

## Material

The standard material for the 324 Series Rhino dirt wiper is high-grade H-PU polyurethane. It is also available in robust NBR and high temperature resistant FPM.

Material	Code
Polyurethane H-PU	P03
Nitrile NBR	N01
Fluoroelastomer FPM	F01

## Operating Parameters

Temperature	P03	
	°C	°F
hydraulic oil	-20...+115	-5...+240
water oil emulsions (HFA)	+5...+55	+40...+130
water-glycol fluids (HFC)	-20...+55	-5...+130
polyol esters (HFD)	-	-
water	+5...+55	+40...+130

Speed	2m/s (6.5ft/sec)
Pressure	-

Note: for other materials or fluids please contact our engineering department

## Description

The 324 Series dirt wiper is a heavy duty wiper for severely contaminated and aggressive environments. Its unique lip design prevents contaminants from entering through the static gland or housing.

## Product Benefits

- Excellent wear resistance
- Compatible with a wide range of fluids
- Wide range of compounds available
- Available in diameters up to 1900mm

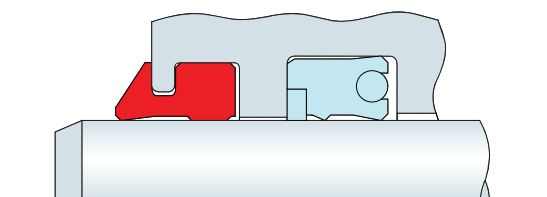
## Applications

The 324 Series Rhino dirt wiper is used in severely-contaminated or abrasive conditions, in particular in vertically mounted cylinders where contamination collects at the top of the cylinder.

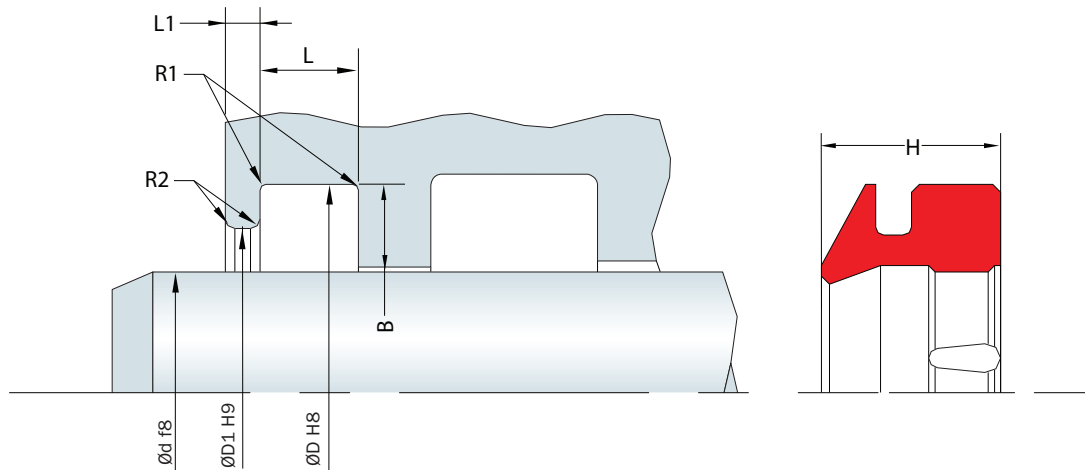
Typical applications include:

- Longwall mining
- Steel making
- Mineral processing
- Oil and gas

## Installation Drawing



## Design Guidelines



### Metric Series

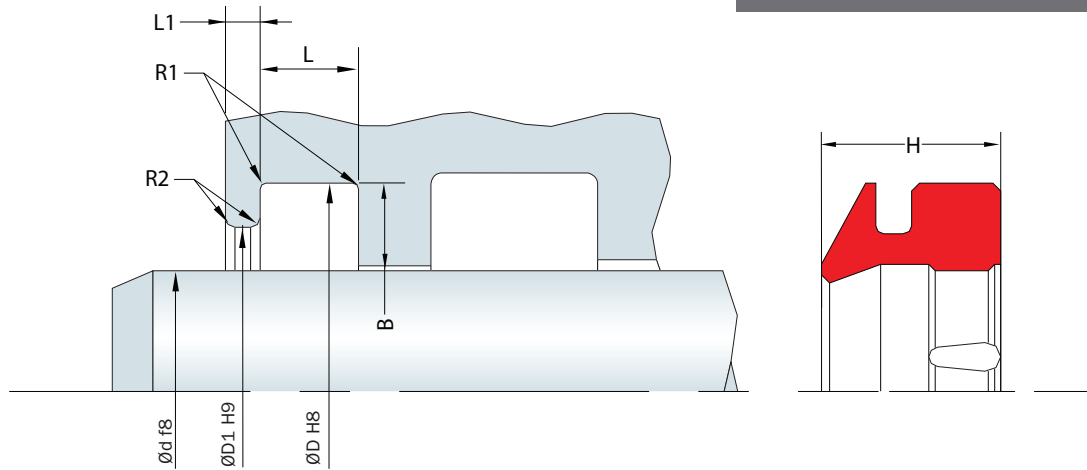
	Rod Diameter d	B	D	D1	L <sup>+0.2</sup>	L1 <sup>-0.10</sup>
Series 1	up to 40mm	3.00	d + 6.00	d + 3.75	3.00	1.00
Series 2	up to 50mm	5.00	d + 10.00	d + 5.75	5.00	1.50
Series 3	up to 90mm	6.50	d + 13.00	d + 7.50	6.50	2.00
Series 4	up to 115mm	8.00	d + 16.00	d + 9.10	8.00	3.00
Series 5	up to 175mm	10.00	d + 20.00	d + 11.25	10.00	4.00
Series 6	up to 1000mm	12.50	d + 25.00	d + 15.00	12.50	5.00

### Inch Series

	Rod Diameter d	B	D	D1	L <sup>+0.008</sup>	L1 <sup>-0.004</sup>
Series 1	up to 1.625 inches	0.125	d + 0.250	d + 0.148	0.125	0.040
Series 2	up to 1.875 inches	0.188	d + 0.376	d + 0.222	0.188	0.060
Series 3	up to 3.500 inches	0.250	d + 0.500	d + 0.296	0.250	0.080
Series 4	up to 4.375 inches	0.313	d + 0.626	d + 0.358	0.313	0.118
Series 5	up to 6.750 inches	0.375	d + 0.750	d + 0.442	0.375	0.158
Series 6	up to 40.000 inches	0.500	d + 1.000	d + 0.590	0.500	0.197

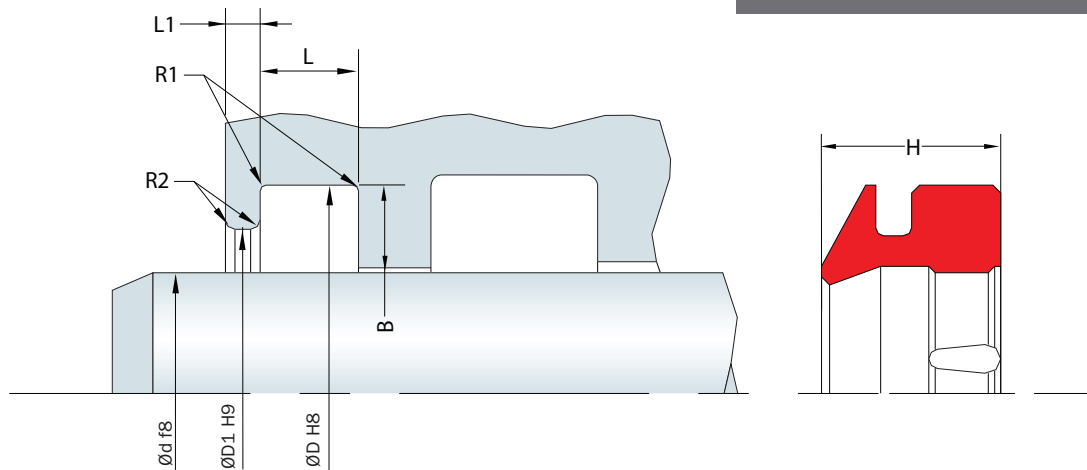
### Surface Finish

Surface roughness	Ra	Rt	RMS
Sliding surface	≤0.3 µm	≤3 µm	8 RMS
Surface of groove I.D.	≤1.8 µm	≤10 µm	64 RMS
Sides of groove	≤3 µm	≤16 µm	125 RMS



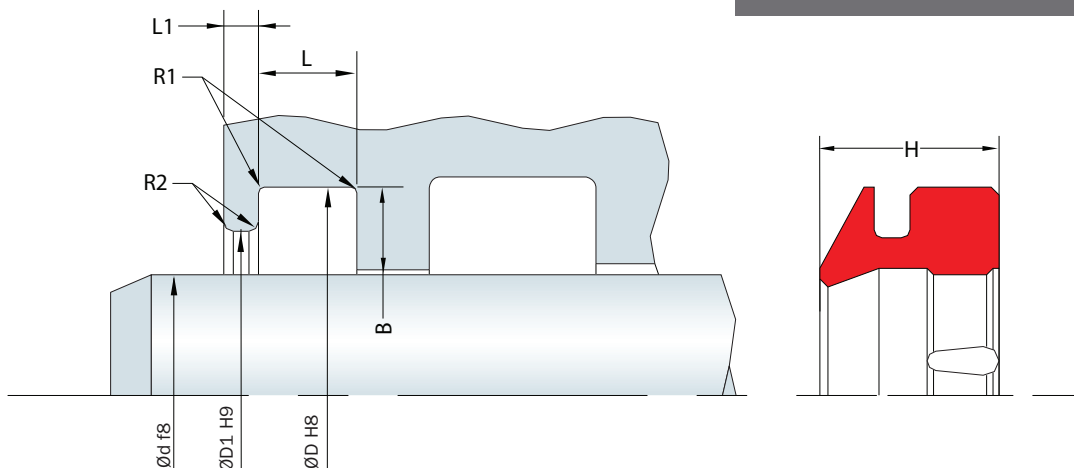
**Parts List**

Ød	ØD	L	D1	L1	P03 - H-PU
3.00	9.00	3.00	6.75	1.00	324.94050
4.00	10.00	3.00	7.75	1.00	324.94141
5.00	11.00	3.00	8.75	1.00	324.94163
6.00	12.00	3.00	9.75	1.00	324.94079
6.40	12.40	3.00	10.15	1.00	324.94010
7.00	13.00	3.00	10.75	1.00	324.94223
7.50	13.50	3.00	11.25	1.00	324.94117
8.00	14.00	3.00	11.75	1.00	324.94190
9.53	15.53	3.00	13.28	1.00	324.94097
10.00	16.00	3.00	13.75	1.00	324.94209
11.00	17.00	3.00	14.75	1.00	324.94253
11.10	17.10	3.00	14.85	1.00	324.94100
12.00	18.00	3.00	15.75	1.00	324.94084
12.60	18.60	3.00	16.35	1.00	324.94197
12.70	18.70	3.00	16.45	1.00	324.94019
13.00	19.00	3.00	16.75	1.00	324.94154
14.00	20.00	3.00	17.75	1.00	324.94281
14.00	20.00	3.00	17.75	1.00	324.94036
14.27	20.27	3.00	18.02	1.00	324.94176
15.00	21.00	3.00	18.75	1.00	324.94069
15.88	21.88	3.00	19.63	1.00	324.94149
16.00	22.00	3.00	19.75	1.00	324.94212
17.45	23.45	3.00	21.20	1.00	324.94166
18.00	24.00	3.00	21.75	1.00	324.94052
18.00	24.00	3.00	21.75	1.00	324.94044
19.05	25.05	3.00	22.80	1.00	324.94125
20.00	26.00	3.00	23.75	1.00	324.94040
20.62	26.62	3.00	24.37	1.00	324.94241
22.00	28.00	3.00	25.75	1.00	324.94130
22.23	28.23	3.00	25.98	1.00	324.94175
23.00	29.00	3.00	26.75	1.00	324.94170
23.80	29.80	3.00	27.55	1.00	324.94234



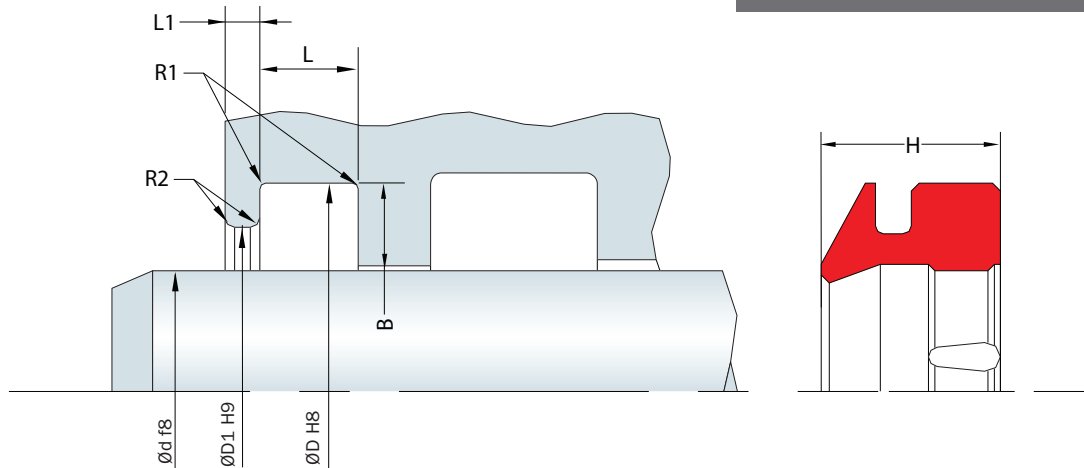
### Parts List

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24.00	30.00	3.00	27.75	1.00	324.94161
25.00	31.00	3.00	28.75	1.00	324.94139
25.40	31.40	3.00	29.15	1.00	324.94143
26.00	32.00	3.00	29.75	1.00	324.94029
26.97	32.97	3.00	30.72	1.00	324.94266
28.00	34.00	3.00	31.75	1.00	324.94206
28.58	34.58	3.00	32.33	1.00	324.94230
30.00	36.00	3.00	33.75	1.00	324.94059
30.15	36.15	3.00	33.90	1.00	324.94112
31.75	37.75	3.00	35.50	1.00	324.94056
32.00	38.00	3.00	35.75	1.00	324.94174
33.32	39.32	3.00	37.07	1.00	324.94216
34.00	40.00	3.00	37.75	1.00	324.94005
34.93	40.93	3.00	38.68	1.00	324.94254
35.00	41.00	3.00	38.75	1.00	324.94042
36.00	42.00	3.00	39.75	1.00	324.94140
36.50	42.50	3.00	40.25	1.00	324.94282
37.00	43.00	3.00	40.75	1.00	324.94278
38.00	44.00	3.00	41.75	1.00	324.94032
39.00	45.00	3.00	42.75	1.00	324.94261
40.00	46.00	3.00	43.75	1.00	324.94012
40.50	50.50	5.00	46.25	1.50	324.94286
41.00	51.00	5.00	46.75	1.50	324.94215
42.00	52.00	5.00	47.75	1.50	324.94093
44.00	54.00	5.00	49.75	1.50	324.94064
44.00	54.00	5.00	49.75	1.50	324.94073
44.45	54.45	5.00	50.20	1.50	324.94192
45.00	55.00	5.00	50.75	1.50	324.94105
46.00	56.00	5.00	51.75	1.50	324.94049
47.00	57.00	5.00	52.75	1.50	324.94178
48.00	58.00	5.00	53.75	1.50	324.94151



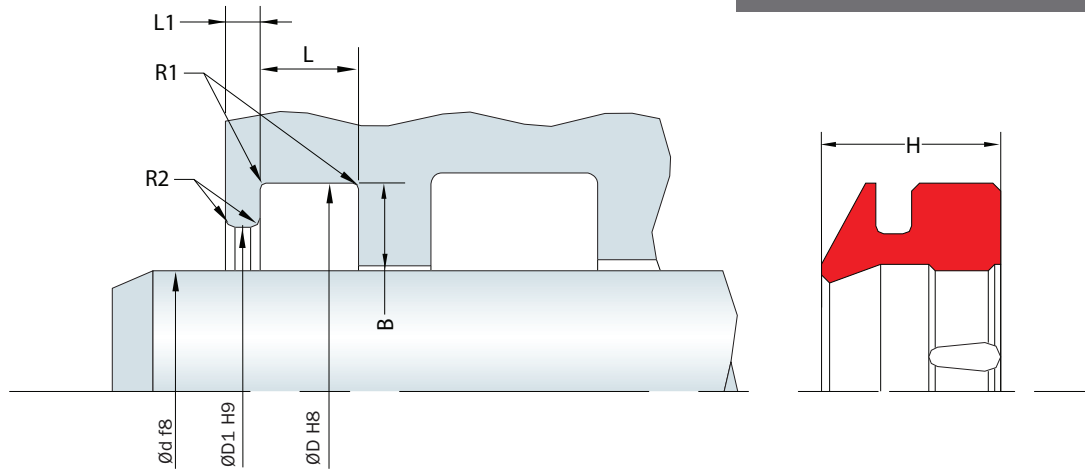
### Parts List

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50.00	60.00	5.00	55.75	1.50	324.94249
50.80	63.80	6.50	58.30	2.00	324.94218
51.00	64.00	6.50	58.50	2.00	324.94114
51.50	64.50	6.50	59.00	2.00	324.94244
52.00	65.00	6.50	59.50	2.00	324.94137
53.50	66.50	6.50	61.00	2.00	324.94003
53.98	66.98	6.50	61.48	2.00	324.94225
54.00	67.00	6.50	61.50	2.00	324.94091
55.00	68.00	6.50	62.50	2.00	324.94028
56.00	69.00	6.50	63.50	2.00	324.94288
57.00	70.00	6.50	64.50	2.00	324.94177
57.15	70.15	6.50	64.65	2.00	324.94189
58.00	71.00	6.50	65.50	2.00	324.94067
60.00	73.00	6.50	67.50	2.00	324.94270
62.00	75.00	6.50	69.50	2.00	324.94094
62.50	75.50	6.50	70.00	2.00	324.94182
63.00	76.00	6.50	70.50	2.00	324.94199
63.50	76.50	6.50	71.00	2.00	324.94264
64.00	77.00	6.50	71.50	2.00	324.94173
65.00	78.00	6.50	72.50	2.00	324.94247
66.68	79.68	6.50	74.18	2.00	324.94060
68.00	81.00	6.50	75.50	2.00	324.94260
69.00	82.00	6.50	76.50	2.00	324.94168
69.85	82.85	6.50	77.35	2.00	324.94289
70.00	83.00	6.50	77.50	2.00	324.94071
73.03	86.03	6.50	80.53	2.00	324.94027
75.00	88.00	6.50	82.50	2.00	324.94108
76.20	89.20	6.50	83.70	2.00	324.94111
76.50	89.50	6.50	84.00	2.00	324.94229
77.00	90.00	6.50	84.50	2.00	324.94208
78.00	91.00	6.50	85.50	2.00	324.94201



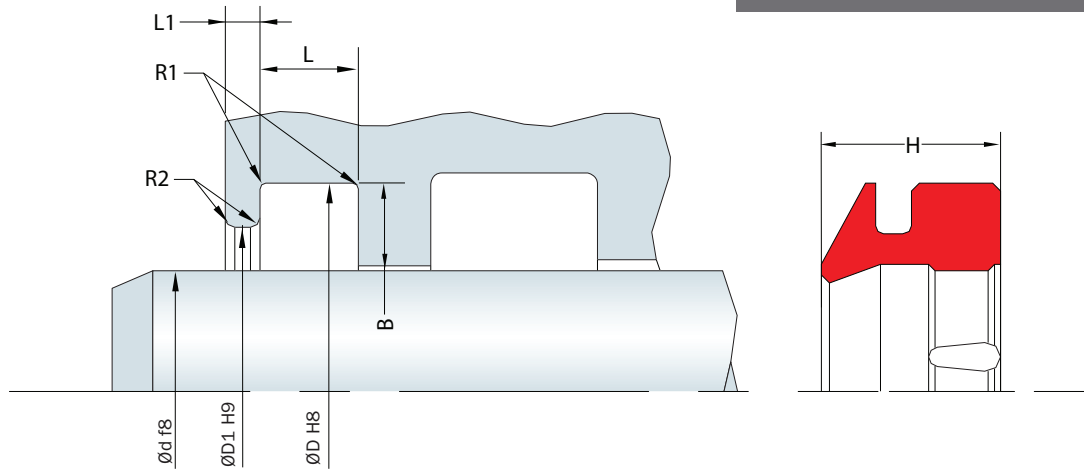
### Parts List

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81.00	94.00	6.50	88.50	2.00	324.94065
82.00	95.00	6.50	89.50	2.00	324.94159
82.55	95.55	6.50	90.05	2.00	324.94246
83.00	96.00	6.50	90.50	2.00	324.94242
85.00	98.00	6.50	92.50	2.00	324.94153
88.00	101.00	6.50	95.50	2.00	324.94207
88.90	101.90	6.50	96.40	2.00	324.94198
90.00	103.00	6.50	97.50	2.00	324.94187
91.50	107.50	8.00	100.60	3.00	324.94235
92.08	108.08	8.00	101.18	3.00	324.94018
94.00	110.00	8.00	103.10	3.00	324.94256
95.00	111.00	8.00	104.10	3.00	324.94070
98.43	114.43	8.00	107.53	3.00	324.94055
100.00	116.00	8.00	109.10	3.00	324.94034
101.60	117.60	8.00	110.70	3.00	324.94220
103.00	119.00	8.00	112.10	3.00	324.94129
104.78	120.78	8.00	113.88	3.00	324.94245
105.00	121.00	8.00	114.10	3.00	324.94146
107.00	123.00	8.00	116.10	3.00	324.94243
107.95	123.95	8.00	117.05	3.00	324.94196
110.00	126.00	8.00	119.10	3.00	324.94054
111.13	127.13	8.00	120.23	3.00	324.94081
113.00	129.00	8.00	122.10	3.00	324.94134
114.30	130.30	8.00	123.40	3.00	324.94181
115.00	131.00	8.00	124.10	3.00	324.94038
117.48	137.48	10.00	128.73	4.00	324.94109
118.00	138.00	10.00	129.25	4.00	324.94226
120.00	140.00	10.00	131.25	4.00	324.94058
125.00	145.00	10.00	136.25	4.00	324.94231
126.00	146.00	10.00	137.25	4.00	324.94259



### Parts List

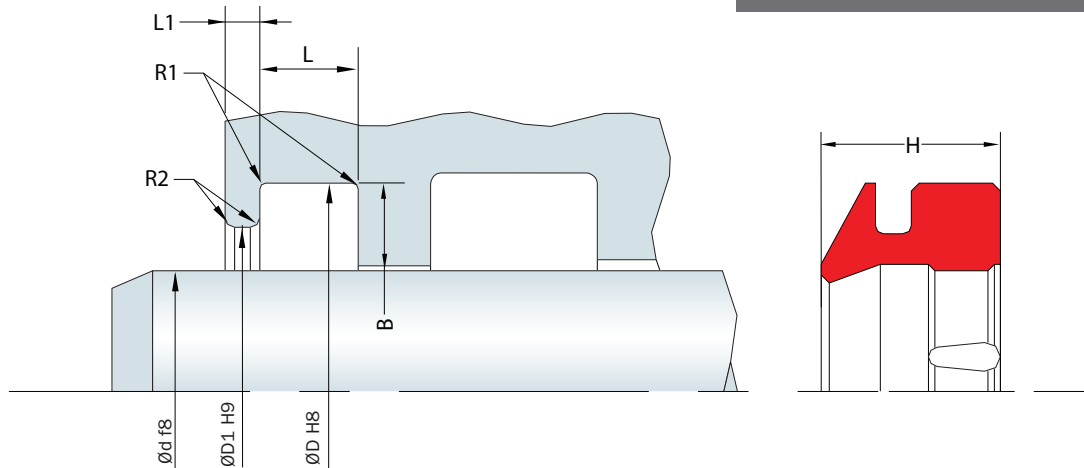
Ød	ØD	L	D1	L1	P03 - H-PU
128.00	148.00	10.00	139.25	4.00	324.94041
130.00	150.00	10.00	141.25	4.00	324.94014
132.00	152.00	10.00	143.25	4.00	324.94135
133.35	153.35	10.00	144.60	4.00	324.94025
135.00	155.00	10.00	146.25	4.00	324.94156
138.00	158.00	10.00	149.25	4.00	324.94169
138.20	158.20	10.00	149.45	4.00	324.94184
139.70	159.70	10.00	150.95	4.00	324.94180
140.00	160.00	10.00	151.25	4.00	324.94124
145.00	165.00	10.00	156.25	4.00	324.94283
147.00	167.00	10.00	158.25	4.00	324.94101
149.23	169.23	10.00	160.48	4.00	324.94250
150.00	170.00	10.00	161.25	4.00	324.94239
151.00	171.00	10.00	162.25	4.00	324.94191
152.40	172.40	10.00	163.65	4.00	324.94162
155.00	175.00	10.00	166.25	4.00	324.94263
156.50	176.50	10.00	167.75	4.00	324.94087
157.00	177.00	10.00	168.25	4.00	324.94222
160.00	180.00	10.00	171.25	4.00	324.94017
165.00	185.00	10.00	176.25	4.00	324.94076
167.00	187.00	10.00	178.25	4.00	324.94121
170.00	190.00	10.00	181.25	4.00	324.94240
173.00	193.00	10.00	184.25	4.00	324.94057
175.00	195.00	10.00	186.25	4.00	324.94227
176.50	201.50	12.50	191.50	5.00	324.94268
177.00	202.00	12.50	192.00	5.00	324.94172
177.80	202.80	12.50	192.80	5.00	324.94031
180.00	205.00	12.50	195.00	5.00	324.94279
185.00	210.00	12.50	200.00	5.00	324.94205
185.50	210.50	12.50	200.50	5.00	324.94004
189.00	214.00	12.50	204.00	5.00	324.94262
190.00	215.00	12.50	205.00	5.00	324.94133



### Parts List

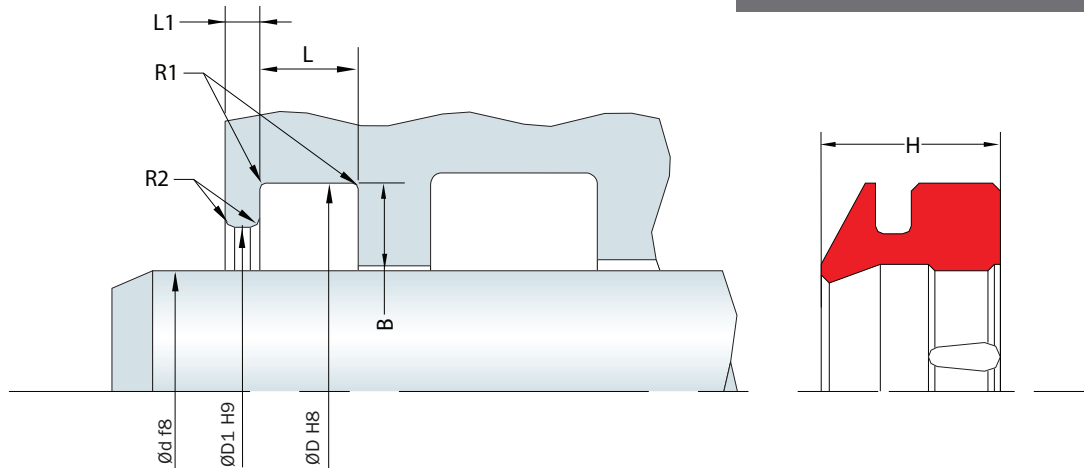
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195.00	220.00	12.50	210.00	5.00	324.94090
200.00	225.00	12.50	215.00	5.00	324.94233
205.00	230.00	12.50	220.00	5.00	324.94077
210.00	235.00	12.50	225.00	5.00	324.94267
215.00	240.00	12.50	230.00	5.00	324.94021
215.90	240.90	12.50	230.90	5.00	324.94026
220.00	245.00	12.50	235.00	5.00	324.94265
225.00	250.00	12.50	240.00	5.00	324.94148
228.60	253.60	12.50	243.60	5.00	324.94280
230.00	255.00	12.50	245.00	5.00	324.94272
235.00	260.00	12.50	250.00	5.00	324.94274
240.00	265.00	12.50	255.00	5.00	324.94214
241.30	266.30	12.50	256.30	5.00	324.94102
245.00	270.00	12.50	260.00	5.00	324.94236
250.00	275.00	12.50	265.00	5.00	324.94258
254.00	279.00	12.50	269.00	5.00	324.94086
255.00	280.00	12.50	270.00	5.00	324.94080
260.00	285.00	12.50	275.00	5.00	324.94035
265.00	290.00	12.50	280.00	5.00	324.94252
270.00	295.00	12.50	285.00	5.00	324.94150
275.00	300.00	12.50	290.00	5.00	324.94138
280.00	305.00	12.50	295.00	5.00	324.94119
285.00	310.00	12.50	300.00	5.00	324.94122
290.00	315.00	12.50	305.00	5.00	324.94276
290.00	315.00	12.50	305.00	5.00	324.94132
290.00	315.00	12.50	305.00	5.00	324.94271
295.00	320.00	12.50	310.00	5.00	324.94113
300.00	325.00	12.50	315.00	5.00	324.94095
300.30	325.30	12.50	315.30	5.00	324.94200
307.00	332.00	12.50	322.00	5.00	324.94074
310.00	335.00	12.50	325.00	5.00	324.94039
315.00	340.00	12.50	330.00	5.00	324.94136





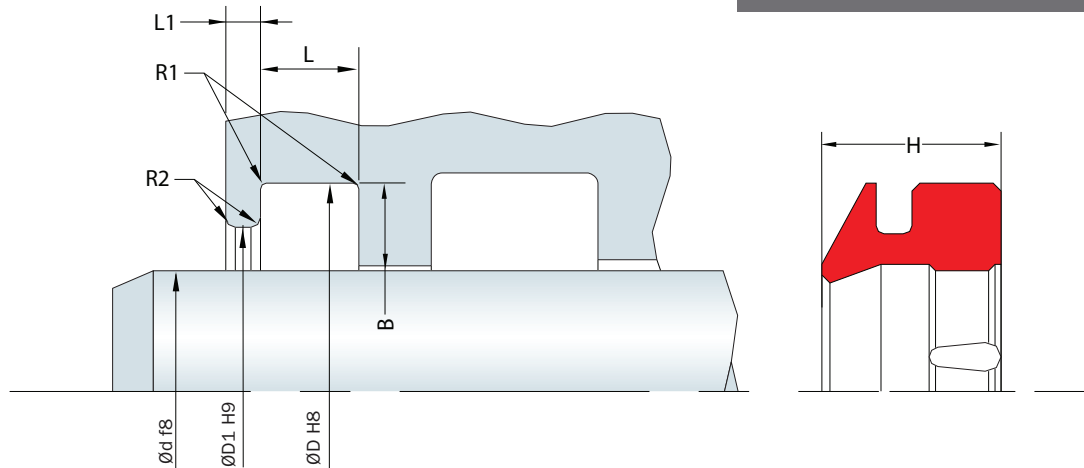
### Parts List

Ød	ØD	L	D1	L1	P03 - H-PU
317.00	342.00	12.50	332.00	5.00	324.94061
320.00	345.00	12.50	335.00	5.00	324.94269
325.00	350.00	12.50	340.00	5.00	324.94092
327.50	352.50	12.50	342.50	5.00	324.94118
330.00	355.00	12.50	345.00	5.00	324.94164
330.20	355.20	12.50	345.20	5.00	324.94155
335.00	360.00	12.50	350.00	5.00	324.94126
340.00	365.00	12.50	355.00	5.00	324.94202
345.00	370.00	12.50	360.00	5.00	324.94188
350.00	375.00	12.50	365.00	5.00	324.94152
351.60	376.60	12.50	366.60	5.00	324.94287
355.00	380.00	12.50	370.00	5.00	324.94096
360.00	385.00	12.50	375.00	5.00	324.94104
370.00	395.00	12.50	385.00	5.00	324.94015
371.30	396.30	12.50	386.30	5.00	324.94116
373.00	398.00	12.50	388.00	5.00	324.94142
375.00	400.00	12.50	390.00	5.00	324.94047
380.00	405.00	12.50	395.00	5.00	324.94183
390.00	415.00	12.50	405.00	5.00	324.94194
392.00	417.00	12.50	407.00	5.00	324.94228
395.00	420.00	12.50	410.00	5.00	324.94158
400.00	425.00	12.50	415.00	5.00	324.94115
410.00	435.00	12.50	425.00	5.00	324.94123
415.00	440.00	12.50	430.00	5.00	324.94128
420.00	445.00	12.50	435.00	5.00	324.94179
425.00	450.00	12.50	440.00	5.00	324.94020
430.00	455.00	12.50	445.00	5.00	324.94204
431.80	456.80	12.50	446.80	5.00	324.94221
435.00	460.00	12.50	450.00	5.00	324.94103
440.00	465.00	12.50	455.00	5.00	324.94219
445.00	470.00	12.50	460.00	5.00	324.94085
450.00	475.00	12.50	465.00	5.00	324.94098



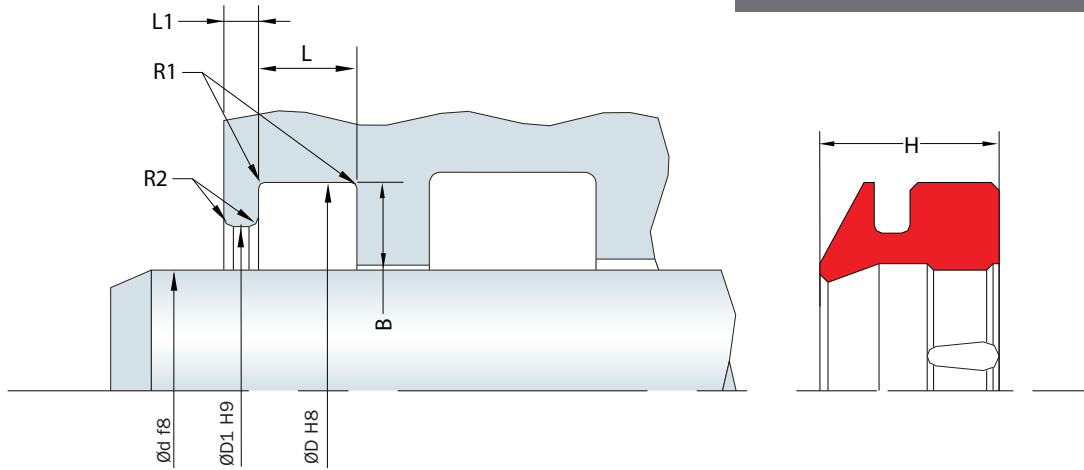
### Parts List

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470.00	495.00	12.50	485.00	5.00	324.94048
475.00	500.00	12.50	490.00	5.00	324.94082
480.00	505.00	12.50	495.00	5.00	324.94045
485.00	510.00	12.50	500.00	5.00	324.94046
485.00	510.00	12.50	500.00	5.00	324.94284
490.00	515.00	12.50	505.00	5.00	324.94217
495.00	520.00	12.50	510.00	5.00	324.94211
498.00	523.00	12.50	513.00	5.00	324.94037
500.00	525.00	12.50	515.00	5.00	324.94251
508.00	533.00	12.50	523.00	5.00	324.94107
510.00	535.00	12.50	525.00	5.00	324.94238
515.00	540.00	12.50	530.00	5.00	324.94013
520.00	545.00	12.50	535.00	5.00	324.94160
530.00	555.00	12.50	545.00	5.00	324.94185
540.00	565.00	12.50	555.00	5.00	324.94033
550.00	575.00	12.50	565.00	5.00	324.94106
555.00	580.00	12.50	570.00	5.00	324.94203
558.80	583.80	12.50	573.80	5.00	324.94167
560.00	585.00	12.50	575.00	5.00	324.94277
570.00	595.00	12.50	585.00	5.00	324.94001
580.00	605.00	12.50	595.00	5.00	324.94002
590.00	615.00	12.50	605.00	5.00	324.94083
600.00	625.00	12.50	615.00	5.00	324.94068
610.00	635.00	12.50	625.00	5.00	324.94024
620.00	645.00	12.50	635.00	5.00	324.94053
630.00	655.00	12.50	645.00	5.00	324.94006
635.00	660.00	12.50	650.00	5.00	324.94030
640.00	665.00	12.50	655.00	5.00	324.94275
650.00	675.00	12.50	665.00	5.00	324.94023
660.00	685.00	12.50	675.00	5.00	324.94157
670.00	695.00	12.50	685.00	5.00	324.94147



### Parts List

Ød	ØD	L	D1	L1	P03 - H-PU
673.10	698.10	12.50	688.10	5.00	324.94063
680.00	705.00	12.50	695.00	5.00	324.94248
690.00	715.00	12.50	705.00	5.00	324.94072
700.00	725.00	12.50	715.00	5.00	324.94066
710.00	735.00	12.50	725.00	5.00	324.94099
720.00	745.00	12.50	735.00	5.00	324.94193
730.00	755.00	12.50	745.00	5.00	324.94008
735.00	760.00	12.50	750.00	5.00	324.94232
740.00	765.00	12.50	755.00	5.00	324.94089
750.00	775.00	12.50	765.00	5.00	324.94016
760.00	785.00	12.50	775.00	5.00	324.94043
767.00	792.00	12.50	782.00	5.00	324.94144
770.00	795.00	12.50	785.00	5.00	324.94088
780.00	805.00	12.50	795.00	5.00	324.94224
787.40	812.40	12.50	802.40	5.00	324.94186
790.00	815.00	12.50	805.00	5.00	324.94011
795.00	820.00	12.50	810.00	5.00	324.94075
800.00	825.00	12.50	815.00	5.00	324.94165
810.00	835.00	12.50	825.00	5.00	324.94062
820.00	845.00	12.50	835.00	5.00	324.94007
830.00	855.00	12.50	845.00	5.00	324.94009
840.00	865.00	12.50	855.00	5.00	324.94255
850.00	875.00	12.50	865.00	5.00	324.94257
860.00	885.00	12.50	875.00	5.00	324.94051
870.00	895.00	12.50	885.00	5.00	324.94078
875.00	900.00	12.50	890.00	5.00	324.94131
880.00	905.00	12.50	895.00	5.00	324.94120
890.00	915.00	12.50	905.00	5.00	324.94127
900.00	925.00	12.50	915.00	5.00	324.94022
910.00	935.00	12.50	925.00	5.00	324.94273
920.00	945.00	12.50	935.00	5.00	324.94145
930.00	955.00	12.50	945.00	5.00	324.94195



**Parts List**

Ød	ØD	L	D1	L1	P03 - H-PU
940.00	965.00	12.50	955.00	5.00	324.94237
950.00	975.00	12.50	965.00	5.00	324.94210