

# ROD SEALS

## BECA

### 170-179



#### DESCRIPTION

The BECA 170 profile is a double acting composite rod seal composed of a filled PTFE friction ring and a pre-tightened rubber O'Ring. It meets the standards MIL-G-5514F and AS4716.

#### ADVANTAGES

- Suitable for a reduced size
- Low friction coefficient; no stick-slip effect
- Excellent extrusion and wear resistance
- Wide temperature range and excellent chemical resistance, depending on the material selected for the O'Ring

#### APPLICATIONS

- Actuators
- Brakes systems
- Flight controls
- Engine systems
- Landing gear

#### MATERIALS

##### Friction ring

- Bronze-filled PTFE
- Carbon-filled PTFE
- Blue GL PTFE

##### O'Ring

- NBR 70 Shore A
- FKM 70 Shore A

#### TECHNICAL DATA

Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s
Media	Mineral oil-based hydraulic fluids Fire retardant hydraulic fluids Bio oils Phosphate esters Water

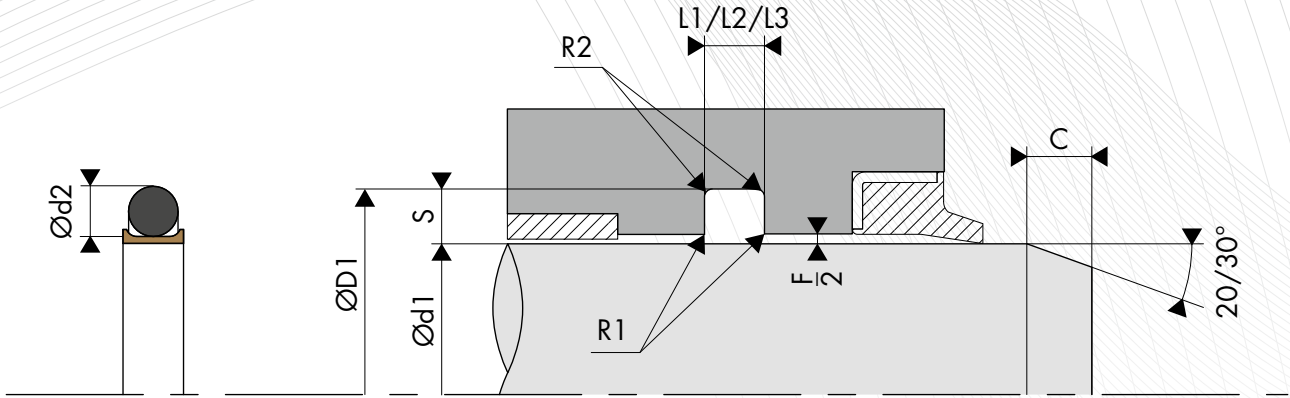
The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

#### SURFACE ROUGHNESS

Roughness	Dynamic surface area	Static surface area	Groove flanks
Ra	0.05 - 0.2 µm	≤1.6 µm	≤3.2 µm
Rz	0.4 - 1.6 µm	≤6.3 µm	≤10.0 µm
Rmax	0.63 - 2.5 µm	≤10.0 µm	≤16.0 µm

#### CHAMFERS AND RADIUS

Series	Radius		Chamfer C
	R1 min - max	R2 min - max	
010 - 028	0.13 - 0.26	0.13 - 0.38	2.00
110 - 149	0.13 - 0.26	0.13 - 0.38	2.50
210 - 222	0.13 - 0.26	0.13 - 0.38	3.00
223 - 247	0.13 - 0.26	0.25 - 0.64	3.50
325 - 349	0.13 - 0.26	0.51 - 0.89	4.00
425 - 460	0.13 - 0.26	0.51 - 0.89	4.50



○ GROOVE WIDTHS AND EXTRUSION GAPS

Series	Groove width			Extrusion gaps F	O'Ring cross-section Ød2
	L1 min - max	L2 min - max	L3 min - max		
010 - 012	2.39 - 2.52	3.81 - 4.06	5.26 - 5.51	0.10	1.78
013 - 028	2.39 - 2.52	3.81 - 4.06	5.26 - 5.51	0.13	1.78
110 - 125	3.58 - 3.83	4.65 - 4.90	6.22 - 6.47	0.13	2.62
126 - 131	3.58 - 3.83	4.65 - 4.90	6.22 - 6.47	0.15	2.62
132 - 149	3.58 - 3.83	4.65 - 4.90	6.22 - 6.47	0.18	2.62
210 - 222	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.13	3.55
223 - 225	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.15	3.55
226 - 245	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.18	3.55
246 - 247	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.20	3.55
325 - 327	7.14 - 7.39	8.48 - 8.73	10.77 - 11.02	0.15	5.33
328 - 349	7.14 - 7.39	8.48 - 8.73	10.77 - 11.02	0.18	5.33
425 - 449	9.53 - 9.78	12.07 - 12.32	14.71 - 14.96	0.23	6.99
450 - 460	9.53 - 9.78	12.07 - 12.32	14.71 - 14.96	0.25	6.99

○ TOLERANCES ON THE ROD DIAMETERS AND GROOVE DIAMETERS

Series	Tolerance on rod diameter Ød1	Tolerance on groove diameter ØD1
010 - 012	-0.025/0	0/+0.025
013 - 349	-0.050/0	0/+0.050
425 - 446	-0.076/0	0/+0.076
447 - 460	-0.076/0	0/+0.100

 DIMENSIONS

Part number	Series	Rod diameter			Groove diameter		
		AS4716 / MIL-G-5514	AS4716	MIL-G-5514	0 BAE	1 BAE	2 BAE
		Ød1	ØD1	ØD1	L1 min	L2 min	L3 min
170.A010	010	6.30	9.12	9.14	2.39	3.81	5.26
170.A011	011	7.87	10.69	10.72	2.39	3.81	5.26
170.A012	012	9.47	12.29	12.32	2.39	3.81	5.26
170.A013	013	11.05	13.84	13.89	2.39	3.81	5.26
170.A014	014	12.65	15.44	15.49	2.39	3.81	5.26
170.A015	015	14.22	17.02	17.07	2.39	3.81	5.26
170.A016	016	15.82	18.62	18.67	2.39	3.81	5.26
170.A017	017	17.40	20.19	20.24	2.39	3.81	5.26
170.A018	018	19.00	21.79	21.84	2.39	3.81	5.26
170.A019	019	20.57	23.37	23.42	2.39	3.81	5.26
170.A020	020	22.17	24.97	25.02	2.39	3.81	5.26
170.A021	021	23.75	26.54	26.59	2.39	3.81	5.26
170.A022	022	25.35	28.14	28.19	2.39	3.81	5.26
170.A023	023	26.92	29.72	29.77	2.39	3.81	5.26
170.A024	024	28.52	31.32	31.37	2.39	3.81	5.26
170.A025	025	30.10	32.89	32.94	2.39	3.81	5.26
170.A026	026	31.70	34.49	34.54	2.39	3.81	5.26
170.A027	027	33.27	36.07	36.12	2.39	3.81	5.26
170.A028	028	34.87	37.67	37.72	2.39	3.81	5.26
170.A110	110	9.47	13.87	14.00	3.58	4.65	6.22
170.A111	111	11.05	15.47	15.57	3.58	4.65	6.22
170.A112	112	12.65	17.07	17.17	3.58	4.65	6.22
170.A113	113	14.22	18.64	18.75	3.58	4.65	6.22
170.A114	114	15.82	20.24	20.35	3.58	4.65	6.22
170.A115	115	17.40	21.82	21.92	3.58	4.65	6.22
170.A116	116	19.00	23.44	23.52	3.58	4.65	6.22
170.A117	117	20.57	25.02	25.10	3.58	4.65	6.22
170.A118	118	22.17	26.62	26.70	3.58	4.65	6.22
170.A119	119	23.75	28.19	28.27	3.58	4.65	6.22
170.A120	120	25.35	29.79	29.87	3.58	4.65	6.22
170.A121	121	26.92	31.37	31.45	3.58	4.65	6.22
170.A122	122	28.52	32.97	33.05	3.58	4.65	6.22
170.A123	123	30.10	34.54	34.62	3.58	4.65	6.22
170.A124	124	31.70	36.14	36.22	3.58	4.65	6.22
170.A125	125	33.27	37.72	37.80	3.58	4.65	6.22
170.A126	126	34.87	39.32	39.40	3.58	4.65	6.22
170.A127	127	36.45	40.89	40.97	3.58	4.65	6.22
170.A128	128	38.05	42.49	42.57	3.58	4.65	6.22
170.A129	129	39.62	44.07	44.15	3.58	4.65	6.22
170.A130	130	41.22	45.67	45.75	3.58	4.65	6.22
170.A131	131	42.80	47.24	47.32	3.58	4.65	6.22
170.A132	132	44.40	48.84	48.92	3.58	4.65	6.22
170.A133	133	45.97	50.39	50.50	3.58	4.65	6.22
170.A134	134	47.57	51.99	52.10	3.58	4.65	6.22
170.A135	135	49.17	53.59	53.70	3.58	4.65	6.22
170.A136	136	50.75	55.17	55.27	3.58	4.65	6.22
170.A137	137	52.35	56.77	56.87	3.58	4.65	6.22
170.A138	138	53.92	58.34	58.45	3.58	4.65	6.22
170.A139	139	55.52	59.94	60.05	3.58	4.65	6.22
170.A140	140	57.10	61.52	61.62	3.58	4.65	6.22
170.A141	141	58.70	63.12	63.22	3.58	4.65	6.22
170.A142	142	60.27	64.69	64.80	3.58	4.65	6.22
170.A143	143	61.87	66.29	66.40	3.58	4.65	6.22
170.A144	144	63.45	67.87	67.97	3.58	4.65	6.22
170.A145	145	65.05	69.47	69.57	3.58	4.65	6.22
170.A146	146	66.62	71.04	71.15	3.58	4.65	6.22
170.A147	147	68.22	72.64	72.75	3.58	4.65	6.22
170.A148	148	69.80	74.22	74.32	3.58	4.65	6.22
170.A149	149	71.40	75.82	75.92	3.58	4.65	6.22
170.A210	210	19.00	25.12	25.17	4.78	5.97	7.72
170.A211	211	20.57	26.70	26.75	4.78	5.97	7.72

Part number	Series	Rod diameter	Groove diameter		Groove width		
		AS4716 / MIL-G-5514	AS4716	MIL-G-5514	0 BAE	1 BAE	2 BAE
		Ød1	ØD1	ØD1	L1 min	L2 min	L3 min
170.A212	212	22.17	28.32	28.35	4.78	5.97	7.72
170.A213	213	23.75	29.90	29.92	4.78	5.97	7.72
170.A214	214	25.35	31.50	31.52	4.78	5.97	7.72
170.A215	215	26.92	33.07	33.10	4.78	5.97	7.72
170.A216	216	28.52	34.67	34.70	4.78	5.97	7.72
170.A217	217	30.10	36.25	36.27	4.78	5.97	7.72
170.A218	218	31.70	37.85	37.87	4.78	5.97	7.72
170.A219	219	33.27	39.42	39.45	4.78	5.97	7.72
170.A220	220	34.87	41.02	41.05	4.78	5.97	7.72
170.A221	221	36.45	42.60	42.62	4.78	5.97	7.72
170.A222	222	38.05	44.20	44.22	4.78	5.97	7.72
170.A223	223	41.22	47.37	47.40	4.78	5.97	7.72
170.A224	224	44.40	50.55	50.57	4.78	5.97	7.72
170.A225	225	47.57	53.72	53.75	4.78	5.97	7.72
170.A226	226	50.75	56.90	56.92	4.78	5.97	7.72
170.A227	227	53.92	60.07	60.10	4.78	5.97	7.72
170.A228	228	57.10	63.25	63.27	4.78	5.97	7.72
170.A229	229	60.27	66.42	66.45	4.78	5.97	7.72
170.A230	230	63.45	69.60	69.62	4.78	5.97	7.72
170.A231	231	66.62	72.77	72.80	4.78	5.97	7.72
170.A232	232	69.80	75.95	75.97	4.78	5.97	7.72
170.A233	233	72.97	79.12	79.15	4.78	5.97	7.72
170.A234	234	76.12	82.27	82.30	4.78	5.97	7.72
170.A235	235	79.30	85.45	85.47	4.78	5.97	7.72
170.A236	236	82.47	88.62	88.65	4.78	5.97	7.72
170.A237	237	85.65	91.80	91.82	4.78	5.97	7.72
170.A238	238	88.82	94.97	95.00	4.78	5.97	7.72
170.A239	239	92.00	98.15	98.17	4.78	5.97	7.72
170.A240	240	95.17	101.32	101.35	4.78	5.97	7.72
170.A241	241	98.35	104.50	104.52	4.78	5.97	7.72
170.A242	242	101.52	107.67	107.70	4.78	5.97	7.72
170.A243	243	104.70	110.85	110.87	4.78	5.97	7.72
170.A244	244	107.87	114.02	114.05	4.78	5.97	7.72
170.A245	245	111.05	117.20	117.22	4.78	5.97	7.72
170.A246	246	114.22	120.37	120.40	4.78	5.97	7.72
170.A247	247	117.40	123.55	123.57	4.78	5.97	7.72
170.A325	325	38.05	47.50	47.50	7.14	8.48	10.77
170.A326	326	41.22	50.67	50.67	7.14	8.48	10.77
170.A327	327	44.40	53.85	53.85	7.14	8.48	10.77
170.A328	328	47.57	57.02	57.02	7.14	8.48	10.77
170.A329	329	50.75	60.20	60.20	7.14	8.48	10.77
170.A330	330	53.92	63.37	63.37	7.14	8.48	10.77
170.A331	331	57.10	66.55	66.55	7.14	8.48	10.77
170.A332	332	60.27	69.72	69.72	7.14	8.48	10.77
170.A333	333	63.45	72.90	72.90	7.14	8.48	10.77
170.A334	334	66.62	76.07	76.07	7.14	8.48	10.77
170.A335	335	69.80	79.25	79.25	7.14	8.48	10.77
170.A336	336	72.97	82.42	82.42	7.14	8.48	10.77
170.A337	337	76.12	85.57	85.57	7.14	8.48	10.77
170.A338	338	79.30	88.75	88.75	7.14	8.48	10.77
170.A339	339	82.47	91.92	91.92	7.14	8.48	10.77
170.A340	340	85.65	95.10	95.10	7.14	8.48	10.77
170.A341	341	88.82	98.27	98.27	7.14	8.48	10.77
170.A342	342	92.00	101.45	101.45	7.14	8.48	10.77
170.A343	343	95.17	104.62	104.62	7.14	8.48	10.77
170.A344	344	98.35	107.80	107.80	7.14	8.48	10.77
170.A345	345	101.52	110.97	110.97	7.14	8.48	10.77
170.A346	346	104.70	114.15	114.15	7.14	8.48	10.77
170.A347	347	107.87	117.32	117.32	7.14	8.48	10.77
170.A348	348	111.05	120.50	120.50	7.14	8.48	10.77
170.A349	349	114.22	123.67	123.67	7.14	8.48	10.77

Part number	Series	Rod diameter	Groove diameter		Groove width		
		AS4716 / MIL-G-5514	AS4716	MIL-G-5514	0 BAE	1 BAE	2 BAE
		Ød1	ØD1	ØD1	L1 min	L2 min	L3 min
170.A425	425	114.22	126.34	126.34	9.53	12.07	14.71
170.A426	426	117.40	129.51	129.51	9.53	12.07	14.71
170.A427	427	120.57	132.69	132.69	9.53	12.07	14.71
170.A428	428	123.75	135.86	135.86	9.53	12.07	14.71
170.A429	429	126.92	139.04	139.04	9.53	12.07	14.71
170.A430	430	130.10	142.21	142.21	9.53	12.07	14.71
170.A431	431	133.27	145.39	145.39	9.53	12.07	14.71
170.A432	432	135.45	148.56	148.56	9.53	12.07	14.71
170.A433	433	139.62	151.74	151.74	9.53	12.07	14.71
170.A434	434	142.80	154.91	154.91	9.53	12.07	14.71
170.A435	435	145.97	158.09	158.09	9.53	12.07	14.71
170.A436	436	149.15	161.26	161.26	9.53	12.07	14.71
170.A437	437	152.32	164.44	164.44	9.53	12.07	14.71
170.A438	438	158.67	170.79	170.79	9.53	12.07	14.71
170.A439	439	165.02	177.14	177.14	9.53	12.07	14.71
170.A440	440	171.37	183.49	183.49	9.53	12.07	14.71
170.A441	441	177.72	189.84	189.84	9.53	12.07	14.71
170.A442	442	184.07	196.19	196.19	9.53	12.07	14.71
170.A443	443	190.42	202.54	202.54	9.53	12.07	14.71
170.A444	444	196.77	208.89	208.89	9.53	12.07	14.71
170.A445	445	203.12	215.24	215.24	9.53	12.07	14.71
170.A446	446	215.82	227.94	227.94	9.53	12.07	14.71
170.A447	447	228.52	240.64	240.64	9.53	12.07	14.71
170.A448	448	241.22	253.34	253.34	9.53	12.07	14.71
170.A449	449	253.92	266.04	266.04	9.53	12.07	14.71
170.A450	450	266.62	278.74	278.74	9.53	12.07	14.71
170.A451	451	279.32	291.44	291.44	9.53	12.07	14.71
170.A452	452	292.02	304.14	304.14	9.53	12.07	14.71
170.A453	453	304.72	316.84	316.84	9.53	12.07	14.71
170.A454	454	317.42	329.54	329.54	9.53	12.07	14.71
170.A455	455	330.12	342.24	342.24	9.53	12.07	14.71
170.A456	456	342.82	354.94	354.94	9.53	12.07	14.71
170.A457	457	355.52	367.64	367.64	9.53	12.07	14.71
170.A458	458	368.22	380.34	380.34	9.53	12.07	14.71
170.A459	459	380.92	393.04	393.04	9.53	12.07	14.71
170.A460	460	393.62	405.74	405.74	9.53	12.07	14.71