

ROD SEALS

BECA 156M



DESCRIPTION

The BECA 156M profile is a single 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

- Low friction coefficient
- Suitable for a reduced size
- Wide temperature range and excellent chemical resistance, depending on the materials selected
- Housing in line with MIL-G-5514F and AS4716

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

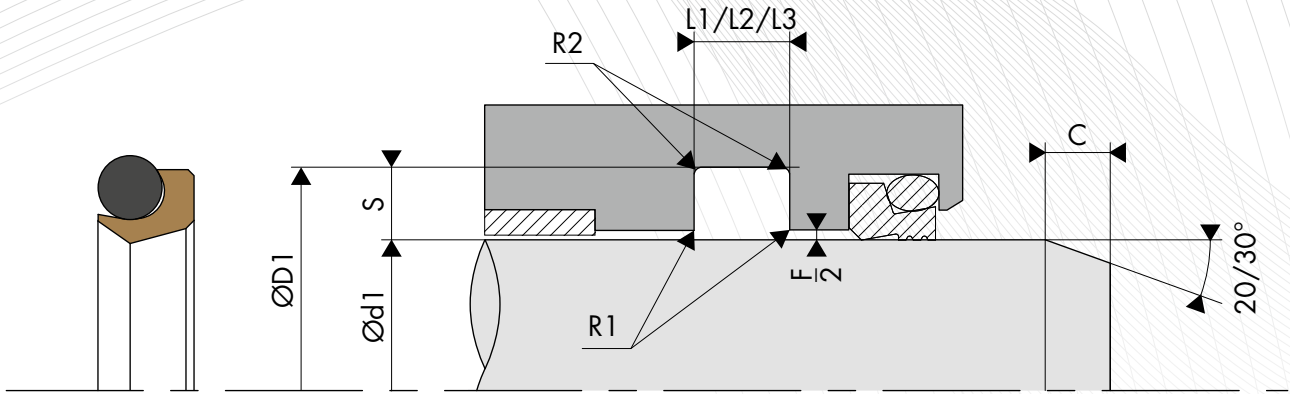
The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

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	
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		
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	3.53
223 - 225	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.15	3.53
226 - 245	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.18	3.53
246 - 247	4.78 - 5.03	5.97 - 6.22	7.72 - 7.97	0.20	3.53
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		Groove width			O'Ring Series
		AS4716 / MIL-G-5514	AS4716	MIL-G-5514	L1 min	L2 min	L3 min	
		Ød1	ØD1	ØD1				
156.110	110	9.47	13.87	14.00	3.58	4.65	6.22	013
156.111	111	11.05	15.47	15.57	3.58	4.65	6.22	014
156.112	112	12.65	17.07	17.17	3.58	4.65	6.22	015
156.113	113	14.22	18.64	18.75	3.58	4.65	6.22	016
156.114	114	15.82	20.24	20.35	3.58	4.65	6.22	017
156.115	115	17.40	21.82	21.92	3.58	4.65	6.22	018
156.116	116	19.00	23.44	23.52	3.58	4.65	6.22	019
156.117	117	20.57	25.02	25.10	3.58	4.65	6.22	020
156.118	118	22.17	26.62	26.70	3.58	4.65	6.22	021
156.119	119	23.75	28.19	28.27	3.58	4.65	6.22	022
156.120	120	25.35	29.79	29.87	3.58	4.65	6.22	023
156.121	121	26.92	31.37	31.45	3.58	4.65	6.22	024
156.122	122	28.52	32.97	33.05	3.58	4.65	6.22	025
156.123	123	30.10	34.54	34.62	3.58	4.65	6.22	026
156.124	124	31.70	36.14	36.22	3.58	4.65	6.22	027
156.125	125	33.27	37.72	37.80	3.58	4.65	6.22	028
156.126	126	34.87	39.32	39.40	3.58	4.65	6.22	028
156.127	127	36.45	40.89	40.97	3.58	4.65	6.22	029
156.128	128	38.05	42.49	42.57	3.58	4.65	6.22	029
156.129	129	39.62	44.07	44.15	3.58	4.65	6.22	030
156.130	130	41.22	45.67	45.75	3.58	4.65	6.22	030
156.131	131	42.80	47.24	47.32	3.58	4.65	6.22	031
156.132	132	44.40	48.84	48.92	3.58	4.65	6.22	031
156.133	133	45.97	50.39	50.50	3.58	4.65	6.22	032
156.134	134	47.57	51.99	52.10	3.58	4.65	6.22	032
156.135	135	49.17	53.59	53.70	3.58	4.65	6.22	033
156.136	136	50.75	55.17	55.27	3.58	4.65	6.22	033
156.137	137	52.35	56.77	56.87	3.58	4.65	6.22	034
156.138	138	53.92	58.34	58.45	3.58	4.65	6.22	034
156.139	139	55.52	59.94	60.05	3.58	4.65	6.22	035
156.140	140	57.10	61.52	61.62	3.58	4.65	6.22	035
156.141	141	58.70	63.12	63.22	3.58	4.65	6.22	036
156.142	142	60.27	64.69	64.80	3.58	4.65	6.22	036
156.143	143	61.87	66.29	66.40	3.58	4.65	6.22	037
156.144	144	63.45	67.87	67.97	3.58	4.65	6.22	037
156.145	145	65.05	69.47	69.57	3.58	4.65	6.22	038
156.146	146	66.62	71.04	71.15	3.58	4.65	6.22	038
156.147	147	68.22	72.64	72.75	3.58	4.65	6.22	039
156.148	148	69.80	74.22	74.32	3.58	4.65	6.22	039
156.149	149	71.40	75.82	75.92	3.58	4.65	6.22	040
156.210	210	19.00	25.12	25.17	4.78	5.97	7.72	117
156.211	211	20.57	26.70	26.75	4.78	5.97	7.72	118
156.212	212	22.17	28.32	28.35	4.78	5.97	7.72	119
156.213	213	23.75	29.90	29.92	4.78	5.97	7.72	120
156.214	214	25.35	31.50	31.52	4.78	5.97	7.72	121
156.215	215	26.92	33.07	33.10	4.78	5.97	7.72	122
156.216	216	28.52	34.67	34.70	4.78	5.97	7.72	123
156.217	217	30.10	36.25	36.27	4.78	5.97	7.72	124
156.218	218	31.70	37.85	37.87	4.78	5.97	7.72	125
156.219	219	33.27	39.42	39.45	4.78	5.97	7.72	126
156.220	220	34.87	41.02	41.05	4.78	5.97	7.72	127
156.221	221	36.45	42.60	42.62	4.78	5.97	7.72	128
156.222	222	38.05	44.20	44.22	4.78	5.97	7.72	129
156.223	223	41.22	47.37	47.40	4.78	5.97	7.72	131
156.224	224	44.40	50.55	50.57	4.78	5.97	7.72	133
156.225	225	47.57	53.72	53.75	4.78	5.97	7.72	135
156.226	226	50.75	56.90	56.92	4.78	5.97	7.72	137
156.227	227	53.92	60.07	60.10	4.78	5.97	7.72	139
156.228	228	57.10	63.25	63.27	4.78	5.97	7.72	141
156.229	229	60.27	66.42	66.45	4.78	5.97	7.72	143

Part number	Series	Rod diameter	Groove diameter		Groove width			O'Ring Series
		AS4716 / MIL-G-5514	AS4716	MIL-G-5514	L1 min	L2 min	L3 min	
		Ød1	ØD1	ØD1				
156.230	230	63.45	69.60	69.62	4.78	5.97	7.72	145
156.231	231	66.62	72.77	72.80	4.78	5.97	7.72	147
156.232	232	69.80	75.95	75.97	4.78	5.97	7.72	149
156.233	233	72.97	79.12	79.15	4.78	5.97	7.72	150
156.234	234	76.12	82.27	82.30	4.78	5.97	7.72	151
156.235	235	79.30	85.45	85.47	4.78	5.97	7.72	151
156.236	236	82.47	88.62	88.65	4.78	5.97	7.72	152
156.237	237	85.65	91.80	91.82	4.78	5.97	7.72	152
156.238	238	88.82	94.97	95.00	4.78	5.97	7.72	153
156.239	239	92.00	98.15	98.17	4.78	5.97	7.72	153
156.240	240	95.17	101.32	101.35	4.78	5.97	7.72	154
156.241	241	98.35	104.50	104.52	4.78	5.97	7.72	154
156.242	242	101.52	107.67	107.70	4.78	5.97	7.72	155
156.243	243	104.70	110.85	110.87	4.78	5.97	7.72	155
156.244	244	107.87	114.02	114.05	4.78	5.97	7.72	156
156.245	245	111.05	117.20	117.22	4.78	5.97	7.72	156
156.246	246	114.22	120.37	120.40	4.78	5.97	7.72	157
156.247	247	117.40	123.55	123.57	4.78	5.97	7.72	157
156.325	325	38.05	47.50	47.50	7.14	8.48	10.77	223
156.326	326	41.22	50.67	50.67	7.14	8.48	10.77	224
156.327	327	44.40	53.85	53.85	7.14	8.48	10.77	225
156.328	328	47.57	57.02	57.02	7.14	8.48	10.77	226
156.329	329	50.75	60.20	60.20	7.14	8.48	10.77	227
156.330	330	53.92	63.37	63.37	7.14	8.48	10.77	228
156.331	331	57.10	66.55	66.55	7.14	8.48	10.77	229
156.332	332	60.27	69.72	69.72	7.14	8.48	10.77	230
156.333	333	63.45	72.90	72.90	7.14	8.48	10.77	231
156.334	334	66.62	76.07	76.07	7.14	8.48	10.77	232
156.335	335	69.80	79.25	79.25	7.14	8.48	10.77	233
156.336	336	72.97	82.42	82.42	7.14	8.48	10.77	234
156.337	337	76.12	85.57	85.57	7.14	8.48	10.77	235
156.338	338	79.30	88.75	88.75	7.14	8.48	10.77	236
156.339	339	82.47	91.92	91.92	7.14	8.48	10.77	237
156.340	340	85.65	95.10	95.10	7.14	8.48	10.77	238
156.341	341	88.82	98.27	98.27	7.14	8.48	10.77	239
156.342	342	92.00	101.45	101.45	7.14	8.48	10.77	240
156.343	343	95.17	104.62	104.62	7.14	8.48	10.77	241
156.344	344	98.35	107.80	107.80	7.14	8.48	10.77	242
156.345	345	101.52	110.97	110.97	7.14	8.48	10.77	243
156.346	346	104.70	114.15	114.15	7.14	8.48	10.77	244
156.347	347	107.87	117.32	117.32	7.14	8.48	10.77	245
156.348	348	111.05	120.50	120.50	7.14	8.48	10.77	246
156.349	349	114.22	123.67	123.67	7.14	8.48	10.77	247
156.425	425	114.22	126.34	126.34	9.53	12.07	14.71	350
156.426	426	117.40	129.51	129.51	9.53	12.07	14.71	351
156.427	427	120.57	132.69	132.69	9.53	12.07	14.71	352
156.428	428	123.75	135.86	135.86	9.53	12.07	14.71	353
156.429	429	126.92	139.04	139.04	9.53	12.07	14.71	354
156.430	430	130.10	142.21	142.21	9.53	12.07	14.71	355
156.431	431	133.27	145.39	145.39	9.53	12.07	14.71	356
156.432	432	135.45	148.56	148.56	9.53	12.07	14.71	357
156.433	433	139.62	151.74	151.74	9.53	12.07	14.71	358
156.434	434	142.80	154.91	154.91	9.53	12.07	14.71	359
156.435	435	145.97	158.09	158.09	9.53	12.07	14.71	360
156.436	436	149.15	161.26	161.26	9.53	12.07	14.71	361
156.437	437	152.32	164.44	164.44	9.53	12.07	14.71	361
156.438	438	158.67	170.79	170.79	9.53	12.07	14.71	362
156.439	439	165.02	177.14	177.14	9.53	12.07	14.71	363
156.440	440	171.37	183.49	183.49	9.53	12.07	14.71	364
156.441	441	177.72	189.84	189.84	9.53	12.07	14.71	365

Part number	Series	Rod diameter	Groove diameter		Groove width			O'Ring Series
		AS4716 / MIL-G-5514	AS4716	MIL-G-5514	L1 min	L2 min	L3 min	
		Ød1	ØD1	ØD1				
156.442	442	184.07	196.19	196.19	9.53	12.07	14.71	366
156.443	443	190.42	202.54	202.54	9.53	12.07	14.71	367
156.444	444	196.77	208.89	208.89	9.53	12.07	14.71	368
156.445	445	203.12	215.24	215.24	9.53	12.07	14.71	369
156.446	446	215.82	227.94	227.94	9.53	12.07	14.71	371
156.447	447	228.52	240.64	240.64	9.53	12.07	14.71	373
156.448	448	241.22	253.34	253.34	9.53	12.07	14.71	375
156.449	449	253.92	266.04	266.04	9.53	12.07	14.71	377
156.450	450	266.62	278.74	278.74	9.53	12.07	14.71	378
156.451	451	279.32	291.44	291.44	9.53	12.07	14.71	379
156.452	452	292.02	304.14	304.14	9.53	12.07	14.71	380
156.453	453	304.72	316.84	316.84	9.53	12.07	14.71	381
156.454	454	317.42	329.54	329.54	9.53	12.07	14.71	381
156.455	455	330.12	342.24	342.24	9.53	12.07	14.71	382
156.456	456	342.82	354.94	354.94	9.53	12.07	14.71	382
156.457	457	355.52	367.64	367.64	9.53	12.07	14.71	383
156.458	458	368.22	380.34	380.34	9.53	12.07	14.71	383
156.459	459	380.92	393.04	393.04	9.53	12.07	14.71	384
156.460	460	393.62	405.74	405.74	9.53	12.07	14.71	384