

# O-RING

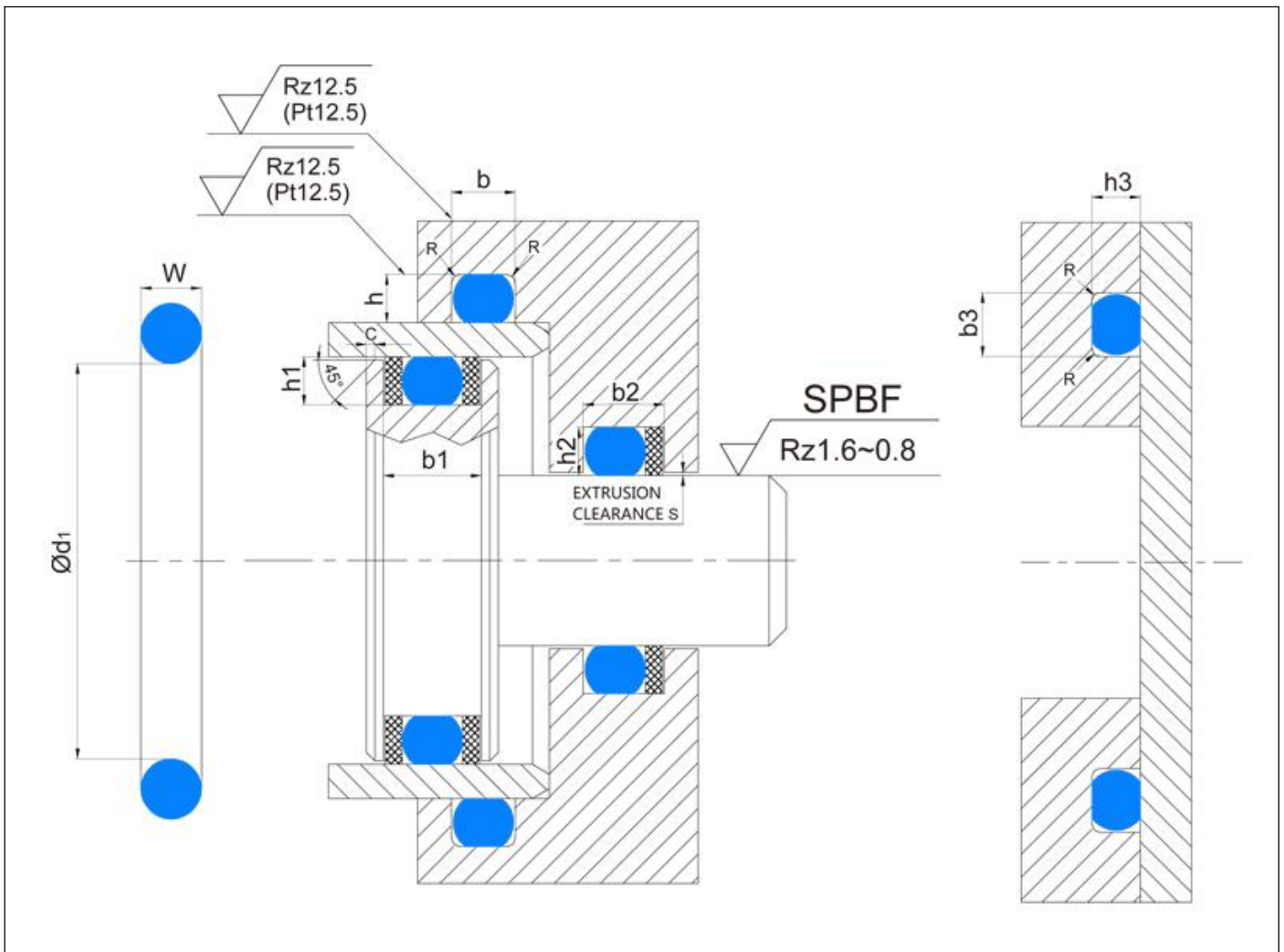
# O-RING



## 1. Description

O-Ring seals are suitable for various mechanical equipment. It has sealing function in static or motion state. When it was in the medium of specified temperature, pressure, different liquid and gas. There have many sealing elements used in machine, ship, automobile, aerospace equipment, metallurgical machinery, chemical machinery, construction machinery, building machinery, mining machinery, petroleum machinery, plastic machinery, agricultural machinery and various instruments and apparatus. O-Ring seals mainly used for static sealing and reciprocating motion sealing. When it used in rotary sealing, it was only limited in low speed rotary sealing device. O-Ring seals generally installed in the groove of rectangle cross section. O-Ring seals have good sealing performance in the situation of oil resistance, acid and alkali resistance, wear resistance, chemical resistance. O-Ring seals are most widely used in hydraulic and pneumatic system.

## 2. Installation Recommendation



## 3. Standard materials

NBR, FKM, EPDM, silicone, HNBR, FFKM, ACM, VMQ, CR, NR, SBR, PTFE

# O-RING



## 4. Standard tolerance

### Wire Diameter Tolerance

Wire diameter of O-Ring (mm)	Tolerance ( $\pm$ mm)
0-1.8	0.08
1.80-2.65	0.09
2.65-3.55	0.10
3.55-5.30	0.13
5.30-7.00	0.15
7.00-8.00	0.18
8.00-10.00	0.21
10.00-12.00	0.25

### Inner diameter tolerance

Inner Diameter $d_1$ mm	Tolerance $\pm$ mm	Inner Diameter $d_1$ mm	Tolerance $\pm$ mm	Inner Diameter $d_1$ mm	Tolerance $\pm$ mm
0.70-2.50	0.13	43.70-45.00	0.42	95.00-97.50	0.83
2.50-4.50	0.14	46.00-46.20	0.43	97.50-100.00	0.84
4.50-6.30	0.15	46.20-47.50	0.44	100.00-103.00	0.87
6.30-8.50	0.16	47.50-48.70	0.45	103.00-106.00	0.89
8.50-10.00	0.17	48.70-50.00	0.46	106.00-109.00	0.91
10.00-11.20	0.18	50.00-51.50	0.47	109.00-112.00	0.93
11.20-14.00	0.19	51.50-53.00	0.48	112.00-115.00	0.95
14.00-16.00	0.20	53.00-54.50	0.50	115.00-118.00	0.97
16.00-18.00	0.21	54.50-56.00	0.51	118.00-122.00	1.00
18.00-20.00	0.22	56.00-58.00	0.52	122.00-125.00	1.03
20.00-21.20	0.23	58.00-60.00	0.54	125.00-128.00	1.05
21.20-23.60	0.24	60.00-61.50	0.55	128.00-132.00	1.08
23.60-25.00	0.25	61.50-63.00	0.56	132.00-136.00	1.10
25.00-26.50	0.26	63.00-65.00	0.58	136.00-140.00	1.13
26.50-28.00	0.28	65.00-67.00	0.59	140.00-145.00	1.17
28.00-30.00	0.29	67.00-69.00	0.61	145.00-150.00	1.20
30.00-31.50	0.31	69.00-71.00	0.63	150.00-155.00	1.24
31.50-33.50	0.32	71.00-73.00	0.64	155.00-160.00	1.27
33.50-34.50	0.33	73.00-75.00	0.66	160.00-165.00	1.31
34.50-35.50	0.34	75.00-77.50	0.67	165.00-170.00	1.34
35.50-36.50	0.35	77.50-80.00	0.69	170.00-175.00	1.38
36.50-37.50	0.36	80.00-82.50	0.71	175.00-180.00	1.41
37.50-38.70	0.37	82.50-85.00	0.73	180.00-185.00	1.44
38.70-40.00	0.38	85.00-87.50	0.75	185.00-190.00	1.48
40.00-41.20	0.39	87.50-90.00	0.77	190.00-195.00	1.51
41.20-42.50	0.40	90.00-92.50	0.79	195.00-200.00	1.55
42.50-43.70	0.41	92.50-95.00	0.81	200.00-206.00	1.59

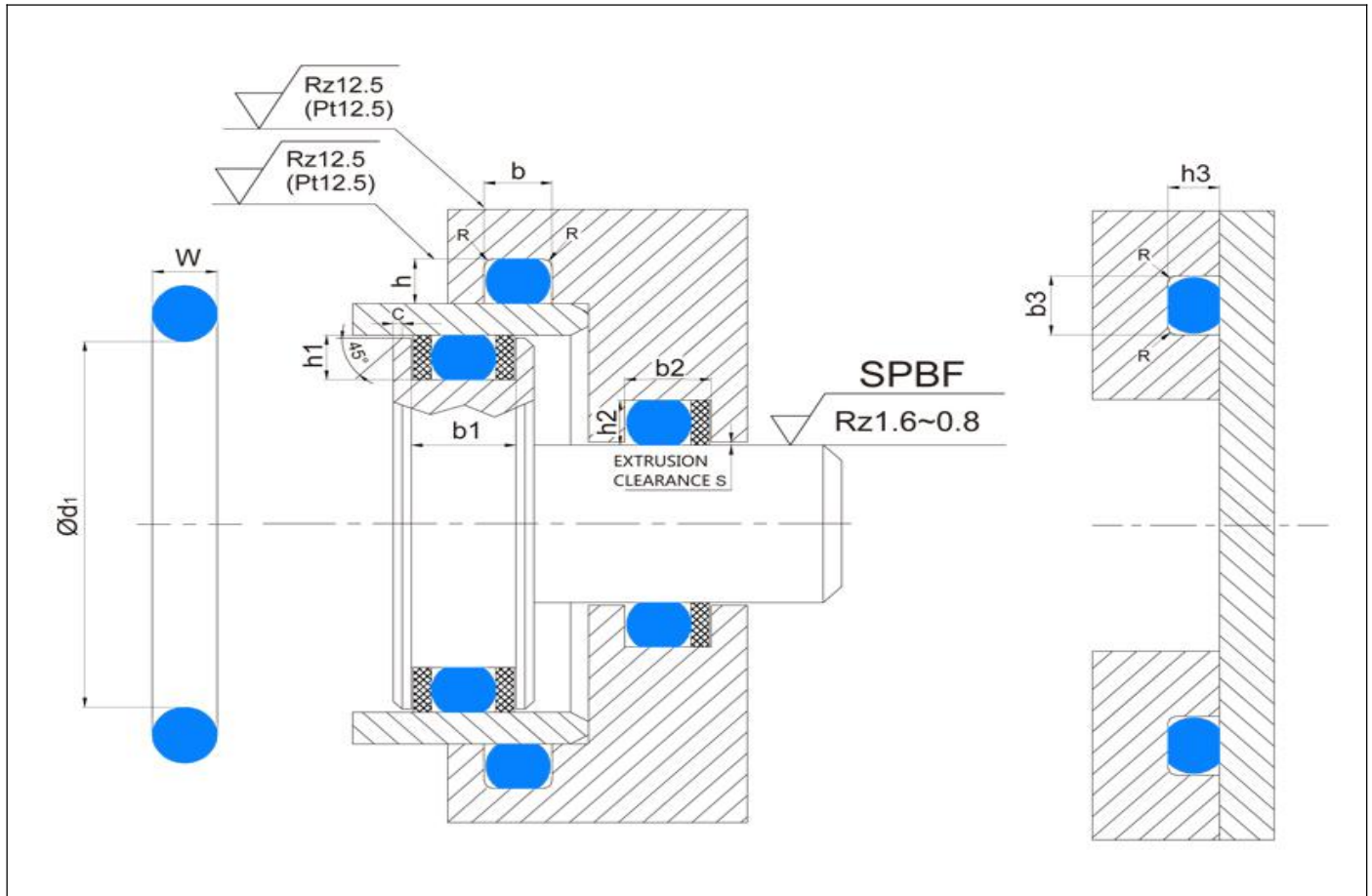
# O-RING



Inner Diameter d <sub>1</sub> mm	Tolerance ±mm	Inner Diameter d <sub>1</sub> mm	Tolerance ±mm	Inner Diameter d <sub>1</sub> mm	Tolerance ±mm
206.00-212.00	1.63	315.00-325.00	2.37	485.00-500.00	3.45
212.00-218.00	1.67	325.00-335.00	2.43	500.00-515.00	3.54
218.00-224.00	1.71	335.00-345.00	2.49	515.00-530.00	3.63
224.00-230.00	1.75	345.00-355.00	2.56	530.00-545.00	3.72
230.00-236.00	1.79	355.00-365.00	2.62	545.00-560.00	3.81
236.00-243.00	1.83	365.00-375.00	2.68	560.00-580.00	3.93
243.00-250.00	1.88	375.00-387.00	2.76	580.00-600.00	4.05
250.00-258.00	1.93	387.00-400.00	2.84	600.00-615.00	4.13
258.00-265.00	1.98	400.00-412.00	2.91	615.00-630.00	4.22
265.00-272.00	2.02	412.00-425.00	2.99	630.00-650.00	4.34
272.00-280.00	2.08	425.00-437.00	3.07	650.00-670.00	4.46
280.00-290.00	2.14	437.00-450.00	3.15		
290.00-300.00	2.21	450.00-462.00	3.22		
300.00-307.00	2.25	462.00-475.00	3.30		
307.00-315.00	2.30	475.00-485.00	3.37		



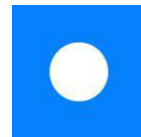
## 1. Installation Recommendation



## 2. O-Ring Dimensions

d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
0.74	1.02	AS-001	18.77	1.78	AS-018
1.07	1.27	AS-002	20.35	1.78	AS-019
1.42	1.52	AS-003	21.95	1.78	AS-020
1.78	1.78	AS-004	23.52	1.78	AS-021
2.57	1.78	AS-005	25.12	1.78	AS-022
2.9	1.78	AS-006	26.7	1.78	AS-023
3.68	1.78	AS-007	28.3	1.78	AS-024
4.47	1.78	AS-008	29.87	1.78	AS-025
5.28	1.78	AS-009	31.47	1.78	AS-026
6.07	1.78	AS-010	33.05	1.78	AS-027
7.65	1.78	AS-011	34.65	1.78	AS-028
9.25	1.78	AS-012	37.82	1.78	AS-029
10.82	1.78	AS-013	41	1.78	AS-030
12.42	1.78	AS-014	44.17	1.78	AS-031
14	1.78	AS-015	47.35	1.78	AS-032
15.6	1.27	AS-016	50.52	1.78	AS-033
17.17	1.52	AS-017	53.7	1.78	AS-034

# AS568



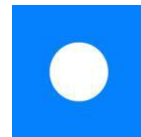
d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
56.87	1.78	AS-035	34.59	2.62	AS-126
60.05	1.78	AS-036	36.17	2.62	AS-127
63.22	1.78	AS-037	37.77	2.62	AS-128
66.4	1.78	AS-038	39.34	2.62	AS-129
69.57	1.78	AS-039	40.94	2.62	AS-130
72.75	1.78	AS-040	42.52	2.62	AS-131
75.92	1.78	AS-041	44.12	2.62	AS-132
82.27	1.78	AS-042	45.69	2.62	AS-133
88.62	1.78	AS-043	47.29	2.62	AS-134
94.97	1.78	AS-044	48.9	2.62	AS-135
101.32	1.78	AS-045	50.47	2.62	AS-136
107.67	1.78	AS-046	52.07	2.62	AS-137
114.02	1.78	AS-047	53.64	2.62	AS-138
120.37	1.78	AS-048	55.25	2.62	AS-139
126.72	1.78	AS-049	56.82	2.62	AS-140
133.07	1.78	AS-050	58.42	2.62	AS-141
1.24	2.62	AS-102	59.99	2.62	AS-142
2.06	2.62	AS-103	61.6	2.62	AS-143
2.84	2.62	AS-104	63.17	2.62	AS-144
3.63	2.62	AS-105	64.77	2.62	AS-145
4.42	2.62	AS-106	66.34	2.62	AS-146
5.23	2.62	AS-107	67.95	2.62	AS-147
6.02	2.62	AS-108	69.52	2.62	AS-148
7.59	2.62	AS-109	71.12	2.62	AS-149
9.19	2.62	AS-110	72.69	2.62	AS-150
10.77	2.62	AS-111	75.87	2.62	AS-151
12.37	2.62	AS-112	82.22	2.62	AS-152
13.94	2.62	AS-113	88.57	2.62	AS-153
15.54	2.62	AS-114	94.92	2.62	AS-154
17.12	2.62	AS-115	101.27	2.62	AS-155
18.72	2.62	AS-116	107.62	2.62	AS-156
20.29	2.62	AS-117	113.97	2.62	AS-157
21.89	2.62	AS-118	120.32	2.62	AS-158
23.47	2.62	AS-119	126.67	2.62	AS-159
25.07	2.62	AS-120	133.02	2.62	AS-160
26.64	2.62	AS-121	139.37	2.62	AS-161
28.24	2.62	AS-122	145.72	2.62	AS-162
29.82	2.62	AS-123	152.07	2.62	AS-163
31.42	2.62	AS-124	158.42	2.62	AS-164
32.99	2.62	AS-125	164.77	2.62	AS-165

# AS568



d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
171.12	2.62	AS-166	53.57	3.53	AS-227
177.47	2.62	AS-167	56.74	3.53	AS-228
183.82	2.62	AS-168	59.92	3.53	AS-229
190.17	2.62	AS-169	63.09	3.53	AS-230
196.52	2.62	AS-170	66.27	3.53	AS-231
202.87	2.62	AS-171	69.44	3.53	AS-232
209.22	2.62	AS-172	72.62	3.53	AS-233
215.57	2.62	AS-173	75.79	3.53	AS-234
221.92	2.62	AS-174	78.97	3.53	AS-235
228.27	2.62	AS-175	82.14	3.53	AS-236
234.62	2.62	AS-176	85.32	3.53	AS-237
240.97	2.62	AS-177	88.49	3.53	AS-238
247.32	2.62	AS-178	91.67	3.53	AS-239
253.67	2.62	AS-179	94.84	3.53	AS-240
4.34	3.53	AS-201	98.02	3.53	AS-241
5.94	3.53	AS-202	101.19	3.53	AS-242
7.52	3.53	AS-203	104.37	3.53	AS-243
9.12	3.53	AS-204	107.54	3.53	AS-244
10.69	3.53	AS-205	110.72	3.53	AS-245
12.29	3.53	AS-206	113.89	3.53	AS-246
13.87	3.53	AS-207	117.07	3.53	AS-247
15.47	3.53	AS-208	120.24	3.53	AS-248
17.04	3.53	AS-209	123.42	3.53	AS-249
18.64	3.53	AS-210	126.59	3.53	AS-250
20.22	3.53	AS-211	129.77	3.53	AS-251
21.82	3.53	AS-212	132.94	3.53	AS-252
23.39	3.53	AS-213	136.12	3.53	AS-253
24.99	3.53	AS-214	139.29	3.53	AS-254
26.57	3.53	AS-215	142.47	3.53	AS-255
28.17	3.53	AS-216	145.64	3.53	AS-256
29.74	3.53	AS-217	148.82	3.53	AS-257
31.34	3.53	AS-218	151.99	3.53	AS-258
32.92	3.53	AS-219	158.34	3.53	AS-259
34.52	3.53	AS-220	164.69	3.53	AS-260
36.09	3.53	AS-221	171.04	3.53	AS-261
37.69	3.53	AS-222	177.39	3.53	AS-262
40.87	3.53	AS-223	183.74	3.53	AS-263
44.04	3.53	AS-224	190.09	3.53	AS-264
47.22	3.53	AS-225	196.44	3.53	AS-265
50.39	3.53	AS-226	202.79	3.53	AS-266

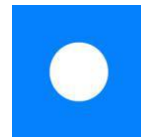
# AS568



d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
209.14	3.53	AS-267	56.52	5.33	AS-331
215.49	3.53	AS-268	59.69	5.33	AS-332
221.84	3.53	AS-269	62.87	5.33	AS-333
228.19	3.53	AS-270	66.04	5.33	AS-334
234.54	3.53	AS-271	69.22	5.33	AS-335
240.89	3.53	AS-272	72.39	5.33	AS-336
247.24	3.53	AS-273	75.57	5.33	AS-337
253.59	3.53	AS-274	78.74	5.33	AS-338
266.29	3.53	AS-275	81.92	5.33	AS-339
278.99	3.53	AS-276	85.09	5.33	AS-340
291.69	3.53	AS-277	88.27	5.33	AS-341
304.39	3.53	AS-278	91.44	5.33	AS-342
329.79	3.53	AS-279	94.62	5.33	AS-343
355.19	3.53	AS-280	97.79	5.33	AS-344
380.59	3.53	AS-281	100.97	5.33	AS-345
405.26	3.53	AS-282	104.14	5.33	AS-346
430.66	3.53	AS-283	107.32	5.33	AS-347
456.06	3.53	AS-284	110.49	5.33	AS-348
10.46	5.33	AS-309	113.67	5.33	AS-349
12.07	5.33	AS-310	116.84	5.33	AS-350
13.64	5.33	AS-311	120.02	5.33	AS-351
15.24	5.33	AS-312	123.19	5.33	AS-352
16.81	5.33	AS-313	126.37	5.33	AS-353
18.42	5.33	AS-314	129.54	5.33	AS-354
19.99	5.33	AS-315	132.72	5.33	AS-355
21.59	5.33	AS-316	135.89	5.33	AS-356
23.16	5.33	AS-317	139.07	5.33	AS-357
24.77	5.33	AS-318	142.24	5.33	AS-358
26.34	5.33	AS-319	145.42	5.33	AS-359
27.94	5.33	AS-320	148.59	5.33	AS-360
29.51	5.33	AS-321	151.77	5.33	AS-361
31.12	5.33	AS-322	158.12	5.33	AS-362
32.69	5.33	AS-323	164.47	5.33	AS-363
34.29	5.33	AS-324	170.82	5.33	AS-364
37.47	5.33	AS-325	177.71	5.33	AS-365
40.64	5.33	AS-326	183.52	5.33	AS-366
43.82	5.33	AS-327	189.87	5.33	AS-367
46.99	5.33	AS-328	196.22	5.33	AS-368
50.17	5.33	AS-329	202.57	5.33	AS-369
53.34	5.33	AS-330	208.92	5.33	AS-370

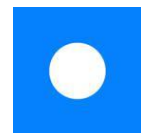


# AS568



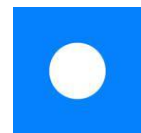
d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
215.27	5.33	AS-371	158.12	7	AS-438
221.62	5.33	AS-372	164.47	7	AS-439
227.97	5.33	AS-373	170.82	7	AS-440
234.32	5.33	AS-374	177.17	7	AS-441
240.67	5.33	AS-375	183.52	7	AS-442
247.02	5.33	AS-376	189.87	7	AS-443
253.37	5.33	AS-377	196.22	7	AS-444
266.07	5.33	AS-378	202.57	7	AS-445
278.77	5.33	AS-379	215.27	7	AS-446
291.47	5.33	AS-380	227.97	7	AS-447
304.17	5.33	AS-381	240.67	7	AS-448
329.57	5.33	AS-382	253.37	7	AS-449
354.97	5.33	AS-383	266.07	7	AS-450
380.37	5.33	AS-384	278.77	7	AS-451
405.26	5.33	AS-385	291.47	7	AS-452
430.66	5.33	AS-386	304.17	7	AS-453
456.06	5.33	AS-387	316.87	7	AS-454
481.41	5.33	AS-388	329.57	7	AS-455
506.81	5.33	AS-389	342.27	7	AS-456
532.21	5.33	AS-390	354.87	7	AS-457
557.61	5.33	AS-391	367.67	7	AS-458
582.68	5.33	AS-392	380.37	7	AS-459
608.08	5.33	AS-393	393.07	7	AS-460
633.48	5.33	AS-394	405.26	7	AS-461
658.88	5.33	AS-395	417.96	7	AS-462
113.67	7	AS-425	430.66	7	AS-463
116.84	7	AS-426	443.36	7	AS-464
120.02	7	AS-427	456.06	7	AS-465
123.19	7	AS-428	468.76	7	AS-466
126.37	7	AS-429	481.46	7	AS-467
129.54	7	AS-430	494.16	7	AS-468
132.72	7	AS-431	506.86	7	AS-469
135.89	7	AS-432	532.26	7	AS-470
139.07	7	AS-433	557.66	7	AS-471
142.24	7	AS-434	582.68	7	AS-472
145.42	7	AS-435	608.08	7	AS-473
148.59	7	AS-436	633.48	7	AS-474
151.77	7	AS-437	658.88	7	AS-475

# JIS B



d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
2.8	1.9	P3	40.7	3.5	P41
3.8	1.9	P4	41.7	3.5	P42
4.8	1.9	P5	43.7	3.5	P44
5.8	1.9	P6	44.7	3.5	P45
6.8	1.9	P7	45.7	3.5	P46
7.8	1.9	P8	47.7	3.5	P48
8.8	1.9	P9	48.7	3.5	P49
9.8	1.9	P10	49.7	3.5	P50
9.8	2.4	P10A	47.6	5.7	P48A
10.8	2.4	P11	49.6	5.7	P50A
11	2.4	P11.2	51.6	5.7	P52
11.8	2.4	P12	52.6	5.7	P53
12.3	2.4	P12.5	54.6	5.7	P55
13.8	2.4	P14	55.6	5.7	P56
14.8	2.4	P15	57.6	5.7	P58
15.8	2.4	P16	59.6	5.7	P60
17.8	2.4	P18	61.6	5.7	P62
19.8	2.4	P20	62.6	5.7	P63
20.8	2.4	P21	64.6	5.7	P65
21.8	2.4	P22	66.6	5.7	P67
21.7	3.5	P22A	69.6	5.7	P70
22.1	3.5	P22.4	70.6	5.7	P71
23.7	3.5	P24	74.6	5.7	P75
24.7	3.5	P25	79.6	5.7	P80
25.2	3.5	P25.5	84.6	5.7	P85
25.7	3.5	P26	89.6	5.7	P90
27.7	3.5	P28	94.6	5.7	P95
28.7	3.5	P29	99.6	5.7	P100
29.2	3.5	P29.5	101.6	5.7	P102
29.7	3.5	P30	104.6	5.7	P105
30.7	3.5	P31	109.6	5.7	P110
31.2	3.5	P31.5	111.6	5.7	P112
31.7	3.5	P32	114.6	5.7	P115
33.7	3.5	P34	119.6	5.7	P120
34.7	3.5	P35	124.6	5.7	P125
35.2	3.5	P35.5	129.6	5.7	P130
35.7	3.5	P36	131.6	5.7	P132
37.7	3.5	P38	134.6	5.7	P135
38.7	3.5	P39	144.6	5.7	P145
39.7	3.5	P40	149.6	8.4	P150

# JIS B



d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
154.5	8.4	P155	24.4	3.1	G25
159.5	8.4	P160	29.4	3.1	G30
164.5	8.4	P165	34.4	3.1	G35
169.5	8.4	P170	39.4	3.1	G40
174.5	8.4	P175	44.4	3.1	G45
179.5	8.4	P180	49.4	3.1	G50
184.5	8.4	P185	54.4	3.1	G55
189.5	8.4	P190	59.4	3.1	G60
194.5	8.4	P195	64.4	3.1	G65
199.5	8.4	P200	69.4	3.1	G70
204.5	8.4	P205	74.4	3.1	G75
208.5	8.4	P209	79.4	3.1	G80
209.5	8.4	P210	84.4	3.1	G85
214.5	8.4	P215	89.4	3.1	G90
219.5	8.4	P220	94.4	3.1	G95
224.5	8.4	P225	99.4	3.1	G100
229.5	8.4	P230	104.4	3.1	G105
234.5	8.4	P235	109.4	3.1	G110
239.5	8.4	P240	114.4	3.1	G115
244.5	8.4	P245	119.4	3.1	G120
249.5	8.4	P250	124.5	3.1	G125
254.5	8.4	P255	129.4	3.1	G130
259.5	8.4	P260	134.4	3.1	G135
264.5	8.4	P265	139.4	3.1	G140
269.5	8.4	P270	144.4	3.1	G145
274.5	8.4	P275	149.3	5.7	G150
279.5	8.4	P280	154.3	5.7	G155
284.5	8.4	P285	159.3	5.7	G160
289.5	8.4	P290	164.3	5.7	G165
294.5	8.4	P295	169.3	5.7	G170
299.5	8.4	P300	174.3	5.7	G175
314.5	8.4	P315	179.3	5.7	G180
319.5	8.4	P320	184.3	5.7	G185
334.5	8.4	P335	189.3	5.7	G190
339.5	8.4	P340	194.3	5.7	G195
354.5	8.4	P355	199.3	5.7	G200
359.5	8.4	P360	209.3	5.7	G210
374.5	8.4	P375	219.3	5.7	G220
384.5	8.4	P385	229.3	5.7	G230
399.5	8.4	P400	239.3	5.7	G240

# JIS B



---

d <sub>1</sub>	W	Order No.	d <sub>1</sub>	W	Order No.
249.3	5.7	G250	279.3	5.7	G280
259.3	5.7	G260	289.3	5.7	G290
269.3	5.7	G270	299.3	5.7	G300