



# Metric Single Lip Nitrile 70 ShA Oil Seals

Nitrile / NBR / Buna-N

Nitrile is the most cost effective and commonly available Oil seal material. Commonly used in driveshafts, crankshafts and hydraulic cylinders where a rotating shaft is lubricated by oil or grease. NBR is good for applications where the Oil seal requires resistance to lubrication oils, hydraulic fluids and grease. Nitrile Oil seals are not suitable for use with brake oil, phosphoric ester and ester base.

*Colour: Black*

*Operating temperature range: -20°C to 90°C*

*Please see page 3 onwards for sizes.*

Physical Property	Test Method	Units	Typical Values
Hardness	ASTM D 2240	Shore A	70 ±5
Tensile Strength	ASTM D 412 C	MPa	18.9
Elongation	ASTM D 412 C	%	438
Specific Gravity	ASTM D 297	g/cm <sup>3</sup>	1.25 ± 0.03
Compression Set 22h / 200°C	ASTM D 395 B	%	10
Tear Resistance	ASTM D 624 B	N/mm	58
Low Temperature Resistance	ASTM D 2137 A	°C	-40

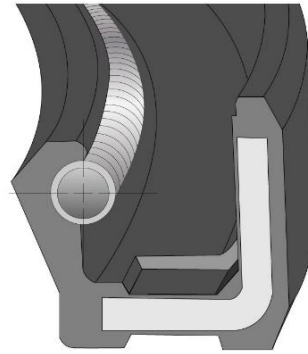
Aging Property	Test Method	Time (h)	Temperature (°C)	Hardness	Tensile Strength (%)	Ultimate Elongation (%)	Volume (%)
Air	ASTM D 573	70	100	+1	+4	-11	
ASTM Oil No. 1	ASTM D 471	70	100	+3	+3	-14	-3
ASTM Oil 903	ASTM D 471	70	100	-2	-3	-18	+6
Fuel A	ASTM D 471	70	23	0	-9	-17	+0.2
Fuel B	ASTM D 471	70	23	-14	-34	-33	+23
Water	ASTM D 471	70	100	-3			+5

### Chemical resistance

- Many hydrocarbons
- Fats
- Oils & Gasoline
- Petroleum based hydraulic fluid (HFD-R)

### Not compatible with:

- Ozone
- Esters
- Ketones
- Aldehydes
- Chlorinated
- Nitro Hydrocarbons



Single Lip Oil Seal Profile

### Tolerance Chart:

<i>Press-Fit Allowance</i>		
<b>Bore Diameter (mm)</b>	<b>Case</b>	<b>Permissible Eccentricity</b>
<b>Up to 50</b>	+0.15 - +0.30	0.25
<b>Over 50 to 80</b>	+0.20- +0.35	0.35
<b>Over 80 to 120</b>	+0.20- +0.35	0.5
<b>Over 120 to 180</b>	+0.25- +0.45	0.65
<b>Over 180 to 300</b>	+0.25- +0.45	0.8
<b>Over 300 to 500</b>	+0.30- +0.5	1.0

<i>House Tolerance</i>		<i>Shaft Tolerance</i>	
<b>Bore Diameter (mm)</b>	<b>Bore Tolerance</b>	<b>Shaft Diameter (mm)</b>	<b>Tolerance</b>
<b>Over 6 to 10</b>	+0.022/-0.000	Over 3 to 6	0/-0.075
<b>Over 10 to 18</b>	+0.027/-0.000	Over 6 to 10	0/-0.090
<b>Over 18 to 30</b>	+0.033/-0.000	Over 10 to 18	0/-0.110
<b>Over 30 to 50</b>	+0.039/-0.000	Over 18 to 30	0/-0.130
<b>Over 50 to 80</b>	+0.046/-0.000	Over 30 to 50	0/-0.160
<b>Over 80 to 120</b>	+0.054/-0.000	Over 50 to 80	0/-0.190
<b>Over 120 to 180</b>	+0.063/-0.000	Over 80 to 120	0/-0.220
<b>Over 180 to 250</b>	+0.072/-0.000	Over 120 to 180	0/-0.250
<b>Over 250 to 315</b>	+0.081/-0.000	Over 180 to 250	0/-0.290
<b>Over 315 to 400</b>	+0.089/-0.000	Over 250 to 315	0/-0.320
<b>Over 400 to 500</b>	+0.097/-0.000	Over 315 to 400	0/-0.360

RS Article Number	Millimetres (mm)			Inches (")		
	Internal Diameter	Outside Diameter	Height	Internal Diameter	Outside Diameter	Height
2299692	6	15	4	0.236	0.591	0.157
2299532	12	22	6	0.472	0.866	0.236
2263854	50	80	10	1.969	3.150	0.315
2299578	22	38	7	0.866	1.496	0.276
2263752	25	33	6	0.984	1.299	0.236
2299653	42	56	7	1.654	2.205	0.276
2299530	12	18	5	0.472	0.709	0.197
2263732	19	30	7	0.748	1.181	0.276
2299703	7	19	6	0.276	0.748	0.236
2263808	38	52	7	1.496	2.047	0.276
2299707	8	14	4	0.315	0.551	0.157
2299704	7	22	7	0.276	0.866	0.276
2299706	80	105	13	3.150	4.134	0.512
2299544	15	32	5.5	0.591	1.260	0.217
2299538	13	22	5	0.512	0.866	0.197
2299694	6	22	7	0.236	0.866	0.276
2299569	20	35	10	0.787	1.378	0.394
2299550	16	32	7	0.630	1.260	0.276
2299595	25	47	8	0.984	1.850	0.315
2299598	25	62	8	0.984	2.441	0.315
2299666	4	11	6	0.157	0.433	0.236
2299617	32	45	6	1.260	1.772	0.236

2263802	35	62	10	1.378	2.441	0.394
2299552	17	25	4	0.669	0.984	0.157
2299525	10	22	6	0.394	0.866	0.236
2299677	55	75	10	2.165	2.953	0.394
2299613	30	48	10	1.181	1.890	0.394
2299649	40	68	7	1.575	2.677	0.276
2299633	36	47	7	1.417	1.850	0.276
2299576	21	35	7	0.827	1.378	0.276
2299520	130	160	12	5.118	6.299	0.472
2299689	64	80	8	2.520	3.150	0.315
2299658	45	55	7	1.772	2.165	0.276
2299537	12	37	10	0.472	1.457	0.394
2299557	17	40	6	0.669	1.575	0.236
2299526	10	22	8	0.394	0.866	0.315
2299519	120	150	12	4.724	5.906	0.472
2263870	58	80	8	2.283	3.150	0.315
2299579	22	40	10	0.866	1.575	0.394
2299715	95	120	12	3.740	4.724	0.472
2299646	40	62	8	1.575	2.441	0.315
2299667	50	62	7	1.969	2.441	0.276
2299711	90	110	12	3.543	4.331	0.472
2299589	25	37	5	0.984	1.457	0.197
2299518	110	130	12	4.331	5.118	0.472
2299648	40	65	9	1.575	2.559	0.354
2299699	75	90	10	2.953	3.543	0.394

2299543	15	28	7	0.591	1.102	0.276
2299575	20	52	7	0.787	2.047	0.276
2299531	12	21	4	0.472	0.827	0.157
2299696	72	90	10	2.835	3.543	0.394
2263760	25	42	7	0.984	1.654	0.276
2299643	40	58	8	1.575	2.283	0.315
2299655	44	62	10	1.732	2.441	0.394
2299529	12.5	20	5	0.492	0.787	0.197
2299585	25	35	5	0.984	1.378	0.197
2299623	35	47	6	1.378	1.850	0.236
2263819	40	62	7	1.575	2.441	0.276
2299638	38	62	10	1.496	2.441	0.394
2299686	60	75	10	2.362	2.953	0.394
2299571	20	42	10	0.787	1.654	0.394
2299562	18	35	8	0.709	1.378	0.315
2299533	12	24	4.5	0.472	0.945	0.177
2299566	20	32	5	0.787	1.260	0.197
2270622	35	45	10	1.378	1.772	0.394
2270491	170	200	15	6.693	7.874	0.591
2270550	21	35	8	0.827	1.378	0.315
2270580	27	38	6	1.063	1.496	0.236
2270495	11	22	8	0.433	0.866	0.315
2270524	15	37	7	0.591	1.457	0.276
2270512	13	32	7	0.512	1.260	0.276
2270513	14	22	5	0.551	0.866	0.197

2270499	12	22	6.5	0.472	0.866	0.256
2270648	44	72	12	1.732	2.835	0.472
2270533	17	40	8	0.669	1.575	0.315
2270534	17	47	7	0.669	1.850	0.276
2270506	12	26	8	0.472	1.024	0.315
2270518	15	30	10	0.591	1.181	0.394
2270597	30	50	5	1.181	1.969	0.197
2270525	15	40	10	0.591	1.575	0.394
2270664	8	19	6	0.315	0.748	0.236
2270563	24	36	6	0.945	1.417	0.236
2270586	28	48	5	1.102	1.890	0.197
2270646	43	56	7	1.693	2.205	0.276
2270522	15	35	10	0.591	1.378	0.394
2270647	44	55	7	1.732	2.165	0.276
2270630	35	72	7	1.378	2.835	0.276
2270656	6	17	6	0.236	0.669	0.236
2270581	27	40	7	1.063	1.575	0.276
2270543	20	33	10	0.787	1.299	0.394
2270562	24	35	6	0.945	1.378	0.236
2270620	34	50	8	1.339	1.969	0.315
2270570	25	37	8	0.984	1.457	0.315
2270498	12	20	7	0.472	0.787	0.276
2270561	24	34	5.5	0.945	1.339	0.217
2270591	29	41	6	1.142	1.614	0.236
2270559	23	38	7	0.906	1.496	0.276

2263701	12	22	4.5	0.472	0.866	0.177
2270617	33	52	6	1.299	2.047	0.236
2270588	28	57	12	1.102	2.244	0.472
2270624	35	57	10	1.378	2.244	0.394
2270539	19	32	6	0.748	1.260	0.236
2270667	95	130	13	3.740	5.118	0.512
2270632	38	60	12	1.496	2.362	0.472
2270603	31	47	10	1.220	1.850	0.394
2270592	29	50	12	1.142	1.969	0.472
2270608	32	48	9	1.260	1.890	0.354
2270546	20	43	7.5	0.787	1.693	0.295
2270607	32	44	7	1.260	1.732	0.276
2270516	15.6	25	7	0.614	0.984	0.276
2270530	17	30	6	0.669	1.181	0.236
2270577	26	37	10	1.024	1.457	0.394
2270490	27.8	38	7	1.094	1.496	0.276
2270609	32	50	12	1.260	1.969	0.472
2270551	22	32	10	0.866	1.260	0.394
2270590	29	40	7	1.142	1.575	0.276
2270645	42	60	9	1.654	2.362	0.354
2270511	13	30	8	0.512	1.181	0.315
2270519	15	32	8	0.591	1.260	0.315
2270552	22	35	5.5	0.866	1.378	0.217
2270553	22	35	6.5	0.866	1.378	0.256
2270587	28	50	8	1.102	1.969	0.315

2270594	30	42	12	1.181	1.654	0.472
2270572	25	43	9	0.984	1.693	0.354
2270604	31	47	7	1.220	1.850	0.276
2270536	18	32	6	0.709	1.260	0.236
2270547	20	52	12	0.787	2.047	0.472
2270589	28	62	10	1.102	2.441	0.394
2270569	24	50	10	0.945	1.969	0.394
2270564	24	36	7	0.945	1.417	0.276
2270613	33	43	7	1.299	1.693	0.276
2270651	45	70	10	1.772	2.756	0.394
2270616	33	50	7	1.299	1.969	0.276
2270665	8	22	10	0.315	0.866	0.394
2270657	6	18	6	0.236	0.709	0.236
2270528	16	40	10	0.630	1.575	0.394
2270505	12	26	6	0.472	1.024	0.236
2270535	18	32	4.5	0.709	1.260	0.177
2270501	12	24	10	0.472	0.945	0.394
2270599	30	52	12	1.181	2.047	0.472
2270574	25	55	10	0.984	2.165	0.394
2270662	8	15	7	0.315	0.591	0.276
2270514	14	35	7	0.551	1.378	0.276
2270635	38	72	10	1.496	2.835	0.394
2270507	12	28	5	0.472	1.102	0.197
2270643	42	58	12	1.654	2.283	0.472
2270494	10	16.5	4	0.394	0.650	0.157



2270521	15	32	9	0.591	1.260	0.354
2270644	42	58	7	1.654	2.283	0.276
2270532	17	40	8.5	0.669	1.575	0.335
2270628	35	60	10	1.378	2.362	0.394
2270558	23	37	7	0.906	1.457	0.276
2270557	22	48	10	0.866	1.890	0.394
2270596	30	45	5.5	1.181	1.772	0.217
2270566	24	40	8	0.945	1.575	0.315
2295265	28	40	5	1.102	1.575	0.197
2295271	30	56	8	1.181	2.205	0.315
2295234	15	37	10	0.591	1.457	0.394
2295255	24.5	40	8.5	0.965	1.575	0.335
2295236	16	36	7	0.630	1.417	0.276
2295294	44	60	9	1.732	2.362	0.354
2295279	35	47	8	1.378	1.850	0.315
2295278	35	46	7	1.378	1.811	0.276
2295281	36	56	10	1.417	2.205	0.394
2295228	12.5	20	6	0.492	0.787	0.236
2295241	18	42	10	0.709	1.654	0.394
2295246	20	52	10	0.787	2.047	0.394
2295249	21	40	5	0.827	1.575	0.197
2295254	23	40	6	0.906	1.575	0.236
2295289	42	52	5	1.654	2.047	0.197
2295240	18	32	10	0.709	1.260	0.394
2295235	16	22	7	0.630	0.866	0.276

2295260	27	35	7.5	1.063	1.378	0.295
2295302	73	95	10	2.874	3.740	0.394
2295232	15	25	7	0.591	0.984	0.276
2295280	35	55	11	1.378	2.165	0.433
2295245	20	37	10	0.787	1.457	0.394
2295290	42	60	10	1.654	2.362	0.394
2295266	28	44	10	1.102	1.732	0.394
2295237	17	47	10	0.669	1.850	0.394
2295248	21	32	5	0.827	1.260	0.197
2295270	30	45	5	1.181	1.772	0.197
2295267	29	47	10	1.142	1.850	0.394
2295229	12	25	7	0.472	0.984	0.276
2295276	34	44	6	1.339	1.732	0.236
2295287	41	56	8	1.614	2.205	0.315
2295257	25	36	10	0.984	1.417	0.394
2295227	110	130	8	4.331	5.118	0.315
2295226	105	130	12	4.134	5.118	0.472
2295274	32	47	10	1.260	1.850	0.394
2295252	22	33	7	0.866	1.299	0.276