



Superior Quality

Originate from Taiwan



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YOKEY

YOKEY PRECISION TECHNOLOGY

— Originate from Taiwan —



ISO9001:2008

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YOKEY PRECISION TECHNOLOGY ISO9001:2008

Ningbo Yokey Precision Technology Co., Ltd. established in 2005, is located in Ningbo, Zhejiang province, a port city of the Yangtze River Delta. The company is a modernized enterprise specializing in researching & developing, manufacturing, and marketing of rubber seals.

The company is armed with an experienced manufacturing team of international senior engineers and technicians, possessing mold processing centers of high precision and advanced imported test devices for products. We also adopt world-leading seal manufacturing technique in the whole course and choose raw material of high quality from Germany, America and Japan. Products are inspected and tested strictly for more than three times before delivery. Our main products include O-ring, PTFE back-up ring, rubber washer, ED-ring, oil seal, rubber non-standard product and a series of dustproof polyurethane seals, which are widely used in high-ended manufacturing fields such as hydraulics, pneumatics, mechatronics, chemical industry, medical treatment, water, aviation and auto parts.

With excellent technology, steady quality, favorable price, punctual delivery and qualified service, seals in our company gain acceptance and trust from many renowned domestic customers, and win an international market, reaching out to America, Japan, Germany, Russia, India, Brazil and many other countries.

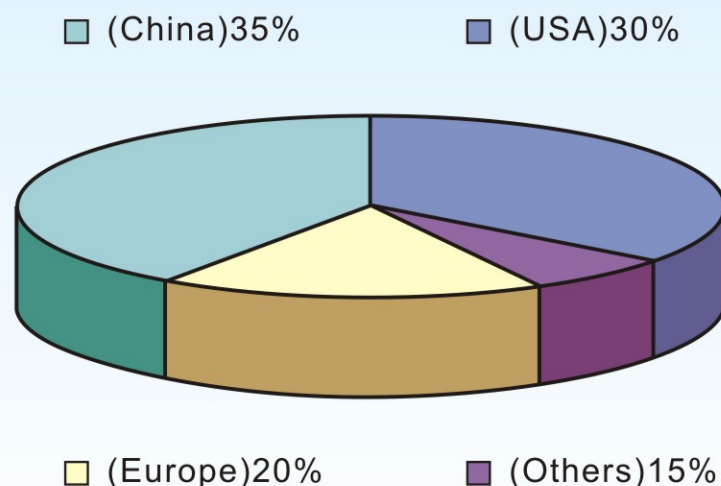
Processing Workshop



Inspection Equipment



Market Division Chart



Superior Quality

1. We possess a development, research, manufacturing and sales team, which can provide our customers professional sealing solutions.
2. We have high-precision mold processing center introduced from Germany. The size tolerance of our products can be controlled in 0.01mm.
3. We strictly conduct ISO 9001 quality control system. The products go through all inspection before delivery, and the pass percent can reach 99.99%.
4. Our raw material all comes from Germany, American and Japan. The elongation and elastic resilience are better than industrial standard.
5. We introduce the international processing technique of advanced level, and constantly improve the automation level to save customers' purchase cost of high-end sealing products.

Certificates



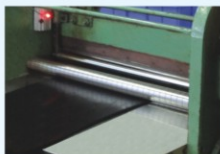


Rubber Processing

Rubber raw material mixing



Cut the rubber into clunks, strip out banding rubber



Vulcanization process



Products selection



Two times vulcanization process



Inspection and delivery



Contents

1

Material Selection Chart



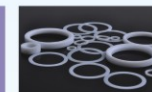
2

O-Ring, X-Ring



3

PTFE Back-up Ring



4

Rubber Washer



5

ED- Ring



6

Bonded Seal



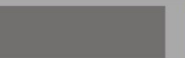
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Oil Seal



Name Grade Property	NBR(N)	HNBR(H)	XNBR(X)	EPDM(E)	VMQ(S)	CR(C)	FKM(V)	AFLAS(L)	FVMQ(F)	FFKM(K)	PTFE(T)	PU(U)	ECO(O)	NR(R)	SBR(B)	IIR(I)	ACM(A)
OZONE RESISTANCE	△	◎	○	◎	◎	◎○	◎	◎	◎	◎	◎	◎	◎	×	×	○	◎
WEATHER RESISTANCE	△	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	○	○	×	△	◎	◎
HEAT RESISTANCE	120℃	150℃	150℃	150℃	220℃	120℃	200℃	230℃	200℃	320℃	280℃	90℃	135℃	90℃	110℃	120℃	150℃
CHEMICAL RESISTANCE	○△	○	○	◎	◎○	○△	◎	◎	◎	◎	◎	◎	○	×	△	○	×
OIL RESISTANCE	◎	◎	◎	×	○△	○△	◎	◎○	◎	◎	◎	◎	○	×	×	×	◎
WATER SWELL RESISTANCE	○	○	○	◎	○	○	○	◎	△	△	◎	×	○	○	○	◎	◎
COLD RESISTANCE	-40℃	-40℃	-35℃	-50℃	-70℃	-40℃	-20℃	-2℃	-60℃	-10℃	-100℃	-40℃	-35℃	-60℃	-40℃	-50℃	-25℃
ABRASION RESISTANCE	○	◎○	◎○	○	×	○	◎○	◎○	×	◎	◎	◎	◎○	◎○	◎○	○	△
DEFORMATION RESISTANCE	◎○	○	△	◎○	◎	△	○	○	◎	◎	×	×	○	◎○	◎○	○	△
ACID RESISTANCE	△	○	○	◎○	△	○△	◎	◎	◎	◎	◎	×	○△	○△	○△	○	△×
ALKALINE RESISTANCE	○	◎○	○	◎	△	◎○	◎○	◎	△	◎	◎	×	○	△	△	◎	×
TENSILE STRENGTH	◎○	◎	◎	◎○	×	◎○	◎○	◎○	○	◎○	△×	◎	◎○	◎	◎	○	△
STEAM RESISTANCE	○△	○△	○△	◎○	○△	△	○△	◎	○△	◎	○	×	○△	△	○△	○△	×
BURNING RESISTANCE	×	×	△	×	×	○	◎	○	△×	◎	◎	△	△×	×	×	△×	△×
AGE RESISTANCE (STORED PROPERLY) (Y=YEAR)	5-10Y	5-10Y	5-10Y	5-10Y	ABT20Y	5-10Y	ABT20Y	ABT20Y	ABT20Y	ABT20Y	ABT20Y	ABT1Y	5-10Y	3-5Y	5-10Y	5-10Y	ABT20Y

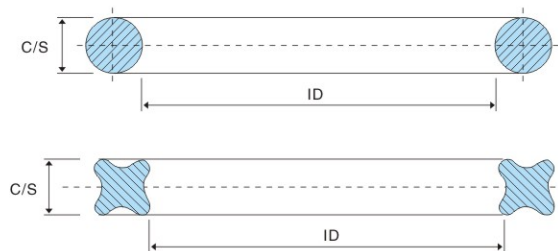
◎EXCELLENT ○GOOD △SATISFYING ×BAD

Reference color Name									
	Red	Orange	Yellow	Green	Blue	Gray	Purple	Brown	Milk
(PANTONE)	187 C	1665 C	7404 U	3298 C	280 C	431 C	2665 U	4975 C	warm gray 1C



O-ring is mainly used in fluid static application(for example, water, oil, air, chemicals solvent,chemicals, etc.). The temperature range is from -60℃ up to 220℃. The pressure in static application should be less than 20Mpa, which varies with different materials. Sometimes o-ring is used in dynamic application with the pressure less than 5Mpa and also used in semi-conductor vacuum seal.

X-ring can totally take place of o-ring in use. Non-circular C/S can avoid rolling in reciprocating movement. The property of x-ring is improved based on the property of o-ring. Its standard size is the same as AS568 standard of o-ring.



Size Indication & Tolerance Chart

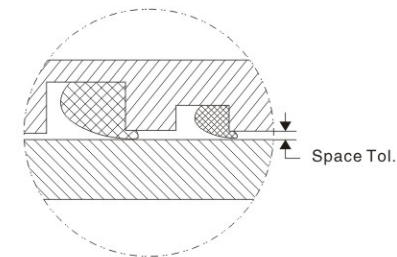
ID	Tol(+/-)	ID	Tol(+/-)	ID	Tol(+/-)	ID	Tol(+/-)
0-1.79	0.12	71.01-73.00	0.64	206.01-212.00	1.57	425.01-429.00	2.96
1.80-2.80	0.13	73.01-75.00	0.65	212.01-218.00	1.61	429.01-433.00	2.99
2.81-4.00	0.14	75.01-77.50	0.67	218.01-224.00	1.65	433.01-437.00	3.01
4.01-5.30	0.15	77.51-80.00	0.69	224.01-227.00	1.67	437.01-443.00	3.05
5.31-7.10	0.16	80.01-82.50	0.71	227.01-230.00	1.69	443.01-450.00	3.09
7.11-8.50	0.17	82.51-85.00	0.72	230.01-236.00	1.73	450.01-456.00	3.13
8.51-9.75	0.18	85.01-87.50	0.74	236.01-239.00	1.75	456.01-462.00	3.17
9.76-11.80	0.19	87.51-90.00	0.76	239.01-243.00	1.77	462.01-466.00	3.19
11.81-13.20	0.21	90.01-92.50	0.77	243.01-250.00	1.82	466.01-470.00	3.22
13.21-15.00	0.22	92.51-95.00	0.79	250.01-254.00	1.84	470.01-475.00	3.25
15.01-16.00	0.23	95.01-97.50	0.81	254.01-258.00	1.87	475.01-479.00	3.28
16.01-17.00	0.24	97.51-100.00	0.82	258.01-261.00	1.89	479.01-483.00	3.30
17.01-19.00	0.25	100.01-103.00	0.85	261.01-265.00	1.91	483.01-487.00	3.33
19.01-20.60	0.26	103.01-106.00	0.87	265.01-268.00	1.92	487.01-493.00	3.36
20.61-21.20	0.27	106.01-109.00	0.89	268.01-272.00	1.96	493.01-500.00	3.41
21.21-22.40	0.28	109.01-112.00	0.91	272.01-276.00	1.98	500.01-508.00	3.46
22.41-23.60	0.29	112.01-115.00	0.93	276.01-280.00	2.01	508.01-515.00	3.50
23.61-25.00	0.30	115.01-118.00	0.95	280.01-283.00	2.03	515.01-523.00	3.55
25.01-26.50	0.31	118.01-122.00	0.97	283.01-286.00	2.05	523.01-530.00	3.60
26.51-28.00	0.32	122.01-125.00	0.99	286.01-290.00	2.08	530.01-538.00	3.65
28.01-29.00	0.33	125.01-128.00	1.01	290.01-295.00	2.11	538.01-545.00	3.69
29.01-30.00	0.34	128.01-132.00	1.04	295.01-300.00	2.14	545.01-553.00	3.74
30.01-31.50	0.35	132.01-136.00	1.07	300.01-303.00	2.16	553.01-560.00	3.78
31.51-33.50	0.36	136.01-140.00	1.09	303.01-307.00	2.19	560.01-570.00	3.85
33.51-34.50	0.37	140.01-142.50	1.11	307.01-311.00	2.21	570.01-580.00	3.91
34.51-36.50	0.38	142.51-145.00	1.13	311.01-315.00	2.24	580.01-590.00	3.97
36.51-37.50	0.39	145.01-147.50	1.14	315.01-320.00	2.27	590.01-600.00	4.03
37.51-38.70	0.40	147.51-150.00	1.16	320.01-325.00	2.30	600.01-608.00	4.08
38.71-40.00	0.41	150.01-152.50	1.18	325.01-330.00	2.33	608.01-615.00	4.12
40.01-41.20	0.42	152.51-155.00	1.19	330.01-335.00	2.36	615.01-623.00	4.17
41.21-42.50	0.43	155.01-157.50	1.21	335.01-340.00	2.40	623.01-630.00	4.22
42.51-45.00	0.44	157.51-160.00	1.23	340.01-345.00	2.43	630.01-640.00	4.28
45.01-46.20	0.45	160.01-162.50	1.24	345.01-350.00	2.46	640.01-650.00	4.34
46.21-47.50	0.46	162.51-165.00	1.26	350.01-355.00	2.49	650.01-660.00	4.40
47.51-48.70	0.47	165.01-167.50	1.28	355.01-360.00	2.52	660.01-670.00	4.47
48.71-50.00	0.48	167.51-170.00	1.29	360.01-365.00	2.56		
50.01-51.50	0.49	170.01-172.50	1.31	365.01-370.00	2.59		
51.51-53.00	0.50	172.51-175.00	1.33	370.01-375.00	2.62		
53.01-54.50	0.51	175.01-177.50	1.34	375.01-379.00	2.64		
54.51-56.00	0.52	177.51-180.00	1.36	379.01-383.00	2.67		
56.01-58.00	0.54	180.01-182.50	1.38	383.01-387.00	2.70		
58.01-60.00	0.55	182.51-185.00	1.39	387.01-391.00	2.72		
60.01-61.50	0.56	185.01-187.50	1.41	391.01-395.00	2.75		
61.51-63.00	0.57	187.51-190.00	1.43	395.01-400.00	2.78		
63.01-65.00	0.58	190.01-195.00	1.46	400.01-406.00	2.82		
65.01-67.00	0.60	195.01-200.00	1.49	406.01-412.00	2.85		
67.01-69.00	0.61	200.01-203.00	1.51	412.01-418.00	2.89		
69.01-71.00	0.63	203.01-206.00	1.53	418.01-425.00	2.93		

C/S	Tol(+/-)
0-1.79	0.07
1.80-2.64	0.08
2.65-3.54	0.09
3.55-5.29	0.10
5.30-6.99	0.13
7.00-8.00	0.15
8.01-10.00	0.20
10.01-15.00	0.25
15.01-25.00	0.35
25.01-100.00	0.45

Working Pressure/Deformation Chart

HARDNESS (SHORE A)	WORKING FIELD
40+/-5	Need Sensitive Sealing Products
50+/-5	
60+/-5	
70+/-5	Generally Sealing Products
80+/-5	High Pressure Sealing Products
90+/-5	

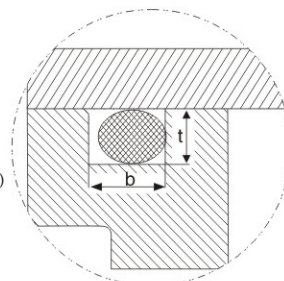
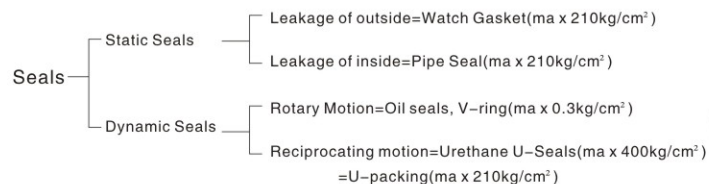
Without Back up Rings	Working Pressure	With Back up Rings
	Zero Pressure	
	500PSI Pressure	
	1000PSI Pressure	
	1500PSI Pressure	
	3000PSI Pressure	



Hardness/Working Pressure Chart

C/S (mm)	Pressure (kg/cm ²) Tol. (mm)	Hardness	35	70	105	140	175	210	350
		Shore A	KG/CM ²	KG/CM ²	KG/CM ²	KG/CM ²	KG/CM ²	KG/CM ²	KG/CM ²
1.78		70	0.15	0.10	0.05				
		80	0.20	0.15	0.10	0.05	0.03		
		90	0.25	0.20	0.13	0.10	0.08	0.05	0.03
2.62		70	0.18	0.13	0.08				
		80	0.25	0.18	0.13	0.08	0.04		
		90	0.30	0.25	0.18	0.13	0.10	0.08	0.04
3.53		70	0.20	0.15	0.10				
		80	0.30	0.20	0.15	0.10	0.05		
		90	0.40	0.30	0.20	0.15	0.13	0.10	0.05
5.34		70	0.25	0.18	0.13				
		80	0.35	0.25	0.18	0.13	0.06		
		90	0.45	0.35	0.25	0.18	0.15	0.13	0.06
7.00		70	0.30	0.20	0.15				
		80	0.40	0.30	0.20	0.15	0.07		
		90	0.50	0.40	0.30	0.20	0.18	0.15	0.07

O-ring Fitting Dimension Chart(Static)

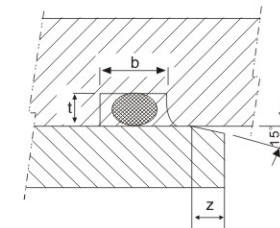


Note:Working Pressure will vary with different working conditions

c/s	t	b
1.00	0.80	1.3
1.50	1.10	1.9
1.60	1.20	2.1
1.78	1.30	2.3
1.90	1.40	2.4
2.00	1.50	2.6
2.40	1.80	3.1
2.50	1.90	3.2
2.62	2.00	3.4
2.70	2.10	3.5
3.00	2.30	3.9
3.50	2.70	4.5
3.53	2.70	4.5
3.60	2.80	4.7
4.00	3.15	5.2
4.50	3.60	5.8

c/s	t	b
5.00	4.00	6.5
5.33	4.30	6.9
5.50	4.50	7.1
5.70	4.65	7.4
6.00	4.95	7.8
6.50	5.40	8.4
6.99	5.85	9.1
7.00	5.85	9.1
7.50	6.30	9.7
8.00	6.75	10.4
8.40	7.15	10.9
8.50	7.25	11.0
9.00	7.70	11.7
9.50	8.20	12.3
10.00	8.65	13.0

O-ring Fitting Dimension Chart(Dynamic)



Medium=Liquid

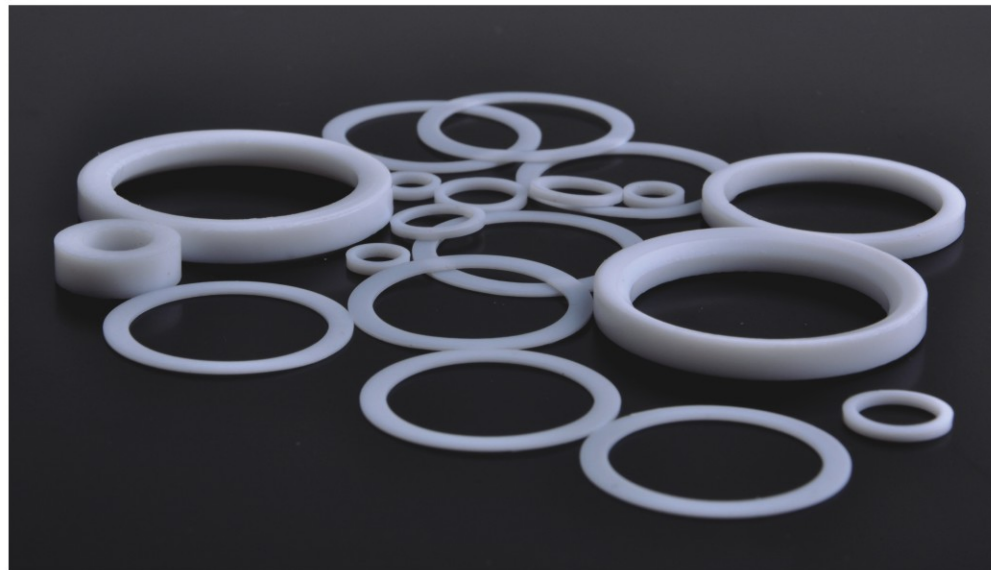
c/s	t	b	z
1.00	0.90	1.3	1.0
1.50	1.30	1.9	1.0
1.60	1.40	2.0	1.1
1.78	1.50	2.3	1.1
1.90	1.60	2.4	1.2
2.00	1.70	2.4	1.2
2.40	2.10	2.9	1.4
2.50	2.20	3.0	1.4
2.62	2.30	3.1	1.5
2.70	2.40	3.2	1.5
3.00	2.60	3.6	1.6
3.50	3.10	4.2	1.8
3.53	3.10	4.2	1.8
3.60	3.20	4.3	1.8
4.00	3.50	4.8	2.0
4.50	4.00	5.4	2.3

c/s	t	b	z
5.00	4.45	6.0	2.5
5.33	4.70	6.4	2.7
5.50	4.95	6.6	2.8
5.70	5.10	6.9	3.0
6.00	5.40	7.2	3.1
6.50	5.80	7.8	3.3
6.99	6.30	8.4	3.6
7.00	6.30	8.4	3.6
7.50	6.70	9.0	3.8
8.00	7.20	9.6	4.0
8.40	7.60	10.1	4.2
8.50	7.70	10.2	4.2
9.00	8.20	10.8	4.3
9.50	8.60	11.4	4.4
10.00	9.10	12.0	4.5

Medium=Gas

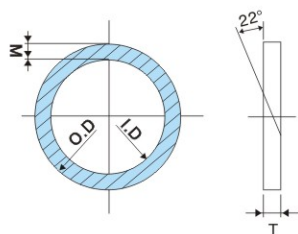
c/s	t	b	z
1.00	0.95	1.3	1.0
1.50	1.35	1.9	1.0
1.60	1.45	2.0	1.1
1.78	1.55	2.3	1.1
1.90	1.75	2.4	1.2
2.00	1.80	2.4	1.2
2.40	2.15	2.9	1.4
2.50	2.25	3.0	1.4
2.62	2.35	3.1	1.5
2.70	2.45	3.2	1.5
3.00	2.75	3.6	1.6
3.50	3.25	4.2	1.8
3.53	3.25	4.2	1.8
3.60	3.35	4.3	1.8
4.00	3.70	4.8	2.0
4.50	4.20	5.4	2.3

c/s	t	b	z
5.00	4.65	6.0	2.5
5.33	4.95	6.4	2.7
5.50	5.15	6.6	2.8
5.70	5.35	6.9	3.0
6.00	5.65	7.2	3.1
6.50	6.10	7.8	3.3
6.99	6.60	8.4	3.6
7.00	6.60	8.4	3.6
7.50	7.10	9.0	3.8
8.00	7.60	9.6	4.0
8.40	7.90	10.1	4.2
8.50	8.00	10.2	4.2
9.00	8.50	10.8	4.3
9.50	9.00	11.4	4.4
10.00	9.50	12.0	4.5

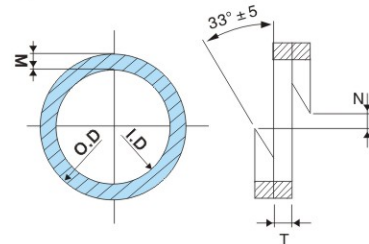


PTFE back-up ring is mainly used to bear greater pressure in cylinder, hydraulic system or valve to keep effective seal function. It is able to prevent o-ring from extrusion and increase the pressure that o-ring resist.

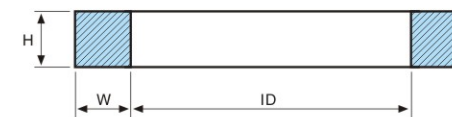
Split



Spiral



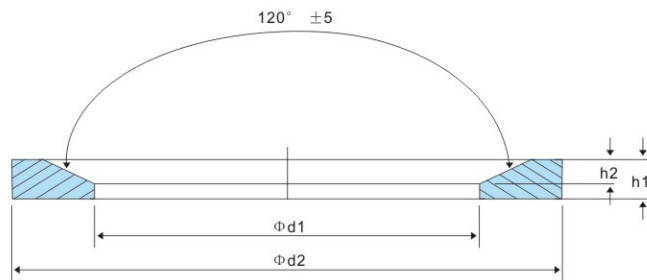
Rubber washer is mainly used for shock absorption application or seal the gap in the static fluid (for example, water, oil, air, chemicals solvent, chemicals, etc.).



ID(MM)	Tol(+/-)
4-14.00	0.13
14.01-15.60	0.18
15.61-25.12	0.23
25.13-29.78	0.25
29.79-34.65	0.28
34.66-44.17	0.33
44.18-50.52	0.38
50.53-66.40	0.46
66.41-75.92	0.51
75.93-94.97	0.61
94.98-107.67	0.69
107.68-126.72	0.76
126.73-133.07	0.94
133.08-158.42	0.89
158.43-183.82	1.02
183.83-209.22	1.14
209.23-234.62	1.27
234.63-278.99	1.40
279.00-405.26	1.65
405.27-430.66	1.91
430.67-456.07	2.03
456.08-.....	0.50%

W(MM)	Tol(+/-)
0-1.68	0.15
1.69-2.51	0.15
2.52-3.40	0.15
3.41-5.16	0.15
5.17-6.73	0.15
6.74-...	0.20

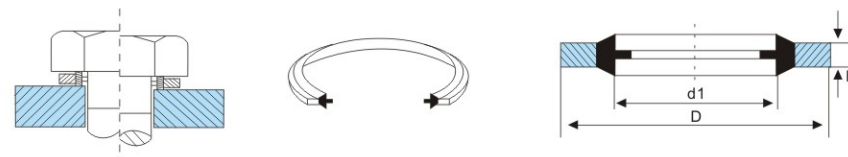
H(MM)	Tol(+/-)
0-1.68	0.08
1.69-2.51	0.10
2.52-3.40	0.10
3.41-5.16	0.10
5.17-6.73	0.10
6.74-...	0.15


NBR 90 FKM 85

Size Specification

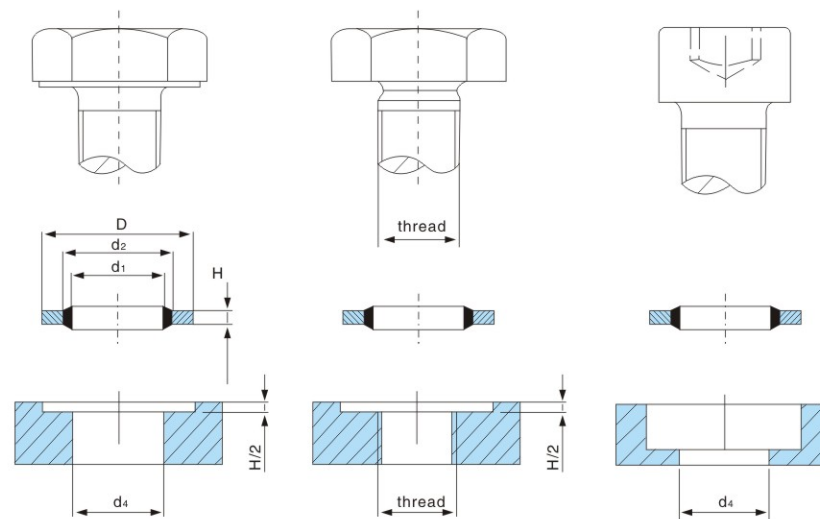
Number	Model	—	d1	d2	h1+0.1	h2
8	M8*1	—	6.50	9.90	1.00	0.50
10	M10*1	G1/8A	8.40	11.90	1.00	0.50
12	M12*1.5	—	9.80	14.40	1.50	0.80
14	M14*1.5	G1/4G	11.50	16.50	1.50	0.80
16	M16*1.5	—	13.80	18.90	1.50	0.80
17	—	G3/8A	14.70	18.90	1.50	0.80
18	M18*1.5	—	15.70	20.90	1.50	0.80
20	M20*1.5	—	17.80	22.90	1.50	0.80
21	—	G1/2A	18.50	23.90	1.50	0.80
22	M22*1.5	—	19.60	24.30	1.50	0.80
24	M24*1.5	G5/8A	21.80	26.90	1.50	0.80
27	M27*2	G3/4A	23.90	29.20	1.50	0.80
33	M33*2	—	29.70	35.70	2.00	1.00
42	M42*2	G1 1/4A	38.80	45.80	2.00	1.00
48	M48*2	G1 1/2A	44.70	50.70	2.00	1.00
60	M60*2	G2A	56.50	66.50	4.00	2.00



A BS/A automatic centering bonded seal is suitable for metric, inch, BSP threaded fittings and plug seal. It is an ideal accessory for quick and automated installation, which do not need special machining in seal groove position. The operating temperature range is from -30°C up to 100°C, and the working pressure shall within 39.2 mpa.

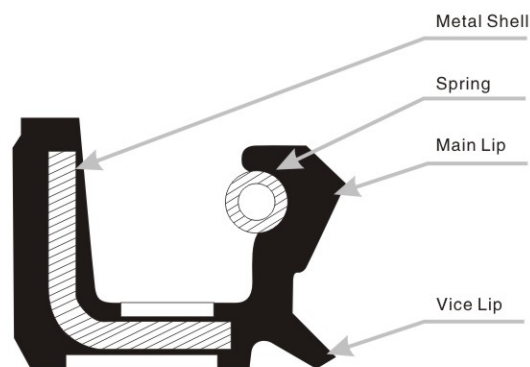


A non-automatic centering bonded seal is applied to the oil pipeline system for sealing welding fittings, card sets, expanding pipe fittings, pressure systems and mechanical devices plug to prevent oil, fuel, water and medicines leakage. The nominal pressure is 40mpa, and its operating temperature range is from -25°C up to 100°C.





Oil seal is mainly used in sealing the lubricant. It's normally fixed to the load, especially the rotary bearing in order to isolate the oil cylinder from outside. Oil seal can both seal inside oil and resist outside dust.



Most of the metal case of oil seal have a grinded outside diameter.



(ISO TYTE2)
(DIN B)
SB



(ISO TYTE5)
(DIN BS)
TB



VB

For some large thermal expansion housing especially for aluminum and magnesium, the outside diameter is covered in rubber.



(ISO TYTE1)
(DIN A)
SC



(ISO TYTE4)
(DIN AS)
TC



VC

ISO/R286 H8

NORMAL DIAMETER	HOLE DIAMETER TOL.	SHAFT O.D. DIAMETER TOL.
6.00-10.00	-0.000/+0.020	+0.000/-0.090
10.01-18.00	-0.000/+0.027	+0.000/-0.110
18.01-30.00	-0.000/+0.033	+0.000/-0.130
30.01-50.00	-0.000/+0.039	+0.000/-0.160
50.01-80.00	-0.000/+0.046	+0.000/-0.190
80.01-120.00	-0.000/+0.054	+0.000/-0.220
120.01-180.00	-0.000/+0.063	+0.000/-0.250
180.01-250.00	-0.000/+0.072	+0.000/-0.290
250.01-315.00	-0.000/+0.081	+0.000/-0.320
315.01-400.00	-0.000/+0.089	+0.000/-0.360
400.01-500.00	-0.000/+0.097	+0.000/-0.400

GB9877.1-88

SHAFT DIAMETER	MAJOR LIP TOL.	MINOR LIP TOL.
5-30	-0.65/-1.15	-0.15/-0.45
30-60	-0.90/-1.60	-0.20/-0.60
60-80	-1.10/-1.90	-0.25/-0.75
80-130	-1.40/-2.40	-0.30/-0.90
130-250	-1.80/-3.00	-0.40/-1.05
250-400	-2.30/-3.70	-0.50/-1.30

GB13871-2007

DIAMETER	HEIGHT TOL.
≤10	±0.3
≥10	±0.4

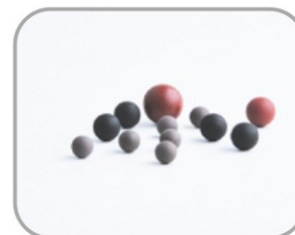
GB13871-2007

SHAFT DIAMETER	OUT SIDE FRAMEWORK ID TOL.	INNER FRAMEWORK OD TOL.	OUT SIDE FRAMEWORK ROUNDNESS	INNER FRAMEWORK ROUNDNESS TOL.
≤50	+0.20/+0.08	+0.30/+0.15	0.18	0.25
50-80	+0.23/+0.09	+0.35/+0.20	0.25	0.35
80-120	+0.25/+0.10	+0.35(0.45)/+0.2	1.30	0.50
120-180	+0.28/+0.12	+0.45(0.50)/+0.25	0.40	0.65
180-300	+0.35/+0.15	+0.45(0.55)/+0.25	OD*0.25%	0.80
300-440	+0.45/+0.20	+0.55(0.65)/+0.30	OD*0.25%, but no over 0.9	1.00



PU seal is mainly used in oil cylinder, can be easily fixed and scrape the dust and dirt off the piston. (Hardness of green PU is relatively lower, while blue ones is higher and with greater pressure endurance. See<used abroad>)

PU seal has good mechanical, water-proof and oil proof property, most frequently used in hydraulic oil cylinder with medium and high pressure. U-ring is the most frequently used seal in hydraulic cylinder. It's typical lip seal, which is able to gain seal effect no matter in piston or piston rod.



RUBBER BALL



RUBBER HOSE



RUBBER CORD



FEP ENCAPSULATED O-RING



TPEE BACK-UP RING



GLYD RING & STEP SEAL



METAL BONDING SEAL



RUBBER FILTER



RUBBER DIAPHRAGM