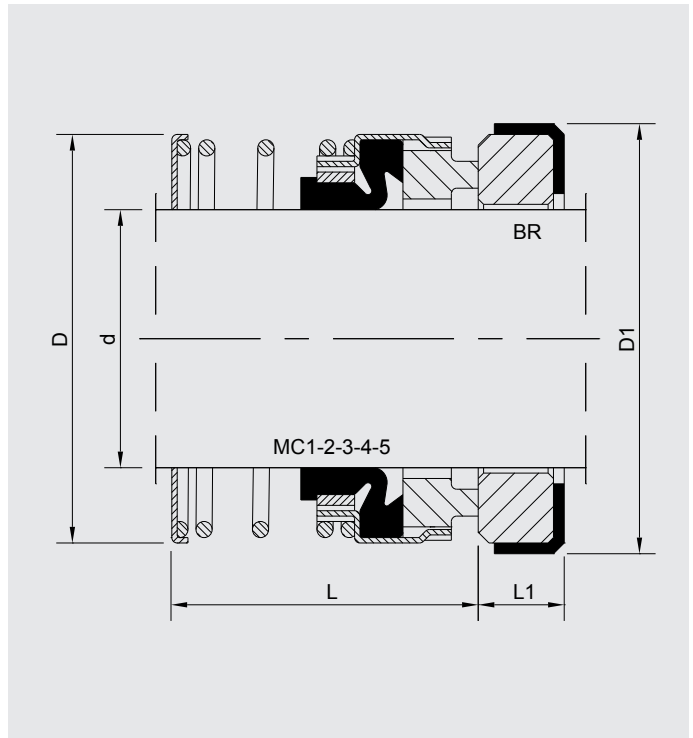


# Munich

Elastomer bellows seals



## Technical features

- Unbalanced
- Single spring
- Bi-directional
- Elastomer bellows

## 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*

\* upon request

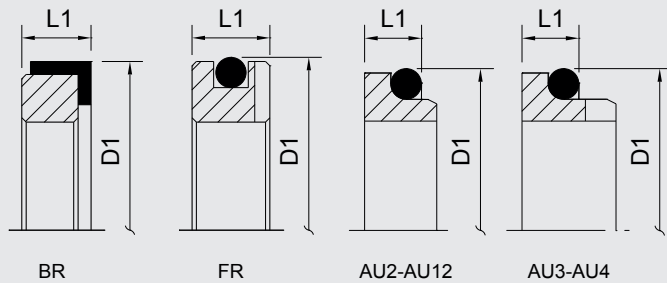
## Available products:

- | Imperial size    | Metric size      |
|------------------|------------------|
| • Munich 1 (MC1) | • Munich 4 (MC4) |
| • Munich 2 (MC2) | • Munich 5 (MC5) |
| • Munich 3 (MC3) |                  |

## Mating rings

- For MC1: BR3 (standard)
  - For MC2, MC3: BR2 (standard), FR1
  - For MC5: BR1 (standard), AU2\*, AU3\*
- For more details on mating rings see page 29

d (inc)	MC1		BR2 - FR1		AU4*	MC2		MC3	
	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	3.750	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	3.846	2.062



d (mm)	*MC1		BR3 - AU12*		d (mm)	MC5		MC4	BR1 - AU2* - AU3*	
	D	L	D1	L1		D	L		L	D1
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