Your Partner for Sealing Technology

HEAVY DUTY MECHANICAL FACE SEAL

AST | ADVANCED SEALING TECHNOLOGY
CUSTOMIZED SEALING SOLUTIONS

INFLATABLE SEAL

YOUR PARTNER FOR SEALING TECHNOLOGY

Advanced Sealing Technology designs, produces and delivers dedicated inflatable seal solutions among other sealing solutions. We are a one-stop shop providing the best in elastomer, thermoplastic, PTFE, mechanical and composite sealing technologies for applications in practically all industries.

With more then 30-years' experience, Advanced Sealing Technology engineers, support customers with design, prototyping, production, test and installation.

Advanced Sealing technology fulfills challenging service requirement, supplying standard parts in volume or a single custom-manufactured component.

Besides the inflatable profiles in our catalog, we have more profiles available or we design and produce the profile needed for your application.

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DESCRIPTION

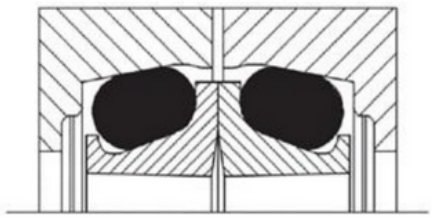

Figure 1 Type DO

Mechanical Face Seals consist of two metal seals and two elastomeric components, which are mounted into two separate housings. The elastomeric parts, as a secondary seal, take over the function of the elastic force of a spring, the static sealing between the sliding ring and the housing as well as the torque transmission. The perfectly lapped contact surfaces of both metal sealing rings are pressed and axially slide on each other. ''Figure 1 Type DO''

An essential functional feature of the Mechanical Face Seal is a robust construction form combined with very long lifecycles. The selection of the most suitable materials for the sliding ring and elastomeric part ensure high wear resistance. Mechanical Face Seals guarantee a fully adequate corrosion protection, as well as optimal lubrication and temperature resistance. O-ring materials assure minimal power loss over the life of the drive seal. So, this seal is technically superior to other types of construction and sealing methods.

Mechanical Face Seals are especially used for rotary shafts in severe and dirty environments. Due to their outstanding technical features Mechanical Face Seals have achieved worldwide distribution.

Different geometric designs and material types of metal and rubber parts can be used depending on the application and construction of the sealed units. The standard seal usually consists of two metal rings and two O-rings assembled into a set, inserted into particularly shaped, conical cavities. Another type of design is called “Square Bore Seals”, which fit in cylindrical cavities using a diamond-shaped rubber part instead of the O-ring.

Depending on application, design characteristics and operating conditions, the selection of the most appropriate sealing system is implemented.

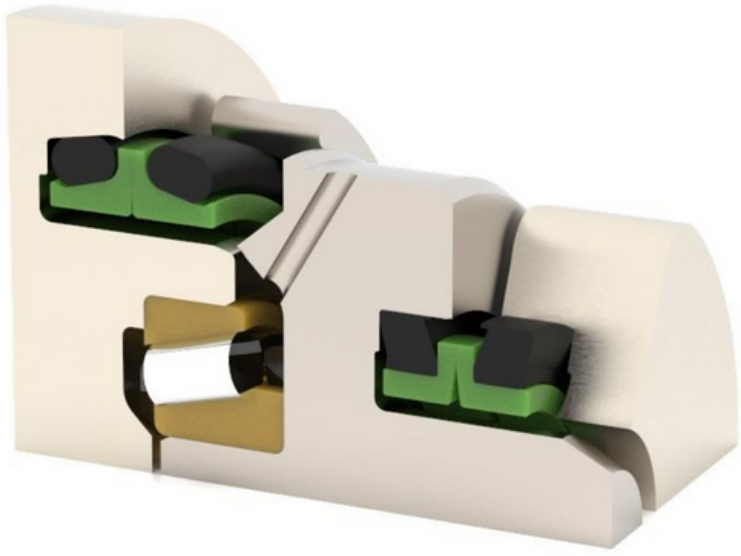

Figure 2 Cut 3D Example Type DO & DF

INSTALLATION RECOMMENDATIONS FOR TYPE DO IN BEARING STEEL

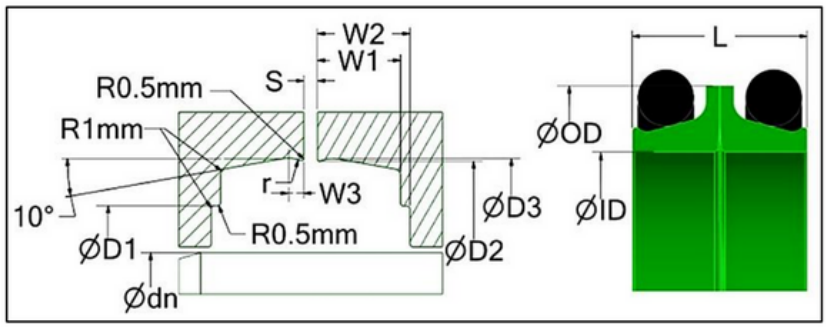

Figure 3 Installation Drawing

Table I Installation Dimensions

ID	OD	L	dmax.	D3	D2 0.1	D1	W1	W2 min.	W3	r	S
34.0	45.0	14.0	30.0	47.0	46.5	42.0	6.5	8.0	1.0	1.0	1.5
38.0	51.0	20.4	35.0	53.7	53.0	46.0	9.0	11.0	1.8	2.0	3.0
39.0	50.0	14.0	35.0	52.0	51.5	46.0	6.5	8.0	1.0	1.0	1.5
40.0	52.0	20.0	35.0	55.0	54.2	46.0	9.0	11.0	1.0	1.0	3.0
43.0	58.0	24.0	39.0	61.6	60.8	53.4	10.0	12.0	1.8	2.5	3.0
45.0	68.0	21.6	41.0	61.6	661.0	54.0	10.5	12.5	1.8	2.5	3.0
46.0	59.0	20.0	42.0	61.6	61.2	53.0	9.0	11.0	2.0	2.5	3.0
48.0	58.0	14.4	44.0	59.9	59.4	55.0	6.3	8.0	1.5	1.7	1.5
48.0	62.0	26.0	45.0	68.0	67.2	58.0	12.0	14.0	2.0	3.0	3.0
55.5	70.0	22.0	52.0	73.8	73.1	65.5	10.0	11.5	2.4	5.0	3.0
56.0	70.0	26.0	53.0	76.0	75.2	66.0	12.0	14.0	2.0	2.5	3.0
57.0	77.5	35.6	54.0	81.4	80.7	68.5	15.2	20.9	3.5	4.8	
58.0	75.0	27.0	53.0	79.2	78.6	66.0	12.0	14.0	2.0	2.5	3.0
60.0	74.0	20.6	57.0	78.4	77.4	70.0	9.0	11.0	1.9	2.5	3.0
61.0	73.0	17.6	58.0	75.8	75.5	66.8	6.5	7.5	1.0	1.4	3.0
63.5	82.5	31.8	60.5	86.5	85.7	73.5	15.2	16.8	3.5	4.8	3.0
64.0	78.0	25.0	61.0	84.6	83.8	74.0	12.5	14.5	2.0	3.0	3.0
67.5	86.5	31.8	64.0	91.0	90.0	78.0	14.5	17.0	2.8	5.0	3.0
69.0	84.0	24.0	66.0	89.6	88.6	78.5	11.0	13.0	1.9	3.0	3.0
69.0	89.0	24.0	66.0	92.5	91.5	83.0	11.0	13.5	2.8	5.0	3.0
70.0	90.0	29.0	65.0	95.5	94.7	84.0	13.5	15.5	2.0	3.0	3.0
71.0	84.0	20.0	68.0	87.4	86.7	80.8	8.5	10.0	1.8	2.0	3.0
72.5	92.0	35.6	70.1	96.0	95.2	83.0	15.2	20.9	3.5	4.8	
73.0	92.0	31.8	70.0	96.2	95.4	84.0	15.0	17.0	2.8	4.0	3.0
73.1	91.9	31.8	70.1	96.0	95.2	83.0	15.2	16.8	3.5	4.8	3.0
73.5	88.5	20.4	70.0	90.2	89.4	82.0	12.7	14.3	2.2	2.8	3.0
74.0	86.5	22.5	70.0	91.4	90.7	80.0	9.5	11.5	2.0	3.0	3.0
75.0	94.0	29.0	73.0	101.4	100.6	89.0	14.5	16.5	2.0	3.0	3.0
77.5	87.6	13.6	75.9	90.7	90.2	89.5	7.5	8.0	1.4	1.5	
79.5	92.5	20.0	76.0	96.0	95.3	88.0	8.5	10.5	1.8	2.0	3.0
80.0	100.0	30.0	76.0	104.1	103.3	93.0	15.0	18.0	2.3	2.5	3.0

INSTALLATION RECOMMENDATIONS FOR TYPE DO IN BEARING STEEL

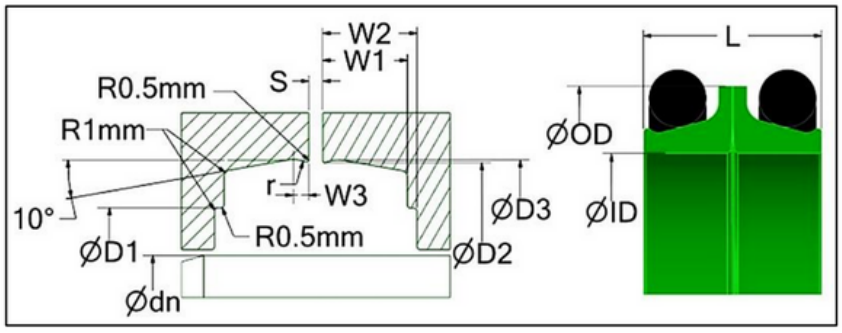

Figure 3 Installation Drawing

Table I Installation Dimensions

ID	OD	L	dmax.	D3	D2 0.1	D1	W1	W2 min.	W3	r	S
124.0	141.0	22.0	120.0	146.4	145.3	136.0	10.6	12.3	2.8	3.0	3.0
125.0	144.1	31.8	120.0	148.5	147.5	136.0	14.3	17.4	3.0	5.0	3.0
126.0	146.0	31.8	123.0	150.0	149.2	137.0	15.2	16.8	3.5	4.8	3.0
126.5	139.0	26.8	123.5	143.8	143.1	136.9	11.8	14.2	2.9	2.8	3.0
127.0	141.0	29.0	124.0	144.0	143.0	136.0	12.0	14.5	2.8	5.0	3.0
127.0	141.2	25.4	124.0	143.8	143.1	136.9	11.8	14.2	2.9	2.8	3.0
127.0	146.0	31.8	124.0	150.5	149.5	138.0	14.5	17.5	2.8	5.0	4.0
130.0	150.5	32.0	125.0	155.6	154.6	144.0	14.5	16.5	2.5	5.0	3.0
130.0	152.0	38.5	125.0	159.0	158.0	144.0	18.5	20.5	2.5	3.0	
142.7	156.9	25.4	139.7	159.7	158.9	152.4	11.8	15.2	2.9	2.8	3.0
143.0	160.0	27.0	138.0	164.0	163.0	154.0	12.0	14.5	2.8	5.0	4.0
144.0	157.0	26.0	140.0	160.0	159.0	154.5	12.0	14.5	2.8	5.0	3.0
146.0	168.0	38.0	143.0	176.8	175.9	159.0	18.0	20.5	3.0	6.5	4.0
146.0	175.0	38.0	142.0	180.5	179.5	162.0	17.7	20.5	3.0	6.3	6.0
146.3	171.7	38.0	143.3	176.8	175.9	158.9	18.4	20.3	3.7	6.3	
147.0	167.0	28.0	142.0	171.0	170.0	160.0	13.0	15.5	2.8	5.0	3.0
148.0	170.0	31.0	142.0	175.6	174.6	164.0	15.0	17.0	2.5	3.0	4.0
150.0	172.0	40.0	147.0	179.0	178.0	165.0	18.0	20.0	2.5	2.0	4.0
152.0	171.5	32.0	149.0	175.4	174.7	162.5	15.2	16.8	3.5	4.8	
153.0	171.5	28.0	149.0	176.3	175.3	164.5	12.5	14.5	2.8	5.0	3.0
153.9	168.1	25.4	150.9	171.0	170.2	164.0	11.8	14.2	2.9	2.8	3.0
154.0	168.0	27.0	150.0	171.0	170.0	162.5	12.0	14.5	2.3	3.0	3.0
154.0	169.0	22.0	150.0	174.1	173.5	166.0	9.2	11.0	2.3	3.0	3.0
154.0	170.0	21.0	150.0	175.1	174.1	167.0	9.2	10.0	2.3	3.0	3.0
154.0	173.5	32.0	151.0	178.0	177.0	166.0	14.5	17.0	2.8	6.5	3.0
163.3	191.2	38.0	160.3	196.8	195.8	178.9	18.4	20.3	3.7	6.3	6.0
163.3	191.3	46.0	160.0	196.8	195.9	178.9	18.4	24.1	3.7	6.3	6.0
164.0	189.0	30.0	160.0	193.5	192.5	179.0	14.5	17.0	2.8	5.0	3.0
165.0	181.0	27.0	161.0	185.0	184.0	176.5	12.0	14.5	2.7	4.0	3.0
172.5	190.0	25.4	168.0	192.7	191.8	188.0	12.7	14.3	2.3	2.8	3.0
174.0	190.0	25.4	170.0	192.7	191.8	188.0	12.7	14.3	2.3	2.8	3.0

INSTALLATION RECOMMENDATIONS FOR TYPE DO IN BEARING STEEL

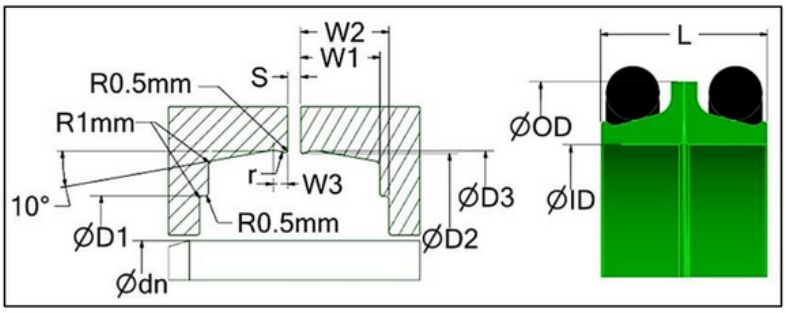

Figure 3 Installation Drawing

Table I Installation Dimensions

ID	OD	L	dmax.	D3	D2 0.1	D1	W1	W2 min.	W3	r	S
177.0	200.0	31.0	173.0	204.5	203.4	191.0	14.5	17.0	3.1	5.0	3.0
178.0	199.0	32.0	175.0	203.6	202.4	190.0	23.0	16.0	3.0	5.0	3.0
178.0	200.0	38.0	175.0	210.6	209.6	192.0	19.0	21.0	3.0	4.0	4.0
180.0	197.4	21.4	173.0	202.2	201.9	196.0	9.4	10.6	1.2	3.0	3.0
182.3	210.3	38.0	179.3	215.4	214.4	197.5	18.4	20.3	3.7	6.3	6.0
182.4	210.3	46.0	179.0	206.0	205.0	195.0	12.5	14.5	2.8	5.0	3.0
183.0	202.0	28.0	179.0	206.0	205.0	195.0	12.5	14.5	2.8	5.0	3.0
186.0	203.0	25.4	182.0	205.7	204.9	190.5	14.5	16.0	2.3	2.8	3.0
191.0	210.0	28.0	187.0	214.0	213.0	203.0	12.5	14.5	2.8	5.0	3.0
192.0	215.0	33.0	189.0	220.8	219.8	207.0	16.5	18.5	3.0	4.0	4.0
195.0	216.5	32.0	191.0	221.0	220.0	207.0	14.5	17.0	2.8	5.0	3.0
200.0	228.5	38.0	196.0	233.5	232.5	215.5	18.0	20.5	3.1	6.3	6.0
202.0	222.3	26.5	197.0	224.9	224.1	217.9	11.8	14.2	2.9	2.8	3.0
205.0	227.0	30.0	198.0	231.5	230.5	219.0	14.5	17.0	2.8	5.0	3.0
209.0	234.0	42.0	206.0	242.6	241.6	224.0	19.5	22.5	3.0	4.0	4.0
220.0	239.5	32.0	215.0	244.0	243.0	232.0	14.5	16.5	2.8	5.0	3.0
223.5	251.5	46.0	220.0	256.6	255.7	238.7	18.4	24.1	3.7	6.3	6.0
223.5	251.4	38.0	220.5	256.5	255.7	238.7	18.4	20.3	3.7	6.3	6.0
225.0	252.0	38.0	220.0	258.0	257.0	241.0	19.0	21.0	3.0	4.0	4.0
231.6	259.6	38.0	228.0	264.7	263.8	247.0	18.4	20.5	3.7	6.3	6.0
238.0	261.0	32.0	231.0	265.5	264.5	254.0	14.5	17.0	2.8	5.0	3.0
239.0	268.0	40.0	234.0	274.2	273.2	257.0	20.5	22.5	3.0	4.0	4.0
240.0	262.8	38.0	236.0	273.5	272.5	255.5	18.0	20.5	3.1	6.5	3.0
245.0	264.5	32.0	238.0	268.9	267.9	255.0	14.5	17.0	2.8	5.0	3.0
250.0	276.0	44.0	247.0	284.6	283.6	266.0	20.5	24.0	3.0	4.0	4.0
252.0	280.0	38.0	248.0	285.5	284.5	265.0	18.0	20.0	3.1	6.5	3.0
265.0	292.8	46.0	261.0	297.8	297.0	280.0	18.4	24.1	3.7	6.3	6.0
265.0	293.0	38.0	261.0	298.0	297.0	280.0	18.0	20.5	3.1	6.3	4.0
275.0	303.0	38.0	271.0	308.0	307.0	290.0	18.0	20.5	3.1	6.5	3.0
282.9	310.8	38.0	280.0	316.3	315.4	298.4	18.4	20.3	3.7	6.3	6.0
282.9	310.8	38.0	280.0	316.3	315.4	398.4	18.4	20.3	3.7	6.3	6.0

INSTALLATION RECOMMENDATIONS FOR TYPE DO IN BEARING STEEL

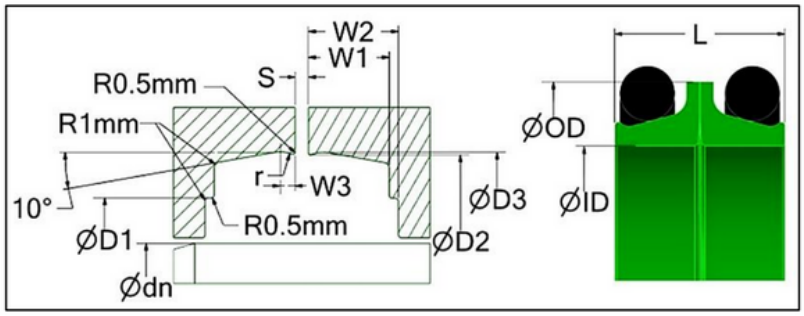

Figure 3 Installation Drawing

Table I Installation Dimensions

ID	OD	L	dmax.	D3	D2 0.1	D1	W1	W2 min.	W3	r	S
282.9	310.8	38.0	280.0	316.3	315.4	298.4	18.4	20.3	3.7	6.3	6.0
300.0	325.0	38.0	296.0	335.5	334.5	318.0	17.5	20.5	3.1	6.5	3.0
300.0	328.0	40.0	295.0	333.0	332.0	315.0	18.5	21.0	3.0	4.0	4.0
301.0	328.0	38.0	297.0	333.0	332.0	315.0	18.4	20.3	3.7	6.3	6.0
318.0	341.0	38.0	315.0	351.5	350.5	334.0	18.0	20.5	3.	6.5	3.0
318.5	346.4	38.0	315.5	351.6	350.7	333.7	18.4	20.3	3.7	6.3	6.0
319.0	346.5	46.0	315.0	351.6	35.7	333.7	18.4	24.1	3.7	6.3	6.0
339.5	369.0	40.0	335.0	374.8	372.8	358.0	19.0	21.5	3.0	4.0	4.0
340.0	368.0	40.0	337.0	374.8	373.8	358.0	19.0	31.5	3.0	4.0	3.0
350.0	375.0	38.0	345.0	385.0	381.5	368.0	17.5	20.5	3.1	6.5	3.0
366.5	394.4	38.0	363.5	399.5	398.6	381.7	18.4	20.3	3.7	6.3	6.0
366.5	394.5	48.0	363.5	399.5	398.6	381.7	18.4	24.1	3.7	6.3	6.0
367.2	394.5	38.0	364.2	399.5	398.6	381.7	18.4	20.3	3.7	6.3	6.0
370.0	398.0	38.0	365.0	403.5	402.6	385.0	17.5	20.5	3.0	6.5	3.0
380.5	405.0	40.0	375.0	412.2	410.5	395.0	17.0	22.0	3.0	4.0	4.0
387.0	415.0	38.5	382.0	420.3	419.3	402.0	17.5	20.5	3.1	6.5	3.0
428.5	454.0	37.0	425.0	462.3	461.3	444.6	18.5	21.0	3.0	4.0	4.0
429.2	457.2	38.0	426.2	462.3	461.4	444.4	18.4	20.3	3.7	6.3	6.0
470.0	500.0	50.0	465.0	512.2	510.2	490.0	23.5	25.5	3.0	6.0	3.0
505.4	533.4	44.0	502.4	538.5	537.6	520.6	21.3	26.2	3.7	6.3	6.0
530.0	560.0	50.0	524.0	572.2	570.0	545.0	23.5	25.5	4.0	6.0	3.0
580.0	608.0	43.6	575.5	613.0	611.0	596.0	19.7	21.7	4.0	6.5	6.0
591.0	623.0	50.0	585.0	635.2	632.1	613.0	23.5	25.5	4.0	6.0	5.0
667.0	700.0	44.0	660.0	705.6	704.6	687.6	18.4	23.4	3.7	6.3	6.0
710.0	750.0	50.0	700.0	762.2	760.2	740.0	23.5	25.5	4.0	6.0	3.0
830.0	886.0	80.0	815.0	891.6	890.6	860.0	34.5	39.5	4.4	10.0	17.0

INSTALLATION RECOMMENDATIONS FOR TYPE DO IN CAST IRON

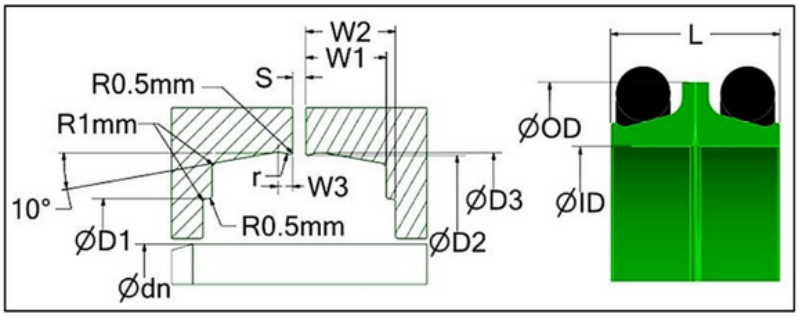

Figure 4 Installation Drawing

Table II Installation Dimensions

ID	OD	L	dmax.	D3	D2 0.1	D1	W1	W2 min.	W3	r	S
38.0	51.0	20.0	35.0	53.7	53.0	46.0	9.0	11.0	1.6	2.0	3.0
43.0	58.0	24.0	40.0	62.0	61.3	51.0	10.5	12.5	2.0	2.0	3.0
45.0	58.0	21.0	42.0	61.6	60.8	53.4	10.0	12.0	1.8	2.5	3.0
48.0	62.0	25.0	45.0	68.0	67.2	58.0	12.0	14.0	2.0	3.0	3.0
55.5	70.0	22.0	52.5	73.8	73.1	55.5	10.0	11.5	2.4	5.0	3.0
56.0	70.0	25.0	53.0	76.0	75.2	66.0	12.0	14.0	2.0	3.0	3.0
58.0	74.0	27.0	55.0	79.4	78.6	67.0	13.5	15.5	2.0	3.0	3.0
60.0	74.0	20.0	57.0	78.4	77.4	70.0	9.0	11.0	1.9	2.5	3.0
61.0	73.0	17.6	58.0	75.8	75.5	68.5	8.0	9.5	1.4	1.5	2.0
63.5	82.5	31.8	60.5	86.8	85.9	74.0	15.0	17.0	3.0	2.5	3.0
64.0	78.0	25.0	61.0	84.6	83.6	74.0	12.5	147.5	2.0	3.0	3.0
66.0	85.0	28.0	63.0	90.0	89.2	78.0	14.0	16.0	2.0	3.0	3.0
69.0	84.0	24.0	66.0	89.6	88.6	78.5	11.0	13.0	1.9	3.0	3.0
71.0	90.0	29.0	68.0	95.5	94.7	84.0	13.5	15.5	2.0	3.0	3.0
73.0	92.0	31.8	70.0	96.2	95.4	84.0	15.0	17.0	3.0	2.5	3.0
74.0	86.6	22.0	71.0	91.4	90.7	80.0	9.5	11.5	2.0	3.0	3.0
80.5	99.5	29.0	77.0	105.0	104.2	92.0	14.5	16.5	2.0	3.0	3.0
81.0	98.0	28.0	78.0	102.3	101.1	91.0	12.5	14.5	2.8	5.0	
82.0	98.0	22.0	79.0	102.3	101.3	91.0	9.0	11.0	2.8	5.0	3.0
90.5	109.0	32.0	87.0	113.6	112.9	101.0	15.0	17.0	3.0	2.5	3.0
92.0	109.0	22.0	89.0	113.8	113.0	105.0	9.5	11.5	1.8	2.5	3.0
94.0	106.5	22.0	91.0	111.6	110.8	102.0	9.5	11.5	2.0	3.0	3.0
95.0	114.0	31.0	92.0	120.0	119.2	107.0	15.0	17.0	2.5	3.0	3.0
99.0	120.0	28.0	96.0	123.5	122.5	112.0	12.5	14.5	2.8	5.0	3.0
100.0	119.0	31.8	97.0	123.2	122.4	111.0	14.5	16.5	2.5	2.5	3.0
100.0	120.0	29.4	97.0	125.0	124.2	111.0	14.0	16.0	2.9	3.0	3.0
102.0	122.0	32.0	99.0	127.2	126.2	115.0	15.5	17.5	2.5	3.0	3.0
104.0	116.7	21.2	101.0	121.0	120.2	107.0	9.5	11.5	2.0	3.0	3.0
104.0	121.0	22.0	101.0	125.5	125.1	117.5	9.5	11.5	2.0	3.0	3.0
109.0	127.0	32.0	106.0	133.0	132.0	121.0	15.0	17.0	2.5	3.0	3.0
109.0	132.0	32.0	106.0	136.6	135.6	124.0	15.5	17.5	2.5	3.0	3.0

INSTALLATION RECOMMENDATIONS FOR TYPE DO IN CAST IRON

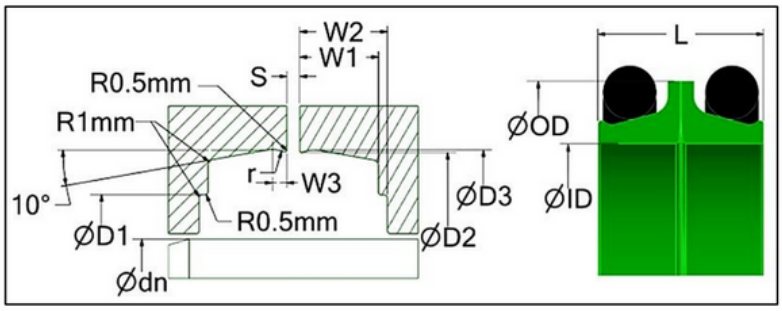

Figure 4 Installation Drawing

Table II Installation Dimensions

ID	OD	L	dmax.	D3	D2 0.1	D1	W1	W2 min.	W3	r	S
115.0	137.0	31.0	112.0	141.8	140.8	130.0	14.5	16.5	2.5	3.0	3.0
124.0	141.0	22.0	121.0	145.8	145.0	136.0	9.5	11.5	2.0	3.0	3.0
127.0	146.0	31.8	123.0	150.2	149.4	138.0	14.0	16.0	2.5	2.5	4.0
130.0	152.0	38.0	127.0	159.0	158.0	144.0	18.5	20.5	2.5	3.0	3.0
143.0	157.0	25.0	140.0	159.7	158.9	152.0	11.5	13.5	2.5	2.8	4.0
146.0	168.0	38.0	143.0	177.0	176.0	159.0	18.0	20.0	2.5	3.0	4.0
150.0	172.0	40.0	147.0	179.0	178.0	165.0	18.0	20.0	2.5	3.0	4.0
154.0	168.0	25.0	151.0	171.0	170.2	164.0	11.5	13.5	2.5	2.8	4.0
163.0	191.0	38.0	160.0	196.4	195.5	179.0	18.0	20.0	3.1	6.4	4.0
191.0	210.0	28.0	187.0	214.0	213.0	203.0	12.5	14.5	2.8	5.0	3.0
192.0	215.0	33.0	189.0	220.8	219.8	207.0	16.5	18.5	3.0	4.0	4.0
209.0	234.0	42.0	206.0	242.6	241.6	224.0	19.5	21.5	3.0	4.0	4.0
220.0	239.5	31.8	217.0	244.0	243.0	232.0	14.5	16.5	2.8	5.0	3.0
223.5	252.0	38.0	237.0	273.5	272.5	257.0	18.0	20.0	3.1	6.4	3.0
240.0	262.8	38.0	237.0	273.5	272.5	257.0	19.0	21.0	3.0	4.0	4.0
250.0	276.0	41.0	247.0	284.6	283.6	266.0	20.5	22.5	3.0	4.0	4.0
265.0	293.0	38.0	262.0	298.0	297.0	280.0	19.0	21.0	3.0	6.4	4.0
275.0	303.0	38.0	271.0	308.0	307.0	290.0	18.0	20.5	3.1	4.0	
300.0	328.0	39.0	297.0	333.0	332.0	315.0	19.5	22.0	3.0	4.0	4.0
318.0	341.0	38.0	315.0	351.6	350.7	335.0	19.0	20.5	3.0	6.4	
318.5	346.5	38.0	315.0	351.6	350.6	335.0	19.0	21.5	3.0	6.4	
340.0	368.0	38.0	333.0	375.7	374.8	368.0	19.6	22.1	3.1	4.0	2.0
366.5	391.0	38.0	363.0	399.5	398.5	382.0	18.5	21.0	3.0	4.0	4.0
366.5	394.5	38.0	363.0	399.5	398.6	382.0	18.5	21.0	3.0	6.4	4.0
387.0	415.0	38.0	384.0	419.5	418.5	400.0	18.0	20.5	3.0	4.0	3.0
429.0	457.0	38.0	426.0	463.5	462.5	444.0	18.0	20.5	3.0	4.0	3.0

INSTALLATION RECOMMENDATIONS FOR TYPE DF IN BEARING STEEL

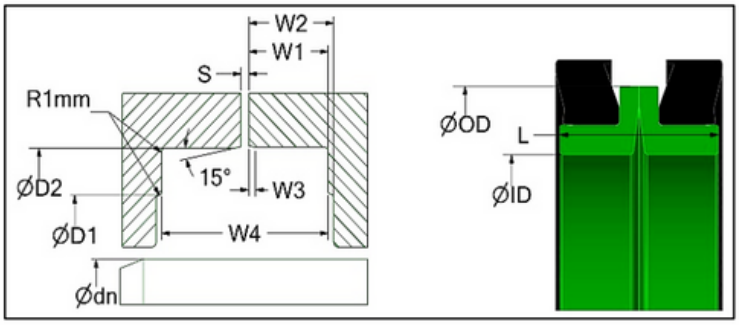

Figure 5 Installation Drawing

Table II Installation Dimensions

ID	OD	L	dmax.	D2	D1	W1	W2 min.	W3	S
42.0	59.0	20.0	38.0	65.0	53.0	10.0	10.5	2.0	3.0
47.0	62.0	20.0	44.0	70.0	58.0	10.0	11.0	2.0	3.0
50.5	65.0	19.0	46.0	76.2	63.0	10.0	11.0	2.0	2..5
54.0	73.0	22.0	50.0	80.0	67.0	11.5	12.0	1.5	3.0
58.5	73.0	19.0	54.0	82.5	65.0	10.0	12.0	1.8	3.0
58.6	80.0	19.6	57.0	84.0	71.0	9.0	9.5	1.5	3.0
63.5	81.0	19.0	59.5	87.8	71.0	9.0	9.5	1.0	3.0
67.0	86..2	20.0	64.0	95.4	82.0	10.0	11.0	2.0	3.0
67.0	87.0	25.0	64.0	95.0	81.0	12.5	13.0	1.5	4.0
67.0	91.7	20.0	64.0	95.4	82.0	10.0	11.0	2.0	3.0
68.0	86.2	20.0	64.0	95.6	82.0	10.0	11.0	2.0	3.5
73.8	92.8	20.0	70.0	102.2	88.0	10.0	11.0	2.0	3.0
74.0	99.0	20.0	70.0	102.2	88.0	10.0	11.0	2.0	3.0
77.0	97.0	25.0	74.0	105.0	87.0	12.5	13.5	1.5	4.0
81.7	101.5	20.0	70.0	110.2	96.0	10.0	11.0	2.0	3.0
82.5	100.0	22.0	75.0	114.3	97.0	11.0	12.0	2.0	3.5
87.5	109.0	17.5	83.0	113.0	100.0	8.5	9.5	1.5	3.0
87.5	111.5	19.0	85.0	115.8	102.0	10.0	11.0	1.5	3.0
92.0	113.0	24.0	88.0	125.8	102.0	12.5	13.0	2.5	3.0
94.0	112.5	24.0	90.0	125.8	109.0	12.5	13.0	2.5	3.0
99.0	120.0	17.5	95.0	124.0	110.0	8.5	9.5	1.5	3.0
99.0	123.0	19.0	95.0	127.3	113.0	10.0	11.0	3.0	3.0
104.0	126.0	24.0	100.0	135.0	114.0	12.0	13.0	2.0	4.0
105.0	124.0	24.4	101.0	134.9	125.0	13.3	14.5	1.3	3.0
114.0	133.2	26.0	110.0	147.9	130.0	12.0	13.0	1.5	4.0
114.0	138.0	26.0	110.0	148.0	126.0	12.0	13.0	2.0	4.0
124.0	144.0	32.0	119.0	162.5	141.5	18.5	20.5	1.5	3.0
133.0	156.0	28.0	128.0	171.5	151.0	13.0	14.0	2.0	6.5
148.5	168.0	32.4	143.0	184.1	164.0	16.5	17.5	1.5	5.0
150.0	175.0	30.0	145.0	190.0	170.0	15.0	15.5	2.0	5.0
154.0	180.0	36.0	149.0	194.0	174.0	18.4	20.0	1.4	4.5

INSTALLATION RECOMMENDATIONS FOR TYPE DF IN BEARING STEEL

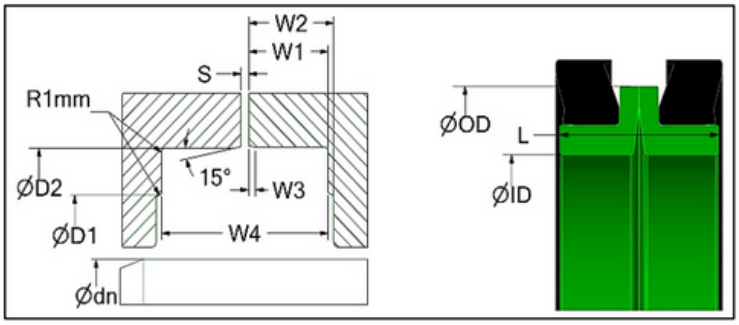

Figure 5 Installation Drawing

Table II Installation Dimensions

ID	OD	L	dmax.	D2	D1	W1	W2 min.	W3	S
169.0	195.0	33.0	164.0	206.2	191.5	15.1	18.4	1.1	5.0
177.7	207.0	29.0	173.0	218.9	197.0	16.6	17.5	1.6	
193.0	214.3	31.0	187.0	238.9	215.0	19.4	20.4	1.4	3.0
194.0	214.5	31.0	188.0	238.8	214.0	20.1	21.0	1.1	
198.0	224.0	35.0	195.0	245.0	223.0	17.0	17.5	2.0	6.0
228.0	260.5	41.0	221.0	277.1	247.5	23.5	24.5	1.5	4.0
233.0	259.0	35.0	225.0	280.0	250.0	17.0	18.0	2.0	6.0
241.5	273.5	36.0	235.0	279.4	260.6	17.5	20.0	1.0	2.0
275.0	303.0	36.0	270.0	309.4	290.0	17.5	20.0	1.0	2.0
283.0	305.0	42.0	278.0	329.4	307.0	18.5	22.1	1.5	3.0
320.0	352.5	40.0	312.0	365.1	343.0	20.0	21.5	1.5	2.0
355.0	392.0	39.6	345.0	401.7	380.0	23.0	24.0	1.5	1.8
442.0	470.0	41.0	435.0	488.7	467.0	18.4	22.0	1.4	2.5
492.0	530.0	43.0	480.0	546.1	532.0	19.9	24.4	1.5	2.0

PROPERTIES

As a result of permanent operations in adverse and dirty environments the sealed units and vehicles are exposed to extreme and constant strain. In all “outdoor” applications such as coal-mining, open-cast mining, construction industry, agricultural- and forestry applications, chemistry, waste disposal and removal industries, water treatment, wind craft energy, offshore drilling etc. the following abrasive and corrosive media have to be taken into account:

- Sand, loam, mud, earth, stone, lime sandstone, granite, basalt;
- concrete, lime, potash, rubble, grit, slag, glass, asphalt, bitumen;
- chemicals, liquids, salts, lye, acids;
- sewage water, rainwater, harbour water, dirty water, sea water.

Additionally, in combination to extreme weather conditions such as -55 [°C] / -131 [°F] to +200 [°C] / +392 [°F] and corrosive surroundings, e.g. maritime climate, the Mechanical Face Seal solutions proved to be highly reliable and functional in a wide range of applications.

Mechanical Face Seals distinguish themselves in many application due to three outstanding advantages:

- Prevention of entry of abrasive dirt, contamination and media into the sealing space
- avoidance of leakage (oil or grease) from the sealing space
- extremely high wear resistance according to application.

SELECTION OF APPROPRIATE MECHANICAL FACE SEAL

Cast Iron and Bearing Steel
As a result of very high requirements for the wear resistance of Mechanical Face Seals AST uses cast iron (15Cr3Mo) orsteel (GCr15/100Cr6) with a hardnessrange from 58 to 68 HRC. The extremely high wear resistance is reached thanks to a carbidic-martensite structure of the material and a selection of the alloy elements as well as their concentration. Cast iron ring are suitable for extreme operating conditions: thanks to its material structure and its high hardness values cast iron can operate at pressures up to 0.3 [MPa] and rotating speed up to 2 [m/s], ensuring a lifetime up to 5000 hours. For lower speeds (≤2 [m/s]) and lower pressure values (≤0.15 [MPa]) bearing steel GCr15 (100Cr6) can be a good alternative.

Individual Material Recipes
Depending on the media that has to be sealed off, it is possible to tailor individual material recipes for a special high alloy cast in order to substantially increase life span and wear resistance of the Mechanical Face Seal. Individual recipes of high alloy cast for sealing solutions in biogas fermentation plants or harrowing machinery with chemical exposure to slurry show substantial improvements with respect to life cycles, wear resistance and corrosion resistance.

SELECTION OF APPROPRIATE O-RING MATERIAL

High thermal resistance and a low compression set are the essential criteria for the elastomeric material in demanding applications. The normal NBR compound meets these requirements. For higher thermal use we stress that the o-rings are made of HNBR, VMQ or FPM.

The oil compatibility of several elastomers has to be assessed. The elastomeric materials listed are offered in various degrees of hardness, so that the O-ring can adequately perform its function of generating a permanent and consistent contact pressure with hardware.

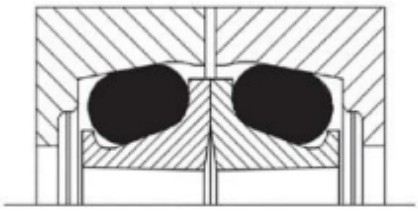

Figure 6 Type DO

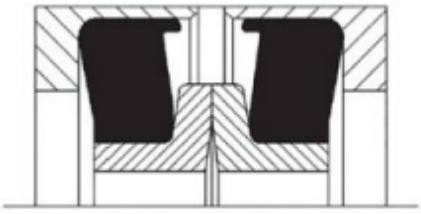

Figure 7 Type DF

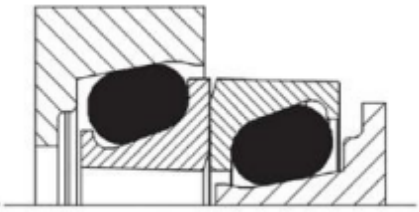

Figure 8 Special Application

Figure 9 Example seal cutted

Figure 10 Example Cast Iron Type DO

The above values are typical

The information in this brochure is based on many years of experience in the application of mechanical face seals. However, unknown parameters and conditions may restrict general statements during usage. It is vital that users satisfy themselves as to the suitability of individual products through adequate testing. For this reason and due to the wide range of applications of our products, AST B.V. can accept no liability as to the suitability or correctness of our recommendations in individual cases. The application limits for pressure, temperature and velocity given in this datasheet are maximum values determined in the test laboratory. During practical applications it should be remembered that due to the interaction of the operating parameters, the maximum values must be set correspondingly lower. For exceptional operating conditions, please contact us.

The information in this brochure is intended to be for general reference purposes only and is not intended to be a specific recommendation for any individual application. The application limits for pressure, temperature, speed and media given are maximum values determined in laboratory conditions. In application, due to the interaction of operating parameters, maximum values may not be achieved. It is vital therefore, that customers satisfy themselves as to be suitable of product and material for each of their individual applications. Any reliance on information is therefore at the user´s own risk. In no event will Advanced Sealing Technology be liable for any loss, damage, claim or expense directly or indirectly arising or resulting from the use of any information provided in this brochure. While every effort is made to ensure the accuracy of information contained herewith, Advanced Sealing Technology cannot warrant the accuracy or completeness of information.

To obtain the best recommendation for a specific application, please contact Advanced Sealing Technology.

This edition supersedes all previous brochures.

ADVANCED SEALING TECHNOLOGY

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