

PISTON SEALS

BECA 501



DESCRIPTION

The BECA 501 profile is a single acting composite piston seal composed of a filled PTFE friction ring and a pre-tightened rubber O'Ring. It follows the bore diameters, in line with the standards MIL-G-5514F and AS4716.

ADVANTAGES

Optimal sealing in static and dynamic applications

Low friction coefficient; no stick-slip effect

Excellent abrasion and extrusion 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

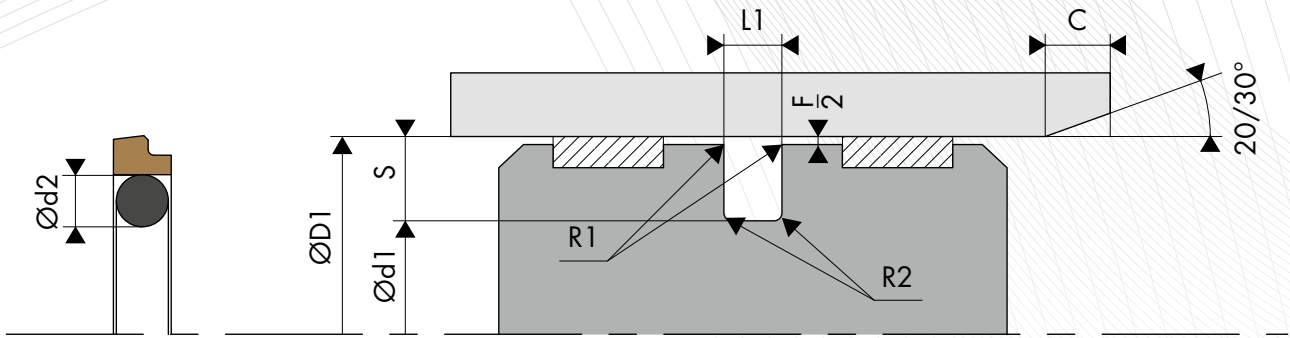
The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

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

RADIUS AND CHAMFERS

Series	Radius		Chamfer C
	R1 min - max	R2 min - max	
010 - 149	0.13 - 0.26	0.13 - 0.38	3.00
210 - 247	0.13 - 0.26	0.25 - 0.64	4.00
325 - 460	0.13 - 0.26	0.50 - 0.73	5.00



○ GROOVE WIDTHS AND EXTRUSION GAPS

Series	Width L1 min - max	Extrusion gaps F	O'Ring cross-section Ød2
010 - 012	2.06 - 2.19	0.10	1.78
013 - 028	2.06 - 2.19	0.13	1.78
110 - 129	3.20 - 3.33	0.13	2.62
130 - 140	3.20 - 3.33	0.15	2.62
141 - 149	3.20 - 3.33	0.18	2.62
210 - 222	4.22 - 4.35	0.13	3.53
223 - 227	4.22 - 4.35	0.15	3.53
228 - 243	4.22 - 4.35	0.18	3.53
244 - 247	4.22 - 4.35	0.20	3.53
325 - 329	6.27 - 6.40	0.15	5.33
330 - 345	6.27 - 6.40	0.18	5.33
346 - 352	6.27 - 6.40	0.20	5.33
428 - 445	8.13 - 8.26	0.23	6.99
446	8.13 - 8.26	0.25	6.99
447 - 460	8.13 - 8.26	0.28	6.99

○ TOLERANCES ON THE BORE DIAMETERS AND GROOVE DIAMETERS

Series	Tolerance on bore diameter ØD1	Tolerance on groove diameter Ød1
010 - 012	0/+0.025	-0.025/0
013 - 349	0/+0.050	-0.050/0
350 - 446	0/+0.076	-0.076/0
447 - 460	0/+0.100	-0.076/0

 DIMENSIONS

Part number	Series	Bore diameter	Groove diameter	Groove width	O'Ring Series
		AS4716 / MIL-G-5514			
		ØD1	Ød1	L1 min	
501.A010	010	9.14	5.54	2.06	009
501.A011	011	10.72	6.30	2.06	010
501.A012	012	12.32	7.90	2.06	011
501.A013	013	13.97	9.55	2.06	012
501.A014	014	15.57	11.15	2.06	013
501.A015	015	17.15	12.73	2.06	014
501.A016	016	18.75	14.33	2.06	015
501.A017	017	20.32	15.90	2.06	016
501.A018	018	21.92	17.50	2.06	017
501.A019	019	23.50	19.08	2.06	018
501.A020	020	25.17	20.75	2.06	019
501.A021	021	26.75	22.33	2.06	020
501.A022	022	28.35	23.93	2.06	021
501.A023	023	29.92	25.50	2.06	022
501.A024	024	31.52	27.10	2.06	023
501.A025	025	33.10	28.68	2.06	024
501.A026	026	34.70	30.28	2.06	025
501.A027	027	36.27	31.85	2.06	026
501.A028	028	37.87	33.45	2.06	027
501.A110	110	13.97	7.62	3.20	028
501.A111	111	15.57	9.22	3.20	110
501.A112	112	17.15	10.80	3.20	111
501.A113	113	18.75	12.40	3.20	112
501.A114	114	20.32	13.97	3.20	113
501.A115	115	21.92	15.57	3.20	114
501.A116	116	23.50	17.15	3.20	115
501.A117	117	25.17	18.82	3.20	116
501.A118	118	26.75	20.40	3.20	117
501.A119	119	28.35	22.00	3.20	118
501.A120	120	29.92	23.57	3.20	119
501.A121	121	31.52	25.17	3.20	120
501.A122	122	33.10	26.75	3.20	121
501.A123	123	34.70	28.35	3.20	122
501.A124	124	36.27	29.92	3.20	123
501.A125	125	37.87	31.52	3.20	124
501.A126	126	39.45	33.10	3.20	125
501.A127	127	41.05	34.70	3.20	126
501.A128	128	42.62	36.27	3.20	127
501.A129	129	44.22	37.87	3.20	128
501.A130	130	45.85	39.50	3.20	129
501.A131	131	47.42	41.07	3.20	130
501.A132	132	49.02	42.67	3.20	131
501.A133	133	50.60	44.45	3.20	132
501.A134	134	52.20	45.85	3.20	133
501.A135	135	53.80	47.45	3.20	134
501.A136	136	55.37	49.02	3.20	135
501.A137	137	56.97	50.62	3.20	136
501.A138	138	58.55	52.20	3.20	137
501.A139	139	60.15	53.80	3.20	138
501.A140	140	61.72	55.37	3.20	139
501.A141	141	63.32	56.97	3.20	140
501.A142	142	64.90	58.55	3.20	141
501.A143	143	66.50	60.15	3.20	142
501.A144	144	68.07	61.72	3.20	143
501.A145	145	69.67	63.32	3.20	144
501.A146	146	71.25	64.90	3.20	145
501.A147	147	72.85	66.50	3.20	146
501.A148	148	74.42	68.07	3.20	147
501.A149	149	76.02	69.67	3.20	148
501.A210	210	25.17	15.67	4.22	149
501.A211	211	26.75	17.25	4.22	210

Part number	Series	Bore diameter	Groove diameter	Groove width	O'Ring Series
		AS4716 / MIL-G-5514			
		ØD1	Ød1	L1 min	
501.A212	212	28.35	18.85	4.22	211
501.A213	213	29.92	20.42	4.22	212
501.A214	214	31.52	22.02	4.22	213
501.A215	215	33.10	23.60	4.22	214
501.A216	216	34.70	25.20	4.22	215
501.A217	217	36.27	26.77	4.22	216
501.A218	218	37.87	28.37	4.22	217
501.A219	219	39.45	29.95	4.22	218
501.A220	220	41.05	31.55	4.22	219
501.A221	221	42.62	33.12	4.22	220
501.A222	222	44.22	34.72	4.22	221
501.A223	223	47.42	37.92	4.22	222
501.A224	224	50.60	41.10	4.22	223
501.A225	225	53.80	44.30	4.22	224
501.A226	226	56.97	47.47	4.22	225
501.A227	227	60.15	50.65	4.22	226
501.A228	228	63.32	53.82	4.22	227
501.A229	229	66.50	53.82	4.22	228
501.A230	230	69.67	60.17	4.22	229
501.A231	231	72.85	63.35	4.22	230
501.A232	232	76.02	66.52	4.22	231
501.A233	233	79.20	69.70	4.22	232
501.A234	234	82.37	72.87	4.22	233
501.A235	235	85.55	76.05	4.22	234
501.A236	236	88.72	79.22	4.22	235
501.A237	237	91.90	82.40	4.22	236
501.A238	238	95.07	85.57	4.22	237
501.A239	239	98.25	88.75	4.22	238
501.A240	240	101.42	91.92	4.22	239
501.A241	241	104.60	95.10	4.22	240
501.A242	242	107.77	98.27	4.22	241
501.A243	243	110.95	101.45	4.22	242
501.A244	244	114.12	104.62	4.22	243
501.A245	245	117.30	107.80	4.22	244
501.A246	246	120.47	110.97	4.22	245
501.A247	247	123.65	114.15	4.22	246
501.A325	325	47.42	33.35	6.27	247
501.A326	326	50.60	36.53	6.27	325
501.A327	327	53.80	39.73	6.27	326
501.A328	328	56.97	42.90	6.27	327
501.A329	329	60.15	46.08	6.27	328
501.A330	330	63.32	49.25	6.27	329
501.A331	331	66.50	52.43	6.27	330
501.A332	332	69.67	55.60	6.27	331
501.A333	333	72.85	58.78	6.27	332
501.A334	334	76.02	61.95	6.27	333
501.A335	335	79.20	65.13	6.27	334
501.A336	336	82.37	68.30	6.27	335
501.A337	337	85.55	71.48	6.27	336
501.A338	338	88.72	74.65	6.27	337
501.A339	339	91.90	77.83	6.27	338
501.A340	340	95.07	81.00	6.27	339
501.A341	341	98.25	84.18	6.27	340
501.A342	342	101.42	87.35	6.27	341
501.A343	343	104.60	90.53	6.27	342
501.A344	344	107.77	93.70	6.27	343
501.A345	345	110.95	96.88	6.27	344
501.A346	346	114.12	100.05	6.27	345
501.A347	347	117.30	103.23	6.27	346
501.A348	348	120.47	106.40	6.27	347
501.A349	349	123.65	109.58	6.27	348

Part number	Series	Bore diameter		Groove diameter	Groove width	O'Ring Series
		AS4716 / MIL-G-5514				
		ØD1		Ød1	L1 min	
501.A425	350	126.34		112.27	6.27	349
501.A426	351	129.51		115.44	6.27	350
501.A427	352	132.69		118.62	6.27	351
501.A428	428	135.86		116.81	8.13	352
501.A429	429	139.04		119.99	8.13	428
501.A430	430	142.21		126.16	8.13	429
501.A431	431	145.39		126.34	8.13	430
501.A432	432	148.56		129.51	8.13	431
501.A433	433	151.74		132.69	8.13	432
501.A434	434	154.91		135.86	8.13	433
501.A435	435	158.09		139.04	8.13	434
501.A436	436	161.26		142.21	8.13	435
501.A437	437	164.44		145.39	8.13	436
501.A438	438	170.79		151.74	8.13	437
501.A439	439	177.14		158.09	8.13	438
501.A440	440	183.49		164.44	8.13	439
501.A441	441	189.84		170.79	8.13	440
501.A442	442	196.19		177.14	8.13	441
501.A443	443	202.54		183.49	8.13	442
501.A444	444	208.89		189.84	8.13	443
501.A445	445	215.24		196.19	8.13	444
501.A446	446	227.94		208.89	8.13	445
501.A447	447	240.64		221.59	8.13	446
501.A448	448	253.34		234.29	8.13	447
501.A449	449	266.04		246.99	8.13	448
501.A450	450	278.74		259.69	8.13	449
501.A451	451	291.44		272.39	8.13	450
501.A452	452	304.14		285.09	8.13	451
501.A453	453	316.84		297.79	8.13	452
501.A454	454	329.54		310.49	8.13	453
501.A455	455	342.24		323.19	8.13	454
501.A456	456	354.94		335.89	8.13	455
501.A457	457	367.64		348.59	8.13	456
501.A458	458	380.34		361.29	8.13	457
501.A459	459	393.04		373.99	8.13	458
501.A460	460	405.74		386.69	8.13	459