	68.0	71.0	82.0	114.3	10.0
100	-	120.0	68.0	71.0	82.0	119.0	10.0
-	4.000	124.5	72.5	75.5	88.5	123.8	10.0

Salvador

Conical spring o-ring mounted seals



	SA1		DE3	
d	D	L	D1	L1
10	20	15	18.1	5.5
11	22	18	20.6	5.5
12	22	18	20.6	5.5
13	25	22	23.1	6.0
14	25	22	23.1	6.0
15	29	22	26.9	7.0
16	29	23	26.9	7.0
17	29	23	26.9	7.0
18	33	24	30.9	8.0
19	33	25	30.9	8.0
20	33	25	30.9	8.0
22	38	25	35.4	8.0
24	38	27	35.4	8.0
25	40	27	38.2	8.5
28	46	29	43.3	9.0
30	46	30	43.3	9.0
32	46	30	43.3	9.0
33	48	39	53.5	11.5
35	50	39	53.5	11.5
38	55	39	60.5	11.5
40	55	39	60.5	11.5

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Molla conica - Conical spring
- Uni-direzionale - Uni-directional

Limiti operativi - Operating limits

P = 145 PSI
T = -95 to 320°F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, Alluminium oxide, stainless
Mating rings	silicon carbide, carbon graphite, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304

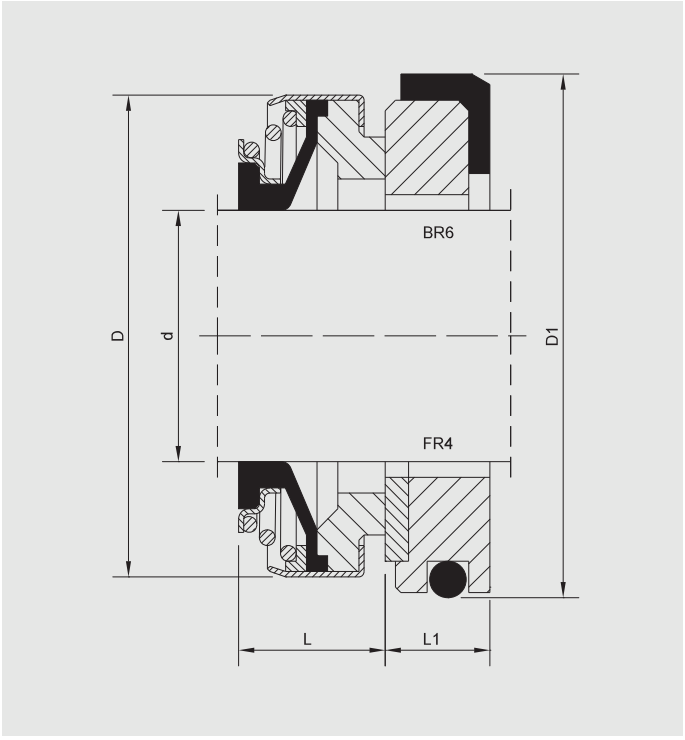
Controfaccia - Mating ring

- DE3
- DE2
- DE1
- NL2
- NL1
- NL3

Dettagli - details pag. 153

San Francisco

Compact elastomer bellows seals



Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Molla protetta - Spring enclosed
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Limiti operativi - Operating limits

P = 87 PSI
T = -95 to 320°F
V = 32 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, carbon graphite, phenolic graphite
Mating rings	silicon carbide, ceramic, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

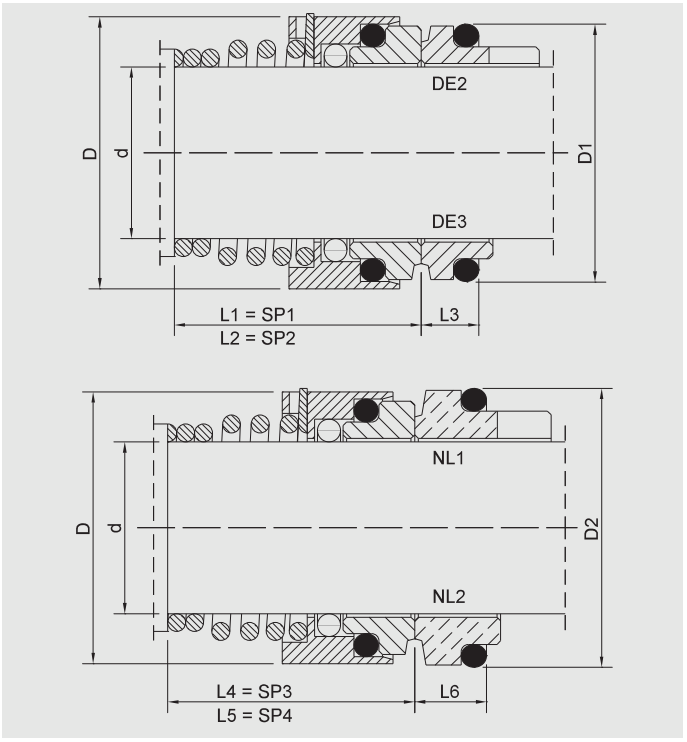
Controfaccia - Mating ring

- BR6 (standard)
- FR4 (corpo unico - monolithic)
- FR5 (inserto - insert)

Dettagli - details pag. 153

	SF		BR6-FR4	
d	D	L	D1	L1
8a	20	11	26.0	4.0
8b	20	11	22.0	4.0
8c	24	11	26.0	8.0
9	24	11	26.0	8.0
10	24	11	26.0	8.0
11	24	11	26.0	8.0
12a	24	13	26.0	5.5
12b	24	13	26.0	8.0
12c	32	13	35.0	8.0
13	24	13	26.0	8.0
14a	28	13	25.0	7.0
14b	28	13	28.5	8.0
14c	32	13	29.5	8.0
14d	32	13	35.0	8.0
14e	32	13	30.0	8.0
15a	32	13	29.5	8.0
15b	32	13	38.0	8.0
15c	35	13	38.0	8.0
16a	32	13	29.5	8.0
16b	35	13	38.0	8.0
16c	39	13	38.0	8.0
16d	39	13	42.0	8.0
17	39	13	42.0	8.0
18	39	13	42.0	8.0
19	39	13	42.0	8.0
20a	39	13	42.0	8.0
20b	42	13	45.0	10.0
22	42	13	45.0	10.0
23	47	14	50.0	10.0
24	47	14	50.0	10.0
25a	42	14	50.0	10.0
25b	47	14	50.0	10.0
26	47	14	50.0	10.0
28	54	15	57.0	10.0
30	54	15	57.0	10.0
32	54	15	57.0	10.0
35	60	16	63.0	10.0
38	65	18	68.0	12.0
40	65	18	68.0	12.0
45	70	20	73.0	12.0
50	85	23	88.0	15.0
55	85	23	88.0	15.0
60	105	30	110.0	15.0
65	105	30	110.0	15.0
70	105	32	110.0	15.0

São Paulo
Conical spring seals



		SP1	SP2	SP3	SP4	DE2 - DE3		NL1 - NL2	
d	D	L1	L2	L4	L5	D1	L3	D2	L6
10	19.3	20	15	15	25.5	18.1	5.5	21	7
12	21.8	22	18	18	25.5	20.6	5.5	23	7
14	24.4	27	22	22	28.0	23.1	6.0	25	7
15	28.5	27	22	23	28.0	26.9	7.0	27	7
16	28.5	28	23	23	28.0	26.9	7.0	27	7
18	32.5	30	24	24	27.5	30.9	8.0	33	10
19	32.5	30	25	25	27.5	30.9	8.0	35	10
20	32.5	30	25	25	27.5	30.9	8.0	35	10
22	37.0	30	25	25	27.5	35.4	8.0	37	10
24	37.0	32	27	27	30.0	35.4	8.0	39	10
25	40.6	33	27	27	30.0	38.2	8.5	40	10
28	46.5	36	29	29	32.5	43.3	9.0	43	10
30	46.5	37	30	30	32.5	43.3	9.0	45	10
32	46.5	37	30	30	32.5	43.3	9.0	48	10
33	56.5	48	39	39	32.5	53.5	11.5	48	10
35	56.5	48	39	39	32.5	53.5	11.5	50	10
38	56.5	48	39	42	32.0	60.5	11.5	56	13
40	63.5	48	39	42	32.0	60.5	11.5	58	13
43	63.5	48	39	47	32.0	60.5	11.5	61	13
45	68.5	51	41	47	32.0	65.5	11.5	63	13
48	68.5	51	41	47	32.0	65.5	11.5	66	13
50	74.5	55	45	46	33.5	72.5	11.5	70	14
53	74.5	57	47	56	33.5	72.5	11.5	73	14
55	74.5	57	47	56	33.5	72.5	11.5	75	14
58	82.9	61	49	56	38.5	79.3	11.5	78	14
60	82.9	61	49	56	38.5	79.3	11.5	80	14
63	88.1	63	51	56	38.5	84.5	11.5	83	14
65	88.1	63	51	66	38.5	84.5	11.5	85	14
68	93.1	63	51	64	36.5	89.5	11.5	90	16
70	93.1	63	51	64	44.0	89.5	11.5	92	16
75	98.1	68	57	64	44.0	94.5	11.5	97	16
80	103.5	70	59	72	42.0	99.5	11.5	105	18
85	109.5	72	59	72	42.0	105.5	13.5	110	18
90	115.5	75	62	72	47.0	111.5	13.5	115	18
95	123.0	75	62	72	47.0	116.5	13.5	120	18
100	129.0	85	75	72	47.0	119.5	13.5	125	18

Caratteristiche tecniche - Technical features

- Tenuta singola - Single seal
- Sbilanciata - Unbalanced
- Uni-direzionale - Uni-directional
- Molla conica - Conical spring

Limiti operativi - Operating limits

P = 232 PSI
T = -95 to 320°F
V = 49 ft/s

Description	Materials
Primary rings	silicon carbide, tungsten carbide, ceramic, stainless
Mating rings	silicon carbide, carbon graphite, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

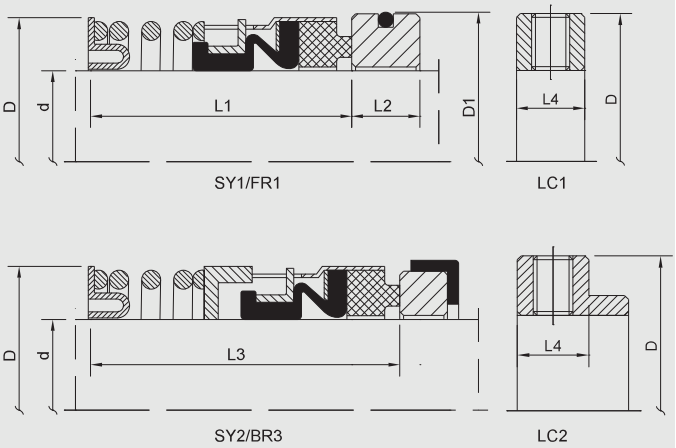
- São Paulo 1 (SP1)
- São Paulo 2 (SP2)
- São Paulo 3 (SP3)
- São Paulo 4 (SP4)

Controfaccia - Mating ring

- DE3
- DE2
- NL2
- NL1
- DE1
- NL3

Dettagli - details pag. 153

Sydney
Elastomer bellows seals



Caratteristiche tecniche - Technical features

- Molla singola - Single spring
- Sbilanciata - Unbalanced
- Bi-direzionale - Bi-directional
- Soffietto in elastomero - Elastomer bellows

Operating limits

P = 290 PSI
T = -95 to 320 °F
V = 65 ft/s

Description	Materials
Primary rings	silicon carbide, carbon graphite, tungsten carbide
Mating rings	silicon carbide, ceramic, tungsten carbide
Secondary seals	NBR, EPDM, Viton
Metal parts	Stainless 304 / Stainless 316*

**su richiesta - upon request*

Tenuta rotante - Primary ring

- Sydney 1 (SY1)
- Sydney 2 (SY2)

Controfaccia - Mating ring

- For SY1: FR1 (standard), BR2
- For SY2: BR3 (standard), BR1, BR2
- LC1 - LC2: Lock Collar (Stainless 304 / Stainless 316*)

Dettagli - details pag. 153

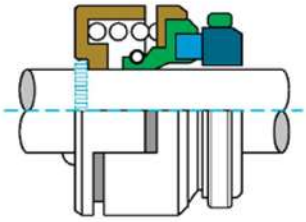
			SY1	SY2	FR1		LC1 - LC2
d (inc)	d (mm)	D	L1	L3	D1	L2	L4
.625	14-16	1.093	1.312	1.719	1.250	.406	.312
.750	18	1.218	1.312	1.719	1.375	.406	.312
.875	20-22	1.343	1.375	1.719	1.500	.406	.312
1.000	24-25	1.500	1.562	1.719	1.625	.437	.375
1.125	28	1.625	1.625	2.375	1.750	.437	.375
1.250	30-32	1.812	1.625	2.375	1.875	.437	.375
1.375	33-35	1.875	1.687	2.375	2.000	.437	.375
1.500	38	2.000	1.687	2.375	2.125	.437	.375
1.625	40	2.250	2.000	2.375	2.375	.500	.375
1.750	43-45	2.375	2.000	2.781	2.500	.500	.375
1.875	48	2.500	2.125	2.781	2.625	.500	.375
2.000	50	2.625	2.125	2.781	2.750	.500	.375
2.125	53	2.812	2.375	2.795	3.000	.562	.375
2.250	55	2.937	2.375	2.795	3.125	.562	.500
2.375	60	3.062	2.500	2.795	3.250	.562	.500
2.500	63	3.187	2.500	2.795	3.375	.562	.500
2.625	65	3.375	2.750	2.750	3.375	.625	.500
2.750	70	3.500	2.750	2.750	3.500	.625	.500
2.875	73	3.625	2.875	2.875	3.750	.625	.500
3.000	75	3.750	2.875	2.875	3.875	.625	.500

NEW

Verona

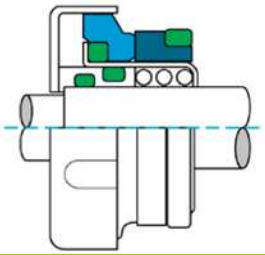
Verona B

B, as in Bellow seal, referring to the bellow like secondary seal between the shaft and the rotating seal ring. The bellow seal is a reliable and sturdy construction that has served well in Flygt B pumps for many years. The single coil spring along with the bellow shaped secondary seal greatly reduces the risk of hampered spring motion and since there is always metal to metal contact with the oil housing, good heat dissipation is well provided for.



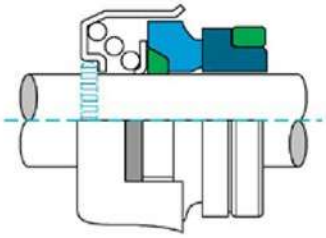
Verona I

I, as in Internal spring seal, referring to the protected position of the spring between the shaft and seal rings. This design concept first appeared in the 2201 but has gained popularity also in C pumps because of its high resistance to clogging.



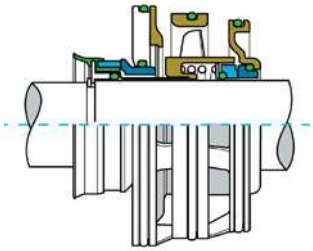
Verona O

O, as in Open coil spring seal, is used in smaller B pumps. This is a straightforward and durable design that can withstand a lot of abuse. The single coil spring, the flexible mounted O-ring and well dimensioned seal rings assure long life in all common applications.



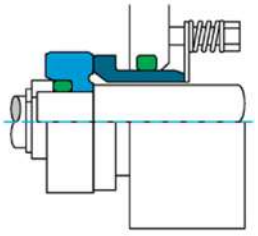
Verona P

P, as in Plug-in seal, has a number of features that make it easier to handle than conventional single seals. The seal comprises an inner and outer seal in one unit that is simply “plugged in” to the product without any special tools being required. The seal is designed for wear and clog resistance, and is suitable for all applications and the toughest media. The plug-n seal is standard in all new products.



Verona S

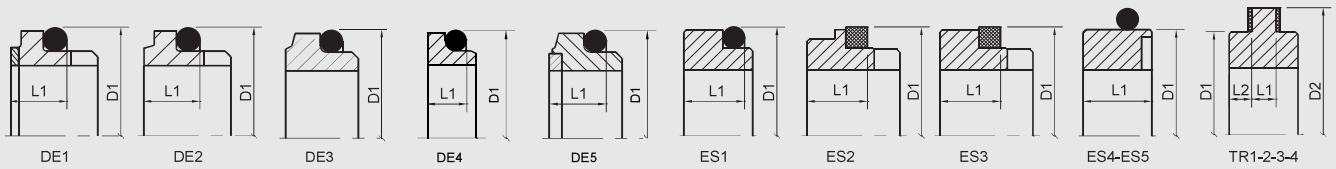
S, as in Sleeve seal, referring to the sleeve shape of this stationary seal ring. The sleeve seal is a well proven design that is used in mixers and medium sized C pumps. Since the spring is placed in the oil housing and the exterior is flushed, the sleeve seal has excellent resistance to clogging and wear.
There is also an inverted form of this seal, where the rotating ring is sleeve shaped, which is used in 2151 and 2084.



DIAMETER (mm)	CiTY LINE type	FLYGT type	Materials	Pump Model
20	Verona B	TYPE B - BELLOW SEAL	UUV	2024, 2066, 2075, 2101, 3065, 3080
20	Verona B	TYPE B - BELLOW SEAL	QQV	2024, 2066, 2075, 2101, 3065, 3080
22	Verona B	TYPE B - BELLOW SEAL	UUV	2070, 2102/040, 3082, 2040, 2071, 2102/041, 2102/210, 2102/220
22	Verona B	TYPE B - BELLOW SEAL	QQV	2070, 2102/040, 3082, 2040, 2071, 2102/041, 2102/210, 2102/220
25	Verona B	TYPE B - BELLOW SEAL	UUV	
25	Verona B	TYPE B - BELLOW SEAL	QQV	
28	Verona B	TYPE B - BELLOW SEAL	UUV	2082, 2090, 2125, 2140, 3101
28	Verona B	TYPE B - BELLOW SEAL	QQV	2082, 2090, 2125, 2140, 3101
30	Verona B	TYPE B - BELLOW SEAL	UUV	
30	Verona B	TYPE B - BELLOW SEAL	QQV	
35	Verona B	TYPE B - BELLOW SEAL	UUV	
35	Verona B	TYPE B - BELLOW SEAL	QQV	
35	Verona I	TYPE I - INTERNAL SPRING SEAL	UUV	2151/010, 3126/090, 3126/180, 2084, 2135, 2151/011, 2151/050, 3126/091, 3126/280, 3126/290
20	Verona O	TYPE O - OPEN COIL SEAL	UUV	2060, 3041/281, 3060, 3067/170, 3067/250, 3068, 3085/120, 3085/170, 3085/180, 3085/890
25	Verona O	TYPE O - OPEN COIL SEAL	UUV	3102
35	Verona O	TYPE O - OPEN COIL SEAL	UUV	3126/091, 3126/280, 3126/290, 3126/181, 3127, 4440, 5530
45	Verona O	TYPE O - OPEN COIL SEAL	UUV	2201, 3140, 3152, 4650, 4660 (SUPERIORE)
45	Verona S	TYPE S - SLEEVE SEAL	UUV	2201, 3140, 3152, 4650, 4660 (INFERIORE)
30	Verona S	TYPE S - SLEEVE SEAL	UUV	
35	Verona S	TYPE S - SLEEVE SEAL	UUV	2151/010, 3126/090, 3126/180
60	Verona S	TYPE S - SLEEVE SEAL	UUV	2250, 2290, 3200, 600, 3170, 3201, 4670, 4680, 7045
80	Verona S	TYPE S - SLEEVE SEAL	UUV	3230, 3305, 3357, 3231, 3306, 3356, 3300, 3355, 7050, 7051, 7060, 7076, 7055, 7061, 7080
20	Verona P	TYPE P - PLUG-IN SEAL	UU/UU/V/PLASTIC	1520, 2610, 2620, 2630, 2640, 4610, 4620
25	Verona P	TYPE P - PLUG-IN SEAL	UU/UU/V/PLASTIC	2660, 4630, 4640
35	Verona P	TYPE P - PLUG-IN SEAL	UU/UU/V/PLASTIC	2670, 3153, 5100 (.210, .211, .220, .221)
45	Verona P	TYPE P - PLUG-IN SEAL	UU/UU/V/PLASTIC	3171, 4650, 4660, 5100 (.250, .251, .260, .261)
60	Verona P	TYPE P - PLUG-IN SEAL	UU/UU/V/PLASTIC	3202, 4670, 4680, 5100 (.300, .310), 5150 (.300, .310)

DE - ES - TR

Mating rings

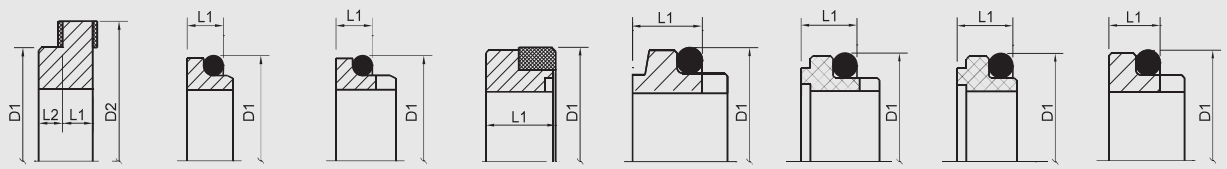


DE1 - DE2 - DE3 - DE4 - DE5		
d	D1	L1
10	18.1	5.5
12	20.6	5.5
14	23.1	6.0
15	26.9	7.0
16	26.9	7.0
17	26.9	7.0
18	30.9	8.0
19	30.9	8.0
20	30.9	8.0
22	35.4	8.0
24	35.4	8.0
25	38.2	8.5
26	38.2	8.5
28	43.3	9.0
30	43.3	9.0
32	43.3	9.0
33	53.5	11.5
35	53.5	11.5
38	60.5	11.5
40	60.5	11.5
42	60.5	11.5
43	60.5	11.5
45	65.5	11.5
48	65.5	11.5
50	72.5	11.5
53	72.5	11.5
55	72.5	11.5
58	79.3	11.5
60	79.3	11.5
63	84.5	11.5
65	84.5	11.5
68	89.5	11.5
70	89.5	11.5
75	94.5	11.5
80	99.5	11.5
85	105.5	13.5
90	111.5	13.5
95	116.5	13.5
100	119.5	13.5

ES1 - ES2 - ES3			ES4*			ES5*	
d	D1	L1	d	D1	L1	D1	L1
14	25	12.0	.500	1.000	.406	1.000	.312
16	27	12.0	.625	1.125	.406	1.250	.406
18	33	13.5	.750	1.250	.437	1.375	.406
20	35	13.5	.875	1.375	.437	1.500	.406
22	37	13.5	1.000	1.500	.500	1.625	.437
24	39	13.3	1.125	1.625	.500	1.750	.437
25	40	13.0	1.250	1.875	.500	1.875	.437
28	43	12.5	1.375	2.000	.500	2.000	.437
30	45	12.0	1.500	2.125	.500	2.125	.437
32	48	12.0	1.625	2.250	.500	2.375	.500
33	48	12.0	1.750	2.375	.500	2.500	.500
35	50	12.0	1.875	2.500	.500	2.625	.500
38	56	13.0	2.000	2.625	.500	2.750	.500
40	58	13.0	2.125	2.750	.562	3.000	.562
43	61	13.0	2.250	2.875	.562	3.125	.562
45	63	13.0	2.375	3.000	.562	3.250	.562
48	66	13.0	2.500	3.125	.562	3.375	.562
50	70	13.5	2.625	3.250	.625	3.375	.625
53	73	13.5	2.750	3.375	.625	3.500	.625
55	75	13.5	2.875	3.500	.625	3.750	.625
58	78	13.5	3.000	3.625	.625	3.875	.625
60	80	13.5	3.125	3.750	.625	4.000	.781
63	83	13.5	3.250	3.875	.625	4.125	.781
65	85	13.5	3.375	4.000	.625	4.250	.781
68	90	13.5	3.500	4.125	.625	4.375	.781
70	92	14.5	3.625	4.250	.687	4.500	.781
75	97	14.5	3.750	4.500	.687	4.625	.781
80	105	15.0	3.875	4.625	.687	4.750	.781
85	110	15.0	4.000	4.750	.687	4.875	.781
90	115	15.0					
95	120	15.0					
100	125	15.0					

su richiesta - upon request

		*TR1				*TR2				*TR3				*TR4			
d (inc)	d (mm)	D1	D2	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2
.750	18	1.370	1.750	.250	.250	1.307	1.718	.406	.203	1.426	1.850	.315	.189	-	-	-	-
.875	20-22	1.494	1.875	.250	.250	1.432	1.843	.406	.203	1.551	1.948	.315	.189	-	-	-	-
1.000	24-25	1.620	2.000	.375	.250	1.557	1.968	.406	.203	1.676	2.067	.315	.189	-	-	-	-
1.125	28	1.745	2.125	.375	.250	1.683	2.093	.406	.203	1.990	2.480	.437	.313	1.801	2.303	.437	.313
1.250	30-32	1.870	2.250	.375	.250	1.807	2.218	.406	.203	2.115	2.598	.437	.313	1.990	2.500	.437	.313
1.375	33-35	1.995	2.375	.375	.250	2.057	2.593	.437	.218	2.240	2.717	.437	.313	2.115	2.579	.437	.313
1.500	38	2.245	2.625	.375	.250	2.057	2.593	.437	.218	2.490	2.992	.437	.313	2.240	2.736	.437	.313
1.625	40	2.370	2.750	.375	.250	2.370	2.906	.437	.218	2.615	3.110	.437	.313	2.490	3.011	.437	.313
1.750	43-45	2.495	3.000	.375	.250	2.432	2.968	.437	.218	2.740	3.228	.437	.313	2.615	3.130	.437	.313
1.875	-	2.620	3.125	.375	.250	2.620	3.156	.437	.218	2.865	3.386	.437	.313	2.740	3.248	.437	.313
2.000	48-50	2.745	3.250	.375	.250	2.744	3.406	.500	.250	3.115	3.740	.563	.374	2.865	3.366	.437	.313
2.125	53	2.870	3.500	.375	.250	2.930	3.593	.500	.250	3.240	3.858	.563	.374	3.115	3.760	.563	.374
2.250	55	2.995	3.625	.375	.250	2.961	3.625	.500	.250	3.365	3.976	.563	.374	3.240	3.878	.563	.374
2.375	58-60	3.120	3.750	.375	.250	3.118	3.781	.500	.250	3.490	4.173	.563	.374	3.365	3.996	.563	.374
2.500	63	3.245	4.000	.375	.250	3.243	3.906	.500	.250	3.610	4.252	.563	.374	3.490	4.114	.563	.374
2.625	65	3.370	4.125	.375	.250	3.368	4.031	.500	.250	3.740	4.370	.563	.374	3.615	4.272	.563	.374
2.750	68-70	3.615	4.250	.750	.250	3.493	4.156	.500	.250	3.865	4.488	.563	.374	3.740	4.370	.563	.374
2.875	73	3.740	4.375	.750	.250	3.617	4.281	.500	.250	3.927	4.526	.563	.374	3.865	4.488	.563	.374
3.000	75	3.865	4.500	.750	.250	3.740	4.406	.500	.250	4.053	4.685	.563	.374	3.927	4.547	.563	.374
3.125	-	3.990	4.625	.750	.250	3.865	4.531	.500	.250	4.240	4.921	.563	.374	4.053	4.705	.563	.374
3.250	80	4.115	4.750	.750	.250	3.990	4.656	.500	.250	4.490	5.118	.563	.374	4.240	4.870	.563	.374
3.375	-	4.240	4.875	.750	.250	4.114	4.781	.500	.250	4.615	5.276	.563	.374	4.490	5.000	.563	.374
3.500	85	4.365	5.000	.750	.250	4.238	4.906	.500	.250	4.740	5.354	.563	.374	4.490	5.138	.563	.374
3.625	-	4.490	5.125	.750	.250	4.363	5.031	.500	.250	4.865	5.511	.563	.374	4.740	5.250	.563	.374
3.750	90-95	4.615	5.250	.750	.250	4.487	5.156	.500	.250	4.990	5.591	.563	.374	4.740	5.374	.563	.374
3.875	-	4.740	5.375	.750	.250	4.612	5.281	.500	.250	5.115	5.767	.563	.374	4.865	5.500	.563	.374
4.000	100	4.865	5.500	.750	.250	4.735	5.406	.500	.250	5.240	5.866	.563	.374	4.990	5.610	.563	.374



AU1 | AU2-AU12 | AU3-AU4 | AU5 | AU6 - AU7 | AU8 - AU9 | AU11 | AU10

AU1*					AU4*		AU5*		AU2* - AU3*			AU6* - AU7* - AU10*				AU8 - AU9 - AU11*				AU12*		
d (inc)	D1	D2	L1	L2	d (inc)	L1	D1	L1	d (mm)	D1	L1	d (mm)	d (inc)	D1	L1	d	d (inc)	D1	L3	d (mm)	D1	L1
.375	-	-	-	-	.375	.261			10	21.0	8.6	20	.750	35	13	16	-	28.6	9.0	10	24.6	8.7
.500	-	-	-	-	.500	.261	1.000	.312	12	23.0	8.6	22	-	37	13	18	-	31.8	9.0	12	27.8	8.7
.625	-	-	-	-	.625	.297	1.250	.406	14	25.0	8.6	24	.875	39	13	20	-	33.3	9.0	14-16	31.0	10.3
.750	1.370	1.750	.250	.250	.750	.297	1.375	.406	16	27.0	8.6	25	1.000	40	13	22	-	34.9	9.0	18-19	34.2	10.3
.875	1.494	1.875	.250	.250	.813	.297	1.500	.406	18	33.0	10.0	28	1.125	43	13	25	-	39.7	10.0	20	35.7	10.3
1.000	1.620	2.000	.375	.250	.875	.297	1.625	.437	19	35.0	10.0	30	-	45	13	28	-	42.9	10.0	22	37.3	10.3
1.125	1.745	2.125	.375	.250	1.000	.297	1.750	.437	20	35.0	10.0	32	1.250	48	13	30	-	44.4	10.0	24-25	40.5	10.3
1.250	1.870	2.250	.375	.250	1.125	.297	1.875	.437	22	37.0	10.0	33	-	48	13	32	-	46.0	10.0	28	47.6	12.0
1.375	1.995	2.375	.375	.250	1.250	.297	2.000	.437	24	39.0	10.0	35	1.375	50	13	33	-	46.0	10.0	30-32	50.8	12.0
1.500	2.245	2.625	.375	.250	1.375	.297	2.125	.437	25	40.0	10.0	38	1.500	56	13	35	-	49.2	10.0	33	53.9	12.0
1.625	2.370	2.750	.375	.250	1.437	.297	2.375	.500	28	43.0	10.0	40	-	58	13	38	-	52.4	10.0	35	53.9	12.0
1.750	2.495	3.000	.375	.250	1.500	.297	2.500	.500	30	45.0	10.0	42	-	61	13	40	-	54.0	10.0	38	57.2	12.0
1.875	2.620	3.125	.375	.250	1.625	.335	2.625	.500	32	48.0	10.0	43	1.625	61	13	42	-	55.6	10.0	40	60.3	12.0
2.000	2.745	3.250	.375	.250	1.750	.335	2.750	.500	33	48.0	10.0	45	1.750	63	13	43	-	55.6	10.0	42-45	63.5	12.0
2.125	2.870	3.500	.375	.250	1.875	.335	3.000	.562	35	50.0	10.0	48	1.875	66	13	45	-	58.7	10.0	48	66.7	12.0
2.250	2.995	3.625	.375	.250	2.000	.335	3.125	.562	38	56.0	11.0	50	2.000	70	13	48	-	63.5	10.0	50	69.8	13.5
2.375	3.120	3.750	.375	.250	2.125	.375	3.250	.562	40	58.0	11.0	53	2.125	73	13	50	-	65.1	10.0	53	73.0	13.5
2.500	3.245	4.000	.375	.250	2.250	.375	3.375	.562	42	61.0	11.0	55	-	75	13	-	2.000	66.7	10.0	55	76.2	13.5
2.625	3.370	4.125	.375	.250	2.375	.375	3.375	.625	43	61.0	11.0	58	2.250	78	16	55	-	69.9	10.0	58-60	79.4	13.5
2.750	3.615	4.250	.750	.250	2.500	.375	3.500	.625	45	63.0	11.0	60	2.375	80	16	58	-	73.0	10.0	63	82.5	13.5
2.875	3.740	4.375	.750	.250	2.625	.375	3.750	.625	48	66.0	11.0	63	2.500	84	16	60	-	76.2	10.0	65	92.1	15.9
3.000	3.865	4.500	.750	.250	2.750	.375	3.875	.625	50	70.0	13.0	65	-	85	16	63	-	79.4	10.0	70	95.2	15.9
3.125	3.990	4.625	.750	.250	2.875	.473	4.000	.781	53	73.0	13.0	-	2.625	-	-	65	-	81.0	10.0	73	98.4	15.9
3.250	4.115	4.750	.750	.250	3.000	.473	4.125	.781	55	75.0	13.0	68	-	90	16	68	-	82.6	10.0	75	101.6	15.9
3.375	4.240	4.875	.750	.250	3.125	.473	4.250	.781	58	78.0	13.0	70	2.750	92	16	70	-	85.7	10.0	-	111.1	19.8
3.500	4.365	5.000	.750	.250	3.250	.473	4.375	.781	60	80.0	13.0	-	2.875	-	-	73	-	88.9	10.0	80	114.3	19.8
3.625	4.490	5.125	.750	.250	3.375	.473	4.500	.781	63	83.0	13.0	75	3.000	97	16	75	-	90.5	10.0	85	117.5	19.8
3.750	4.615	5.250	.750	.250	3.500	.473	4.625	.781	65	85.0	13.0	80	3.125	105	16	-	3.000	95.3	10.0	-	120.7	19.8
3.875	4.740	5.375	.750	.250	3.625	.513	4.750	.781	68	90.0	15.3	-	3.250	-	-	80	-	98.4	10.0	90	123.8	19.8
4.000	4.865	5.500	.750	.250	3.750	.513	4.875	.781	70	92.0	15.3	85	3.375	110	16	-	3.250	101.6	10.0	95	127.0	19.8
									75	97.0	15.3	90	3.500	115	16	85	-	104.8	10.0	-	130.2	19.8
									80	105.0	15.7	-	3.625	-	-	-	3.500	108.0	10.0	100	133.4	19.8
									85	110.0	15.7	95	3.750	120	16	90	-	109.5	10.0			
									90	115.0	15.7	-	3.875	-	-	95	-	114.3	10.0			
									95	120.0	15.7	100	4.000	125	16	100	-	119.0	10.0			
									100	125.0	15.7					-	4.000	123.8	10.0			

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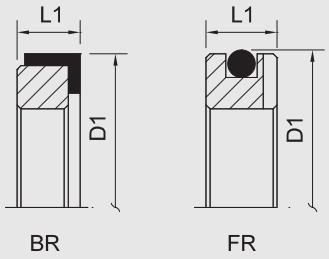
BR - FR
Mating rings



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Seat	d	D1	L1
BR1	12	23.0	8.6
BR1	14	25.0	8.6
BR1	16	27.0	8.6
BR1	18	33.0	10.0
BR1	19	35.0	10.0
BR1	20	35.0	10.0
BR1	22	37.0	10.0
BR1	24	39.0	10.0
BR1	25	40.0	10.0
BR1	28	43.0	10.0
BR1	30	45.0	10.0
BR1	32	48.0	10.0
BR1	33	48.0	10.0
BR1	35	50.0	10.0
BR1	38	56.0	11.0
BR1	40	58.0	11.0
BR1	42	61.0	11.0
BR1	43	61.0	11.0
BR1	45	63.0	11.0
BR1	48	66.0	11.0
BR1	50	70.0	13.0
BR1	53	73.0	13.0
BR1	55	75.0	13.0
BR1	58	78.0	13.0
BR1	60	80.0	13.0
BR1	63	83.0	13.0
BR1	65	85.0	13.0
BR1	68	90.0	15.3
BR1	70	92.0	15.3
BR1	75	97.0	15.3
BR1	80	105.0	15.7
BR1	85	110.0	15.7
BR1	90	115.0	15.7
BR1	95	120.0	15.7
BR1	100	125.0	15.7
BR1	70	.875	.312
BR1	75	1.000	.312
BR1	80	1.250	.406
BR1	85	1.375	.406
BR2	.375	.875	.312
BR2	.500	1.000	.312
BR2	.625	1.250	.406
BR2	.750	1.375	.406
BR2	.812	1.375	.406
BR2	.875	1.500	.406
BR2	1.000	1.625	.437
BR2	1.125	1.750	.437
BR2	1.187	1.875	.437
BR2	1.250	1.875	.437
BR2	1.375	2.000	.437
BR2	1.437	2.125	.437
BR2	1.500	2.125	.437
BR2	1.625	2.375	.500
BR2	1.750	2.500	.500
BR2	1.875	2.625	.500

Seat	d	D1	L1
BR2	2.000	2.750	.500
BR2	2.125	3.000	.562
BR2	2.250	3.125	.562
BR2	2.375	3.250	.562
BR2	2.500	3.375	.562
BR2	2.625	3.375	.625
BR2	2.750	3.500	.625
BR2	2.875	3.750	.625
BR2	3.000	3.875	.625
BR3	.375	.968	.344
BR3	.500	1.094	.343
BR3	.625	1.219	.406
BR3	.750	1.344	.406
BR3	.813	1.406	.406
BR3	.875	1.469	.406
BR3	1.000	1.594	.406
BR3	1.125	1.875	.472
BR3	1.250	2.000	.472
BR3	1.375	2.125	.472
BR3	1.500	2.250	.472
BR3	1.625	2.375	.472
BR3	1.750	2.500	.472
BR3	1.875	2.625	.472
BR3	2.000	2.750	.531
BR3	2.125	2.875	.531
BR3	2.250	3.000	.531
BR3	2.375	3.125	.531
BR3	2.500	3.250	.531
BR3	2.625	3.625	.625
BR3	2.750	3.750	.625
BR3	2.875	3.875	.625
BR3	3.000	4.000	.625
BR4	10	21	5
BR4	12	23	6
BR4	14	25	6
BR4	15	26	6
BR4	16	27	6
BR4	18	33	6
BR4	20	35	6
BR4	22	37	6
BR4	24	39	6
BR4	25	40	6
BR4	28	43	6
BR4	30	45	7
BR4	32	48	7
BR4	33	48	7
BR4	35	50	8
BR4	38	56	8
BR4	40	58	8
BR4	43	61	8
BR4	45	63	8
BR4	48	66	10
BR4	50	70	10
BR4	53	73	10
BR4	55	75	10
BR4	58	78	10
BR4	60	80	12
BR4	63	83	12
BR4	65	85	12
BR4	68	90	12
BR4	70	92	12
BR4	75	97	12
BR5*	10	24	7
BR5*	11	24	7
BR5*	12	26	7
BR5*	13	26	7
BR5*	14	28	7
BR5*	15	28	7
BR5*	16	32	8
BR5*	17	32	8

Seat	d	D1	L1
BR5*	18	35	8
BR5*	19	35	8
BR5*	20	38	8
BR5*	22	40	8
BR5*	25	44	9
BR5*	28	46	9
BR5*	30	50	9
BR5*	32	54	9
BR5*	35	58	10
BR5*	38	60	10
BR5*	40	64	10
BR5*	45	66	10
BR5*	50	72	10
BR6	8a	26.0	4.0
BR6	8b	22.0	4.0
BR6	8c	26.0	8.0
BR6	9	26.0	8.0
BR6	10	26.0	8.0
BR6	11	26.0	8.0
BR6	12a	26.0	5.5
BR6	12b	26.0	8.0
BR6	12c	35.0	8.0
BR6	13	26.0	8.0
BR6	14a	25.0	7.0
BR6	14b	28.5	8.0
BR6	14c	29.5	8.0
BR6	14d	35.0	8.0
BR6	14e	30.0	8.0
BR6	15a	29.5	8.0
BR6	15b	38.0	8.0
BR6	15c	38.0	8.0
BR6	16a	29.5	8.0
BR6	16b	38.0	8.0
BR6	16c	38.0	8.0
BR6	16d	42.0	8.0
BR6	17	42.0	8.0
BR6	18	42.0	8.0
BR6	19	42.0	8.0
BR6	20a	42.0	8.0
BR6	20b	45.0	10.0
BR6	22	45.0	10.0
BR6	23	50.0	10.0
BR6	24	50.0	10.0
BR6	25a	50.0	10.0
BR6	25b	50.0	10.0
BR6	26	50.0	10.0
BR6	28	57.0	10.0
BR6	30	57.0	10.0
BR6	32	57.0	10.0
BR6	35	63.0	10.0
BR6	38	68.0	12.0
BR6	40	68.0	12.0
BR6	45	73.0	12.0
BR6	50	88.0	15.0
BR6	55	88.0	15.0
BR6	60	110.0	15.0
BR6	65	110.0	15.0
BR6	70	110.0	15.0
BR7*	.437	1.175	.250
BR7*	.625	1.187	.343
BR7*	.750	1.312	.281
BR7*	.875	1.437	.265
BR7*	1.000	1.625	.406
BR7*	1.125	1.875	.437
BR7*	1.187	1.750	.437
BR7*	1.250	2.000	.437
BR7*	1.375	2.125	.437
BR7*	1.500	2.250	.437
BR7*	1.625	2.625	.500
BR7*	2.000	2.625	.500

Seat	d	D1	L1
BR7*	2.125	3.000	.625
BR8*	.625	1.375	.406
BR8*	.750	1.275	.281
BR8*	.875	1.562	.406
BR8*	1.000	1.750	.437
BR8*	1.125	1.875	.437
BR8*	1.250	1.762	.365
BR8*	1.500	2.156	.437
BR8*	1.625	2.312	.500
BR8*	1.750	2.625	.500
BR9*	.500	.938	.225
BR9*	.500	1.000	.187
BR9*	.500	1.000	.218
BR9*	.500	1.000	.290
BR9*	.625	1.187	.288
BR9*	.625	1.250	.250
BR9*	.625	1.250	.281
BR9*	.625	1.250	.343
BR9*	.625	1.270	.406
BR9*	.625	1.375	.562
BR9*	.750	1.375	.250
BR9*	.750	1.375	.281
BR9*	.750	1.437	.406
BR9*	.750	1.500	.250
BR9*	1.000	1.625	.385
BR9*	1.250	1.750	.365

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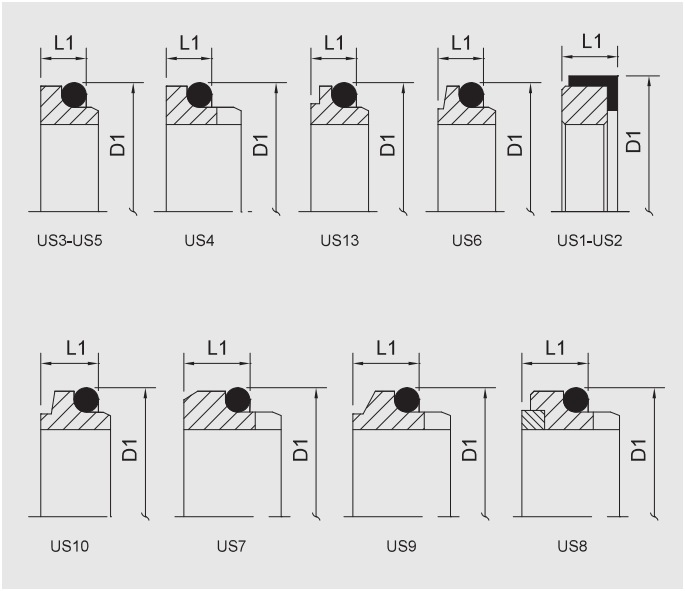
Seat	d	D1	L1
FR1	.375	.875	.312
FR1	.500	1.000	.312
FR1	.625	1.250	.406
FR1	.750	1.375	.406
FR1	.875	1.500	.406
FR1	.937	1.562	.437
FR1	1.000	1.625	.437
FR1	1.125	1.750	.437
FR1	1.250	1.875	.437
FR1	1.375	2.000	.437
FR1	1.437	2.125	.437
FR1	1.500	2.125	.437
FR1	1.625	2.375	.500
FR1	1.750	2.500	.500
FR1	1.875	2.625	.500
FR1	2.000	2.750	.500
FR1	2.125	3.000	.562
FR1	2.250	3.125	.562
FR1	2.375	3.250	.562
FR1	2.500	3.375	.562
FR1	2.625	3.375	.625
FR1	2.750	3.500	.625
FR1	2.875	3.750	.625
FR1	3.000	3.875	.625
FR1	3.125	4.000	.781
FR1	3.250	4.125	.781
FR1	3.375	4.250	.781
FR1	3.500	4.375	.781
FR1	3.625	4.500	.781
FR1	3.750	4.625	.781
FR1	3.875	4.750	.781
FR1	4.000	4.875	.781
FR2	.375	.968	.343
FR2	.500	1.094	.343
FR2	.625	1.219	.406
FR2	.750	1.344	.406
FR2	.813	1.406	.406
FR2	.875	1.469	.406

Seat	d	D1	L1
FR2	1.000	1.594	.406
FR2	1.125	1.875	.472
FR2	1.250	2.000	.472
FR2	1.375	2.125	.472
FR2	1.500	2.250	.472
FR2	1.625	2.375	.472
FR2	1.750	2.500	.472
FR2	1.875	2.625	.472
FR2	2.000	2.750	.531
FR2	2.125	2.875	.531
FR2	2.250	3.000	.531
FR2	2.375	3.125	.531
FR2	2.500	3.250	.531
FR2	2.625	3.625	.625
FR2	2.750	3.750	.625
FR2	2.875	3.875	.625
FR2	3.000	4.000	.625
FR2	3.125	4.375	.781
FR2	3.250	4.500	.781
FR2	3.375	4.625	.781
FR2	3.500	4.750	.781
FR2	3.625	4.875	.781
FR2	3.750	5.000	.781
FR2	3.875	5.125	.781
FR2	4.000	5.250	.781
FR3	1.125	1.875	.437
FR3	1.250	2.000	.437
FR3	1.375	2.125	.437
FR3	1.437	2.250	.437
FR3	2.125	2.875	.562
FR3	2.500	3.250	.562
FR4 - 5	12a	26.0	5.5
FR4 - 5	12b	26.0	8.0
FR4 - 5	12c	35.0	8.0
FR4 - 5	13	26.0	8.0
FR4 - 5	14a	25.0	7.0
FR4 - 5	14b	28.5	8.0
FR4 - 5	14c	29.5	8.0
FR4 - 5	14d	35.0	8.0
FR4 - 5	14e	30.0	8.0
FR4 - 5	15a	29.5	8.0
FR4 - 5	15b	38.0	8.0
FR4 - 5	15c	38.0	8.0
FR4 - 5	16a	29.5	8.0
FR4 - 5	16b	38.0	8.0
FR4 - 5	16c	38.0	8.0
FR4 - 5	16d	42.0	8.0
FR4 - 5	17	42.0	8.0
FR4 - 5	18	42.0	8.0
FR4 - 5	19	42.0	8.0
FR4 - 5	20a	42.0	8.0
FR4 - 5	20b	45.0	10.0
FR4 - 5	22	45.0	10.0
FR4 - 5	23	50.0	10.0
FR4 - 5	24	50.0	10.0
FR4 - 5	25a	50.0	10.0
FR4 - 5	25b	50.0	10.0
FR4 - 5	26	50.0	10.0
FR4 - 5	28	57.0	10.0
FR4 - 5	30	57.0	10.0
FR4 - 5	32	57.0	10.0
FR4 - 5	35	63.0	10.0
FR4 - 5	38	68.0	12.0
FR4 - 5	40	68.0	12.0
FR4 - 5	45	73.0	12.0
FR4 - 5	50	88.0	15.0
FR4 - 5	55	88.0	15.0
FR4 - 5	60	110.0	15.0
FR4 - 5	65	110.0	15.0
FR4 - 5	70	110.0	15.0

Seat	d	D1	L1
FR6	.437	1.175	.250
FR6	.625	1.187	.343
FR6	.750	1.187	.406
FR6	1.125	1.812	.437
FR6	1.437	2.063	.437
FR6	1.500	2.312	.437
FR6	1.625	2.625	.500
FR6	1.750	2.312	.500
FR6	1.875	2.687	.500
FR6	2.000	3.000	.500
FR6	2.500	3.250	.437
FR6	2.875	3.750	.562
FR6	3.125	4.000	.625
FR6	3.250	4.125	.625
FR6	3.375	4.250	.625
FR6	3.500	4.375	.625
FR6	3.625	4.500	.687
FR6	3.750	4.625	.687
FR6	3.875	4.750	.687
FR6	4.000	4.875	.687
FR7	1.000	1.750	.437
FR7	1.375	2.000	.687
FR7	1.437	2.250	.375
FR7	1.500	2.125	.500
FR7	1.750	2.625	.500
FR7	2.500	3.000	.562
FR7	2.750	3.625	.625
FR7	3.000	4.000	.500
FR8	1.437	2.250	.625
FR8	1.500	2.063	.437
FR8	1.750	2.750	.625
FR9	1.437	2.312	.357

*su richiesta - upon request



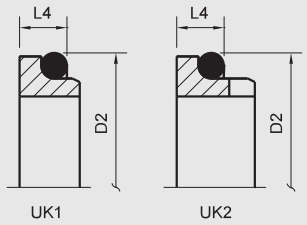
US
Mating rings

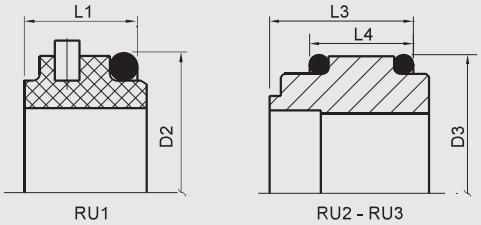
Caratteristiche tecniche - Technical features

- Controfacce per misure albero metriche
  Mating rings for metric shaft sizes
- US3, US4, US5, US13, US7, US2, US1
  available in: ceramic, stainless steel, silicon carbide, tugsten carbide.
- US6, US10, US9
  available in: carbon graphite.

su richiesta - upon request

	US3 - US4* - US13*		US5 - US1 - US6		US10		US7 - US9 - US8		US2			US12	US11
d	D1	L1	D1	L1	D1	L1	D1	L1	D1	L1	D1	L1	L1
10	19.2	6.6	21.0	6.6	19.2	7.1	21.0	10.0	24.6	9.0	-	-	-
12	21.6	5.6	23.0	6.6	21.6	7.6	23.0	10.0	27.8	9.0	-	-	-
14	24.6	5.6	25.0	6.6	24.6	7.6	25.0	10.0	31.0	10.5	-	-	-
15	24.6	6.6	27.0	6.6	24.6	9.0	27.0	10.0	31.0	10.5	-	-	-
16	28.0	7.5	27.0	6.6	28.0	9.0	27.0	10.0	31.0	10.5	-	-	-
18	30.0	8.0	33.0	7.5	30.0	10.0	33.0	11.5	34.2	10.5	33.0	7.0	9.0
20	35.0	7.5	35.0	7.5	35.0	9.5	35.0	11.5	35.7	10.5	35.0	7.0	9.0
22	35.0	7.5	37.0	7.5	35.0	9.5	37.0	11.5	37.3	10.5	37.0	7.0	9.0
24	38.0	7.5	39.0	7.5	38.0	9.5	39.0	11.5	40.5	10.5	39.0	7.0	9.0
25	38.0	7.5	40.0	7.5	38.0	11.0	40.0	11.5	40.5	10.5	40.0	7.0	9.0
28	42.0	9.0	43.0	7.5	42.0	11.0	43.0	11.5	47.7	12.0	43.0	7.0	9.5
30	45.0	10.5	45.0	7.5	45.0	11.0	45.0	11.5	50.8	12.0	45.0	7.0	9.5
32	48.0	10.5	48.0	7.5	48.0	11.0	48.0	11.5	50.8	12.0	48.0	7.0	9.5
33	50.0	11.0	48.0	7.5	50.0	11.5	48.0	11.5	54.0	12.0	48.0	7.0	9.5
35	52.0	11.0	50.0	7.5	52.0	11.5	50.0	11.5	54.0	12.0	50.0	7.0	9.5
38	55.0	10.3	56.0	9.0	55.0	11.5	56.0	14.0	57.2	12.0	56.0	8.0	10.5
40	58.0	10.8	58.0	9.0	58.0	11.5	58.0	14.0	60.4	12.0	58.0	8.0	10.5
42	62.0	12.0	61.0	9.0	60.0	14.3	61.0	14.0	63.5	12.0	-	-	-
43	62.0	12.0	61.0	9.0	62.0	14.3	61.0	14.0	63.5	12.0	61.0	8.0	10.5
45	64.0	11.6	63.0	9.0	64.0	14.3	63.0	14.0	63.5	12.0	63.0	8.0	10.5
48	68.4	11.6	66.0	9.0	68.4	14.3	66.0	14.0	66.7	12.0	66.0	8.0	10.5
50	69.3	11.6	70.0	9.5	69.3	14.3	70.0	15.0	69.9	13.5	70.0	9.5	12.0
53	72.3	12.3	73.0	11.0	72.3	14.3	73.0	15.0	73.1	13.5	73.0	9.5	12.0
55	75.4	13.3	75.0	11.0	75.4	15.3	75.0	15.0	76.2	13.5	75.0	9.5	12.0
58	78.4	13.3	78.0	11.0	78.4	15.3	78.0	15.0	79.4	13.5	78.0	10.5	13.0
60	80.4	13.3	80.0	11.0	80.4	15.3	80.0	15.0	79.4	13.5	80.0	10.5	13.0
63	83.4	13.3	83.0	11.0	83.4	15.3	83.0	15.0	82.5	13.5	83.0	10.5	13.0
65	85.4	13.0	85.0	11.0	85.4	15.3	85.0	15.0	92.1	16.0	85.0	10.5	13.0
68	91.5	13.7	90.0	11.3	91.5	16.0	90.0	18.0	95.3	16.0	90.0	11.0	13.5
70	92.0	13.0	92.0	11.3	92.0	15.3	92.0	18.0	95.3	16.0	92.0	11.5	14.0
75	99.0	14.0	97.0	11.3	99.0	15.3	97.0	18.0	101.6	16.0	97.0	11.5	14.0
80	104.0	15.0	105.0	12.0	104.0	16.3	105.0	18.2	114.3	20.0	105.0	11.5	14.0
85	109.0	14.8	110.0	14.0	109.0	16.3	110.0	18.2	117.5	20.0	110.0	11.5	14.0
90	114.0	14.8	115.0	14.0	114.0	16.3	115.0	18.2	123.9	20.0	115.0	13.0	15.5
95	120.3	15.8	120.0	14.0	120.3	17.3	120.0	17.2	127.0	20.0	120.0	13.0	15.5
100	123.3	15.8	125.0	14.0	123.3	17.3	125.0	17.2	133.4	20.0	125.0	13.0	15.5





UK1* - UK2*

d	D2	L4
8	-	-
10	21	7
12	23	7
14	25	7
15	-	-
16	27	7
17	-	-
18	33	10
19	-	-
20	35	10
22	37	10
24	39	10
25	40	10
26	-	-
28	43	10
30	45	10
32	48	10
33	48	10
35	50	10
38	56	13
40	58	13
42	-	-
43	61	13
45	63	13
48	66	13
50	70	14
53	73	14
55	75	14
58	78	14
60	80	14
63	83	14
65	85	14
68	90	16
70	92	16
75	97	16
80	105	18
85	110	18
90	115	18
95	120	18
100	125	18

RU1*

d	D1	L1
1.000	1.500	.81
1.125	1.875	.81
1.187	1.937	.81
1.250	2.000	.81
1.375	2.125	.81
1.437	2.187	.81
1.500	2.250	.81
1.625	2.375	.81
1.750	2.500	.81
1.875	2.625	.81
2.000	2.750	.81
2.125	2.875	.81
2.250	3.000	.81
2.375	3.125	.81
2.500	3.250	.81
2.625	3.375	.81
2.750	3.500	.81
2.875	3.625	.81
3.000	3.750	.81
3.125	4.062	.81
3.250	4.187	.81
3.375	4.312	.81
3.500	4.437	.81
3.625	4.562	.81
3.750	4.687	.81
3.875	4.812	.81
4.000	4.937	.81
4.250	5.187	.81
4.500	5.437	.81

RU2* - RU3*

d (mm)	d (inc)	D3	L3	L4
20	.750	42	23	18
22	-	44	23	18
24	.875	46	23	18
25	1.000	47	23	18
28	1.125	50	23	18
30	-	52	23	18
32	1.250	54	23	18
33	-	55	23	18
35	1.375	57	23	18
38	1.500	64	25	20
40	-	66	25	20
42	-	69	25	20
43	1.625	69	25	20
45	1.750	71	25	20
48	1.875	74	25	20
50	2.000	76	25	20
53	2.125	79	25	20
55	-	81	25	20
58	2.250	89	28	22
60	2.375	91	28	22
63	2.500	94	28	22
65	-	96	28	22
-	2.625	-	-	-
68	-	99	30	24
70	2.750	101	30	24
-	2.875	-	-	-
75	3.000	110	30	24
80	3.125	115	31	25
-	3.250	-	-	-
85	3.375	120	31	25
90	3.500	125	31	25
-	3.625	-	-	-
95	3.750	130	31	25
-	3.875	-	-	-
100	4.000	135	31	25

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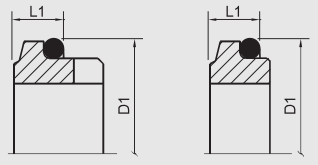

NL1 - NL2 - NL3 - NL4

d	D2	L2	d	D2	L2
10	21	7	43	61	13
12	23	7	45	63	13
14	25	7	48	66	13
15	27	7	50	70	14
16	27	7	53	73	14
18	33	10	55	75	14
19	35	10	58	78	14
20	35	10	60	80	14
22	37	10	63	83	14
24	39	10	65	85	14
25	40	10	68	90	16
28	43	10	70	92	16
30	45	10	75	97	16
32	48	10	80	105	18
33	48	10	85	110	18
35	50	10	90	115	18
38	56	13	95	120	18
40	58	13	100	125	18

DETTAGLI

AU6* Corpo unico
AU7* Ad inserto per misure albero metriche
AU10* Corpo unico per misure albero metriche

DE1 Pista di scivolo inserita tramite processo termico con foro antirotazione
DE2 Corpo unico a coda lunga con foro antirotazione
DE3 Corpo unico a dimensione ridotta
DE4 Corpo unico a dimensione ridotta pista di scivolo maggiorata
DE5 Pista di scivolo inserita tramite processo termico a dimensione ridotta

FR1 Per misure albero imperiali

NL1 Corpo unico a coda lunga con foro antirotazione a normativa DIN24960
NL2 Corpo unico a dimensione ridotta a normativa DIN24960
NL3 Pista di scivolo inserita tramite processo termico con foro antirotazione a normativa DIN24960
NL4 Pista di scivolo inserita tramite processo termico a dimensione ridotta con foro antirotazione a normativa DIN24960

RU2* Corpo unico
RU3 Ad inserto per misure albero metriche

UK1* Corpo unico a dimensione ridotta con pista di scivolo maggiorata a normativa DIN24960
UK2* Corpo unico a coda, pista di scivolo maggiorata con foro antirotazione a normativa DIN24960

US1 A normativa DIN 24960, standard per NY1, NY2, NY3
US2 Standard per NY4
US3, US5, US10 Solo grafite
US7 Standard
US8 Pista di scivolo inserita tramite processo termico
US9 Solo grafite
US10 Solo grafite

DETAILS

AU6* Monolithic
AU7* Insert for metric shaft size
AU10* Monolithic for metric shaft size

DE1 Face shrink fitted, anti-rotation pin slot
DE2 Monolithic long seat, anti-rotation pin slot
DE3 Monolithic short seat
DE4 Monolithic short seat, wide face
DE5 Short seat, face shrink fitted

FR1 For imperial shaft size

NL1 Monolithic long seat, anti-rotation pin slot, to DIN24960
NL2 Monolithic short seat, to DIN24960
NL3 Face shrink fitted, anti-rotation pin slot, to DIN24960
NL4 Short seat, face shrink fitted, anti-rotation pin slot, to DIN24960

RU2* Monolithic
RU3 Insert for metric shaft size

UK1* Monolithic short seat, wide face, to DIN24960
UK2* Monolithic long seat, wide face, anti-rotation pin slot, to DIN24960

US1 To DIN 24960, standard for NY1, NY2, NY3
US2 Standard for NY4
US3, US5, US10 Carbon only
US7 Standard
US8 Carbide face shrink-fitted
US9 Carbon only
US10 Carbon only

**su richiesta - upon request*

TABELLE DI CONVERSIONE MISURE

PRESSIONE		TEMPERATURA		VELOCITA'	
bar	psi	°C	°F	m/s	ft/s
1	14,5	-80	-112	1	3,28
1,5	21,75	-70	-94	2	6,56
2	29	-60	-76	3	9,84
2,5	36,25	-50	-58	4	13,12
3	43,5	-40	-40	5	16,4
3,5	50,75	-30	-22	6	19,68
4	58	-20	-4	7	22,96
4,5	65,25	-10	14	8	26,24
5	72,5	-5	23	9	29,52
5,5	79,75	0	32	10	32,8
6	87	1	33,8	11	36,08
6,5	94,25	2	35,6	12	39,36
7	101,5	3	37,4	13	42,64
7,5	108,75	4	39,2	14	45,92
8	116	5	41	15	49,2
8,5	123,25	6	42,8	16	52,48
9	130,5	7	44,6	17	55,76
9,5	137,75	8	46,4	18	59,04
10	145	9	48,2	19	62,32
11	159,5	10	50	20	65,6
12	174	15	59	21	68,88
13	188,5	20	68	22	72,16
14	203	25	77	23	75,44
15	217,5	30	86	24	78,72
16	232	35	95	25	82
17	246,5	40	104	26	85,28
18	261	45	113	27	88,56
19	275,5	50	122	28	91,84
20	290	55	131	29	95,12
21	304,5	60	140	30	98,4
22	319	65	149	31	101,68
23	333,5	70	158	32	104,96
24	348	75	167	33	108,24
25	362,5	80	176	34	111,52
26	377	85	185	35	114,8
27	391,5	90	194	36	118,08
28	406	100	212	37	121,36
29	420,5	110	230	38	124,64
30	435	120	248	39	127,92
32	464	130	266	40	131,2
34	493	140	284	42	137,76
36	522	150	302	44	144,32
38	551	160	320	48	157,44
40	580	180	356	50	164
45	652,5	200	392	55	180,4

1 pollice
25,40 mm

TABELLA MATERIALI DIN 2496

Tenuta Rotante		Controfaccia		Tenuta Secondaria		Molle		Parti Metalliche	
Carburo di silicio sinterizzato	Q	Ossido di allumina (ceramica)	V1	NBR	P	AISI 304 (acciaio inox 304)	F1	AISI 304 (acciaio inox 304)	F1
Silicio	Q1	Carburo di silicio sinterizzato	Q	Viton	V	AISI 316 (acciaio inox 316)	G	AISI 316 (acciaio inox 316)	G
Carburo di tungsteno (VIDIA)	U	Silicio	Q1	EPDM	E	Hastelloy	M	Hastelloy	M
Grafite impregnata resina	B	Carburo di tungsteno (VIDIA)	U	PTFE	T	AISI 302 (acciaio inox)	F	AISI 302 (acciaio inox)	F
Grafite doppia impregnazione resina	B1	Grafite doppia impregnazione resina	B1	Aflas	K				
Grafite impregnata resina furanica	B2	Grafite impregnata resina furanica	B2						
Grafite impregnata antimonio	A	Grafite impregnata resina furanica	A						
Carburo di silicio caricato grafite	Q4	Carburo di silicio caricato grafite	Q4						

RIGENERAZIONE di TENUTE MECCANICHE
MECHANICAL SEALS REGENERATION