



Metric Double 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 ³	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

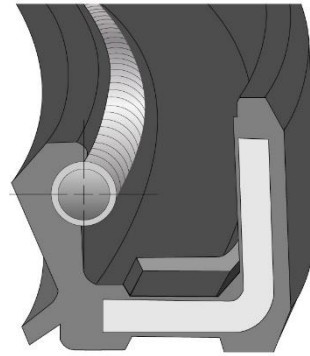
Aging Property	Test Method	Time (h)	Temperature (°C)	Hardness	Tensile Strength (%)	Ultimate Elongation (%)	Volume (%)
Air	ASTM D 573	70	100	+1	+4	-11	
ASTM Oil No. 1	ASTM D 471	70	100	+3	+3	-14	-3
ASTM Oil 903	ASTM D 471	70	100	-2	-3	-18	+6
Fuel A	ASTM D 471	70	23	0	-9	-17	+0.2
Fuel B	ASTM D 471	70	23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



Double Lip Oil Seal Profile

Tolerance Chart:

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

<i>House Tolerance</i>		<i>Shaft Tolerance</i>	
Bore Diameter (mm)	Bore Tolerance	Shaft Diameter (mm)	Tolerance
Over 6 to 10	+0.022/-0.000	Over 3 to 6	0/-0.075
Over 10 to 18	+0.027/-0.000	Over 6 to 10	0/-0.090
Over 18 to 30	+0.033/-0.000	Over 10 to 18	0/-0.110
Over 30 to 50	+0.039/-0.000	Over 18 to 30	0/-0.130
Over 50 to 80	+0.046/-0.000	Over 30 to 50	0/-0.160
Over 80 to 120	+0.054/-0.000	Over 50 to 80	0/-0.190
Over 120 to 180	+0.063/-0.000	Over 80 to 120	0/-0.220
Over 180 to 250	+0.072/-0.000	Over 120 to 180	0/-0.250
Over 250 to 315	+0.081/-0.000	Over 180 to 250	0/-0.290
Over 315 to 400	+0.089/-0.000	Over 250 to 315	0/-0.320
Over 400 to 500	+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
2299615	30	52	7	1.181	2.047	0.276
2299584	25	32	6	0.984	1.260	0.236
2299652	42	55	7	1.654	2.165	0.276
2299597	25	52	7	0.984	2.047	0.276
2299709	8	16	7	0.315	0.630	0.276
2299604	28	47	7	1.102	1.850	0.276
2299608	30	40	5	1.181	1.575	0.197
2299609	30	42	7	1.181	1.654	0.276
2299672	50	72	12	1.969	2.835	0.472
2299674	55	68	8	2.165	2.677	0.315
2299554	17	30	7	0.669	1.181	0.276
2299541	15	25	5	0.591	0.984	0.197
2299594	25	47	10	0.984	1.850	0.394
2299639	40	55	7	1.575	2.165	0.276
2299688	60	85	10	2.362	3.346	0.394
2299640	40	55	8	1.575	2.165	0.315
2299559	18	24	4	0.709	0.945	0.157
2299629	35	62	7	1.378	2.441	0.276
2299683	5	22	7	0.197	0.866	0.276
2299624	35	52	10	1.378	2.047	0.394
2299577	22	35	7	0.866	1.378	0.276
2299636	38	50	7	1.496	1.969	0.276

2299660	45	60	12	1.772	2.362	0.472
2299540	15	24	7	0.591	0.945	0.276
2299687	60	75	8	2.362	2.953	0.315
2299702	78	100	13	3.071	3.937	0.512
2299593	25	44	8	0.984	1.732	0.315
2299632	35	80	10	1.378	3.150	0.394
2299586	25	35	6	0.984	1.378	0.236
2299583	24	47	7	0.945	1.850	0.276
2299536	12	28	7	0.472	1.102	0.276
2299682	5	15	5	0.197	0.591	0.197
2299676	55	72	8	2.165	2.835	0.315
2299625	35	52	7	1.378	2.047	0.276
2299670	50	70	10	1.969	2.756	0.394
2299679	55	80	13	2.165	3.150	0.512
2299663	45	62	10	1.772	2.441	0.394
2299611	30	45	8	1.181	1.772	0.315
2299616	30	52	8	1.181	2.047	0.315
2299556	17	40	5	0.669	1.575	0.197
2299553	17	25	4	0.669	0.984	0.157
2299681	58	80	13	2.283	3.150	0.512
2299627	35	62	10	1.378	2.441	0.394
2299542	15	26	7	0.591	1.024	0.276
2299630	35	72	10	1.378	2.835	0.394
2299587	25	35	7	0.984	1.378	0.276
2299637	38	55	8	1.496	2.165	0.315

2299680	58	72	9	2.283	2.835	0.354
2299673	50	80	13	1.969	3.150	0.512
2299545	15	32	5	0.591	1.260	0.197
2299601	26	40	5	1.024	1.575	0.197
2299581	24	35	8	0.945	1.378	0.315
2299539	15	24	5	0.591	0.945	0.197
2299675	55	72	10	2.165	2.835	0.394
2299631	35	72	7	1.378	2.835	0.276
2299560	18	30	6	0.709	1.181	0.236
2299665	48	62	8	1.890	2.441	0.315
2299621	34	46	8	1.339	1.811	0.315
2299701	75	95	10	2.953	3.740	0.394
2299647	40	62	8	1.575	2.441	0.315
2299626	35	52	8	1.378	2.047	0.315
2299558	17	40	7	0.669	1.575	0.276
2299714	95	115	13	3.740	4.528	0.512
2299695	70	90	10	2.756	3.543	0.394
2299650	40	72	12	1.575	2.835	0.472
2299591	25	40	5	0.984	1.575	0.197
2299603	28	42	8	1.102	1.654	0.315
2299700	75	92	12	2.953	3.622	0.472
2299661	45	60	7	1.772	2.362	0.276
2299668	50	62	7	1.969	2.441	0.276
2299698	75	120	12	2.953	4.724	0.472
2299614	30	48	7	1.181	1.890	0.276

2299568	20	32	8	0.787	1.260	0.315
2299551	16	35	7	0.630	1.378	0.276
2299572	20	42	10	0.787	1.654	0.394
2299697	75	110	12	2.953	4.331	0.472
2299691	65	100	10	2.559	3.937	0.394
2299522	150	180	14	5.906	7.087	0.551
2299565	20	30	5	0.787	1.181	0.197
2299642	40	58	7	1.575	2.283	0.276
2299618	32	47	5	1.260	1.850	0.197
2299641	40	56	8	1.575	2.205	0.315
2299523	180	220	16	7.087	8.661	0.630
2299622	35	45	4	1.378	1.772	0.157
2299582	24	47	10	0.945	1.850	0.394
2299574	20	52	10	0.787	2.047	0.394
2299534	12	24	7	0.472	0.945	0.276
2299524	10	18	8	0.394	0.709	0.315
2299590	25	37	5	0.984	1.457	0.197
2299664	45	65	10	1.772	2.559	0.394
2299607	29	47	10	1.142	1.850	0.394
2299710	8	18	7	0.315	0.709	0.276
2299708	8	15	5	0.315	0.591	0.197
2299521	130	170	12	5.118	6.693	0.472
2299592	25	40	8	0.984	1.575	0.315
2299563	19	32	7	0.748	1.260	0.276
2299547	16	28	7	0.630	1.102	0.276

2299610	30	42	8	1.181	1.654	0.315
2299645	40	60	10	1.575	2.362	0.394
2299671	50	70	8	1.969	2.756	0.315
2299548	16	30	6	0.630	1.181	0.236
2299602	28	40	5	1.102	1.575	0.197
2299644	40	58	9	1.575	2.283	0.354
2299596	25	50	8	0.984	1.969	0.315
2299712	90	120	13	3.543	4.724	0.512
2299620	32	52	7	1.260	2.047	0.276
2299659	45	60	10	1.772	2.362	0.394
2299535	12	26	7	0.472	1.024	0.276
2299580	20	35	7	0.787	1.378	0.276
2299567	20	32	5	0.787	1.260	0.197
2299693	6	16	5	0.236	0.630	0.197
2299573	20	50	7	0.787	1.969	0.276
2299705	80	100	13	3.150	3.937	0.512
2299651	40	90	10	1.575	3.543	0.394
2299600	25	62	8	0.984	2.441	0.315
2299528	115	140	12	4.528	5.512	0.472
2299570	20	40	6	0.787	1.575	0.236
2299685	60	72	8	2.362	2.835	0.315
2299654	42	58	10	1.654	2.283	0.394
2299588	25	35	8	0.984	1.378	0.315
2299555	17	35	10	0.669	1.378	0.394
2299546	15	42	10	0.591	1.654	0.394

2299605	28	52	7	1.102	2.047	0.276
2299669	50	68	10	1.969	2.677	0.394
2299635	36	62	7	1.417	2.441	0.276
2299619	32	50	7	1.260	1.969	0.276
2299564	19	35	7	0.748	1.378	0.276
2299657	45	52	4	1.772	2.047	0.157
2270556	22	47	7	0.866	1.850	0.276
2270629	35	60	10	1.378	2.362	0.394
2270517	15	25	6	0.591	0.984	0.236
2270571	25	43	8	0.984	1.693	0.315
2270631	36	52	7	1.417	2.047	0.276
2270640	40	68	7	1.575	2.677	0.276
2270614	33	44	8	1.299	1.732	0.315
2270660	8	14	5	0.315	0.551	0.197
2270493	100	130	12	3.937	5.118	0.472
2270663	8	16	5	0.315	0.630	0.197
2270573	25	44	7	0.984	1.732	0.276
2270653	56	70	8	2.205	2.756	0.315
2270540	19	32	8	0.748	1.260	0.315
2270601	30	55	12	1.181	2.165	0.472
2270578	26	37	10	1.024	1.457	0.394
2270634	38	62	10	1.496	2.441	0.394
2270606	32	44	10	1.260	1.732	0.394
2270583	28	38	5	1.102	1.496	0.197
2270636	40	54	10	1.575	2.126	0.394

2270542	20	28	5	0.787	1.102	0.197
2270544	20	35	8	0.787	1.378	0.315
2270537	18	38	7	0.709	1.496	0.276
2270652	45	85	10	1.772	3.346	0.394
2270642	42	56	7	1.654	2.205	0.276
2270527	16	35	9	0.630	1.378	0.354
2270625	35	58	10	1.378	2.283	0.394
2270654	58	80	12	2.283	3.150	0.472
2270500	12	22	7.5	0.472	0.866	0.295
2270503	12	25	7	0.472	0.984	0.276
2270567	24	42	10	0.945	1.654	0.394
2270492	100	125	12	3.937	4.921	0.472
2270638	40	58	8.5	1.575	2.283	0.335
2270579	26	40	6	1.024	1.575	0.236
2270555	22	36	7	0.866	1.417	0.276
2270565	24	40	7	0.945	1.575	0.276
2270623	35	48	8	1.378	1.890	0.315
2270584	28	43	9	1.102	1.693	0.354
2270502	12	25	4.5	0.472	0.984	0.177
2270600	30	54	10	1.181	2.126	0.394
2270520	15	32	8	0.591	1.260	0.315
2270538	19	27	10	0.748	1.063	0.394
2270545	20	40	10	0.787	1.575	0.394
2270621	34	54	12.5	1.339	2.126	0.492
2270659	85	105	12	3.346	4.134	0.472

2270568	24	45	7	0.945	1.772	0.276
2270615	33	48	8.9	1.299	1.890	0.350
2270531	17	37	7	0.669	1.457	0.276
2270515	15.6	25	7	0.614	0.984	0.276
2270618	34	50	6	1.339	1.969	0.236
2270585	28	45	10	1.102	1.772	0.394
2270650	45	68	10	1.772	2.677	0.394
2270549	21	31	5	0.827	1.220	0.197
2270523	15	35	8	0.591	1.378	0.315
2270639	40	62	11	1.575	2.441	0.433
2270637	40	54	7	1.575	2.126	0.276
2270612	32	57	8	1.260	2.244	0.315
2270508	12	28	8	0.472	1.102	0.315
2270610	32	52	10	1.260	2.047	0.394
2270626	35	58	12	1.378	2.283	0.472
2270595	30	45	13	1.181	1.772	0.512
2270619	34	50	7	1.339	1.969	0.276
2270541	19	47	7	0.748	1.850	0.276
2270575	26	35	6	1.024	1.378	0.236
2270509	12	37	7	0.472	1.457	0.276
2270593	29	52	7	1.142	2.047	0.276
2270658	7	22	7	0.276	0.866	0.276
2270666	8	25	8	0.315	0.984	0.315
2270529	17	28	7	0.669	1.102	0.276
2270641	41	56	7	1.614	2.205	0.276

2270602	30	58	8	1.181	2.283	0.315
2270496	11	30	7	0.433	1.181	0.276
2295282	37	50	7	1.457	1.969	0.276
2295233	15	32	9	0.591	1.260	0.354
2295263	27	53	7	1.063	2.087	0.276
2295268	30	43	8.5	1.181	1.693	0.335
2295298	55	100	12	2.165	3.937	0.472
2295262	27	43	8	1.063	1.693	0.315
2295243	19	37	10	0.748	1.457	0.394
2295285	40	47	7	1.575	1.850	0.276
2295251	22	28	4	0.866	1.102	0.157
2270638	40	58	8	1.575	2.283	0.315
2295264	28	38	5.5	1.102	1.496	0.217
2295297	45	59	7	1.772	2.323	0.276
2295296	45	55	8	1.772	2.165	0.315
2295259	25	45	7	0.984	1.772	0.276
2295299	65	90	10	2.559	3.543	0.394
2295291	42	65	12	1.654	2.559	0.472
2295269	30	43	8	1.181	1.693	0.315
2295293	44	56	7	1.732	2.205	0.276
2295256	25	35	4	0.984	1.378	0.157
2295261	27	41	7	1.063	1.614	0.276
2295242	19	32	10	0.748	1.260	0.394
2295277	34	48	8	1.339	1.890	0.315
2295300	6	19	7	0.236	0.748	0.276

2295247	20	52	8	0.787	2.047	0.315
2295258	25	38	10	0.984	1.496	0.394
2295231	14	26	6	0.551	1.024	0.236
2295275	33	50	10	1.299	1.969	0.394
2295284	38	56	12	1.496	2.205	0.472
2295283	38	50	10	1.496	1.969	0.394
2295239	18	28	6	0.709	1.102	0.236
2295286	40	54	5.5	1.575	2.126	0.217
2295295	45	54	4.5	1.772	2.126	0.177
2295303	9	19	7	0.354	0.748	0.276
2295230	12	30	9	0.472	1.181	0.354
2295273	32	45	5	1.260	1.772	0.197
2295253	23	35	6	0.906	1.378	0.236
2295292	43	60	10	1.693	2.362	0.394