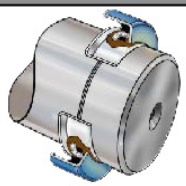
HARWAL

Serving America's Power Transmission Industry

ROTARY SHAFT SEALS
Metric p.24 Inch p.100



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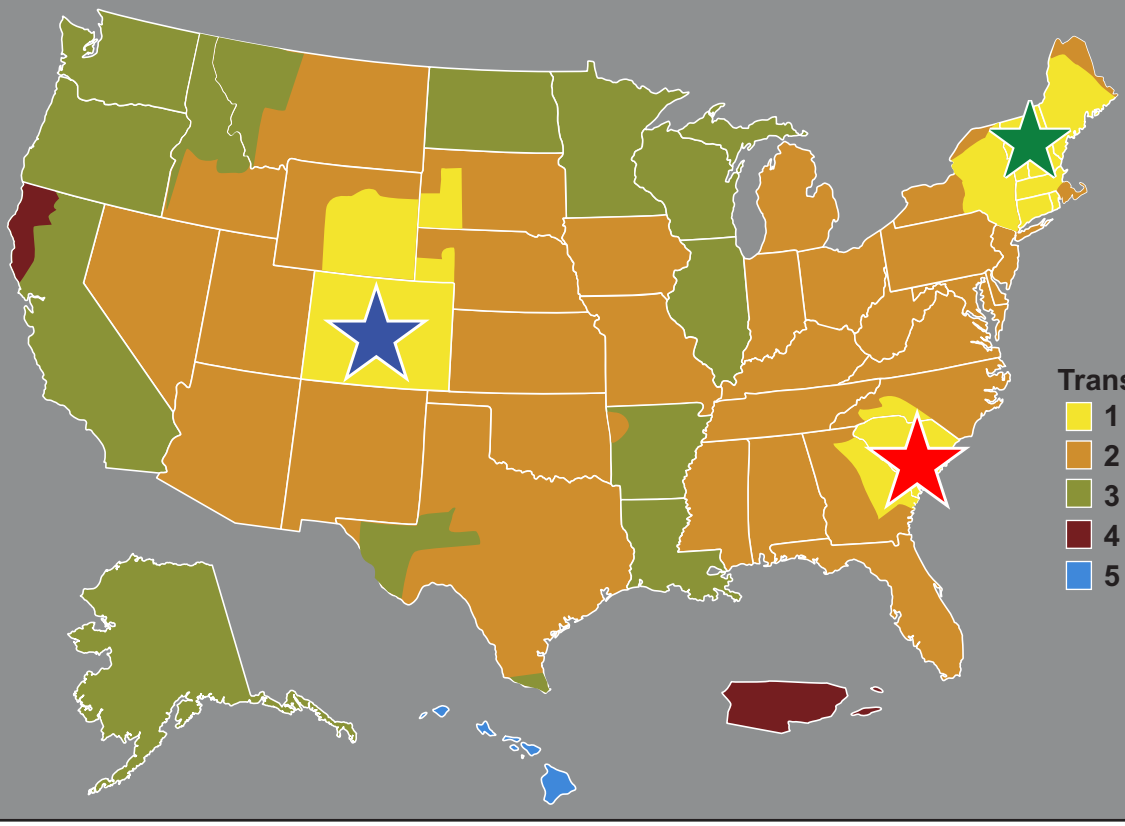
We will meet or beat any competitor price!



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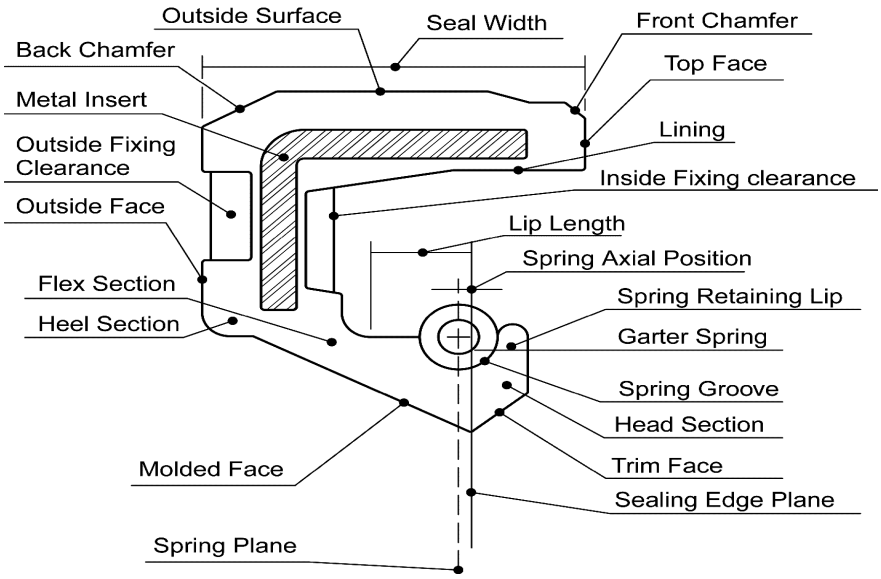
Custom made-to-order seals:

7-10 business day delivery*

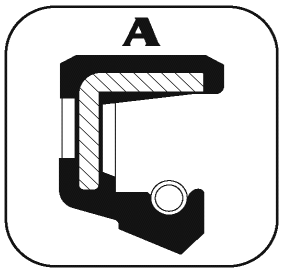
***7-10 business day delivery into Harwal on most items.**
Please call for quotation.

Rotary shaft seals are applied for sealing rotating shafts. Essentially, they consist of a rubber sealing lip, a stiffening metal core, and a garter spring. Depending on the application, there are three standard types: A, B, and C. Below is our A style.



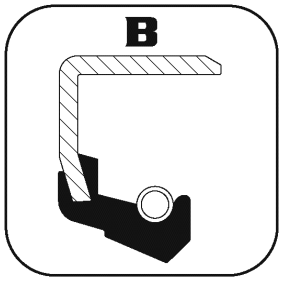
Type A

The rubber elastomer outer covering tolerates thermal expansion as well as roughness in the housing bore. There will be no fretting corrosion. Furthermore, damage of the housing bore will be prevented when frequently replacing the seal. This qualifies for sealing gaseous or liquid media.



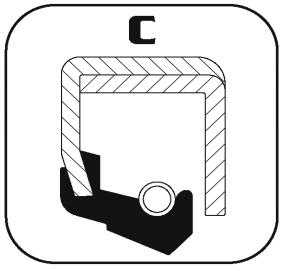
Type B

Metallic casing enables easier fitting. However, this type demands closer tolerances in the housing bore to ensure the sealing process.



Type C

Metallic casing with reinforcing cap. Sealing and mounting are identical as with type B. This type is applied in case of rougher operating conditions and where larger dimensions are utilized. Less delicate in case of incorrect mounting due to reinforcing cap.



Hardware Specifications

Shaft Specifications

Our seals perform the best on medium carbon steel or stainless steel shafts. Heat treatment or nitriding is especially recommended.

Shaft Hardness

In the area where the sealing lip contacts the shaft, we recommend that the minimum hardness is 45 HRc. Where lubrication is doubtful, abrasive matter is present, or the shaft speed is greater than 14m/s, 55 HRc is preferred.

Shaft Roughness

We recommend the shaft to be machined to a surface roughness of Ra = 9-17 (Ra = .23-.43um). In the area of the contact surface, rifling marks are not permitted.

Shaft Eccentricity

Two types of shaft eccentricity affect seal performance. They are dynamic run out (double dynamic eccentricity) and offset (shaft to bore misalignment or static eccentricity).

Shaft Tolerance

Shaft tolerances are shown on tables 1 & 2.

Housing Specifications

Steel and cast iron provide a good surface for both rubber and metal O.D. seals. For soft alloy, such as an aluminum housing, seals with a rubber O.D. are a better choice.

Housing Roughness

The housing inside diameter roughness is 100 micro inch Ra or 2.54 micrometers Ra for metal O.D. seals, and 150 micro inch or 3.81 micrometers for rubber covered O.D. seals.

Housing Tolerance

Housing tolerances are shown on tables 3 & 4.

Table 1. **Shaft Tolerance in INCH**

Nominal Shaft Diameter	Tolerance
up to 4,000	+/- 0.003
over 4,000 to 6,000	+/- 0.004
over 6,000 to 10,000	+/- 0.005
over 10,000	+/- 0.006

Table 2. **Shaft Tolerance in METRIC**

Shaft Diameter		Tolerance in mm
over	to	+ / -
0	3	0.0 / -.060
3	6	0.0 / -.075
6	10	0.0 / -.090
10	18	0.0 / -.110
18	30	0.0 / -.130
30	50	0.0 / -.160
50	80	0.0 / -.190
80	120	0.0 / -.220
120	180	0.0 / -.250
180	250	0.0 / -.290
250	315	0.0 / -.320
315	400	0.0 / -.360
400	500	0.0 / -.400

Table 3. **Housing Tolerance in INCH**

Bore Diameter	Bore Tolerance
up to 3.000	+/- 0.001
3.001 to 6.000	+/- 0.0015
6.001 to 10.000	+/- 0.002
10.001 to 20.000	+0.002 / -0.004
20.001 to 40.000	+0.002 / -0.006
40.001 to 60.000	+0.002 / -0.010

Table 4. **Housing Tolerance in METRIC**

Bore Diameter	Bore Tolerance
over 6 to 10	+0.022 / -0.000
over 10 to 18	+0.027 / -0.000
over 18 to 30	+0.033 / -0.000
over 30 to 50	+0.039 / -0.000
over 50 to 80	+0.046 / -0.000
over 80 to 120	+0.054 / -0.000
over 120 to 180	+0.063 / -0.000
over 180 to 250	+0.072 / -0.000
over 250 to 315	+0.081 / -0.000
over 315 to 400	+0.089 / -0.000

Width Tolerance of Seals

Unit	Width Range	Tolerance
Inch	ANY	+/-0.015
Metric	up to 10mm	+/-0.20
	over 10mm	+/-0.30

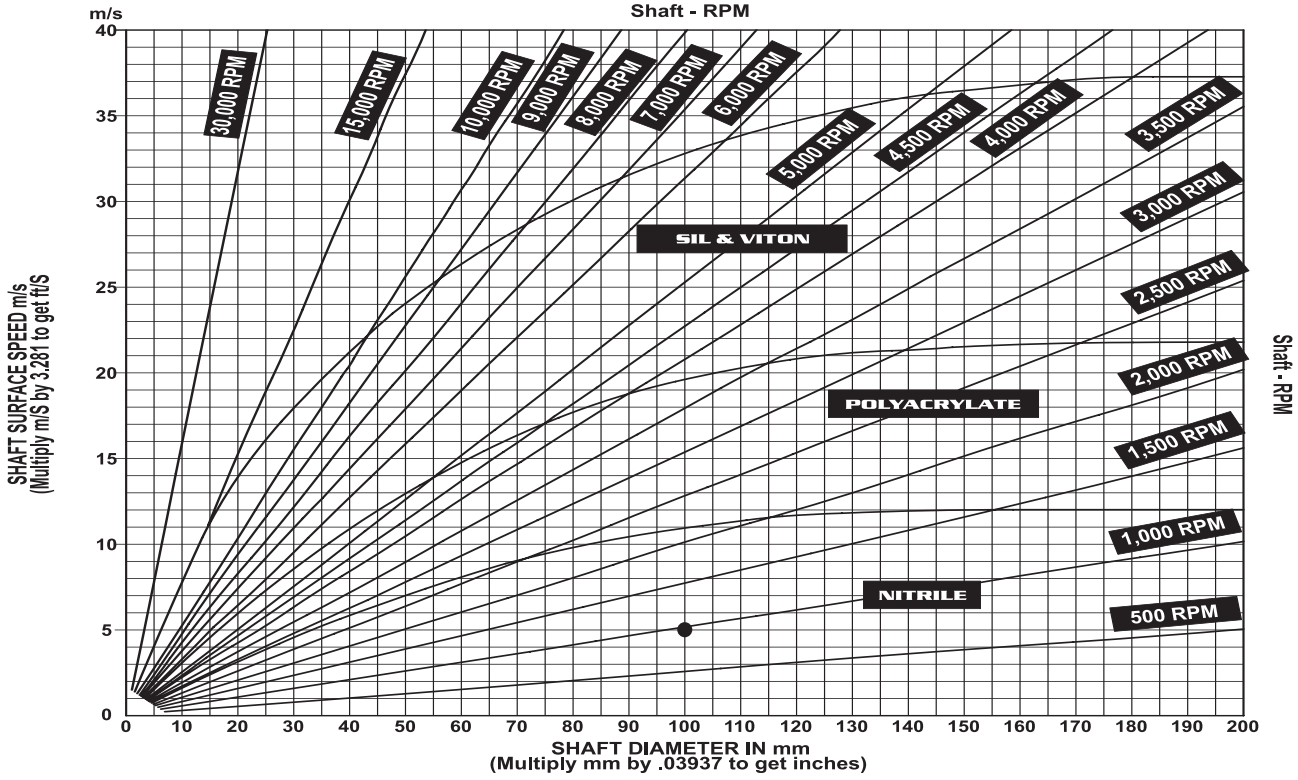
Seal Outside Diameter Tolerances - INCH

Bore Diameter	Press-fit Allowance		Tolerance	
	Metal Case	Rubber Covered Case	Metal Case	Rubber Covered Case
up to 1,000	+0.004	+0.006	+/- 0.002	+/- 0.003
1,001 to 2,000	+0.004	+0.007	+/- 0.002	+/- 0.003
2,001 to 3,000	+0.004	+0.008	+/- 0.002	+/- 0.003
3,001 to 4,000	+0.005	+0.010	+/- 0.002	+/- 0.004
4,001 to 6,000	+0.005	+0.010	+ 0.003 / - 0.002	+/- 0.004
6,001 to 8,000	+0.006	+0.010	+ 0.003 / - 0.002	+/- 0.004
8,001 to 10,000	+0.008	+0.010	+ 0.004 / - 0.002	+/- 0.004
10,001 to 20,000	+0.008	+0.010	+ 0.006 / - 0.002	+/- 0.004
20,001 to 40,000	+0.008	+0.010	+ 0.008 / - 0.002	+/- 0.004
40,001 to 60,000	+0.008	+0.010	+ 0.010 / - 0.002	+/- 0.004

Seal Outside Diameter Tolerances - METRIC

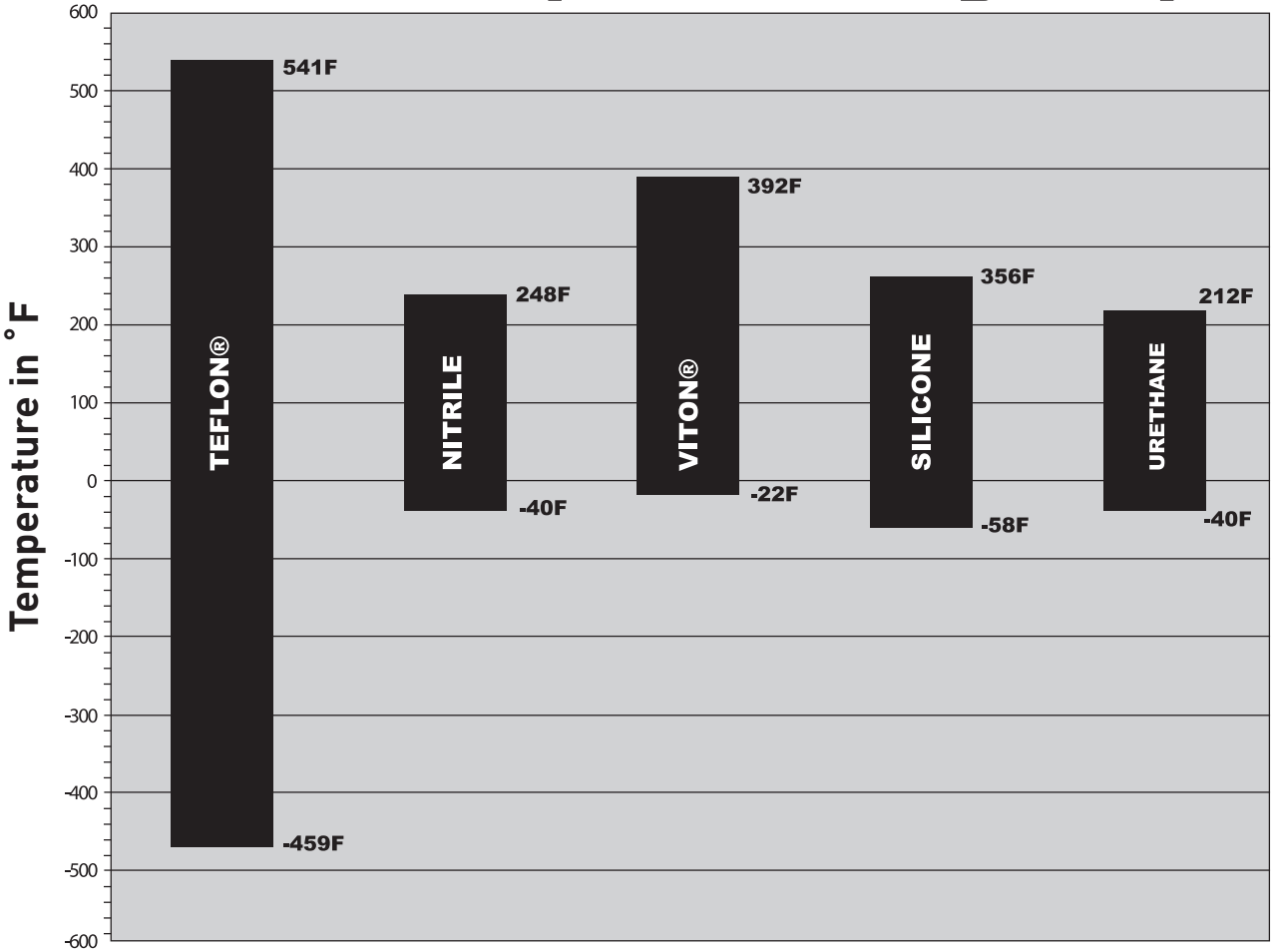
Bore Diameter	Press-fit Allowance		Permissible Eccentricity
	Metal Case	Rubber Covered Case	
up to 50	+ 0.20 / + 0.10	+ 0.30 / + 0.15	0.25
over 50 to 80	+ 0.23 / + 0.13	+ 0.35 / + 0.20	0.35
over 80 to 120	+ 0.25 / + 0.15	+ 0.35 / + 0.20	0.50
over 120 to 180	+ 0.28 / + 0.18	+ 0.45 / + 0.25	0.65
over 180 to 300	+ 0.30 / + 0.20	+ 0.45 / + 0.25	0.80
over 300 to 500	+ 0.35 / + 0.23	+ 0.55 / + 0.30	1.00

Shaft Speed Graph



● Example: A 100mm shaft rotating at 1000rpm would require a Nitrile lip.

Material Temperature Range Graph



Pressure

Our standard seal designs are generally used for sealing lower pressure applications. The chart below shows the maximum psi allowed for our standard seal types.

Seal Type	A, ADL, AO, B, C, DC	A-P, ADL-P	MS, MD (Teflon®)
Max allowable pressure	7psi	140psi	MS 60psi/MD 150psi

Shaft to Bore Misalignment

This is the degree of misalignment from the center of the shaft to the bore center. Misalignment concentrates wear on one side of the sealing lip. This becomes more severe as surface speeds increase. The chart below shows maximum misalignment.

Total Misalignment Allowed	.010 .005 (AO type only)	.010	.005

Shaft Run-Out

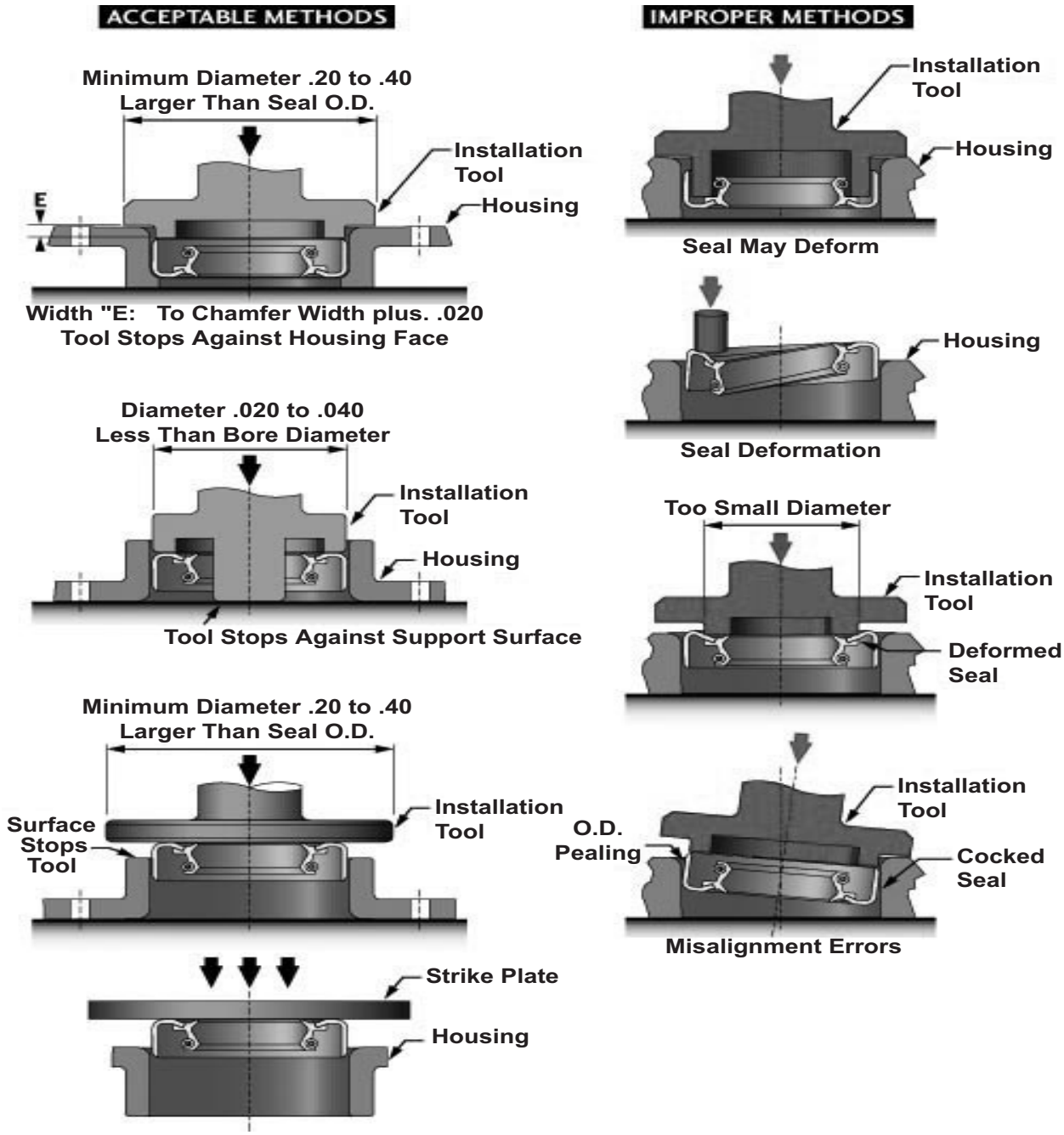
This is the misalignment of the sealing lip to the shaft with the center of shaft rotation, or movement of the center of the rotation through bearing looseness or shaft whip. This type of wear is more evenly distributed throughout the circumference of the sealing lip. Run-Out should be kept to a minumum. A combination of shaft run-out and bore misalignment create very difficult sealing conditions.

Total RPM Allowed	0-800	.025 (AO .005)	.025	.005
	800-2200	.020 (AO .005)	.020	.005
	2200-4200	.015 (AO .005)	.015	.005

Installation Methods

The subject of installation represents an area commonly overlooked when selecting an oil seal for an application. Studies have shown this area to be one of the major causes of premature seal failure. To assist the installation, the oil seal should be prelubricated with grease or oil to reduce sliding friction of contact surfaces. This will also help protect the seal lips during initial run-in. This section expands on recommended procedures for installation.

HOUSING INSTALLATION



An installation tool should always be used when installing an oil seal. The use of a tool can make installation easier and lower the possibility of seal cocking. A hydraulic or pneumatic press is advised to supply necessary force to install the seal. Figure 5 describes examples of both recommended and improper installation methods. In each preferredmethod, installation load is absorbed by either housing or bottom plate to prevent seal damage and to locate the seal properly within the bore.

Materials & Specifications

The most important component of an oil seal is the elastomer material. You must consider all environmental conditions and functions of the seal such as:

Chemical Resistance
Resistance to high and low temperatures
Resistance to ozone and weathering
Resistance to water
Low Compression Set
Elasticity
Cost

Harwal offers many compounds to satisfy almost any sealing application. The chart below shows the limitations and resistance qualities of our most common elastomers. Also included are the advantages and disadvantages of each elastomer.

Material	Advantages	Disadvantages	Ranges	Substitutes
Nitrile (NBR)	Highly cost efficient. Good low temp. capabilities. Excellent wear resistance. Little to no swell in hydrocarbon fluids.	Poor high heat resistance. Poor ozone resistance. Poor resistance to lubricants containing sulfur or EP additives, hydrocarbons or oxygenate blends (gasoline/methanol).	-40°F to +248°F -40°C to +120°C	FPM Polyacrylate PTFE
Viton® (FPM)	Excellent properties for sealing under high temperatures. Excellent fluid compatibilities. Very long usage life.	Poor resistance to basic fluids with a ph >7. Expensive compared to other materials.	-22°F to +392°F -30°C to +200°C	PTFE
Leather	Good dry running capabilities	Higher cost than Nitrile. Poor heat resistance.	-50°F to +200°F -46°C to +93°C	Nitrile FPM Polyacrylate PTFE
Polyacrylate (ACM)	Good resistance to EP lubricants. Low swell when sealing hydrocarbon fluids. Better heat resistance than Nitrile.	Higher cost than Nitrile. Poor low temperature capabilities. Should not be used when sealing aqueous media.	-20°F to +300°F -29°C to +149°C	FPM PTFE
Silicone	Good resistance to dry heat. Excellent sealing capabilities in low temperature applications.	Higher cost than Nitrile. High swell properties. Poor dry running capabilities. Poor resistance to some EP additives.	-58°F to +356°F -50°C to +180°C	FPM PTFE
Urethane	Good lubricant and ozone resistance. Good abrasion resistance. More durable than Silicone.	Substantial softening when used in applications above 250°F. Poor resistance to hot water or steam.	Please contact your Harwal representative with your specific application.	Urethane cannot be substituted.
Teflon® (PTFE)	Superior dry running capabilities. Extremely low coefficient of friction. Excellent chemical resistance. Resistant to hydrocarbon/ oxygenate blends.	Poor resistance to abrasion in dirty environments. Can be easily damaged during installation. High thermal expansion.	-459°F to +541°F -272°C to +282°C	PTFE cannot be substituted.

Material Characteristics

	Nitrile	Polvacrvlate	Silicone	Viton®
Temperature Range	+248F / -40F +120C / -40C	+302F / -22F +150C / -30C	+356F / -58F +180C / -50C	+392F / -22F +200C / -30C
Abrasion Resistance	B	C	D	B
Compression Set	B	C	B	B
Cracking Resistance	C	C	A	B
Cut Growth Resistance	B	B	D	D
Flex Cracking Resistance	C	C	B	B
Impact Strength	B	D	C	C
Low Temperature Resistance	B	D	A	B
Oxidation Resistance	B	A	A	A
Sunlight Resistance	C	A	A	A
Tear Resistance	B	D	D	C
Weathering Resistance	B	A	A	A

Legend: **A=Excellent** **B=Good** **C=Fair** **D=Poor**

Troubleshooting

	Symptom	Probable Cause / Solution
The Sealing Member	Lip Surface hardened	Lip hardening can be caused by excessive operating temperatures, inadequate lubrication, or if the media being sealed is incompatible with the lip material.
	Sealing lip brittle or cracked	Operating temperature of sealed media or lubricant may exceed the recommended limits for the type of sealing member material. Make sure the seal is the correct size for the application. If the seal is too tight on the shaft, this may cause overheating. Check that the seal was installed with and maintained adequate lubrication for the type of seal you are using.
	Sealing lip shows excessive wear (entire circumference)	Shaft finish may be too rough at point of lip contact. Seal may not have been properly or adequately lubricated prior to installation. Make sure the seal is the correct size. If the seal is too tight on the shaft, this may cause overheating and rapid wear. Shaft run-out or shaft whip may exceed the recommended limits. Make sure that the seal seats close to the bearing and check for excessive looseness in the bearing or splines.
	Sealing lip shows excessive wear (one side)	Check misalignment of shaft to bore. Shaft misalignment causes rapid wear at one point on the sealing lip.
	Sealing lip contact on shaft is too light	Make sure the seal is the correct size for the application. Check for excessive wear at point of lip contact. The shaft may be too soft, be sure to check the minimum shaft hardness specifications for your application. Check to make sure you used the proper installation tool. Your installation tool must not have an O.D. of more than 1/32" greater than the shaft or the sealing lip may be overstretched
	Sealing lip is nicked or scratched	This can be caused by careless storage, handling, or the use of improper assembly / installation tools. This can also be caused by failing to properly clean and prepare shaft prior to installation and/or failing to protect the sealing member when installing over splines or keyways etc.
Oil Seal Metal Parts	Seal case is distorted	The seal O.D. may be too large for the housing bore. The housing bore may be excessively out-of-round. If you find that the bore diameter and the out-of-round limits are correct, look for evidence of careless handling or the use of improper installation tools.
	Garter spring is damaged	This may be caused by careless handling or use of improper installation tools or methods. Excessive spreading of the primary sealing lip during the installation process can damage the spring.
	Inner components of the seal assembly are loose	This can be caused by the use of improper installation tools. Check the out-of-round limits of the housing bore and make sure the O.D. of the seal is not too large for the bore. Either of these conditions can cause the seal to become distorted. Seal distortion may not be apparent, but may be enough to loosen the inner components of the seal and cause it to leak.
	Seal cocked in housing	This can be because of the use of improper installation tools or methods. Check to make sure the seal O.D. is not too large for the bore. Also be sure to check for burrs, scale, or chips that may prevent the seal from seating properly.
Shaft	Excessive shaft wear	Check to be sure the seal is the proper size for the shaft. Too tight of a fit will cause excessive wear on both the lip and the contact point on the shaft. Check to be sure the seal was properly and adequately lubricated prior to installation. Check to be sure that the seal stays lubricated while in use. Check for the presence of abrasive dirt or other debris. Make sure shaft was cleaned properly prior to the installation of the seal. In applications where the seal has the possibility of getting dirt or other large debris on or near the sealing lip, a seal with a dust lip should be used.
	Shaft is scratched or gouged	Carefully inspect and clean the shaft prior to installation. If the shaft cannot be refinished, a shaft repair sleeve may be needed.
Bore	Leakage around the O.D. of the seal	The seal may be cocked in the housing. Check the O.D. surface of the seal for evidence of damage from installation, careless handling or improper storage prior to use. Check interior of housing for excessive roughness, foreign matter, scratches or burrs. Check housing to be sure it is not out-of-round. If the eccentricity is only slight, .001" or so, special cement on the O.D. can be used to offset this problem.
	Other	Your Harwal representative will be happy to assist you with any questions or concerns you may have with our sealing products.

Shaft Seal Interchange Table

HARWAL TYPES	A	AO	ADL	B	BO	BDL	C
Chicago Rawhide (SKF)	HMS4	HM4	HMSA7	CRW1	HM14	CRWA1	CRWH1
Clark Seals	SC	VC	TC	SB2	VB2	TB2	SA2
Dichtomatik	WA	WAO	WAS	WB	WBO	WBS	WC
Freudenberg	BA	BAOF	BASL	B1	B1OF	B1SL	B2
Gaco	A		FA	ABI			
Garlock	92	91	94	76	71	78	50
Goetze	827N		827S	822N		822S	824N
ISP	A	VC	AS	BE	VB	BES	CE
Kaco	DG	DGS	DF	DC	DFS	DFK	DFSK
NAK	SC		TC	SB		TB	SA
National	35	34	32	48	44	47	45
NOK	SC	VC	TC	SB	VB	TB	SA2
Paulstra	IE		IEL	EE		EEL	EEP
Pioneer Weston	R21		R23	R4/WR		R6	R1/WRL
Simmerwerke	A		ASL	B		BSL	C
Simrit	BAUX2	BAFUDX7	BAUSLX2	B1U	B1	B1SL	B2U
Stefa	CB		CC	BB		BC	DB
Timken	35	34	32	48		47	45
Transcom (TCM)	SC	VC	TC	SB	VB	TB	SA2
Wyko Seals	A1N#		ASN#	B1N#		BSN#	C1N#

HARWAL TYPES	CDL	DC	HLSRS	HP-1	HES	VA	VS
Chicago Rawhide (SKF)	CRWHA1					VR1	VR2
Clark Seals	TA2	DF					
Dichtomatik	WCS	WAD		WCP21		VA	VS
Freudenberg	B2SL	DB					
Gaco			SMK				
Garlock			64	PS			
Goetze	824S						
ISP	CES						
NAK		DB					
National	41	7S			8L	VR1	VR2
NOK	TA2	DC					
Simmerwerke	SCL						
Simrit	B2USL	BADUO		B2PT			
Stefa	DC						
Timken	41				8L	VRS1	VRS2
Transcom (TCM)	TA	DC		PA1		VA	VS
Wyko Seals		A/BDN#					

HARWAL TYPES	VL	VE	RB	9RB	U41	U43	U45
Chicago Rawhide (SKF)	VR3	VR4	MVR1	MVR2	UN	SI	
Dichtomatik	VL	VE	VRM		MA25	MA23	MA24
NAK			RE	RE1	UNP	UOP	UIP
National	VR3	VR4					
Timken	VRS3	VRS4					
Transcom (TCM)			AFS	AFX	UNP	UOP	UIP
Wyko Seals							

Media Compatibility Table

The recommendations shown in the table are based on data supplied by our polymer manufacturers and comparison made with similar materials. The table below is meant only as a guideline and users of the actual product must conduct their own functional test to determine the suitability of any compound for their particular application.

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Acetaldehyde	D	A	C	A	A	D	A
Acetamide	A	A	B	A	B	B	A
Acetate Solvent	C	A	D	A	C	D	A
Acetic Acid	C	A	C	A	C	B	D
Acetic Acid 20%	B	A	A	A	B	B	D
Acetic Acid 80%	C	A	C	A	B	B	D
Acetic Acid, Glacial	C	B	D	A	B	D	B
Acetic Anhydride	D	B	A	A	C	D	A
Acetone	D	A	C	A	D	D	A
Acetyl Bromide	*	*	*	A	*	*	D
Acetyl Chloride (dry)	D	D	D	A	C	A	B
Acetylene	B	A	B	A	B	A	A
Acrylonitrile	D	D	C	A	D	D	A
Adipic Acid	C	A	C	A	*	A	*
Alcohols:Amyl	B	A	A	A	D	A	A
Alcohols:Benzyl	D	B	C	A	*	A	B
Alcohols:Butyl	C	A	A	A	B	A	D
Alcohols:Diacetone	D	A	D	A	D	D	A
Alcohols:Ethyl	C	A	A	A	B	A	A
Alcohols:Hexyl	A	C	A	A	B	C	A
Alcohols:Isobutyl	B	A	A	A	A	A	A
Alcohols:Isopropyl	B	A	B	A	A	A	D
Alcohols:Methyl	A	A	A	A	A	C	B
Alcohols:Octyl	B	A	B	*	B	B	A
Alcohols:Propyl	A	A	A	A	A	A	D
Aluminum Chloride	A	A	A	A	B	A	B
Aluminum Chloride 20%	A	A	A	A	B	A	D
Aluminum Fluoride	A	A	A	A	B	A	A
Aluminum Hydroxide	A	A	A	A	*	A	A
Aluminum Nitrate	A	A	A	A	B	A	A
Aluminum Potassium Sulfate 10%	A	A	A	A	A	A	D
Aluminum Potassium Sulfate 100%	A	A	A	A	A	A	D
Aluminum Sulfate	A	A	A	A	A	A	A
Alums	A	A	B	A	A	A	A
Amines	D	B	B	A	B	D	D
Ammonia 10%	A	A	A	A	*	D	A
Ammonia Nitrate	C	A	C	A	*	D	D
Ammonia, anhydrous	B	A	A	A	C	D	A
Ammonia, liquid	C	A	A	A	*	D	B
Ammonium Acetate	B	A	A	A	*	A	A
Ammonium Bifluoride	B	A	D	A	*	A	*
Ammonium Carbonate	B	A	A	A	C	A	A
Ammonium Caseinate	*	*	A	*	*	*	*
Ammonium Chloride	B	A	B	A	C	A	B
Ammonium Hydroxide	D	A	A	A	A	B	A
Ammonium Nitrate	A	A	B	A	C	A	A
Ammonium Oxalate	D	A	A	*	*	*	*
Ammonium Persulfate	A	B	A	A	D	A	D
Ammonium Phosphate, Dibasic	A	A	A	A	A	A	C
Ammonium Phosphate, Monobasic	A	A	A	A	A	A	B
Ammonium Phosphate, Tribasic	A	A	A	A	A	A	B
Ammonium Sulfate	A	A	A	A	A	A	A
Ammonium Sulfite	A	A	A	A	*	D	A
Ammonium Thiosulfate	A	A	A	*	*	*	*
Amyl Acetate	D	A	D	A	D	D	B
Amyl Alcohol	B	A	A	A	D	A	A
Amyl Chloride	D	D	D	A	D	B	C
Aniline	D	B	D	A	B	A	A
Aniline Hydrochloride	D	B	D	A	D	A	D
Antifreeze	A	A	C	*	C	A	D
Antimony Trichloride	B	B	*	A	*	A	D
Aqua Regia (80% HCl, 20% HNO3)	D	C	D	A	D	B	D
Arochlor 1248	C	B	D	A	B	A	A

LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Aromatic Hydrocarbons	D	D	D	*	D	A	*
Arsenic Acid	A	A	A	A	A	A	C
Arsenic Salts	*	*	*	*	*	A	A
Asphalt	B	D	D	A	D	A	A
Barium Carbonate	A	A	*	A	*	A	A
Barium Chloride	A	A	A	A	A	A	A
Barium Cyanide	C	A	C	A	*	A	A
Barium Hydroxide	A	A	A	A	A	A	A
Barium Nitrate	A	A	A	A	B	A	A
Barium Sulfate	A	A	A	A	A	A	A
Barium Sulfide	A	A	A	A	A	A	A
Beer	A	A	A	A	A	A	A
Beet Sugar Liquids	A	A	A	A	A	A	A
Benzaldehyde	D	A	D	A	D	D	A
Benzene	D	D	D	A	D	A	A
Benzene Sulfonic Acid	D	D	A	A	D	A	D
Benzoic Acid	D	D	B	A	B	A	D
Benzol	D	D	D	A	D	A	D
Benzonitrile	*	*	*	A	A	*	*
Benzyl Chloride	D	D	D	*	D	A	A
Bleaching Liquors	D	A	D	A	B	A	C
Borax (Sodium Borate)	B	A	A	A	B	A	A
Boric Acid	A	A	D	A	A	A	B
Brewery Slop	A	*	A	*	*	A	*
Bromine	D	D	D	A	D	A	D
Butadiene	D	C	B	A	D	B	C
Butane	A	D	A	A	D	A	A
Butanol (Butyl Alcohol)	A	A	A	A	B	A	B
Butter	A	A	B	A	B	A	*
Buttermilk	A	A	D	A	A	A	B
Butyl Amine	*	*	D	A	B	D	A
Butyl Ether	B	D	D	A	D	D	A
Butyl Phthalate	D	B	D	A	A	C	A
Butylacetate	D	B	D	A	D	D	A
Butylene	A	D	D	A	D	A	B
Butyric Acid	D	B	D	A	D	B	C
Calcium Bisulfate	A	A	A	*	C	*	*
Calcium Bisulfide	A	C	A	A	C	A	A
Calcium Bisulfite	A	D	A	A	A	A	A
Calcium Carbonate	A	A	A	A	A	A	A
Calcium Chlorate	A	A	*	A	*	A	*
Calcium Chloride	A	A	A	A	A	A	A
Calcium Hydroxide	A	A	A	A	A	A	A
Calcium Hypochlorite	C	B	D	A	B	A	D
Calcium Nitrate	A	A	A	A	B	A	A
Calcium Oxide	A	A	A	A	A	B	B
Calcium Sulfate	A	A	B	A	*	A	D
Calgon	A	A	A	*	A	A	A
Cane Juice	A	A	A	A	A	A	A
Carbolic Acid (Phenol)	D	B	D	A	D	A	D
Carbon Bisulfide	C	D	D	*	*	A	A
Carbon Dioxide (dry)	A	B	B	A	B	B	A
Carbon Dioxide (wet)	A	B	B	A	B	B	A
Carbon Disulfide	D	D	D	A	*	A	B
Carbon Monoxide	A	A	B	A	A	A	A
Carbon Tetrachloride	D	D	D	A	D	A	D
Carbon Tetrachloride (dry)	C	B	D	A	D	A	*
Carbon Tetrachloride (wet)	D	D	D	A	D	*	*
Carbonated Water	A	*	A	*	*	A	A
Carbonic Acid	D	B	D	A	A	A	A
Catsup	A	A	A	*	*	A	A
Chloric Acid	*	*	*	A	*	*	D
Chlorinated Glue	B	B	D	*	*	A	*
Chlorine (dry)	B	A	C	A	D	A	D
Chlorine Water	D	C	D	A	D	A	C
Chlorine, Anhydrous Liquid	D	B	D	A	D	A	D
Chloroacetic Acid	D	B	D	A	D	D	D
Chlorobenzene (Mono)	D	D	D	B	D	A	D

LEGEND:
A - Excellent
B - Good
C - Fair
D - Severe Effect
* - Insufficient Data

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Chlorobromomethane	D	B	D	A	D	A	C
Chloroform	D	D	D	A	D	A	A
Chlorosulfonic Acid	D	D	D	A	D	D	D
Chocolate Syrup	A	A	A	A	*	A	A
Chromic Acid 10%	D	C	D	A	C	B	D
Chromic Acid 30%	D	B	D	A	C	A	D
Chromic Acid 5%	D	A	D	A	C	A	D
Chromic Acid 50%	D	B	D	A	C	A	D
Chromium Salts	*	*	*	*	*	*	B
Cider	A	A	A	*	B	A	A
Citric Acid	A	A	A	A	A	A	A
Citric Oils	A	B	D	*	*	A	*
Cloroxr (Bleach)	D	B	B	A	*	A	A
Coffee	A	A	A	*	A	A	A
Copper Chloride	A	A	A	A	A	A	D
Copper Cyanide	A	A	A	A	A	A	D
Copper Fluoborate	B	*	A	*	*	A	*
Copper Nitrate	A	*	A	A	*	A	D
Copper Sulfate >5%	A	A	A	A	A	A	D
Copper Sulfate 5%	A	A	A	A	A	A	D
Cream	A	*	D	A	*	A	A
Cresols	D	D	D	*	D	A	D
Cresylic Acid	D	D	D	A	D	A	D
Cupric Acid	B	A	A	A	A	A	D
Cyanic Acid	C	*	C	A	A	A	*
Cyclohexane	B	D	D	A	D	A	A
Cyclohexanone	D	B	D	A	D	D	A
Detergents	A	A	B	A	A	A	A
Diacetone Alcohol	D	A	D	A	D	D	A
Dichlorobenzene	D	D	D	A	D	C	D
Dichloroethane	D	*	D	A	*	C	A
Diesel Fuel	A	D	B	A	D	A	A
Diethyl Ether	D	D	D	A	D	D	A
Diethylamine	C	B	A	D	B	A	A
Diethylene Glycol	A	A	A	A	B	A	A
Dimethyl Aniline	D	B	D	A	D	D	A
Dimethyl Formamide	D	B	D	A	C	C	A
Diphenyl	D	D	B	A	D	A	*
Diphenyl Oxide	A	D	D	A	C	A	*
Dyes	*	*	C	*	*	A	A
Epsom Salts (Magnesium Sulfate)	A	A	A	A	A	A	A
Ethane	A	D	B	A	D	A	D
Ethanol	C	A	A	A	B	A	A
Ethanolamine	B	B	B	A	B	D	A
Ether	D	C	D	A	D	C	A
Ethyl Acetate	D	B	D	A	B	D	A
Ethyl Benzoate	D	*	D	A	D	A	*
Ethyl Chloride	A	A	C	A	D	A	A
Ethyl Ether	D	D	D	A	D	D	A
Ethyl Sulfate	A	*	*	A	*	A	*
Ethylene Bromide	D	C	C	A	D	A	*
Ethylene Chloride	D	D	D	A	D	B	A
Ethylene Chlorohydrin	D	B	A	A	C	A	D
Ethylene Diamine	A	A	B	A	A	B	D
Ethylene Dichloride	D	C	D	A	D	A	A
Ethylene Glycol	A	A	A	A	A	A	A
Ethylene Oxide	D	C	D	A	D	D	A
Fatty Acids	B	D	C	A	C	A	A
Ferric Chloride	A	A	B	A	B	A	A
Ferric Nitrate	A	A	A	A	C	A	A
Ferric Sulfate	A	A	A	A	B	A	A
Ferrous Chloride	A	*	A	A	*	A	D
Ferrous Sulfate	A	A	*	A	*	B	D
Fluoboric Acid	A	A	A	A	*	B	D
Fluorine	D	A	*	D	D	C	D
Fluosilicic Acid	A	A	A	A	*	B	D
Formaldehyde 100%	C	A	C	A	B	D	D
Formaldehyde 40%	B	A	B	A	*	A	A

LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Formic Acid	C	A	A	A	B	C	D
Freon 113	A	D	C	A	D	B	*
Freon 12	A	B	A	A	D	B	A
Freon 22	D	A	A	A	D	D	B
Freon TF	A	D	A	A	D	B	D
Freonr 11	B	D	D	A	D	B	D
Fruit Juice	A	*	A	A	*	A	A
Fuel Oils	A	D	B	B	D	A	A
Furan Resin	D	C	D	A	D	D	*
Furfural	D	D	D	A	D	D	B
Gallic Acid	B	B	B	B	D	A	A
Gasoline (high-aromatic)	A	D	A	B	D	A	A
Gasoline, leaded, ref.	A	D	B	A	D	A	A
Gasoline, unleaded	A	D	B	A	D	A	A
Gelatin	A	A	A	A	A	A	A
Glucose	A	A	A	A	A	A	A
Glue, P.V.A.	A	A	A	A	A	B	A
Glycerin	A	A	A	A	A	A	A
Glycolic Acid	A	A	A	A	A	A	*
Gold Monocyanide	A	*	A	D	*	A	*
Grape Juice	A	A	D	A	A	A	A
Grease	A	D	D	A	D	A	*
Heptane	A	D	B	A	D	A	A
Hexane	A	D	B	A	D	A	B
Honey	A	A	*	A	A	A	A
Hydraulic Oil (Petro)	A	D	A	A	B	A	A
Hydraulic Oil (Synthetic)	D	A	A	A	B	A	A
Hydrazine	B	A	B	A	B	A	*
Hydrobromic Acid 100%	D	A	D	A	D	A	D
Hydrobromic Acid 20%	D	A	D	*	D	A	D
Hydrochloric Acid 100%	D	D	D	A	D	A	D
Hydrochloric Acid 20%	*	A	C	A	D	A	D
Hydrochloric Acid 37%	B	C	B	A	B	A	D
Hydrochloric Acid, Dry Gas	*	*	*	A	*	*	A
Hydrocyanic Acid	B	B	B	A	C	A	B
Hydrocyanic Acid (Gas 10%)	B	A	A	A	D	A	*
Hydrofluoric Acid 100%	D	D	D	A	D	B	D
Hydrofluoric Acid 20%	D	D	B	A	D	A	C
Hydrofluoric Acid 50%	D	D	D	A	D	B	D
Hydrofluoric Acid 75%	D	C	D	A	D	B	D
Hydrofluosilicic Acid 100%	B	A	B	A	D	A	D
Hydrofluosilicic Acid 20%	A	A	B	A	D	A	D
Hydrogen Gas	A	A	A	A	C	A	A
Hydrogen Peroxide 10%	D	A	D	A	A	A	C
Hydrogen Peroxide 100%	D	D	D	A	B	A	D
Hydrogen Peroxide 30%	D	B	D	A	B	A	D
Hydrogen Peroxide 50%	D	B	D	A	B	A	D
Hydrogen Sulfide (aqua)	D	B	A	A	C	D	C
Hydrogen Sulfide (dry)	D	B	A	A	C	D	C
Hydroquinone	D	D	A	A	*	B	D
Hydroxyacetic Acid 70%	A	A	A	A	*	A	*
Ink	A	*	A	A	*	A	C
Iodine	B	B	D	A	*	A	A
Iodine (in alcohol)	*	A	*	*	*	*	C
Iodoform	D	A	A	C	*	*	*
Isooctane	A	D	B	A	D	A	A
Isopropyl Acetate	D	B	D	A	D	D	B
Isopropyl Ether	B	D	D	A	D	D	A
Isotane	A	*	D	*	*	A	D
Jet Fuel (JP3, JP4, JP5)	A	D	D	A	D	A	C
Kerosene	A	D	A	A	D	A	A
Ketones	D	A	D	A	*	D	A
Lacquer Thinners	D	D	D	A	D	D	A
Lacquers	D	D	D	A	D	D	A
Lactic Acid	A	A	A	A	A	A	B
Lard	A	D	D	A	B	A	A
Latex	A	A	*	A	A	A	A
Lead Acetate	B	A	A	A	A	D	A

LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Lead Nitrate	A	A	A	A	B	A	*
Lead Sulfamate	B	A	A	B	B	A	B
Ligroin	A	D	B	A	D	A	D
Lime	A	D	A	A	*	A	A
Linoleic Acid	B	D	*	A	B	B	*
Lithium Chloride	A	A	A	A	A	A	*
Lithium Hydroxide	C	*	*	A	*	*	*
Lubricants	A	D	D	A	D	A	A
Lye: Ca(OH)2 Calcium Hydroxide	A	A	A	A	A	B	A
Lye: KOH Potassium Hydroxide	B	A	B	A	C	B	C
Lye: NaOH Sodium Hydroxide	A	B	B	A	A	B	A
Magnesium Bisulfate	B	*	B	A	*	*	A
Magnesium Carbonate	A	A	A	A	*	A	*
Magnesium Chloride	A	A	A	A	A	A	A
Magnesium Hydroxide	A	A	A	A	A	A	B
Magnesium Nitrate	A	A	A	A	*	A	A
Magnesium Oxide	A	*	A	A	*	C	*
Magnesium Sulfate (Epsom Salts)	A	A	A	A	A	A	A
Maleic Acid	D	D	D	A	*	A	A
Maleic Anhydride	D	D	D	A	*	A	*
Malic Acid	A	D	D	A	B	A	A
Manganese Sulfate	A	A	A	A	A	A	A
Mash	A	A	A	*	*	A	A
Mayonnaise	C	*	A	A	*	A	A
Melamine	C	A	D	A	C	A	A
Mercuric Chloride (dilute)	A	A	A	A	*	A	D
Mercuric Cyanide	A	A	A	B	A	A	A
Mercurous Nitrate	B	A	B	A	*	A	*
Mercury	A	A	A	A	*	A	A
Methane	A	D	B	A	D	A	A
Methanol (Methyl Alcohol)	A	A	A	A	A	C	B
Methyl Acetate	D	B	B	A	D	D	A
Methyl Acetone	D	A	D	A	*	D	A
Methyl Acrylate	D	B	B	*	D	D	*
Methyl Alcohol 10%	A	A	A	A	A	C	B
Methyl Bromide	B	D	D	A	*	A	B
Methyl Butyl Ketone	D	A	D	*	D	D	D
Methyl Cellosolve	A	B	B	A	D	D	C
Methyl Chloride	D	D	D	A	D	A	B
Methyl Dichloride	D	D	*	*	*	A	C
Methyl Ethyl Ketone	D	A	D	A	D	D	A
Methyl Ethyl Ketone Peroxide	D	D	D	*	B	D	*
Methyl Isobutyl Ketone	D	B	D	A	D	D	B
Methyl Isopropyl Ketone	D	C	D	A	C	D	A
Methyl Methacrylate	D	D	D	*	C	D	*
Methylamine	B	A	*	A	*	D	*
Methylene Chloride	D	C	*	A	*	B	C
Milk	A	A	A	A	A	A	A
Mineral Spirits	A	D	C	A	D	A	A
Molasses	A	A	A	A	*	A	A
Monochloroacetic acid	D	C	A	A	*	C	D
Monoethanolamine	B	B	D	A	B	D	A
Morpholine	D	D	D	A	*	*	A
Motor oil	A	D	B	A	*	*	A
Mustard	B	A	A	A	*	D	A
Naphtha	A	D	D	B	D	A	A
Naphthalene	D	D	D	A	D	A	A
Natural Gas	A	D	A	A	A	A	*
Nickel Chloride	A	A	B	A	A	A	C
Nickel Nitrate	A	A	A	A	*	A	A
Nickel Sulfate	A	A	A	A	A	A	A
Nitrating Acid (<15% HNO3)	*	*	A	A	*	*	*
Nitrating Acid (>15% H2SO4)	D	A	A	A	*	*	*
Nitrating Acid (S1% Acid)	*	*	A	A	*	*	*
Nitrating Acid (S15% H2SO4)	*	*	A	A	*	*	*
Nitric Acid (20%)	D	A	D	A	D	A	D
Nitric Acid (50%)	D	D	D	A	D	A	D
Nitric Acid (5-10%)	D	A	B	A	C	A	D

LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Nitric Acid (Concentrated)	D	D	D	A	D	A	D
Nitrobenzene	D	B	D	A	D	B	B
Nitrogen Fertilizer	*	*	*	A	*	*	*
Nitromethane	D	B	D	A	D	D	B
Nitrous Acid	*	A	D	A	*	B	*
Nitrous Oxide	*	A	A	A	*	B	C
Oils:Aniline	D	B	D	A	D	C	A
Oils:Anise	*	*	D	*	*	*	*
Oils:Bay	*	*	D	*	*	A	*
Oils:Bone	A	*	D	A	*	A	*
Oils:Castor	B	B	A	A	A	A	A
Oils:Cinnamon	*	*	C	A	*	A	*
Oils:Citric	D	B	D	A	*	A	A
Oils:Clove	A	*	C	A	*	A	*
Oils:Coconut	A	D	C	A	A	A	*
Oils:Cod Liver	A	A	B	A	B	A	*
Oils:Corn	D	C	A	A	A	B	A
Oils:Cottonseed	A	D	C	A	A	A	B
Oils:Creosote	D	D	C	A	D	A	D
Oils:Diesel Fuel (20, 30, 40, 50)	A	D	B	A	D	A	A
Oils:Fuel (1, 2, 3, 5A, 5B, 6)	B	D	D	A	C	B	A
Oils:Ginger	A	A	A	A	*	A	*
Oils:Hydraulic Oil (Petro)	A	D	A	A	B	A	A
Oils:Hydraulic Oil (Synthetic)	D	A	A	A	B	A	A
Oils:Lemon	*	D	D	A	*	A	*
Oils:Linseed	A	D	D	A	A	A	A
Oils:Mineral	A	D	B	A	C	A	A
Oils:Olive	D	D	B	A	D	A	A
Oils:Orange	A	*	C	*	D	A	*
Oils:Palm	A	A	D	A	*	A	*
Oils:Peanut	A	D	B	A	A	A	*
Oils:Peppermint	D	*	D	A	*	A	*
Oils:Pine	D	D	D	A	D	A	A
Oils:Rapeseed	D	A	B	A	D	A	*
Oils:Rosin	A	*	*	A	*	A	A
Oils:Sesame Seed	A	*	D	A	*	A	*
Oils:Silicone	A	A	D	A	C	A	A
Oils:Soybean	A	C	C	A	A	A	A
Oils:Sperm (whale)	A	*	D	A	*	A	*
Oils:Tanning	A	*	D	*	*	A	*
Oils:Transformer	A	D	B	A	B	A	A
Oils:Turbine	B	A	D	A	D	A	A
Oleic Acid	B	B	C	A	D	B	A
Oleum 100%	D	D	D	A	D	A	D
Oleum 25%	D	D	D	A	D	A	D
Oxalic Acid (cold)	D	A	D	A	B	A	B
Ozone	D	A	C	A	A	A	D
Palmitic Acid	A	B	D	A	D	A	A
Paraffin	B	D	B	A	*	B	A
Pentane	A	D	B	A	D	A	A
Perchloric Acid	D	B	A	A	D	A	D
Perchloroethylene	C	D	D	A	D	A	C
Petrolatum	A	A	A	C	D	A	D
Petroleum	A	D	B	A	D	A	A
Phenol (10%)	D	B	D	A	D	A	D
Phenol (Carbolic Acid)	D	B	D	A	D	A	D
Phosphoric Acid (>40%)	D	B	B	A	D	A	B
Phosphoric Acid (crude)	D	B	D	A	D	A	B
Phosphoric Acid (molten)	*	*	A	*	*	*	*
Phosphoric Acid (S40%)	D	B	B	A	C	A	B
Phosphoric Acid Anhydride	D	*	A	*	*	*	*
Phosphorus	*	*	*	A	*	*	*
Phosphorus Trichloride	D	A	D	A	*	A	*
Photographic Developer	A	B	A	A	B	A	*
Photographic Solutions	B	A	B	A	A	B	A
Phthalic Acid	D	A	A	A	B	A	B
Phthalic Anhydride	D	A	A	A	*	A	*
Picric Acid	C	B	A	A	D	A	C

LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Media		EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon
Potash (Potassium Carbonate)	A	A	A	*	*	A	A
Potassium Bicarbonate	A	A	A	A	A	A	A
Potassium Bromide	A	A	A	A	A	A	A
Potassium Chlorate	A	A	A	A	B	A	C
Potassium Chloride	A	A	A	A	A	A	A
Potassium Chromate	A	A	A	A	*	A	B
Potassium Cyanide Solutions	A	A	B	A	A	A	A
Potassium Dichromate	A	A	A	A	A	A	B
Potassium Ferricyanide	D	A	A	A	*	A	B
Potassium Ferrocyanide	D	A	A	A	*	A	B
Potassium Hydroxide (Caustic Potash)	B	A	B	A	C	B	C
Potassium Hypochlorite	A	A	B	A	*	*	B
Potassium Iodide	A	A	A	A	*	A	A
Potassium Nitrate	A	A	A	A	A	A	B
Potassium Oxalate	*	*	*	A	*	*	*
Potassium Permanganate	C	A	A	A	*	A	D
Potassium Sulfate	A	A	A	A	A	A	A
Potassium Sulfide	A	A	A	A	A	A	A
Propane (liquefied)	A	D	C	A	D	A	A
Propylene	D	D	D	A	D	A	*
Propylene Glycol	A	A	C	A	A	A	A
Pyridine	D	B	D	A	D	D	C
Pyrogallic Acid	*	B	A	A	*	A	*
Resorcinal	*	B	D	A	*	A	D
Rosins	A	*	A	A	A	A	A
Rum	A	A	A	*	A	A	A
Rust Inhibitors	A	*	C	*	*	A	*
Salad Dressings	A	*	*	*	*	A	A
Salicylic Acid	B	A	*	A	*	A	A
Salt Brine (NaCl saturated)	A	A	A	A	A	A	A
Sea Water	A	A	B	A	A	A	A
Shellac (Bleached)	A	A	B	A	*	A	A
Shellac (Orange)	A	A	D	A	*	A	A
Silicone	A	A	A	A	C	A	A
Silver Bromide	*	*	*	A	*	*	*
Silver Nitrate	B	A	A	A	A	A	A
Soap Solutions	A	A	B	A	A	A	A
Soda Ash (see Sodium Carbonate)	A	A	A	A	A	A	B
Sodium Acetate	B	A	B	A	D	D	B
Sodium Aluminate	A	A	A	A	*	A	A
Sodium Benzoate	B	A	A	A	*	A	B
Sodium Bicarbonate	A	A	A	A	A	A	A
Sodium Bisulfate	B	A	A	A	A	A	A
Sodium Bisulfite	A	A	A	A	A	A	C
Sodium Borate (Borax)	A	A	A	A	A	A	A
Sodium Bromide	*	A	A	A	*	A	B
Sodium Carbonate	A	A	A	A	A	A	B
Sodium Chlorate	B	A	A	A	C	A	D
Sodium Chloride	A	A	A	A	A	A	A
Sodium Chromate	A	*	A	A	*	A	C
Sodium Cyanide	A	A	A	A	A	A	A
Sodium Ferrocyanide	A	A	A	A	*	A	*
Sodium Fluoride	A	A	A	A	*	A	B
Sodium Hydrosulfite	C	B	B	A	C	A	A
Sodium Hydroxide (20%)	A	B	B	A	A	C	A
Sodium Hydroxide (50%)	A	B	B	A	A	D	A
Sodium Hydroxide (80%)	D	B	B	A	A	D	C
Sodium Hypochlorite (<20%)	B	B	C	A	B	A	D
Sodium Hypochlorite (100%)	D	B	C	A	B	A	D
Sodium Hyposulfate	*	*	C	A	*	*	*
Sodium Metaphosphate	A	A	B	A	A	A	A
Sodium Metasilicate	A	A	A	A	*	A	*
Sodium Nitrate	A	A	B	A	D	A	A
Sodium Perborate	B	A	B	A	B	A	B
Sodium Peroxide	B	A	B	A	D	A	A
Sodium Polyphosphate	A	A	B	A	D	A	A
Sodium Silicate	A	A	A	A	A	A	A
Sodium Sulfate	A	A	A	A	A	A	A

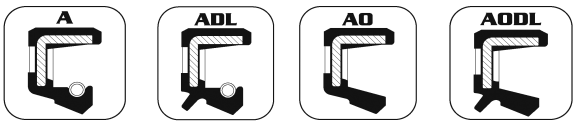
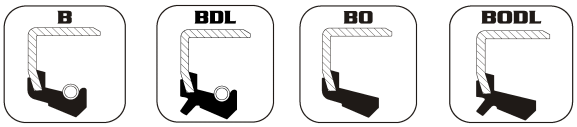
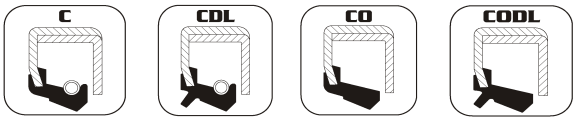
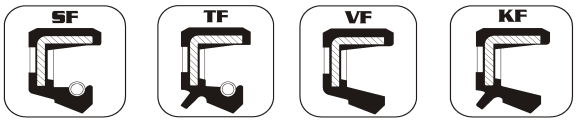
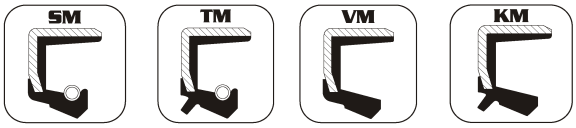
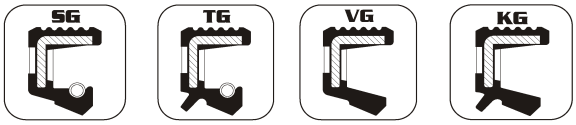
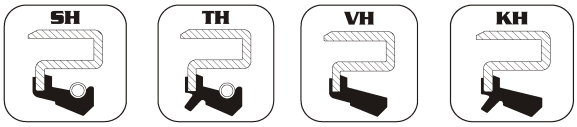
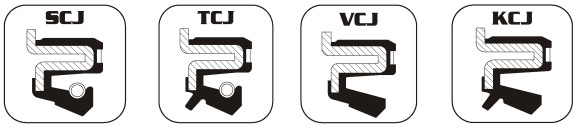
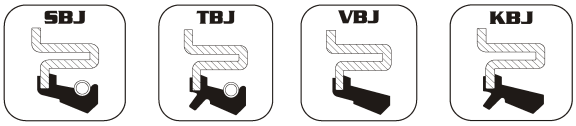
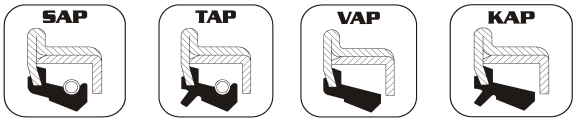
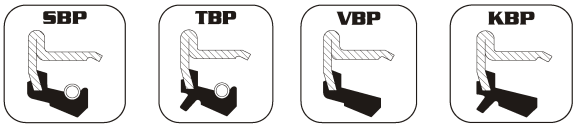
LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Media	Nitrile (NBR)	EPDM	Neoprene	Teflon® (PTFE)	Silicone	Viton® (FPM)	Nylon	
Sodium Sulfide	A	A	A	A	A	A	A	
Sodium Sulfite	A	A	A	A	A	A	D	
Sodium Tetraborate	A	A	B	A	A	A	A	
Sodium Thiosulfate (hypo)	B	A	A	A	A	A	B	
Sorghum	A	*	A	*	*	A	A	
Soy Sauce	A	*	A	*	*	A	A	
Stannic Chloride	A	A	C	A	B	A	B	
Stannic Fluoborate	A	*	A	*	*	A	*	
Stannous Chloride	A	C	A	A	B	A	C	
Starch	A	A	A	A	*	A	A	
Stearic Acid	B	B	B	A	B	A	A	
Stoddard Solvent	A	D	C	A	D	A	A	
Styrene	D	D	D	A	D	B	A	
Sugar (Liquids)	A	A	A	A	A	A	A	
Sulfate (Liquors)	A	A	B	A	B	A	B	
Sulfur Chloride	D	D	D	A	C	A	A	
Sulfur Dioxide	D	A	B	A	B	A	C	
Sulfur Dioxide (dry)	D	A	D	A	B	A	B	
Sulfur Hexafluoride	B	B	A	*	B	*	B	
Sulfur Trioxide	D	C	D	A	B	A	D	
Sulfur Trioxide (dry)	D	C	D	A	B	A	A	
Sulfuric Acid (<10%)	A	A	B	A	C	A	C	
Sulfuric Acid (10-75%)	B	B	B	A	D	A	D	
Sulfuric Acid (75-100%)	C	B	D	A	D	A	D	
Sulfuric Acid (cold concentrated)	D	C	D	A	D	B	D	
Sulfuric Acid (hot concentrated)	D	D	D	A	D	A	D	
Sulfurous Acid	B	B	C	A	D	A	D	
Sulfuryl Chloride	*	*	*	A	*	*	*	
Tallow	A	A	B	A	*	A	A	
Tannic Acid	A	A	A	A	B	A	C	
Tanning Liquors	B	B	A	A	B	A	A	
Tartaric Acid	A	B	A	A	A	A	B	
Tetrachloroethane	D	D	D	A	D	A	C	
Tetrachloroethylene	D	D	D	A	D	A	A	
Tetrahydrofuran	D	D	D	A	D	D	A	
Tin Salts	A	B	*	A	B	A	*	
Toluene (Toluol)	D	D	D	A	D	C	A	
Tomato Juice	A	A	A	A	*	A	A	
Trichloroacetic Acid	*	B	D	A	D	C	C	
Trichloroethane	D	D	D	A	D	A	C	
Trichloroethylene	D	D	D	A	D	A	C	
Trichloropropane	D	*	A	A	*	A	*	
Tricresylphosphate	D	A	C	A	C	A	A	
Triethylamine	C	A	A	A	*	D	A	
Trisodium Phosphate	A	A	A	A	A	A	A	
Turpentine	*	D	D	A	D	A	B	
Urea	B	A	B	A	B	A	A	
Uric Acid	*	*	A	A	*	*	A	
Urine	A	A	D	A	*	A	B	
Varnish	B	D	D	A	D	A	A	
Vegetable Juice	A	A	*	A	B	A	A	
Vinegar	B	A	B	A	A	A	A	
Vinyl Acetate	D	B	D	A	D	A	*	
Vinyl Chloride	D	C	D	A	*	A	A	
Water, Acid, Mine	A	A	C	A	B	A	A	
Water, Deionized	A	A	A	A	*	A	A	
Water, Distilled	A	A	A	A	C	A	A	
Water, Fresh	A	A	A	A	B	A	A	
Water, Salt	A	A	A	A	B	A	A	
Weed Killers	A	*	C	*	A	A	A	
Whey	A	*	*	A	*	A	*	
Whiskey & Wines	A	A	C	A	A	A	A	
White Liquor (Pulp Mill)	A	*	A	A	A	A	A	
White Water (Paper Mill)	*	*	A	*	*	A	A	
Xylene	D	D	D	A	D	B	A	
Zinc Chloride	A	A	A	A	B	A	A	
Zinc Hydrosulfite	A	A	A	A	*	*	A	
Zinc Sulfate	A	A	A	A	A	A	A	

LEGEND: A - Excellent B - Good C - Fair D - Severe Effect * - Insufficient Data

Harwal design capabilities

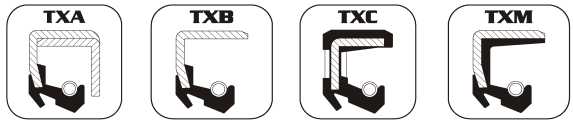
Virtually any design is available, including custom designs. Shown here are the most widely used designs and configurations. See page 22 for helix designs.

Rubber covered O.D. improves sealing ability at the housing, and is kind to softer materials. The "A" and "ADL" styles will hold up in low-pressure applications. The "AO" and "AODL" are for non-pressure applications only. **Stainless steel is available on special request.**	
Precision ground O.D. with a lead-in chamfer to help ease the installation. Does not have the sealability around the O.D. like the rubber covered and is also not as kind to softer housing materials. **Stainless steel is available on special request.**	
Precision ground O.D. with the addition of an inner case that provides increased structural rigidity and durability. This style is more often used in large bore diameters or heavy duty applications. **Stainless steel is available on special request.**	
Rubber covered O.D. improves sealing ability at the housing, and is kind to softer materials. This seal type offers an additional rubber lining that fully protects the inner case from rusting or corroding which could contaminate the sealed media. **Stainless steel is available on special request.**	
Precision ground O.D. with a lead-in chamfer to help ease the installation. This seal type offers an additional rubber lining that fully protects the inner case from rusting or corroding which could contaminate the sealed media. **Stainless steel is available on special request.**	
Ribbed O.D. for use in applications where the housing material is subject to high thermal expansion. This seal type is also used when press fitting into a housing where installation is usually difficult. **Stainless steel is available on special request.**	
Precision ground O.D. with added structural rigidity particularly when there is a large radial seal width. This seal type also allows for installation from both sides. **Stainless steel is available on special request.**	
Rubber covered O.D. with a flange will allow easy installation or replacement . These features also give additional rigidity and restrict the installation depth into the housing. **Stainless steel is available on special request.**	
Precision ground O.D. with a flange will allow easy installation or replacement . These features also give additional rigidity and restrict the installation depth into the housing. **Stainless steel is available on special request.**	
Precision ground and reinforced O.D. includes a minimum clearance flange that allows for an easy installation or replacement. The flange also restricts the installation depth into the housing. **Stainless steel is available on special request.**	
Precision ground O.D. includes a minimum clearance flange that allows for an easy installation or replacement. The flange also restricts the installation depth into the housing. **Stainless steel is available on special request.**	

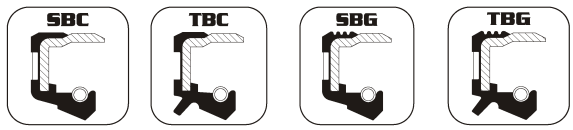
Harwal design capabilities

Virtually any design is available, including custom designs. Shown here are the most widely used designs and configurations. See page 22 for helix designs.

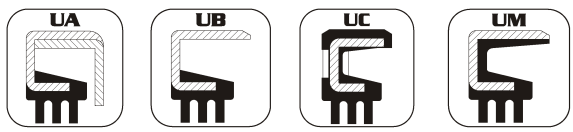
Precision ground or rubber covered O.D. available. This lip design includes a cavity to allow pre-lubrication of the seal. This will help during the initial dry running. The inward-facing double lip is perfect for applications where space is limited and a secondary lip is required. **Stainless steel is available on special request.**



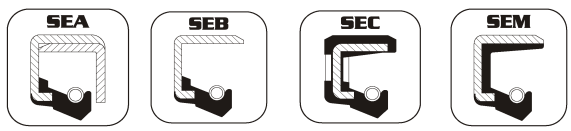
This design features a 50/50 metal / rubber O.D. to provide the metal-to-metal press fit and the sealing capabilities of a rubber O.D. into one simple design. This seal design will counter rough or worn housings.
Stainless steel is available on special request.



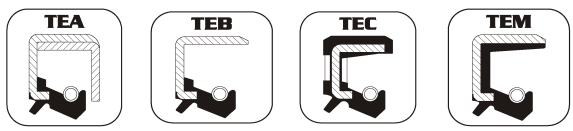
Precision ground or rubber covered O.D. with a triple flat lip design is for use in heavy dirt applications. These will commonly be found in agricultural equipment.
Stainless steel is available on special request.



The metal case of this design is extended into the lip flex section to strengthen the lip and allow for low to medium pressures depending on shaft speed and runout.
Stainless steel is available on special request.



The metal case of this design is extended into the lip flex section to strengthen the lip and allow for low to medium pressures depending on shaft speed and runout. An additional dust lip has been added to protect the sealing lip from large particles.
Stainless steel is available on special request.



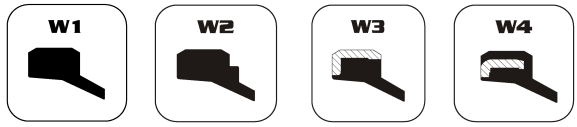
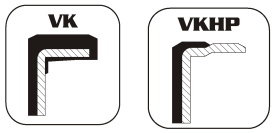
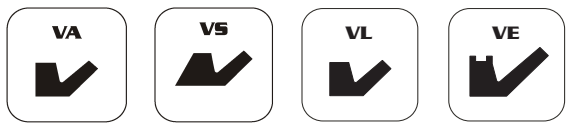
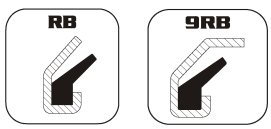
Dual opposing spring loaded sealing members. Designed for sealing and separating two different media.
Stainless steel is available on special request.

External Seals (Sealing against housing)

Designed to press fit onto the shaft of the housing, the external lip type performs and has the same design characteristics as standard radial lip seals.
Stainless steel is available on special request.

Harwal design capabilities

Virtually ANY design is available, even custom designs, shown here are the most widely used designs and configuations.

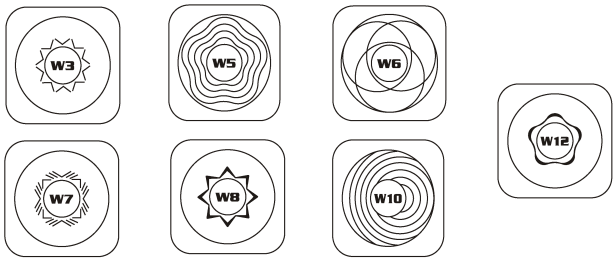
Designed for applications where there is a reciprocating shaft. This seal type will act as a dust wiper or scraper. Primarily used in hydraulic or pneumatic applications. **Stainless steel is available on special request.**	
Designed for static applications to act as a plug or barrier. The VK type is for applications that do not have pressure above 7psi. The VK HP type is designed to be able to handle pressure up to 50psi. **Stainless steel is available on special request.**	
Designed for reciprocating or static applications to retain fluid or act as a dust wiper/scraper. Made out of solid 90 shore polyurethane. These types are flexible, have good abrasion resistance, and are considerably durable.	
VA, VS, VL & VE styles are designed to be fixed on the shaft, sealing axially against a perpendicular counter face.	
RB and 9RB styles perform in the same way as the VA and VS styles but have the added feature of a metal face for protection. **Stainless steel is available on special request.**	

Harwal helix capabilities:

Adding a helix design to an oil seal can improve the performance of the primary sealing lip. The helix causes a pumping action to push any medium back towards the fluid side. Specific designs are available for bi-directional, left, and right hand shaft rotations.

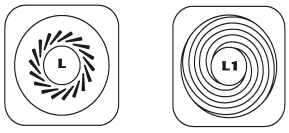
Bi-directional:

For use in applications where the shaft rotates left and/or right. and/or



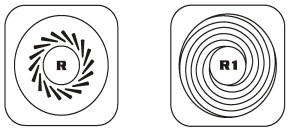
Left only:

For use in applications where the shaft rotates to the left.



Right only:

For use in applications where the shaft rotates to the right.



Metric Shaft Seals
Complete Size Listing

6,740 different sizes and styles.

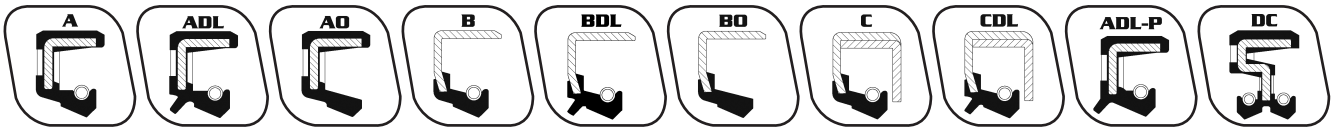
Nitrile price breaks at:
50, 100, 250, 500 and 1,000 pcs.*
Viton® price breaks at:
10, 25, 50, 100, 250, 500, 1,000 pcs.*

*Custom price breaks available, please call us with your needs.
Harwal will beat any competitors price.

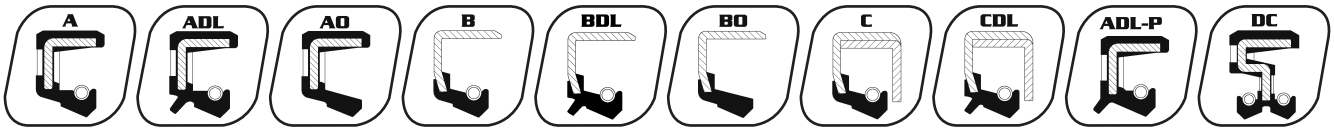
Reference Numbers for Metric Sizes
Harwal seals are designated by the actual hardware dimensions.
The capital letters refer to type. The most common seal types can be found at the top of the listing on each page. See pages 20-22 for additional seal types.

Shaft	Bore	Width	Type	Mat.
02	09	03	AO	NBR
03	10	06	AO	NBR
3.5	09	03	AO	NBR
04	08	02	AO	NBR
04	08	02	BO	NBR
↓	↓	↓	↓	↓
shaft diameter in mm	housing bore in mm	width in mm	seal type	material

Can't find the size or style you are looking for?
Harwal can make almost ANY seal in 2 weeks!



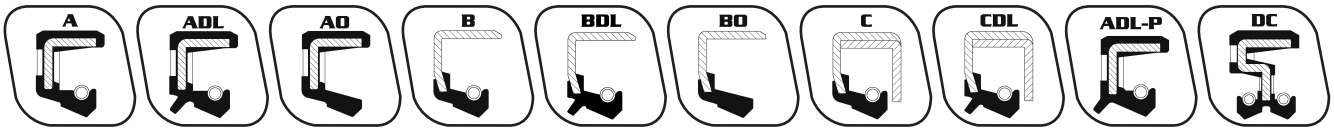
Shaft	Bore	Width	Type	Mat.
02	09	03	AO	NBR
03	10	06	AO	NBR
3.5	09	03	AO	NBR
04	08	02	AO	NBR
04	08	02	BO	NBR
04	**08**	**02**	**BO**	**FPM**
04	09	3.2	AO	NBR
04	10	04	AO	NBR
04	11	02	AO	NBR
04	11	06	A	NBR
04	**11**	**06**	**A**	**FPM**
04	12	06	A	NBR
04	**12**	**06**	**A**	**FPM**
04	16	07	ADL	NBR
4.5	17	07	ADL	NBR
4.8	22	07	A	NBR
05	09	02	AO	NBR
05	09	02	BO	NBR
05	09	03	AO	NBR
05	10	02	AO	NBR
05	11	02	AO	NBR
05	11	03	AO	NBR
05	14	05	BODL	NBR
05	14.5	07	ADL	NBR
05	15	06	A	NBR
05	15	07	A	NBR
05	16	06	A	NBR
05	16	07	A	NBR
05	**16**	**07**	**A**	**FPM**
05	16	07	ADL	NBR
05	17	07	ADL	NBR
05	18	07	A	NBR
05	18	07	ADL	NBR
05	18	08	ADL	NBR
05	19	05	ADL	NBR
05	22	07	ADL	NBR
05	25	07	ADL	NBR
05	30	06	AODL	NBR
06	09	3.2	AO	NBR
06	10	02	AO	NBR
06	10	02	BO	NBR
06	**10**	**02**	**BO**	**FPM**
06	11	03	AO	NBR
06	11	05	AO	NBR
06	12	02	AO	NBR
06	12	04	A	NBR
06	12	4.5	ADL	NBR
06	12	5.5	A	NBR
06	12	5.5	B	NBR
06	13	4.5	BO	NBR
06	14	06	A	NBR
06	**14**	**06**	**A**	**FPM**
06	15	04	A	NBR
06	**15**	**04**	**A**	**FPM**
06	15	04	AO	NBR
06	15	06	A	NBR
06	16	05	A	NBR
06	**16**	**05**	**A**	**FPM**
06	16	05	ADL	NBR
06	16	06	A	NBR
06	**16**	**06**	**A**	**FPM**
06	16	07	A	NBR
06	**16**	**07**	**A**	**FPM**
06	16	07	ADL	NBR
06	17	06	A	NBR
06	17	07	A	NBR
06	18	05	A	NBR
06	18	06	A	NBR
06	18	07	A	NBR
06	18	07	ADL	NBR
06	19	04	A	NBR
06	19	06	A	NBR
06	**19**	**06**	**A**	**FPM**
06	19	06	ADL	NBR
06	19	07	A	NBR
06	**19**	**07**	**A**	**FPM**
06	19	07	ADL	NBR
06	20	5.5	AO	NBR
06	**20**	**06**	**A**	**FPM**
06	21	07	ADL	NBR
06	22	06	ADL	NBR
06	22	07	A	NBR
06	**22**	**07**	**A**	**FPM**
06	22	07	ADL	NBR
06	**22**	**07**	**ADL**	**FPM**
06	22	08	A	NBR
06	22	08	ADL	NBR
06	25	06	ADL	NBR
6.5	12	04	AO	NBR
6.5	14.5	07	ADL	NBR



Shaft	Bore	Width	Type	Mat.
07	11	02	AO	NBR
07	11	02	BO	NBR
07	**11**	**02**	**BO**	**FPM**
07	12	02	BO	NBR
07	13	03	AO	NBR
07	14	02	BO	NBR
07	**14**	**02**	**BO**	**FPM**
07	14	04	ADL	NBR
07	14	05	A	NBR
07	15	05	A	NBR
07	16	04	ADL	NBR
07	16	07	A	NBR
07	**16**	**07**	**A**	**FPM**
07	16	07	ADL	NBR
07	18	05	ADL	NBR
07	18	07	A	NBR
07	18	08	ADL	NBR
07	19	06	A	NBR
07	19	07	ADL	NBR
07	20	06	A	NBR
07	22	06	ADL	NBR
07	22	07	A	NBR
07	**22**	**07**	**A**	**FPM**
07	22	07	ADL	NBR
07	**22**	**07**	**ADL**	**FPM**
07	22	08	A	NBR
07	26	5.5	ADL	NBR
07	29	07	ADL	NBR
08	12	03	AO	NBR
08	**12**	**03**	**AO**	**FPM**
08	13	3.5	AO	NBR
08	14	04	A	NBR
08	**14**	**04**	**A**	**FPM**
08	14	04	ADL	NBR
08	14	04	AO	NBR
08	**14**	**04**	**B**	**FPM**
08	14	06	B	NBR
08	**15**	**03**	**A**	**FPM**
08	15	03	AO	NBR
08	15	05	A	NBR
08	15	07	A	NBR
08	16	03	AO	NBR
08	16	04	A	NBR
08	16	06	A	NBR
08	16	06	ADL	NBR

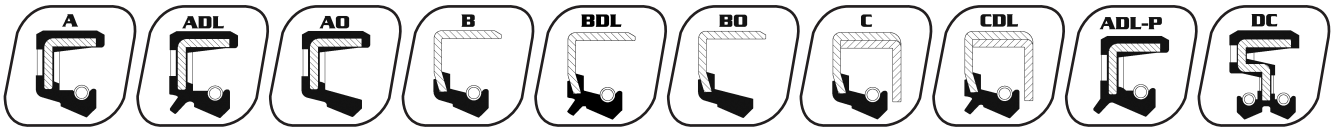
Shaft	Bore	Width	Type	Mat.
08	**16**	**06**	**ADL**	**FPM**
08	16	07	A	NBR
08	**16**	**07**	**A**	**FPM**
08	16	07	ADL	NBR
08	**16**	**07**	**ADL**	**FPM**
08	17	05	ADL	NBR
08	17	07	ADL	NBR
08	18	04	A	NBR
08	18	04	AO	NBR
08	18	05	A	NBR
08	**18**	**05**	**A**	**FPM**
08	18	05	ADL	NBR
08	**18**	**05**	**ADL**	**FPM**
08	18	06	A	NBR
08	18	07	A	NBR
08	18	07	ADL	NBR
08	18	08	ADL	NBR
08	19	6.5	A	NBR
08	**19**	**07**	**A**	**FPM**
08	19	07	ADL	NBR
08	20	05	ADL	NBR
08	20	07	A	NBR
08	20	08	A	NBR
08	**20**	**08**	**A**	**FPM**
08	20	08	ADL	NBR
08	21	06	ADL	NBR
08	22	04	ADL	NBR
08	22	05	A	NBR
08	22	06	ADL	NBR
08	22	06	ADL-P	NBR
08	**22**	**06**	**ADL-P**	**FPM**
08	22	07	A	NBR
08	**22**	**07**	**A**	**FPM**
08	22	07	ADL	NBR
08	**22**	**07**	**ADL**	**FPM**
08	22	07	ADL-P	NBR
08	22	08	A	NBR
08	22	10	A	NBR
08	23	07	ADL	NBR
08	24	07	A	NBR
08	**24**	**07**	**A**	**FPM**
08	24	07	ADL	NBR
08	25	07	ADL	NBR
08	25	08	ADL	NBR
08	26	07	ADL	NBR

NBR=Nitrile FPM=Viton®



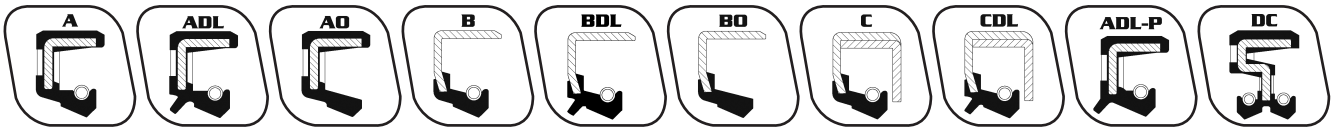
Shaft	Bore	Width	Type	Mat.
08	30	06	ADL	NBR
08	30	07	A	NBR
08	**30**	**07**	**A**	**FPM**
09	13	03	AO	NBR
09	15	03	AO	NBR
09	15	05	AODL	NBR
09	16	03	AO	NBR
09	16	04	A	NBR
09	16	05	A	NBR
09	17	4.5	B	NBR
09	18	03	AO	NBR
09	18	06	A	NBR
09	18	07	A	NBR
09	18	07	ADL	NBR
09	19	04	A	NBR
09	19	05	ADL	NBR
09	20	06	ADL-P	NBR
09	20	07	ADL	NBR
09	20	09	ADL	NBR
09	21	9.5	ADL	NBR
09	22	07	A	NBR
09	**22**	**07**	**A**	**FPM**
09	22	07	ADL	NBR
09	**22**	**07**	**ADL**	**FPM**
09	24	07	A	NBR
09	**24**	**07**	**A**	**FPM**
09	24	07	ADL	NBR
09	26	07	A	NBR
09	**26**	**07**	**A**	**FPM**
09	28	08	A	NBR
09	29	07	ADL	NBR
09	30	07	A	NBR
10	14	03	AO	NBR
10	**14**	**03**	**AO**	**FPM**
10	14	03	BO	NBR
10	14	03	BO-P	NBR
10	15	03	BO	NBR
10	16	04	A	NBR
10	**16**	**04**	**A**	**FPM**
10	16	04	AO	NBR
10	16	05	A	NBR
10	16	06	B	NBR
10	16	07	ADL	NBR
10	16.5	04	A	NBR
10	17	03	AO	NBR

Shaft	Bore	Width	Type	Mat.
10	**17**	**03**	**AO**	**FPM**
10	17	04	AO	NBR
10	17	05	B	NBR
10	17	05	BO	NBR
10	17	06	A	NBR
10	17	07	ADL	NBR
10	18	04	A	NBR
10	18	04	ADL	NBR
10	18	05	A	NBR
10	18	05	ADL	NBR
10	18	06	A	NBR
10	18	06	ADL	NBR
10	**18**	**06**	**ADL**	**FPM**
10	**18**	**07**	**A**	**FPM**
10	18	07	ADL	NBR
10	18	08	ADL	NBR
10	18	09	A	NBR
10	19	03	AO	NBR
10	19	04	A	NBR
10	19	04	ADL	NBR
10	19	06	AODL	NBR
10	19	07	A	NBR
10	**19**	**07**	**A**	**FPM**
10	19	07	ADL	NBR
10	**19**	**07**	**ADL**	**FPM**
10	19	08	A	NBR
10	20	04	A	NBR
10	20	04	ADL	NBR
10	20	04	AO	NBR
10	20	4.5	A	NBR
10	20	05	A	NBR
10	20	05	ADL	NBR
10	20	06	A	NBR
10	**20**	**06**	**A**	**FPM**
10	20	06	ADL	NBR
10	20	06	ADL-P	NBR
10	**20**	**06**	**ADL-P**	**FPM**
10	20	07	A	NBR
10	20	07	ADL	NBR
10	**20**	**07**	**ADL**	**FPM**
10	21	04	AO	NBR
10	21	05	A	NBR
10	21	05	ADL	NBR
10	21	07	ADL	NBR
10	22	03	AO	NBR



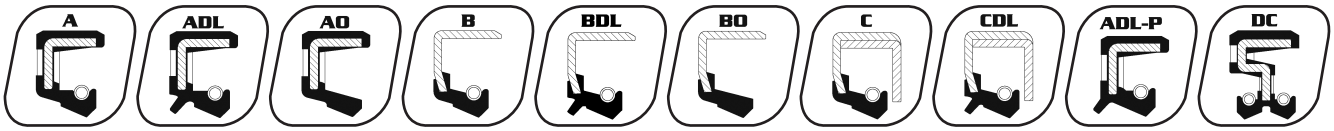
Shaft	Bore	Width	Type	Mat.
10	22	04	ADL	NBR
10	22	05	ADL	NBR
10	22	06	A	NBR
10	**22**	**06**	**A**	**FPM**
10	22	06	ADL	NBR
10	22	06	ADL-P	NBR
10	22	07	A	NBR
10	**22**	**07**	**A**	**FPM**
10	22	07	ADL	NBR
10	**22**	**07**	**ADL**	**FPM**
10	22	08	A	NBR
10	**22**	**08**	**A**	**FPM**
10	22	08	ADL	NBR
10	22	08	B	NBR
10	23	07	ADL	NBR
10	23	08	ADL	NBR
10	23	09	ADL	NBR
10	23.5	08	ADL	NBR
10	24	06	ADL	NBR
10	24	07	A	NBR
10	**24**	**07**	**A**	**FPM**
10	24	07	ADL	NBR
10	**24**	**07**	**ADL**	**FPM**
10	25	05	ADL	NBR
10	25	06	A	NBR
10	25	06	ADL	NBR
10	25	07	A	NBR
10	25	07	ADL	NBR
10	**25**	**07**	**ADL**	**FPM**
10	25	07	ADL-P	NBR
10	25	10	ADL	NBR
10	26	03	BO	NBR
10	26	07	A	NBR
10	**26**	**07**	**A**	**FPM**
10	26	07	ADL	NBR
10	**26**	**07**	**ADL**	**FPM**
10	26	08	ADL	NBR
10	28	07	A	NBR
10	**28**	**07**	**A**	**FPM**
10	28	07	ADL	NBR
10	**28**	**08**	**A**	**FPM**
10	30	06	ADL	NBR
10	30	07	A	NBR
10	30	07	ADL	NBR
10	**30**	**07**	**ADL**	**FPM**
10	30	08	A	NBR
10	30	10	A	NBR
10	30	12	ADL	NBR
10	40	07	ADL	NBR
10.5	15	03	AO	NBR
10.8	20	09	AO	NBR
11	16	03	AO	NBR
11	17	04	A	NBR
11	**17**	**04**	**A**	**FPM**
11	17	04	ADL	NBR
11	**17**	**04**	**ADL**	**FPM**
11	18	04	ADL	NBR
11	19	05	ADL	NBR
11	19	06	ADL	NBR
11	19	07	A	NBR
11	20	04	ADL	NBR
11	20	4.5	B	NBR
11	22	04	AO	NBR
11	22	04	ADL	NBR
11	22	07	A	NBR
11	**22**	**07**	**A**	**FPM**
11	22	07	ADL	NBR
11	22	07	ADL-P	NBR
11	22	08	A	NBR
11	23	07	ADL	NBR
11	24	07	ADL	NBR
11	25	07	ADL	NBR
11	26	07	A	NBR
11	**26**	**07**	**A**	**FPM**
11	26	07	ADL	NBR
11	**26**	**07**	**ADL**	**FPM**
11	28	07	ADL	NBR
11	29	07	CDL	NBR
11	30	07	A	NBR
11	30	07	ADL	NBR
11	30	08	A	NBR
11	30	10	A	NBR
11.6	19	06	A	NBR
12	16	03	AO	NBR
12	**16**	**03**	**AO**	**FPM**
12	18	03	AO	NBR
12	**18**	**03**	**AO**	**FPM**
12	18	03	BO	NBR
12	**18**	**03**	**BO**	**FPM**
12	18	04	ADL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
12	18	4.5	A	NBR
12	18	4.5	ADL	NBR
12	**18**	**4.5**	**A**	**FPM**
12	18	05	A	NBR
12	18	5.5	AO	NBR
12	18	06	B	NBR
12	18.5	03	AO	NBR
12	19	03	AO	NBR
12	**19**	**03**	**AO**	**FPM**
12	19	4.5	A	NBR
12	19	05	A	NBR
12	**19**	**05**	**A**	**FPM**
12	19	05	ADL	NBR
12	**19**	**05**	**ADL**	**FPM**
12	19	07	ADL	NBR
12	19.5	4.5	A	NBR
12	20	04	A	NBR
12	20	04	ADL	NBR
12	20	05	A	NBR
12	20	05	ADL	NBR
12	**20**	**05**	**A**	**FPM**
12	**20**	**05**	**ADL**	**FPM**
12	20	07	A	NBR
12	20	07	ADL	NBR
12	21	04	A	NBR
12	21	04	ADL	NBR
12	21	05	A	NBR
12	21	05	ADL	NBR
12	21	07	ADL	NBR
12	22	04	A	NBR
12	**22**	**04**	**A**	**FPM**
12	22	4.5	A	NBR
12	22	05	A	NBR
12	22	05	ADL	NBR
12	22	5.5	ADL-P	NBR
12	22	06	A	NBR
12	22	06	ADL	NBR
12	22	06	ADL-P	NBR
12	22	6.5	A	NBR
12	22	07	A	NBR
12	**22**	**07**	**A**	**FPM**
12	22	07	ADL	NBR
12	**22**	**07**	**ADL**	**FPM**
12	22	07	ADL-P	NBR
12	22	07	B	NBR

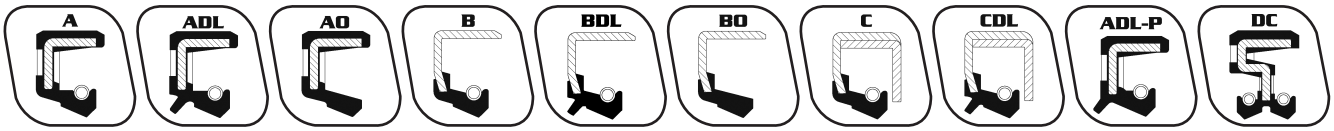
Shaft	Bore	Width	Type	Mat.
12	22	07	DC	NBR
12	22	08	A	NBR
12	22	09	ADL	NBR
12	22.5	07	ADL	NBR
12	23	08	ADL	NBR
12	24	04	AO	NBR
12	24	4.5	A	NBR
12	24	06	A	NBR
12	24	06	ADL	NBR
12	24	06	ADL-P	NBR
12	**24**	**06**	**ADL-P**	**FPM**
12	24	6.5	A	NBR
12	**24**	**6.5**	**A**	**FPM**
12	24	07	A	NBR
12	**24**	**07**	**A**	**FPM**
12	24	07	ADL	NBR
12	**24**	**07**	**ADL**	**FPM**
12	24	07	ADL-P	NBR
12	**24**	**07**	**ADL-P**	**FPM**
12	24	08	A	NBR
12	24	08	ADL	NBR
12	24	10	A	NBR
12	24	10	ADL	NBR
12	25	4.5	A	NBR
12	25	4.5	ADL	NBR
12	25	05	A	NBR
12	**25**	**05**	**A**	**FPM**
12	25	05	ADL	NBR
12	25	06	ADL	NBR
12	25	07	A	NBR
12	**25**	**07**	**A**	**FPM**
12	25	07	ADL	NBR
12	**25**	**07**	**ADL**	**FPM**
12	25	07	ADL-P	NBR
12	25	08	A	NBR
12	**25**	**08**	**A**	**FPM**
12	25	08	ADL	NBR
12	25	10	ADL	NBR
12	25.5	07	ADL	NBR
12	26	06	A	NBR
12	26	07	A	NBR
12	**26**	**07**	**A**	**FPM**
12	26	07	ADL	NBR
12	26	08	A	NBR
12	26	08	ADL	NBR



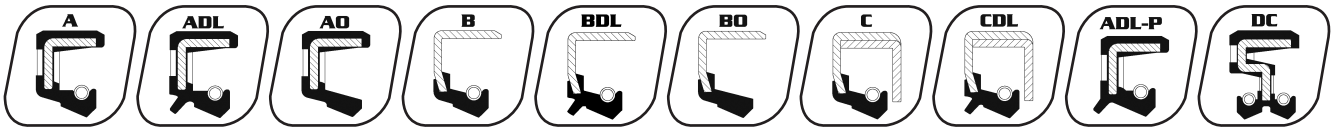
Shaft	Bore	Width	Type	Mat.
12	26	10	ADL	NBR
12	27	07	ADL	NBR
12	28	05	A	NBR
12	28	07	A	NBR
12	**28**	**07**	**A**	**FPM**
12	28	07	ADL	NBR
12	**28**	**07**	**ADL**	**FPM**
12	28	07	ADL-P	NBR
12	28	08	A	NBR
12	28	08	ADL	NBR
12	29	07	ADL	NBR
12	30	05	A	NBR
12	30	06	A	NBR
12	30	06	AO	NBR
12	30	07	A	NBR
12	**30**	**07**	**A**	**FPM**
12	30	07	ADL	NBR
12	**30**	**07**	**ADL**	**FPM**
12	30	08	ADL	NBR
12	30	09	ADL	NBR
12	30	10	A	NBR
12	**30**	**10**	**A**	**FPM**
12	32	4.5	BDL	NBR
12	32	05	A	NBR
12	32	05	ADL	NBR
12	32	07	A	NBR
12	**32**	**07**	**A**	**FPM**
12	32	07	ADL	NBR
12	**32**	**07**	**ADL**	**FPM**
12	32	07	ADL-P	NBR
12	32	10	A	NBR
12	34	07	ADL	NBR
12	35	4.3	A	NBR
12	**35**	**05**	**DC**	**FPM**
12	35	06	ADL	NBR
12	**35**	**07**	**A**	**FPM**
12	35	07	ADL	NBR
12	35	10	A	NBR
12	36	07	ADL	NBR
12	37	07	A	NBR
12	37	07	ADL	NBR
12	37	10	A	NBR
12	38	07	ADL	NBR
12	42	08	ADL	NBR
12	45	07	A	NBR

Shaft	Bore	Width	Type	Mat.
12	45	07	ADL	NBR
12	50	05	ADL	NBR
12.5	18.5	05	AO	NBR
12.5	19	05	A	NBR
12.5	20	05	A	NBR
12.5	20	06	A	NBR
12.5	22	05	A	NBR
12.5	22	06	A	NBR
12.5	22.5	05	A	NBR
12.5	23.5	07	ADL	NBR
12.5	25	08	ADL	NBR
12.7	26	06	A	NBR
13	19	03	AO	NBR
13	19	04	AO	NBR
13	20	05	AO	NBR
13	22	04	ADL	NBR
13	22	05	A	NBR
13	22	05	ADL	NBR
13	22	05	B	NBR
13	22	06	A	NBR
13	22	07	ADL	NBR
13	23	6.5	B	NBR
13	24	07	A	NBR
13	24	07	ADL	NBR
13	25	04	A	NBR
13	25	05	A	NBR
13	25	07	A	NBR
13	25	07	ADL	NBR
13	25	08	ADL	NBR
13	26	05	A	NBR
13	26	07	A	NBR
13	**26**	**07**	**A**	**FPM**
13	26	07	ADL	NBR
13	**26**	**07**	**ADL**	**FPM**
13	26	09	A	NBR
13	**26**	**09**	**ADL**	**FPM**
13	28	07	A	NBR
13	28	07	ADL	NBR
13	28	08	ADL	NBR
13	30	05	A	NBR
13	30	07	A	NBR
13	**30**	**07**	**A**	**FPM**
13	30	08	A	NBR
13	30	09	ADL	NBR
13	30	10	A	NBR

NBR=Nitrile FPM=Viton®



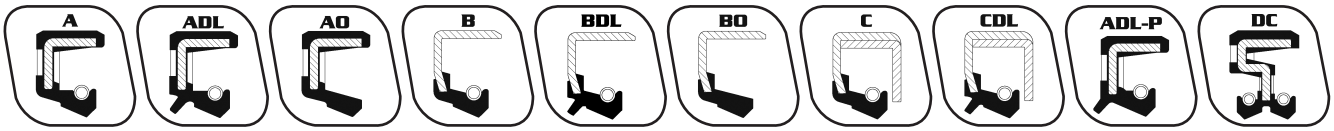
Shaft	Bore	Width	Type	Mat.
13	30	10	ADL	NBR
13	32	06	A	NBR
13	32	07	A	NBR
13	33	07	BDL	NBR
13	35	07	ADL	NBR
13	35	10	A	NBR
13.7	24	05	A	NBR
14	18	03	AO	NBR
14	**18**	**03**	**AODL**	**FPM**
14	20	03	AO	NBR
14	20	05	AO	NBR
14	20	07	ADL	NBR
14	20	12	AO	NBR
14	21	03	AO	NBR
14	21	04	A	NBR
14	22	03	AO	NBR
14	**22**	**04**	**A**	**FPM**
14	22	04	ADL	NBR
14	22	04	AO	NBR
14	22	05	A	NBR
14	22	06	AO	NBR
14	22	07	A	NBR
14	22	07	ADL	NBR
14	23	06	A	NBR
14	23.5	06	A	NBR
14	24	04	AO	NBR
14	24	05	A	NBR
14	24	05	ADL	NBR
14	**24**	**05**	**ADL**	**FPM**
14	24	06	ADL	NBR
14	24	07	A	NBR
14	**24**	**07**	**A**	**FPM**
14	24	07	ADL	NBR
14	**24**	**07**	**ADL**	**FPM**
14	24	07	ADL-P	NBR
14	24	08	ADL	NBR
14	25	05	A	NBR
14	25	05	ADL	NBR
14	25	07	A	NBR
14	25	07	ADL	NBR
14	25	08	A	NBR
14	25.5	07	ADL	NBR
14	26	07	A	NBR
14	26	07	ADL	NBR
14	**26**	**07**	**ADL**	**FPM**
14	26	08	ADL	NBR
14	**27**	**07**	**A**	**FPM**
14	27	07	ADL	NBR
14	28	06	A	NBR
14	28	06	ADL	NBR
14	28	07	A	NBR
14	**28**	**07**	**A**	**FPM**
14	28	07	ADL	NBR
14	**28**	**07**	**ADL**	**FPM**
14	28	07	ADL-P	NBR
14	28	08	ADL	NBR
14	**28**	**10**	**A**	**FPM**
14	28	10	ADL	NBR
14	29	07	ADL	NBR
14	30	03	AO	NBR
14	30	07	A	NBR
14	**30**	**07**	**A**	**FPM**
14	30	07	ADL	NBR
14	**30**	**07**	**ADL**	**FPM**
14	30	08	A	NBR
14	30	08	ADL	NBR
14	30	09	ADL	NBR
14	30	10	A	NBR
14	32	05	A	NBR
14	32	06	ADL	NBR
14	32	07	A	NBR
14	32	07	ADL	NBR
14	32	10	A	NBR
14	34	07	A	NBR
14	35	07	A	NBR
14	**35**	**07**	**A**	**FPM**
14	35	07	ADL	NBR
14	35	08	A	NBR
14	35	10	ADL	NBR
14	38	07	ADL	NBR
14	40	07	ADL	NBR
14.5	24	04	A	NBR
14.5	24.5	06	ADL	NBR
14.5	32	07	ADL	NBR
14.6	27	07	ADL	NBR
14.7	30	07	ADL	NBR
14.8	30	05	ADL	NBR
15	20	05	BO	NBR
15	20	05	BODL	NBR
15	21	02	BO	NBR



Shaft	Bore	Width	Type	Mat.
15	21	03	AO	NBR
15	**21**	**03**	**AO**	**FPM**
15	**21**	**03**	**AODL**	**FPM**
15	21	03	BO	NBR
15	21	04	A	NBR
15	21	04	ADL	NBR
15	21	04	AO	NBR
15	21	05	ADL	NBR
15	**22**	**03**	**AO**	**FPM**
15	**22**	**04**	**A**	**FPM**
15	22	04	AODL	NBR
15	22	05	ADL	NBR
15	22	07	A	NBR
15	23	03	AO	NBR
15	**23**	**03**	**AO**	**FPM**
15	23	04	ADL	NBR
15	23	05	ADL	NBR
15	23	07	ADL	NBR
15	24	4.5	AO	NBR
15	24	05	A	NBR
15	**24**	**05**	**A**	**FPM**
15	24	05	ADL	NBR
15	24	06	ADL	NBR
15	24	07	A	NBR
15	**24**	**07**	**A**	**FPM**
15	24	07	ADL	NBR
15	**24**	**07**	**ADL**	**FPM**
15	24	07	ADL-P	NBR
15	24	07	DC	NBR
15	24	08	A	NBR
15	25	03	AO	NBR
15	25	04	ADL	NBR
15	25	05	A	NBR
15	**25**	**05**	**A**	**FPM**
15	25	05	ADL	NBR
15	**25**	**05**	**ADL**	**FPM**
15	**25**	**05**	**BO**	**FPM**
15	25	06	A	NBR
15	25	06	ADL	NBR
15	25	06	ADL-P	NBR
15	**25**	**06**	**ADL-P**	**FPM**
15	25	07	A	NBR
15	25	07	ADL	NBR
15	**25**	**07**	**ADL**	**FPM**
15	25	07	ADL-P	NBR

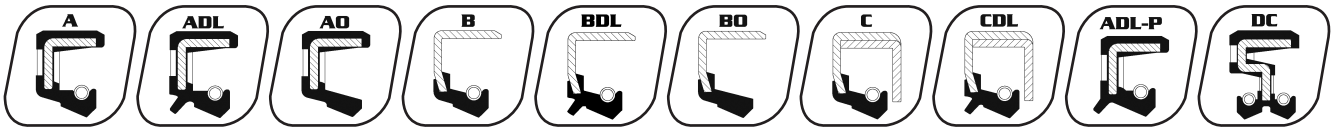
Shaft	Bore	Width	Type	Mat.
15	25	08	ADL	NBR
15	**25**	**10**	**A**	**FPM**
15	25.5	4.5	A	NBR
15	**25.5**	**4.5**	**A**	**FPM**
15	25.5	07	ADL	NBR
15	26	4.5	A	NBR
15	26	06	A	NBR
15	26	06	ADL	NBR
15	26	07	A	NBR
15	**26**	**07**	**A**	**FPM**
15	26	07	ADL	NBR
15	**26**	**07**	**ADL**	**FPM**
15	26	07	B	NBR
15	26	08	ADL	NBR
15	26	09	ADL	NBR
15	27	05	AO	NBR
15	27	07	A	NBR
15	**27**	**07**	**A**	**FPM**
15	27	07	ADL	NBR
15	**27**	**07**	**ADL**	**FPM**
15	28	03	BO	NBR
15	28	04	A	NBR
15	**28**	**05**	**A**	**FPM**
15	28	06	A	NBR
15	28	07	A	NBR
15	**28**	**07**	**A**	**FPM**
15	28	07	ADL	NBR
15	**28**	**07**	**ADL**	**FPM**
15	28	08	A	NBR
15	28	08	ADL	NBR
15	28	10	ADL	NBR
15	28.58	07	ADL	NBR
15	29	07	ADL	NBR
15	30	04	AO	NBR
15	30	4.5	A	NBR
15	30	05	A	NBR
15	30	05	ADL	NBR
15	30	5.5	A	NBR
15	**30**	**06**	**A**	**FPM**
15	30	07	A	NBR
15	**30**	**07**	**A**	**FPM**
15	30	07	ADL	NBR
15	**30**	**07**	**ADL**	**FPM**
15	30	07	ADL-P	NBR
15	30	07	DC	NBR

NBR=Nitrile FPM=Viton®



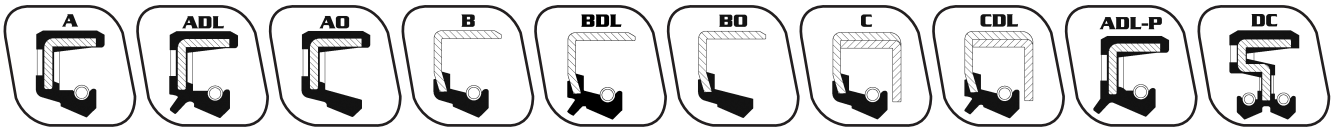
Shaft	Bore	Width	Type	Mat.
15	30	08	A	NBR
15	30	08	ADL	NBR
15	30	10	A	NBR
15	**30**	**10**	**A**	**FPM**
15	30	10	ADL	NBR
15	30	12	ADL	NBR
15	31	07	ADL	NBR
15	32	05	A	NBR
15	32	5.5	A	NBR
15	32	07	A	NBR
15	**32**	**07**	**A**	**FPM**
15	32	07	ADL	NBR
15	**32**	**07**	**ADL**	**FPM**
15	32	07	ADL-P	NBR
15	32	07	B	NBR
15	32	08	ADL	NBR
15	32	09	ADL	NBR
15	32	10	A	NBR
15	33	07	A	NBR
15	33	10	ADL	NBR
15	34	07	ADL	NBR
15	35	05	A	NBR
15	**35**	**05**	**A**	**FPM**
15	35	06	ADL	NBR
15	35	06	ADL-P	NBR
15	35	07	A	NBR
15	**35**	**07**	**A**	**FPM**
15	35	07	ADL	NBR
15	**35**	**07**	**ADL**	**FPM**
15	35	07	BDL	NBR
15	35	08	A	NBR
15	35	08	ADL	NBR
15	35	09	ADL	NBR
15	35	10	A	NBR
15	35	10	ADL	NBR
15	**35**	**10**	**ADL**	**FPM**
15	35.2	5.5	ADL	NBR
15	36	07	ADL	NBR
15	37	07	A	NBR
15	**37**	**07**	**A**	**FPM**
15	37	07	ADL	NBR
15	**37**	**07**	**ADL**	**FPM**
15	37	10	A	NBR
15	38	10	ADL	NBR
15	40	07	ADL	NBR

Shaft	Bore	Width	Type	Mat.
15	40	08	ADL	NBR
15	40	10	A	NBR
15	**40**	**10**	**A**	**FPM**
15	40	10	ADL	NBR
15	42	07	A	NBR
15	**42**	**07**	**A**	**FPM**
15	42	07	ADL	NBR
15	42	08	ADL	NBR
15	42	10	A	NBR
15	**42**	**10**	**A**	**FPM**
15	42	10	ADL	NBR
15	46	06	A	NBR
15	47	10	ADL	NBR
15	48	08	ADL	NBR
15	50	07	A	NBR
15.5	28	07	ADL	NBR
15.6	25.5	07	ADL	NBR
15.8	24	05	BDL	NBR
15.88	24	04	AO	NBR
16	20	2.5	BO	NBR
16	20	07	AO	NBR
16	21	03	BO	NBR
16	21	4.5	BDL	NBR
16	22	03	AO	NBR
16	**22**	**03**	**AO**	**FPM**
16	22	04	A	NBR
16	**22**	**04**	**A**	**FPM**
16	22	04	ADL	NBR
16	22	04	AO	NBR
16	22	07	A	NBR
16	22	07	ADL	NBR
16	22.2	04	A	NBR
16	23	04	ADL	NBR
16	24	03	AO	NBR
16	**24**	**03**	**AO**	**FPM**
16	**24**	**04**	**A**	**FPM**
16	24	04	AO	NBR
16	**24**	**04**	**AO**	**FPM**
16	24	05	A	NBR
16	**24**	**05**	**A**	**FPM**
16	24	06	B	NBR
16	24	6.5	ADL	NBR
16	24	07	A	NBR
16	**24**	**07**	**A**	**FPM**
16	24	07	ADL	NBR



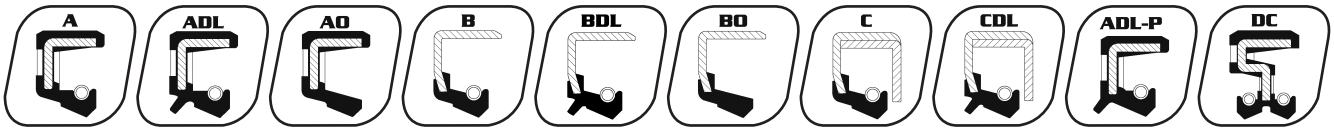
Shaft	Bore	Width	Type	Mat.
16	25	03	AO	NBR
16	**25**	**03**	**AO**	**FPM**
16	25	04	ADL	NBR
16	25	06	ADL	NBR
16	25	07	A	NBR
16	25	07	ADL	NBR
16	25	07	BDL	NBR
16	25.5	07	A	NBR
16	26	05	A	NBR
16	26	06	A	NBR
16	26	06	ADL	NBR
16	26	07	A	NBR
16	**26**	**07**	**A**	**FPM**
16	26	07	ADL	NBR
16	26	07	ADL-P	NBR
16	26	08	ADL	NBR
16	27	07	ADL	NBR
16	28	04	AO	NBR
16	28	05	A	NBR
16	28	06	ADL-P	NBR
16	28	07	A	NBR
16	**28**	**07**	**A**	**FPM**
16	28	07	ADL	NBR
16	**28**	**07**	**ADL**	**FPM**
16	28	07	ADL-P	NBR
16	28	08	ADL	NBR
16	28.58	07	ADL	NBR
16	29	07	ADL	NBR
16	30	4.5	A	NBR
16	**30**	**4.5**	**ADL**	**FPM**
16	30	4.5	ADL-P	NBR
16	30	06	B	NBR
16	30	07	A	NBR
16	**30**	**07**	**A**	**FPM**
16	30	07	ADL	NBR
16	**30**	**07**	**ADL**	**FPM**
16	30	08	A	NBR
16	30	08	ADL	NBR
16	30	10	A	NBR
16	**30**	**10**	**A**	**FPM**
16	31	07	ADL	NBR
16	32	07	A	NBR
16	**32**	**07**	**A**	**FPM**
16	32	07	ADL	NBR
16	**32**	**07**	**ADL**	**FPM**
16	32	07	B	NBR
16	**32**	**08**	**A**	**FPM**
16	32	10	A	NBR
16	**32**	**10**	**A**	**FPM**
16	33	11	A	NBR
16	34	10	ADL	NBR
16	35	07	A	NBR
16	**35**	**07**	**A**	**FPM**
16	35	07	ADL	NBR
16	**35**	**07**	**ADL**	**FPM**
16	35	08	A	NBR
16	35	09	ADL	NBR
16	35	09	ADL-P	NBR
16	35	10	A	NBR
16	**35**	**10**	**A**	**FPM**
16	36	07	ADL	NBR
16	37	07	ADL	NBR
16	38	07	A	NBR
16	40	05	A	NBR
16	40	07	ADL	NBR
16	40	10	A	NBR
16	40	10	ADL	NBR
16	**40**	**10**	**ADL-P**	**FPM**
16	42	06	A	NBR
16	42	07	ADL	NBR
16	42	10	ADL	NBR
16	47	08	ADL	NBR
16	48	07	ADL	NBR
16.5	28	08	ADL	NBR
17	23	03	AO	NBR
17	**23**	**03**	**AO**	**FPM**
17	23	03	AODL	NBR
17	23	04	AODL	NBR
17	24	2.5	AODL	NBR
17	24	03	AODL	NBR
17	24	04	ADL	NBR
17	24	04	AO	NBR
17	24	05	ADL	NBR
17	24	07	A	NBR
17	25	03	AO	NBR
17	**25**	**03**	**AO**	**FPM**
17	25	04	A	NBR
17	**25**	**04**	**A**	**FPM**
17	25	04	ADL	NBR
17	25	06	ADL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
17	25	07	A	NBR
17	25	07	ADL	NBR
17	26	02	AO	NBR
17	**26**	**03**	**AO**	**FPM**
17	26	06	A	NBR
17	**26**	**06**	**A**	**FPM**
17	26	06	ADL	NBR
17	26	07	A	NBR
17	27	06	A	NBR
17	27	06	ADL	NBR
17	27	07	A	NBR
17	27	07	ADL	NBR
17	**27**	**07**	**ADL**	**FPM**
17	27	08	ADL	NBR
17	27	10	ADL	NBR
17	28	04	A	NBR
17	28	05	A	NBR
17	**28**	**05**	**A**	**FPM**
17	**28**	**05**	**ADL**	**FPM**
17	28	06	A	NBR
17	28	06	ADL	NBR
17	**28**	**06**	**ADL**	**FPM**
17	28	07	A	NBR
17	**28**	**07**	**A**	**FPM**
17	28	07	ADL	NBR
17	**28**	**07**	**ADL**	**FPM**
17	28	07	ADL-P	NBR
17	28	08	A	NBR
17	**28**	**08**	**A**	**FPM**
17	28	08	ADL	NBR
17	28	08	DC	NBR
17	28.5	09	ADL	NBR
17	28.5	10	ADL	NBR
17	28.65	07	ADL	NBR
17	29	05	A	NBR
17	**29**	**05**	**A**	**FPM**
17	29	07	ADL	NBR
17	30	03	AO	NBR
17	30	05	A	NBR
17	**30**	**05**	**A**	**FPM**
17	30	05	ADL	NBR
17	30	06	A	NBR
17	30	06	ADL	NBR
17	30	06	ADL-P	NBR
17	30	07	A	NBR

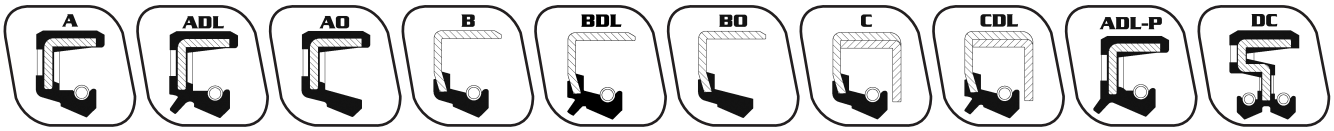
Shaft	Bore	Width	Type	Mat.
17	**30**	**07**	**A**	**FPM**
17	30	07	ADL	NBR
17	**30**	**07**	**ADL**	**FPM**
17	30	07	ADL-P	NBR
17	30	08	A	NBR
17	30	08	ADL	NBR
17	31	07	A	NBR
17	31	07	ADL	NBR
17	32	05	A	NBR
17	32	07	A	NBR
17	**32**	**07**	**A**	**FPM**
17	32	07	ADL	NBR
17	**32**	**07**	**ADL**	**FPM**
17	32	7.5	B	NBR
17	32	08	A	NBR
17	32	08	ADL	NBR
17	32	10	A	NBR
17	**32**	**10**	**A**	**FPM**
17	33	07	B	NBR
17	33	07	BDL	NBR
17	33	08	A	NBR
17	34	04	ADL	NBR
17	34	04	B	NBR
17	34	06	ADL	NBR
17	34	07	A	NBR
17	35	05	A	NBR
17	35	05	ADL	NBR
17	35	06	A	NBR
17	35	06	ADL	NBR
17	35	07	A	NBR
17	**35**	**07**	**A**	**FPM**
17	35	07	ADL	NBR
17	**35**	**07**	**ADL**	**FPM**
17	35	07	ADL-P	NBR
17	**35**	**07**	**B**	**FPM**
17	35	08	A	NBR
17	35	08	ADL	NBR
17	35	08	ADL-P	NBR
17	35	09	ADL	NBR
17	35	10	A	NBR
17	**35**	**10**	**A**	**FPM**
17	36	07	ADL	NBR
17	37	05	ADL	NBR
17	37	07	A	NBR
17	37	07	ADL	NBR



Shaft	Bore	Width	Type	Mat.
17	37	10	A	NBR
17	37	10	ADL	NBR
17	38	05	ADL	NBR
17	38	07	A	NBR
17	38	07	ADL	NBR
17	39	9.5	ADL	NBR
17	40	4.6	AODL	NBR
17	40	05	ADL	NBR
17	40	06	A	NBR
17	**40**	**06**	**A**	**FPM**
17	40	07	A	NBR
17	**40**	**07**	**A**	**FPM**
17	40	07	ADL	NBR
17	**40**	**07**	**ADL**	**FPM**
17	40	07	DC	NBR
17	40	08	A	NBR
17	40	08	ADL	NBR
17	40	8.5	A	NBR
17	40	10	A	NBR
17	**40**	**10**	**A**	**FPM**
17	40	10	ADL	NBR
17	42	05	A	NBR
17	42	07	A	NBR
17	47	07	A	NBR
17	**47**	**07**	**A**	**FPM**
17	47	07	ADL	NBR
17	47	08	A	NBR
17	47	08	ADL	NBR
17	47	10	A	NBR
17	47	10	ADL	NBR
17	47	11	A	NBR
17.5	23	03	AODL	NBR
17.5	28	06	A	NBR
18	24	03	AO	NBR
18	**24**	**03**	**AO**	**FPM**
18	24	04	AO	NBR
18	24	05	A	NBR
18	25	03	AO	NBR
18	25	04	B	NBR
18	25	06	B	NBR
18	25	07	ADL	NBR
18	26	04	A	NBR
18	26	04	AO	NBR
18	**26**	**04**	**BO**	**FPM**
18	26	06	A	NBR

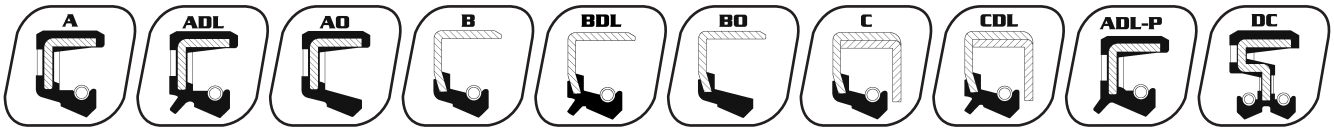
Shaft	Bore	Width	Type	Mat.
18	27	04	AO	NBR
18	**27**	**04**	**AO**	**FPM**
18	27	07	ADL	NBR
18	28	04	A	NBR
18	**28**	**04**	**A**	**FPM**
18	28	06	A	NBR
18	**28**	**06**	**A**	**FPM**
18	28	06	ADL	NBR
18	28	07	A	NBR
18	**28**	**07**	**A**	**FPM**
18	28	07	ADL	NBR
18	**28**	**07**	**ADL**	**FPM**
18	28	08	A	NBR
18	**28**	**08**	**A**	**FPM**
18	28	08	ADL	NBR
18	28	10	ADL	NBR
18	29	05	ADL	NBR
18	29	07	A	NBR
18	29	07	ADL	NBR
18	30	05	A	NBR
18	30	06	ADL	NBR
18	30	06	ADL-P	NBR
18	**30**	**06**	**ADL-P**	**FPM**
18	30	07	A	NBR
18	**30**	**07**	**A**	**FPM**
18	30	07	ADL	NBR
18	**30**	**07**	**ADL**	**FPM**
18	30	07	ADL-P	NBR
18	30	08	ADL	NBR
18	30	10	A	NBR
18	31	07	ADL	NBR
18	32	05	ADL	NBR
18	32	06	ADL	NBR
18	32	06	ADL-P	NBR
18	32	07	A	NBR
18	32	07	ADL	NBR
18	32	07	ADL	NBR
18	**32**	**07**	**ADL**	**FPM**
18	32	07	ADL-P	NBR
18	32	08	A	NBR
18	**32**	**08**	**A**	**FPM**
18	32	08	ADL	NBR
18	32	10	A	NBR
18	34	07	ADL	NBR
18	35	06	A	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
18	35	06	ADL	NBR
18	35	06	ADL-P	NBR
18	**35**	**06**	**ADL-P**	**FPM**
18	35	07	A	NBR
18	**35**	**07**	**A**	**FPM**
18	35	07	ADL	NBR
18	**35**	**07**	**ADL**	**FPM**
18	35	08	A	NBR
18	**35**	**08**	**A**	**FPM**
18	35	08	ADL	NBR
18	35	10	A	NBR
18	35	10	ADL	NBR
18	36	08	ADL	NBR
18	37	07	ADL	NBR
18	37	08	A	NBR
18	37	08	ADL	NBR
18	38	05	A	NBR
18	38	07	ADL	NBR
18	38	10	ADL	NBR
18	40	06	ADL	NBR
18	40	07	A	NBR
18	**40**	**07**	**A**	**FPM**
18	40	07	ADL	NBR
18	**40**	**07**	**ADL**	**FPM**
18	40	10	A	NBR
18	**40**	**10**	**A**	**FPM**
18	40	10	ADL	NBR
18	42	07	ADL	NBR
18	42	08	A	NBR
18	**42**	**08**	**A**	**FPM**
18	42	10	A	NBR
18	42	10	ADL	NBR
18	44	08	A	NBR
18	47	08	ADL	NBR
18	47	10	A	NBR
18.9	28	05	A	NBR
18.9	30	05	ADL	NBR
19	26	05	AO	NBR
19	27	04	AO	NBR
19	**27**	**04**	**AO**	**FPM**
19	27	05	ADL	NBR
19	27	06	A	NBR
19	**28**	**05**	**ADL-P**	**FPM**
19	28	07	ADL	NBR
19	29	07	ADL	NBR
19	29	08	ADL	NBR
19	30	05	A	NBR
19	30	06	A	NBR
19	30	07	ADL	NBR
19	**30**	**07**	**ADL**	**FPM**
19	30	08	A	NBR
19	30	10	A	NBR
19	30.5	07	AODL	NBR
19	31	05	ADL	NBR
19	31	08	ADL	NBR
19	32	05	ADL	NBR
19	**32**	**06**	**ADL-P**	**FPM**
19	32	07	A	NBR
19	**32**	**07**	**A**	**FPM**
19	32	07	ADL	NBR
19	**32**	**07**	**ADL**	**FPM**
19	32	07	ADL-P	NBR
19	32	08	ADL	NBR
19	32	10	A	NBR
19	33.3	08	ADL	NBR
19	34	07	ADL	NBR
19	**35**	**06**	**ADL-P**	**FPM**
19	35	07	A	NBR
19	35	07	ADL	NBR
19	35	08	A	NBR
19	35	08	ADL	NBR
19	35	10	A	NBR
19	35	10	ADL	NBR
19	36	07	A	NBR
19	36	08	A	NBR
19	36	08	ADL	NBR
19	37	06	ADL	NBR
19	37	07	ADL	NBR
19	37	08	ADL	NBR
19	37	10	A	NBR
19	38	07	ADL	NBR
19	38	7.5	ADL-P	NBR
19	38	10	A	NBR
19	38	10	ADL	NBR
19	40	08	ADL	NBR
19	40	10	A	NBR
19	42	07	A	NBR
19	42	07	ADL	NBR
19	46	17	ADL	NBR
19	47	07	ADL	NBR

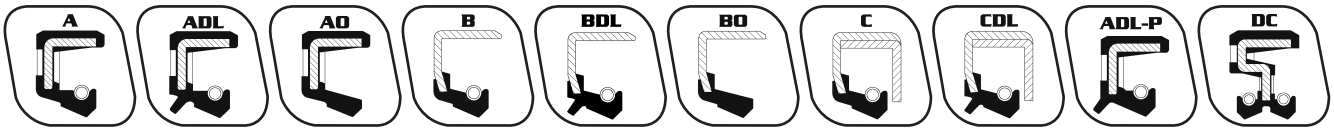
NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
19	47	07	BDL	NBR
19	47	10	ADL	NBR
19	52	06	A	NBR
19	52	07	ADL	NBR
19	53	7.5	A	NBR
19.8	30	05	ADL	NBR
20	24	2.5	AO	NBR
20	25	05	ADL	NBR
20	25	07	ADL	NBR
20	26	02	AO	NBR
20	26	04	AO	NBR
20	**26**	**04**	**AO**	**FPM**
20	26	04	AODL	NBR
20	26	04	ADL	NBR
20	26	05	ADL	NBR
20	26	10	AO	NBR
20	27	04	AODL	NBR
20	27	05	ADL	NBR
20	27	06	B	NBR
20	28	03	BO	NBR
20	28	04	AO	NBR
20	**28**	**04**	**A**	**FPM**
20	**28**	**04**	**AO**	**FPM**
20	28	04	BO	NBR
20	28	4.5	AO	NBR
20	28	05	BO	NBR
20	28	06	A	NBR
20	**28**	**06**	**A**	**FPM**
20	28	06	ADL	NBR
20	28	07	A	NBR
20	**28**	**07**	**A**	**FPM**
20	28	07	ADL	NBR
20	29	9.5	BDL	NBR
20	30	04	AODL	NBR
20	30	4.5	A	NBR
20	30	4.5	ADL	NBR
20	30	05	A	NBR
20	**30**	**05**	**A**	**FPM**
20	30	05	ADL	NBR
20	30	05	ADL-P	NBR
20	30	06	ADL	NBR
20	30	07	A	NBR
20	**30**	**07**	**A**	**FPM**
20	30	07	ADL	NBR
20	**30**	**07**	**ADL**	**FPM**

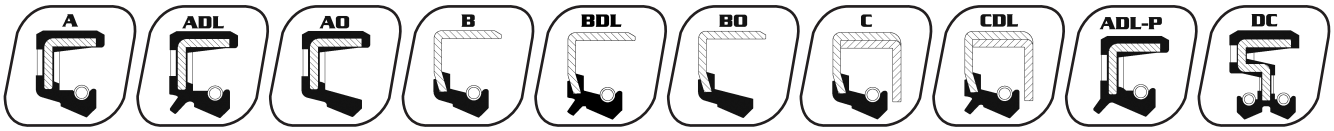
Shaft	Bore	Width	Type	Mat.
20	30	07	ADL-P	NBR
20	30	07	B	NBR
20	30	07	DC	NBR
20	30	08	A	NBR
20	30	08	ADL	NBR
20	**30**	**08**	**ADL**	**FPM**
20	30	09	ADL	NBR
20	30	09	B	NBR
20	31	07	A	NBR
20	31	07	ADL	NBR
20	**31**	**07**	**ADL**	**FPM**
20	32	04	AO	NBR
20	32	05	A	NBR
20	32	05	ADL	NBR
20	32	06	A	NBR
20	**32**	**06**	**A**	**FPM**
20	32	06	ADL	NBR
20	**32**	**06**	**ADL**	**FPM**
20	32	07	A	NBR
20	**32**	**07**	**A**	**FPM**
20	32	07	ADL	NBR
20	**32**	**07**	**ADL**	**FPM**
20	32	07	ADL-P	NBR
20	32	07	B	NBR
20	32	08	ADL	NBR
20	32	08	DC	NBR
20	32	12	ADL	NBR
20	33	07	ADL	NBR
20	33	09	A	NBR
20	33	10	A	NBR
20	**33**	**10**	**A**	**FPM**
20	34	06	A	NBR
20	34	07	A	NBR
20	34	07	ADL	NBR
20	34	08	ADL	NBR
20	35	04	ADL	NBR
20	35	05	A	NBR
20	35	06	A	NBR
20	35	06	ADL	NBR
20	35	06	ADL-P	NBR
20	**35**	**06**	**ADL-P**	**FPM**
20	35	07	A	NBR
20	**35**	**07**	**A**	**FPM**
20	35	07	ADL	NBR
20	**35**	**07**	**ADL**	**FPM**

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
20	35	07	ADL-P	NBR
20	35	07	B	NBR
20	35	08	A	NBR
20	**35**	**08**	**A**	**FPM**
20	35	08	ADL	NBR
20	**35**	**08**	**ADL**	**FPM**
20	35	08	DC	NBR
20	35	10	A	NBR
20	**35**	**10**	**A**	**FPM**
20	35	10	ADL	NBR
20	**35**	**10**	**ADL**	**FPM**
20	35	10	C	NBR
20	35	12	ADL	NBR
20	35.8	04	BDL	NBR
20	36	07	A	NBR
20	36	07	ADL	NBR
20	**36**	**08**	**A**	**FPM**
20	**36**	**08**	**ADL**	**FPM**
20	37	06	B	NBR
20	37	07	ADL	NBR
20	37	08	A	NBR
20	**37**	**08**	**A**	**FPM**
20	37	08	ADL	NBR
20	37	10	A	NBR
20	37	10	ADL	NBR
20	38	05	A	NBR
20	38	05	ADL	NBR
20	38	07	A	NBR
20	38	07	ADL	NBR
20	38	08	A	NBR
20	**38**	**08**	**A**	**FPM**
20	38	08	ADL	NBR
20	38	10	ADL	NBR
20	38	15	DC	NBR
20	40	04	ADL	NBR
20	40	05	ADL	NBR
20	40	06	A	NBR
20	**40**	**06**	**A**	**FPM**
20	40	07	A	NBR
20	**40**	**07**	**A**	**FPM**
20	40	07	ADL	NBR
20	**40**	**07**	**ADL**	**FPM**
20	40	07	B	NBR
20	40	08	ADL	NBR
20	40	08	DC	NBR

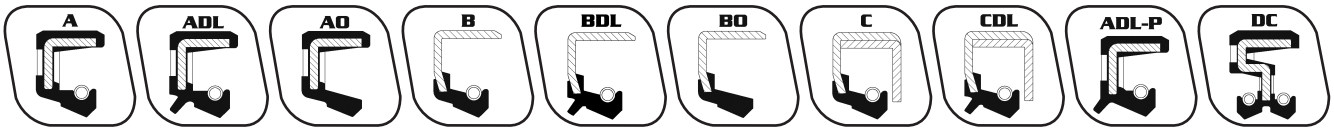
Shaft	Bore	Width	Type	Mat.
20	40	09	A	NBR
20	40	09	DC	NBR
20	40	10	A	NBR
20	**40**	**10**	**A**	**FPM**
20	40	10	ADL	NBR
20	**40**	**10**	**ADL**	**FPM**
20	40	11	ADL	NBR
20	41	07	ADL	NBR
20	41.2	05	ADL	NBR
20	42	05	ADL	NBR
20	**42**	**06**	**A**	**FPM**
20	42	06	ADL	NBR
20	42	07	A	NBR
20	**42**	**07**	**A**	**FPM**
20	42	07	ADL	NBR
20	**42**	**07**	**ADL**	**FPM**
20	42	07	ADL-P	NBR
20	42	07	B	NBR
20	42	08	ADL	NBR
20	42	10	A	NBR
20	**42**	**10**	**A**	**FPM**
20	42	10	ADL	NBR
20	42	10	B	NBR
20	43	7.5	A	NBR
20	45	07	ADL	NBR
20	45	08	ADL	NBR
20	45	10	A	NBR
20	45	10	ADL	NBR
20	45	12	A	NBR
20	45	12	ADL	NBR
20	46	06	A	NBR
20	46	07	ADL	NBR
20	46	08	ADL	NBR
20	47	05	ADL	NBR
20	47	07	A	NBR
20	**47**	**07**	**A**	**FPM**
20	47	07	ADL	NBR
20	**47**	**07**	**ADL**	**FPM**
20	47	07	B	NBR
20	47	08	A	NBR
20	47	08	ADL	NBR
20	47	09	ADL	NBR
20	47	10	A	NBR
20	**47**	**10**	**A**	**FPM**
20	47	10	ADL	NBR



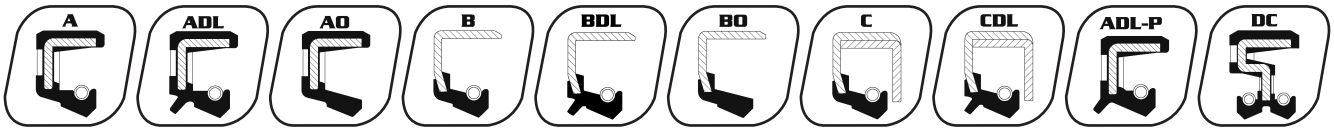
Shaft	Bore	Width	Type	Mat.
20	47.5	07	ADL	NBR
20	48	09	A	NBR
20	50	05	ADL	NBR
20	50	08	ADL	NBR
20	50	10	ADL	NBR
20	52	06	A	NBR
20	52	07	A	NBR
20	**52**	**07**	**A**	**FPM**
20	52	07	ADL	NBR
20	52	08	A	NBR
20	52	08	ADL	NBR
20	52	09	ADL	NBR
20	52	10	A	NBR
20	**52**	**10**	**A**	**FPM**
20	52	10	ADL	NBR
20	**52**	**10**	**ADL**	**FPM**
20	52	12	A	NBR
20	52	12	ADL	NBR
20	62	6.5	A	NBR
20	62	08	ADL	NBR
20	62	10	ADL	NBR
20	72	10	A	NBR
21	28	3.5	BO	NBR
21	28	5.5	BO	NBR
21	29	04	AO	NBR
21	30	6.5	A	NBR
21	32	05	A	NBR
21	32	07	A	NBR
21	32	07	ADL	NBR
21	32	08	ADL	NBR
21	33	07	ADL	NBR
21	35	06	A	NBR
21	35	6.5	A	NBR
21	35	07	A	NBR
21	35	07	ADL	NBR
21	35	10	A	NBR
21	35	10	C	NBR
21	35	13	ADL	NBR
21	36	07	ADL	NBR
21	36	10	ADL	NBR
21	37	07	A	NBR
21	37	07	ADL	NBR
21	40	05	A	NBR
21	40	07	ADL	NBR
21	48	08	A	NBR

Shaft	Bore	Width	Type	Mat.
21	52	08	A	NBR
21.5	35	08	ADL	NBR
21.9	40	08	ADL	NBR
22	28	04	AO	NBR
22	29	04	ADL	NBR
22	29	04	AO	NBR
22	30	04	AO	NBR
22	**30**	**04**	**AO**	**FPM**
22	30	06	ADL	NBR
22	30	07	A	NBR
22	**30**	**07**	**A**	**FPM**
22	30	07	ADL	NBR
22	30	10	AO	NBR
22	31	05	A	NBR
22	31	06	ADL	NBR
22	32	03	BO	NBR
22	32	04	A	NBR
22	32	4.5	ADL	NBR
22	32	05	A	NBR
22	32	5.5	A	NBR
22	32	5.5	ADL	NBR
22	32	06	ADL	NBR
22	32	06	B	NBR
22	32	07	A	NBR
22	**32**	**07**	**A**	**FPM**
22	32	07	ADL	NBR
22	**32**	**07**	**ADL**	**FPM**
22	32	07	ADL-P	NBR
22	32	08	ADL	NBR
22	32	10	A	NBR
22	33	6.5	ADL	NBR
22	33	07	A	NBR
22	33	07	ADL	NBR
22	34	05	A	NBR
22	34	05	ADL	NBR
22	35	05	ADL	NBR
22	35	5.5	ADL	NBR
22	35	06	A	NBR
22	35	06	ADL	NBR
22	35	06	ADL-P	NBR
22	35	07	A	NBR
22	**35**	**07**	**A**	**FPM**
22	35	07	ADL	NBR
22	**35**	**07**	**ADL**	**FPM**
22	35	07	B	NBR

NBR=Nitrile FPM=Viton®

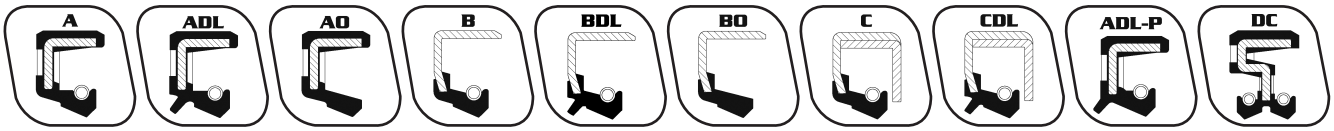


Shaft	Bore	Width	Type	Mat.
22	35	07	DC	NBR
22	35	08	A	NBR
22	**35**	**08**	**A**	**FPM**
22	35	08	ADL	NBR
22	35	10	A	NBR
22	35	10	ADL	NBR
22	36	07	A	NBR
22	36	07	ADL	NBR
22	36	08	ADL	NBR
22	36	10	ADL	NBR
22	37	07	A	NBR
22	37	07	ADL	NBR
22	37	8.5	ADL	NBR
22	38	05	ADL	NBR
22	38	07	A	NBR
22	**38**	**07**	**A**	**FPM**
22	38	07	ADL	NBR
22	38	08	A	NBR
22	38	08	ADL	NBR
22	39	06	ADL	NBR
22	40	04	ADL	NBR
22	**40**	**05**	**A**	**FPM**
22	40	06	A	NBR
22	40	07	A	NBR
22	**40**	**07**	**A**	**FPM**
22	40	07	ADL	NBR
22	**40**	**07**	**ADL**	**FPM**
22	40	07	BDL	NBR
22	40	08	A	NBR
22	40	08	ADL	NBR
22	40	8.5	A	NBR
22	40	10	A	NBR
22	**40**	**10**	**A**	**FPM**
22	40	10	ADL	NBR
22	40	12	ADL	NBR
22	40	16	ADL	NBR
22	41	07	ADL	NBR
22	41.25	06	ADL	NBR
22	41.5	07	BDL	NBR
22	42	06	ADL	NBR
22	42	07	A	NBR
22	42	07	ADL	NBR
22	42	10	A	NBR
22	42	10	ADL	NBR
22	42	11	ADL	NBR
22	42	11	ADL-P	NBR
22	45	07	A	NBR
22	**45**	**07**	**A**	**FPM**
22	45	07	ADL	NBR
22	45	10	ADL	NBR
22	46	10	ADL	NBR
22	46	12	ADL	NBR
22	47	07	A	NBR
22	**47**	**07**	**A**	**FPM**
22	47	07	ADL	NBR
22	**47**	**07**	**ADL**	**FPM**
22	47	10	A	NBR
22	47	10	B	NBR
22	48	10	A	NBR
22	50	05	ADL	NBR
22	50	10	A	NBR
22	50.8	9.52	ADL	NBR
22	52	08	ADL	NBR
22	**52**	**10**	**A**	**FPM**
22	52	10	ADL	NBR
22	55	07	ADL	NBR
22	56	08	ADL	NBR
22.5	35	06	ADL	NBR
23	28	03	BO	NBR
23	29	03	AO	NBR
23	29	3.5	AO	NBR
23	30	04	AODL	NBR
23	32	05	AO	NBR
23	32	05	BDL	NBR
23	32	07	ADL	NBR
23	34	08	ADL	NBR
23	35	06	A	NBR
23	35	07	A	NBR
23	35	07	ADL	NBR
23	36	06	ADL	NBR
23	36	07	ADL	NBR
23	37	06	ADL	NBR
23	38	07	A	NBR
23	38	08	A	NBR
23	**38**	**08**	**A**	**FPM**
23	40	06	ADL	NBR
23	40	07	BDL	NBR
23	40	08	A	NBR
23	40	08	ADL	NBR
23	40	10	A	NBR

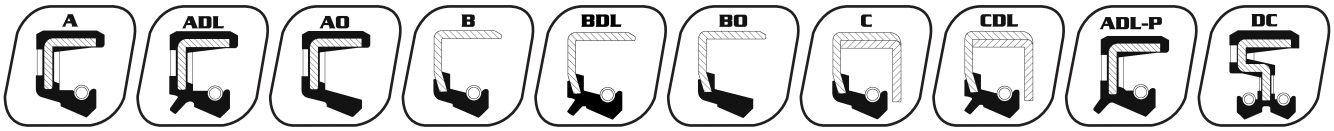


Shaft	Bore	Width	Type	Mat.
23	40	10	ADL	NBR
23	42	06	ADL	NBR
23	42	07	ADL	NBR
23	42	10	A	NBR
23	42	11	ADL-P	NBR
23	43	08	ADL	NBR
23	45	11	ADL	NBR
23	47	07	ADL	NBR
23	47	10	ADL	NBR
23	48	10	ADL	NBR
23	52	11	ADL	NBR
23	52	12	A	NBR
24	30	03	BO	NBR
24	31	03	AODL	NBR
24	32	04	AO	NBR
24	32	05	B	NBR
24	32	05	BO	NBR
24	32	07	BDL	NBR
24	33	05	ADL-P	NBR
24	34	5.5	A	NBR
24	34	07	ADL	NBR
24	35	5.5	A	NBR
24	35	5.5	ADL	NBR
24	35	06	A	NBR
24	**35**	**06**	**A**	**FPM**
24	**35**	**06**	**ADL**	**FPM**
24	35	07	A	NBR
24	**35**	**07**	**A**	**FPM**
24	35	07	ADL	NBR
24	**35**	**07**	**ADL**	**FPM**
24	35	08	ADL	NBR
24	36	06	A	NBR
24	**36**	**07**	**A**	**FPM**
24	36	07	ADL	NBR
24	36	07	B	NBR
24	36.5	08	ADL	NBR
24	37	07	A	NBR
24	**37**	**07**	**A**	**FPM**
24	37	07	ADL	NBR
24	**37**	**07**	**ADL**	**FPM**
24	38	07	ADL	NBR
24	38	08	ADL	NBR
24	38	10	ADL	NBR
24	38.2	07	ADL	NBR
24	39	08	A	NBR
24	40	06	ADL-P	NBR
24	40	07	A	NBR
24	**40**	**07**	**A**	**FPM**
24	40	07	ADL	NBR
24	**40**	**07**	**ADL**	**FPM**
24	40	07	ADL-P	NBR
24	40	08	A	NBR
24	40	10	A	NBR
24	42	07	A	NBR
24	42	07	ADL	NBR
24	42	08	A	NBR
24	**42**	**08**	**A**	**FPM**
24	42	08	ADL	NBR
24	42	10	A	NBR
24	42	10	C	NBR
24	43	06	ADL	NBR
24	43	07	ADL	NBR
24	44	07	A	NBR
24	44	08	ADL	NBR
24	45	06	ADL	NBR
24	45	11	ADL	NBR
24	46	07	ADL	NBR
24	46	10	ADL	NBR
24	47	07	A	NBR
24	**47**	**07**	**A**	**FPM**
24	47	07	ADL	NBR
24	47	07	ADL-P	NBR
24	47	10	A	NBR
24	47	10	ADL	NBR
24	48	07	ADL	NBR
24	49	12	ADL	NBR
24	49	18	ADL	NBR
24	50	10	A	NBR
24	50	12	ADL	NBR
24	52	07	ADL	NBR
24	52	10	ADL	NBR
24	55	10	ADL	NBR
24	62	07	A	NBR
24.5	40	8.5	A	NBR
25	30	04	BO	NBR
25	31	2.5	BO	NBR
25	32	04	AO	NBR
25	**32**	**04**	**AO**	**FPM**
25	**32**	**04**	**BO**	**FPM**
25	32	05	ADL	NBR

NBR=Nitrile FPM=Viton®

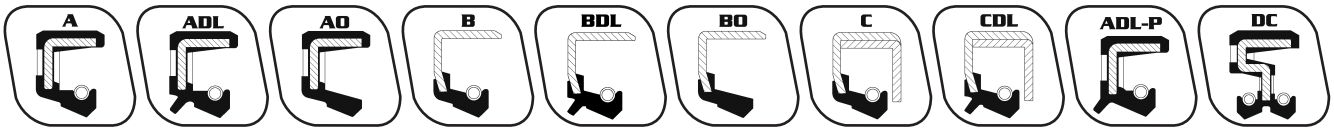


Shaft	Bore	Width	Type	Mat.
25	32	06	A	NBR
25	**32**	**06**	**A**	**FPM**
25	32	06	ADL	NBR
25	**32**	**06**	**ADL**	**FPM**
25	32	06	BDL	NBR
25	32	07	A	NBR
25	32	07	BDL	NBR
25	33	04	A	NBR
25	33	04	AO	NBR
25	**33**	**04**	**BO**	**FPM**
25	**33**	**04**	**BDL**	**FPM**
25	33	06	A	NBR
25	**33**	**06**	**A**	**FPM**
25	33	06	ADL	NBR
25	33	06	ADL-P	NBR
25	33	09	A	NBR
25	34	05	BDL	NBR
25	34	07	BDL	NBR
25	35	04	AO	NBR
25	**35**	**04**	**AO**	**FPM**
25	35	05	A	NBR
25	35	05	ADL	NBR
25	35	06	A	NBR
25	**35**	**06**	**A**	**FPM**
25	35	06	ADL	NBR
25	**35**	**06**	**ADL**	**FPM**
25	35	06	ADL-P	NBR
25	**35**	**06**	**ADL-P**	**FPM**
25	35	07	A	NBR
25	**35**	**07**	**A**	**FPM**
25	35	07	ADL	NBR
25	**35**	**07**	**ADL**	**FPM**
25	35	07	B	NBR
25	**35**	**07**	**B**	**FPM**
25	**35**	**07**	**BDL**	**FPM**
25	35	08	A	NBR
25	35	08	ADL	NBR
25	35	08	DC	NBR
25	35	09	A	NBR
25	35	10	A	NBR
25	35	10	ADL	NBR
25	36	05	ADL	NBR
25	36	06	A	NBR
25	36	06	ADL-P	NBR
25	36	07	A	NBR
25	**36**	**07**	**A**	**FPM**
25	36	07	ADL	NBR
25	**36**	**07**	**ADL**	**FPM**
25	36	08	ADL	NBR
25	36	10	A	NBR
25	37	05	A	NBR
25	**37**	**05**	**A**	**FPM**
25	37	05	ADL	NBR
25	37	06	A	NBR
25	37	06	ADL	NBR
25	**37**	**06**	**ADL**	**FPM**
25	37	06	ADL-P	NBR
25	37	07	A	NBR
25	**37**	**07**	**A**	**FPM**
25	37	07	ADL	NBR
25	**37**	**07**	**ADL**	**FPM**
25	37	08	A	NBR
25	37	08	ADL	NBR
25	38	05	B	NBR
25	38	06	ADL	NBR
25	38	07	A	NBR
25	**38**	**07**	**A**	**FPM**
25	38	07	ADL	NBR
25	**38**	**07**	**ADL**	**FPM**
25	38	07	B	NBR
25	38	08	ADL	NBR
25	38	10	ADL	NBR
25	39	09	A	NBR
25	39	09	ADL	NBR
25	40	03	A	NBR
25	40	05	A	NBR
25	**40**	**05**	**A**	**FPM**
25	40	05	ADL	NBR
25	40	06	ADL	NBR
25	**40**	**06**	**ADL**	**FPM**
25	40	07	A	NBR
25	**40**	**07**	**A**	**FPM**
25	40	07	ADL	NBR
25	**40**	**07**	**ADL**	**FPM**
25	40	07	ADL-P	NBR
25	40	07	B	NBR
25	40	08	A	NBR
25	**40**	**08**	**A**	**FPM**
25	40	08	ADL	NBR
25	**40**	**08**	**ADL**	**FPM**

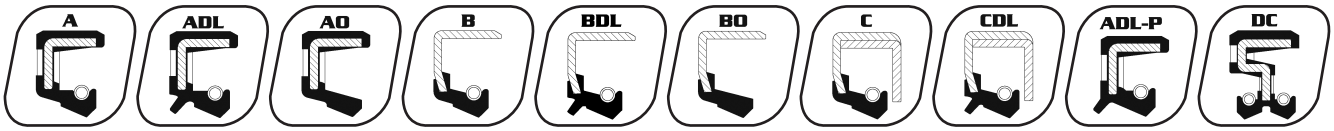


Shaft	Bore	Width	Type	Mat.
25	40	08	DC	NBR
25	40	09	C	NBR
25	40	10	A	NBR
25	**40**	**10**	**A**	**FPM**
25	40	10	ADL	NBR
25	**40**	**10**	**ADL**	**FPM**
25	40	10	B	NBR
25	41	06	ADL	NBR
25	41	07	ADL	NBR
25	41.2	07	ADL	NBR
25	41.5	08	ADL	NBR
25	42	05	ADL	NBR
25	42	06	A	NBR
25	**42**	**06**	**A**	**FPM**
25	42	06	ADL-P	NBR
25	42	07	A	NBR
25	**42**	**07**	**A**	**FPM**
25	42	07	ADL	NBR
25	**42**	**07**	**ADL**	**FPM**
25	42	07	B	NBR
25	42	08	A	NBR
25	**42**	**08**	**A**	**FPM**
25	42	08	ADL	NBR
25	42	08	B	NBR
25	42	8.5	A	NBR
25	42	09	A	NBR
25	42	10	A	NBR
25	**42**	**10**	**A**	**FPM**
25	42	10	ADL	NBR
25	**42**	**10**	**ADL**	**FPM**
25	42.9	9.5	BDL	NBR
25	43	06	A	NBR
25	43	09	A	NBR
25	**43**	**09**	**A**	**FPM**
25	43	10	A	NBR
25	**43**	**10**	**A**	**FPM**
25	**43**	**10**	**ADL**	**FPM**
25	44	07	A	NBR
25	44	07	ADL	NBR
25	44	10	ADL	NBR
25	44.45	10	ADL	NBR
25	44.5	06	A	NBR
25	45	07	A	NBR
25	45	07	ADL	NBR
25	**45**	**07**	**ADL**	**FPM**
25	45	08	ADL	NBR
25	45	10	A	NBR
25	**45**	**10**	**A**	**FPM**
25	45	10	ADL	NBR
25	**45**	**10**	**ADL**	**FPM**
25	45	11	ADL	NBR
25	45	11	ADL-P	NBR
25	46	07	A	NBR
25	**46**	**07**	**A**	**FPM**
25	46	07	ADL	NBR
25	47	06	A	NBR
25	47	06	ADL	NBR
25	47	06	ADL-P	NBR
25	**47**	**06**	**ADL-P**	**FPM**
25	47	06	B	NBR
25	47	07	A	NBR
25	**47**	**07**	**A**	**FPM**
25	47	07	ADL	NBR
25	**47**	**07**	**ADL**	**FPM**
25	47	07	BDL	NBR
25	47	08	A	NBR
25	**47**	**08**	**A**	**FPM**
25	47	08	ADL	NBR
25	47	09	C	NBR
25	47	10	A	NBR
25	**47**	**10**	**A**	**FPM**
25	47	10	ADL	NBR
25	**47**	**10**	**ADL**	**FPM**
25	47	10	C	NBR
25	48	07	ADL	NBR
25	48	08	A	NBR
25	48	08	ADL	NBR
25	48	10	ADL	NBR
25	49	07	ADL	NBR
25	50	07	A	NBR
25	**50**	**07**	**A**	**FPM**
25	50	08	ADL	NBR
25	50	10	A	NBR
25	50	10	ADL	NBR
25	**50**	**10**	**ADL**	**FPM**
25	50	12	A	NBR
25	51	10	ADL	NBR
25	51	11	A	NBR
25	52	05	A	NBR
25	52	07	A	NBR

NBR=Nitrile FPM=Viton®



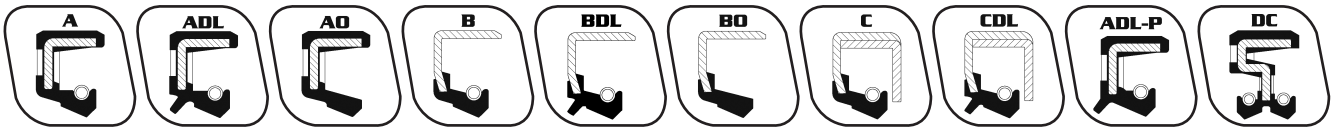
Shaft	Bore	Width	Type	Mat.
25	**52**	**07**	**A**	**FPM**
25	52	07	ADL	NBR
25	**52**	**07**	**ADL**	**FPM**
25	52	07	ADL-P	NBR
25	52	07	B	NBR
25	52	08	A	NBR
25	**52**	**08**	**A**	**FPM**
25	52	08	ADL	NBR
25	52	09	C	NBR
25	52	09	DC	NBR
25	52	10	A	NBR
25	**52**	**10**	**A**	**FPM**
25	52	10	ADL	NBR
25	52	12	ADL	NBR
25	52	15	ADL	NBR
25	53	10	ADL	NBR
25	54	08	ADL	NBR
25	55	08	ADL	NBR
25	55	09	ADL	NBR
25	55	10	ADL	NBR
25	58	10	A	NBR
25	58	10	ADL	NBR
25	60	10	ADL	NBR
25	62	06	A	NBR
25	62	07	A	NBR
25	**62**	**07**	**A**	**FPM**
25	62	07	ADL	NBR
25	62	08	A	NBR
25	**62**	**08**	**A**	**FPM**
25	62	08	ADL	NBR
25	**62**	**08**	**ADL**	**FPM**
25	62	10	A	NBR
25	**62**	**10**	**A**	**FPM**
25	62	10	ADL	NBR
25	62	12	C	NBR
25	65	12	ADL	NBR
25	70	10	ADL	NBR
25	**72**	**07**	**A**	**FPM**
25	72	07	ADL	NBR
25	72	10	ADL	NBR
26	30	06	AODL	NBR
26	31	03	BO	NBR
26	**34**	**04**	**A**	**FPM**
26	34	04	AO	NBR
26	34	09	AO	NBR
26	35	06	ADL	NBR
26	35	07	A	NBR
26	**35**	**07**	**A**	**FPM**
26	35	07	ADL	NBR
26	**35**	**07**	**ADL**	**FPM**
26	36	05	ADL	NBR
26	36	07	A	NBR
26	**36**	**07**	**A**	**FPM**
26	36	07	ADL	NBR
26	36	10	ADL	NBR
26	37	07	A	NBR
26	**37**	**07**	**A**	**FPM**
26	37	07	ADL	NBR
26	**37**	**07**	**ADL**	**FPM**
26	37	08	ADL	NBR
26	37	10	A	NBR
26	37	10.5	ADL	NBR
26	38	05	A	NBR
26	38	05	ADL	NBR
26	38	06	ADL	NBR
26	38	07	A	NBR
26	38	07	ADL	NBR
26	**38**	**07**	**ADL**	**FPM**
26	38	08	A	NBR
26	38	08	ADL	NBR
26	40	05	ADL	NBR
26	40	06	A	NBR
26	40	07	A	NBR
26	40	07	ADL	NBR
26	40	09	A	NBR
26	40	09	ADL	NBR
26	41	07	ADL	NBR
26	42	06	A	NBR
26	42	07	A	NBR
26	42	07	ADL	NBR
26	**42**	**07**	**ADL**	**FPM**
26	42	08	A	NBR
26	42	08	ADL	NBR
26	42	10	ADL	NBR
26	42	10	C	NBR
26	43	06	B	NBR
26	43	07	ADL	NBR
26	43	08	ADL	NBR
26	45	06	ADL	NBR
26	45	07	A	NBR



Shaft	Bore	Width	Type	Mat.
26	45	07	ADL	NBR
26	45	10	B	NBR
26	46	07	ADL	NBR
26	47	05	ADL	NBR
26	47	07	A	NBR
26	**47**	**07**	**A**	**FPM**
26	47	07	ADL	NBR
26	**47**	**07**	**ADL**	**FPM**
26	47	09	ADL	NBR
26	47	10	A	NBR
26	47	12	ADL	NBR
26	48	07	ADL	NBR
26	50	10	A	NBR
26	52	07	ADL	NBR
26	52	08	A	NBR
26	52	08	ADL	NBR
26	52	10	A	NBR
26	62	09	ADL	NBR
26.5	47	07	A	NBR
27	34	03	BO	NBR
27	34	04	ADL	NBR
27	34	07	A	NBR
27	35	04	A	NBR
27	35	07	A	NBR
27	35	7.5	A	NBR
27	36	06	ADL	NBR
27	37	07	A	NBR
27	**37**	**07**	**A**	**FPM**
27	37	07	ADL	NBR
27	38	05	ADL	NBR
27	38	06	ADL	NBR
27	38	07	A	NBR
27	38	07	ADL	NBR
27	39	10.5	ADL	NBR
27	40	06	A	NBR
27	40	06	ADL	NBR
27	40	07	A	NBR
27	**40**	**07**	**A**	**FPM**
27	40	07	ADL	NBR
27	40	08	ADL	NBR
27	40	10	A	NBR
27	41	07	ADL	NBR
27	41	10	A	NBR
27	**41**	**10**	**A**	**FPM**
27	41	10	ADL	NBR

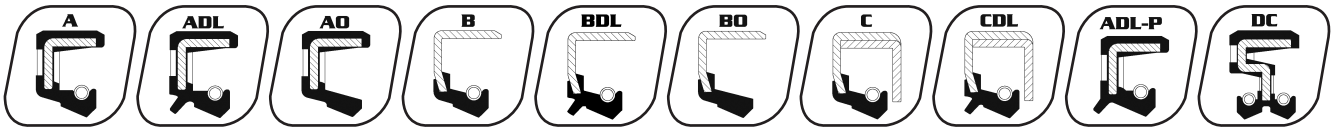
Shaft	Bore	Width	Type	Mat.
27	42	07	A	NBR
27	**42**	**07**	**A**	**FPM**
27	**42**	**07**	**ADL**	**FPM**
27	42	07	ADL-P	NBR
27	42	08	ADL	NBR
27	42	09	ADL	NBR
27	42	10	A	NBR
27	42	10	ADL	NBR
27	42.5	08	ADL	NBR
27	43	08	ADL	NBR
27	**43**	**08**	**ADL**	**FPM**
27	43	09	A	NBR
27	44	07	ADL-P	NBR
27	45	07	ADL	NBR
27	45	08	A	NBR
27	45	08	ADL	NBR
27	45	09	ADL	NBR
27	**47**	**5.5**	**ADL**	**FPM**
27	47	06	A	NBR
27	47	07	A	NBR
27	47	07	ADL	NBR
27	47	08	A	NBR
27	**47**	**08**	**A**	**FPM**
27	47	10	A	NBR
27	47	10	ADL	NBR
27	47	11	ADL	NBR
27	48	09	ADL	NBR
27	49	7.5	A	NBR
27	50	10	A	NBR
27	51	10	ADL	NBR
27	52	05	ADL	NBR
27	52	08	A	NBR
27	53	07	A	NBR
27	55	05	AODL	NBR
27	55	07	ADL	NBR
27	55	08	ADL	NBR
27	56	10	ADL	NBR
27	62	12	C	NBR
27	77	07	ADL	NBR
27.8	38	07	A	NBR
28	34	04	AO	NBR
28	35	04	AO	NBR
28	**35**	**04**	**AO**	**FPM**
28	35	05	ADL	NBR
28	35	05	BDL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
28	35	07	ADL	NBR
28	35	08	ADL	NBR
28	36	05	BDL	NBR
28	36	07	ADL	NBR
28	37	04	AO	NBR
28	**37**	**04**	**AO**	**FPM**
28	37	05	ADL	NBR
28	37	06	ADL	NBR
28	37	07	ADL	NBR
28	38	5.5	A	NBR
28	38	06	A	NBR
28	38	07	A	NBR
28	**38**	**07**	**A**	**FPM**
28	38	07	ADL	NBR
28	**38**	**07**	**ADL**	**FPM**
28	38	10	ADL	NBR
28	39	07	ADL	NBR
28	39	08	ADL	NBR
28	39.5	08	BDL	NBR
28	40	05	A	NBR
28	40	05	ADL	NBR
28	**40**	**06**	**ADL**	**FPM**
28	40	06	ADL-P	NBR
28	**40**	**06**	**ADL-P**	**FPM**
28	40	07	A	NBR
28	**40**	**07**	**A**	**FPM**
28	40	07	ADL	NBR
28	**40**	**07**	**ADL**	**FPM**
28	40	07	ADL-P	NBR
28	40	08	A	NBR
28	40	08	ADL	NBR
28	**40**	**08**	**ADL**	**FPM**
28	40	08	ADL-P	NBR
28	40	08	DC	NBR
28	40	09	ADL-P	NBR
28	40	10	A	NBR
28	**40**	**10**	**A**	**FPM**
28	40	10	B	NBR
28	41	07	ADL	NBR
28	41	08	ADL	NBR
28	42	06	ADL	NBR
28	42	07	A	NBR
28	**42**	**07**	**A**	**FPM**
28	42	07	ADL	NBR
28	42	08	A	NBR

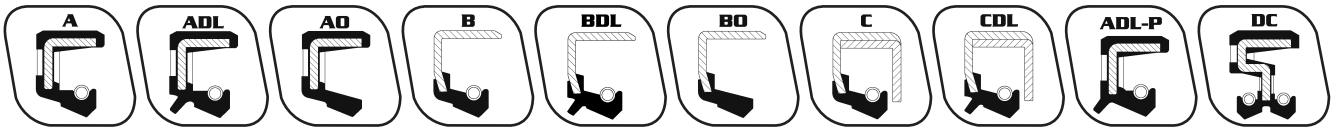
Shaft	Bore	Width	Type	Mat.
28	**42**	**08**	**A**	**FPM**
28	42	08	ADL	NBR
28	42	10	A	NBR
28	**42**	**10**	**A**	**FPM**
28	42	11	ADL	NBR
28	42.5	08	A	NBR
28	42.5	08	ADL	NBR
28	43	07	ADL	NBR
28	43	08	ADL	NBR
28	43	10	A	NBR
28	43	10	ADL	NBR
28	44	07	ADL	NBR
28	44	08	ADL	NBR
28	44	10	A	NBR
28	44	10	ADL	NBR
28	44	11	ADL	NBR
28	44	15	ADL	NBR
28	44.5	07	ADL	NBR
28	45	06	A	NBR
28	45	07	A	NBR
28	**45**	**07**	**A**	**FPM**
28	45	07	ADL	NBR
28	45	08	A	NBR
28	45	08	ADL	NBR
28	**45**	**09**	**A**	**FPM**
28	45	10	ADL	NBR
28	47	05	ADL	NBR
28	47	07	A	NBR
28	**47**	**07**	**A**	**FPM**
28	47	07	ADL	NBR
28	**47**	**07**	**ADL**	**FPM**
28	47	08	A	NBR
28	47	08	ADL	NBR
28	47	08	B	NBR
28	47	10	A	NBR
28	**47**	**10**	**A**	**FPM**
28	47	10	ADL	NBR
28	**47**	**10**	**ADL**	**FPM**
28	48	05	A	NBR
28	48	08	ADL	NBR
28	48	11	ADL	NBR
28	49	10	ADL	NBR
28	50	06	ADL	NBR
28	**50**	**07**	**A**	**FPM**
28	50	07	ADL	NBR



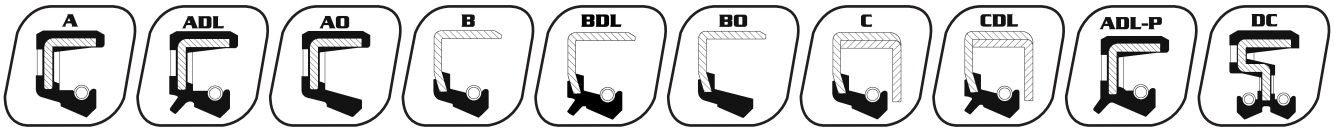
Shaft	Bore	Width	Type	Mat.
28	50	08	A	NBR
28	50	10	A	NBR
28	**50**	**10**	**A**	**FPM**
28	50	10	ADL	NBR
28	50	12	B	NBR
28	50.8	10	ADL	NBR
28	51	06	ADL	NBR
28	51	08	ADL	NBR
28	51	10	ADL	NBR
28	52	05	A	NBR
28	52	06	ADL	NBR
28	52	07	A	NBR
28	**52**	**07**	**A**	**FPM**
28	52	07	ADL	NBR
28	**52**	**07**	**ADL**	**FPM**
28	52	10	A	NBR
28	52	10	ADL	NBR
28	52	12	A	NBR
28	55	07	ADL	NBR
28	55	08	ADL	NBR
28	56	08	ADL	NBR
28	57	12	A	NBR
28	58	08	ADL	NBR
28	60	10	ADL	NBR
28	62	07	ADL	NBR
28	62	10	A	NBR
28	62	12	A	NBR
28	74	11	BDL	NBR
29	35	03	AO	NBR
29	36	08	BO	NBR
29	38	04	AO	NBR
29	38	04	AODL	NBR
29	38	07	A	NBR
29	39	05	A	NBR
29	40	07	A	NBR
29	40	08	ADL	NBR
29	41	06	A	NBR
29	42	06	ADL	NBR
29	43	07	A	NBR
29	45	07	A	NBR
29	45	08	ADL	NBR
29	45	09	A	NBR
29	46	10	ADL	NBR
29	47	07	ADL	NBR
29	47	10	A	NBR

Shaft	Bore	Width	Type	Mat.
29	50	10	A	NBR
29	50	10	ADL	NBR
29	50	12	A	NBR
29	52	07	ADL	NBR
29	52	09	A	NBR
29	55	09	A	NBR
29	62	10	A	NBR
29	**62**	**10**	**A**	**FPM**
30	34	03	BO	NBR
30	35	03	BO	NBR
30	35	04	BO	NBR
30	37	03	BO	NBR
30	37	04	AO	NBR
30	**37**	**04**	**AO**	**FPM**
30	37	06	ADL	NBR
30	38	04	A	NBR
30	38	05	ADL	NBR
30	38	05	B	NBR
30	38	07	ADL	NBR
30	40	04	ADL	NBR
30	40	04	AO	NBR
30	40	05	A	NBR
30	**40**	**05**	**A**	**FPM**
30	40	05	ADL	NBR
30	40	05	ADL-P	NBR
30	40	07	A	NBR
30	**40**	**07**	**A**	**FPM**
30	40	07	ADL	NBR
30	**40**	**07**	**ADL**	**FPM**
30	40	07	ADL-P	NBR
30	40	08	A	NBR
30	40	09	A	NBR
30	40	10	A	NBR
30	41	07	ADL	NBR
30	41	08	ADL	NBR
30	41	10	ADL	NBR
30	42	4.5	A	NBR
30	42	05	ADL	NBR
30	42	5.7	A	NBR
30	42	06	A	NBR
30	42	06	ADL	NBR
30	**42**	**06**	**ADL**	**FPM**
30	42	06	ADL-P	NBR
30	**42**	**06**	**ADL-P**	**FPM**
30	42	07	A	NBR

NBR=Nitrile FPM=Viton®

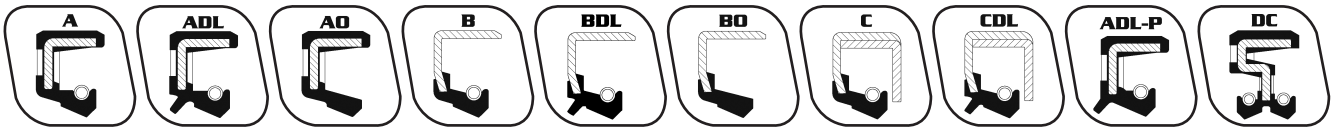


Shaft	Bore	Width	Type	Mat.
30	**42**	**07**	**A**	**FPM**
30	42	07	ADL	NBR
30	**42**	**07**	**ADL**	**FPM**
30	42	07	B	NBR
30	42	07	DC	NBR
30	42	08	A	NBR
30	42	08	ADL	NBR
30	**42**	**08**	**ADL**	**FPM**
30	42	10	A	NBR
30	42	10	ADL	NBR
30	42	12	A	NBR
30	43	07	ADL	NBR
30	43	08	A	NBR
30	43	08	ADL	NBR
30	43	8.5	ADL	NBR
30	43.5	10	ADL	NBR
30	44	05	ADL	NBR
30	44	07	A	NBR
30	44	07	ADL	NBR
30	44	08	ADL	NBR
30	44	09	ADL	NBR
30	44	10	A	NBR
30	44	10	ADL	NBR
30	44.5	07	ADL	NBR
30	45	05	A	NBR
30	45	5.5	A	NBR
30	45	06	A	NBR
30	**45**	**06**	**A**	**FPM**
30	45	06	ADL	NBR
30	45	07	A	NBR
30	**45**	**07**	**A**	**FPM**
30	45	07	ADL	NBR
30	**45**	**07**	**ADL**	**FPM**
30	45	08	A	NBR
30	**45**	**08**	**A**	**FPM**
30	45	08	ADL	NBR
30	**45**	**08**	**ADL**	**FPM**
30	45	08	B	NBR
30	45	8.5	DC	NBR
30	45	9.5	B	NBR
30	45	10	A	NBR
30	**45**	**10**	**A**	**FPM**
30	45	10	ADL	NBR
30	45	11	ADL	NBR
30	46	05	A	NBR
30	46	07	ADL	NBR
30	**46**	**07**	**ADL**	**FPM**
30	46	08	A	NBR
30	**46**	**08**	**ADL**	**FPM**
30	46	10	A	NBR
30	47	05	A	NBR
30	**47**	**05**	**A**	**FPM**
30	47	06	A	NBR
30	47	06	ADL	NBR
30	47	07	A	NBR
30	**47**	**07**	**A**	**FPM**
30	47	07	ADL	NBR
30	**47**	**07**	**ADL**	**FPM**
30	47	07	ADL-P	NBR
30	47	07	B	NBR
30	47	08	A	NBR
30	**47**	**08**	**A**	**FPM**
30	47	08	ADL	NBR
30	**47**	**08**	**ADL**	**FPM**
30	47	08	ADL-P	NBR
30	47	08	DC	NBR
30	47	09	C	NBR
30	47	10	A	NBR
30	**47**	**10**	**A**	**FPM**
30	47	10	ADL	NBR
30	**47**	**10**	**ADL**	**FPM**
30	47	10	ADL-P	NBR
30	47	10	C	NBR
30	47	14	DC	NBR
30	47.5	08	ADL	NBR
30	48	07	ADL	NBR
30	48	08	A	NBR
30	**48**	**08**	**A**	**FPM**
30	48	08	ADL	NBR
30	**48**	**08**	**ADL**	**FPM**
30	48	10	A	NBR
30	48	10	ADL	NBR
30	48	10	B	NBR
30	49	07	ADL	NBR
30	50	05	AO	NBR
30	50	06	ADL	NBR
30	50	07	A	NBR
30	**50**	**07**	**A**	**FPM**
30	50	07	ADL	NBR
30	**50**	**07**	**ADL**	**FPM**



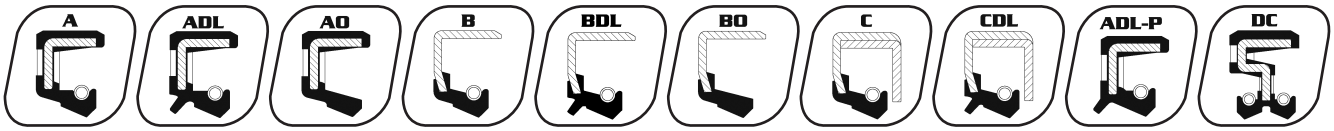
Shaft	Bore	Width	Type	Mat.
30	50	07	ADL-P	NBR
30	50	08	A	NBR
30	**50**	**08**	**A**	**FPM**
30	50	08	ADL	NBR
30	50	10	A	NBR
30	**50**	**10**	**A**	**FPM**
30	50	10	ADL	NBR
30	**50**	**10**	**ADL**	**FPM**
30	50	10	C	NBR
30	50	11	ADL	NBR
30	50	12	A	NBR
30	50	12	ADL	NBR
30	50.8	07	ADL	NBR
30	51	07	ADL	NBR
30	51	10	ADL	NBR
30	52	04	AO	NBR
30	52	05	A	NBR
30	**52**	**05**	**A**	**FPM**
30	52	06	A	NBR
30	52	06	ADL	NBR
30	52	07	A	NBR
30	**52**	**07**	**A**	**FPM**
30	52	07	ADL	NBR
30	**52**	**07**	**ADL**	**FPM**
30	52	07	ADL-P	NBR
30	52	07	B	NBR
30	52	08	A	NBR
30	**52**	**08**	**A**	**FPM**
30	52	08	ADL	NBR
30	**52**	**08**	**ADL**	**FPM**
30	52	08	ADL-P	NBR
30	52	09	C	NBR
30	52	10	A	NBR
30	**52**	**10**	**A**	**FPM**
30	52	10	ADL	NBR
30	**52**	**10**	**ADL**	**FPM**
30	52	11	ADL	NBR
30	52	12	A	NBR
30	**52**	**12**	**A**	**FPM**
30	52	12	ADL	NBR
30	52.1	08	A	NBR
30	54	10	A	NBR
30	55	06	A	NBR
30	55	07	A	NBR
30	**55**	**07**	**A**	**FPM**
30	55	07	ADL	NBR
30	**55**	**07**	**ADL**	**FPM**
30	55	08	ADL	NBR
30	55	10	A	NBR
30	**55**	**10**	**A**	**FPM**
30	55	10	ADL	NBR
30	**55**	**10**	**ADL**	**FPM**
30	55	12	A	NBR
30	55	12	ADL	NBR
30	56	7.5	ADL	NBR
30	56	08	A	NBR
30	56	08	ADL	NBR
30	56	10	A	NBR
30	**56**	**10**	**A**	**FPM**
30	56	10	ADL	NBR
30	56	12	A	NBR
30	56	12	ADL	NBR
30	57	08	A	NBR
30	58	08	ADL	NBR
30	58	10	ADL	NBR
30	60	08	B	NBR
30	60	10	A	NBR
30	60	10	ADL	NBR
30	60	12	C	NBR
30	62	06	B	NBR
30	62	07	A	NBR
30	**62**	**07**	**A**	**FPM**
30	62	07	ADL	NBR
30	**62**	**07**	**ADL**	**FPM**
30	62	07	B	NBR
30	62	07	BDL	NBR
30	62	08	A	NBR
30	62	08	ADL	NBR
30	62	09	C	NBR
30	62	10	A	NBR
30	**62**	**10**	**A**	**FPM**
30	62	10	ADL	NBR
30	**62**	**10**	**ADL**	**FPM**
30	62	11	ADL	NBR
30	62	12	A	NBR
30	62	12	ADL	NBR
30	63	08	ADL	NBR
30	65	10	A	NBR
30	65	10	ADL	NBR
30	68	07	ADL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
30	68	10	A	NBR
30	70	10	ADL	NBR
30	72	06	A	NBR
30	72	07	BDL	NBR
30	72	08	A	NBR
30	72	08	ADL	NBR
30	**72**	**08**	**ADL**	**FPM**
30	72	10	A	NBR
30	**72**	**10**	**A**	**FPM**
30	72	10	ADL	NBR
30	**72**	**10**	**ADL**	**FPM**
30	72	11	ADL	NBR
30	72	12	C	NBR
30	75	10	ADL	NBR
30	77	09	ADL	NBR
30	80	10	ADL	NBR
30.5	47	08	ADL	NBR
31	41	12.5	ADL	NBR
31	42	07	B	NBR
31	42	08	A	NBR
31	42	08	ADL	NBR
31	43	08	ADL	NBR
31	44	07	ADL	NBR
31	45	08	ADL	NBR
31	**45**	**08**	**ADL**	**FPM**
31	45	09	ADL	NBR
31	46	08	ADL	NBR
31	47	07	A	NBR
31	**47**	**07**	**A**	**FPM**
31	47	10	A	NBR
31	48	07	ADL	NBR
31	48	10	ADL	NBR
31	49	07	ADL	NBR
31	50	07	ADL	NBR
31	50	08	ADL	NBR
31	51	07	ADL	NBR
31	**52**	**06**	**A**	**FPM**
31	52	06	ADL	NBR
31	52	07	A	NBR
31	**52**	**07**	**A**	**FPM**
31	52	07	ADL	NBR
31	52	08	A	NBR
31	52	09	A	NBR
31	55	09	A	NBR
31.5	47	07	A	NBR

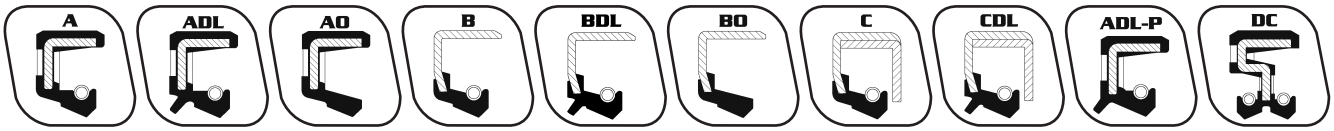
Shaft	Bore	Width	Type	Mat.
31.5	52	07	A	NBR
31.8	40	08	ADL	NBR
32	38	04	BO	NBR
32	40	05	AO	NBR
32	40	07	A	NBR
32	**40**	**07**	**ADL**	**FPM**
32	40	10	ADL	NBR
32	**42**	**04**	**ADL**	**FPM**
32	42	04	AO	NBR
32	**42**	**04**	**AO**	**FPM**
32	42	05	A	NBR
32	**42**	**05**	**A**	**FPM**
32	42	07	A	NBR
32	42	07	ADL	NBR
32	**42**	**07**	**ADL**	**FPM**
32	42	08	ADL	NBR
32	43	06	A	NBR
32	43	07	ADL	NBR
32	**43**	**07**	**ADL**	**FPM**
32	44	07	ADL	NBR
32	44	07	ADL-P	NBR
32	44	08	ADL	NBR
32	44	09	B	NBR
32	44	10	ADL	NBR
32	44	12	ADL	NBR
32	44.5	07	ADL	NBR
32	45	04	AO	NBR
32	45	06	A	NBR
32	45	07	A	NBR
32	**45**	**07**	**A**	**FPM**
32	45	07	ADL	NBR
32	**45**	**07**	**ADL**	**FPM**
32	45	07	ADL-P	NBR
32	45	08	A	NBR
32	45	08	ADL	NBR
32	**45**	**08**	**ADL**	**FPM**
32	45	10	A	NBR
32	**45**	**10**	**A**	**FPM**
32	45	10	ADL	NBR
32	45	12	ADL	NBR
32	46	08	ADL	NBR
32	46	10	ADL	NBR
32	**47**	**06**	**A**	**FPM**
32	47	06	ADL	NBR
32	47	06	ADL-P	NBR



Shaft	Bore	Width	Type	Mat.
32	47	07	A	NBR
32	**47**	**07**	**A**	**FPM**
32	47	07	ADL	NBR
32	**47**	**07**	**ADL**	**FPM**
32	47	07	ADL-P	NBR
32	47	07	B	NBR
32	47	08	A	NBR
32	47	08	ADL	NBR
32	47	09	C	NBR
32	47	10	A	NBR
32	**47**	**10**	**A**	**FPM**
32	47	10	ADL	NBR
32	47	10	B	NBR
32	48	05	A	NBR
32	48	07	A	NBR
32	48	07	ADL	NBR
32	48	08	A	NBR
32	**48**	**08**	**A**	**FPM**
32	48	08	ADL	NBR
32	**48**	**08**	**ADL**	**FPM**
32	48	09	A	NBR
32	48	10	A	NBR
32	48	10	ADL	NBR
32	48	12	A	NBR
32	48	12	ADL	NBR
32	**50**	**07**	**A**	**FPM**
32	**50**	**07**	**ADL**	**FPM**
32	50	07	B	NBR
32	50	08	A	NBR
32	**50**	**08**	**A**	**FPM**
32	50	08	ADL	NBR
32	50	10	A	NBR
32	**50**	**10**	**A**	**FPM**
32	50	10	ADL	NBR
32	**50**	**10**	**ADL**	**FPM**
32	50	12	A	NBR
32	**50**	**12**	**A**	**FPM**
32	51	08	A	NBR
32	52	05	ADL	NBR
32	52	07	A	NBR
32	**52**	**07**	**A**	**FPM**
32	52	07	ADL	NBR
32	**52**	**07**	**ADL**	**FPM**
32	52	07	ADL-P	NBR
32	52	07	B	NBR

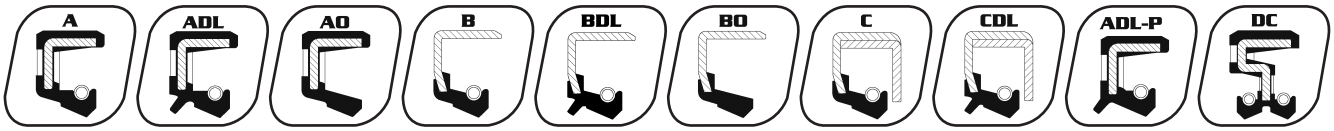
Shaft	Bore	Width	Type	Mat.
32	52	08	A	NBR
32	52	08	ADL	NBR
32	**52**	**08**	**ADL**	**FPM**
32	52	08	DC	NBR
32	52	09	A	NBR
32	52	10	A	NBR
32	**52**	**10**	**A**	**FPM**
32	52	10	ADL	NBR
32	52	11	ADL	NBR
32	**52**	**12**	**A**	**FPM**
32	52	12	ADL	NBR
32	53	07	ADL	NBR
32	54	07	AO	NBR
32	54	10	ADL	NBR
32	54	11	A	NBR
32	55	07	ADL	NBR
32	55	08	ADL	NBR
32	55	10	A	NBR
32	55	10	ADL	NBR
32	55	12	C	NBR
32	56	10	A	NBR
32	**56**	**10**	**A**	**FPM**
32	56	10	ADL	NBR
32	56	12	A	NBR
32	**57**	**9.5**	**A**	**FPM**
32	57.2	10	ADL	NBR
32	58	08	ADL	NBR
32	58	10	ADL	NBR
32	58	10	B	NBR
32	58	12	ADL	NBR
32	60	10	C	NBR
32	60	12	C	NBR
32	62	07	ADL	NBR
32	62	08	A	NBR
32	62	08	ADL	NBR
32	62	08	DC	NBR
32	62	10	A	NBR
32	**62**	**10**	**A**	**FPM**
32	62	10	ADL	NBR
32	**62**	**10**	**ADL**	**FPM**
32	62	12	A	NBR
32	65	6.5	ADL	NBR
32	65	10	ADL	NBR
32	65	10	C	NBR
32	65	12	C	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
32	65	13	ADL	NBR
32	66	10	A	NBR
32	68	08	ADL	NBR
32	70	10	ADL	NBR
32	72	06	A	NBR
32	72	06	ADL	NBR
32	72	08	ADL	NBR
32	72	10	ADL	NBR
32	72	12	ADL	NBR
32	72	12	C	NBR
32	75	10	ADL	NBR
32	75	12	ADL	NBR
32	78	10	ADL	NBR
32	82	06	A	NBR
32	86	06	A	NBR
33	38	03	BO	NBR
33	39	04	AODL	NBR
33	40	03	BO	NBR
33	43	07	A	NBR
33	44	08	ADL	NBR
33	45	07	A	NBR
33	**45**	**07**	**A**	**FPM**
33	45	07	ADL	NBR
33	45	08	ADL	NBR
33	45	10	ADL	NBR
33	46	07	ADL	NBR
33	47	10	ADL	NBR
33	47	11	A	NBR
33	48	8.9	ADL	NBR
33	48	12	A	NBR
33	49.5	09	ADL	NBR
33	50	06	A	NBR
33	50	06	ADL	NBR
33	50	07	A	NBR
33	50	07	ADL	NBR
33	50	08	ADL	NBR
33	50	10	A	NBR
33	50	10	ADL	NBR
33	50	12	ADL	NBR
33	51	07	BDL	NBR
33	52	06	A	NBR
33	52	08	A	NBR
33	52	10	A	NBR
33	54	10	A	NBR
33	55	9.5	BDL	NBR

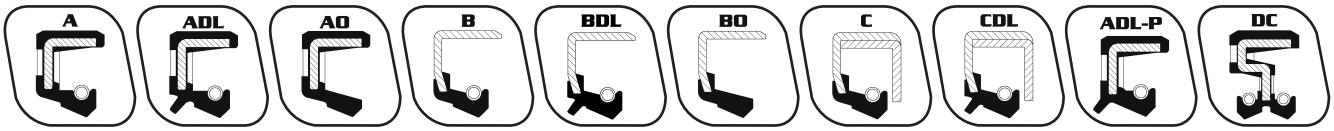
Shaft	Bore	Width	Type	Mat.
33	56	08	ADL	NBR
33	56	10	ADL	NBR
33	56	12	ADL	NBR
33	62	10	ADL	NBR
33	62	12	C	NBR
33	63	09	ADL	NBR
33	66	13	A	NBR
33	72	08	ADL	NBR
33	72	10	ADL	NBR
33.5	55	9.5	ADL	NBR
34	39	03	AO	NBR
34	40	04	AO	NBR
34	41	04	AODL	NBR
34	42	05	AO	NBR
34	44	06	A	NBR
34	44	07	A	NBR
34	44	08	ADL	NBR
34	45	07	A	NBR
34	45	07	ADL	NBR
34	46	08	ADL	NBR
34	46	08	B	NBR
34	46	10	A	NBR
34	47	07	ADL	NBR
34	**47**	**07**	**ADL**	**FPM**
34	47	09	A	NBR
34	48	07	ADL	NBR
34	48	08	ADL	NBR
34	**48**	**08**	**BDL**	**FPM**
34	48	10	ADL	NBR
34	**49**	**08**	**A**	**FPM**
34	50	07	ADL	NBR
34	50	08	A	NBR
34	50	08	ADL	NBR
34	50	09	ADL	NBR
34	50	10	A	NBR
34	**50**	**10**	**A**	**FPM**
34	50	10	ADL	NBR
34	50	12	ADL	NBR
34	51	08	A	NBR
34	52	07	B	NBR
34	52	7.5	A	NBR
34	**52**	**7.5**	**A**	**FPM**
34	52	08	A	NBR
34	52	08	ADL	NBR
34	52	10	A	NBR



Shaft	Bore	Width	Type	Mat.
34	52	11	ADL	NBR
34	54	07	ADL	NBR
34	54	08	ADL	NBR
34	54	11	ADL	NBR
34	54	12.5	ADL	NBR
34	55	06	A	NBR
34	55	09	A	NBR
34	55	09	ADL	NBR
34	**55**	**10**	**A**	**FPM**
34	**55**	**10**	**ADL**	**FPM**
34	55	11	ADL	NBR
34	56	10	ADL	NBR
34	57	06	A	NBR
34	57	06	ADL	NBR
34	58	06	ADL	NBR
34	58	13	C	NBR
34	62	08	ADL	NBR
34	62	10	A	NBR
34	62	10	ADL	NBR
34	**62**	**10**	**ADL**	**FPM**
34	62	12	C	NBR
34	68	10	ADL	NBR
34	70	10	ADL	NBR
34	72	10	A	NBR
34	72	10	ADL	NBR
34	72	11	ADL	NBR
34	72	12	C	NBR
34	72	14	ADL	NBR
35	40	04	BO	NBR
35	42	04	AO	NBR
35	**42**	**04**	**AO**	**FPM**
35	42	08	ADL	NBR
35	43	06	A	NBR
35	43	07	ADL	NBR
35	44	04	A	NBR
35	**44**	**07**	**A**	**FPM**
35	45	04	AO	NBR
35	**45**	**04**	**AO**	**FPM**
35	45	06	A	NBR
35	45	06	A	NBR
35	**45**	**06**	**A**	**FPM**
35	45	06	ADL	NBR
35	45	07	A	NBR
35	**45**	**07**	**A**	**FPM**
35	45	07	ADL	NBR

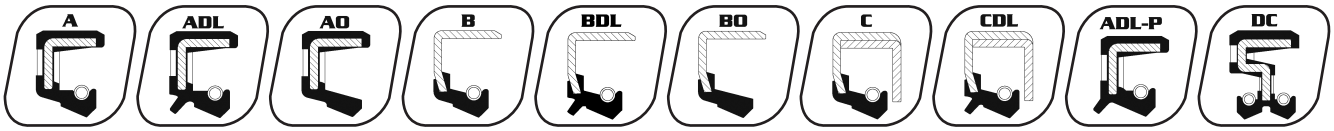
Shaft	Bore	Width	Type	Mat.
35	**45**	**07**	**ADL**	**FPM**
35	45	08	ADL	NBR
35	45	10	A	NBR
35	45	10	ADL	NBR
35	**45**	**10**	**ADL**	**FPM**
35	46	08	ADL	NBR
35	46	10	ADL	NBR
35	47	4.5	A	NBR
35	47	05	A	NBR
35	47	06	A	NBR
35	**47**	**06**	**A**	**FPM**
35	47	06	ADL	NBR
35	47	06	ADL-P	NBR
35	47	07	A	NBR
35	**47**	**07**	**A**	**FPM**
35	47	07	ADL	NBR
35	**47**	**07**	**ADL**	**FPM**
35	47	07	ADL-P	NBR
35	47	07	B	NBR
35	47	08	A	NBR
35	47	09	ADL	NBR
35	47	10	A	NBR
35	47	10	ADL	NBR
35	47	10	ADL-P	NBR
35	47	10	DC	NBR
35	48	05	AO	NBR
35	48	05	BO	NBR
35	48	07	ADL	NBR
35	**48**	**07**	**ADL**	**FPM**
35	48	08	A	NBR
35	48	08	ADL	NBR
35	48	09	A	NBR
35	48	10	ADL	NBR
35	49	06	ADL	NBR
35	49	07	ADL	NBR
35	50	05	A	NBR
35	50	07	A	NBR
35	**50**	**07**	**A**	**FPM**
35	50	07	ADL	NBR
35	**50**	**07**	**ADL**	**FPM**
35	50	07	ADL-P	NBR
35	50	08	A	NBR
35	**50**	**08**	**A**	**FPM**
35	50	08	ADL	NBR
35	**50**	**08**	**ADL**	**FPM**

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
35	50	09	C	NBR
35	50	10	A	NBR
35	**50**	**10**	**A**	**FPM**
35	50	10	ADL	NBR
35	**50**	**10**	**ADL**	**FPM**
35	50	11	ADL	NBR
35	50	12	ADL	NBR
35	51	08	ADL	NBR
35	51	10	ADL	NBR
35	51	14	ADL	NBR
35	52	06	ADL	NBR
35	**52**	**06**	**ADL**	**FPM**
35	52	06	ADL-P	NBR
35	52	07	A	NBR
35	**52**	**07**	**A**	**FPM**
35	52	07	ADL	NBR
35	**52**	**07**	**ADL**	**FPM**
35	52	07	B	NBR
35	52	08	A	NBR
35	**52**	**08**	**A**	**FPM**
35	52	08	ADL	NBR
35	**52**	**08**	**ADL**	**FPM**
35	52	08	B	NBR
35	52	09	A	NBR
35	52	09	ADL	NBR
35	52	10	A	NBR
35	**52**	**10**	**A**	**FPM**
35	52	10	ADL	NBR
35	**52**	**10**	**ADL**	**FPM**
35	52	10	DC	NBR
35	52	12	A	NBR
35	52	12	ADL	NBR
35	53	08	A	NBR
35	54	06	ADL	NBR
35	54	07	A	NBR
35	54	08	A	NBR
35	54	08	ADL	NBR
35	54	10	A	NBR
35	**54**	**10**	**A**	**FPM**
35	55	05	B	NBR
35	55	07	A	NBR
35	**55**	**07**	**A**	**FPM**
35	55	07	ADL	NBR
35	**55**	**07**	**ADL**	**FPM**
35	55	08	A	NBR

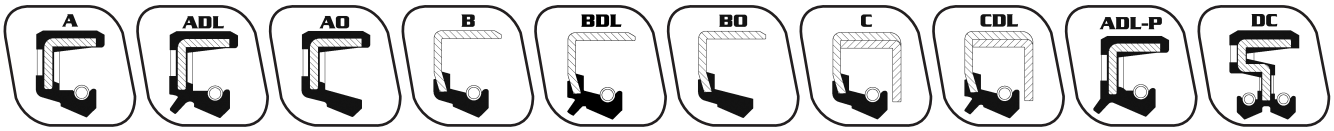
Shaft	Bore	Width	Type	Mat.
35	**55**	**08**	**A**	**FPM**
35	55	08	ADL	NBR
35	**55**	**08**	**ADL**	**FPM**
35	55	09	ADL	NBR
35	55	10	A	NBR
35	**55**	**10**	**A**	**FPM**
35	55	10	ADL	NBR
35	**55**	**10**	**ADL**	**FPM**
35	55	11	ADL	NBR
35	55	12	ADL-P	NBR
35	55	12	C	NBR
35	56	08	A	NBR
35	56	08	ADL	NBR
35	56	10	A	NBR
35	**56**	**10**	**A**	**FPM**
35	56	10	ADL	NBR
35	56	12	A	NBR
35	56	12	ADL	NBR
35	57	13	ADL	NBR
35	58	06	ADL	NBR
35	58	07	A	NBR
35	58	07	ADL	NBR
35	58	7.5	A	NBR
35	58	08	ADL	NBR
35	58	10	A	NBR
35	**58**	**10**	**A**	**FPM**
35	58	10	ADL	NBR
35	**58**	**10**	**ADL**	**FPM**
35	58	11	ADL	NBR
35	58	12	A	NBR
35	58	12	ADL	NBR
35	60	07	ADL	NBR
35	60	10	A	NBR
35	**60**	**10**	**A**	**FPM**
35	60	10	ADL	NBR
35	**60**	**10**	**ADL**	**FPM**
35	60	11	ADL	NBR
35	60	12	A	NBR
35	60	12	ADL	NBR
35	62	05	B	NBR
35	62	06	ADL	NBR
35	62	07	A	NBR
35	**62**	**07**	**A**	**FPM**
35	62	07	ADL	NBR
35	**62**	**07**	**ADL**	**FPM**



Shaft	Bore	Width	Type	Mat.
35	62	07	ADL-P	NBR
35	62	07	B	NBR
35	62	08	A	NBR
35	62	08	ADL	NBR
35	62	10	A	NBR
35	**62**	**10**	**A**	**FPM**
35	62	10	ADL	NBR
35	**62**	**10**	**ADL**	**FPM**
35	**62**	**10**	**DCN**	**FPM**
35	62	12	A	NBR
35	62	12	ADL	NBR
35	**62**	**12**	**ADL**	**FPM**
35	62	12	B	NBR
35	62	15	BDL	NBR
35	63	10	ADL	NBR
35	63	12	ADL	NBR
35	64	13	ADL	NBR
35	65	09	A	NBR
35	65	10	A	NBR
35	65	12	A	NBR
35	65	12	ADL	NBR
35	67	07	A	NBR
35	68	06	A	NBR
35	68	10	A	NBR
35	**68**	**10**	**A**	**FPM**
35	68	12	A	NBR
35	70	08	ADL	NBR
35	70	10	ADL	NBR
35	70	10	B	NBR
35	70	12	C	NBR
35	**72**	**07**	**A**	**FPM**
35	72	07	ADL	NBR
35	**72**	**07**	**ADL**	**FPM**
35	72	08	ADL	NBR
35	72	10	A	NBR
35	**72**	**10**	**A**	**FPM**
35	72	10	ADL	NBR
35	**72**	**10**	**ADL**	**FPM**
35	72	12	A	NBR
35	**72**	**12**	**A**	**FPM**
35	72	12	ADL	NBR
35	72	12	B	NBR
35	74	10	ADL	NBR
35	75	12	ADL	NBR
35	76	09	ADL	NBR

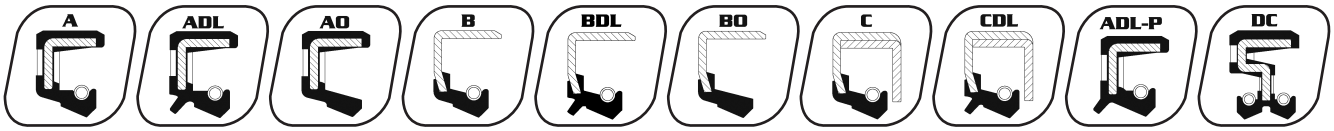
Shaft	Bore	Width	Type	Mat.
35	78	08	ADL	NBR
35	80	07	A	NBR
35	80	08	A	NBR
35	80	08	ADL	NBR
35	80	10	A	NBR
35	80	10	ADL	NBR
35	80	12	A	NBR
35	**80**	**12**	**A**	**FPM**
35	80	12	ADL	NBR
35	**80**	**12**	**ADL**	**FPM**
35	80	13	ADL	NBR
35	80	13	C	NBR
35	82	06	A	NBR
35	90	10	ADL	NBR
35.8	68	10	B	NBR
35.9	52	08	B	NBR
36	42	3.5	BO	NBR
36	45	07	A	NBR
36	46	09	B	NBR
36	47	07	A	NBR
36	47	07	ADL	NBR
36	**47**	**07**	**ADL**	**FPM**
36	48	04	AO	NBR
36	48	05	ADL-P	NBR
36	48	07	ADL	NBR
36	48	10	A	NBR
36	**48**	**10**	**A**	**FPM**
36	49	07	ADL	NBR
36	50	05	A	NBR
36	50	07	A	NBR
36	**50**	**07**	**A**	**FPM**
36	50	07	ADL	NBR
36	50	10	A	NBR
36	50.5	07	ADL	NBR
36	50.8	08	BDL	NBR
36	51	08	ADL	NBR
36	52	6.5	A	NBR
36	52	07	A	NBR
36	**52**	**07**	**A**	**FPM**
36	52	07	ADL	NBR
36	**52**	**07**	**ADL**	**FPM**
36	52	08	ADL	NBR
36	52	09	ADL	NBR
36	52	10	ADL	NBR
36	53	09	ADL	NBR

NBR=Nitrile FPM=Viton®



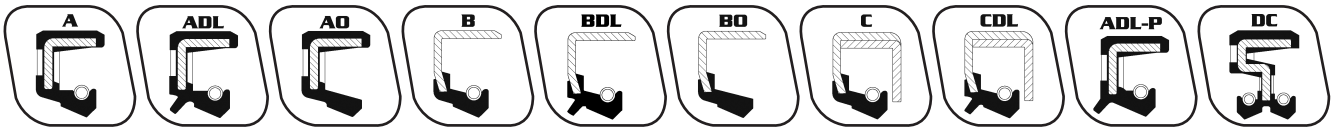
Shaft	Bore	Width	Type	Mat.
36	54	6.5	A	NBR
36	54	07	A	NBR
36	54	07	ADL	NBR
36	54	7.5	A	NBR
36	**54**	**7.5**	**A**	**FPM**
36	54	08	ADL	NBR
36	54	10	ADL	NBR
36	54	11	ADL	NBR
36	55	08	ADL	NBR
36	56	07	ADL	NBR
36	56	10	A	NBR
36	**56**	**10**	**A**	**FPM**
36	57	10	ADL	NBR
36	58	10	A	NBR
36	58	10	ADL	NBR
36	58	12	A	NBR
36	59	9.5	A	NBR
36	60	07	ADL	NBR
36	60	10	ADL	NBR
36	62	07	A	NBR
36	**62**	**07**	**A**	**FPM**
36	62	07	ADL	NBR
36	**62**	**07**	**ADL**	**FPM**
36	62	10	A	NBR
36	**62**	**10**	**A**	**FPM**
36	63.5	09	ADL	NBR
36	65	10	ADL	NBR
36	68	10	A	NBR
36	**68**	**10**	**A**	**FPM**
36	68	10	ADL	NBR
36	72	08	ADL	NBR
36	75	12	A	NBR
36	83	12	A	NBR
36.5	50.5	07	ADL	NBR
37	45	07	ADL	NBR
37	47	04	ADL	NBR
37	47	04	AO	NBR
37	**47**	**04**	**AO**	**FPM**
37	47	08	ADL	NBR
37	47	10	ADL	NBR
37	48	06	ADL	NBR
37	50	06	BDL	NBR
37	50	07	ADL	NBR
37	50	08	ADL	NBR
37	50	10	A	NBR

Shaft	Bore	Width	Type	Mat.
37	51	06	A	NBR
37	52	07	A	NBR
37	52	08	A	NBR
37	52	10	A	NBR
37	**52**	**10**	**A**	**FPM**
37	52	12	ADL	NBR
37	53	07	ADL	NBR
37	55	08	ADL	NBR
37	55	10	ADL	NBR
37	57	08	ADL	NBR
37	57	10	ADL	NBR
37	58	13	A	NBR
37	58	13	ADL	NBR
37	60	08	ADL	NBR
37	62	08	A	NBR
37	**62**	**08**	**A**	**FPM**
37	62	09	ADL	NBR
37	62	09	C	NBR
37	62	10	A	NBR
37	62	11	A	NBR
37	62	12	A	NBR
37	64	13	ADL	NBR
37	65	12	ADL	NBR
37	66	10	ADL	NBR
37	80	13	C	NBR
38	43	03	B	NBR
38	47	07	ADL	NBR
38	47	10	B	NBR
38	48	04	AO	NBR
38	**48**	**04**	**AO**	**FPM**
38	48	06	ADL	NBR
38	48	07	A	NBR
38	50	06	ADL-P	NBR
38	50	06	BDL	NBR
38	50	07	A	NBR
38	**50**	**07**	**A**	**FPM**
38	50	07	ADL	NBR
38	**50**	**07**	**ADL**	**FPM**
38	50	08	ADL	NBR
38	50	10	A	NBR
38	50	10	ADL	NBR
38	50	11	ADL	NBR
38	51	07	ADL	NBR
38	51	08	ADL	NBR
38	51	10	ADL	NBR

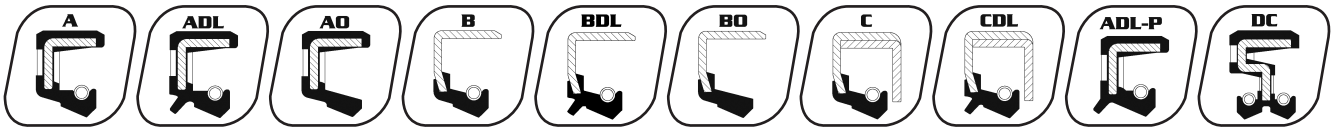


Shaft	Bore	Width	Type	Mat.
38	52	06	ADL	NBR
38	52	07	A	NBR
38	**52**	**07**	**A**	**FPM**
38	52	07	ADL	NBR
38	**52**	**07**	**ADL**	**FPM**
38	52	08	A	NBR
38	**52**	**08**	**A**	**FPM**
38	52	08	ADL	NBR
38	52	09	ADL	NBR
38	52	10	A	NBR
38	**52**	**10**	**A**	**FPM**
38	52	10	ADL	NBR
38	52	10	B	NBR
38	52	10	C	NBR
38	53	07	ADL	NBR
38	54	6.5	A	NBR
38	**54**	**6.5**	**A**	**FPM**
38	54	08	ADL	NBR
38	54	10	A	NBR
38	**54**	**10**	**A**	**FPM**
38	54	10	ADL	NBR
38	55	06	ADL	NBR
38	55	07	A	NBR
38	**55**	**07**	**A**	**FPM**
38	55	07	ADL	NBR
38	**55**	**07**	**ADL**	**FPM**
38	55	08	ADL	NBR
38	55	08	B	NBR
38	55	09	ADL	NBR
38	55	10	A	NBR
38	55	10	ADL	NBR
38	**55**	**10**	**ADL**	**FPM**
38	56	07	A	NBR
38	56	07	ADL	NBR
38	56	10	A	NBR
38	**56**	**10**	**A**	**FPM**
38	56	10	ADL	NBR
38	**56**	**10**	**ADL**	**FPM**
38	56	12	A	NBR
38	57	10	ADL	NBR
38	58	05	AO	NBR
38	58	07	ADL	NBR
38	58	10	A	NBR
38	**58**	**10**	**A**	**FPM**
38	58	10	ADL	NBR
38	58	11	A	NBR
38	58	11	ADL	NBR
38	58	12	ADL	NBR
38	58	12	C	NBR
38	59	09	ADL	NBR
38	**60**	**07**	**ADL**	**FPM**
38	60	08	ADL	NBR
38	60	10	A	NBR
38	**60**	**10**	**A**	**FPM**
38	60	10	ADL	NBR
38	60	12	A	NBR
38	60	12	ADL	NBR
38	60.5	10	ADL	NBR
38	62	04	AO	NBR
38	62	07	A	NBR
38	62	07	ADL	NBR
38	**62**	**07**	**ADL**	**FPM**
38	62	07	ADL-P	NBR
38	62	08	A	NBR
38	62	08	ADL	NBR
38	**62**	**08**	**ADL**	**FPM**
38	62	10	A	NBR
38	**62**	**10**	**A**	**FPM**
38	62	10	ADL	NBR
38	62	10	BDL	NBR
38	62	12	A	NBR
38	62	12	ADL	NBR
38	64	12	A	NBR
38	64	12	ADL	NBR
38	**65**	**08**	**A**	**FPM**
38	65	08	ADL	NBR
38	65	10	A	NBR
38	68	12	BDL	NBR
38	70	08	ADL	NBR
38	70	10	ADL	NBR
38	70	10	C	NBR
38	70	12	A	NBR
38	72	08	ADL	NBR
38	72	10	A	NBR
38	**72**	**10**	**A**	**FPM**
38	72	10	ADL	NBR
38	72	12	A	NBR
38	74	10	A	NBR
38	74	11	ADL	NBR
38	80	10	A	NBR

NBR=Nitrile FPM=Viton®



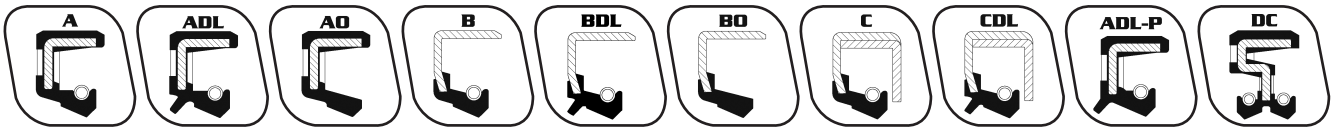
Shaft	Bore	Width	Type	Mat.
38	80	12	A	NBR
38.5	58	09	ADL	NBR
38.5	58	11	ADL	NBR
39	47	05	AODL	NBR
39	51	7.5	A	NBR
39	52	10	ADL	NBR
39	55.9	09	A	NBR
39	58	06	ADL	NBR
39	59	07	ADL	NBR
39	65	08	ADL	NBR
39	65	09	A	NBR
39.5	60	10	BDL	NBR
40	46	4.5	BO	NBR
40	46	08	ADL	NBR
40	47	04	AO	NBR
40	**47**	**04**	**AO**	**FPM**
40	48	04	BO	NBR
40	**48**	**04**	**BO**	**FPM**
40	49	10	B	NBR
40	50	04	AO	NBR
40	50	05	ADL	NBR
40	50	6.5	ADL	NBR
40	50	07	A	NBR
40	**50**	**07**	**A**	**FPM**
40	50	07	ADL	NBR
40	50	08	A	NBR
40	**50**	**08**	**A**	**FPM**
40	50	08	ADL	NBR
40	50	10	ADL	NBR
40	51	5.5	A	NBR
40	51.5	4.5	A	NBR
40	52	05	A	NBR
40	52	05	ADL	NBR
40	52	05	AO	NBR
40	52	06	A	NBR
40	**52**	**06**	**A**	**FPM**
40	52	06	ADL	NBR
40	**52**	**06**	**ADL**	**FPM**
40	52	07	A	NBR
40	**52**	**07**	**A**	**FPM**
40	52	07	ADL	NBR
40	**52**	**07**	**ADL**	**FPM**
40	52	07	ADL-P	NBR
40	52	07	B	NBR
40	52	08	A	NBR
40	52	08	ADL	NBR
40	52	09	A	NBR
40	52	09	ADL	NBR
40	52	10	A	NBR
40	52	10	ADL	NBR
40	53	08	ADL	NBR
40	54	05	ADL	NBR
40	54	5.5	BDL	NBR
40	54	07	ADL	NBR
40	54	07	AO	NBR
40	54	09	ADL	NBR
40	55	05	AO	NBR
40	**55**	**06**	**ADL-P**	**FPM**
40	55	6.5	A	NBR
40	55	07	A	NBR
40	**55**	**07**	**A**	**FPM**
40	55	07	ADL	NBR
40	**55**	**07**	**ADL**	**FPM**
40	55	07	ADL-P	NBR
40	55	08	A	NBR
40	**55**	**08**	**A**	**FPM**
40	55	08	ADL	NBR
40	**55**	**08**	**ADL**	**FPM**
40	55	09	C	NBR
40	55	10	A	NBR
40	**55**	**10**	**A**	**FPM**
40	55	10	ADL	NBR
40	**55**	**10**	**ADL**	**FPM**
40	55	12	C	NBR
40	56	06	ADL	NBR
40	56	06	ADL-P	NBR
40	56	07	A	NBR
40	56	07	ADL	NBR
40	56	08	A	NBR
40	**56**	**08**	**A**	**FPM**
40	56	08	ADL	NBR
40	56	09	A	NBR
40	56	10	A	NBR
40	**56**	**10**	**A**	**FPM**
40	56	10	ADL	NBR
40	56	12	A	NBR
40	56	12	ADL	NBR
40	57	10	ADL	NBR
40	58	07	A	NBR
40	58	07	ADL	NBR



Shaft	Bore	Width	Type	Mat.
40	58	08	A	NBR
40	**58**	**08**	**A**	**FPM**
40	58	08	ADL	NBR
40	**58**	**08**	**ADL**	**FPM**
40	58	08	ADL-P	NBR
40	58	8.5	ADL	NBR
40	58	09	A	NBR
40	58	09	ADL	NBR
40	58	10	A	NBR
40	**58**	**10**	**A**	**FPM**
40	58	10	ADL	NBR
40	58	12	A	NBR
40	60	07	A	NBR
40	60	07	ADL	NBR
40	60	07	ADL-P	NBR
40	60	08	A	NBR
40	**60**	**08**	**A**	**FPM**
40	60	08	ADL	NBR
40	60	10	A	NBR
40	**60**	**10**	**A**	**FPM**
40	60	10	ADL	NBR
40	**60**	**10**	**ADL**	**FPM**
40	60	10	ADL-P	NBR
40	60	12	A	NBR
40	60	12	ADL	NBR
40	61	10	B	NBR
40	62	05	AO	NBR
40	**62**	**06**	**A**	**FPM**
40	**62**	**06**	**ADL**	**FPM**
40	62	06	ADL-P	NBR
40	**62**	**06**	**ADL-P**	**FPM**
40	62	07	A	NBR
40	**62**	**07**	**A**	**FPM**
40	62	07	ADL	NBR
40	**62**	**07**	**ADL**	**FPM**
40	62	07	B	NBR
40	62	07	BDL	NBR
40	62	08	A	NBR
40	62	08	ADL	NBR
40	**62**	**08**	**ADL**	**FPM**
40	62	08	B	NBR
40	62	09	ADL	NBR
40	62	10	A	NBR
40	**62**	**10**	**A**	**FPM**
40	62	10	ADL	NBR

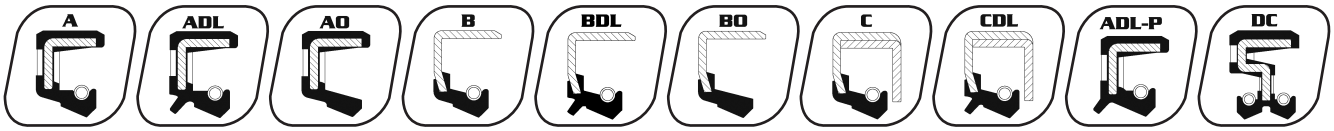
Shaft	Bore	Width	Type	Mat.
40	**62**	**10**	**ADL**	**FPM**
40	62	10	ADL-P	NBR
40	62	10	C	NBR
40	62	11	ADL	NBR
40	62	11.5	A	NBR
40	62	12	A	NBR
40	**62**	**12**	**A**	**FPM**
40	62	12	ADL	NBR
40	**62**	**12**	**ADL**	**FPM**
40	62	14	ADL	NBR
40	63	07	ADL	NBR
40	63	10	A	NBR
40	64	10	ADL	NBR
40	64	12	ADL	NBR
40	64	13	ADL	NBR
40	65	09	A	NBR
40	65	09	ADL	NBR
40	65	10	A	NBR
40	**65**	**10**	**A**	**FPM**
40	65	10	ADL	NBR
40	**65**	**10**	**ADL**	**FPM**
40	65	12	A	NBR
40	**65**	**12**	**A**	**FPM**
40	65	12	ADL	NBR
40	65.4	10	ADL	NBR
40	66	09	ADL	NBR
40	66	10	ADL	NBR
40	67	08	ADL	NBR
40	67	10	ADL	NBR
40	68	05	ADL	NBR
40	68	06	A	NBR
40	68	07	A	NBR
40	68	07	ADL	NBR
40	68	08	A	NBR
40	68	08	ADL	NBR
40	68	10	A	NBR
40	**68**	**10**	**A**	**FPM**
40	68	10	ADL	NBR
40	68	12	A	NBR
40	68	12	ADL	NBR
40	70	08	A	NBR
40	70	08	ADL	NBR
40	70	10	A	NBR
40	**70**	**10**	**A**	**FPM**
40	70	10	ADL	NBR

NBR=Nitrile FPM=Viton®



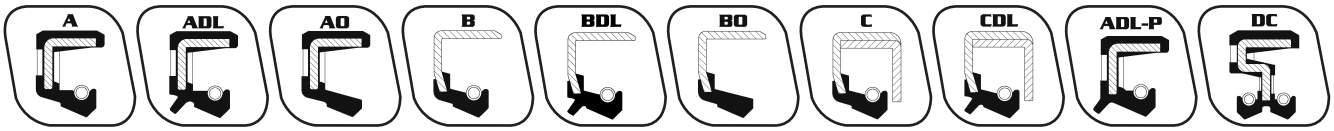
Shaft	Bore	Width	Type	Mat.
40	70	12	A	NBR
40	70	12	ADL	NBR
40	72	07	A	NBR
40	**72**	**07**	**A**	**FPM**
40	72	07	ADL	NBR
40	**72**	**07**	**ADL**	**FPM**
40	72	08	A	NBR
40	72	08	ADL	NBR
40	72	09	C	NBR
40	72	10	A	NBR
40	**72**	**10**	**A**	**FPM**
40	72	10	ADL	NBR
40	72	11	ADL	NBR
40	72	12	A	NBR
40	72	12	ADL	NBR
40	75	08	ADL	NBR
40	75	10	ADL	NBR
40	75	12	ADL	NBR
40	76	08	ADL	NBR
40	78	10	A	NBR
40	80	07	ADL	NBR
40	80	08	A	NBR
40	80	08	ADL	NBR
40	80	10	A	NBR
40	**80**	**10**	**A**	**FPM**
40	80	10	ADL	NBR
40	**80**	**10**	**ADL**	**FPM**
40	80	12	ADL	NBR
40	**80**	**12**	**ADL**	**FPM**
40	80	13	A	NBR
40	80	13	ADL	NBR
40	85	10	A	NBR
40	**85**	**10**	**A**	**FPM**
40	85	10	ADL	NBR
40	85	12	ADL	NBR
40	88	06	A	NBR
40	90	08	A	NBR
40	90	10	A	NBR
40	90	10	ADL	NBR
40	90	12	ADL	NBR
40	**90**	**12**	**ADL**	**FPM**
40	90	12	B	NBR
40	90	13	C	NBR
40.5	58	08	ADL	NBR
41	47	04	BO	NBR

Shaft	Bore	Width	Type	Mat.
41	51	05	AODL	NBR
41	52	08	A	NBR
41	53	07	BDL	NBR
41	53	08	ADL	NBR
41	55	06	BDL	NBR
41	55	07	ADL	NBR
41	55.7	09	ADL	NBR
41	56	07	A	NBR
41	56	08	A	NBR
41	56	10	A	NBR
41	62	08	ADL	NBR
41	64	10	ADL	NBR
41	65	09	BDL	NBR
42	50	07	A	NBR
42	51	07	ADL	NBR
42	52	04	ADL	NBR
42	52	04	AO	NBR
42	**52**	**04**	**AO**	**FPM**
42	52	05	A	NBR
42	52	5.5	AO	NBR
42	**52**	**08**	**A**	**FPM**
42	52	08	ADL	NBR
42	52	10	ADL	NBR
42	53	08	ADL	NBR
42	54	05	AO	NBR
42	54	05	ADL	NBR
42	55	06	ADL	NBR
42	55	07	A	NBR
42	55	07	ADL	NBR
42	**55**	**07**	**ADL**	**FPM**
42	55	08	A	NBR
42	**55**	**08**	**A**	**FPM**
42	55	08	ADL	NBR
42	**55**	**08**	**ADL**	**FPM**
42	55	09	ADL	NBR
42	55	10	A	NBR
42	55	10	ADL	NBR
42	56	07	A	NBR
42	**56**	**07**	**A**	**FPM**
42	56	07	ADL	NBR
42	56	08	B	NBR
42	56	10	ADL	NBR
42	57	07	A	NBR
42	58	07	ADL	NBR
42	**58**	**07**	**ADL**	**FPM**



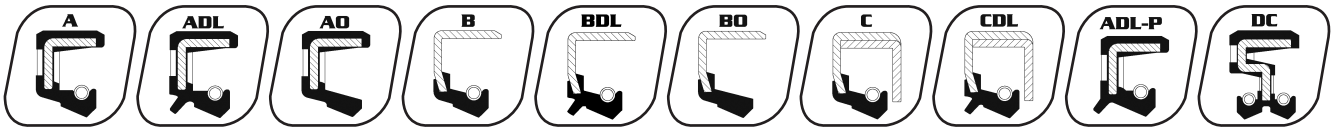
Shaft	Bore	Width	Type	Mat.
42	58	08	ADL	NBR
42	58	09	B	NBR
42	58	10	A	NBR
42	58	10	ADL	NBR
42	58	11	ADL	NBR
42	58	12	A	NBR
42	59.5	10	ADL	NBR
42	60	07	A	NBR
42	60	07	ADL	NBR
42	**60**	**07**	**ADL**	**FPM**
42	60	08	A	NBR
42	**60**	**08**	**A**	**FPM**
42	60	08	ADL	NBR
42	60	09	ADL	NBR
42	60	10	A	NBR
42	**60**	**10**	**A**	**FPM**
42	60	10	ADL	NBR
42	60	12	A	NBR
42	**60**	**12**	**A**	**FPM**
42	60	12	ADL	NBR
42	62	07	A	NBR
42	**62**	**07**	**A**	**FPM**
42	62	07	ADL	NBR
42	**62**	**07**	**ADL**	**FPM**
42	62	07	BDL	NBR
42	62	08	A	NBR
42	**62**	**08**	**A**	**FPM**
42	62	08	ADL	NBR
42	**62**	**08**	**ADL**	**FPM**
42	62	08	ADL-P	NBR
42	62	10	A	NBR
42	**62**	**10**	**A**	**FPM**
42	62	10	ADL	NBR
42	62	12	A	NBR
42	62	12	ADL	NBR
42	63	09	ADL	NBR
42	64	07	A	NBR
42	64	07	ADL	NBR
42	64	08	ADL	NBR
42	65	08	A	NBR
42	65	08	ADL	NBR
42	**65**	**08**	**ADL**	**FPM**
42	65	09	ADL	NBR
42	65	10	A	NBR
42	**65**	**10**	**A**	**FPM**
42	65	10	ADL	NBR
42	65	12	A	NBR
42	65	12	ADL	NBR
42	65	12	ADL-P	NBR
42	66	08	A	NBR
42	66	08	ADL	NBR
42	67	10	ADL	NBR
42	**68**	**08**	**ADL**	**FPM**
42	68	10	ADL	NBR
42	68	11	A	NBR
42	68	11.5	A	NBR
42	70	10	A	NBR
42	70	10	ADL	NBR
42	70	12	A	NBR
42	70	12	ADL	NBR
42	72	06	ADL	NBR
42	72	07	ADL	NBR
42	72	08	A	NBR
42	**72**	**08**	**A**	**FPM**
42	72	08	ADL	NBR
42	**72**	**08**	**ADL**	**FPM**
42	72	09	ADL	NBR
42	72	10	A	NBR
42	**72**	**10**	**A**	**FPM**
42	72	10	ADL	NBR
42	**72**	**10**	**ADL**	**FPM**
42	72	12	A	NBR
42	72	12	ADL	NBR
42	72.5	10	ADL	NBR
42	75	10	ADL	NBR
42	75	12	ADL	NBR
42	76	12	ADL	NBR
42	78	10	ADL	NBR
42	80	09	ADL	NBR
42	80	10	A	NBR
42	80	12	C	NBR
42	80	13	C	NBR
42	81	13	A	NBR
43	50	08	AODL	NBR
43	52	10	B	NBR
43	53	04	AO	NBR
43	**53**	**05**	**A**	**FPM**
43	54	7.5	B	NBR
43	54	09	ADL	NBR
43	55	07	A	NBR

NBR=Nitrile FPM=Viton®



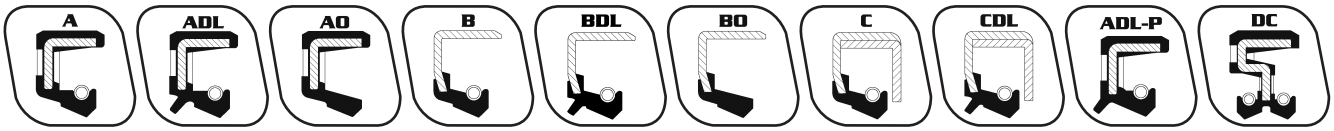
Shaft	Bore	Width	Type	Mat.
43	**55**	**07**	**ADL**	**FPM**
43	55	09	ADL	NBR
43	56	06	ADL	NBR
43	58	07	ADL	NBR
43	58	08	ADL	NBR
43	60	10	A	NBR
43	**60**	**10**	**A**	**FPM**
43	60	10	ADL	NBR
43	62	08	ADL	NBR
43	62	10	A	NBR
43	**62**	**10**	**A**	**FPM**
43	62	12	ADL	NBR
43	65	13	A	NBR
43	66	10	A	NBR
43	75	10	A	NBR
43	80	10	A	NBR
44	52	10	ADL	NBR
44	52	10	AO	NBR
44	54	4.5	A	NBR
44	54	7.5	ADL	NBR
44	54	09	ADL	NBR
44	55	07	A	NBR
44	56	08	ADL	NBR
44	57	9.5	A	NBR
44	57	9.5	ADL	NBR
44	58	07	ADL	NBR
44	58	07	B	NBR
44	60	07	ADL	NBR
44	60	09	A	NBR
44	60	09	ADL	NBR
44	60	10	A	NBR
44	**60**	**10**	**A**	**FPM**
44	60	12	ADL	NBR
44	62	08	ADL	NBR
44	62	09	ADL	NBR
44	62	10	A	NBR
44	62	10	ADL	NBR
44	62	11.5	ADL	NBR
44	62	12	C	NBR
44	63	07	ADL	NBR
44	64	09	ADL	NBR
44	64	10	ADL	NBR
44	65	08	ADL	NBR
44	**65**	**08**	**ADL**	**FPM**
44	65	10	A	NBR

Shaft	Bore	Width	Type	Mat.
44	**65**	**10**	**A**	**FPM**
44	65	10	ADL	NBR
44	**65**	**10**	**ADL**	**FPM**
44	65	11	ADL	NBR
44	67	10	ADL	NBR
44	68	08	A	NBR
44	70	12	C	NBR
44	72	09	ADL	NBR
44	72	10	A	NBR
44	72	12	C	NBR
44	80	06	A	NBR
44	92	09	ADL	NBR
44	92	10	ADL	NBR
44	100	12	A	NBR
44.5	54	07	ADL	NBR
44.5	62	10	A	NBR
45	50	02	AO	NBR
45	50	03	BO	NBR
45	**52**	**04**	**A**	**FPM**
45	52	04	AO	NBR
45	52	08	A	NBR
45	52	08	ADL	NBR
45	53	07	B	NBR
45	55	04	AO	NBR
45	**55**	**04**	**AO**	**FPM**
45	55	07	A	NBR
45	**55**	**07**	**A**	**FPM**
45	55	07	ADL	NBR
45	**55**	**07**	**ADL**	**FPM**
45	55	07	ADL-P	NBR
45	55	07	B	NBR
45	55	08	A	NBR
45	55	10	A	NBR
45	56	07	ADL	NBR
45	57	5.5	ADL	NBR
45	57	07	A	NBR
45	57	7.5	ADL	NBR
45	57	09	A	NBR
45	57	10	ADL	NBR
45	58	06	ADL-P	NBR
45	58	07	A	NBR
45	58	07	ADL	NBR
45	**58**	**07**	**ADL**	**FPM**
45	58	07	ADL-P	NBR
45	58	08	A	NBR



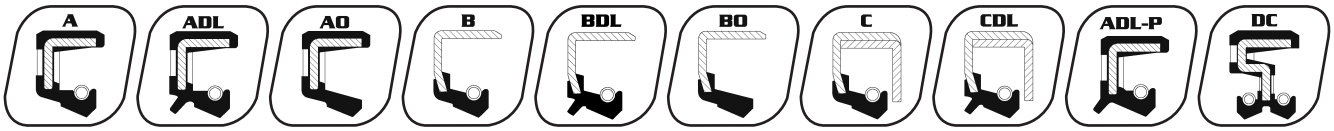
Shaft	Bore	Width	Type	Mat.
45	58	08	ADL	NBR
45	58	09	BDL	NBR
45	59	10	A	NBR
45	60	06	A	NBR
45	60	07	A	NBR
45	**60**	**07**	**A**	**FPM**
45	60	07	ADL	NBR
45	**60**	**07**	**ADL**	**FPM**
45	60	08	A	NBR
45	**60**	**08**	**A**	**FPM**
45	60	08	ADL	NBR
45	**60**	**08**	**ADL**	**FPM**
45	60	09	ADL	NBR
45	60	10	A	NBR
45	**60**	**10**	**A**	**FPM**
45	60	10	ADL	NBR
45	**60**	**10**	**ADL**	**FPM**
45	60	12	A	NBR
45	61	09	ADL	NBR
45	61	10	ADL	NBR
45	61.5	05	C	NBR
45	62	06	A	NBR
45	62	07	A	NBR
45	**62**	**07**	**A**	**FPM**
45	62	07	ADL	NBR
45	**62**	**07**	**ADL**	**FPM**
45	62	07	ADL-P	NBR
45	62	07	B	NBR
45	62	08	A	NBR
45	**62**	**08**	**A**	**FPM**
45	62	08	ADL	NBR
45	**62**	**08**	**ADL**	**FPM**
45	62	08	AODL	NBR
45	62	09	A	NBR
45	**62**	**09**	**A**	**FPM**
45	62	09	ADL	NBR
45	**62**	**09**	**ADL**	**FPM**
45	62	10	A	NBR
45	**62**	**10**	**A**	**FPM**
45	62	10	ADL	NBR
45	62	11	ADL	NBR
45	62	12	A	NBR
45	**62**	**12**	**A**	**FPM**
45	62	12	ADL	NBR
45	63	07	ADL	NBR
45	63.5	10	ADL	NBR
45	64	09	ADL	NBR
45	65	05	A	NBR
45	65	06	A	NBR
45	65	07	ADL	NBR
45	65	07	ADL-P	NBR
45	**65**	**07**	**ADL-P**	**FPM**
45	65	08	A	NBR
45	**65**	**08**	**A**	**FPM**
45	65	08	ADL	NBR
45	**65**	**08**	**ADL**	**FPM**
45	65	08	ADL-P	NBR
45	**65**	**08**	**B**	**FPM**
45	65	09	ADL	NBR
45	65	10	A	NBR
45	**65**	**10**	**A**	**FPM**
45	65	10	ADL	NBR
45	**65**	**10**	**ADL**	**FPM**
45	65	12	A	NBR
45	**65**	**12**	**A**	**FPM**
45	65	12	ADL	NBR
45	66	06	A	NBR
45	**66**	**06**	**A**	**FPM**
45	66	09	**A**	NBR
45	66	10	A	NBR
45	68	07	ADL	NBR
45	68	08	A	NBR
45	68	08	ADL	NBR
45	68	09	ADL	NBR
45	68	10	A	NBR
45	**68**	**10**	**A**	**FPM**
45	68	10	ADL	NBR
45	**68**	**10**	**ADL**	**FPM**
45	68	12	A	NBR
45	68	12	ADL	NBR
45	68	12	ADL-P	NBR
45	68	12	C	NBR
45	69	10	ADL	NBR
45	70	05	ADL	NBR
45	70	10	A	NBR
45	70	10	ADL	NBR
45	70	10	C	NBR
45	70	12	A	NBR
45	**70**	**12**	**A**	**FPM**
45	70	12	ADL	NBR

NBR=Nitrile FPM=Viton®



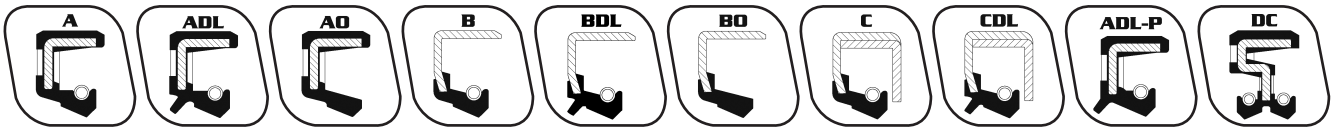
Shaft	Bore	Width	Type	Mat.
45	71	07	BO	NBR
45	72	07	A	NBR
45	72	08	A	NBR
45	**72**	**08**	**A**	**FPM**
45	72	08	ADL	NBR
45	**72**	**08**	**ADL**	**FPM**
45	72	09	A	NBR
45	72	10	A	NBR
45	**72**	**10**	**A**	**FPM**
45	72	10	ADL	NBR
45	72	11	ADL	NBR
45	72	12	A	NBR
45	72	12	ADL	NBR
45	72	12	B	NBR
45	72	15	ADL	NBR
45	73	10	ADL	NBR
45	75	06	A	NBR
45	75	06	ADL	NBR
45	75	07	ADL	NBR
45	**75**	**07**	**ADL**	**FPM**
45	75	08	A	NBR
45	75	08	ADL	NBR
45	**75**	**08**	**ADL**	**FPM**
45	75	10	A	NBR
45	**75**	**10**	**A**	**FPM**
45	75	10	ADL	NBR
45	**75**	**10**	**ADL**	**FPM**
45	75	12	ADL	NBR
45	75	12	C	NBR
45	75	13	ADL	NBR
45	78	10	BDL	NBR
45	78	13	A	NBR
45	80	08	A	NBR
45	80	10	A	NBR
45	**80**	**10**	**A**	**FPM**
45	80	10	ADL	NBR
45	**80**	**10**	**ADL**	**FPM**
45	80	10	B	NBR
45	80	13	A	NBR
45	80	13	ADL	NBR
45	82	12	ADL	NBR
45	**85**	**08**	**A**	**FPM**
45	85	08	ADL	NBR
45	85	10	A	NBR
45	85	10	ADL	NBR

Shaft	Bore	Width	Type	Mat.
45	**85**	**10**	**ADL**	**FPM**
45	85	13	A	NBR
45	90	10	A	NBR
45	90	10	ADL	NBR
45	**90**	**10**	**ADL**	**FPM**
45	100	10	A	NBR
45	100	10	ADL	NBR
45	**100**	**10**	**ADL**	**FPM**
46	56	07	ADL	NBR
46	58	05	AO	NBR
46	59	12	ADL	NBR
46	60	07	ADL	NBR
46	60	10	ADL	NBR
46	62	08	ADL	NBR
46	62	09	A	NBR
46	64	08	A	NBR
46	64	09	ADL	NBR
46	65	09	ADL	NBR
46	65	10	A	NBR
46	68	08	ADL	NBR
46	70	08	ADL	NBR
46	**70**	**08**	**ADL**	**FPM**
46	72	10	A	NBR
46	73	10	ADL	NBR
46	73	10	BDL	NBR
46	78	10	A	NBR
46	78	10	ADL	NBR
46.2	80	10	A	NBR
47	56	10	A	NBR
47	58	05	ADL	NBR
47	58	06	A	NBR
47	58	07	A	NBR
47	58	07	ADL	NBR
47	62	06	A	NBR
47	**62**	**06**	**A**	**FPM**
47	62	07	ADL-P	NBR
47	**62**	**07**	**ADL-P**	**FPM**
47	62	08	A	NBR
47	62	09	ADL	NBR
47	65	08	A	NBR
47	65	10	A	NBR
47	**65**	**10**	**A**	**FPM**
47	65	10	ADL-P	NBR
47	66	06	BDL	NBR
47	67	12	A	NBR

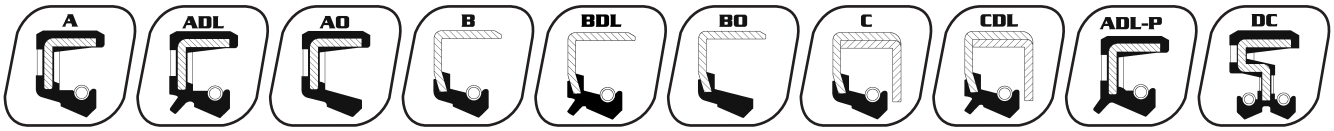


Shaft	Bore	Width	Type	Mat.
47	68	13	BDL	NBR
47	70	10	ADL	NBR
47	72	08	ADL	NBR
47	72	09	A	NBR
47	**72**	**09**	**A**	**FPM**
47	72	10	A	NBR
47	72	10	ADL	NBR
47	72	12	ADL	NBR
47	**75**	**10**	**ADL**	**FPM**
48	52	05	BO	NBR
48	54	04	AO	NBR
48	58	04	A	NBR
48	58	04	ADL	NBR
48	60	07	ADL	NBR
48	60	08	ADL	NBR
48	60	09	BDL	NBR
48	**60**	**10**	**A**	**FPM**
48	62	06	AO	NBR
48	62	07	ADL	NBR
48	62	08	A	NBR
48	**62**	**08**	**A**	**FPM**
48	62	08	ADL	NBR
48	**62**	**08**	**ADL**	**FPM**
48	62	08	ADL-P	NBR
48	62	09	ADL	NBR
48	62	10	A	NBR
48	**62**	**10**	**A**	**FPM**
48	62	10	ADL	NBR
48	62	12	A	NBR
48	63	11	A	NBR
48	63.5	08	ADL	NBR
48	**65**	**07**	**A**	**FPM**
48	65	07	ADL	NBR
48	65	08	A	NBR
48	**65**	**08**	**ADL**	**FPM**
48	65	09	ADL	NBR
48	65	10	A	NBR
48	**65**	**10**	**A**	**FPM**
48	65	10	ADL	NBR
48	**65**	**10**	**ADL**	**FPM**
48	65	12	A	NBR
48	65	12	B	NBR
48	67	09	ADL	NBR
48	67	10	ADL	NBR
48	68	08	ADL	NBR
48	**68**	**08**	**ADL**	**FPM**
48	68	10	A	NBR
48	**68**	**10**	**A**	**FPM**
48	68	10	ADL	NBR
48	**68**	**10**	**ADL**	**FPM**
48	68	11	ADL	NBR
48	68	12	A	NBR
48	68	14	ADL	NBR
48	69	10	ADL	NBR
48	70	08	A	NBR
48	70	09	ADL	NBR
48	70	10	A	NBR
48	**70**	**10**	**A**	**FPM**
48	70	10	ADL	NBR
48	**70**	**10**	**ADL**	**FPM**
48	70	12	A	NBR
48	70	12	ADL	NBR
48	**70**	**12**	**ADL**	**FPM**
48	72	07	A	NBR
48	72	07	ADL	NBR
48	72	07	ADL-P	NBR
48	72	08	A	NBR
48	**72**	**08**	**A**	**FPM**
48	72	08	ADL	NBR
48	**72**	**08**	**ADL**	**FPM**
48	72	09	A	NBR
48	72	10	A	NBR
48	**72**	**10**	**A**	**FPM**
48	72	10	ADL	NBR
48	72	12	A	NBR
48	72	12	ADL	NBR
48	72	15	DC	NBR
48	**72**	**15**	**DC**	**FPM**
48	73	12	ADL	NBR
48	74	10	A	NBR
48	74	10	ADL	NBR
48	75	09	ADL	NBR
48	75	10	ADL	NBR
48	76	13	ADL	NBR
48	79	09	ADL	NBR
48	80	08	A	NBR
48	80	10	A	NBR
48	**80**	**10**	**A**	**FPM**
48	80	10	ADL	NBR
48	80	13	A	NBR

NBR=Nitrile FPM=Viton®

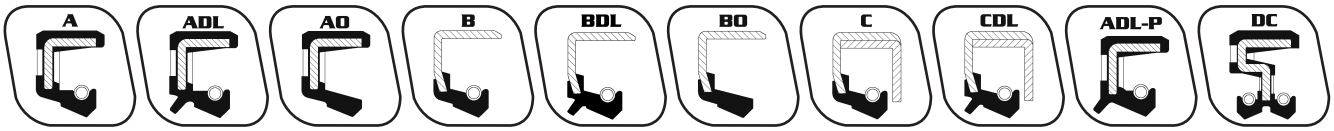


Shaft	Bore	Width	Type	Mat.
48	82	12	BDL	NBR
48	**85**	**06**	**A**	**FPM**
48	85	10	A	NBR
48	90	10	A	NBR
48	**90**	**10**	**A**	**FPM**
48	90	13	ADL	NBR
48	110	12	ADL	NBR
49	54	04	AO	NBR
49	55	05	BDL	NBR
49	60	07	B	NBR
49	60	10	ADL	NBR
49	62	06	ADL	NBR
49	65	10	A	NBR
49	68	12	A	NBR
49	72	5.46	AO	NBR
49	72	10	A	NBR
49	77	18	ADL	NBR
49	86	12	ADL	NBR
49	92	10	ADL	NBR
50	56	07	BO	NBR
50	58	04	AO	NBR
50	**58**	**04**	**AO**	**FPM**
50	58	05	B	NBR
50	59	04	AO	NBR
50	60	04	AO	NBR
50	60	07	A	NBR
50	**60**	**07**	**A**	**FPM**
50	60	08	A	NBR
50	60	08	ADL	NBR
50	60	10	A	NBR
50	60	10	ADL	NBR
50	62	05	AO	NBR
50	**62**	**05**	**AO**	**FPM**
50	62	06	A	NBR
50	62	07	A	NBR
50	**62**	**07**	**A**	**FPM**
50	62	07	ADL	NBR
50	**62**	**07**	**ADL**	**FPM**
50	**62**	**08**	**A**	**FPM**
50	62	08	ADL	NBR
50	62	10	A	NBR
50	62	10	ADL	NBR
50	63	03	BODL	NBR
50	63	03	BDL	NBR
50	63	06	BO	NBR
50	64	10	A	NBR
50	64	10	ADL	NBR
50	64	12	ADL	NBR
50	65	07	A	NBR
50	65	07	ADL-P	NBR
50	**65**	**07**	**ADL-P**	**FPM**
50	65	08	A	NBR
50	**65**	**08**	**A**	**FPM**
50	65	08	ADL	NBR
50	**65**	**08**	**ADL**	**FPM**
50	65	08	ADL-P	NBR
50	65	09	ADL	NBR
50	65	10	A	NBR
50	**65**	**10**	**A**	**FPM**
50	65	10	ADL	NBR
50	**65**	**10**	**ADL**	**FPM**
50	65	10	C	NBR
50	65	12	A	NBR
50	66	08	A	NBR
50	66	10	A	NBR
50	66	12	A	NBR
50	67	09	BDL	NBR
50	67	11	AODL	NBR
50	68	04	AO	NBR
50	68	06	ADL	NBR
50	68	07	ADL	NBR
50	68	07	ADL-P	NBR
50	68	08	A	NBR
50	**68**	**08**	**A**	**FPM**
50	68	08	ADL	NBR
50	**68**	**08**	**ADL**	**FPM**
50	68	08	ADL-P	NBR
50	68	09	ADL	NBR
50	68	10	A	NBR
50	**68**	**10**	**A**	**FPM**
50	68	10	ADL	NBR
50	**68**	**10**	**ADL**	**FPM**
50	68	11	A	NBR
50	68	12	A	NBR
50	68	12	C	NBR
50	68	14	B	NBR
50	70	07	CDL	NBR
50	70	08	A	NBR
50	**70**	**08**	**A**	**FPM**
50	**70**	**08**	**ADL**	**FPM**



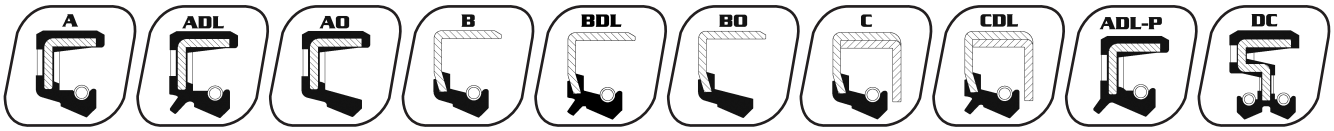
Shaft	Bore	Width	Type	Mat.
50	70	09	A	NBR
50	70	09	ADL	NBR
50	70	9.5	ADL	NBR
50	70	10	A	NBR
50	**70**	**10**	**A**	**FPM**
50	70	10	ADL	NBR
50	**70**	**10**	**ADL**	**FPM**
50	70	10	ADL-P	NBR
50	70	12	A	NBR
50	**70**	**12**	**A**	**FPM**
50	70	12	ADL	NBR
50	70	13.5	ADL	NBR
50	72	05	ADL	NBR
50	72	06	A	NBR
50	72	06	AO	NBR
50	72	06	ADL	NBR
50	72	07	ADL	NBR
50	**72**	**07**	**ADL**	**FPM**
50	72	07	ADL-P	NBR
50	**72**	**07**	**ADL-P**	**FPM**
50	72	08	A	NBR
50	**72**	**08**	**A**	**FPM**
50	72	08	ADL	NBR
50	**72**	**08**	**ADL**	**FPM**
50	72	08	B	NBR
50	**72**	**08**	**B**	**FPM**
50	72	09	ADL	NBR
50	72	10	A	NBR
50	**72**	**10**	**A**	**FPM**
50	72	10	ADL	NBR
50	**72**	**10**	**ADL**	**FPM**
50	72	12	A	NBR
50	**72**	**12**	**A**	**FPM**
50	72	12	ADL	NBR
50	**72**	**12**	**ADL**	**FPM**
50	73	12	ADL	NBR
50	74	12	ADL	NBR
50	75	08	ADL	NBR
50	**75**	**08**	**ADL**	**FPM**
50	75	10	A	NBR
50	**75**	**10**	**A**	**FPM**
50	75	10	ADL	NBR
50	**75**	**10**	**ADL**	**FPM**
50	75	12	A	NBR
50	**75**	**12**	**A**	**FPM**
50	75	12	ADL	NBR
50	**75**	**12**	**ADL**	**FPM**
50	76	10	A	NBR
50	76	12	ADL	NBR
50	78	08	ADL	NBR
50	78	10	A	NBR
50	78	10	ADL	NBR
50	78	12	A	NBR
50	78	12	ADL	NBR
50	80	07	ADL	NBR
50	80	08	A	NBR
50	**80**	**08**	**A**	**FPM**
50	80	08	ADL	NBR
50	**80**	**08**	**ADL**	**FPM**
50	80	08	ADL-P	NBR
50	80	10	A	NBR
50	**80**	**10**	**A**	**FPM**
50	80	10	ADL	NBR
50	**80**	**10**	**ADL**	**FPM**
50	80	12	A	NBR
50	80	12	ADL	NBR
50	80	13	A	NBR
50	80	13	ADL	NBR
50	**80**	**13**	**ADL**	**FPM**
50	82	12	ADL	NBR
50	85	08	A	NBR
50	85	10	A	NBR
50	85	10	ADL	NBR
50	**85**	**10**	**ADL**	**FPM**
50	85	13	A	NBR
50	**90**	**08**	**A**	**FPM**
50	90	08	ADL	NBR
50	90	10	A	NBR
50	**90**	**10**	**A**	**FPM**
50	90	10	ADL	NBR
50	**90**	**10**	**ADL**	**FPM**
50	90	12	ADL	NBR
50	90	12	C	NBR
50	90	13	A	NBR
50	90	13	ADL	NBR
50	95	10	C	NBR
50	100	10	ADL	NBR
50	**100**	**10**	**ADL**	**FPM**
50	110	10	ADL	NBR
50	**110**	**10**	**ADL**	**FPM**

NBR=Nitrile FPM=Viton®



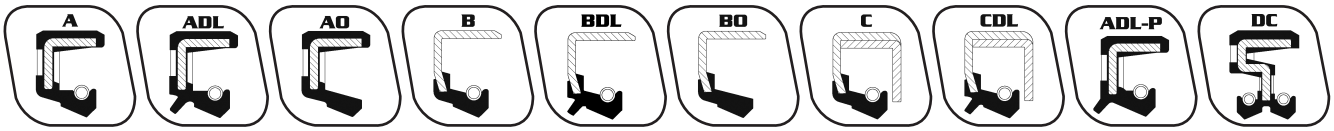
Shaft	Bore	Width	Type	Mat.
50	110	10.5	A	NBR
50	110	12	A	NBR
50	110	12	ADL	NBR
50	120	12	ADL	NBR
50	125	10	ADL	NBR
50.5	62	09	ADL	NBR
51	58	04	BO	NBR
51	62	07	A	NBR
51	62	07	ADL	NBR
51	63	06	BO	NBR
51	65	07	CDL	NBR
51	65	09	BO	NBR
51	70	11	ADL	NBR
51	72	10	A	NBR
52	60	07	ADL	NBR
52	62	07	A	NBR
52	62	07	ADL	NBR
52	62	08	A	NBR
52	**62**	**08**	**A**	**FPM**
52	62	08	ADL	NBR
52	63	06	ADL	NBR
52	63	08	ADL	NBR
52	64	09	ADL	NBR
52	65	08	A	NBR
52	65	09	ADL	NBR
52	65	10	ADL	NBR
52	66	07	ADL	NBR
52	68	07	B	NBR
52	68	08	A	NBR
52	**68**	**08**	**A**	**FPM**
52	68	08	ADL	NBR
52	**68**	**08**	**ADL**	**FPM**
52	68	09	ADL	NBR
52	68	10	A	NBR
52	68	10	ADL	NBR
52	68	10	ADL-P	NBR
52	68	12	C	NBR
52	68	13	A	NBR
52	68	13.5	BDL	NBR
52	69	10	A	NBR
52	**69**	**10**	**A**	**FPM**
52	**69**	**10**	**ADL**	**FPM**
52	70	08	ADL	NBR
52	70	09	ADL	NBR
52	70	10	C	NBR

Shaft	Bore	Width	Type	Mat.
52	71	09	A	NBR
52	72	08	A	NBR
52	**72**	**08**	**A**	**FPM**
52	72	08	ADL	NBR
52	**72**	**08**	**ADL**	**FPM**
52	72	09	ADL	NBR
52	72	10	A	NBR
52	**72**	**10**	**A**	**FPM**
52	72	10	ADL	NBR
52	72	12	A	NBR
52	72	12	ADL	NBR
52	72	12	ADL-P	NBR
52	72	12	B	NBR
52	73	09	A	NBR
52	75	08	A	NBR
52	75	10	A	NBR
52	**75**	**10**	**A**	**FPM**
52	75	12	A	NBR
52	**75**	**12**	**A**	**FPM**
52	75	12	ADL	NBR
52	75	15	A	NBR
52	75	15	ADL	NBR
52	76	12	A	NBR
52	76	13	A	NBR
52	78	10	ADL	NBR
52	78	12	ADL	NBR
52	78	13	A	NBR
52	80	08	A	NBR
52	80	10	A	NBR
52	**80**	**10**	**A**	**FPM**
52	80	10	ADL	NBR
52	80	13	A	NBR
52	**80**	**13**	**A**	**FPM**
52	80	13	C	NBR
52	84	14	A	NBR
52	85	08	A	NBR
52	85	10	A	NBR
52	85	10	ADL	NBR
52	90	13	ADL	NBR
52	90	13	C	NBR
52	100	10	ADL	NBR
53	65	10	ADL	NBR
53	68	10	A	NBR
53	**68**	**10**	**A**	**FPM**
53	72	10	ADL	NBR

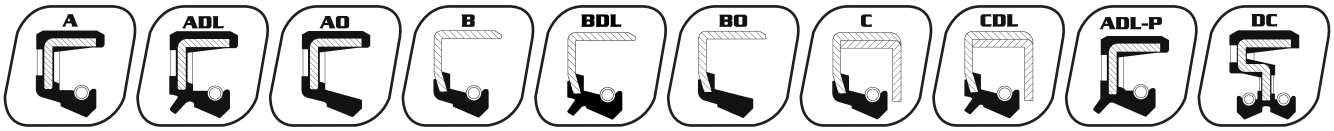


Shaft	Bore	Width	Type	Mat.
53	72	12	ADL	NBR
53	80	10	A	NBR
53	**80**	**10**	**A**	**FPM**
53	90	13	ADL	NBR
54	61	04	BO	NBR
54	65	13	ADL	NBR
54	66	07	ADL	NBR
54	68	09	ADL	NBR
54	68	10.5	A	NBR
54	70	10	A	NBR
54	**70**	**12**	**A**	**FPM**
54	72	05	A	NBR
54	72	08	A	NBR
54	72	10	A	NBR
54	72	10	ADL	NBR
54	**72**	**10**	**ADL**	**FPM**
54	72	12	C	NBR
54	72.5	09	A	NBR
54	73	06	BO	NBR
54	74	08	A	NBR
54	74	10	ADL	NBR
54	75	10	ADL	NBR
54	75	12	A	NBR
54	75	12	ADL	NBR
54	76	10	ADL	NBR
54	76	12	A	NBR
54	78	12	A	NBR
54	80	10	C	NBR
54	80	13	ADL	NBR
54	81	10	ADL	NBR
54	82	11	ADL	NBR
54	**85**	**10**	**A**	**FPM**
54	85	10	ADL	NBR
54	85	10	C	NBR
54	85	15	A	NBR
54	90	13	A	NBR
54	**90**	**13**	**A**	**FPM**
55	62	04	BO	NBR
55	63	05	AO	NBR
55	**63**	**05**	**AO**	**FPM**
55	65	05	AO	NBR
55	65	05	BO	NBR
55	65	08	A	NBR
55	65	08	ADL	NBR
55	67	05	BO	NBR
55	67	06	ADL	NBR
55	68	07	ADL-P	NBR
55	68	08	A	NBR
55	**68**	**08**	**A**	**FPM**
55	68	08	ADL	NBR
55	**68**	**08**	**ADL**	**FPM**
55	70	04	BO	NBR
55	70	06	ADL	NBR
55	70	07	A	NBR
55	**70**	**07**	**A**	**FPM**
55	70	07	ADL-P	NBR
55	70	08	A	NBR
55	**70**	**08**	**A**	**FPM**
55	70	08	ADL	NBR
55	**70**	**08**	**ADL**	**FPM**
55	70	08	ADL-P	NBR
55	70	08	BDL	NBR
55	70	09	A	NBR
55	70	09	ADL	NBR
55	70	10	A	NBR
55	**70**	**10**	**A**	**FPM**
55	70	10	ADL	NBR
55	**70**	**10**	**ADL**	**FPM**
55	70	12	C	NBR
55	**72**	**07**	**ADL**	**FPM**
55	72	07	ADL-P	NBR
55	**72**	**07**	**ADL-P**	**FPM**
55	72	07	AO	NBR
55	72	08	A	NBR
55	**72**	**08**	**A**	**FPM**
55	72	08	ADL	NBR
55	**72**	**08**	**ADL**	**FPM**
55	72	08	ADL-P	NBR
55	**72**	**08**	**ADL-P**	**FPM**
55	72	08	B	NBR
55	72	09	ADL	NBR
55	72	10	A	NBR
55	**72**	**10**	**A**	**FPM**
55	72	10	ADL	NBR
55	**72**	**10**	**ADL**	**FPM**
55	72	10	BDL	NBR
55	72	12	A	NBR
55	72	12	ADL	NBR
55	72	13	A	NBR
55	73	10	ADL	NBR

NBR=Nitrile FPM=Viton®



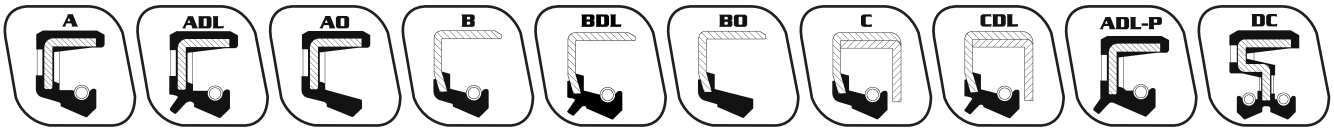
Shaft	Bore	Width	Type	Mat.
55	**75**	**07**	**ADL**	**FPM**
55	75	08	A	NBR
55	75	08	ADL	NBR
55	**75**	**08**	**ADL**	**FPM**
55	75	09	ADL	NBR
55	75	10	A	NBR
55	**75**	**10**	**A**	**FPM**
55	75	10	ADL	NBR
55	**75**	**10**	**ADL**	**FPM**
55	75	12	A	NBR
55	**75**	**12**	**A**	**FPM**
55	75	12	ADL	NBR
55	76	12	ADL	NBR
55	77	5.5	A	NBR
55	78	08	A	NBR
55	**78**	**08**	**A**	**FPM**
55	**78**	**08**	**ADL**	**FPM**
55	78	09	ADL	NBR
55	78	10	A	NBR
55	**78**	**10**	**A**	**FPM**
55	78	10	ADL	NBR
55	**78**	**10**	**ADL**	**FPM**
55	78	12	A	NBR
55	78	12	ADL	NBR
55	**78**	**12**	**ADL**	**FPM**
55	78	13	C	NBR
55	80	06	A	NBR
55	80	08	A	NBR
55	**80**	**08**	**A**	**FPM**
55	80	08	ADL	NBR
55	**80**	**08**	**ADL**	**FPM**
55	80	08	ADL-P	NBR
55	80	10	A	NBR
55	**80**	**10**	**A**	**FPM**
55	80	10	ADL	NBR
55	**80**	**10**	**ADL**	**FPM**
55	80	10	CDL	NBR
55	80	10	DC	NBR
55	80	12	A	NBR
55	80	12	ADL	NBR
55	80	13	A	NBR
55	80	13	ADL	NBR
55	80	13	ADL-P	NBR
55	82	09	ADL	NBR
55	82	10	ADL	NBR
55	82	12	A	NBR
55	82	12	ADL	NBR
55	85	08	A	NBR
55	**85**	**08**	**A**	**FPM**
55	85	08	ADL	NBR
55	**85**	**08**	**ADL**	**FPM**
55	85	10	A	NBR
55	**85**	**10**	**A**	**FPM**
55	85	10	ADL	NBR
55	**85**	**10**	**ADL**	**FPM**
55	85	12	ADL	NBR
55	85	13	A	NBR
55	85	13	B	NBR
55	88	10	A	NBR
55	88	10	ADL	NBR
55	90	06	BO	NBR
55	90	08	A	NBR
55	90	08	ADL	NBR
55	90	10	A	NBR
55	**90**	**10**	**A**	**FPM**
55	90	10	ADL	NBR
55	**90**	**10**	**ADL**	**FPM**
55	90	10	BDL	NBR
55	90	13	A	NBR
55	90	13	ADL	NBR
55	95	09	ADL	NBR
55	**100**	**08**	**A**	**FPM**
55	100	10	ADL	NBR
55	**100**	**10**	**ADL**	**FPM**
55	100	12	A	NBR
55	100	12	ADL	NBR
55	100	13	A	NBR
55	100	13	ADL	NBR
55	100	16	A	NBR
55	110	12	ADL	NBR
56	65	12	B	NBR
56	69	10	ADL	NBR
56	70	08	A	NBR
56	**70**	**08**	**A**	**FPM**
56	70	09	ADL	NBR
56	72	07	ADL	NBR
56	72	08	A	NBR
56	**72**	**08**	**ADL**	**FPM**
56	72	08	ADL-P	NBR
56	**72**	**10**	**A**	**FPM**



Shaft	Bore	Width	Type	Mat.
56	72	10	ADL	NBR
56	75	08	ADL	NBR
56	78	08	ADL	NBR
56	78	13	C	NBR
56	80	08	A	NBR
56	**80**	**08**	**ADL**	**FPM**
56	80	10	C	NBR
56	**80**	**12**	**A**	**FPM**
56	80	12	ADL	NBR
56	82	08	ADL	NBR
56	85	08	A	NBR
56	**85**	**08**	**A**	**FPM**
56	85	08	ADL	NBR
56	**85**	**08**	**ADL**	**FPM**
56	85	13	A	NBR
56	88	10	A	NBR
56	90	10	A	NBR
56	90	13	C	NBR
56	100	10	ADL	NBR
56	100	10	B	NBR
57	67	06	ADL	NBR
57	71	09	ADL	NBR
57	73	07	ADL	NBR
57	75	7.5	ADL	NBR
57	75	10	A	NBR
57	75	12	A	NBR
57	76	10	ADL	NBR
57	77	10	ADL	NBR
57	79.5	10	ADL	NBR
57	80	10	ADL	NBR
57	80	12	ADL	NBR
57	81	13	ADL	NBR
57	82.5	13	BDL	NBR
57	85	10	A	NBR
57	85	13	A	NBR
57	85	13	ADL	NBR
57	**85**	**13**	**ADL**	**FPM**
57	85.4	08	A	NBR
57	86	08	ADL	NBR
57	86	12	A	NBR
57	87	15	A	NBR
57	90	13	A	NBR
57	90	13	C	NBR
57	95	10	A	NBR
58	65	3.5	BO	NBR

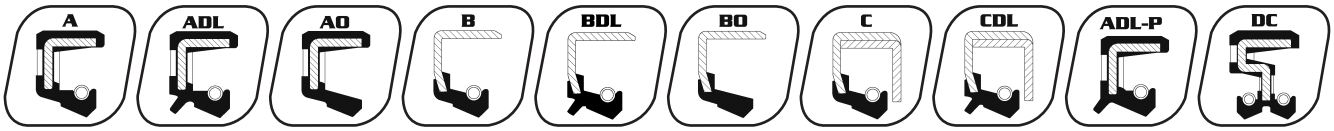
Shaft	Bore	Width	Type	Mat.
58	66	05	AO	NBR
58	68	09	ADL	NBR
58	70	06	A	NBR
58	72	08	A	NBR
58	**72**	**08**	**A**	**FPM**
58	72	08	ADL	NBR
58	**72**	**08**	**ADL**	**FPM**
58	72	09	A	NBR
58	72	09	ADL	NBR
58	74	10	ADL	NBR
58	75	07	ADL	NBR
58	**75**	**08**	**A**	**FPM**
58	75	08	ADL	NBR
58	75	08	B	NBR
58	75	09	A	NBR
58	75	09	ADL	NBR
58	75	12	A	NBR
58	75	12	C	NBR
58	75	13	ADL	NBR
58	76	09	A	NBR
58	76	10	ADL	NBR
58	78	09	ADL	NBR
58	78	13	A	NBR
58	**78**	**13**	**A**	**FPM**
58	80	05	A	NBR
58	80	08	A	NBR
58	**80**	**08**	**A**	**FPM**
58	80	08	ADL	NBR
58	**80**	**08**	**ADL**	**FPM**
58	80	08	ADL-P	NBR
58	80	09	ADL	NBR
58	**80**	**09**	**ADL**	**FPM**
58	80	10	A	NBR
58	**80**	**10**	**A**	**FPM**
58	80	10	ADL	NBR
58	**80**	**10**	**ADL**	**FPM**
58	80	12	A	NBR
58	80	12	ADL	NBR
58	80	13	A	NBR
58	80	13	ADL	NBR
58	80	13	CDL	NBR
58	84	10	ADL	NBR
58	85	10	A	NBR
58	**85**	**10**	**A**	**FPM**
58	85	10	ADL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
58	85	12	A	NBR
58	85	13	ADL	NBR
58	86	12	A	NBR
58	90	09	ADL	NBR
58	90	10	A	NBR
58	**90**	**10**	**A**	**FPM**
58	90	10	ADL	NBR
58	**90**	**10**	**ADL**	**FPM**
58	90	11	A	NBR
58	90	13	A	NBR
58	110	10	ADL	NBR
59	72	12.3	ADL	NBR
59	75	10	ADL	NBR
59	80	10	A	NBR
59	85	08	A	NBR
60	67	04	AO	NBR
60	70	07	A	NBR
60	70	07	B	NBR
60	70	10	AO	NBR
60	72	04	BO	NBR
60	72	07	ADL-P	NBR
60	72	07	B	NBR
60	72	08	A	NBR
60	**72**	**08**	**A**	**FPM**
60	72	08	ADL	NBR
60	72	08	B	NBR
60	72	09	ADL	NBR
60	72	10	ADL	NBR
60	74	10	A	NBR
60	74	10	ADL	NBR
60	75	04	AO	NBR
60	75	06	AO	NBR
60	75	07	A	NBR
60	75	07	ADL	NBR
60	75	08	A	NBR
60	**75**	**08**	**A**	**FPM**
60	75	08	ADL	NBR
60	**75**	**08**	**ADL**	**FPM**
60	75	08	ADL-P	NBR
60	75	08	B	NBR
60	75	09	A	NBR
60	75	09	ADL	NBR
60	75	10	A	NBR
60	**75**	**10**	**A**	**FPM**
60	75	10	ADL	NBR

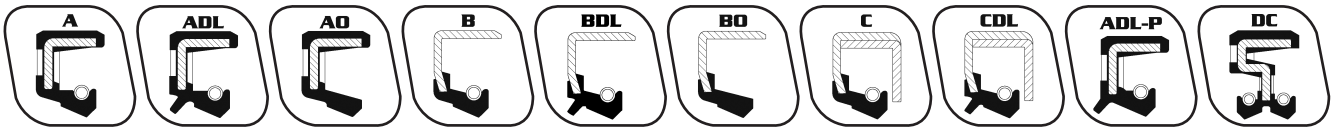
Shaft	Bore	Width	Type	Mat.
60	75	12	A	NBR
60	75	12	ADL	NBR
60	76	09	ADL	NBR
60	76	11	ADL	NBR
60	77	10	ADL	NBR
60	77	12	ADL	NBR
60	78	09	A	NBR
60	78	10	A	NBR
60	**78**	**10**	**A**	**FPM**
60	78	13	A	NBR
60	**79.4**	**08**	**A**	**FPM**
60	80	07	A	NBR
60	80	07	ADL	NBR
60	80	07	ADL-P	NBR
60	**80**	**07**	**ADL-P**	**FPM**
60	80	08	A	NBR
60	**80**	**08**	**A**	**FPM**
60	80	08	ADL	NBR
60	**80**	**08**	**ADL**	**FPM**
60	80	08	B	NBR
60	80	09	ADL	NBR
60	80	10	A	NBR
60	**80**	**10**	**A**	**FPM**
60	80	10	ADL	NBR
60	**80**	**10**	**ADL**	**FPM**
60	80	10	B	NBR
60	80	10	DC	NBR
60	80	12	A	NBR
60	**80**	**12**	**A**	**FPM**
60	80	12	ADL	NBR
60	**80**	**12**	**ADL**	**FPM**
60	80	13	A	NBR
60	80	13	ADL	NBR
60	82	07	ADL	NBR
60	82	07	AODL	NBR
60	82	09	ADL	NBR
60	82	10	A	NBR
60	82	12	A	NBR
60	82	12	ADL	NBR
60	**82**	**12**	**ADL**	**FPM**
60	85	06	ADL	NBR
60	85	08	A	NBR
60	**85**	**08**	**A**	**FPM**
60	85	08	ADL	NBR
60	**85**	**08**	**ADL**	**FPM**



Shaft	Bore	Width	Type	Mat.
60	85	08	ADL-P	NBR
60	85	10	A	NBR
60	**85**	**10**	**A**	**FPM**
60	85	10	ADL	NBR
60	**85**	**10**	**ADL**	**FPM**
60	85	12	A	NBR
60	85	12	ADL	NBR
60	85	13	A	NBR
60	**85**	**13**	**A**	**FPM**
60	86	10	ADL	NBR
60	86	12	ADL	NBR
60	90	07	ADL-P	NBR
60	90	08	A	NBR
60	**90**	**08**	**A**	**FPM**
60	90	08	ADL	NBR
60	**90**	**08**	**ADL**	**FPM**
60	90	10	A	NBR
60	**90**	**10**	**A**	**FPM**
60	90	10	ADL	NBR
60	**90**	**10**	**ADL**	**FPM**
60	90	11	ADL	NBR
60	90	12	ADL	NBR
60	90	12	C	NBR
60	90	13	A	NBR
60	**90**	**13**	**A**	**FPM**
60	90	13	ADL	NBR
60	92	10	ADL	NBR
60	93	13	A	NBR
60	95	08	A	NBR
60	95	08	ADL	NBR
60	95	10	A	NBR
60	**95**	**10**	**A**	**FPM**
60	95	10	ADL	NBR
60	**95**	**10**	**ADL**	**FPM**
60	95	13	ADL	NBR
60	98.5	13	ADL	NBR
60	100	10	A	NBR
60	**100**	**10**	**A**	**FPM**
60	100	10	ADL	NBR
60	**100**	**10**	**ADL**	**FPM**
60	100	12	ADL	NBR
60	100	12	C	NBR
60	100	13	A	NBR
60	100	13	ADL	NBR
60	103	12	ADL	NBR

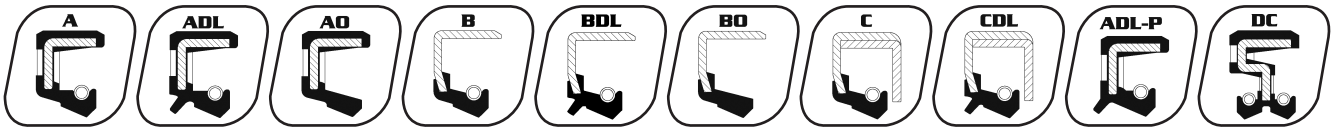
Shaft	Bore	Width	Type	Mat.
60	110	10	ADL	NBR
60	110	12	A	NBR
60	110	13	A	NBR
60	**110**	**13**	**A**	**FPM**
60	110	13	ADL	NBR
60	112	12	ADL	NBR
60	120	12	A	NBR
60	120	13	ADL	NBR
60	**130**	**12**	**A**	**FPM**
60	130	15	A	NBR
60	140	13	ADL	NBR
61	**75**	**08**	**A**	**FPM**
61	85	13	C	NBR
61	89	12.5	ADL	NBR
62	70	10	AO	NBR
62	72	09	ADL	NBR
62	72	10	ADL	NBR
62	75	7.5	ADL-P	NBR
62	75	10	ADL	NBR
62	75	10	B	NBR
62	75	10	BDL	NBR
62	76	10	ADL	NBR
62	80	08	ADL	NBR
62	80	09	ADL	NBR
62	80	10	A	NBR
62	**80**	**10**	**A**	**FPM**
62	80	10	ADL	NBR
62	80	10	B	NBR
62	80	12	A	NBR
62	80	12	ADL	NBR
62	82	07	ADL	NBR
62	82	10	A	NBR
62	82	10	ADL	NBR
62	85	07	ADL-P	NBR
62	**85**	**07**	**ADL-P**	**FPM**
62	85	08	A	NBR
62	85	08	ADL	NBR
62	**85**	**08**	**ADL**	**FPM**
62	85	10	A	NBR
62	**85**	**10**	**A**	**FPM**
62	85	10	ADL	NBR
62	**85**	**10**	**ADL**	**FPM**
62	85	12	A	NBR
62	**85**	**12**	**A**	**FPM**
62	85	12	ADL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
62	85	12	C	NBR
62	85	13	A	NBR
62	88	12	ADL	NBR
62	89	13	CDL	NBR
62	90	10	A	NBR
62	90	10	ADL	NBR
62	**90**	**10**	**ADL**	**FPM**
62	90	11	A	NBR
62	90	12	ADL	NBR
62	90	12	C	NBR
62	90	13	A	NBR
62	90	13	ADL	NBR
62	95	10	A	NBR
62	95	10	ADL	NBR
62	95	13	B	NBR
62	100	10	A	NBR
62	100	10	ADL	NBR
62	100	12	A	NBR
62	100	12	ADL	NBR
62	100	13	C	NBR
62	110	13	A	NBR
62	120	12	ADL	NBR
63	75	08	ADL	NBR
63	78	10	A	NBR
63	80	09	ADL	NBR
63	80	12	ADL	NBR
63	85	10	A	NBR
63	**85**	**10**	**A**	**FPM**
63	85	10	ADL	NBR
63	**85**	**10**	**ADL**	**FPM**
63	85	10	ADL-P	NBR
63	85	12	C	NBR
63	85	13	A	NBR
63	88	10	A	NBR
63	88	10	ADL	NBR
63	90	07	ADL	NBR
63	90	08	ADL	NBR
63	90	10	A	NBR
63	**90**	**10**	**A**	**FPM**
63	**90**	**10**	**ADL**	**FPM**
63	100	10	ADL	NBR
63	100	13	A	NBR
63.4	85.4	08	ADL	NBR
63.5	90	10	A	NBR
63.5	90	13	A	NBR

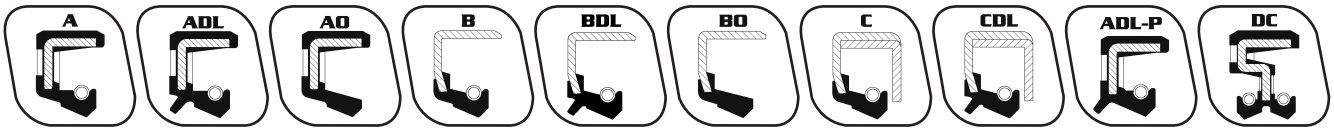
Shaft	Bore	Width	Type	Mat.
64	80	08	A	NBR
64	**80**	**08**	**A**	**FPM**
64	80	08	ADL	NBR
64	80	13	ADL	NBR
64	85	10	A	NBR
64	85	12	ADL	NBR
64	85	13	ADL	NBR
64	85	16	ADL	NBR
64	86	08	ADL	NBR
64	88	15	ADL	NBR
64	90	10	C	NBR
64	90	13	ADL	NBR
64	**90**	**13**	**ADL**	**FPM**
64	90	13	CDL	NBR
64	95	10	ADL	NBR
64	100	13	C	NBR
65	75	05	AO	NBR
65	**75**	**05**	**AO**	**FPM**
65	75	08	ADL	NBR
65	**75**	**08**	**ADL**	**FPM**
65	77	12	BDL	NBR
65	80	04	AO	NBR
65	80	08	A	NBR
65	**80**	**08**	**A**	**FPM**
65	80	08	ADL	NBR
65	**80**	**08**	**ADL**	**FPM**
65	80	10	A	NBR
65	80	10	ADL	NBR
65	**80**	**10**	**ADL**	**FPM**
65	80	10	B	NBR
65	80	12	A	NBR
65	**80**	**12**	**A**	**FPM**
65	80	12	ADL	NBR
65	80	13	A	NBR
65	81	07	ADL	NBR
65	82	10	A	NBR
65	82	12	A	NBR
65	82	12	ADL	NBR
65	84	10	ADL	NBR
65	85	08	A	NBR
65	**85**	**08**	**A**	**FPM**
65	85	08	ADL	NBR
65	85	08	ADL-P	NBR
65	85	10	A	NBR
65	**85**	**10**	**A**	**FPM**



Shaft	Bore	Width	Type	Mat.
65	85	10	ADL	NBR
65	**85**	**10**	**ADL**	**FPM**
65	85	10	ADL-P	NBR
65	85	12	A	NBR
65	**85**	**12**	**A**	**FPM**
65	85	12	ADL	NBR
65	**85**	**12**	**ADL**	**FPM**
65	85	13	A	NBR
65	85	13	ADL	NBR
65	**85**	**13**	**ADL**	**FPM**
65	85	13	C	NBR
65	86	10	ADL	NBR
65	88	06	AO	NBR
65	**88**	**07**	**ADL-P**	**FPM**
65	88	08	ADL	NBR
65	88	10	ADL	NBR
65	88	12	ADL	NBR
65	**88**	**12**	**ADL**	**FPM**
65	89	10	ADL	NBR
65	89	13	ADL	NBR
65	90	07	ADL	NBR
65	**90**	**07**	**ADL**	**FPM**
65	90	07	ADL-P	NBR
65	90	08	ADL	NBR
65	90	10	A	NBR
65	**90**	**10**	**A**	**FPM**
65	90	10	ADL	NBR
65	**90**	**10**	**ADL**	**FPM**
65	90	10	ADL-P	NBR
65	90	12	A	NBR
65	90	12	ADL	NBR
65	**90**	**12**	**ADL**	**FPM**
65	90	13	A	NBR
65	**90**	**13**	**A**	**FPM**
65	90	13	ADL	NBR
65	90	13	B	NBR
65	92	12	A	NBR
65	92	12	ADL	NBR
65	95	10	A	NBR
65	**95**	**10**	**A**	**FPM**
65	95	10	ADL	NBR
65	**95**	**10**	**ADL**	**FPM**
65	95	13	A	NBR
65	95	13	ADL	NBR
65	95	13	C	NBR

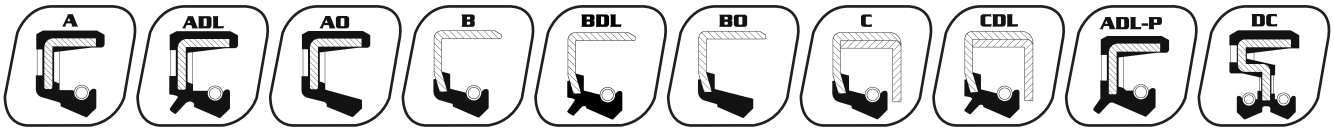
Shaft	Bore	Width	Type	Mat.
65	95	16	A	NBR
65	**100**	**08**	**A**	**FPM**
65	100	10	A	NBR
65	**100**	**10**	**A**	**FPM**
65	100	10	ADL	NBR
65	**100**	**10**	**ADL**	**FPM**
65	100	12	A	NBR
65	100	12	ADL	NBR
65	100	13	A	NBR
65	100	13	ADL	NBR
65	105	12	ADL	NBR
65	110	10	A	NBR
65	110	10	ADL	NBR
65	110	12	ADL	NBR
65	115	10	ADL	NBR
65	115	12	ADL	NBR
65	115	15	A	NBR
65	120	08	B	NBR
65	120	10	A	NBR
65	120	12	A	NBR
65	**120**	**12**	**A**	**FPM**
65	120	12	ADL	NBR
65	120	13	ADL	NBR
65	125	12	A	NBR
65	**125**	**12**	**A**	**FPM**
66	90	13	C	NBR
66	100	11	A	NBR
67	82	7.5	ADL	NBR
67	85	10	C	NBR
67	90	10	C	NBR
68	**80**	**07**	**A**	**FPM**
68	80	10	ADL	NBR
68	82	07	ADL	NBR
68	82	10	ADL	NBR
68	83	10	ADL	NBR
68	84	09	ADL	NBR
68	85	08	A	NBR
68	85	10	A	NBR
68	85	10	B	NBR
68	85	10	BDL	NBR
68	85	13	ADL	NBR
68	86	07	ADL	NBR
68	88	09	ADL	NBR
68	88	10	ADL	NBR
68	88	10	CDL	NBR

NBR=Nitrile FPM=Viton®



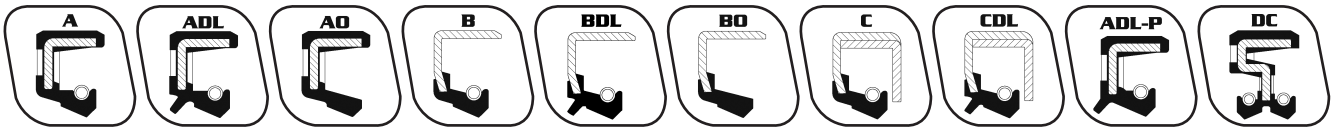
Shaft	Bore	Width	Type	Mat.
68	90	07	ADL	NBR
68	90	08	ADL	NBR
68	**90**	**08**	**ADL**	**FPM**
68	90	10	A	NBR
68	**90**	**10**	**A**	**FPM**
68	90	10	ADL	NBR
68	**90**	**10**	**ADL**	**FPM**
68	90	10	ADL-P	NBR
68	90	12	A	NBR
68	90	12	ADL	NBR
68	90	13	A	NBR
68	90	13	ADL	NBR
68	92	12	BDL	NBR
68	92	14	BDL	NBR
68	94	08	ADL	NBR
68	95	07	AO	NBR
68	95	10	A	NBR
68	**95**	**10**	**ADL**	**FPM**
68	95	12	A	NBR
68	95	13	A	NBR
68	100	07	ADL	NBR
68	100	08	ADL	NBR
68	100	10	A	NBR
68	100	10	ADL	NBR
68	**100**	**10**	**ADL**	**FPM**
68	100	12	C	NBR
68	100	13	A	NBR
68	100	13	ADL	NBR
68	110	13	C	NBR
69	85	10	B	NBR
69	85	12	BDL	NBR
69	90	10	A	NBR
70	78	05	AO	NBR
70	**78**	**05**	**AO**	**FPM**
70	80	08	ADL	NBR
70	80	10	ADL	NBR
70	81.5	6.5	A	NBR
70	82.5	10	ADL	NBR
70	85	04	AO	NBR
70	85	06	B	NBR
70	85	07	A	NBR
70	**85**	**07**	**A**	**FPM**
70	85	08	A	NBR
70	**85**	**08**	**A**	**FPM**
70	85	08	ADL	NBR

Shaft	Bore	Width	Type	Mat.
70	**85**	**08**	**ADL**	**FPM**
70	85	08	BDL	NBR
70	85	10	A	NBR
70	85	10	ADL	NBR
70	87	10	ADL	NBR
70	88	08	ADL	NBR
70	**88**	**09**	**A**	**FPM**
70	88	12	ADL	NBR
70	90	07	ADL	NBR
70	90	07	ADL-P	NBR
70	**90**	**07**	**ADL-P**	**FPM**
70	90	08	ADL	NBR
70	90	10	A	NBR
70	**90**	**10**	**A**	**FPM**
70	90	10	ADL	NBR
70	**90**	**10**	**ADL**	**FPM**
70	90	10	ADL-P	NBR
70	**90**	**10**	**ADL-P**	**FPM**
70	90	10	B	NBR
70	90	10	C	NBR
70	90	11	DC	NBR
70	90	12	A	NBR
70	**90**	**12**	**A**	**FPM**
70	90	12	ADL	NBR
70	**90**	**12**	**ADL**	**FPM**
70	90	12	C	NBR
70	90	12	CDL	NBR
70	90	13	A	NBR
70	**90**	**13**	**A**	**FPM**
70	90	13	ADL	NBR
70	**90**	**13**	**DC**	**FPM**
70	92	8.5	ADL	NBR
70	92	12	A	NBR
70	92	12	ADL	NBR
70	94	12	ADL	NBR
70	95	10	A	NBR
70	95	10	ADL	NBR
70	**95**	**10**	**ADL**	**FPM**
70	95	12	ADL	NBR
70	**95**	**12**	**ADL**	**FPM**
70	95	13	A	NBR
70	**95**	**13**	**A**	**FPM**
70	95	13	ADL	NBR
70	**95**	**13**	**ADL**	**FPM**
70	98.5	13	ADL	NBR



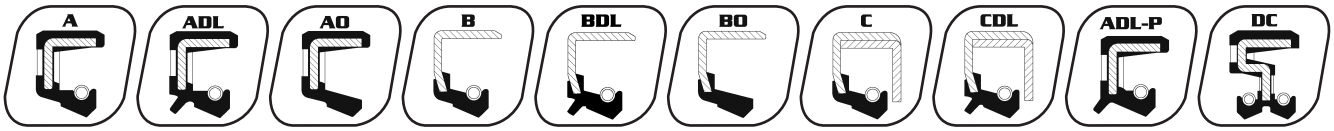
Shaft	Bore	Width	Type	Mat.
70	100	06	A	NBR
70	100	08	A	NBR
70	100	08	ADL	NBR
70	100	10	A	NBR
70	**100**	**10**	**A**	**FPM**
70	100	10	ADL	NBR
70	**100**	**10**	**ADL**	**FPM**
70	100	10	ADL-P	NBR
70	100	12	A	NBR
70	**100**	**12**	**A**	**FPM**
70	100	12	ADL	NBR
70	100	13	A	NBR
70	**100**	**13**	**A**	**FPM**
70	100	13	ADL	NBR
70	**100**	**13**	**ADL**	**FPM**
70	100	13	C	NBR
70	102	12	ADL	NBR
70	102	13	ADL	NBR
70	105	10	ADL	NBR
70	105	13	A	NBR
70	**105**	**13**	**A**	**FPM**
70	105	13	ADL	NBR
70	110	08	A	NBR
70	110	08	ADL	NBR
70	**110**	**08**	**ADL**	**FPM**
70	110	10	A	NBR
70	**110**	**10**	**A**	**FPM**
70	110	10	ADL	NBR
70	110	10	B	NBR
70	110	12	A	NBR
70	110	12	ADL	NBR
70	110	13	A	NBR
70	**110**	**13**	**A**	**FPM**
70	110	13	ADL	NBR
70	**110**	**13**	**ADL**	**FPM**
70	112	12	A	NBR
70	115	15	A	NBR
70	115	15	ADL	NBR
70	120	10	ADL	NBR
70	120	12	A	NBR
70	120	13	A	NBR
70	**120**	**13**	**A**	**FPM**
70	120	13	ADL	NBR
70	125	12	ADL	NBR
70	130	13	ADL	NBR
70	135	12	A	NBR
71	80	06	B	NBR
71	88	08	ADL	NBR
72	84	07	BDL	NBR
72	85	08	A	NBR
72	**85**	**08**	**A**	**FPM**
72	85	10	A	NBR
72	85.5	05	AO	NBR
72	86	07	ADL	NBR
72	88	08	ADL	NBR
72	90	08	A	NBR
72	90	10	A	NBR
72	**90**	**10**	**A**	**FPM**
72	90	10	ADL	NBR
72	**90**	**10**	**ADL**	**FPM**
72	90	13	C	NBR
72	94	12	ADL	NBR
72	95	10	A	NBR
72	**95**	**10**	**A**	**FPM**
72	95	10	ADL	NBR
72	**95**	**10**	**ADL**	**FPM**
72	95	10	ADL-P	NBR
72	95	12	A	NBR
72	95	13	A	NBR
72	95	13	ADL	NBR
72	95	13	B	NBR
72	96	09	ADL	NBR
72	98	09	ADL	NBR
72	100	10	A	NBR
72	100	10	ADL	NBR
72	**100**	**10**	**ADL**	**FPM**
72	100	12	ADL	NBR
72	100	13	A	NBR
72	**100**	**13**	**A**	**FPM**
72	100	13	ADL	NBR
72	105	10	ADL	NBR
72	105	13	B	NBR
72	110	12	A	NBR
72	110	12	ADL	NBR
72	140	12	ADL	NBR
73	95	10	A	NBR
73	**96**	**09**	**ADL**	**FPM**
73	108	12	ADL	NBR
74	88	08	ADL	NBR
74	90	10	ADL	NBR

NBR=Nitrile FPM=Viton®



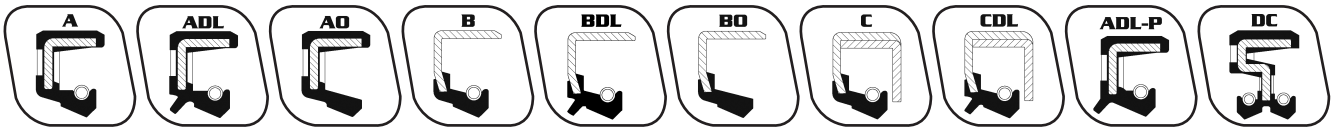
Shaft	Bore	Width	Type	Mat.
74	90	10	BDL	NBR
74	95	07	ADL	NBR
74	95	10	C	NBR
74	96	10	ADL	NBR
74	98	12	ADL	NBR
74	100	13	B	NBR
74	100	13	C	NBR
74	105	12	A	NBR
74	**105**	**12**	**A**	**FPM**
74	135	15	A	NBR
75	**85**	**08**	**A**	**FPM**
75	85	10	ADL	NBR
75	90	06	AO	NBR
75	90	07	ADL	NBR
75	90	08	A	NBR
75	**90**	**08**	**A**	**FPM**
75	90	08	ADL	NBR
75	90	10	A	NBR
75	**90**	**10**	**A**	**FPM**
75	90	10	ADL	NBR
75	**90**	**10**	**ADL**	**FPM**
75	90	10	ADL-P	NBR
75	90	12	C	NBR
75	92	07	A	NBR
75	93	10	ADL	NBR
75	94	10	ADL	NBR
75	95	05	ADL	NBR
75	95	05	B	NBR
75	95	07	ADL-P	NBR
75	95	08	ADL	NBR
75	95	09	ADL	NBR
75	95	10	A	NBR
75	**95**	**10**	**A**	**FPM**
75	95	10	ADL	NBR
75	**95**	**10**	**ADL**	**FPM**
75	95	10	B	NBR
75	95	10	BDL	NBR
75	95	12	A	NBR
75	**95**	**12**	**A**	**FPM**
75	95	12	ADL	NBR
75	**95**	**12**	**ADL**	**FPM**
75	95	12	DC	NBR
75	95	13	A	NBR
75	95	13	ADL	NBR
75	95	15	B	NBR

Shaft	Bore	Width	Type	Mat.
75	100	07	A	NBR
75	100	08	ADL-P	NBR
75	100	10	A	NBR
75	**100**	**10**	**A**	**FPM**
75	100	10	ADL	NBR
75	**100**	**10**	**ADL**	**FPM**
75	100	10	ADL-P	NBR
75	100	12	A	NBR
75	**100**	**12**	**A**	**FPM**
75	100	12	ADL	NBR
75	**100**	**12**	**ADL**	**FPM**
75	100	13	A	NBR
75	100	13	ADL	NBR
75	**100**	**13**	**ADL**	**FPM**
75	101	12	A	NBR
75	102	12	ADL	NBR
75	105	10	ADL	NBR
75	105	12	A	NBR
75	105	13	ADL	NBR
75	105	15	ADL	NBR
75	108	13	ADL	NBR
75	110	10	ADL	NBR
75	110	12	A	NBR
75	**110**	**12**	**A**	**FPM**
75	110	12	ADL	NBR
75	**110**	**12**	**ADL**	**FPM**
75	110	13	A	NBR
75	**110**	**13**	**A**	**FPM**
75	110	13	ADL	NBR
75	112	12	A	NBR
75	115	10	A	NBR
75	115	10	ADL	NBR
75	**115**	**10**	**ADL**	**FPM**
75	115	12	A	NBR
75	115	12	ADL	NBR
75	115	13	C	NBR
75	120	12	A	NBR
75	**120**	**12**	**A**	**FPM**
75	120	12	ADL	NBR
75	**120**	**12**	**ADL**	**FPM**
75	121	13	ADL	NBR
75	125	12	ADL	NBR
75	125	13	ADL	NBR
75	130	13	A	NBR
75	**130**	**13**	**A**	**FPM**



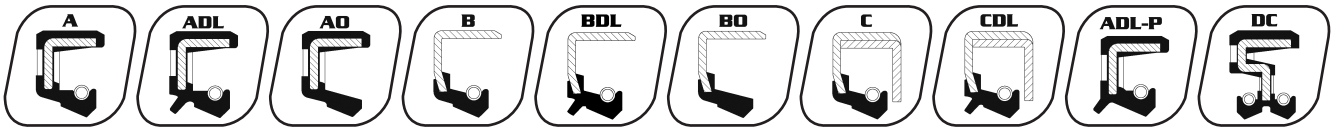
Shaft	Bore	Width	Type	Mat.
76	93	10	ADL	NBR
76	98	12	ADL	NBR
76	100	12	ADL	NBR
76	100	16	ADL	NBR
76	105	13	A	NBR
76	105	13	ADL	NBR
76	114	14	ADL	NBR
76	120	12	A	NBR
77	95	10	C	NBR
77	100	10	A	NBR
77	100	11.5	ADL	NBR
77	100	13	C	NBR
78	90	08	A	NBR
78	92	06	A	NBR
78	95	11	A	NBR
78	**95**	**11**	**A**	**FPM**
78	95	13	C	NBR
78	100	10	A	NBR
78	**100**	**10**	**A**	**FPM**
78	100	10	ADL	NBR
78	**100**	**10**	**ADL**	**FPM**
78	100	12	C	NBR
78	100	13	A	NBR
78	100	13	ADL	NBR
78	105	13	A	NBR
78	**105**	**13**	**A**	**FPM**
78	105	13	ADL	NBR
78	105	15	A	NBR
78	110	12	A	NBR
78	**110**	**12**	**A**	**FPM**
78	110	13	A	NBR
78	110	13	ADL	NBR
78	115	10	ADL	NBR
79	102	12.5	ADL	NBR
79	120	13	ADL	NBR
80	90	05	AO	NBR
80	**90**	**05**	**AO**	**FPM**
80	95	04	AO	NBR
80	95	05	AO	NBR
80	95	08	A	NBR
80	**95**	**08**	**A**	**FPM**
80	95	08	ADL	NBR
80	95	10	ADL	NBR
80	96	08	ADL	NBR
80	98	10	ADL	NBR
80	100	07	ADL	NBR
80	100	07	ADL-P	NBR
80	**100**	**07**	**ADL-P**	**FPM**
80	100	08	ADL	NBR
80	100	10	A	NBR
80	**100**	**10**	**A**	**FPM**
80	100	10	ADL	NBR
80	**100**	**10**	**ADL**	**FPM**
80	100	10	ADL-P	NBR
80	100	10	B	NBR
80	100	10	DC	NBR
80	100	12	A	NBR
80	100	12	ADL	NBR
80	100	13	A	NBR
80	**100**	**13**	**A**	**FPM**
80	100	13	ADL	NBR
80	**100**	**13**	**ADL**	**FPM**
80	100	14	A	NBR
80	100	18	ADL	NBR
80	102	11	ADL	NBR
80	105	10	A	NBR
80	**105**	**10**	**A**	**FPM**
80	105	10	ADL	NBR
80	105	12	A	NBR
80	**105**	**12**	**A**	**FPM**
80	105	12	ADL	NBR
80	105	13	A	NBR
80	105	13	ADL	NBR
80	105	13	ADL-P	NBR
80	105	13	C	NBR
80	105	14	ADL	NBR
80	105	15	B	NBR
80	108	13	ADL	NBR
80	110	10	A	NBR
80	**110**	**10**	**A**	**FPM**
80	110	10	ADL	NBR
80	**110**	**10**	**ADL**	**FPM**
80	110	12	A	NBR
80	**110**	**12**	**A**	**FPM**
80	110	12	ADL	NBR
80	**110**	**12**	**ADL**	**FPM**
80	110	13	A	NBR
80	110	13	ADL	NBR
80	112	12.5	A	NBR
80	113	12	A	NBR

NBR=Nitrile FPM=Viton®



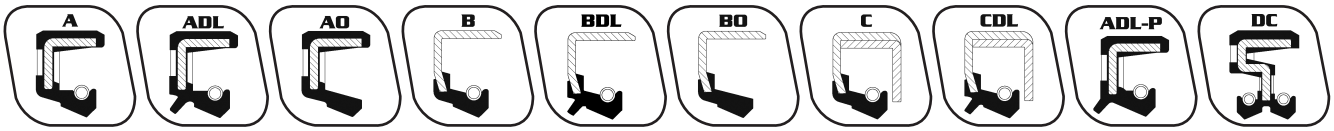
Shaft	Bore	Width	Type	Mat.
80	115	10	A	NBR
80	115	10	ADL	NBR
80	**115**	**10**	**ADL**	**FPM**
80	115	12	A	NBR
80	115	12	ADL	NBR
80	120	10	ADL	NBR
80	120	12	ADL	NBR
80	120	12	C	NBR
80	120	13	A	NBR
80	**120**	**13**	**A**	**FPM**
80	120	13	ADL	NBR
80	125	10	ADL	NBR
80	125	12	A	NBR
80	**125**	**12**	**A**	**FPM**
80	125	12	ADL	NBR
80	**125**	**12**	**ADL**	**FPM**
80	125	13	A	NBR
80	125	13	ADL	NBR
80	128	10	A	NBR
80	128	10	ADL	NBR
80	130	13	A	NBR
80	130	13	ADL	NBR
80	140	13	A	NBR
80	140	13	ADL	NBR
80	145	13	A	NBR
80	150.5	13	A	NBR
80	180	13	ADL	NBR
82	100	08	A	NBR
82	**104**	**05**	**BDL**	**FPM**
82	**105**	**10**	**A**	**FPM**
82	105	10	ADL	NBR
82	105	12	A	NBR
82	**105**	**12**	**A**	**FPM**
82	105	12	ADL	NBR
82	**105**	**12**	**ADL-P**	**FPM**
82	105	13	ADL	NBR
82	**105**	**13**	**ADL**	**FPM**
82	105	14	A	NBR
82	110	12	A	NBR
82	**110**	**12**	**A**	**FPM**
82	110	13	C	NBR
82	160	13	ADL	NBR
83	100	09	ADL	NBR
83	110	12	C	NBR
83	110	13	C	NBR

Shaft	Bore	Width	Type	Mat.
83.5	110	12	ADL	NBR
84	100	13	A	NBR
84	105	12	ADL	NBR
84	105	13	C	NBR
84	110	10	ADL	NBR
84	110	12	C	NBR
84	110	16	ADL	NBR
85	95	05	B	NBR
85	100	09	A	NBR
85	100	09	ADL	NBR
85	100	09	B	NBR
85	100	10	ADL	NBR
85	100	12	A	NBR
85	**100**	**12**	**A**	**FPM**
85	100	12	ADL	NBR
85	100	13	ADL	NBR
85	100	13	C	NBR
85	102	13	ADL	NBR
85	103	08	ADL	NBR
85	105	7.5	ADL-P	NBR
85	105	08	A	NBR
85	105	08	ADL	NBR
85	105	10	A	NBR
85	**105**	**10**	**A**	**FPM**
85	105	10	ADL	NBR
85	105	12	A	NBR
85	105	12	ADL	NBR
85	**105**	**12**	**ADL**	**FPM**
85	105	12	ADL-P	NBR
85	105	13	A	NBR
85	105	13	ADL	NBR
85	110	08	ADL-P	NBR
85	110	10	A	NBR
85	**110**	**10**	**A**	**FPM**
85	110	10	ADL	NBR
85	110	11	ADL	NBR
85	110	12	A	NBR
85	**110**	**12**	**A**	**FPM**
85	110	12	ADL	NBR
85	**110**	**12**	**ADL**	**FPM**
85	110	12	C	NBR
85	110	12	CDL	NBR
85	110	13	A	NBR
85	**110**	**13**	**A**	**FPM**
85	110	13	ADL	NBR



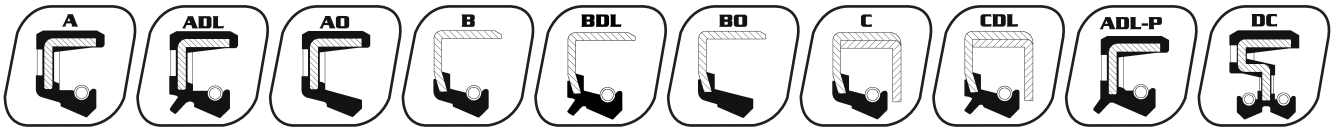
Shaft	Bore	Width	Type	Mat.
85	**110**	**13**	**ADL**	**FPM**
85	110	14	ADL	NBR
85	110	15	C	NBR
85	111	10	ADL	NBR
85	115	10	A	NBR
85	115	10	ADL	NBR
85	115	13	A	NBR
85	**115**	**13**	**A**	**FPM**
85	115	13	ADL	NBR
85	115	13	C	NBR
85	115	15	A	NBR
85	120	7.5	ADL-P	NBR
85	120	10	ADL	NBR
85	120	12	A	NBR
85	120	12	ADL	NBR
85	**120**	**12**	**ADL**	**FPM**
85	120	12	B	NBR
85	120	13	A	NBR
85	120	13	ADL	NBR
85	120	15	C	NBR
85	125	10	ADL	NBR
85	125	12	A	NBR
85	**125**	**12**	**A**	**FPM**
85	125	12	ADL	NBR
85	**125**	**12**	**ADL**	**FPM**
85	125	13	C	NBR
85	125	14	ADL	NBR
85	126	13	A	NBR
85	130	10	A	NBR
85	130	10	ADL	NBR
85	130	12	A	NBR
85	130	12	ADL	NBR
85	**130**	**12**	**ADL**	**FPM**
85	**130**	**13**	**ADL**	**FPM**
85	130	13	C	NBR
85	140	12	A	NBR
85	140	12	ADL	NBR
85	150	12	A	NBR
85	150	12	ADL	NBR
85	150	13	A	NBR
86	**100**	**07**	**A**	**FPM**
86	**100**	**10**	**A**	**FPM**
86	104	11	ADL	NBR
86	110	13	A	NBR
86	110	13	C	NBR
87	100	12	ADL	NBR
87	110	13	A	NBR
88	100	13	A	NBR
88	105	12	A	NBR
88	106	10	ADL	NBR
88	110	10	A	NBR
88	110	12	A	NBR
88	110	12	ADL-P	NBR
88	110	13	A	NBR
88	**110**	**13**	**A**	**FPM**
88	110	13	ADL	NBR
88	110	13	C	NBR
88	120	12	A	NBR
88	120	13	ADL	NBR
88	120	13	C	NBR
88	121.5	12	A	NBR
88	126	12	A	NBR
88	**126**	**12**	**A**	**FPM**
88	128	12	A	NBR
88	140	13	A	NBR
89	120	13	C	NBR
90	104	11	ADL	NBR
90	105	04	AO	NBR
90	105	06	A	NBR
90	105	06	B	NBR
90	105	09	ADL	NBR
90	105	10	A	NBR
90	105	10	ADL	NBR
90	109	10	ADL	NBR
90	110	5.5	A	NBR
90	110	5.5	ADL	NBR
90	110	06	ADL	NBR
90	110	07	ADL	NBR
90	110	7.5	ADL-P	NBR
90	**110**	**7.5**	**ADL-P**	**FPM**
90	110	08	A	NBR
90	110	08	ADL	NBR
90	110	08	C	NBR
90	110	09	ADL	NBR
90	110	10	A	NBR
90	**110**	**10**	**A**	**FPM**
90	110	10	ADL	NBR
90	**110**	**10**	**ADL**	**FPM**
90	110	10	C	NBR
90	110	12	A	NBR

NBR=Nitrile FPM=Viton®



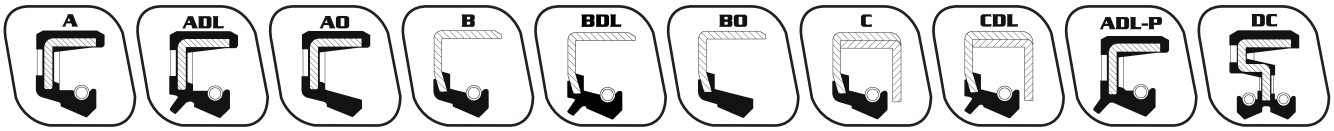
Shaft	Bore	Width	Type	Mat.
90	**110**	**12**	**A**	**FPM**
90	110	12	ADL	NBR
90	**110**	**12**	**ADL**	**FPM**
90	110	12	ADL-P	NBR
90	110	13	A	NBR
90	110	13	ADL	NBR
90	**110**	**13**	**ADL**	**FPM**
90	110	13	CDL	NBR
90	110	15	ADL	NBR
90	112	12	ADL	NBR
90	114	12	ADL	NBR
90	115	08	A	NBR
90	115	09	A	NBR
90	**115**	**09**	**A**	**FPM**
90	115	09	ADL	NBR
90	115	09	C	NBR
90	115	10	A	NBR
90	115	10	ADL	NBR
90	**115**	**12**	**A**	**FPM**
90	115	12	ADL	NBR
90	**115**	**12**	**ADL**	**FPM**
90	115	13	A	NBR
90	**115**	**13**	**A**	**FPM**
90	115	13	ADL	NBR
90	**115**	**13**	**ADL**	**FPM**
90	115	13	BDL	NBR
90	118	12	ADL	NBR
90	120	08	ADL	NBR
90	120	10	A	NBR
90	120	12	A	NBR
90	**120**	**12**	**A**	**FPM**
90	120	12	ADL	NBR
90	**120**	**12**	**ADL**	**FPM**
90	120	12	DC	NBR
90	120	13	A	NBR
90	**120**	**13**	**A**	**FPM**
90	120	13	ADL	NBR
90	120	13	CDL	NBR
90	120	15	A	NBR
90	120	15	ADL	NBR
90	125	13	A	NBR
90	125	13	ADL	NBR
90	125	14	A	NBR
90	**125**	**14**	**A**	**FPM**
90	127	13	BDL	NBR

Shaft	Bore	Width	Type	Mat.
90	130	12	A	NBR
90	130	12	ADL	NBR
90	130	13	A	NBR
90	**130**	**13**	**A**	**FPM**
90	130	13	ADL	NBR
90	**130**	**13**	**ADL**	**FPM**
90	135	13	ADL	NBR
90	140	13	A	NBR
90	140	13	ADL	NBR
90	140	13	C	NBR
90	150	13	ADL	NBR
90	160	12	A	NBR
90	160	13	ADL	NBR
90	167	14	A	NBR
91	**136**	**12**	**A**	**FPM**
92	108	10	ADL	NBR
92	110	10	ADL	NBR
92	120	13	A	NBR
92	**120**	**13**	**A**	**FPM**
93	110	12	ADL	NBR
93	114	12	ADL	NBR
95	105	09	ADL	NBR
95	110	09	B	NBR
95	110	10	A	NBR
95	**110**	**10**	**A**	**FPM**
95	110	10	ADL	NBR
95	110	10	BDL	NBR
95	110	11	ADL	NBR
95	110	12	A	NBR
95	**110**	**12**	**A**	**FPM**
95	110	12	ADL	NBR
95	110	13	A	NBR
95	112	12	ADL	NBR
95	114	12	ADL	NBR
95	115	08	A	NBR
95	115	10	C	NBR
95	115	11	A	NBR
95	115	12	A	NBR
95	115	12	ADL	NBR
95	**115**	**12**	**ADL**	**FPM**
95	115	13	A	NBR
95	115	13	ADL	NBR
95	**115**	**13**	**ADL**	**FPM**
95	115	13	C	NBR
95	120	08	A	NBR



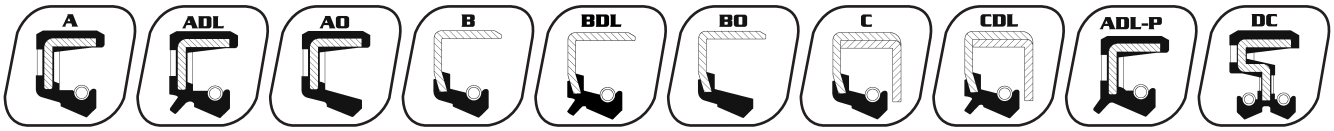
Shaft	Bore	Width	Type	Mat.
95	120	08	ADL	NBR
95	120	08	AO	NBR
95	120	10	ADL	NBR
95	120	12	A	NBR
95	**120**	**12**	**A**	**FPM**
95	120	12	ADL	NBR
95	**120**	**12**	**ADL**	**FPM**
95	120	12	ADL-P	NBR
95	120	12	B	NBR
95	**120**	**12**	**BDL**	**FPM**
95	120	12	DC	NBR
95	120	13	A	NBR
95	120	13	ADL	NBR
95	**120**	**13**	**ADL**	**FPM**
95	120	15	C	NBR
95	125	12	A	NBR
95	**125**	**12**	**A**	**FPM**
95	125	12	ADL	NBR
95	**125**	**12**	**ADL**	**FPM**
95	125	13	A	NBR
95	125	13	ADL	NBR
95	**125**	**13**	**ADL**	**FPM**
95	127	13	BDL	NBR
95	130	12	A	NBR
95	130	12	ADL	NBR
95	**130**	**12**	**ADL**	**FPM**
95	130	12	CDL	NBR
95	130	13	A	NBR
95	**130**	**13**	**A**	**FPM**
95	130	13	ADL	NBR
95	130	13	B	NBR
95	130	13	C	NBR
95	130	15	A	NBR
95	132	12	A	NBR
95	135	13	A	NBR
95	136	13	A	NBR
95	145	10	ADL	NBR
95	145	13	A	NBR
95	145	13	ADL	NBR
95	150	15	A	NBR
95	**150**	**15**	**A**	**FPM**
95	160	15	A	NBR
95	**160**	**15**	**A**	**FPM**
95	**170**	**13**	**A**	**FPM**
96	112	10	A	NBR
96	**117**	**10**	**A**	**FPM**
96	136	12	A	NBR
96	136	12	ADL	NBR
96	140	13	A	NBR
97	127	13	A	NBR
97	167	13	A	NBR
98	118	10	ADL	NBR
98	120	13	A	NBR
98	120	13	ADL	NBR
98	125	13	A	NBR
98	128	10	A	NBR
98	**128**	**10**	**A**	**FPM**
98	128	10	C	NBR
98	130	13	B	NBR
100	110	07	B	NBR
100	110	07	BO	NBR
100	114	10	B	NBR
100	114	12	BDL	NBR
100	115	04	AO	NBR
100	115	09	A	NBR
100	115	09	ADL	NBR
100	**115**	**09**	**ADL**	**FPM**
100	115	09	B	NBR
100	115	12	ADL	NBR
100	116	08	B	NBR
100	118	12	B	NBR
100	120	*7.5*	ADL-P	NBR
100	120	08	B	NBR
100	120	10	A	NBR
100	120	10	ADL	NBR
100	**120**	**10**	**ADL**	**FPM**
100	120	10	ADL-P	NBR
100	120	11	ADL	NBR
100	120	12	A	NBR
100	**120**	**12**	**A**	**FPM**
100	120	12	ADL	NBR
100	**120**	**12**	**ADL**	**FPM**
100	120	12	ADL-P	NBR
100	120	13	A	NBR
100	120	13	ADL	NBR
100	**120**	**13**	**ADL**	**FPM**
100	120	15	ADL	NBR
100	120	15	C	NBR
100	120	17	ADL	NBR
100	125	04	ADL	NBR

NBR=Nitrile FPM=Viton®



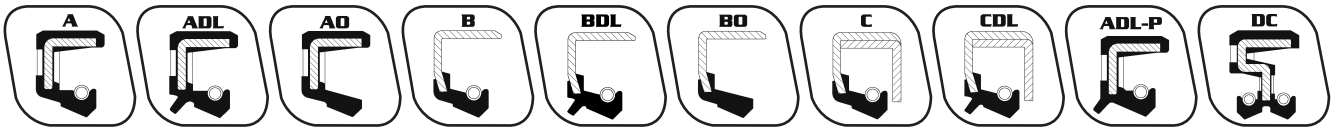
Shaft	Bore	Width	Type	Mat.
100	125	10	A	NBR
100	125	10	ADL	NBR
100	125	12	A	NBR
100	**125**	**12**	**A**	**FPM**
100	125	12	ADL	NBR
100	**125**	**12**	**ADL**	**FPM**
100	125	13	A	NBR
100	**125**	**13**	**A**	**FPM**
100	125	13	ADL	NBR
100	**125**	**13**	**ADL**	**FPM**
100	125	13	C	NBR
100	**125**	**13**	**CDL**	**FPM**
100	125	14	ADL	NBR
100	125	15	A	NBR
100	127	13	A	NBR
100	130	08	C	NBR
100	130	10	A	NBR
100	130	10	ADL	NBR
100	130	12	A	NBR
100	**130**	**12**	**A**	**FPM**
100	130	12	ADL	NBR
100	**130**	**12**	**ADL**	**FPM**
100	130	13	A	NBR
100	130	13	ADL	NBR
100	130	13	BDL	NBR
100	130	13	C	NBR
100	130	13	DC	NBR
100	130	14	A	NBR
100	130	14	ADL	NBR
100	130	15	ADL	NBR
100	130	15	C	NBR
100	134	10	B	NBR
100	135	10	ADL	NBR
100	135	12	ADL	NBR
100	135	13	A	NBR
100	**135**	**13**	**ADL**	**FPM**
100	140	12	A	NBR
100	140	12	ADL	NBR
100	140	13	A	NBR
100	**140**	**13**	**A**	**FPM**
100	140	13	ADL	NBR
100	140	13	C	NBR
100	140	15	BDL	NBR
100	145	13	ADL	NBR
100	145	14	ADL	NBR

Shaft	Bore	Width	Type	Mat.
100	150	10	ADL	NBR
100	150	12	ADL	NBR
100	**150**	**12**	**A**	**FPM**
100	**150**	**12**	**ADL**	**FPM**
100	150	12	B	NBR
100	150	13	A	NBR
100	**150**	**13**	**A**	**FPM**
100	150	13	ADL	NBR
100	150	15	A	NBR
100	160	12	A	NBR
100	160	15	C	NBR
100	160	15	CDL	NBR
100	162	12	ADL	NBR
100	170	15	ADL	NBR
100	180	12	ADL	NBR
100	**180**	**12**	**ADL**	**FPM**
100	180	13	A	NBR
100	185	13	A	NBR
101	114	10	ADL	NBR
102	115	10	ADL	NBR
102	116	14	BDL	NBR
102	120	12	A	NBR
102	123	7.5	B	NBR
102	125	13	C	NBR
102	130	13	C	NBR
102	135	13	A	NBR
103	125	13	C	NBR
103	135	12	ADL	NBR
104	**120**	**13**	**A**	**FPM**
104	125	10	A	NBR
104	**125**	**10**	**A**	**FPM**
104	130	10	A	NBR
105	120	06	ADL	NBR
105	120	07	ADL	NBR
105	120	07	B	NBR
105	120	13	ADL	NBR
105	120	15	C	NBR
105	125	06	ADL	NBR
105	125	10	A	NBR
105	**125**	**12**	**ADL**	**FPM**
105	125	12	B	NBR
105	125	13	A	NBR
105	**125**	**13**	**A**	**FPM**
105	125	13	ADL	NBR
105	**125**	**13**	**ADL**	**FPM**



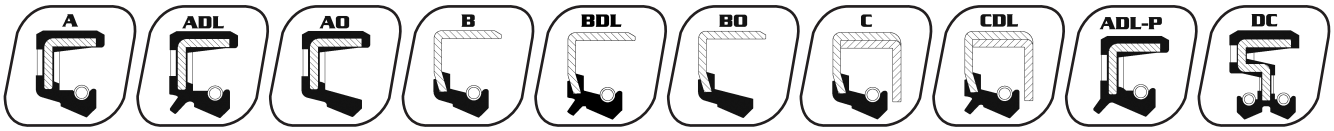
Shaft	Bore	Width	Type	Mat.
105	**125**	**13**	**BO**	**FPM**
105	125	13	C	NBR
105	**125**	**13**	**C**	**FPM**
105	127	13	BDL	NBR
105	130	7.5	ADL-P	NBR
105	130	10	ADL	NBR
105	130	12	A	NBR
105	**130**	**12**	**A**	**FPM**
105	130	12	ADL	NBR
105	**130**	**12**	**ADL**	**FPM**
105	130	12	DC	NBR
105	130	13	A	NBR
105	**130**	**13**	**A**	**FPM**
105	130	13	ADL	NBR
105	**130**	**13**	**ADL**	**FPM**
105	130	13	B	NBR
105	130	15	A	NBR
105	**130**	**15**	**A**	**FPM**
105	130	15	ADL	NBR
105	**135**	**12**	**A**	**FPM**
105	135	13	A	NBR
105	**135**	**13**	**A**	**FPM**
105	135	14	A	NBR
105	135	14	ADL	NBR
105	**135**	**14**	**ADL**	**FPM**
105	135	15	ADL	NBR
105	136	13	ADL	NBR
105	140	12	A	NBR
105	**140**	**12**	**A**	**FPM**
105	140	12	ADL	NBR
105	**140**	**12**	**ADL**	**FPM**
105	140	12	ADL-P	NBR
105	140	13	A	NBR
105	140	13	ADL	NBR
105	140	15	BDL	NBR
105	140	16	A	NBR
105	145	12	ADL	NBR
105	**145**	**12**	**ADL**	**FPM**
105	145	13	B	NBR
105	145	15	B	NBR
105	145	16	A	NBR
105	150	15	A	NBR
106	126	12	ADL	NBR
108	130	13	C	NBR
108	135	15	ADL	NBR
108	140	13	C	NBR
108	140	15	A	NBR
109	130	15	CDL	NBR
109	140	13	BDL	NBR
110	124	08	ADL	NBR
110	125	08	B	NBR
110	125	08	BDL	NBR
110	125	12	A	NBR
110	125	13	A	NBR
110	128	09	B	NBR
110	128	09	C	NBR
110	130	08	A	NBR
110	**130**	**08**	**A**	**FPM**
110	130	10	A	NBR
110	130	12	A	NBR
110	**130**	**12**	**A**	**FPM**
110	130	12	ADL	NBR
110	**130**	**12**	**ADL**	**FPM**
110	130	12	ADL-P	NBR
110	130	13	A	NBR
110	**130**	**13**	**A**	**FPM**
110	130	13	ADL	NBR
110	130	13	B	NBR
110	130	13	BDL	NBR
110	130	13	C	NBR
110	130	14.5	A	NBR
110	130	15	C	NBR
110	132	12	B	NBR
110	135	10	ADL	NBR
110	135	12	A	NBR
110	**135**	**12**	**A**	**FPM**
110	135	12	ADL	NBR
110	135	13	A	NBR
110	135	13	ADL	NBR
110	140	10	A	NBR
110	**140**	**10**	**ADL**	**FPM**
110	140	12	A	NBR
110	**140**	**12**	**A**	**FPM**
110	140	12	ADL	NBR
110	**140**	**12**	**ADL**	**FPM**
110	140	13	A	NBR
110	**140**	**13**	**A**	**FPM**
110	140	13	ADL	NBR
110	**140**	**14**	**A**	**FPM**
110	140	14	ADL	NBR

NBR=Nitrile FPM=Viton®



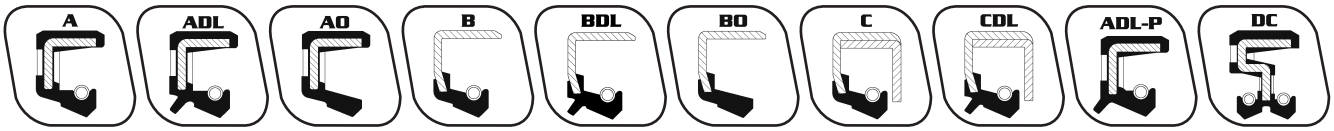
Shaft	Bore	Width	Type	Mat.
110	**140**	**14**	**ADL**	**FPM**
110	140	15	C	NBR
110	142	14	ADL	NBR
110	**143**	**12**	**CDL**	**FPM**
110	145	13	A	NBR
110	145	13	ADL	NBR
110	**145**	**13**	**C**	**FPM**
110	145	14	ADL	NBR
110	145	15	A	NBR
110	145	15	ADL	NBR
110	**145**	**15**	**ADL**	**FPM**
110	146	14	CDL	NBR
110	150	08	ADL-P	NBR
110	150	12	ADL	NBR
110	150	13	A	NBR
110	**150**	**13**	**A**	**FPM**
110	150	13	ADL	NBR
110	**150**	**13**	**ADL**	**FPM**
110	150	15	A	NBR
110	150	15	C	NBR
110	152	15	C	NBR
110	155	15	A	NBR
110	**155**	**15**	**A**	**FPM**
110	160	08	A	NBR
110	160	12	ADL	NBR
110	160	13	ADL	NBR
110	160	14	ADL	NBR
110	160	15	A	NBR
110	160	16	ADL	NBR
110	170	12	ADL	NBR
110	180.5	12	ADL	NBR
110	200	13	ADL	NBR
111	130	10	BDL	NBR
112	125	12	ADL	NBR
112	130	08	B	NBR
112	130	12	B	NBR
112	140	13	A	NBR
112	142	12	ADL	NBR
112	142	14	ADL	NBR
113	140	13	C	NBR
114	**126**	**06**	**ADL**	**FPM**
114	135	13	ADL	NBR
114	140	10	A	NBR
114	140	13	A	NBR
114	140	13	ADL	NBR

Shaft	Bore	Width	Type	Mat.
114	140	13	C	NBR
114	145	12	A	NBR
114	145	14	A	NBR
114	159	14	CDL	NBR
114	160	12	A	NBR
115	130	12	A	NBR
115	**130**	**12**	**A**	**FPM**
115	**130**	**12**	**C**	**FPM**
115	**130**	**13**	**CDL**	**FPM**
115	135	09	C	NBR
115	135	13	B	NBR
115	135	14	ADL	NBR
115	140	10	A	NBR
115	**140**	**10**	**A**	**FPM**
115	140	12	A	NBR
115	**140**	**12**	**A**	**FPM**
115	140	12	ADL	NBR
115	**140**	**12**	**ADL**	**FPM**
115	140	13	A	NBR
115	140	13	ADL	NBR
115	140	14	ADL	NBR
115	140	15	B	NBR
115	140	15	C	NBR
115	140	16	ADL	NBR
115	140	16	BDL	NBR
115	142	14	ADL	NBR
115	143	17	ADL	NBR
115	145	12	A	NBR
115	145	13	A	NBR
115	**145**	**13**	**A**	**FPM**
115	145	14	A	NBR
115	145	14	ADL	NBR
115	**145**	**14**	**ADL**	**FPM**
115	145	14	ADL-P	NBR
115	145	15	ADL	NBR
115	146.5	13	ADL	NBR
115	150	12	A	NBR
115	**150**	**12**	**A**	**FPM**
115	150	12	ADL	NBR
115	**150**	**12**	**ADL**	**FPM**
115	150	13	A	NBR
115	150	13	ADL	NBR
115	150	13	C	NBR
115	150	15	ADL	NBR
115	155	12	ADL	NBR



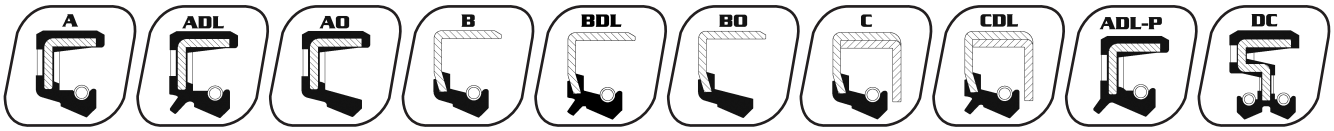
Shaft	Bore	Width	Type	Mat.
115	160	14	BDL	NBR
115	160	15	A	NBR
115	165	15	ADL	NBR
115	180	15	ADL	NBR
116	132	12	ADL	NBR
117	143	13	ADL	NBR
118	136	13	BDL	NBR
118	140	13	A	NBR
118	**150**	**12**	**A**	**FPM**
118	150	12	CDL	NBR
118	150	15	ADL	NBR
119	140	12	BDL	NBR
119	153	15	ADL	NBR
120	130	13	ADL	NBR
120	135	08	B	NBR
120	**135**	**12**	**A**	**FPM**
120	**140**	**7.5**	**A**	**FPM**
120	140	*7.5*	ADL	NBR
120	140	*7.5*	ADL-P	NBR
120	140	10	A	NBR
120	**140**	**10**	**A**	**FPM**
120	140	10	ADL-P	NBR
120	140	12	A	NBR
120	140	12	ADL	NBR
120	**140**	**12**	**ADL**	**FPM**
120	140	13	A	NBR
120	**140**	**13**	**A**	**FPM**
120	140	13	ADL	NBR
120	**140**	**13**	**ADL**	**FPM**
120	140	13	ADL-P	NBR
120	140	13	B	NBR
120	140	13	BDL	NBR
120	140	13	C	NBR
120	140	13	DC	NBR
120	140	14	A	NBR
120	140	15	ADL	NBR
120	145	12	A	NBR
120	145	12	ADL	NBR
120	145	15	ADL	NBR
120	145	15	BDL	NBR
120	146	13	ADL	NBR
120	**146**	**15**	**ADL**	**FPM**
120	150	09	A	NBR
120	150	10	A	NBR
120	150	12	A	NBR
120	**150**	**12**	**A**	**FPM**
120	150	12	ADL	NBR
120	**150**	**12**	**ADL**	**FPM**
120	150	12	ADL-P	NBR
120	150	13	A	NBR
120	**150**	**13**	**A**	**FPM**
120	150	13	ADL	NBR
120	150	13	C	NBR
120	150	14	A	NBR
120	150	14	ADL	NBR
120	150	15	A	NBR
120	150	15	ADL	NBR
120	**150**	**15**	**ADL**	**FPM**
120	150	15	C	NBR
120	150	15	CDL	NBR
120	**150**	**16**	**A**	**FPM**
120	150	16	ADL	NBR
120	152	16	C	NBR
120	153	15	ADL	NBR
120	155	13	ADL	NBR
120	155	15	ADL	NBR
120	155	16	CDL	NBR
120	160	08	B	NBR
120	160	12	A	NBR
120	**160**	**12**	**A**	**FPM**
120	160	12	ADL	NBR
120	**160**	**12**	**ADL**	**FPM**
120	160	13	A	NBR
120	**160**	**13**	**A**	**FPM**
120	160	13	ADL	NBR
120	160	13	C	NBR
120	160	14	A	NBR
120	160	15	A	NBR
120	**160**	**15**	**A**	**FPM**
120	160	15	ADL	NBR
120	**160**	**15**	**ADL**	**FPM**
120	160	15	C	NBR
120	162	13	ADL	NBR
120	165	14	ADL	NBR
120	170	14	ADL	NBR
120	170	15	C	NBR
120	180	15	ADL	NBR
120	**180**	**15**	**ADL**	**FPM**
120	195	13	A	NBR
120	215	12	ADL	NBR

NBR=Nitrile FPM=Viton®



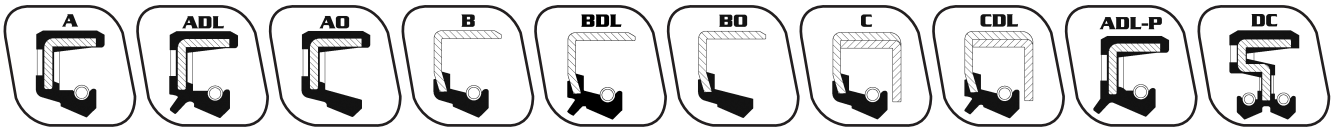
Shaft	Bore	Width	Type	Mat.
122	150	13	C	NBR
122	150	15	A	NBR
124	150	15	C	NBR
125	140	07	ADL	NBR
125	140	10	A	NBR
125	**140**	**10**	**A**	**FPM**
125	140	12	ADL	NBR
125	143	13	ADL	NBR
125	145	7.5	A	NBR
125	145	12	ADL	NBR
125	**145**	**13**	**A**	**FPM**
125	145	13	BDL	NBR
125	145	14	ADL	NBR
125	**150**	**10**	**A**	**FPM**
125	150	12	A	NBR
125	**150**	**12**	**A**	**FPM**
125	150	12	ADL	NBR
125	**150**	**12**	**ADL**	**FPM**
125	150	13	A	NBR
125	**150**	**13**	**A**	**FPM**
125	150	13	ADL	NBR
125	**150**	**13**	**ADL**	**FPM**
125	150	13	BDL	NBR
125	150	13	C	NBR
125	**150**	**13**	**C**	**FPM**
125	150	13	CDL	NBR
125	150	14	A	NBR
125	150	14	ADL	NBR
125	150	15	A	NBR
125	150	15	ADL	NBR
125	150	15	C	NBR
125	**150**	**15**	**C**	**FPM**
125	152	13	ADL	NBR
125	155	12	A	NBR
125	**155**	**12**	**A**	**FPM**
125	155	12	ADL	NBR
125	155	13	ADL	NBR
125	155	14	ADL	NBR
125	159	14	CDL	NBR
125	160	12	A	NBR
125	**160**	**12**	**A**	**FPM**
125	160	12	ADL	NBR
125	**160**	**12**	**ADL**	**FPM**
125	160	13	A	NBR
125	160	15	A	NBR

Shaft	Bore	Width	Type	Mat.
125	**160**	**15**	**A**	**FPM**
125	160	15	ADL	NBR
125	162	13	ADL	NBR
125	165	13	ADL	NBR
125	165	15	ADL	NBR
125	170	12	ADL	NBR
125	170	13	C	NBR
125	170	15	C	NBR
126	**164**	**16**	**ADL**	**FPM**
127	148	13.5	ADL	NBR
127	150	13	A	NBR
127	**170**	**14**	**A**	**FPM**
127	180	12	ADL	NBR
128	146	13.5	A	NBR
128	146	13.5	C	NBR
128	148	13	ADL	NBR
128	150	13	A	NBR
128	**150**	**13**	**A**	**FPM**
128	150	15	B	NBR
128	160	15	C	NBR
130	150	7.5	ADL-P	NBR
130	150	10	A	NBR
130	**150**	**10**	**A**	**FPM**
130	150	10	ADL	NBR
130	**150**	**10**	**ADL**	**FPM**
130	150	12	ADL	NBR
130	**150**	**12**	**ADL**	**FPM**
130	**150**	**13**	**A**	**FPM**
130	150	14	BDL	NBR
130	150	15	ADL	NBR
130	**150**	**15**	**ADL**	**FPM**
130	153	12	ADL	NBR
130	154	16	ADL	NBR
130	155	10	ADL	NBR
130	155	10	C	NBR
130	155	12	C	NBR
130	155	14	ADL	NBR
130	159	14	CDL	NBR
130	160	12	A	NBR
130	**160**	**12**	**A**	**FPM**
130	160	12	ADL	NBR
130	**160**	**12**	**ADL**	**FPM**
130	160	12	ADL-P	NBR
130	160	13	A	NBR
130	**160**	**13**	**A**	**FPM**

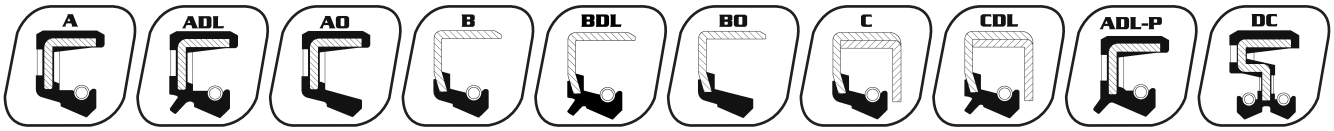


Shaft	Bore	Width	Type	Mat.
130	160	13	ADL	NBR
130	160	13	C	NBR
130	160	14	A	NBR
130	**160**	**14**	**A**	**FPM**
130	160	14	ADL	NBR
130	**160**	**14**	**ADL**	**FPM**
130	160	15	A	NBR
130	**160**	**15**	**A**	**FPM**
130	160	15	ADL	NBR
130	**160**	**15**	**ADL**	**FPM**
130	160	16	B	NBR
130	162	09	ADL	NBR
130	163	18	ADL	NBR
130	165	13	A	NBR
130	**165**	**13**	**A**	**FPM**
130	165	13	ADL	NBR
130	165	15	A	NBR
130	170	12	A	NBR
130	**170**	**12**	**A**	**FPM**
130	170	12	ADL	NBR
130	**170**	**12**	**ADL**	**FPM**
130	170	13	A	NBR
130	**170**	**13**	**A**	**FPM**
130	170	13	ADL	NBR
130	170	14	A	NBR
130	170	14	ADL	NBR
130	170	15	A	NBR
130	**170**	**15**	**A**	**FPM**
130	170	15	ADL	NBR
130	**170**	**15**	**ADL**	**FPM**
130	180	15	ADL	NBR
130	180	15	C	NBR
130	182	16	A	NBR
130	190	12	ADL	NBR
130	200	12	ADL	NBR
130	230	14	ADL	NBR
132	160	12	ADL	NBR
132	160	13	C	NBR
132	160	15	ADL	NBR
134	152	11	BDL	NBR
135	150	15	ADL	NBR
135	155	12	A	NBR
135	159	13	ADL	NBR
135	**160**	**10**	**A**	**FPM**
135	160	12	A	NBR
135	**160**	**12**	**A**	**FPM**
135	160	12	ADL	NBR
135	**160**	**12**	**ADL**	**FPM**
135	160	13	A	NBR
135	**160**	**13**	**A**	**FPM**
135	160	13	ADL	NBR
135	160	13	B	NBR
135	**160**	**14**	**A**	**FPM**
135	160	14	ADL	NBR
135	160	15	A	NBR
135	160	15	ADL	NBR
135	162	13	BDL	NBR
135	165	12	A	NBR
135	**165**	**12**	**A**	**FPM**
135	165	12	ADL	NBR
135	165	13	ADL	NBR
135	165	13	C	NBR
135	165	13	CDL	NBR
135	165	14	ADL	NBR
135	165	15	ADL	NBR
135	170	12	A	NBR
135	**170**	**12**	**A**	**FPM**
135	170	12	ADL	NBR
135	**170**	**12**	**ADL**	**FPM**
135	170	13	C	NBR
135	170	15	A	NBR
135	**170**	**15**	**A**	**FPM**
135	170	15	ADL	NBR
135	170	15	C	NBR
135	175	12	ADL	NBR
135	**175**	**16**	**BDL**	**FPM**
135	180	15	A	NBR
135	190	14	A	NBR
135	190	15	A	NBR
135	192	16	A	NBR
135	200	12	ADL	NBR
138	152	12	BDL	NBR
138	160	15	A	NBR
138	162	13	ADL	NBR
139	170	13	ADL	NBR
140	155	10	A	NBR
140	**157**	**08**	**ADL**	**FPM**
140	160	10	A	NBR
140	**160**	**10**	**A**	**FPM**
140	160	10	ADL	NBR

NBR=Nitrile FPM=Viton®



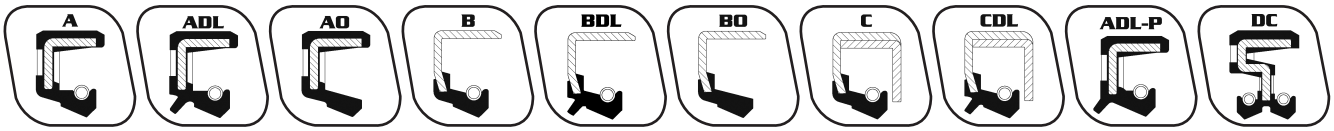
Shaft	Bore	Width	Type	Mat.
140	160	10	ADL-P	NBR
140	160	12	A	NBR
140	160	12	ADL	NBR
140	**160**	**12**	**ADL**	**FPM**
140	160	13	A	NBR
140	**160**	**13**	**A**	**FPM**
140	160	13	ADL	NBR
140	**160**	**13**	**ADL**	**FPM**
140	160	13	C	NBR
140	160	14	ADL	NBR
140	160	15	A	NBR
140	165	10	A	NBR
140	165	12	A	NBR
140	**165**	**12**	**A**	**FPM**
140	165	12	ADL	NBR
140	**165**	**12**	**ADL**	**FPM**
140	165	12	C	NBR
140	165	14	BDL	NBR
140	165	15	A	NBR
140	165	15	ADL	NBR
140	165	15	C	NBR
140	170	12	A	NBR
140	**170**	**12**	**A**	**FPM**
140	170	12	ADL	NBR
140	**170**	**12**	**ADL**	**FPM**
140	170	13	A	NBR
140	**170**	**13**	**A**	**FPM**
140	170	13	ADL	NBR
140	**170**	**13**	**ADL**	**FPM**
140	170	13	C	NBR
140	170	14	A	NBR
140	**170**	**14**	**A**	**FPM**
140	170	14	ADL	NBR
140	**170**	**14**	**ADL**	**FPM**
140	170	15	A	NBR
140	**170**	**15**	**A**	**FPM**
140	170	15	ADL	NBR
140	**170**	**15**	**ADL**	**FPM**
140	170	15	ADL-P	NBR
140	170	15	C	NBR
140	175	13	ADL	NBR
140	175	15	ADL	NBR
140	180	12	A	NBR
140	**180**	**12**	**A**	**FPM**
140	180	12	ADL	NBR
140	**180**	**12**	**ADL**	**FPM**
140	180	13	A	NBR
140	**180**	**13**	**A**	**FPM**
140	180	14	A	NBR
140	180	14	ADL	NBR
140	180	15	A	NBR
140	**180**	**15**	**A**	**FPM**
140	180	15	ADL	NBR
140	**180**	**15**	**ADL**	**FPM**
140	180	15	C	NBR
140	190	10	ADL	NBR
140	**190**	**15**	**A**	**FPM**
140	210	15	ADL	NBR
140	215	12	A	NBR
142	165	10	A	NBR
142	166	10	ADL	NBR
142	168	16	ADL	NBR
143	175	16	A	NBR
144	160	10	ADL	NBR
144	160	12	A	NBR
144	**160**	**12**	**A**	**FPM**
144	172	15	ADL	NBR
145	160	10	A	NBR
145	165	13	A	NBR
145	**165**	**13**	**A**	**FPM**
145	165	13	ADL	NBR
145	165	13	C	NBR
145	165	15	A	NBR
145	167	13	ADL	NBR
145	168	13	ADL	NBR
145	170	12	ADL	NBR
145	**170**	**12**	**ADL**	**FPM**
145	170	13	ADL	NBR
145	170	13	C	NBR
145	170	15	A	NBR
145	**170**	**15**	**A**	**FPM**
145	170	15	ADL	NBR
145	**170**	**15**	**ADL**	**FPM**
145	170	15	B	NBR
145	**175**	**13**	**A**	**FPM**
145	175	13	ADL	NBR
145	175	13	B	NBR
145	175	13	C	NBR
145	175	14	BDL	NBR
145	175	15	A	NBR



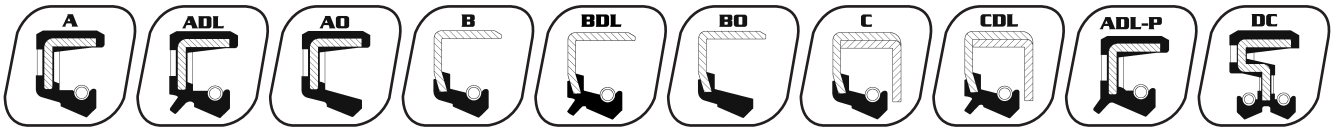
Shaft	Bore	Width	Type	Mat.
145	**175**	**15**	**A**	**FPM**
145	175	15	ADL	NBR
145	**175**	**15**	**ADL**	**FPM**
145	180	12	A	NBR
145	**180**	**12**	**A**	**FPM**
145	180	12	ADL	NBR
145	180	13	A	NBR
145	**180**	**13**	**A**	**FPM**
145	180	14	A	NBR
145	**180**	**14**	**A**	**FPM**
145	180	15	ADL	NBR
145	180	15	C	NBR
145	185	15	A	NBR
146	163	07	A	NBR
146	170	15	C	NBR
148	170	14.5	A	NBR
148	170	15	C	NBR
148	180	15	C	NBR
150	162	09	A	NBR
150	168	12	A	NBR
150	168	13	A	NBR
150	170	12	A	NBR
150	**170**	**12**	**A**	**FPM**
150	170	12	ADL	NBR
150	170	13	A	NBR
150	170	15	A	NBR
150	**170**	**15**	**A**	**FPM**
150	170	15	ADL	NBR
150	**170**	**15**	**ADL**	**FPM**
150	170	15	C	NBR
150	172	10	ADL	NBR
150	172	12	ADL	NBR
150	175	10	ADL	NBR
150	178	13	ADL	NBR
150	180	8.5	ADL-P	NBR
150	180	10	ADL	NBR
150	180	12	A	NBR
150	**180**	**12**	**A**	**FPM**
150	180	12	ADL	NBR
150	**180**	**12**	**ADL**	**FPM**
150	180	13	A	NBR
150	**180**	**13**	**A**	**FPM**
150	180	13	ADL	NBR
150	**180**	**13**	**ADL**	**FPM**
150	180	14	A	NBR

Shaft	Bore	Width	Type	Mat.
150	**180**	**14**	**A**	**FPM**
150	180	14	ADL	NBR
150	**180**	**14**	**ADL**	**FPM**
150	180	14	BDL	NBR
150	180	15	A	NBR
150	**180**	**15**	**A**	**FPM**
150	180	15	ADL	NBR
150	**180**	**15**	**ADL**	**FPM**
150	180	15	C	NBR
150	**180**	**15**	**C**	**FPM**
150	180	15	CDL	NBR
150	**190**	**13**	**ADL**	**FPM**
150	190	13	BDL	NBR
150	190	15	A	NBR
150	190	15	ADL	NBR
150	**190**	**15**	**ADL**	**FPM**
150	190	15	C	NBR
150	190	16	A	NBR
150	**190**	**16**	**ADL**	**FPM**
150	200	15	C	NBR
150	210	15	ADL	NBR
150	210	16	ADL	NBR
150	225	12	ADL	NBR
150	225	15	ADL	NBR
152	178	13	ADL	NBR
152	190	15	ADL	NBR
154	175	14	ADL	NBR
154	176	10	ADL	NBR
154	180	15	ADL	NBR
155	172	14	BDL	NBR
155	174	12	A	NBR
155	174	12	ADL	NBR
155	175	12	A	NBR
155	**175**	**13**	**A**	**FPM**
155	175	13	BDL	NBR
155	180	12	ADL	NBR
155	**180**	**13**	**A**	**FPM**
155	**180**	**15**	**A**	**FPM**
155	180	15	ADL	NBR
155	180	15	C	NBR
155	185	14	ADL	NBR
155	**185**	**15**	**ADL**	**FPM**
155	190	15	A	NBR
155	190	15	ADL	NBR
155	200	15	A	NBR

NBR=Nitrile FPM=Viton®

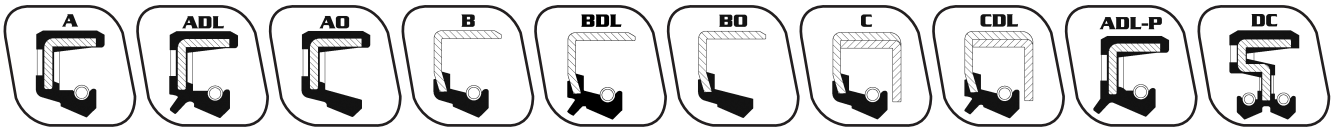


Shaft	Bore	Width	Type	Mat.
156	196	20	A	NBR
158	180	15	A	NBR
160	180	10	ADL	NBR
160	180	10	BDL	NBR
160	180	12	A	NBR
160	**180**	**12**	**A**	**FPM**
160	180	12	ADL	NBR
160	**180**	**12**	**ADL**	**FPM**
160	180	15	A	NBR
160	**180**	**15**	**A**	**FPM**
160	180	15	ADL	NBR
160	180	15	C	NBR
160	182	18	ADL	NBR
160	185	10	A	NBR
160	**185**	**10**	**A**	**FPM**
160	185	10	ADL	NBR
160	185	10	C	NBR
160	185	13	BDL	NBR
160	185	14	A	NBR
160	185	15	ADL	NBR
160	190	13	A	NBR
160	**190**	**13**	**A**	**FPM**
160	190	13	ADL	NBR
160	190	14	A	NBR
160	190	14	ADL	NBR
160	190	15	A	NBR
160	**190**	**15**	**A**	**FPM**
160	190	15	ADL	NBR
160	**190**	**15**	**ADL**	**FPM**
160	190	15	B	NBR
160	190	16	ADL	NBR
160	**190**	**16**	**ADL**	**FPM**
160	200	12	A	NBR
160	**200**	**12**	**A**	**FPM**
160	200	12	ADL	NBR
160	200	14	A	NBR
160	200	14	ADL	NBR
160	200	15	A	NBR
160	**200**	**15**	**A**	**FPM**
160	200	15	ADL	NBR
160	210	15	C	NBR
160	220	15	ADL	NBR
160	240	15	ADL	NBR
160	290	18	ADL	NBR
161	215	15	A	NBR
162	182	14	ADL	NBR
162	187	12	ADL	NBR
162	190	12	A	NBR
164	185	12	C	NBR
165	180	10	ADL	NBR
165	187	09	A	NBR
165	**190**	**10**	**A**	**FPM**
165	190	13	A	NBR
165	**190**	**13**	**A**	**FPM**
165	190	13	ADL	NBR
165	190	15	ADL	NBR
165	195	15	ADL	NBR
165	197	13	ADL	NBR
165	200	09	A	NBR
165	200	15	A	NBR
165	**200**	**15**	**A**	**FPM**
165	200	15	ADL	NBR
165	**200**	**15**	**ADL**	**FPM**
165	200	15	C	NBR
168	190	15	C	NBR
168	**200**	**13**	**ADL**	**FPM**
168	200	15	C	NBR
170	190	8.5	ADL	NBR
170	190	10	ADL	NBR
170	190	13	A	NBR
170	190	13	ADL	NBR
170	**190**	**13**	**ADL**	**FPM**
170	190	14	ADL	NBR
170	190	15	A	NBR
170	**190**	**15**	**A**	**FPM**
170	190	15	C	NBR
170	195	18	BDL	NBR
170	200	12	A	NBR
170	**200**	**12**	**A**	**FPM**
170	200	12	ADL	NBR
170	**200**	**13**	**A**	**FPM**
170	200	13	C	NBR
170	200	14	A	NBR
170	200	14	ADL	NBR
170	200	15	A	NBR
170	**200**	**15**	**A**	**FPM**
170	200	15	ADL	NBR
170	**200**	**15**	**ADL**	**FPM**
170	200	15	C	NBR
170	**200**	**15**	**C**	**FPM**



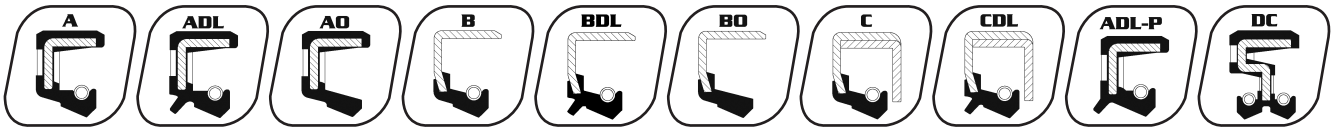
Shaft	Bore	Width	Type	Mat.
170	200	16	B	NBR
170	203	11.5	BDL	NBR
170	205	15	ADL	NBR
170	**205**	**18**	**A**	**FPM**
170	210	14	A	NBR
170	210	15	ADL	NBR
170	215	16	C	NBR
170	220	15	A	NBR
170	**220**	**16**	**ADL**	**FPM**
170	225	15	C	NBR
170	**230**	**15**	**ADL**	**FPM**
172	200	15	A	NBR
172	200	15	C	NBR
175	190	13	ADL	NBR
175	200	10	A	NBR
175	**200**	**10**	**A**	**FPM**
175	200	15	A	NBR
175	**200**	**15**	**A**	**FPM**
175	200	15	ADL	NBR
175	203.5	19	BDL	NBR
175	205	15	A	NBR
175	205	15	ADL	NBR
175	**205**	**15**	**C**	**FPM**
175	210	14	A	NBR
175	**210**	**14**	**A**	**FPM**
175	210	15	ADL	NBR
175	210	15	C	NBR
175	215	16	C	NBR
175	220	17	A	NBR
175	230	20	ADL	NBR
177	250	16	A	NBR
178	194	08	AO	NBR
178	200	15	C	NBR
178	208	15	A	NBR
178	215	16	C	NBR
180	200	13	A	NBR
180	**200**	**13**	**A**	**FPM**
180	200	15	A	NBR
180	**200**	**15**	**A**	**FPM**
180	200	15	ADL	NBR
180	200	15	C	NBR
180	200	15	CDL	NBR
180	200	16	ADL	NBR
180	**200**	**16**	**ADL**	**FPM**
180	205	15	ADL	NBR
180	210	8.5	ADL-P	NBR
180	210	10	A	NBR
180	210	10	ADL	NBR
180	210	14	ADL	NBR
180	210	15	A	NBR
180	**210**	**15**	**A**	**FPM**
180	210	15	ADL	NBR
180	**210**	**15**	**ADL**	**FPM**
180	**210**	**16**	**A**	**FPM**
180	210	16	ADL	NBR
180	215	15	A	NBR
180	**215**	**15**	**A**	**FPM**
180	215	15	ADL	NBR
180	215	15	CDL	NBR
180	215	16	A	NBR
180	**215**	**16**	**A**	**FPM**
180	215	16	ADL	NBR
180	216	19	CDL	NBR
180	220	13	ADL	NBR
180	220	15	A	NBR
180	**220**	**15**	**A**	**FPM**
180	220	15	ADL	NBR
180	220	16	A	NBR
180	220	16	ADL	NBR
180	225	15	B	NBR
180	260	15	ADL	NBR
182	215	15	ADL	NBR
185	**210**	**10**	**A**	**FPM**
185	210	13	A	NBR
185	**210**	**13**	**A**	**FPM**
185	210	13	ADL	NBR
185	**210**	**13**	**ADL**	**FPM**
185	215	15	A	NBR
185	**215**	**15**	**A**	**FPM**
185	215	15	ADL	NBR
185	**215**	**15**	**BO**	**FPM**
185	215	15	C	NBR
185	215	16	A	NBR
185	230	16	C	NBR
186	216	12	C	NBR
188	215	16	ADL	NBR
188	215	16	B	NBR
188	215	16	C	NBR
190	210	10	ADL	NBR
190	215	15	A	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
190	215	15	ADL	NBR
190	215	15	C	NBR
190	215	16	ADL	NBR
190	**215**	**16**	**ADL**	**FPM**
190	215	16	C	NBR
190	**215**	**16**	**C**	**FPM**
190	220	10	ADL	NBR
190	220	12	A	NBR
190	**220**	**12**	**A**	**FPM**
190	220	12	C	NBR
190	220	15	A	NBR
190	**220**	**15**	**A**	**FPM**
190	220	15	ADL	NBR
190	**220**	**15**	**ADL**	**FPM**
190	**220**	**15**	**C**	**FPM**
190	220	16	A	NBR
190	220	16	C	NBR
190	225	12	A	NBR
190	225	15	A	NBR
190	225	16	A	NBR
190	225	16	ADL	NBR
190	**225**	**16**	**ADL**	**FPM**
190	**225**	**16**	**C**	**FPM**
190	230	15	A	NBR
190	230	15	ADL	NBR
190	230	15	C	NBR
190	230	16	ADL	NBR
190	**230**	**16**	**ADL**	**FPM**
190	230	16	C	NBR
190	240	15	ADL	NBR
192	210	10	A	NBR
195	215	15	A	NBR
195	215	15	ADL	NBR
195	220	16	C	NBR
195	**230**	**15**	**BO**	**FPM**
195	230	16	A	NBR
195	230	16	ADL	NBR
195	230	20	ADL	NBR
195	235	15	ADL	NBR
198	230	12	A	NBR
200	221	09	ADL	NBR
200	225	15	A	NBR
200	**225**	**15**	**A**	**FPM**
200	225	15	ADL	NBR
200	**225**	**15**	**ADL**	**FPM**

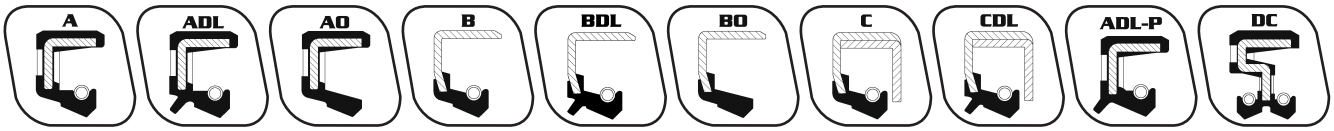
Shaft	Bore	Width	Type	Mat.
200	230	13	A	NBR
200	**230**	**13**	**A**	**FPM**
200	230	13	ADL	NBR
200	230	13	ADL-P	NBR
200	230	15	A	NBR
200	**230**	**15**	**A**	**FPM**
200	230	15	ADL	NBR
200	**230**	**15**	**ADL**	**FPM**
200	230	15	C	NBR
200	230	16	A	NBR
200	230	16	ADL	NBR
200	**235**	**15**	**ADL**	**FPM**
200	235	16	A	NBR
200	235	18	A	NBR
200	**235**	**18**	**A**	**FPM**
200	240	15	A	NBR
200	**240**	**15**	**A**	**FPM**
200	240	15	ADL	NBR
200	240	15	CDL	NBR
200	240	16	CDL	NBR
200	240	18	ADL	NBR
200	240	20	ADL	NBR
200	250	15	A	NBR
200	**250**	**15**	**A**	**FPM**
200	250	15	ADL	NBR
200	310	18	A	NBR
200	310	18	ADL	NBR
205	225	18	ADL	NBR
205	230	15	A	NBR
205	230	15	ADL	NBR
205	230	15	BDL	NBR
205	230	16	A	NBR
205	**230**	**16**	**A**	**FPM**
205	230	16	C	NBR
205	235	18	ADL	NBR
205	250	16	A	NBR
207	230	14	ADL	NBR
210	240	15	A	NBR
210	**240**	**15**	**A**	**FPM**
210	240	15	ADL	NBR
210	**240**	**15**	**ADL**	**FPM**
210	240	15	C	NBR
210	245	18	ADL	NBR
210	250	13	C	NBR
210	250	15	A	NBR



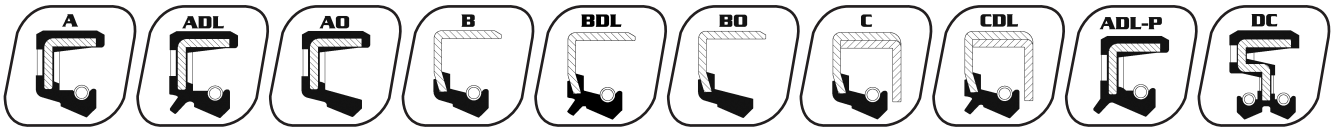
Shaft	Bore	Width	Type	Mat.
210	**250**	**15**	**A**	**FPM**
210	250	15	ADL	NBR
210	**250**	**15**	**ADL**	**FPM**
210	250	15	C	NBR
210	250	16	A	NBR
210	250	16	C	NBR
210	260	15	C	NBR
210	260	16	BDL	NBR
210	260	16	C	NBR
210	265	25	A	NBR
210	290	20	A	NBR
212	245	16	A	NBR
215	240	12	A	NBR
215	**240**	**12**	**A**	**FPM**
215	245	16	C	NBR
215	248	15	ADL	NBR
215	250	15	C	NBR
215	250	16	A	NBR
215	255	18	A	NBR
216	260	16	C	NBR
218	250	16	C	NBR
220	245	08	A	NBR
220	250	11	B	NBR
220	**250**	**12**	**A**	**FPM**
220	250	14	A	NBR
220	250	15	A	NBR
220	**250**	**15**	**A**	**FPM**
220	250	15	ADL	NBR
220	**250**	**15**	**ADL**	**FPM**
220	250	15	C	NBR
220	250	16	A	NBR
220	250	16	ADL	NBR
220	**250**	**16**	**ADL**	**FPM**
220	255	16	A	NBR
220	255	16	ADL	NBR
220	255	18	A	NBR
220	258	13	B	NBR
220	260	14	ADL	NBR
220	260	15	A	NBR
220	260	15	ADL	NBR
220	260	16	A	NBR
220	**260**	**16**	**A**	**FPM**
220	260	16	ADL	NBR
220	260	22	B	NBR
220	270	15	C	NBR

Shaft	Bore	Width	Type	Mat.
220	275	23	ADL	NBR
225	250	16	ADL	NBR
225	250	16	C	NBR
225	270	16	ADL	NBR
230	250	15	A	NBR
230	255	10	ADL	NBR
230	255	10	B	NBR
230	255	15	A	NBR
230	255	15	ADL	NBR
230	255	18	ADL	NBR
230	260	15	A	NBR
230	**260**	**15**	**A**	**FPM**
230	260	15	ADL	NBR
230	260	15	C	NBR
230	260	20	BDL	NBR
230	**260**	**20**	**BDL**	**FPM**
230	270	15	A	NBR
230	270	15	C	NBR
230	270	16	C	NBR
230	280	15	A	NBR
230	**280**	**15**	**A**	**FPM**
230	285	12	ADL	NBR
230	285	23	ADL	NBR
230	310	16	A	NBR
235	265	15	A	NBR
235	**270**	**15**	**C**	**FPM**
235	270	16	C	NBR
240	270	15	A	NBR
240	**270**	**15**	**A**	**FPM**
240	270	15	ADL	NBR
240	**270**	**15**	**ADL**	**FPM**
240	270	15	B	NBR
240	270	15	CDL	NBR
240	275	16	A	NBR
240	**275**	**16**	**ADL**	**FPM**
240	280	15	A	NBR
240	**280**	**15**	**A**	**FPM**
240	280	15	ADL	NBR
240	280	16	A	NBR
240	280	16	C	NBR
240	290	16	C	NBR
240	335	15	A	NBR
245	270	16	B	NBR
245	270	16	C	NBR
245	273	15	ADL	NBR

NBR=Nitrile FPM=Viton®



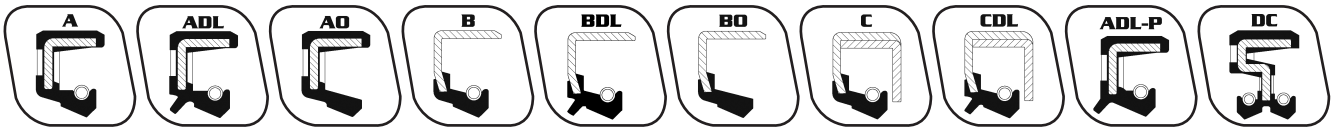
Shaft	Bore	Width	Type	Mat.
250	270	12	A	NBR
250	275	19	ADL	NBR
250	280	15	A	NBR
250	**280**	**15**	**A**	**FPM**
250	280	15	ADL	NBR
250	**280**	**15**	**ADL**	**FPM**
250	280	15	ADL-P	NBR
250	280	15	C	NBR
250	280	15	CDL	NBR
250	280	16	ADL	NBR
250	280	16	C	NBR
250	285	18	ADL	NBR
250	290	15	A	NBR
250	290	16	C	NBR
250	**290**	**16**	**C**	**FPM**
250	310	25	A	NBR
250	310	25	BDL	NBR
255	290	16	C	NBR
258	290	16	C	NBR
260	280	16	C	NBR
260	290	15	A	NBR
260	290	16	A	NBR
260	290	16	ADL	NBR
260	290	16	C	NBR
260	**290**	**16**	**C**	**FPM**
260	300	15	A	NBR
260	**300**	**16**	**A**	**FPM**
260	300	16	C	NBR
260	300	20	A	NBR
260	**300**	**20**	**A**	**FPM**
260	300	20	ADL	NBR
260	300	25	C	NBR
260	310	15	CDL	NBR
260	310	16	C	NBR
260	320	20	ADL	NBR
260	320	25	C	NBR
260	320	25	CDL	NBR
265	290	15	C	NBR
265	290	16	A	NBR
265	**290**	**16**	**A**	**FPM**
265	290	16	ADL	NBR
265	290	16	C	NBR
265	**290**	**16**	**C**	**FPM**
265	300	16	C	NBR
265	310	16	C	NBR
267	293	10	A	NBR
270	300	15	A	NBR
270	**300**	**15**	**A**	**FPM**
270	300	15	ADL	NBR
270	300	15	B	NBR
270	310	15	A	NBR
270	310	16	A	NBR
270	**310**	**16**	**A**	**FPM**
270	310	16	ADL	NBR
270	310	16	C	NBR
270	310	16	CDL	NBR
270	310	20	A	NBR
270	310	20	ADL	NBR
270	320	20	ADL	NBR
270	330	25	ADL	NBR
270	330	25	BDL	NBR
272	304	16	B	NBR
272	310	16	C	NBR
275	294	12	A	NBR
275	305	12	A	NBR
275	310	16	C	NBR
275	320	15	ADL	NBR
280	310	15	A	NBR
280	**310**	**15**	**A**	**FPM**
280	310	15	ADL	NBR
280	310	16	A	NBR
280	310	16	ADL	NBR
280	310	16	C	NBR
280	320	15	A	NBR
280	320	16	C	NBR
280	320	20	A	NBR
280	**320**	**20**	**A**	**FPM**
280	320	20	ADL	NBR
280	320	20	C	NBR
285	310	16	C	NBR
285	**310**	**16**	**C**	**FPM**
285	320	20	ADL	NBR
285	325	16	A	NBR
290	320	18	ADL	NBR
290	330	15	C	NBR
290	330	16	C	NBR
290	330	18	C	NBR
290	330	16/18	BDL	NBR
290	350	18	ADL	NBR
295	335	18	C	NBR



Shaft	Bore	Width	Type	Mat.
300	320	20	A	NBR
300	332	16	C	NBR
300	335	18	C	NBR
300	340	16	A	NBR
300	340	16	ADL	NBR
300	340	16	C	NBR
300	340	18	A	NBR
300	**340**	**18**	**A**	**FPM**
300	340	18	ADL	NBR
300	340	20	A	NBR
300	**340**	**20**	**A**	**FPM**
300	340	20	ADL	NBR
300	**340**	**20**	**ADL**	**FPM**
300	340	20	C	NBR
300	340	20	CDL	NBR
300	344	20	A	NBR
300	350	15	CDL	NBR
300	360	24	ADL	NBR
300	**360**	**25**	**CDL**	**FPM**
300	410	18	ADL	NBR
305	330	13	A	NBR
310	340	15	ADL	NBR
310	**350**	**18**	**A**	**FPM**
310	**350**	**18**	**ADL**	**FPM**
310	350	18	C	NBR
310	**350**	**18**	**C**	**FPM**
310	370	25	C	NBR
310	**370**	**28**	**BDL**	**FPM**
315	350	18	A	NBR
315	355	18	C	NBR
315	365	16	C	NBR
315	365	20	ADL	NBR
315	365	20	C	NBR
320	350	18	C	NBR
320	360	18	A	NBR
320	360	18	C	NBR
320	360	20	A	NBR
320	**360**	**20**	**A**	**FPM**
320	360	20	ADL	NBR
320	360	20	C	NBR
320	380	25	C	NBR
325	**365**	**16**	**A**	**FPM**
325	365	16	C	NBR
330	370	18	A	NBR
330	**370**	**18**	**A**	**FPM**

Shaft	Bore	Width	Type	Mat.
330	370	18	C	NBR
330	370	18	CDL	NBR
330	370	20	C	NBR
330	390	25	A	NBR
335	375	18	A	NBR
335	**375**	**18**	**A**	**FPM**
340	**372**	**16**	**A**	**FPM**
340	372	16	C	NBR
340	380	18	A	NBR
340	**380**	**18**	**A**	**FPM**
340	380	18	C	NBR
340	380	20	A	NBR
340	**380**	**20**	**A**	**FPM**
340	380	20	ADL	NBR
340	380	20	C	NBR
340	388	12	ADL	NBR
340	400	25	C	NBR
350	380	16	ADL	NBR
350	380	16	C	NBR
350	390	18	A	NBR
350	**390**	**18**	**A**	**FPM**
350	390	18	C	NBR
350	390	18	CDL	NBR
360	392	20	C	NBR
360	400	16	A	NBR
360	400	18	C	NBR
360	400	20	ADL	NBR
360	**400**	**20**	**ADL**	**FPM**
360	400	20	C	NBR
365	395	15	ADL	NBR
365	**405**	**18**	**A**	**FPM**
365	405	18	C	NBR
370	410	15	A	NBR
370	**410**	**15**	**A**	**FPM**
370	410	20	C	NBR
370	415	15	ADL	NBR
370	**430**	**26**	**BDL**	**FPM**
380	400	10	A	NBR
380	410	12	BDL	NBR
380	420	20	A	NBR
380	**420**	**20**	**A**	**FPM**
380	420	20	ADL	NBR
380	**420**	**20**	**ADL**	**FPM**
380	420	20	C	NBR
380	424	20.5	A	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
380	430	19	CDL	NBR
390	425	18	CDL	NBR
390	430	16	C	NBR
390	**430**	**18**	**C**	**FPM**
390	430	20	A	NBR
390	430	20	ADL	NBR
394	420	16	A	NBR
394	420	16	ADL	NBR
400	440	18	C	NBR
400	440	20	A	NBR
400	**440**	**20**	**A**	**FPM**
400	440	20	ADL	NBR
400	440	20	C	NBR
400	444	20	A	NBR
400	450	15	C	NBR
400	450	20	A	NBR
400	450	20	C	NBR
400	460	25	B	NBR
400	485	20	ADL	NBR
410	460	15	C	NBR
420	460	15	C	NBR
420	460	20	A	NBR
420	**460**	**20**	**A**	**FPM**
420	460	20	C	NBR
420	470	15	A	NBR
420	470	20	A	NBR
420	**470**	**20**	**ADL**	**FPM**
420	470	20	C	NBR
430	470	20	BDL	NBR
430	**480**	**25**	**BDL**	**FPM**
435	465	18	B	NBR
440	470	20	A	NBR
440	470	20	C	NBR
440	480	20	A	NBR
440	**480**	**20**	**A**	**FPM**
440	480	20	ADL	NBR
440	480	20	C	NBR
440	490	25	C	NBR
445	480	16	CDL	NBR
450	490	20	A	NBR

Shaft	Bore	Width	Type	Mat.
450	500	22	A	NBR
450	510	25	B	NBR
455	495	20	C	NBR
460	**500**	**20**	**A**	**FPM**
460	500	20	C	NBR
460	**510**	**22**	**A**	**FPM**
465	**495**	**18**	**C**	**FPM**
467	510	20	A	NBR
470	510	20	C	NBR
470	520	22	A	NBR
470	530	25	BDL	NBR
475	530	18	C	NBR
480	520	20	A	NBR
480	520	20	ADL	NBR
480	520	20	C	NBR
480	530	25	A	NBR
480	530	25	ADL	NBR
480	540	25	A	NBR
500	540	20	A	NBR
500	**540**	**20**	**A**	**FPM**
500	**540**	**20**	**ADL**	**FPM**
500	540	20	C	NBR
500	550	18	C	NBR
500	550	20	C	NBR
500	550	22	C	NBR
520	545	18.5	ADL	NBR
520	560	20	A	NBR
530	580	22	ADL	NBR
530	580	22	CDL	NBR
530	580	25	A	NBR
540	565	20	ADL	NBR
540	590	25	B	NBR
550	600	25	A	NBR
560	610	20	A	NBR
580	630	25	A	NBR
580	630	25	B	NBR
600	640	20	C	NBR
600	**640**	**20**	**C**	**FPM**
600	650	25	A	NBR
710	760	20	C	NBR

Inch Shaft Seals
Complete Size Listing

1,486 different sizes and styles.

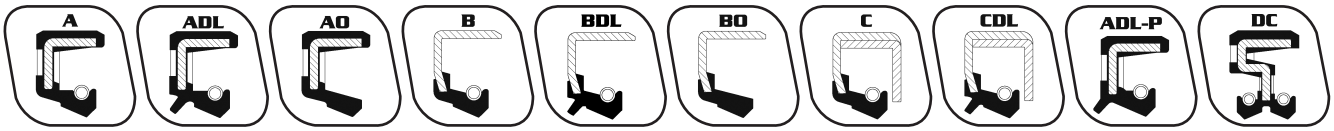
Nitrile price breaks at:
50, 100, 250, 500 and 1,000 pcs.*
Viton® price breaks at:
10, 25, 50, 100, 250, 500, 1,000 pcs.*

*Custom price breaks available, please call us with your needs.
Harwal will beat any competitors price.

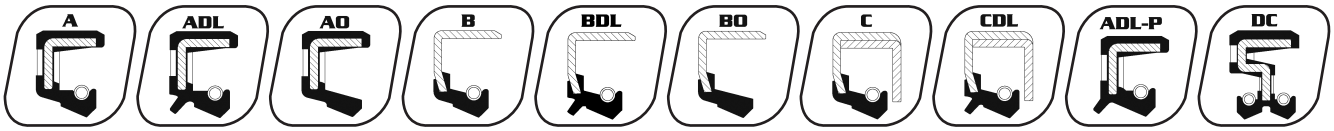
Reference Numbers for Inch Sizes
Harwal seals are designated by the actual hardware dimensions.
The capital letters refer to type. The most common seal types can be found at the top of the listing on each page. See pages 20-22 for additional seal types.

Shaft	Bore	Width	Type	Mat.
.125	.313	.094	AO	NBR
.125	.313	.125	AO	NBR
.187	.631	.250	A	NBR
.187	.750	.250	A	NBR
.187	**.750**	**.250**	**A**	**FPM**
↓	↓	↓	↓	↓
shaft diameter in inch	housing bore in inch	width in inch	seal type	material

Can't find the size or style you are looking for?
Harwal can make almost ANY seal in 2 weeks!

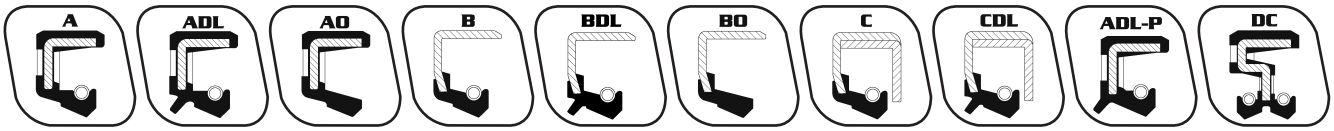


Shaft	Bore	Width	Type	Mat.
.125	.313	.094	AO	NBR
.125	.313	.125	AO	NBR
.187	.631	.250	A	NBR
.187	.750	.250	A	NBR
.187	**.750**	**.250**	**A**	**FPM**
.250	.375	.125	BO	NBR
.250	.500	.125	BODL	NBR
.250	**.500**	**.188**	**ADL**	**FPM**
.250	.750	.250	A	NBR
.250	**.750**	**.250**	**A**	**FPM**
.250	.750	.250	ADL	NBR
.250	1.000	.187	ADL	NBR
.312	.500	.102	AO	NBR
.313	.563	.125	AO	NBR
.313	.563	.250	A	NBR
.313	.625	.156	A	NBR
.313	**.625**	**.156**	**B**	**FPM**
.313	.688	.109	AO	NBR
.313	.688	.313	A	NBR
.313	.750	.250	A	NBR
.313	**.750**	**.250**	**A**	**FPM**
.313	.750	.250	ADL	NBR
.313	.750	.313	B	NBR
.313	.875	.250	ADL	NBR
.354	.703	.156	A	NBR
.375	.563	.094	AO	NBR
.375	**.563**	**.094**	**AO**	**FPM**
.375	.563	.125	AO	NBR
.375	.625	.125	BO	NBR
.375	.625	.188	AO	NBR
.375	.678	.150	AO	NBR
.375	.750	.250	A	NBR
.375	**.750**	**.250**	**ADL**	**FPM**
.375	.750	.250	B	NBR
.375	.875	.250	ADL	NBR
.375	.875	.250	ADL-P	NBR
.375	**.875**	**.250**	**A-P**	**FPM**
.375	.875	.250	BODL	NBR
.375	.875	.313	A	NBR
.375	.875	.313	ADL	NBR
.375	.938	.188	BO	NBR
.375	.999	.250	B	NBR
.375	1.000	.250	ADL	NBR
.375	1.062	.250	ADL	NBR
.375	1.125	.250	ADL	NBR
.390	.788	.200	BDL	NBR
.422	.793	.188	B	NBR
.437	.691	.125	BO	NBR
.437	.812	.312	A	NBR
.437	**.875**	**.250**	**ADL**	**FPM**
.437	1.000	.250	A	NBR
.437	1.000	.375	A	NBR
.438	.875	.156	B	NBR
.438	.875	.250	A	NBR
.438	.875	.250	ADL	NBR
.438	1.000	.250	A	NBR
.438	1.000	.250	ADL	NBR
.438	**1.000**	**.250**	**ADL**	**FPM**
.438	1.000	.313	CDL	NBR
.438	1.125	.375	A	NBR
.500	.678	.125	BO	NBR
.500	.688	.093	AO	NBR
.500	.688	.125	BO	NBR
.500	**.749**	**.165**	**ADL**	**FPM**
.500	.750	.125	AO	NBR
.500	.750	.125	AODL	NBR
.500	.820	.156	BO	NBR
.500	.843	.250	BO	NBR
.500	.875	.125	A	NBR
.500	.875	.125	BO	NBR
.500	.875	.188	A	NBR
.500	.875	.245	ADL	NBR
.500	.875	.250	A	NBR
.500	.875	.250	ADL	NBR
.500	**.875**	**.250**	**ADL**	**FPM**
.500	.875	.312	ADL	NBR
.500	.937	.250	ADL	NBR
.500	1.000	.188	A	NBR
.500	**1.000**	**.188**	**A**	**FPM**
.500	1.000	.250	A	NBR
.500	1.000	.250	ADL	NBR
.500	**1.000**	**.250**	**ADL**	**FPM**
.500	1.000	.313	ADL	NBR
.500	1.000	.375	A	NBR
.500	1.062	.250	ADL	NBR
.500	1.125	.250	A	NBR
.500	1.125	.250	ADL	NBR
.500	1.125	.250	BDL	NBR
.500	1.125	.313	A	NBR
.500	1.125	.375	A	NBR



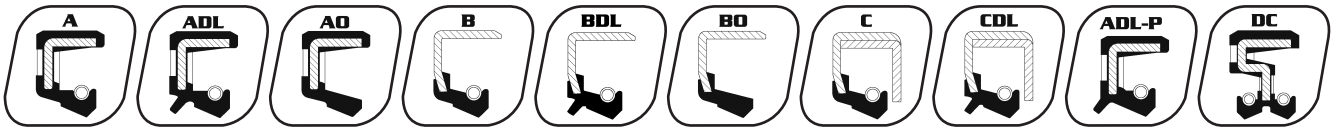
Shaft	Bore	Width	Type	Mat.
.500	1.250	.250	A	NBR
.500	**1.250**	**.375**	**A**	**FPM**
.531	**.750**	**.125**	**BO**	**FPM**
.562	1.250	.250	ADL	NBR
.563	.750	.115	AO	NBR
.563	.813	.158	BO	NBR
.563	.875	.188	B	NBR
.563	1.000	.250	A	NBR
.563	1.000	.250	ADL	NBR
.563	**1.000**	**.250**	**B**	**FPM**
.563	1.125	.250	ADL	NBR
.563	1.125	.375	A	NBR
.563	1.250	.250	A	NBR
.594	1.125	.438	ADL	NBR
.625	.813	.094	BO	NBR
.625	.875	.188	ADL	NBR
.625	.875	.188	BDL	NBR
.625	.938	.188	A	NBR
.625	.999	.250	BDL	NBR
.625	1.000	.125	AO	NBR
.625	1.000	.188	A	NBR
.625	**1.000**	**.188**	**A**	**FPM**
.625	1.000	.188	ADL	NBR
.625	**1.000**	**.250**	**ADL**	**FPM**
.625	1.000	.250	B	NBR
.625	1.000	.250	BDL	NBR
.625	1.125	.156	A	NBR
.625	1.125	.250	A	NBR
.625	**1.125**	**.250**	**A**	**FPM**
.625	**1.125**	**.250**	**ADL**	**FPM**
.625	1.125	.250	BDL	NBR
.625	**1.125**	**.312**	**A**	**FPM**
.625	**1.125**	**.312**	**ADL**	**FPM**
.625	1.125	.313	A	NBR
.625	1.125	.375	A	NBR
.625	1.125	.375	BDL	NBR
.625	**1.125**	**.500**	**B**	**FPM**
.625	1.250	.250	A	NBR
.625	1.250	.250	ADL	NBR
.625	**1.250**	**.250**	**B**	**FPM**
.625	1.250	.250	BDL	NBR
.625	1.250	.313	A	NBR
.625	1.250	.375	A	NBR
.625	1.313	.250	A	NBR
.625	1.375	.250	A	NBR
.625	1.375	.250	ADL	NBR
.625	1.375	.250	BDL	NBR
.625	**1.375**	**.250**	**BDL**	**FPM**
.625	1.375	.313	A	NBR
.625	1.500	.250	ADL	NBR
.625	1.500	.375	A	NBR
.625	1.563	.375	A	NBR
.650	1.124	.312	BDL	NBR
.656	**1.124**	**.313**	**ADL**	**FPM**
.656	1.124	.313	B	NBR
.656	1.250	.250	B	NBR
.656	**1.250**	**.250**	**B**	**FPM**
.656	1.375	.250	B	NBR
.656	1.500	.250	A	NBR
.669	.984	.118	AO	NBR
.687	**1.125**	**.250**	**ADL**	**FPM**
.687	1.250	.250	BDL	NBR
.688	.875	.125	BO	NBR
.688	1.125	.250	ADL	NBR
.688	1.188	.188	B	NBR
.688	1.250	.250	A	NBR
.688	**1.250**	**.250**	**B**	**FPM**
.688	1.375	.312	ADL	NBR
.688	1.375	.375	A	NBR
.718	**1.250**	**.250**	**B**	**FPM**
.750	1.000	.125	AO	NBR
.750	1.000	.125	BO	NBR
.750	1.000	.164	AO	NBR
.750	1.000	.250	ADL	NBR
.750	1.063	.109	AO	NBR
.750	1.063	.188	BO	NBR
.750	1.124	.188	B	NBR
.750	1.125	.125	BO	NBR
.750	1.125	.156	A	NBR
.750	1.125	.156	AO	NBR
.750	1.125	.250	A	NBR
.750	1.125	.250	ADL	NBR
.750	1.125	.313	ADL	NBR
.750	1.187	.156	BO	NBR
.750	1.187	.250	ADL	NBR
.750	1.188	.250	B	NBR
.750	1.250	.188	A	NBR
.750	1.250	.188	B	NBR
.750	1.250	.250	A	NBR
.750	**1.250**	**.250**	**A**	**FPM**

NBR=Nitrile FPM=Viton®



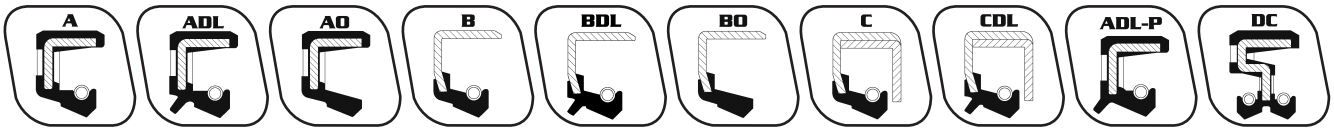
Shaft	Bore	Width	Type	Mat.
.750	1.250	.250	ADL	NBR
.750	**1.250**	**.250**	**ADL**	**FPM**
.750	1.250	.250	ADL-P	NBR
.750	1.250	.312	A	NBR
.750	1.250	.312	BDL	NBR
.750	**1.250**	**.312**	**A**	**FPM**
.750	1.250	.375	A	NBR
.750	1.312	.250	A	NBR
.750	1.375	.250	A	NBR
.750	1.375	.250	ADL	NBR
.750	1.375	.313	A	NBR
.750	1.375	.375	A	NBR
.750	1.375	.375	ADL	NBR
.750	1.375	.406	BDL	NBR
.750	1.375	.406	CDL	NBR
.750	1.500	.250	A	NBR
.750	1.500	.313	A	NBR
.750	1.500	.313	ADL	NBR
.750	1.500	.375	A	NBR
.750	1.625	.250	ADL	NBR
.750	**1.625**	**.250**	**ADL**	**FPM**
.750	1.625	.313	A	NBR
.750	1.625	.313	AO	NBR
.750	1.625	.375	A	NBR
.750	1.750	.250	ADL	NBR
.750	1.750	.312	A	NBR
.750	1.750	.312	BDL	NBR
.750	1.750	.313	ADL	NBR
.750	1.875	.250	A	NBR
.750	1.875	.250	ADL-P	NBR
.781	1.250	.250	A	NBR
.781	1.375	.313	BDL	NBR
.781	1.375	.313	C	NBR
.781	1.625	.188	BO	NBR
.787	1.125	.196	AO	NBR
.812	1.375	.250	ADL	NBR
.813	1.063	.125	AO	NBR
.813	1.188	.250	A	NBR
.813	1.250	.250	ADL	NBR
.813	1.375	.250	A	NBR
.813	1.375	.313	ADL	NBR
.813	1.375	.375	A	NBR
.813	1.500	.250	A	NBR
.813	1.625	.250	B	NBR
.866	1.378	.354	A	NBR

Shaft	Bore	Width	Type	Mat.
.875	1.125	.125	AO	NBR
.875	1.125	.125	BO	NBR
.875	1.250	.188	A	NBR
.875	1.250	.188	B	NBR
.875	1.250	.250	A	NBR
.875	1.250	.250	ADL	NBR
.875	1.308	.250	BO	NBR
.875	1.375	.187	A	NBR
.875	1.375	.250	A	NBR
.875	1.375	.250	ADL	NBR
.875	1.375	.250	BDL	NBR
.875	**1.375**	**.250**	**BDL**	**FPM**
.875	1.375	.256	B	NBR
.875	1.375	.313	A	NBR
.875	1.375	.375	A	NBR
.875	1.375	.375	ADL	NBR
.875	**1.375**	**.375**	**ADL**	**FPM**
.875	**1.384**	**.312**	**B**	**FPM**
.875	**1.384**	**.375**	**A**	**FPM**
.875	1.499	.250	BDL	NBR
.875	1.500	.250	A	NBR
.875	1.500	.250	ADL	NBR
.875	1.500	.250	BDL	NBR
.875	1.500	.313	A	NBR
.875	1.500	.375	A	NBR
.875	1.624	.250	BDL	NBR
.875	1.625	.250	B	NBR
.875	1.625	.250	BDL	NBR
.875	1.625	.375	A	NBR
.875	1.625	.375	ADL	NBR
.875	**1.625**	**.375**	**ADL**	**FPM**
.875	1.750	.250	A	NBR
.875	1.750	.375	A	NBR
.875	1.874	.250	B	NBR
.875	1.875	.250	BDL	NBR
.875	1.875	.375	A	NBR
.875	1.875	.375	ADL	NBR
.875	2.000	.250	B	NBR
.875	2.000	.375	A	NBR
.937	1.500	.375	ADL	NBR
.937	1.375	.312	BDL	NBR
.938	1.375	.250	BDL	NBR
.938	1.438	.250	A	NBR
.938	1.500	.375	A	NBR
.938	1.625	.250	B	NBR

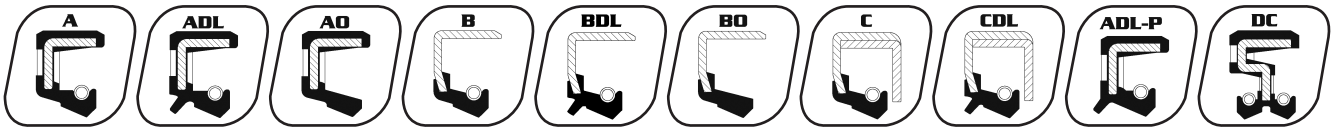


Shaft	Bore	Width	Type	Mat.
.938	1.625	.375	B	NBR
.938	1.750	.313	ADL	NBR
.938	1.750	.375	A	NBR
.966	1.752	.250	A	NBR
.968	1.688	.313	ADL	NBR
.969	1.406	.250	BDL	NBR
.969	1.500	.313	C	NBR
.969	1.752	.250	A	NBR
.984	1.375	.235	AO	NBR
.984	1.500	.250	BDL	NBR
1.000	1.250	.125	AO	NBR
1.000	**1.250**	**.125**	**BO**	**FPM**
1.000	1.250	.156	AO	NBR
1.000	1.375	.187	A	NBR
1.000	1.375	.250	A	NBR
1.000	1.375	.250	ADL	NBR
1.000	1.438	.250	A	NBR
1.000	1.438	.250	ADL	NBR
1.000	1.499	.250	BDL	NBR
1.000	1.499	.312	CDL	NBR
1.000	1.500	.250	ADL	NBR
1.000	**1.500**	**.250**	**ADL**	**FPM**
1.000	1.500	.250	ADL-P	NBR
1.000	1.500	.313	A	NBR
1.000	1.500	.313	BDL	NBR
1.000	1.500	.375	A	NBR
1.000	1.500	.375	ADL	NBR
1.000	**1.500**	**.375**	**ADL**	**FPM**
1.000	1.503	.250	BDL	NBR
1.000	1.561	.250	B	NBR
1.000	1.562	.250	BDL	NBR
1.000	1.562	.312	ADL	NBR
1.000	1.563	.312	A	NBR
1.000	1.568	.312	A	NBR
1.000	1.575	.313	ADL	NBR
1.000	**1.624**	**.250**	**BDL**	**FPM**
1.000	1.625	.250	A	NBR
1.000	**1.625**	**.250**	**A**	**FPM**
1.000	1.625	.250	BDL	NBR
1.000	1.625	.313	A	NBR
1.000	**1.625**	**.313**	**A**	**FPM**
1.000	1.625	.375	A	NBR
1.000	1.625	.375	ADL	NBR
1.000	**1.625**	**.375**	**ADL**	**FPM**
1.000	1.750	.250	A	NBR
1.000	**1.750**	**.250**	**ADL**	**FPM**
1.000	1.750	.250	BDL	NBR
1.000	1.750	.276	BDL	NBR
1.000	1.750	.375	A	NBR
1.000	**1.750**	**.375**	**A**	**FPM**
1.000	1.750	.375	ADL	NBR
1.000	1.875	.250	A	NBR
1.000	1.875	.250	ADL	NBR
1.000	1.875	.375	A	NBR
1.000	1.875	.375	ADL	NBR
1.000	2.000	.250	A	NBR
1.000	2.000	.250	ADL	NBR
1.000	2.000	.250	BDL	NBR
1.000	2.000	.375	A	NBR
1.000	2.000	.375	ADL	NBR
1.000	2.000	.500	A	NBR
1.000	2.000	.500	ADL	NBR
1.000	2.062	.375	A	NBR
1.000	2.062	.375	ADL	NBR
1.000	2.063	.250	B	NBR
1.000	2.125	.375	ADL	NBR
1.000	2.250	.375	A	NBR
1.000	2.250	.375	ADL	NBR
1.000	2.441	.375	ADL	NBR
1.000	2.441	.375	BDL	NBR
1.050	2.000	.406	CDL	NBR
1.062	1.312	.129	AO	NBR
1.062	1.625	.375	ADL	NBR
1.062	1.750	.375	ADL	NBR
1.062	1.875	.375	ADL	NBR
1.063	1.500	.250	A	NBR
1.063	1.500	.250	B	NBR
1.063	1.563	.250	A	NBR
1.063	1.563	.250	B	NBR
1.063	1.625	.313	A	NBR
1.063	1.750	.375	A	NBR
1.063	2.000	.250	BDL	NBR
1.063	2.250	.375	A	NBR
1.125	1.375	.125	AO	NBR
1.125	1.375	.125	BO	NBR
1.125	1.438	.156	A	NBR
1.125	1.438	.203	AO	NBR
1.125	1.500	.250	A	NBR
1.125	1.500	.250	ADL	NBR
1.125	1.500	.500	A	NBR

NBR=Nitrile FPM=Viton®



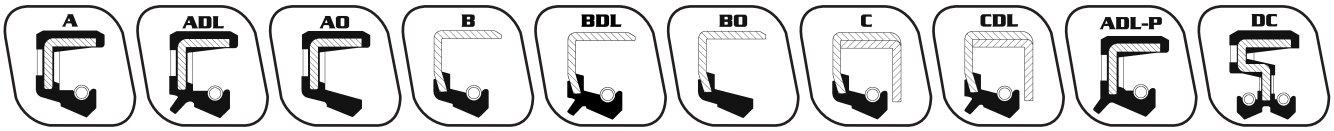
Shaft	Bore	Width	Type	Mat.
1.125	1.563	.250	A	NBR
1.125	1.563	.375	A	NBR
1.125	1.625	.250	A	NBR
1.125	**1.625**	**.250**	**ADL**	**FPM**
1.125	1.625	.250	BDL	NBR
1.125	1.625	.250	BDL-P	NBR
1.125	**1.625**	**.250**	**B**	**FPM**
1.125	**1.625**	**.250**	**BDL-P**	**FPM**
1.125	1.625	.256	BDL	NBR
1.125	1.625	.313	A	NBR
1.125	1.625	.313	ADL	NBR
1.125	**1.625**	**.375**	**A**	**FPM**
1.125	1.626	.375	A	NBR
1.125	1.631	.250	A	NBR
1.125	1.687	.250	ADL	NBR
1.125	1.750	.210	A	NBR
1.125	**1.750**	**.250**	**ADL**	**FPM**
1.125	1.750	.312	ADL	NBR
1.125	1.750	.313	A	NBR
1.125	1.750	.375	A	NBR
1.125	1.750	.375	ADL	NBR
1.125	1.750	.437	A	NBR
1.125	1.781	.250	ADL	NBR
1.125	1.781	.410	ADL	NBR
1.125	1.785	.406	A	NBR
1.125	1.828	.250	A	NBR
1.125	1.828	.250	ADL	NBR
1.125	1.828	.313	A	NBR
1.125	1.832	.313	ADL	NBR
1.125	1.875	.250	A	NBR
1.125	**1.875**	**.250**	**BDL**	**FPM**
1.125	1.875	.375	A	NBR
1.125	1.875	.375	ADL	NBR
1.125	**1.875**	**.375**	**ADL**	**FPM**
1.125	2.000	.250	ADL	NBR
1.125	2.000	.375	A	NBR
1.125	2.000	.375	ADL	NBR
1.125	**2.000**	**.375**	**A**	**FPM**
1.125	**2.000**	**.437**	**A**	**FPM**
1.125	2.000	.500	A	NBR
1.125	2.047	.313	ADL	NBR
1.125	2.062	.375	A	NBR
1.125	2.062	.375	ADL	NBR
1.125	2.125	.313	B	NBR
1.125	2.125	.375	A	NBR
1.125	2.125	.375	ADL	NBR
1.125	2.250	.250	B	NBR
1.125	2.250	.375	A	NBR
1.125	2.437	.437	ADL	NBR
1.125	2.438	.375	ADL	NBR
1.125	2.881	.250	A	NBR
1.156	**1.498**	**.187**	**ADL**	**FPM**
1.156	1.686	.250	BDL	NBR
1.156	1.686	.312	ADL	NBR
1.156	1.688	.313	ADL	NBR
1.156	1.875	.250	ADL	NBR
1.181	1.625	.275	AO	NBR
1.187	1.750	.187	ADL	NBR
1.187	1.875	.375	C	NBR
1.187	2.000	.250	ADL-P	NBR
1.187	2.000	.312	ADL	NBR
1.187	**2.000**	**.375**	**ADL**	**FPM**
1.187	2.000	.437	BDL	NBR
1.188	1.625	.250	A	NBR
1.188	1.688	.375	A	NBR
1.188	1.719	.500	BDL	NBR
1.188	1.750	.187	A	NBR
1.188	1.750	.250	A	NBR
1.188	**1.750**	**.250**	**B**	**FPM**
1.188	1.828	.375	B	NBR
1.188	1.875	.375	A	NBR
1.188	2.000	.250	A	NBR
1.188	2.000	.313	A	NBR
1.188	2.000	.375	A	NBR
1.188	2.250	.500	A	NBR
1.215	2.000	.313	ADL	NBR
1.219	1.979	.406	BO	NBR
1.235	2.250	.500	ADL	NBR
1.245	**2.000**	**.250**	**A**	**FPM**
1.245	**2.000**	**.250**	**AO**	**FPM**
1.250	1.382	.157	BO	NBR
1.250	1.500	.125	BO	NBR
1.250	**1.500**	**.125**	**BO**	**FPM**
1.250	1.500	.156	BO	NBR
1.250	1.500	.250	BO	NBR
1.250	1.625	.186	BDL	NBR
1.250	**1.625**	**.187**	**B**	**FPM**
1.250	1.625	.250	A	NBR
1.250	1.625	.250	ADL	NBR
1.250	1.687	.250	ADL	NBR



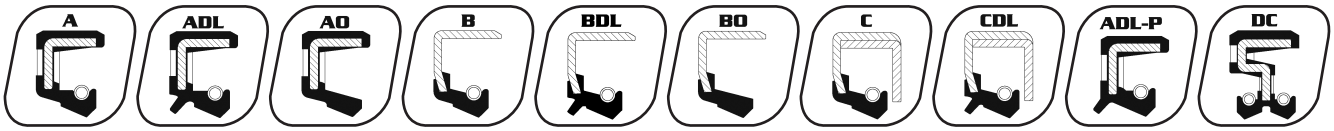
Shaft	Bore	Width	Type	Mat.
1.250	1.687	.375	A	NBR
1.250	1.688	.188	BDL	NBR
1.250	1.750	.250	A	NBR
1.250	1.750	.250	ADL	NBR
1.250	**1.750**	**.250**	**ADL**	**FPM**
1.250	1.750	.250	ADL-P	NBR
1.250	**1.750**	**.250**	**BDL**	**FPM**
1.250	1.750	.313	BDL	NBR
1.250	1.752	.375	B	NBR
1.250	1.874	.250	BDL	NBR
1.250	1.875	.250	A	NBR
1.250	**1.875**	**.250**	**A**	**FPM**
1.250	1.875	.313	A	NBR
1.250	1.875	.375	A	NBR
1.250	1.875	.375	ADL	NBR
1.250	1.875	.438	ADL	NBR
1.250	1.930	.253	BDL	NBR
1.250	1.938	.438	A	NBR
1.250	1.938	.438	ADL	NBR
1.250	1.979	.250	BDL	NBR
1.250	1.983	.250	B	NBR
1.250	1.984	.250	BDL	NBR
1.250	2.000	.250	A	NBR
1.250	2.000	.250	ADL	NBR
1.250	**2.000**	**.250**	**BDL**	**FPM**
1.250	2.000	.313	ADL	NBR
1.250	2.000	.375	A	NBR
1.250	2.000	.375	ADL	NBR
1.250	**2.000**	**.375**	**ADL**	**FPM**
1.250	2.000	.437	C	NBR
1.250	2.000	.500	A	NBR
1.250	2.000	.500	ADL	NBR
1.250	2.063	.250	BDL	NBR
1.250	2.063	.375	B	NBR
1.250	2.063	.500	C	NBR
1.250	2.125	.250	ADL	NBR
1.250	**2.125**	**.250**	**ADL**	**FPM**
1.250	2.125	.313	A	NBR
1.250	2.125	.313	ADL	NBR
1.250	2.125	.375	A	NBR
1.250	2.125	.375	ADL	NBR
1.250	2.188	.438	A	NBR
1.250	2.250	.313	A	NBR
1.250	2.250	.375	A	NBR
1.250	2.250	.375	ADL	NBR

Shaft	Bore	Width	Type	Mat.
1.250	2.250	.500	A	NBR
1.250	2.375	.312	BDL	NBR
1.250	2.375	.375	A	NBR
1.250	2.375	.375	ADL	NBR
1.250	2.438	.250	B	NBR
1.250	2.441	.250	B	NBR
1.250	2.500	.375	A	NBR
1.250	2.500	.375	ADL	NBR
1.250	2.563	.500	C	NBR
1.250	2.750	.313	B	NBR
1.250	2.750	.375	A	NBR
1.250	2.750	.375	ADL	NBR
1.250	2.835	.375	ADL	NBR
1.258	1.625	.250	ADL	NBR
1.311	1.686	.252	ADL	NBR
1.312	2.250	.313	B	NBR
1.312	2.250	.375	ADL	NBR
1.312	2.375	.375	B	NBR
1.313	1.875	.313	A	NBR
1.313	1.938	.188	A	NBR
1.313	2.000	.313	BDL	NBR
1.313	2.000	.375	B	NBR
1.313	2.125	.312	BDL	NBR
1.313	2.125	.375	BDL	NBR
1.313	2.285	.500	B	NBR
1.375	1.750	.187	AO	NBR
1.375	1.750	.197	BO	NBR
1.375	1.750	.250	ADL	NBR
1.375	1.831	.276	ADL	NBR
1.375	1.835	.250	B	NBR
1.375	1.875	.250	A	NBR
1.375	1.875	.250	ADL	NBR
1.375	**1.875**	**.312**	**BDL**	**FPM**
1.375	1.875	.313	ADL	NBR
1.375	1.875	.375	ADL	NBR
1.375	**1.938**	**.250**	**B**	**FPM**
1.375	1.938	.250	BDL	NBR
1.375	2.000	.313	A	NBR
1.375	2.000	.313	ADL	NBR
1.375	2.000	.313	BDL	NBR
1.375	**2.000**	**.313**	**BDL**	**FPM**
1.375	2.000	.375	A	NBR
1.375	2.000	.375	ADL	NBR
1.375	2.000	.438	ADL	NBR
1.375	2.000	.500	A	NBR

NBR=Nitrile FPM=Viton®

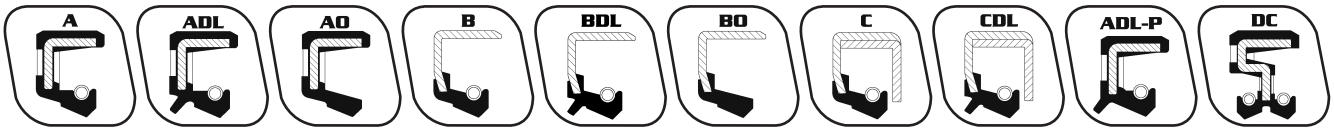


Shaft	Bore	Width	Type	Mat.
1.375	2.062	.375	A	NBR
1.375	2.063	.250	A	NBR
1.375	2.063	.500	A	NBR
1.375	2.125	.313	A	NBR
1.375	**2.125**	**.313**	**ADL**	**FPM**
1.375	2.125	.313	BDL	NBR
1.375	**2.125**	**.313**	**BDL**	**FPM**
1.375	2.125	.375	A	NBR
1.375	2.125	.375	ADL	NBR
1.375	2.250	.312	BDL	NBR
1.375	2.250	.313	B	NBR
1.375	2.250	.375	A	NBR
1.375	2.250	.375	ADL	NBR
1.375	2.250	.500	A	NBR
1.375	2.282	.250	BO	NBR
1.375	2.313	.438	ADL	NBR
1.375	2.374	.312	BDL-P	NBR
1.375	2.374	.312	B	NBR
1.375	2.375	.375	A	NBR
1.375	2.375	.375	ADL	NBR
1.375	2.375	.500	A	NBR
1.375	2.437	.250	B	NBR
1.375	2.437	.375	ADL	NBR
1.375	2.500	.375	A	NBR
1.375	2.500	.375	ADL	NBR
1.375	2.500	.500	A	NBR
1.375	2.500	.500	ADL	NBR
1.375	2.625	.375	A	NBR
1.375	2.750	.500	A	NBR
1.375	3.000	.375	ADL	NBR
1.413	1.964	.237	B	NBR
1.437	2.070	.312	ADL	NBR
1.437	2.250	.312	BDL	NBR
1.437	2.250	.375	ADL	NBR
1.437	2.500	.500	A	NBR
1.437	2.500	.500	ADL	NBR
1.438	2.000	.313	ADL	NBR
1.438	**2.000**	**.313**	**ADL**	**FPM**
1.438	2.063	.313	ADL	NBR
1.438	2.125	.250	A	NBR
1.438	2.125	.313	ADL	NBR
1.438	2.125	.375	A	NBR
1.438	2.125	.375	ADL	NBR
1.438	**2.250**	**.313**	**ADL**	**FPM**
1.438	2.250	.375	A	NBR
1.438	2.250	.375	ADL	NBR
1.438	2.374	.313	BDL	NBR
1.438	2.375	.375	ADL	NBR
1.438	2.500	.500	A	NBR
1.438	2.750	.313	B	NBR
1.500	1.810	.118	ADL	NBR
1.500	**1.874**	**.188**	**BO**	**FPM**
1.500	1.875	.190	A	NBR
1.500	1.875	.250	AODL	NBR
1.500	1.875	.375	A	NBR
1.500	1.980	.500	A	NBR
1.500	1.983	.250	BDL	NBR
1.500	2.000	.250	A	NBR
1.500	**2.000**	**.250**	**A**	**FPM**
1.500	2.000	.250	ADL	NBR
1.500	**2.000**	**.313**	**ADL**	**FPM**
1.500	2.000	.313	B	NBR
1.500	**2.000**	**.313**	**B**	**FPM**
1.500	2.000	.500	A	NBR
1.500	2.000	.500	ADL	NBR
1.500	2.062	.250	ADL	NBR
1.500	2.062	.313	A	NBR
1.500	2.063	.250	A	NBR
1.500	2.063	.375	A	NBR
1.500	2.125	.312	ADL	NBR
1.500	2.125	.313	A	NBR
1.500	2.125	.375	A	NBR
1.500	2.125	.375	ADL	NBR
1.500	2.166	.281	B	NBR
1.500	2.188	.313	A	NBR
1.500	2.188	.375	A	NBR
1.500	2.250	.250	A	NBR
1.500	2.250	.313	A	NBR
1.500	**2.250**	**.313**	**ADL**	**FPM**
1.500	2.250	.313	ADL-P	NBR
1.500	2.250	.375	A	NBR
1.500	2.250	.375	ADL	NBR
1.500	2.250	.438	BDL	NBR
1.500	2.250	.500	A	NBR
1.500	2.250	.500	C	NBR
1.500	2.314	.500	BDL	NBR
1.500	2.328	.406	AO	NBR
1.500	2.328	.406	BO	NBR
1.500	2.328	.500	BDL	NBR
1.500	2.375	.313	BDL	NBR



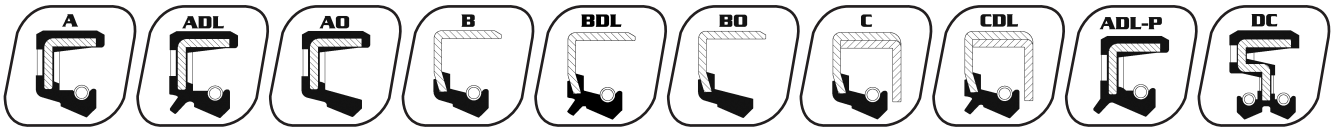
Shaft	Bore	Width	Type	Mat.
1.500	2.375	.375	ADL	NBR
1.500	2.375	.438	A	NBR
1.500	2.375	.500	A	NBR
1.500	2.437	.375	ADL	NBR
1.500	2.438	.375	A	NBR
1.500	2.441	.313	BDL	NBR
1.500	2.500	.250	A	NBR
1.500	2.500	.313	A	NBR
1.500	2.500	.313	ADL	NBR
1.500	2.500	.313	BDL	NBR
1.500	2.500	.375	A	NBR
1.500	2.500	.500	A	NBR
1.500	2.500	.500	ADL	NBR
1.500	2.561	.312	BDL	NBR
1.500	2.625	.375	ADL	NBR
1.500	2.625	.500	A	NBR
1.500	2.750	.375	ADL	NBR
1.500	2.750	.500	A	NBR
1.500	2.875	.250	AO	NBR
1.500	2.875	.313	B	NBR
1.500	3.000	.375	ADL	NBR
1.500	3.125	.375	ADL	NBR
1.500	3.548	.500	C	NBR
1.562	2.125	.500	ADL	NBR
1.562	2.250	.375	ADL	NBR
1.562	2.312	.375	ADL	NBR
1.562	**2.312**	**.375**	**ADL**	**FPM**
1.562	2.375	.375	ADL	NBR
1.562	2.441	.375	CDL	NBR
1.562	2.500	.375	ADL	NBR
1.562	2.625	.375	ADL	NBR
1.563	**2.063**	**.250**	**B**	**FPM**
1.563	2.125	.438	CDL	NBR
1.563	2.250	.375	A	NBR
1.563	2.375	.375	A	NBR
1.563	2.441	.500	BDL	NBR
1.563	2.461	.500	A	NBR
1.563	2.500	.313	A	NBR
1.563	2.500	.375	A	NBR
1.563	2.500	.500	ADL	NBR
1.563	**2.502**	**.313**	**ADL**	**FPM**
1.563	2.625	.313	B	NBR
1.563	2.625	.453	BDL	NBR
1.563	2.688	.375	A	NBR
1.578	2.219	.313	AO	NBR
1.593	2.500	.250	B	NBR
1.625	2.000	.250	ADL	NBR
1.625	2.000	.250	BDL	NBR
1.625	2.000	.500	A	NBR
1.625	2.063	.275	B	NBR
1.625	2.125	.250	A	NBR
1.625	**2.125**	**.250**	**ADL**	**FPM**
1.625	2.188	.375	A	NBR
1.625	2.250	.313	ADL	NBR
1.625	2.250	.375	ADL	NBR
1.625	2.374	.312	BDL	NBR
1.625	2.374	.312	CDL	NBR
1.625	2.375	.313	A	NBR
1.625	2.375	.375	A	NBR
1.625	2.375	.375	ADL	NBR
1.625	**2.375**	**.375**	**ADL**	**FPM**
1.625	2.375	.500	A	NBR
1.625	2.437	.250	ADL	NBR
1.625	2.437	.375	ADL	NBR
1.625	2.438	.375	B	NBR
1.625	2.438	.500	A	NBR
1.625	2.500	.250	ADL	NBR
1.625	2.500	.313	A	NBR
1.625	2.500	.375	ADL	NBR
1.625	2.500	.500	A	NBR
1.625	2.500	.500	ADL	NBR
1.625	2.562	.438	ADL	NBR
1.625	2.563	.375	A	NBR
1.625	**2.625**	**.313**	**B**	**FPM**
1.625	2.625	.375	A	NBR
1.625	2.625	.375	ADL	NBR
1.625	2.625	.500	A	NBR
1.625	2.750	.375	A	NBR
1.625	2.750	.375	ADL	NBR
1.625	2.750	.500	A	NBR
1.625	2.875	.313	A	NBR
1.625	**2.875**	**.375**	**A**	**FPM**
1.625	2.875	.375	ADL	NBR
1.625	2.875	.500	A	NBR
1.625	3.000	.375	ADL	NBR
1.656	2.625	.388	ADL	NBR
1.687	2.328	.312	BDL	NBR
1.687	2.500	.375	ADL	NBR
1.687	2.623	.437	BDL	NBR
1.687	3.000	.375	ADL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
1.688	2.125	.188	A	NBR
1.688	2.250	.313	A	NBR
1.688	2.500	.375	A	NBR
1.688	2.500	.500	A	NBR
1.688	2.625	.375	ADL	NBR
1.688	2.688	.500	A	NBR
1.719	2.565	.500	BDL	NBR
1.750	2.125	.187	BO	NBR
1.750	2.125	.188	A	NBR
1.750	2.125	.188	ADL	NBR
1.750	**2.250**	**.188**	**B**	**FPM**
1.750	2.250	.250	A	NBR
1.750	2.250	.250	BO	NBR
1.750	2.250	.313	A	NBR
1.750	2.250	.313	B	NBR
1.750	2.250	.375	A	NBR
1.750	2.250	.375	ADL	NBR
1.750	2.250	.375	DC	NBR
1.750	2.312	.250	ADL	NBR
1.750	2.313	.250	A	NBR
1.750	2.375	.313	A	NBR
1.750	2.375	.375	A	NBR
1.750	2.375	.375	ADL	NBR
1.750	2.375	.500	A	NBR
1.750	2.383	.375	ADL	NBR
1.750	2.437	.375	ADL	NBR
1.750	**2.438**	**.313**	**A**	**FPM**
1.750	2.438	.313	ADL	NBR
1.750	2.438	.375	B	NBR
1.750	2.441	.313	ADL	NBR
1.750	**2.441**	**.375**	**A**	**FPM**
1.750	2.500	.250	ADL	NBR
1.750	2.500	.313	A	NBR
1.750	2.500	.313	B	NBR
1.750	2.500	.313	BDL	NBR
1.750	**2.500**	**.313**	**BDL**	**FPM**
1.750	2.500	.313	BDL-P	NBR
1.750	**2.500**	**.375**	**A**	**FPM**
1.750	2.500	.375	ADL	NBR
1.750	**2.500**	**.375**	**ADL**	**FPM**
1.750	2.500	.500	A	NBR
1.750	**2.500**	**.500**	**A**	**FPM**
1.750	**2.500**	**.500**	**ADL**	**FPM**
1.750	2.563	.109	BO	NBR
1.750	2.563	.313	A	NBR

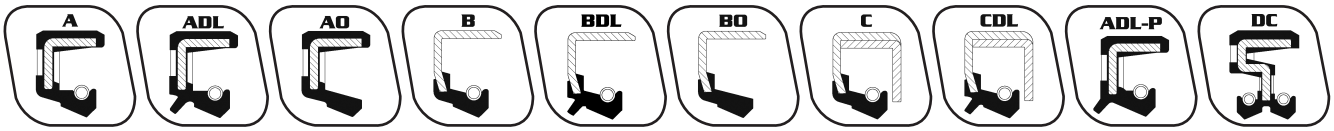
Shaft	Bore	Width	Type	Mat.
1.750	2.625	.375	A	NBR
1.750	2.625	.375	ADL	NBR
1.750	2.625	.500	A	NBR
1.750	2.687	.500	ADL	NBR
1.750	2.688	.438	A	NBR
1.750	2.688	.500	A	NBR
1.750	2.718	.375	ADL	NBR
1.750	2.719	.500	A	NBR
1.750	2.750	.312	BDL	NBR
1.750	2.750	.375	A	NBR
1.750	2.750	.375	ADL	NBR
1.750	2.750	.500	A	NBR
1.750	2.750	.500	ADL	NBR
1.750	2.762	.375	BDL	NBR
1.750	2.814	.313	BDL	NBR
1.750	2.875	.313	B	NBR
1.750	2.875	.375	ADL	NBR
1.750	2.875	.500	A	NBR
1.750	2.875	.500	ADL	NBR
1.750	3.000	.375	ADL	NBR
1.750	3.188	.500	A	NBR
1.750	3.500	.375	ADL	NBR
1.750	3.938	.313	BDL	NBR
1.762	2.412	.375	BDL	NBR
1.812	3.187	.375	ADL	NBR
1.813	2.437	.313	C	NBR
1.813	2.500	.250	A	NBR
1.813	2.500	.313	A	NBR
1.813	2.500	.375	A	NBR
1.813	2.500	.375	ADL	NBR
1.813	2.500	.500	ADL	NBR
1.813	2.625	.375	A	NBR
1.813	2.750	.375	ADL	NBR
1.813	2.750	.500	A	NBR
1.813	3.000	.375	A	NBR
1.820	**2.438**	**.250**	**A**	**FPM**
1.865	2.328	.300	AO	NBR
1.865	2.331	.300	BO	NBR
1.875	2.375	.250	A	NBR
1.875	2.437	.312	ADL	NBR
1.875	**2.441**	**.375**	**A**	**FPM**
1.875	2.500	.250	A	NBR
1.875	2.500	.312	B	NBR
1.875	2.500	.313	A	NBR
1.875	2.500	.375	A	NBR



Shaft	Bore	Width	Type	Mat.
1.875	2.500	.375	ADL	NBR
1.875	2.500	.500	A	NBR
1.875	2.562	.420	ADL	NBR
1.875	2.563	.250	A	NBR
1.875	2.623	.374	AODL	NBR
1.875	2.625	.375	A	NBR
1.875	2.625	.375	ADL	NBR
1.875	2.625	.500	A	NBR
1.875	2.688	.375	ADL	NBR
1.875	2.688	.375	B	NBR
1.875	2.750	.375	ADL	NBR
1.875	**2.750**	**.375**	**ADL**	**FPM**
1.875	2.750	.500	A	NBR
1.875	**2.750**	**.500**	**A**	**FPM**
1.875	2.750	.500	ADL	NBR
1.875	2.875	.313	C	NBR
1.875	2.875	.375	A	NBR
1.875	2.875	.375	ADL	NBR
1.875	2.875	.500	A	NBR
1.875	3.000	.375	A	NBR
1.875	3.000	.375	ADL	NBR
1.875	3.000	.500	A	NBR
1.875	3.000	.500	ADL	NBR
1.875	**3.000**	**.500**	**ADL**	**FPM**
1.875	3.125	.375	BDL	NBR
1.875	**3.160**	**.375**	**ADL**	**FPM**
1.875	3.187	.500	A	NBR
1.904	**2.500**	**.375**	**A**	**FPM**
1.937	2.750	.312	BDL	NBR
1.937	2.750	.375	ADL	NBR
1.938	2.500	.375	A	NBR
1.938	2.500	.375	ADL	NBR
1.938	2.500	.375	BDL	NBR
1.938	2.625	.375	ADL	NBR
1.938	2.750	.375	A	NBR
1.938	2.875	.375	ADL	NBR
1.938	3.000	.375	ADL	NBR
1.938	3.000	.500	A	NBR
1.938	3.188	.438	C	NBR
2.000	2.375	.188	B	NBR
2.000	2.375	.188	BO	NBR
2.000	2.500	.250	A	NBR
2.000	2.500	.250	ADL	NBR
2.000	2.625	.375	A	NBR
2.000	2.625	.375	ADL	NBR

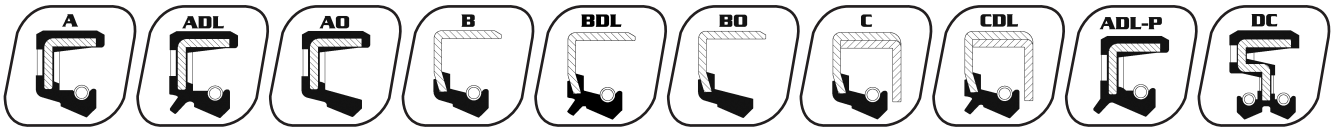
Shaft	Bore	Width	Type	Mat.
2.000	2.688	.375	A	NBR
2.000	2.688	.375	ADL	NBR
2.000	2.688	.500	A	NBR
2.000	2.750	.312	ADL	NBR
2.000	**2.750**	**.313**	**BDL**	**FPM**
2.000	**2.750**	**.375**	**A**	**FPM**
2.000	2.750	.375	ADL	NBR
2.000	2.750	.438	A	NBR
2.000	2.750	.500	A	NBR
2.000	2.750	.500	ADL	NBR
2.000	2.875	.313	B	NBR
2.000	2.875	.375	ADL	NBR
2.000	2.875	.500	A	NBR
2.000	2.922	.313	A	NBR
2.000	3.000	.250	A	NBR
2.000	3.000	.375	A	NBR
2.000	3.000	.375	ADL	NBR
2.000	3.000	.500	ADL	NBR
2.000	**3.000**	**.500**	**ADL**	**FPM**
2.000	3.062	.375	BDL	NBR
2.000	**3.125**	**.312**	**BDL**	**FPM**
2.000	3.125	.375	A	NBR
2.000	3.250	.375	A	NBR
2.000	3.350	.468	CDL	NBR
2.000	3.375	.500	A	NBR
2.000	3.375	.500	ADL	NBR
2.000	3.391	.500	BDL	NBR
2.000	3.500	.500	A	NBR
2.000	3.625	.500	ADL	NBR
2.000	3.750	.500	BDL	NBR
2.062	3.000	.375	ADL	NBR
2.063	2.625	.313	A	NBR
2.063	2.875	.375	A	NBR
2.063	2.875	.375	ADL	NBR
2.063	2.875	.375	BDL	NBR
2.063	3.000	.375	A	NBR
2.063	3.063	.313	A	NBR
2.063	3.188	.375	A	NBR
2.063	3.375	.250	ADL	NBR
2.094	3.063	.500	C	NBR
2.125	2.625	.188	A	NBR
2.125	2.688	.313	A	NBR
2.125	2.750	.313	A	NBR
2.125	2.750	.375	A	NBR
2.125	2.750	.375	ADL	NBR

NBR=Nitrile FPM=Viton®



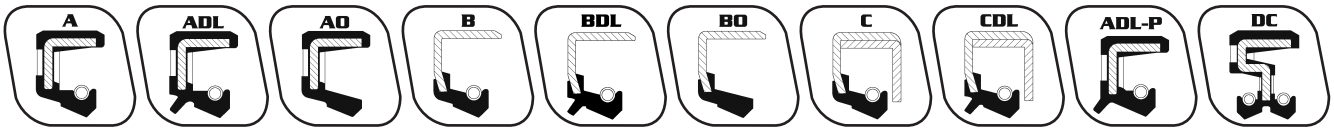
Shaft	Bore	Width	Type	Mat.
2.125	2.750	.500	C	NBR
2.125	2.763	.250	ADL	NBR
2.125	2.833	.438	A	NBR
2.125	2.875	.250	BO	NBR
2.125	2.875	.375	A	NBR
2.125	**2.875**	**.375**	**A**	**FPM**
2.125	**2.875**	**.375**	**ADL**	**FPM**
2.125	2.875	.500	A	NBR
2.125	2.875	.500	C	NBR
2.125	3.000	.375	ADL	NBR
2.125	3.000	.375	BDL	NBR
2.125	3.000	.500	A	NBR
2.125	3.000	.500	ADL	NBR
2.125	3.063	.475	AO	NBR
2.125	3.125	.375	ADL	NBR
2.125	3.125	.375	CDL	NBR
2.125	3.188	.438	C	NBR
2.125	3.250	.375	ADL	NBR
2.125	3.250	.500	A	NBR
2.125	3.375	.375	ADL	NBR
2.125	3.375	.500	A	NBR
2.125	3.500	.500	A	NBR
2.125	3.500	.500	ADL	NBR
2.125	3.661	.250	BO	NBR
2.141	3.547	.375	ADL	NBR
2.150	3.000	.375	A	NBR
2.150	**3.000**	**.375**	**A**	**FPM**
2.180	3.250	.500	C	NBR
2.188	**2.875**	**.375**	**A**	**FPM**
2.188	2.875	.375	ADL	NBR
2.188	2.875	.500	ADL	NBR
2.188	2.997	.438	BDL	NBR
2.188	3.000	.375	ADL	NBR
2.188	3.063	.375	BDL	NBR
2.188	3.250	.375	ADL	NBR
2.188	3.375	.500	ADL	NBR
2.250	2.625	.188	AO	NBR
2.250	2.750	.375	ADL	NBR
2.250	2.875	.375	A	NBR
2.250	2.997	.438	CDL	NBR
2.250	3.000	.375	ADL	NBR
2.250	**3.000**	**.375**	**ADL**	**FPM**
2.250	3.000	.375	AODL	NBR
2.250	**3.000**	**.433**	**ADL**	**FPM**
2.250	3.000	.500	A	NBR

Shaft	Bore	Width	Type	Mat.
2.250	3.000	.500	ADL	NBR
2.250	3.125	.375	A	NBR
2.250	**3.125**	**.375**	**A**	**FPM**
2.250	**3.125**	**.375**	**ADL**	**FPM**
2.250	3.188	.500	A	NBR
2.250	3.250	.375	ADL	NBR
2.250	3.250	.500	A	NBR
2.250	3.250	.500	ADL	NBR
2.250	3.335	.435	A	NBR
2.250	3.344	.313	B	NBR
2.250	3.371	.438	CDL	NBR
2.250	3.375	.250	ADL	NBR
2.250	3.375	.375	A	NBR
2.250	3.375	.500	A	NBR
2.250	**3.375**	**.500**	**ADL**	**FPM**
2.250	3.500	.375	CDL	NBR
2.250	3.500	.438	ADL	NBR
2.250	3.500	.438	C	NBR
2.250	3.500	.500	ADL	NBR
2.250	3.625	.500	A	NBR
2.250	3.625	.500	ADL	NBR
2.250	3.875	.375	ADL	NBR
2.250	3.875	.438	ADL	NBR
2.250	**4.000**	**.469**	**A**	**FPM**
2.250	5.118	.375	A	NBR
2.313	3.000	.250	BO	NBR
2.313	**3.000**	**.500**	**CDL**	**FPM**
2.313	3.125	.375	A	NBR
2.313	3.188	.375	ADL	NBR
2.313	3.250	.438	C	NBR
2.313	3.359	.313	A	NBR
2.313	3.375	.375	A	NBR
2.375	2.875	.313	A	NBR
2.375	2.875	.313	ADL	NBR
2.375	2.875	.375	ADL	NBR
2.375	3.000	.375	A	NBR
2.375	3.000	.375	ADL	NBR
2.375	3.125	.375	ADL	NBR
2.375	**3.125**	**.375**	**ADL**	**FPM**
2.375	3.125	.500	BDL	NBR
2.375	3.250	.375	ADL	NBR
2.375	3.250	.500	A	NBR
2.375	3.375	.375	ADL	NBR
2.375	3.375	.500	ADL	NBR
2.375	3.476	.450	CDL	NBR



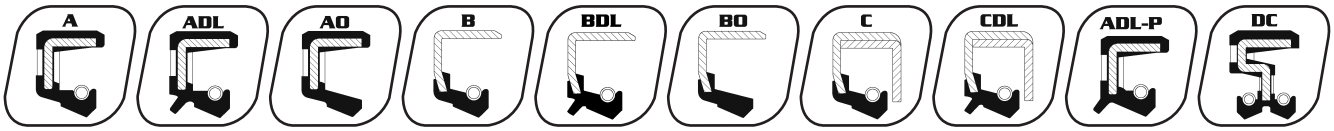
Shaft	Bore	Width	Type	Mat.
2.375	3.500	.375	A	NBR
2.375	3.500	.438	A	NBR
2.375	3.500	.500	A	NBR
2.375	3.500	.500	ADL	NBR
2.375	3.543	.375	CDL	NBR
2.375	3.625	.500	A	NBR
2.375	3.750	.438	ADL	NBR
2.375	3.750	.500	ADL	NBR
2.375	5.543	.375	CDL	NBR
2.437	3.250	.375	ADL	NBR
2.437	3.500	.375	CDL	NBR
2.437	4.250	.375	CO	NBR
2.438	**3.125**	**.375**	**A**	**FPM**
2.438	3.250	.375	A	NBR
2.438	3.375	.500	A	NBR
2.438	**3.500**	**.438**	**C**	**FPM**
2.500	3.000	.250	ADL	NBR
2.500	3.000	.375	A	NBR
2.500	3.000	.375	ADL	NBR
2.500	3.187	.375	ADL	NBR
2.500	3.188	.375	A	NBR
2.500	3.188	.438	C	NBR
2.500	3.250	.375	A	NBR
2.500	**3.250**	**.438**	**CDL**	**FPM**
2.500	**3.251**	**.375**	**ADL**	**FPM**
2.500	3.251	.500	A	NBR
2.500	3.375	.313	ADL	NBR
2.500	3.375	.500	A	NBR
2.500	3.375	.500	ADL	NBR
2.500	**3.375**	**.500**	**BDL**	**FPM**
2.500	3.500	.375	A	NBR
2.500	3.500	.375	ADL	NBR
2.500	**3.500**	**.375**	**ADL**	**FPM**
2.500	**3.500**	**.375**	**B**	**FPM**
2.500	3.500	.375	BDL	NBR
2.500	**3.500**	**.438**	**A**	**FPM**
2.500	**3.500**	**.438**	**CDL**	**FPM**
2.500	3.500	.500	A	NBR
2.500	3.500	.500	ADL	NBR
2.500	3.547	.500	ADL	NBR
2.500	**3.625**	**.375**	**ADL**	**FPM**
2.500	3.625	.500	A	NBR
2.500	3.750	.500	ADL	NBR
2.500	3.751	.438	C	NBR
2.500	3.875	.500	A	NBR
2.500	3.875	.500	ADL	NBR
2.500	4.000	.500	ADL	NBR
2.500	4.250	.500	A	NBR
2.559	3.938	.375	ADL	NBR
2.562	3.500	.375	CDL	NBR
2.563	3.375	.375	A	NBR
2.563	3.500	.438	C	NBR
2.563	**3.505**	**.433**	**ADL**	**FPM**
2.563	3.625	.703	CDL	NBR
2.625	3.250	.375	ADL	NBR
2.625	3.350	.468	B	NBR
2.625	3.371	.375	CDL	NBR
2.625	3.375	.313	A	NBR
2.625	3.375	.375	A	NBR
2.625	3.375	.375	ADL	NBR
2.625	3.500	.500	A	NBR
2.625	3.500	.500	ADL	NBR
2.625	3.625	.375	ADL	NBR
2.625	3.625	.500	A	NBR
2.625	3.625	.500	ADL	NBR
2.625	**3.625**	**.500**	**C**	**FPM**
2.625	3.750	.500	A	NBR
2.625	3.750	.500	ADL	NBR
2.625	3.875	.438	C	NBR
2.625	3.875	.500	ADL	NBR
2.625	4.000	.500	A	NBR
2.625	4.000	.500	ADL	NBR
2.625	4.438	.438	C	NBR
2.687	3.750	.500	ADL	NBR
2.687	3.875	.437	ADL	**FPM**
2.687	**3.875**	**.438**	**ADL**	**FPM**
2.688	3.500	.375	A	NBR
2.688	3.500	.500	ADL	NBR
2.688	3.750	.500	A	NBR
2.688	4.000	.500	A	NBR
2.750	**3.189**	**.132**	**CDL**	**FPM**
2.750	3.390	.313	A	NBR
2.750	3.500	.375	A	NBR
2.750	3.500	.375	ADL	NBR
2.750	**3.500**	**.375**	**ADL**	**FPM**
2.750	3.500	.500	ADL	NBR
2.750	3.625	.500	A	NBR
2.750	3.750	.375	ADL	NBR
2.750	3.750	.500	ADL	NBR
2.750	**3.750**	**.500**	**ADL**	**FPM**

NBR=Nitrile FPM=Viton®



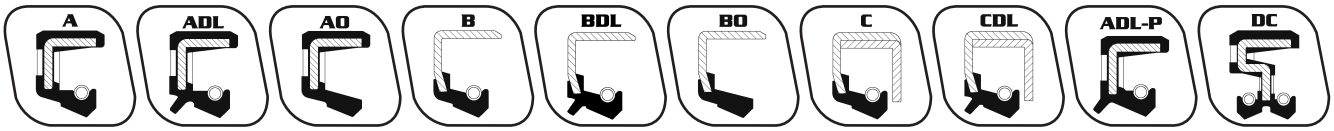
Shaft	Bore	Width	Type	Mat.
2.750	3.875	.469	B	NBR
2.750	3.875	.500	A	NBR
2.750	3.875	.500	ADL	NBR
2.750	**3.875**	**.500**	**ADL**	**FPM**
2.750	4.000	.500	A	NBR
2.750	4.000	.500	ADL	NBR
2.750	4.250	.500	ADL	NBR
2.750	4.500	.500	ADL	NBR
2.813	3.625	.375	A	NBR
2.813	3.625	.375	ADL	NBR
2.813	3.875	.500	ADL	NBR
2.828	3.388	.276	ADL	NBR
2.875	3.375	.188	ADL	NBR
2.875	3.625	.375	A	NBR
2.875	3.625	.375	ADL	NBR
2.875	3.750	.375	B	NBR
2.875	3.750	.375	BDL	NBR
2.875	3.750	.500	ADL	NBR
2.875	3.751	.500	A	NBR
2.875	3.875	.500	ADL	NBR
2.875	3.876	.438	C	NBR
2.875	4.000	.375	C	NBR
2.875	4.000	.500	ADL	NBR
2.875	4.500	.500	ADL	NBR
2.937	3.750	.375	ADL	NBR
2.937	4.003	.375	CDL	NBR
2.938	3.750	.375	A	NBR
2.938	4.000	.625	CDL	NBR
2.938	4.125	.375	CDL	NBR
2.938	4.500	.438	C	NBR
3.000	3.375	.109	BO	NBR
3.000	3.500	.250	A	NBR
3.000	3.750	.375	A	NBR
3.000	3.750	.375	ADL	NBR
3.000	3.750	.500	A	NBR
3.000	3.750	.500	ADL	NBR
3.000	3.751	.438	CDL	NBR
3.000	3.875	.375	A	NBR
3.000	3.875	.375	ADL	NBR
3.000	**3.876**	**.313**	**B**	**FPM**
3.000	4.000	.375	ADL	NBR
3.000	**4.000**	**.438**	**ADL**	**FPM**
3.000	4.000	.438	C	NBR
3.000	4.000	.438	CDL	NBR
3.000	**4.000**	**.468**	**CDL**	**FPM**

Shaft	Bore	Width	Type	Mat.
3.000	4.000	.500	A	NBR
3.000	4.000	.500	ADL	NBR
3.000	4.125	.438	C	NBR
3.000	4.125	.500	ADL	NBR
3.000	4.250	.500	A	NBR
3.000	4.250	.500	ADL	NBR
3.000	4.375	.375	ADL	NBR
3.000	4.500	.438	CDL	NBR
3.000	4.500	.469	CDL	NBR
3.000	4.500	.500	A	NBR
3.000	4.500	.500	ADL	NBR
3.000	4.500	.625	A	NBR
3.062	4.125	.500	ADL	NBR
3.063	4.250	.625	CDL	NBR
3.063	**4.500**	**.500**	**A**	**FPM**
3.125	3.875	.500	ADL	NBR
3.125	**4.000**	**.375**	**A**	**FPM**
3.125	4.000	.500	A	NBR
3.125	4.000	.500	ADL	NBR
3.125	4.125	.500	A	NBR
3.125	4.250	.500	A	NBR
3.125	4.375	.500	CDL	NBR
3.125	4.500	.625	A	NBR
3.125	4.750	.500	A	NBR
3.125	5.000	.438	C	NBR
3.187	4.500	.500	ADL	NBR
3.188	4.250	.500	ADL	NBR
3.188	4.250	.625	ADL	NBR
3.188	4.375	.500	A	NBR
3.188	**4.625**	**.500**	**ADL**	**FPM**
3.250	**4.000**	**.469**	**A**	**FPM**
3.250	4.000	.500	A	NBR
3.250	4.000	.500	ADL	NBR
3.250	4.125	.562	CDL	NBR
3.250	4.250	.313	A	NBR
3.250	4.250	.313	ADL	NBR
3.250	4.250	.375	CDL	NBR
3.250	4.250	.438	CDL	NBR
3.250	**4.250**	**.438**	**A**	**FPM**
3.250	**4.250**	**.438**	**ADL**	**FPM**
3.250	4.250	.500	A	NBR
3.250	4.250	.500	ADL	NBR
3.250	4.250	.625	C	NBR
3.250	4.250	.750	BDL	NBR
3.250	4.500	.438	CDL	NBR



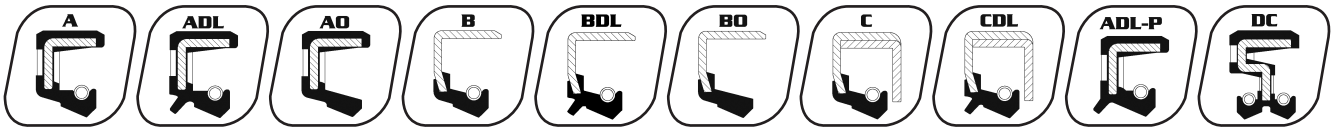
Shaft	Bore	Width	Type	Mat.
3.250	4.500	.625	A	NBR
3.250	4.501	.500	A	NBR
3.250	4.501	.500	ADL	NBR
3.250	4.625	.500	ADL	NBR
3.250	4.625	.438	C	NBR
3.250	4.625	.500	CDL	NBR
3.250	4.750	.500	A	NBR
3.250	**4.750**	**.500**	**A**	**FPM**
3.250	5.250	.500	C	NBR
3.312	4.499	.468	CDL	NBR
3.312	4.500	.500	ADL	NBR
3.313	4.375	.500	A	NBR
3.313	4.500	.468	BDL	NBR
3.357	4.500	.500	A	NBR
3.375	4.000	.500	A	NBR
3.375	4.250	.500	ADL	NBR
3.375	4.375	.375	BDL	NBR
3.375	4.375	.438	ADL	NBR
3.375	4.375	.500	A	NBR
3.375	4.375	.500	ADL	NBR
3.375	**4.376**	**.375**	**B**	**FPM**
3.375	4.500	.500	A	NBR
3.375	4.500	.500	ADL	NBR
3.375	4.625	.375	ADL	NBR
3.375	4.626	.500	ADL	NBR
3.375	**4.686**	**.438**	**ADL**	**FPM**
3.375	4.750	.500	ADL	NBR
3.375	4.875	.500	C	NBR
3.375	5.000	.500	A	NBR
3.375	5.000	.500	ADL	NBR
3.437	**4.500**	**.500**	**A**	**FPM**
3.437	**4.500**	**.500**	**ADL**	**FPM**
3.438	4.501	.500	A	NBR
3.438	4.875	.437	C	NBR
3.500	4.000	.250	B	NBR
3.500	**4.062**	**.167**	**CDL**	**FPM**
3.500	4.125	.312	A	NBR
3.500	4.125	.375	A	NBR
3.500	4.249	.500	A	NBR
3.500	4.250	.500	ADL	NBR
3.500	4.376	.375	BDL	NBR
3.500	4.376	.500	ADL	NBR
3.500	4.500	.375	A	NBR
3.500	4.500	.375	ADL	NBR
3.500	4.500	.438	C	NBR
3.500	4.500	.500	ADL	NBR
3.500	**4.500**	**.500**	**ADL**	**FPM**
3.500	4.500	.625	A	NBR
3.500	4.625	.625	BDL	NBR
3.500	**4.750**	**.375**	**BDL**	**FPM**
3.500	4.751	.500	A	NBR
3.500	4.751	.500	ADL	NBR
3.500	4.751	.562	ADL	NBR
3.500	4.751	.625	B	NBR
3.500	4.875	.500	ADL	NBR
3.500	5.000	.500	A	NBR
3.500	5.000	.500	ADL	NBR
3.500	5.000	.500	CDL	NBR
3.500	5.375	.500	A	NBR
3.563	4.500	.438	C	NBR
3.625	4.375	.375	ADL	NBR
3.625	4.375	.500	ADL	NBR
3.625	4.501	.500	A	NBR
3.625	4.626	.438	C	NBR
3.625	4.626	.500	A	NBR
3.625	4.750	.500	A	NBR
3.625	4.750	.500	ADL	NBR
3.625	5.250	.500	ADL	NBR
3.687	5.625	.500	ADL	NBR
3.688	5.125	.500	ADL	NBR
3.750	**4.500**	**.437**	**ADL**	**FPM**
3.750	4.500	.468	CDL	NBR
3.750	4.501	.500	A	NBR
3.750	**4.686**	**.438**	**ADL**	**FPM**
3.750	4.750	.375	BDL	NBR
3.750	4.751	.500	A	NBR
3.750	5.000	.375	BDL	NBR
3.750	5.000	.500	A	NBR
3.750	5.000	.500	ADL	NBR
3.750	5.250	.500	A	NBR
3.750	5.375	.438	A	NBR
3.750	5.625	.500	ADL	NBR
3.750	6.000	.500	A	NBR
3.750	6.000	.500	C	NBR
3.812	4.876	.500	A	NBR
3.813	4.875	.500	ADL	NBR
3.875	4.875	.500	A	NBR
3.875	4.875	.500	ADL	NBR
3.875	4.881	.500	C	NBR
3.875	5.000	.375	BDL	NBR

NBR=Nitrile FPM=Viton®



Shaft	Bore	Width	Type	Mat.
3.875	5.000	.500	A	NBR
3.875	5.000	.500	ADL	NBR
3.875	5.125	.500	ADL	NBR
3.875	5.250	.438	A	NBR
3.875	5.250	.438	CDL	NBR
3.875	5.251	.500	A	NBR
3.875	5.375	.500	ADL	NBR
3.875	5.688	.500	ADL	NBR
3.937	5.501	.500	CDL	NBR
3.938	5.000	.500	ADL	NBR
3.938	5.500	.438	C	NBR
4.000	4.750	.500	A	NBR
4.000	4.750	.500	ADL	NBR
4.000	5.000	.313	A	NBR
4.000	5.000	.375	A	NBR
4.000	**5.000**	**.375**	**BDL**	**FPM**
4.000	5.000	.500	A	NBR
4.000	5.000	.500	ADL	NBR
4.000	5.126	.500	ADL	NBR
4.000	**5.250**	**.438**	**ADL**	**FPM**
4.000	5.250	.500	ADL	NBR
4.000	5.251	.500	A	NBR
4.000	5.251	.625	A	NBR
4.000	5.501	.500	A	NBR
4.000	6.000	.562	ADL	NBR
4.125	**5.000**	**.438**	**A**	**FPM**
4.125	**5.000**	**.438**	**ADL**	**FPM**
4.125	5.000	.500	A	NBR
4.125	5.126	.500	A	NBR
4.188	5.250	.500	A	NBR
4.188	5.750	.437	ADL	NBR
4.250	5.000	.500	A	NBR
4.250	5.000	.500	ADL	NBR
4.250	5.250	.438	ADL	NBR
4.250	**5.250**	**.438**	**ADL**	**FPM**
4.250	5.251	.500	A	NBR
4.250	5.376	.500	A	NBR
4.250	5.500	.500	ADL	NBR
4.250	5.501	.500	A	NBR
4.250	5.625	.500	ADL	NBR
4.250	5.626	.500	A	NBR
4.250	5.751	.438	A	NBR
4.250	6.000	.500	ADL	NBR
4.250	6.001	.562	A	NBR
4.312	5.751	.500	CDL	NBR

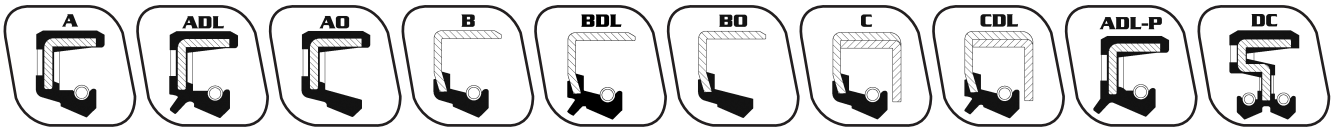
Shaft	Bore	Width	Type	Mat.
4.375	5.250	.500	ADL	NBR
4.375	5.375	.500	ADL	NBR
4.375	5.376	.500	A	NBR
4.375	5.501	.500	A	NBR
4.375	6.000	.500	ADL	NBR
4.437	5.500	.500	A	NBR
4.500	5.125	.313	BO	NBR
4.500	5.250	.437	ADL	NBR
4.500	5.251	.438	A	NBR
4.500	5.251	.500	ADL	NBR
4.500	5.376	.438	A	NBR
4.500	5.500	.375	A	NBR
4.500	5.500	.500	ADL	NBR
4.500	**5.501**	**.438**	**C**	**FPM**
4.500	5.501	.500	A	NBR
4.500	5.626	.500	A	NBR
4.500	5.750	.500	ADL	NBR
4.500	5.751	.500	A	NBR
4.500	6.000	.500	ADL	NBR
4.500	6.126	.562	ADL	NBR
4.500	6.250	.563	BDL	NBR
4.563	5.312	.250	BO	NBR
5.622	5.622	.500	ADL	NBR
4.625	5.625	.500	ADL	NBR
4.625	5.626	.500	A	NBR
4.625	5.750	.500	ADL	NBR
4.625	5.751	.562	A	NBR
4.625	6.000	.500	ADL	NBR
4.625	6.000	.500	CDL	NBR
4.625	6.000	.563	ADL	NBR
4.750	5.500	.375	A	NBR
4.750	5.750	.375	ADL	NBR
4.750	5.750	.500	A	NBR
4.750	5.750	.500	ADL	NBR
4.750	6.000	.500	A	NBR
4.750	6.000	.500	ADL	NBR
4.750	6.000	.625	ADL	NBR
4.750	6.001	.562	A	NBR
4.750	6.250	.563	BDL	NBR
4.875	5.750	.437	ADL	NBR
4.875	**6.000**	**.500**	**C**	**FPM**
4.875	6.250	.500	ADL	NBR
4.937	5.999	.500	CDL	NBR
4.937	6.000	.500	ADL	NBR
4.938	6.000	.500	A	NBR



Shaft	Bore	Width	Type	Mat.
5.000	5.750	.438	A	NBR
5.000	5.750	.500	A	NBR
5.000	**6.000**	**.500**	**A**	**FPM**
5.000	**6.000**	**.500**	**ADL**	**FPM**
5.000	**6.000**	**.500**	**CDL**	**FPM**
5.000	6.001	.500	A	NBR
5.000	6.001	.562	A	NBR
5.000	6.250	.500	CDL	NBR
5.000	6.250	.625	B	NBR
5.000	6.499	.500	CDL	NBR
5.000	6.500	.500	A	NBR
5.000	**6.500**	**.500**	**CDL**	**FPM**
5.000	6.749	.500	CDL	NBR
5.062	6.125	.500	ADL	NBR
5.062	7.874	.500	BDL	NBR
5.125	6.126	.500	A	NBR
5.125	6.374	.500	CDL	NBR
5.125	6.375	.500	C	NBR
5.188	6.250	.500	A	NBR
5.250	6.125	.563	B	NBR
5.250	6.250	.500	A	NBR
5.250	6.250	.500	ADL	NBR
5.250	**6.250**	**.500**	**ADL**	**FPM**
5.250	6.500	.562	A	NBR
5.250	6.500	.562	ADL	NBR
5.375	6.375	.500	A	NBR
5.438	6.500	.500	A	NBR
5.500	6.250	.500	A	NBR
5.500	6.500	.500	A	NBR
5.500	6.500	.500	ADL	NBR
5.500	**6.500**	**.500**	**B**	**FPM**
5.500	6.625	.500	ADL	NBR
5.500	6.750	.500	A	NBR
5.625	6.624	.500	CDL	NBR
5.625	6.625	.500	A	NBR
5.625	6.750	.562	A	NBR
5.625	7.000	.500	C	NBR
5.625	**7.125**	**.500**	**CDL**	**FPM**
5.750	6.625	.625	CDL	NBR
5.750	6.750	.500	ADL	NBR
5.750	7.000	.500	A	NBR
5.750	**7.000**	**.500**	**A**	**FPM**
5.750	7.000	.500	ADL	NBR
5.750	7.000	.625	ADL	NBR
5.750	7.000	.625	C	NBR

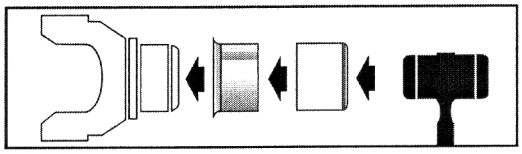
Shaft	Bore	Width	Type	Mat.
5.813	6.875	.500	A	NBR
5.875	6.750	.625	A	NBR
5.938	7.000	.500	A	NBR
6.000	7.000	.500	A	NBR
6.000	7.000	.500	ADL	NBR
6.000	7.500	.500	ADL	NBR
6.000	**7.500**	**.500**	**CDL**	**FPM**
6.000	7.500	.750	A	NBR
6.125	7.125	.500	A	NBR
6.125	7.125	.500	ADL	NBR
6.125	**7.125**	**.550**	**A**	**FPM**
6.187	7.250	.500	A	NBR
6.250	7.000	.375	ADL	NBR
6.250	7.188	.625	ADL	NBR
6.250	7.250	.500	A	NBR
6.250	**7.250**	**.500**	**A**	**FPM**
6.250	7.250	.500	ADL	NBR
6.250	7.500	.500	C	NBR
6.250	7.750	.500	A	NBR
6.250	7.750	.625	C	NBR
6.375	7.375	.500	A	NBR
6.375	7.500	.500	A	NBR
6.375	7.750	.500	BDL	NBR
6.500	7.500	.500	ADL	NBR
6.500	**7.500**	**.500**	**B**	**FPM**
6.500	**7.500**	**.563**	**A**	**FPM**
6.500	7.500	.563	C	NBR
6.500	7.750	.500	A	NBR
6.500	7.750	.625	ADL	NBR
6.500	8.000	.625	CDL	NBR
6.625	7.625	.500	A	NBR
6.625	7.625	.625	C	NBR
6.687	7.750	.500	A	NBR
6.750	7.750	.500	A	NBR
6.750	7.750	.500	ADL	NBR
6.875	7.875	.625	C	NBR
6.875	8.375	.500	ADL	NBR
7.000	8.000	.500	A	NBR
7.000	8.000	.500	ADL	NBR
7.000	8.500	.500	A	NBR
7.000	8.500	.500	ADL	NBR
7.000	9.375	.500	ADL	NBR
7.250	8.750	.562	ADL	NBR
7.250	8.750	.625	ADL	NBR
7.500	8.500	.625	ADL	NBR

NBR=Nitrile FPM=Viton®



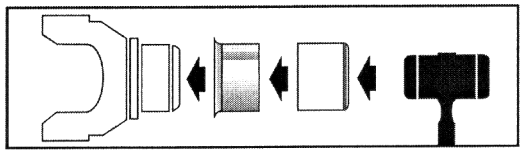
Shaft	Bore	Width	Type	Mat.
7.500	8.500	.625	C	NBR
7.500	9.000	.562	A	NBR
7.500	9.000	.625	CDL	NBR
7.500	9.000	.750	C	NBR
7.500	9.750	.625	ADL	NBR
7.625	9.125	.500	ADL	NBR
7.625	9.125	.562	A	NBR
7.750	8.750	.500	B	NBR
7.750	9.250	.563	ADL	NBR
7.750	9.250	.625	C	NBR
7.875	9.375	.625	ADL	NBR
8.000	9.000	.625	C	NBR
8.000	9.250	.750	ADL	NBR
8.000	9.500	.562	A	NBR
8.000	9.500	.750	ADL	NBR
8.000	10.000	.625	ADL	NBR
8.000	10.000	.625	CDL	NBR
8.000	10.000	.750	CDL	NBR
8.250	9.750	.562	A	NBR
8.500	10.000	.562	A	NBR
8.500	**10.000**	**.750**	**BDL**	**FPM**
8.500	10.500	.625	ADL	NBR
8.750	9.500	.375	ADL	NBR
9.000	10.000	.750	C	NBR
9.000	10.500	.562	A	NBR
9.250	11.250	.625	CDL	NBR
9.250	11.250	.750	A	NBR
9.250	11.250	.750	CDL	NBR
9.500	11.500	1.00	0ADL	NBR
9.625	11.625	.625	CDL	NBR
9.750	11.250	.563	A	NBR
9.750	11.250	.653	A	NBR
10.000	11.000	.350	BO	NBR
10.000	**11.000**	**.500**	**C**	**FPM**
10.000	11.500	.562	A	NBR
10.000	11.500	.562	ADL	NBR
10.500	**12.500**	**.750**	**ADL**	**FPM**
10.938	**12.750**	**.625**	**C**	**FPM**
11.000	12.250	.625	CDL	NBR
11.750	13.250	.750	ADL	NBR
12.000	14.000	.750	CDL	NBR
12.375	13.875	.750	ADL	NBR
12.500	13.750	.750	C	NBR
14.000	15.500	.625	B	NBR
14.000	15.500	.750	A	NBR
14.500	16.000	.688	C	NBR

Shaft Repair Sleeves — Metric and Inch Listing



Harwal Part Number	Min Metric	Max Metric	Min Inch	Max Inch	Width Metric / Inch	Width with Flange Metric / Inch	Installation Depth Metric / Inch
99078	19.94	20.04	.785	.789	8.00 / .315	11.00 / .433	50.80 / 2.000
99086	21.77	21.87	.857	.861	6.35 / .250	9.52 / .375	50.80 / 2.000
99098	24.94	25.04	.982	.986	7.95 / .313	11.00 / .433	50.80 / 2.000
99100	25.27	25.45	.995	1.002	7.92 / .312	11.10 / .437	51.61 / 2.032
99101	25.27	25.45	.995	1.002	7.92 / .312	11.10 / .437	51.61 / 2.032
99112	28.52	28.63	1.123	1.127	7.92 / .312	11.13 / .438	17.48 / .688
99114	29.95	30.07	1.179	1.184	8.00 / .315	11.00 / .433	17.48 / .688
99116	28.52	28.63	1.123	1.127	9.53 / .375	12.70 / .500	17.48 / .688
99125	31.62	31.83	1.245	1.253	7.92 / .312	11.10 / .437	22.23 / .875
99128	31.85	32.08	1.254	1.263	7.92 / .312	11.10 / .437	22.23 / .875
99134	33.86	34.01	1.333	1.339	12.70 / .500	15.88 / .625	20.65 / .813
99138	34.75	34.90	1.368	1.374	12.70 / .500	15.88 / .625	25.40 / 1.000
99139	34.85	35.00	1.372	1.378	12.70 / .500	16.00 / .630	25.40 / 1.000
99143	36.37	36.53	1.432	1.438	14.30 / .563	17.48 / .688	25.81 / 1.016
99144	36.45	36.60	1.435	1.441	9.53 / .375	12.70 / .500	25.81 / 1.016
99149	38.00	38.18	1.496	1.503	14.27 / .562	17.48 / .688	25.81 / 1.016
99150	38.02	38.18	1.497	1.503	9.53 / .375	12.70 / .500	25.81 / 1.016
99152	38.58	38.76	1.519	1.526	11.13 / .438	14.30 / .563	25.81 / 1.016
99155	39.34	39.50	1.549	1.555	11.13 / .438	14.30 / .563	25.81 / 1.016
99156	39.60	39.75	1.559	1.565	14.30 / .563	17.48 / .688	25.81 / 1.016
99157	39.93	40.08	1.572	1.578	13.00 / .512	16.00 / .630	25.98 / 1.023
99162	41.20	41.35	1.622	1.628	14.27 / .562	17.48 / .688	20.62 / .812
99168	42.77	42.93	1.684	1.690	14.30 / .563	17.48 / .688	22.23 / .875
99169	41.83	41.99	1.647	1.653	14.30 / .563	17.50 / .689	21.01 / .827
99170	44.07	44.25	1.735	1.742	9.53 / .375	12.70 / .500	26.21 / 1.032
99172	44.32	44.53	1.745	1.753	9.53 / .375	12.70 / .500	26.21 / 1.032
99173	44.32	44.53	1.745	1.753	22.23 / .875	25.40 / 1.000	26.21 / 1.032
99174	44.32	44.53	1.745	1.753	14.27 / .562	17.48 / .688	26.21 / 1.032
99175	44.32	44.53	1.745	1.753	19.05 / .750	22.23 / .875	26.21 / 1.032
99176	44.68	44.88	1.759	1.767	14.27 / .562	17.48 / .688	26.21 / 1.032
99177	44.88	45.09	1.767	1.775	13.97 / .550	16.99 / .669	26.21 / 1.032
99181	45.90	46.10	1.807	1.815	14.27 / .562	17.48 / .688	31.75 / .1.250
99187	47.47	47.70	1.869	1.878	14.27 / .562	17.48 / .688	31.75 / .1.250
99189	47.93	48.08	1.887	1.893	13.97 / .550	16.97 / .668	24.99 / .984
99192	48.49	48.64	1.909	1.915	9.53 / .375	12.70 / .500	25.40 / 1.000
99193	49.07	49.28	1.932	1.940	14.27 / .562	17.48 / .688	31.75 / .1.250
99196	49.91	50.06	1.965	1.971	13.97 / .550	16.97 / .668	24.99 / .984
99199	50.70	50.88	1.996	2.003	14.27 / .562	17.48 / .688	52.32 / 2.060
99200	50.70	50.88	1.996	2.003	22.23 / .875	25.40 / 1.000	52.32 / 2.060
99205	52.25	52.40	2.057	2.063	20.65 / .813	23.83 / .938	34.93 / 1.375
99210	53.90	54.05	2.122	2.128	12.70 / .500	19.05 / .750	32.51 / 1.280
99212	53.90	54.10	2.122	2.130	19.81 / .780	23.80 / .937	34.93 / 1.375
99218	55.50	55.68	2.185	2.192	19.84 / .781	23.83 / .938	33.32 / 1.312
99220	55.83	56.01	2.198	2.205	12.70 / .500	15.88 / .625	33.32 / 1.312
99225	57.10	57.28	2.248	2.255	19.81 / .780	23.80 / .937	34.93 / 1.375
99227	57.12	57.28	2.249	2.255	7.70 / .303	11.13 / .438	33.32 / 1.312
99235	59.92	60.07	2.359	2.365	19.99 / .787	22.99 / .905	34.93 / 1.375
99237	60.25	60.40	2.372	2.378	19.81 / .780	23.80 / .937	34.93 / 1.375
99238	60.25	60.40	2.372	2.378	15.09 / .594	19.05 / .750	34.93 / 1.375
99240	60.30	60.45	2.374	2.380	13.36 / .526	17.35 / .683	34.93 / 1.375
99242	61.85	62.00	2.435	2.441	12.70 / .500	15.88 / .625	36.20 / 1.425
99243	61.82	61.98	2.434	2.440	19.84 / .781	23.83 / .938	35.38 / 1.393
99244	61.80	62.00	2.433	2.441	12.70 / .500	15.88 / .625	36.20 / 1.425
99248	63.42	63.65	2.497	2.506	12.70 / .500	16.66 / .656	35.38 / 1.393
99249	63.17	63.65	2.487	2.506	19.81 / .780	23.80 / .937	35.38 / 1.393

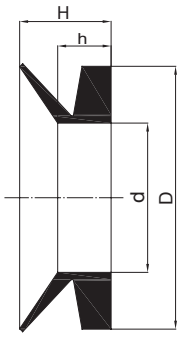
Shaft Repair Sleeves — Metric and Inch Listing

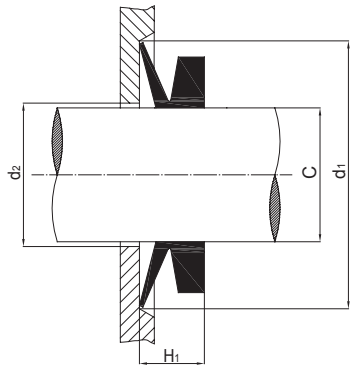


Harwal Part Number	Min Metric	Max Metric	Min Inch	Max Inch	Width Metric / Inch	Width with Flange Metric / Inch	Installation Depth Metric / Inch
99250	63.42	63.65	2.497	2.506	19.81 / .780	23.80 / .937	34.93 / 1.375
99251	63.73	63.91	2.509	2.516	19.81 / .780	23.01 / .906	34.93 / 1.375
99253	63.42	63.65	2.497	2.506	14.10 / .555	16.51 / .650	22.61 / .890
99254	64.87	65.07	2.554	2.562	19.99 / .787	22.99 / .905	34.93 / 1.375
99256	65.00	65.18	2.559	2.566	19.84 / .781	23.83 / .938	34.93 / 1.375
99262	66.62	66.83	2.623	2.631	19.81 / .780	23.80 / .937	38.10 / 1.500
99264	66.55	66.73	2.620	2.627	19.81 / .780	23.01 / .906	38.10 / 1.500
99272	69.85	70.00	2.750	2.756	10.31 / .406	14.30 / .563	31.75 / .1.250
99274	69.67	69.88	2.743	2.751	19.81 / .780	23.80 / .937	34.93 / 1.375
99275	69.80	70.00	2.748	2.756	19.81 / .780	23.80 / .937	34.93 / 1.375
99276	69.85	70.08	2.750	2.759	19.99 / .787	24.00 / .945	34.93 / 1.375
99282	72.06	72.24	2.837	2.844	12.70 / .500	16.66 / .656	31.75 / .1.250
99287	72.92	73.13	2.871	2.879	19.81 / .780	23.80 / .937	34.93 / 1.375
99293	74.55	74.75	2.935	2.943	19.81 / .780	23.83 / .938	38.10 / 1.500
99294	74.90	75.08	2.949	2.956	22.00 / .866	26.01 / 1.024	33.32 / 1.312
99299	75.87	76.10	2.987	2.996	20.62 / .812	25.40 / 1.000	31.75 / .1.250
99300	76.15	76.35	2.998	3.006	20.62 / .812	25.40 / 1.000	32.54 / 1.281
99303	76.15	76.35	2.998	3.006	15.88 / .625	20.62 / .812	27.00 / 1.063
99307	79.32	79.55	3.123	3.132	13.97 / .550	18.01 / .709	51.59 / 2.031
99311	79.22	79.40	3.119	3.126	17.48 / .688	20.65 / .813	50.80 / 2.000
99312	79.22	79.40	3.119	3.126	20.62 / .812	25.40 / 1.000	50.80 / 2.000
99313	79.78	80.01	3.141	3.150	19.05 / .750	22.50 / .886	34.93 / 1.375
99315	79.88	80.09	3.145	3.153	21.01 / .827	24.00 / .945	34.93 / 1.375
99317	79.88	80.09	3.145	3.153	11.00 / .433	15.01 / .591	34.93 / 1.375
99322	82.45	82.63	3.246	3.253	20.62 / .812	25.40 / 1.000	34.93 / 1.375
99324	82.50	82.70	3.248	3.256	15.11 / .595	18.29 / .720	38.10 / 1.500
99325	82.50	82.70	3.248	3.256	20.62 / .812	25.40 / 1.000	38.10 / 1.500
99332	84.76	85.01	3.337	3.347	16.99 / .669	21.01 / .827	35.00 / 1.378
99333	84.76	85.01	3.337	3.347	21.01 / .827	22.71 / .894	35.00 / 1.378
99337	85.62	85.83	3.371	3.379	20.62 / .812	25.40 / 1.000	38.10 / 1.500
99346	88.77	88.98	3.495	3.503	15.88 / .625	20.62 / .812	34.24 / 1.348
99347	88.85	89.05	3.498	3.506	7.92 / .312	12.70 / .500	34.24 / 1.348
99349	88.87	89.08	3.499	3.507	15.88 / .625	20.62 / .812	34.24 / 1.348
99350	88.85	89.05	3.498	3.506	20.62 / .812	25.40 / 1.000	34.21 / 1.347
99360	91.90	92.05	3.618	3.624	20.62 / .812	25.40 / 1.000	44.45 / 1.750
99362	92.00	92.18	3.622	3.629	20.62 / .812	25.40 / 1.000	44.45 / 1.750
99363	92.00	92.18	3.622	3.629	12.70 / .500	15.88 / .625	44.45 / 1.750
99364	94.97	95.15	3.739	3.746	11.91 / .469	15.09 / .594	44.45 / 1.750
99367	95.20	95.40	3.748	3.756	8.74 / .344	12.70 / .500	44.45 / 1.750
99369	94.89	95.07	3.736	3.7439	21.01 / .827	24.00 / .945	44.45 / 1.750
99372	95.20	95.40	3.748	3.756	17.48 / .688	22.23 / .875	47.63 / 1.875
99374	94.97	95.15	3.739	3.746	8.74 / .344	12.70 / .500	44.45 / 1.750
99376	95.12	95.30	3.745	3.752	14.30 / .563	17.48 / .688	44.45 / 1.750
99395	101.47	101.75	3.995	4.006	15.24 / .600	18.42 / .725	53.98 / 2.125
99399	101.47	101.75	3.995	4.006	20.62 / .812	25.40 / 1.000	53.98 / 2.125
99400	101.47	101.75	3.995	4.006	16.51 / .650	19.69 / .775	53.98 / 2.125
99401	101.47	101.75	3.995	4.006	12.70 / .500	15.88 / .625	53.98 / 2.125
99450	114.20	114.40	4.496	4.504	20.65 / .813	25.40 / 1.000	31.75 / .1.250
99452	114.88	115.09	4.523	4.531	20.65 / .813	23.83 / .938	31.75 / .1.250
99492	124.89	125.10	4.916	4.925	26.01 / 1.024	32.00 / 1.260	36.53 / 1.438
99498	126.95	127.15	4.998	5.006	17.48 / .688	22.23 / .875	36.53 / 1.438
99499	126.95	127.15	4.998	5.006	20.65 / .813	25.40 / 1.000	36.53 / 1.438
99599	152.27	152.50	5.995	6.004	25.40 / 1.000	31.75 / 1.250	44.45 / 1.750
99700	177.65	177.93	6.994	7.005	25.40 / 1.000	31.75 / 1.250	42.88 / 1.688

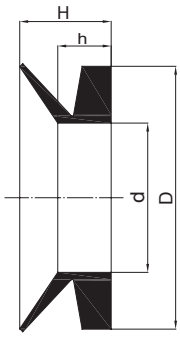
V-Rings

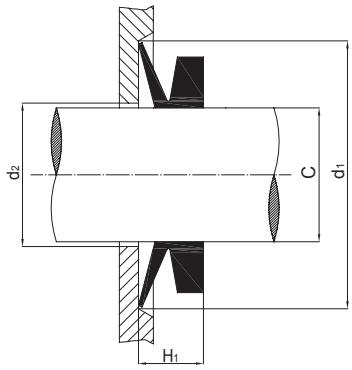
VA Series





Harwal Part Number	Shaft Diameter C	Seal Dimensions				Mounting Dimensions		
		d	D	h	H	d_2	d_1	H_1
VA 3	2.7 - 3.5	2.5	5.5	2.1	3	C +1	C + 4	2.5 ± 0.3
VA 4	3.5 - 4.5	3.2	7.2	2.4	3.7	C +1	C + 6	3 ± 0.4
VA 5	4.5 - 5.5	4	8	2.4	3.7	C +1	C + 6	3 ± 0.4
VA 6	5.5 - 6.5	5	9	2.4	3.7	C +1	C + 6	3 ± 0.4
VA 7	6.5 - 8	6	10	2.4	3.7	C +1	C + 6	3 ± 0.4
VA 8	8 - 9.5	7	11	2.4	3.7	C +1	C + 6	3 ± 0.4
VA 10	9.5 - 11.5	9	15	3.4	5.5	C +2	C + 9	4.5 ± 0.6
VA 12	11.5 - 13.5	10.5	16.5	3.4	5.5	C +2	C + 9	4.5 ± 0.6
VA 14	13.5 - 15.5	12.5	18.5	3.4	5.5	C +2	C + 9	4.5 ± 0.6
VA 16	15.5 - 17.5	14	20	3.4	5.5	C +2	C + 9	4.5 ± 0.6
VA 18	17.5 - 19	16	22	3.4	5.5	C +2	C + 9	4.5 ± 0.6
VA 20	19 - 21	18	26	4.7	7.5	C +2	C + 12	6 ± 0.8
VA 22	21 - 24	20	28	4.7	7.5	C +2	C + 12	6 ± 0.8
VA 25	24 - 27	22	30	4.7	7.5	C +2	C + 12	6 ± 0.8
VA 28	27 - 29	25	33	4.7	7.5	C +3	C + 12	6 ± 0.8
VA 30	29 - 31	27	35	4.7	7.5	C +3	C + 12	6 ± 0.8
VA 32	31 - 33	29	37	4.7	7.5	C +3	C + 12	6 ± 0.8
VA 35	33 - 36	31	39	4.7	7.5	C +3	C + 12	6 ± 0.8
VA 38	36 - 38	34	42	4.7	7.5	C +3	C + 12	6 ± 0.8
VA 40	38 - 43	36	46	5.5	9	C +3	C + 15	7 ± 1
VA 45	43 - 48	40	50	5.5	9	C +3	C + 15	7 ± 1
VA 50	48 - 53	45	55	5.5	9	C +3	C + 15	7 ± 1
VA 55	53 - 58	49	59	5.5	9	C +3	C + 15	7 ± 1
VA 60	58 - 63	54	64	5.5	9	C +3	C + 15	7 ± 1
VA 65	63 - 68	58	68	5.5	9	C +3	C + 15	7 ± 1
VA 70	68 - 73	63	75	6.8	11	C +4	C + 18	9 ± 1.2
VA 75	73 - 78	67	79	6.8	11	C +4	C + 18	9 ± 1.2
VA 80	78 - 83	72	84	6.8	11	C +4	C + 18	9 ± 1.2
VA 85	83 - 88	76	88	6.8	11	C +4	C + 18	9 ± 1.2
VA 90	88 - 93	81	93	6.8	11	C +4	C + 18	9 ± 1.2
VA 95	93 - 98	85	97	6.8	11	C +4	C + 18	9 ± 1.2
VA 100	98 - 105	90	102	6.8	11	C +4	C + 18	9 ± 1.2
VA 110	105 - 115	99	113	7.9	12.8	C +4	C + 21	10.5 ± 1.5
VA 120	115 - 125	108	122	7.9	12.8	C +4	C + 21	10.5 ± 1.5
VA 130	125 - 135	117	131	7.9	12.8	C +4	C + 21	10.5 ± 1.5
VA 140	135 - 145	126	140	7.9	12.8	C +4	C + 21	10.5 ± 1.5
VA 150	145 - 155	135	149	7.9	12.8	C +4	C + 21	10.5 ± 1.5
VA 160	155 - 165	144	160	9	14.5	C +5	C + 24	12 ± 1.8
VA 170	165 - 175	153	169	9	14.5	C +5	C + 24	12 ± 1.8
VA 180	175 - 185	162	178	9	14.5	C +5	C + 24	12 ± 1.8
VA 190	185 - 195	171	187	9	14.5	C +5	C + 24	12 ± 1.8
VA 199	195 - 210	180	196	9	14.5	C +5	C + 24	12 ± 1.8





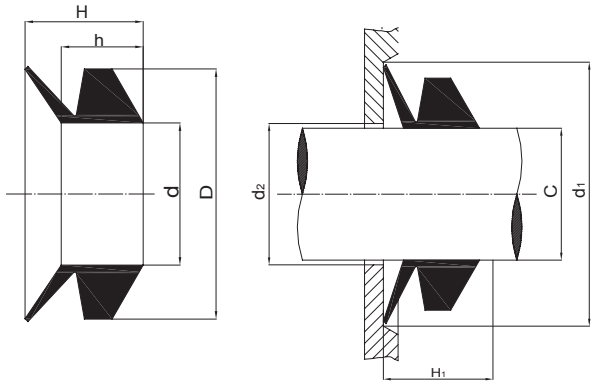
V-Rings

VA Series

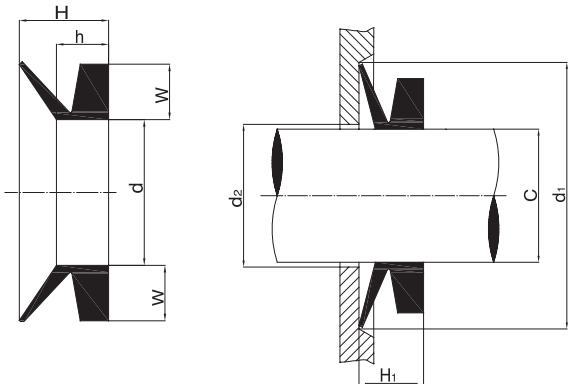
Harwal Part Number	Shaft Diameter C	Seal Dimensions				Mounting Dimensions		
		d	D	h	H	d_2	d_1	H_1
VA200	190 - 210	180	210	14.3	25	C +10	C + 45	20 ± 4
VA220	210 - 235	198	228	14.3	25	C +10	C + 45	20 ± 4
VA250	235 - 265	225	255	14.3	25	C +10	C + 45	20 ± 4
VA275	265 - 290	247	277	14.3	25	C +10	C + 45	20 ± 4
VA300	290 - 310	270	300	14.3	25	C +10	C + 45	20 ± 4
VA325	310 - 335	292	322	14.3	25	C +10	C + 45	20 ± 4
VA350	335 - 365	315	345	14.3	25	C +10	C + 45	20 ± 4
VA375	365 - 390	337	367	14.3	25	C +10	C + 45	20 ± 4
VA400	390 - 430	360	390	14.3	25	C +10	C + 45	20 ± 4
VA450	430 - 480	405	435	14.3	25	C +10	C + 45	20 ± 4
VA500	480 - 530	450	480	14.3	25	C +10	C + 45	20 ± 4
VA550	530 - 580	495	525	14.3	25	C +10	C + 45	20 ± 4
VA600	580 - 630	540	570	14.3	25	C +10	C + 45	20 ± 4
VA650	630 - 665	600	630	14.3	25	C +10	C + 45	20 ± 4
VA700	665 - 705	630	660	14.3	25	C +10	C + 45	20 ± 4
VA725	705 - 745	670	700	14.3	25	C +10	C + 45	20 ± 4
VA750	745 - 785	705	735	14.3	25	C +10	C + 45	20 ± 4
VA800	785 - 830	745	775	14.3	25	C +10	C + 45	20 ± 4
VA850	830 - 875	785	815	14.3	25	C +10	C + 45	20 ± 4
VA900	875 - 920	825	855	14.3	25	C +10	C + 45	20 ± 4
VA950	920 - 965	865	895	14.3	25	C +10	C + 45	20 ± 4
VA1000	965 - 1015	910	940	14.3	25	C +10	C + 45	20 ± 4
VA1050	1015 - 1065	955	985	14.3	25	C +10	C + 45	20 ± 4
VA1100	1065 - 1115	1000	1030	14.3	25	C +10	C + 45	20 ± 4
VA1150	1115 - 1165	1045	1075	14.3	25	C +10	C + 45	20 ± 4
VA1200	1165 - 1215	1090	1120	14.3	25	C +10	C + 45	20 ± 4
VA1250	1215 - 1270	1135	1165	14.3	25	C +10	C + 45	20 ± 4
VA1300	1270 - 1320	1180	1210	14.3	25	C +10	C + 45	20 ± 4
VA1350	1320 - 1370	1225	1255	14.3	25	C +10	C + 45	20 ± 4
VA1400	1370 - 1420	1270	1300	14.3	25	C +10	C + 45	20 ± 4
VA1450	1420 - 1470	1315	1345	14.3	25	C +10	C + 45	20 ± 4
VA1500	1470 - 1520	1360	1390	14.3	25	C +10	C + 45	20 ± 4
VA1550	1520 - 1570	1405	1435	14.3	25	C +10	C + 45	20 ± 4
VA1600	1570 - 1620	1450	1480	14.3	25	C +10	C + 45	20 ± 4
VA1650	1620 - 1670	1495	1525	14.3	25	C +10	C + 45	20 ± 4
VA1700	1670 - 1720	1540	1570	14.3	25	C +10	C + 45	20 ± 4
VA1750	1720 - 1770	1585	1615	14.3	25	C +10	C + 45	20 ± 4
VA1800	1770 - 1820	1630	1660	14.3	25	C +10	C + 45	20 ± 4
VA1850	1820 - 1870	1675	1705	14.3	25	C +10	C + 45	20 ± 4
VA1900	1820 - 1870	1675	1705	14.3	25	C +10	C + 45	20 ± 4
VA1950	1920 - 1970	1765	1795	14.3	25	C +10	C + 45	20 ± 4
VA2000	1970 -2020	1810	1840	14.3	25	C +10	C + 45	20 ± 4

V-Rings

VS Series



Harwal Part Number	Shaft Diameter C	Seal Dimensions				Mounting Dimensions		
		d	D	h	H	d_2	d_1	H_1
VS 5	4.5 - 5.5	4	8	3.9	5.2	C +1	C + 6	4.5 ± 0.4
VS 6	5.5 - 6.5	5	9	3.9	5.2	C +1	C + 6	4.5 ± 0.4
VS 7	6.5 - 8	6	10	3.9	5.2	C +1	C + 6	4.5 ± 0.4
VS 8	8 - 9.5	7	11	3.9	5.2	C +1	C + 6	4.5 ± 0.4
VS 10	9.5 - 11.5	9	15	5.6	7.7	C +2	C + 9	6.7 ± 0.6
VS 12	11.5 - 13.5	10.5	16.5	5.6	7.7	C +2	C + 9	6.7 ± 0.6
VS 14	13.5 - 15.5	12.5	18.5	5.6	7.7	C +2	C + 9	6.7 ± 0.6
VS 16	15.5 - 17.5	14	20	5.6	7.7	C +2	C + 9	6.7 ± 0.6
VS 18	17.5 - 19	16	22	5.6	7.7	C +2	C + 9	6.7 ± 0.6
VS 20	19 - 21	18	26	7.9	10.5	C +2	C + 12	9 ± 0.8
VS 22	21 - 24	20	28	7.9	10.5	C +2	C + 12	9 ± 0.8
VS 25	24 - 27	22	30	7.9	10.5	C +2	C + 12	9 ± 0.8
VS 28	27 - 29	25	33	7.9	10.5	C +3	C + 12	9 ± 0.8
VS 30	29 - 31	27	35	7.9	10.5	C +3	C + 12	9 ± 0.8
VS 32	31 - 33	29	37	7.9	10.5	C +3	C + 12	9 ± 0.8
VS 35	33 - 36	31	39	7.9	10.5	C +3	C + 12	9 ± 0.8
VS 38	36 - 38	34	42	7.9	10.5	C +3	C + 12	9 ± 0.8
VS 40	38 - 43	36	46	9.5	13	C +3	C + 15	11 ± 1
VS 45	43 - 48	40	50	9.5	13	C +3	C + 15	11 ± 1
VS 50	48 - 53	45	55	9.5	13	C +3	C + 15	11 ± 1
VS 55	53 - 58	49	59	9.5	13	C +3	C + 15	11 ± 1
VS 60	58 - 63	54	64	9.5	13	C +3	C + 15	11 ± 1
VS 65	63 - 68	58	68	9.5	13	C +3	C + 15	11 ± 1
VS 70	68 - 73	63	75	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 75	73 - 78	67	79	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 80	78 - 83	72	84	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 85	83 - 88	76	88	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 90	88 - 93	81	93	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 95	93 - 98	85	97	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 100	98 - 105	90	102	11.3	15.5	C +4	C + 18	13.5 ± 1.2
VS 110	105 - 115	99	113	13.1	18	C +4	C + 21	15.5 ± 1.5
VS 120	115 - 125	108	122	13.1	18	C +4	C + 21	15.5 ± 1.5
VS 130	125 - 135	117	131	13.1	18	C +4	C + 21	15.5 ± 1.5
VS 140	135 - 145	126	140	13.1	18	C +4	C + 21	15.5 ± 1.5
VS 150	145 - 155	135	149	13.1	18	C +4	C + 21	15.5 ± 1.5
VS 160	155 - 165	144	160	15	20.5	C +5	C + 24	18 ± 18
VS 170	165 - 175	153	169	15	20.5	C +5	C + 24	18 ± 18
VS 180	175 - 185	162	178	15	20.5	C +5	C + 24	18 ± 18
VS 190	185 - 195	171	187	15	20.5	C +5	C + 24	18 ± 18
VS 199	195 - 210	180	196	15	20.5	C +5	C + 24	18 ± 18



V-Rings

VL Series

V-Ring Dimensions

H = 10.5

h = 6.0

W = 6.0

Assembling Dimensions

H_1 = B ± 1.5

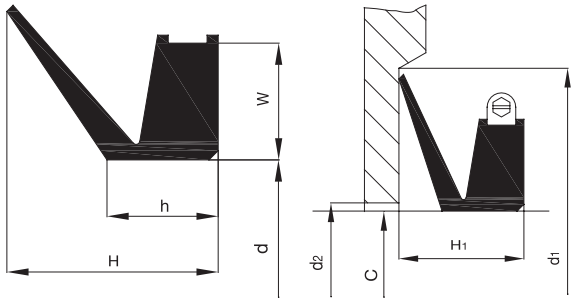
d_2 max C + 5

d_1 min C + 20

Part #	Shaft Size (C)	V-Ring I.D. (d)	Part #	Shaft Size (C)	V-Ring I.D. (d)
VL 110	105 - 115	99	VL 450	440 - 475	405
VL 120	115 - 125	108	VL 500	475 - 510	450
VL 130	125 - 135	117	VL 525	510 - 540	472
VL 140	135 - 145	126	VL 550	540 - 565	495
VL 150	145 - 155	135	VL 575	565 - 585	517
VL 160	155 - 165	144	VL 600	585 - 625	540
VL 170	165 - 175	153	VL 650	625 - 675	600
VL 180	175 - 185	162	VL 675	675 - 710	630
VL 190	185 - 195	171	VL 725	710 - 740	670
VL 200	195 - 210	182	VL 750	740 - 775	705
VL 220	210 - 233	198	VL 800	775 - 825	745
VL 250	233 - 260	225	VL 850	825 - 875	785
VL 275	260 - 285	247	VL 900	875 - 925	825
VL 300	285 - 310	270	VL 950	925 - 975	865
VL 325	310 - 335	292	VL 1000	975 - 1025	910
VL 350	335 - 365	315	VL 1050	1025 - 1075	955
VL 375	365 - 385	337	VL 1100	1075 - 1125	1000
VL 400	385 - 410	360	VL 1150	1125 - 1175	1045
VL 425	410 - 440	382	VL 1200	1175 - 1225	1090

V-Rings

VE Series



Ring Dimensions

H = 65

h = 32

W = 30

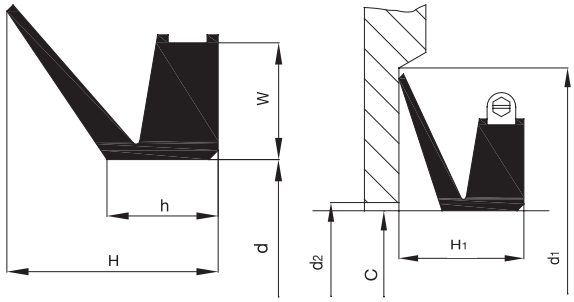
Assembling Dimensions

H_1 = 50 ± 12

d_2 max C + 24

d_1 min C + 115

Part #	Shaft Size (C)	V-Ring I.D. (d)	Part #	Shaft Size (C)	V-Ring I.D. (d)
VE 300	300 - 305	294	VE 415	415 - 420	405
VE 305	305 - 310	299	VE 420	420 - 425	410
VE 310	310 - 315	304	VE 425	425 - 430	415
VE 315	315 - 320	309	VE 430	430 - 435	420
VE 320	320 - 325	314	VE 435	435 - 440	425
VE 325	325 - 330	319	VE 440	440 - 445	429
VE 330	330 - 335	323	VE 445	445 - 450	434
VE 335	335 - 340	328	VE 450	450 - 455	439
VE 340	340 - 345	333	VE 455	455 - 460	444
VE 345	345 - 350	338	VE 460	460 - 465	448
VE 350	350 - 355	343	VE 465	465 - 470	453
VE 355	355 - 360	347	VE 470	470 - 475	458
VE 360	360 - 365	352	VE 475	475 - 480	463
VE 365	365 - 370	357	VE 480	480 - 485	468
VE 370	370 - 375	362	VE 485	485 - 490	473
VE 375	375 - 380	367	VE 490	490 - 495	478
VE 380	380 - 385	371	VE 495	495 - 500	483
VE 385	385 - 390	376	VE 500	500 - 505	488
VE 390	390 - 395	381	VE 505	505 - 510	493
VE 395	395 - 400	386	VE 510	510 - 515	497
VE 400	400 - 405	391	VE 515	515 - 520	502
VE 405	405 - 410	396	VE 520	520 - 525	507
VE 410	410 - 415	401	VE 525	525 -530	512



V-Rings

VE Series

Ring Dimensions

H = 65

h = 32

W = 30

Assembling Dimensions

H_1 = 50 ± 12

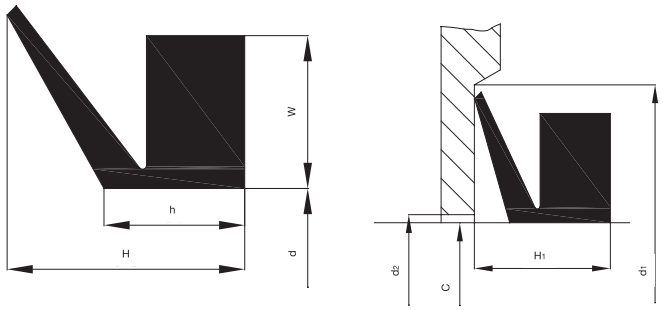
d_2 max C + 24

d_1 min C + 115

Part #	Shaft Size (C)	V-Ring I.D. (d)	Part #	Shaft Size (C)	V-Ring I.D. (d)
VE 530	530 - 535	517	VE 700	700 - 710	680
VE 535	535 - 540	521	VE 710	710 - 720	689
VE 540	540 - 545	526	VE 720	720 - 730	699
VE 545	545 - 550	531	VE 730	730 - 740	709
VE 550	550 - 555	536	VE 740	740 - 750	718
VE 555	555 - 560	541	VE 750	750 - 758	728
VE 560	560 - 565	546	VE 760	758 - 766	735
VE 565	565 - 570	550	VE 770	766 - 774	743
VE 570	570 - 575	555	VE 780	774 - 783	751
VE 575	575 - 580	560	VE 790	783 - 792	759
VE 580	580 - 585	565	VE 800	792 - 801	768
VE 585	585 - 590	570	VE 810	801 - 810	777
VE 590	590 - 600	575	VE 820	810 - 821	786
VE 600	600 - 610	582	VE 830	821 - 831	796
VE 610	610 - 620	592	VE 840	831 - 841	805
VE 620	620 - 630	602	VE 850	841 - 851	814
VE 630	630 - 640	612	VE 860	851 - 861	824
VE 640	640 - 650	621	VE 870	861 - 871	833
VE 650	650 - 660	631	VE 880	871 - 882	843
VE 660	660 - 670	640	VE 890	882 - 892	853
VE 670	670 - 680	650	VE 900	892 - 912	871
VE 680	680 - 690	660	VE 920	912 - 922	880
VE 690	690 - 700	670	VE 930	922 - 933	890

V-Rings

VAX Series



Ring Dimensions
H = 31
h = 17.3
W = 17.8

Assembling Dimensions
H_1 = 25 ± 5
d_2 max C + 12
d_1 min C + 50

Part #	Shaft Size (C)	V-Ring I.D. (d)	Part #	Shaft Size (C)	V-Ring I.D. (d)
VAX 200	200 - 205	192	VAX 700	665 - 705	630
VAX 205	205 - 210	196	VAX 725	705 - 745	670
VAX 210	210 - 215	200	VAX 750	745 - 785	705
VAX 215	215 - 219	204	VAX 800	785 - 830	745
VAX 220	219 - 224	207	VAX 850	830 - 875	785
VAX 225	224 - 228	211	VAX 900	875 - 920	825
VAX 230	228 - 232	215	VAX 950	920 - 965	865
VAX 235	232 - 236	219	VAX 1000	965 - 1015	910
VAX 240	236 - 240	223	VAX 1050	1015 - 1065	955
VAX 250	240 - 250	227	VAX 1100	1065 - 1115	1000
VAX 260	250 - 260	236	VAX 1150	1115 - 1165	1045
VAX 270	260 - 270	245	VAX 1200	1165 - 1215	1090
VAX 280	270 - 281	255	VAX 1250	1215 - 1270	1135
VAX 290	281 - 292	265	VAX 1300	1270 - 1320	1180
VAX 300	292 - 303	275	VAX 1350	1320 - 1370	1225
VAX 310	303 - 313	285	VAX 1400	1370 - 1420	1270
VAX 320	313 - 325	295	VAX 1450	1420 - 1470	1315
VAX 330	325 - 335	305	VAX 1500	1470 - 1520	1360
VAX 340	335 - 345	315	VAX 1550	1520 - 1570	1405
VAX 350	345 - 355	322	VAX 1600	1570 - 1620	1450
VAX 360	355 - 372	328	VAX 1650	1620 - 1670	1495
VAX 380	372 - 390	344	VAX 1700	1670 - 1720	1540
VAX 400	390 - 415	360	VAX 1750	1720 - 1770	1585
VAX 425	415 - 443	385	VAX 1800	1770 - 1820	1630
VAX 450	443 - 480	410	VAX 1850	1820 - 1870	1675
VAX 500	480 - 530	450	VAX 1900	1870 - 1920	1720
VAX 550	530 - 580	495	VAX 1950	1920 - 1970	1765
VAX 600	580 - 630	540	VAX 2000	1970 - 2020	1810
VAX 650	630 - 665	600			

Hydraulic U-Cups

Polyurethane Piston/Rod Seals

90 Shore UB903

Application: Hydraulic reciprocating actions under extreme pressures.
Functions: All three types are single function piston seals and are used as a piston/rod seal.

Symmetrical sealing elements which are self energizing and activated by unit pressure.

Asymmetrical sealing elements with a slightly shorter outer sealing element. The energy is forced outward to strengthen its sealing function at low to extreme pressures.

Asymmetrical sealing elements with a slightly shorter inner sealing element. The energy is forced inward to strengthen its sealing function at low to extreme pressures.

Material: 90sh Polyurethane (Blue)

Type	U41	U43	U45
Max. Pressure	4,300 PSI (300 Bar)	5,800 PSI (400 Bar)	5,800 PSI (400 Bar)
Temperature	-40F/+212F -40C/+100C	-40F/+212F -40C/+100C	-40F/+212F -40C/+100C
Max. Speed	1.64 f/s .5 m/s	1.64 f/s .5 m/s	1.64 f/s .5 m/s

Hydraulic U-Cups

Shaft	Bore	Width	Type	Material
04	10	04	U41	PU90
4.5	11	05	U41	PU90
05	10	05	U41	PU90
05	11	07	U41	PU90
05	12	06	U41	PU90
06	10	4.2	U41	PU90
06	10	4.5	U43	PU90
06	12	4.5	U41	PU90
06	12	05	U41	PU90
06	12	06	U41	PU90
06	13	05	U45	PU90
06	14	5.5	U45	PU90
06	14	06	U41	PU90
06	15	04	U41	PU90
06	15	06	U41	PU90
06	15	08	U41	PU90
6.3	16.3	08	U41	PU90
07	15	07	U41	PU90
08	14	04	U41	PU90
08	14	5.7	U43	PU90
08	14	06	U41	PU90
08	15	5.7	U41	PU90
08	15	06	U41	PU90
08	15	08	U41	PU90
08	16	4.5	U45	PU90
08	16	5.7	U45	PU90
08	16	06	U41	PU90
08	16	08	U41	PU90
08	18	08	U41	PU90
08	18	09	U41	PU90
09	19	06	U41	PU90
9.5	14	2.5	U45	PU90
10	16	04	U41	PU90
10	16	4.5	U45	PU90
10	16	4.8	U41	PU90
10	18	05	U41	PU90
10	18	5.5	U41	PU90
10	18	5.7	U45	PU90
10	18	06	U41	PU90
10	20	4.5	U45	PU90
10	20	06	U41	PU90
10	20	7.2	U45	PU90
10	20	08	U41	PU90
10	20	10	U41	PU90
10	21	4.5	U45	PU90
10	22	05	U41	PU90
10	22	08	U41	PU90
11.2	21.5	08	U41	PU90
12	18	04	U41	PU90
12	18	06	U41	PU90
12	20	5.5	U43	PU90
12	20	06	U41	PU90
12	20	08	U41	PU90
12	22	05	U41	PU90
12	22	07	U41	PU90
12	22	08	U43	PU90
12	22	08	U45	PU90
12	24	09	U41	PU90
12	25	08	U41	PU90
12.5	21	4.6	U45	PU90
13	19	04	U45	PU90
14	20	08	U41	PU90
14	22	05	U41	PU90
14	22	06	U41	PU90
14	24	7.3	U45	PU90
14	24	08	U41	PU90
14	30	05	U41	PU90
15	22	05	U41	PU90
15	23	5.7	U45	PU90
15	25	08	U41	PU90
15	27	06	U41	PU90
15	28	10	U41	PU90
15	30	08	U41	PU90
15	30	10	U43	PU90
16	22	04	U41	PU90
16	22	05	U41	PU90
16	22	05	U45	PU90
16	24	05	U41	PU90
16	24	5.7	U41	PU90
16	24	5.7	U45	PU90
16	24	6.2	U45	PU90
16	24	09	U41	PU90
16	26	05	U41	PU90
16	26	07	U41	PU90
16	26	7.5	U45	PU90
16	26	08	U41	PU90
16	26	08	U45	PU90
16	28	08	U45	PU90
16	32	08	U41	PU90
17	25	10	U41	PU90
18	25	05	U41	PU90
18	25	06	U41	PU90
18	26	05	U41	PU90
18	26	5.7	U45	PU90
18	26	6.5	U41	PU90
18	26	08	U41	PU90
18	28	7.3	U41	PU90
18	28	08	U41	PU90
18	34	08	U41	PU90
18	35	08	U41	PU90
19	25	06	U41	PU90
20	26	05	U45	PU90
20	28	05	U41	PU90
20	28	5.7	U45	PU90
20	28	08	U41	PU90
20	30	06	U41	PU90
20	30	07	U45	PU90
20	30	7.2	U45	PU90
20	30	08	U41	PU90
20	32	08	U41	PU90
20	35	10	U41	PU90
20	40	10	U41	PU90
22	28	04	U41	PU90
22	28	08	U41	PU90
22	30	04	U41	PU90
22	30	05	U41	PU90
22	30	5.7	U45	PU90
22	30	06	U41	PU90
22	30	06	U45	PU90
22	30	07	U41	PU90
22	32	08	U41	PU90
22	32	10	U41	PU90
22	35	10	U41	PU90
22.4	30	05	U41	PU90
24	32	05	U41	PU90
24	32	07	U41	PU90
24	40	08	U41	PU90
24	40	09	U43	PU90
25	30	04	U41	PU90
25	33	04	U41	PU90
25	33	05	U41	PU90
25	33	5.7	U45	PU90

Hydraulic U-Cups

Shaft	Bore	Width	Type	Material
25	33	6.5	U45	PU90
25	33	7.2	U41	PU90
25	33	7.2	U45	PU90
25	33	08	U41	PU90
25	35	05	U41	PU90
25	35	06	U41	PU90
25	35	07	U41	PU90
25	35	7.2	U45	PU90
25	35	08	U41	PU90
25	38	08	U41	PU90
25	38	10	U41	PU90
25	38	10	U45	PU90
25	40	10	U41	PU90
25	45	10	U41	PU90
26	38	08	U41	PU90
27	35	05	U41	PU90
27	36	06	U41	PU90
28	35.5	05	U41	PU90
28	36	05	U41	PU90
28	36	08	U41	PU90
28	38	08	U41	PU90
28	38	10	U41	PU90
28	40	08	U41	PU90
28	40	10	U41	PU90
28	43	10	U41	PU90
30	37	06	U41	PU90
30	38	05	U41	PU90
30	38	5.7	U45	PU90
30	38	06	U41	PU90
30	38	07	U41	PU90
30	38	08	U41	PU90
30	39	6.5	U43	PU90
30	40	05	U41	PU90
30	40	5.5	U41	PU90
30	40	06	U41	PU90
30	40	07	U41	PU90
30	40	07	U43	PU90
30	40	07	U45	PU90
30	40	08	U41	PU90
30	40	08	U45	PU90
30	40	10	U41	PU90
30	42	10	U41	PU90
30	45	10	U41	PU90
30	45	10.2	U41	PU90

Shaft	Bore	Width	Type	Material
30	50	10	U41	PU90
30	50	12	U41	PU90
31.5	41.5	05	U41	PU90
32	40	04	U41	PU90
32	40	05	U41	PU90
32	40	5.7	U43	PU90
32	40	06	U41	PU90
32	40	07	U41	PU90
32	40	08	U41	PU90
32	40	08	U45	PU90
32	42	06	U41	PU90
32	42	07	U45	PU90
32	42	7.3	U45	PU90
32	42	10	U41	PU90
32	45	10	U45	PU90
33	40	08	U43	PU90
33	43	10	U41	PU90
34	45	09	U41	PU90
35	43	5.7	U45	PU90
35	43	06	U41	PU90
35	43	07	U41	PU90
35	45	06	U41	PU90
35	45	07	U45	PU90
35	45	7.2	U45	PU90
35	45	10	U41	PU90
35	48	10	U41	PU90
35	50	10	U41	PU90
35	55	10	U41	PU90
35	55	12	U41	PU90
35.5	45	06	U41	PU90
36	44	04	U41	PU90
36	44	5.7	U41	PU90
36	44	08	U41	PU90
36	46	07	U41	PU90
36	46	7.3	U45	PU90
36	46	10	U41	PU90
36	51	10	U45	PU90
36	51	11.5	U45	PU90
36	56	12	U45	PU90
38	45	06	U41	PU90
38	45	08	U41	PU90
38	48	06	U41	PU90
38	48	10	U41	PU90
38	50	09	U41	PU90
38	50	10	U41	PU90

Shaft	Bore	Width	Type	Material
38	55	10	U41	PU90
39	47	06	U41	PU90
40	48	5.7	U45	PU90
40	48	5.8	U41	PU90
40	48	08	U41	PU90
40	48	08	U45	PU90
40	50	05	U41	PU90
40	50	05	U41	PU90
40	50	06	U41	PU90
40	50	6.5	U41	PU90
40	50	07	U41	PU90
40	50	07	U43	PU90
40	50	7.2	U45	PU90
40	50	10	U41	PU90
40	50	10	U43	PU90
40	50	10	U45	PU90
40	55	10	U41	PU90
40	55	10	U45	PU90
40	56	10	U41	PU90
40	60	10	U41	PU90
40	60	12	U41	PU90
40	60	18	U41	PU90
40	65	12	U41	PU90
42	50	08	U41	PU90
42	50	08	U43	PU90
42	52	10	U41	PU90
45	53	5.6	U45	PU90
45	53	08	U41	PU90
45	53	10	U41	PU90
45	53	10	U45	PU90
45	53	11.5	U45	PU90
45	55	06	U41	PU90
45	55	6.5	U41	PU90
45	55	07	U41	PU90
45	55	7.2	U45	PU90
45	55	10	U41	PU90
45	55	10	U45	PU90
45	56	07	U41	PU90
45	56	07	U43	PU90
45	57.7	9.5	U41	PU90
45	57.7	9.5	U45	PU90
45	60	10	U41	PU90
45	60	10	U43	PU90
45	60	10	U45	PU90

Hydraulic U-Cups

Shaft	Bore	Width	Type	Material
45	63	10	U41	PU90
45	63	12	U41	PU90
45	63	12	U43	PU90
45	65	10	U41	PU90
45	65	12	U41	PU90
46	58	12	U41	PU90
48	58	10	U41	PU90
48	63	09	U43	PU90
48	63	10	U41	PU90
50	60	05	U41	PU90
50	60	06	U41	PU90
50	60	10	U41	PU90
50	60	10	U43	PU90
50	60	10	U45	PU90
50	60	12	U41	PU90
50	62	09	U41	PU90
50	63	06	U41	PU90
50	63	08	U41	PU90
50	63	10	U41	PU90
50	65	10	U41	PU90
50	65	10	U43	PU90
50	65	10	U45	PU90
50	65	11.5	U45	PU90
50	70	10	U41	PU90
50	70	12	U41	PU90
50	70	12	U45	PU90
50	70	18	U41	PU90
50	75	12	U41	PU90
51	66	14	U41	PU90
51	76	14	U41	PU90
52	62	12	U41	PU90
53	63	06	U41	PU90
53	63	07	U43	PU90
53	63	12	U43	PU90
54	70	12	U41	PU90
55	60	10	U41	PU90
55	63	5.7	U43	PU90
55	63	08	U45	PU90
55	65	05	U41	PU90
55	65	06	U41	PU90
55	65	7.2	U45	PU90
55	65	10	U45	PU90
55	65	12	U41	PU90
55	67	10	U45	PU90
55	70	10	U45	PU90
55	70	12	U41	PU90
55	70	12	U43	PU90
55	75	10	U41	PU90
55	75	12	U41	PU90
55	75	12	U43	PU90
56	66	6.5	U41	PU90
56	66	6.7	U41	PU90
56	66	10	U45	PU90
56	71	10	U41	PU90
56	71	10	U45	PU90
56	71	11.5	U45	PU90
57	70	10	U45	PU90
60	68	06	U41	PU90
60	68	08	U41	PU90
60	68	11.5	U45	PU90
60	68	12	U41	PU90
60	68	13.5	U45	PU90
60	70	05	U41	PU90
60	70	06	U41	PU90
60	70	7.2	U45	PU90
60	70	08	U41	PU90
60	70	08	U43	PU90
60	70	10	U45	PU90
60	70	12	U41	PU90
60	70	12	U43	PU90
60	73	10	U45	PU90
60	75	10	U45	PU90
60	75	11.5	U45	PU90
60	75	12	U41	PU90
60	75	12	U45	PU90
60	75	15.5	U45	PU90
60	80	10	U41	PU90
60	80	12	U41	PU90
60	80	13	U43	PU90
60	80	14.5	U43	PU90
60	80	18	U41	PU90
60	85	12	U41	PU90
60	90	15	U41	PU90
61	71	06	U43	PU90
63	73	05	U41	PU90
63	73	12	U45	PU90
63	75	8.7	U45	PU90
63	75	12	U41	PU90
63	78	10	U41	PU90
63	78	11.5	U45	PU90
63	80	12	U41	PU90
63	83	15	U41	PU90
65	73	13	U45	PU90
65	75	10	U45	PU90
65	75	11.5	U43	PU90
65	75	12	U41	PU90
65	75	12	U45	PU90
65	77.7	9.5	U45	PU90
65	80	10	U41	PU90
65	80	10	U45	PU90
65	80	11.4	U43	PU90
65	80	11	U41	PU90
65	85	10	U41	PU90
65	90	12	U41	PU90
66	77	12	U41	PU90
67	77	06	U41	PU90
67	77	10	U41	PU90
70	80	05	U41	PU90
70	80	06	U41	PU90
70	80	6.7	U43	PU90
70	80	07	U43	PU90
70	80	08	U41	PU90
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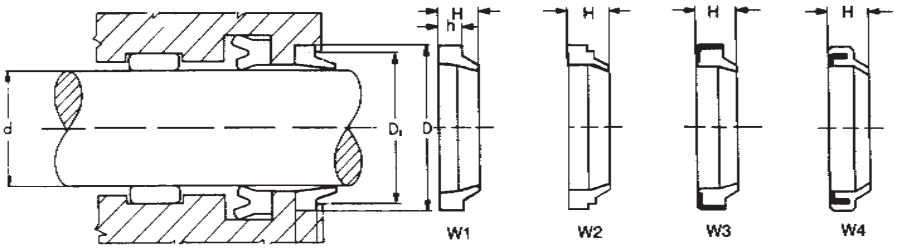
70	85	10	U41	PU90
70	85	11.5	U45	PU90
70	88	13.5	U45	PU90
70	90	10	U41	PU90
70	90	10	U45	PU90
70	90	12	U41	PU90
70	90	12	U43	PU90
70	90	12	U45	PU90
70	90	15	U45	PU90
70	95	12	U41	PU90
71	80	06	U41	PU90
75	85	06	U41	PU90
75	85	08	U43	PU90
75	85	10	U41	PU90
75	85	12	U41	PU90
75	90	09	U41	PU90
75	90	10	U41	PU90
75	90	11.4	U43	PU90
75	90	12	U41	PU90

Hydraulic U-Cups

Shaft	Bore	Width	Type	Material
75	95	10	U41	PU90
75	95	12	U41	PU90
76	91	14	U45	PU90
78	86	13.5	U45	PU90
80	90	05	U41	PU90
80	90	06	U41	PU90
80	90	10.5	U45	PU90
80	93	10	U45	PU90
80	95	11.5	U45	PU90
80	95	12	U41	PU90
80	95	12	U45	PU90
80	100	10	U41	PU90
80	100	10	U43	PU90
80	100	12	U41	PU90
80	100	12	U45	PU90
80	100	13.5	U43	PU90
80	100	15	U43	PU90
85	95	8.5	U41	PU90
85	95	12	U41	PU90
85	100	11.4	U43	PU90
85	100	11.5	U45	PU90
85	100	12	U45	PU90
85	105	12	U41	PU90
85	105	18	U41	PU90
87	95	13	U45	PU90
90	98	12	U45	PU90
90	100	05	U41	PU90
90	100	07	U41	PU90
90	100	08	U41	PU90
90	100	10	U45	PU90
90	100	11.5	U45	PU90
90	100	12	U41	PU90
90	102	09	U45	PU90
90	105	12	U41	PU90
90	105	12	U45	PU90
90	110	10	U41	PU90
90	110	12	U41	PU90
90	110	12	U43	PU90
90	110	12	U45	PU90
90	110	15	U41	PU90
90	110	15	U43	PU90
90	110	17	U45	PU90
90	115	15	U41	PU90
95	105	12	U41	PU90
95	110	09	U41	PU90
95	110	12	U41	PU90
95	110	12	U45	PU90
95	112	12	U41	PU90
95	115	12	U41	PU90
95	115	15	U43	PU90
95	115	14.5	U43	PU90
97	105	13.5	U45	PU90
100	110	14	U45	PU90
100	115	12	U41	PU90
100	120	10	U41	PU90
100	120	12	U43	PU90
100	120	12	U45	PU90
100	120	14.5	U45	PU90
100	120	15	U41	PU90
100	125	12	U41	PU90
100	125	15	U41	PU90
100	125	15	U43	PU90
100	125	15	U45	PU90
105	120	08	U41	PU90
105	120	9.9	U45	PU90
105	120	15	U41	PU90
105	125	10	U41	PU90
105	125	15	U41	PU90
110	125	12	U41	PU90
110	125	15	U41	PU90
110	135	15	U45	PU90
110	140	15	U41	PU90
115	135	15	U41	PU90
115	145	18	U41	PU90
115	145	18	U43	PU90
120	130	05	U41	PU90
120	135	15	U45	PU90
120	140	10	U41	PU90
120	140	12	U41	PU90
120	140	12	U43	PU90
120	140	15	U41	PU90
120	140	16	U41	PU90
120	150	15	U41	PU90
120	150	18	U43	PU90
125	140	09	U41	PU90
125	140	11	U41	PU90
125	140	15	U41	PU90
125	140	15	U43	PU90
125	145	15	U41	PU90
125	145	16	U41	PU90
125	150	12	U41	PU90
125	150	15	U45	PU90
125	155	15	U41	PU90
130	150	12	U45	PU90
130	150	15	U41	PU90
130	150	15	U43	PU90
130	150	15	U45	PU90
130	150	16	U41	PU90
130	160	18	U43	PU90
135	150	15	U41	PU90
135	155	15	U41	PU90
140	150	05	U41	PU90
140	160	12	U41	PU90
140	160	15	U43	PU90
140	160	15	U45	PU90
140	165	15	U41	PU90
143	151	13.5	U45	PU90
145	165	15	U41	PU90
146	160	09	U41	PU90
150	170	14.5	U45	PU90
150	170	15	U41	PU90
150	170	15	U45	PU90
160	180	15	U45	PU90
160	185	15	U41	PU90
160	185	16	U41	PU90
160	185	18.2	U45	PU90
160	190	15	U41	PU90
160	190	18	U45	PU90
160	190	19	U41	PU90
165	190	15	U41	PU90
170	190	15	U41	PU90
171	179	13.5	U45	PU90
180	200	15	U43	PU90
180	200	15	U45	PU90
180	205	16	U41	PU90
180	205	19	U45	PU90
185	200	7.5	U41	PU90
190	220	18	U43	PU90
200	220	15	U41	PU90
200	220	15	U45	PU90
210	230	15	U45	PU90
220	250	18	U41	PU90

Wiper Seals



Shaft	Bore	Width	Type	Material
06	13	3/4.5	W4	NBR 90
08	14	3.5/5	W4	NBR 90
10	16	3.5/5	W4	NBR 90
10	18	4/7	W2	NBR 90
10	20	5/8	W3	NBR 90
10	20	5/8	W4	NBR 90
12	18	3.5/5	W4	NBR 90
12	20	4/6	W3	NBR 90
12	20	4/7	W2	NBR 90
12	22	5/8	W3	NBR 90
12	22	5/8	W4	NBR 90
14	20	3.5/5	W4	NBR 90
14	22	4/7	W2	NBR 90
15	21	3.5/5	W4	NBR 90
15	25	5/7	W4	NBR 90
16	22	3.5/5	W3	NBR 90
16	22	3.5/5	W4	NBR 90
16	24	4/7	W2	NBR 90
16	26	5/8	W3	NBR 90
16	26	5/8	W4	NBR 90
18	26	4/7	W2	NBR 90
18	28	5/7	W4	NBR 90
18	28	7/10	W3	NBR 90
18	28	7/10	W4	NBR 90
20	28	5/7	W1	NBR 90
20	30	5/7	W4	NBR 90
20	30	5/8	W3	NBR 90
20	30	7/10	W3	NBR 90
20	30	7/10	W4	NBR 90
22	30	4/7	W2	NBR 90
22	30	5/8	W3	NBR 90
22	32	5/7	W4	NBR 90
22	32	7/10	W3	NBR 90
24	35	5/8	W4	NBR 90
25	33	4/7	W2	NBR 90
25	33	5/7	W1	NBR 90
25	33	5/7	W4	NBR 90
25	35	5/7	W4	NBR 90

Shaft	Bore	Width	Type	Material
25	35	7/10	W3	NBR 90
25	35	7/10	W4	NBR 90
26	35	7/10	W4	NBR 90
28	36	4/7	W2	NBR 90
28	36	5/7	W1	NBR 90
28	38	5/7	W4	NBR 90
28	38	7/10	W3	NBR 90
28	40	7/10	W4	NBR 90
30	38	4/7	W2	NBR 90
30	38	5/7	W1	NBR 90
30	40	5/7	W3	NBR 90
30	40	5/7	W4	NBR 90
30	40	5/8	W3	NBR 90
30	40	7/10	W3	NBR 90
30	40	7/10	W4	NBR 90
32	40	4/7	W2	NBR 90
32	40	5/7	W1	NBR 90
32	42	5/7	W4	NBR 90
32	45	7/10	W3	NBR 90
35	43	4/7	W2	NBR 90
35	43	5/7	W1	NBR 90
35	45	7/10	W3	NBR 90
35	45	7/10	W4	NBR 90
36	44	4/7	W2	NBR 90
36	44	5/7	W1	NBR 90
36	45	7/10	W3	NBR 90
36	46	5/7	W4	NBR 90
38	46	4/7	W2	NBR 90
38	48	7/10	W4	NBR 90
40	48	4/7	W2	NBR 90
40	48	5/7	W1	NBR 90
40	50	5/8	W3	NBR 90
40	50	5/8	W4	NBR 90
40	50	7/10	W3	NBR 90
40	52	5/8	W3	NBR 90
40	52	7/10	W4	NBR 90
42	50	4/7	W2	NBR 90
42	50	5/7	W1	NBR 90

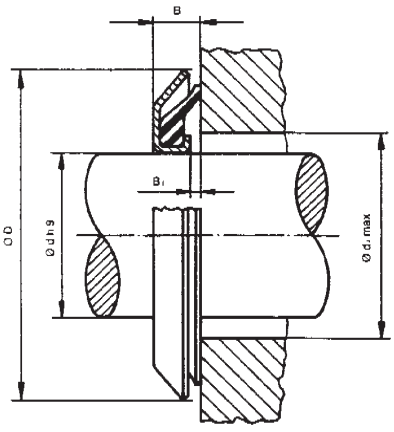
Wiper Seals

Shaft	Bore	Width	Type	Material
42	52	5/7	W4	NBR 90
42	52	7/10	W3	NBR 90
42	52	7/10	W4	NBR 90
45	53	4/7	W2	NBR 90
45	55	5/7	W1	NBR 90
45	55	5/7	W4	NBR 90
45	55	7/10	W3	NBR 90
45	55	7/10	W4	NBR 90
45	60	7/10	W3	NBR 90
45	60	7/10	W4	NBR 90
48	56	4/7	W2	NBR 90
48	60	7/10	W4	NBR 90
50	58	4/7	W2	NBR 90
50	60	5/7	W1	NBR 90
50	60	5/7	W3	NBR 90
50	60	5/8	W3	NBR 90
50	60	7/10	W3	NBR 90
50	60	7/10	W4	NBR 90
50	65	5/8	W3	NBR 90
52	62	7/10	W3	NBR 90
52	62	7/10	W4	NBR 90
55	63	4/7	W2	NBR 90
55	65	5/7	W1	NBR 90
55	65	5/7	W4	NBR 90
55	65	7/10	W3	NBR 90
55	65	7/10	W4	NBR 90
56	64	4/7	W2	NBR 90
56	66	5/7	W1	NBR 90
60	68	4/7	W2	NBR 90
60	70	5/7	W1	NBR 90
60	70	5/7	W3	NBR 90
60	70	5/7	W4	NBR 90
60	70	7/10	W3	NBR 90
60	70	7/10	W4	NBR 90
63	71	4/7	W2	NBR 90
63	73	5/7	W1	NBR 90
63	73	5/7	W4	NBR 90
63	75	7/10	W3	NBR 90
65	73	4/7	W2	NBR 90
65	75	5/7	W1	NBR 90
65	75	5/7	W3	NBR 90
65	75	7/10	W3	NBR 90
65	75	7/10	W4	NBR 90
70	78	4/7	W2	NBR 90
70	80	5/7	W1	NBR 90
70	80	5/7	W3	NBR 90

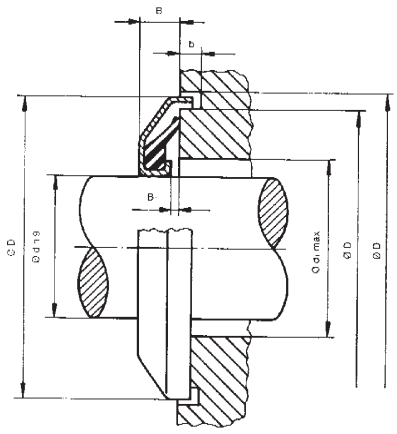
Shaft	Bore	Width	Type	Material
70	80	5/7	W4	NBR 90
70	80	7/10	W3	NBR 90
70	80	7/10	W4	NBR 90
75	83	7/10	W4	NBR 90
75	85	7/10	W3	NBR 90
75	85	7/10	W4	NBR 90
75	87	7/12	W1	NBR 90
80	88	4/7	W2	NBR 90
80	88	7/10	W4	NBR 90
80	90	7/10	W3	NBR 90
80	90	7/10	W4	NBR 90
80	92	7/12	W1	NBR 90
83	93	4/7	W2	NBR 90
85	95	7/10	W3	NBR 90
85	95	7/10	W4	NBR 90
85	97	7/12	W1	NBR 90
90	98	4/7	W2	NBR 90
90	100	7/10	W3	NBR 90
90	100	7/10	W4	NBR 90
90	102	7/12	W1	NBR 90
95	103	4/7	W2	NBR 90
95	105	7/10	W3	NBR 90
95	105	7/10	W4	NBR 90
100	108	4/7	W2	NBR 90
100	110	7/10	W3	NBR 90
100	110	7/10	W4	NBR 90
100	112	7/12	W1	NBR 90
105	115	7/10	W4	NBR 90
110	120	7/10	W3	NBR 90
110	122	5.5/10	W2	NBR 90
110	122	7/12	W1	NBR 90
115	125	7/10	W3	NBR 90
115	127	7/12	W1	NBR 90
120	130	7/10	W3	NBR 90
120	132	5.5/10	W2	NBR 90
125	140	9/12	W3	NBR 90
125	140	10/16	W1	NBR 90
130	142	5.5/10	W2	NBR 90
140	152	5.5/10	W2	NBR 90
140	155	10/16	W1	NBR 90
145	160	9/12	W3	NBR 90
150	165	10/16	W1	NBR 90
160	175	10/16	W1	NBR 90
180	195	10/14	W3	NBR 90
180	200	10/18	W1	NBR 90
200	220	10/18	W1	NBR 90
220	240	12/16	W4	NBR 90

Gamma Seals RB & 9RB

RB



9RB



Gamma Seals (also known as flingers or deflector rings) consist of two parts; a sealing member and a metal case. The case supports, holds, and protects the sealing member.
The sealing member is not bonded to the case, rather it is stretched and held by it's elasticity.
Gamma seals are primarily intended to seal against foreign matter, liquid splatter, and grease.
Case: Stamped from cold rolled steel (zinc plated)
Sealing Member: Nitrile rubber (70 shore) offers a good resistance to mineral oils, salt solutions, and alkalies
Operating Temperatures: -40F to +248F

RB & 9RB Complete Size Listing

Shaft	Bore	Width	Type	Material
10	24	3.5	RB	NBR
11	26	3.5	RB	NBR
14	30	04	RB	NBR
15	30	04	RB	NBR
15	**32**	**04**	**9RB**	**NBR**
16	32	04	RB	NBR
17	32	04	RB	NBR
17	**34**	**04**	**9RB**	**NBR**
18	33	04	RB	NBR
20	35	04	RB	NBR
22	40	3.5	RB	NBR
24	40	04	RB	NBR
25	40	04	RB	NBR
25	**42**	**04**	**9RB**	**NBR**
26	40	04	RB	NBR
28	43	04	RB	NBR
30	47	4.5	RB	NBR
30	**48**	**4.5**	**9RB**	**NBR**
32	49	4.5	RB	NBR
35	52	4.5	RB	NBR
35	**53**	**4.5**	**9RB**	**NBR**
38	55	4.5	RB	NBR
40	57	4.5	RB	NBR
40	**58**	**4.5**	**9RB**	**NBR**
40	**58**	**5.5**	**9RB**	**NBR**
41	57	4.5	RB	NBR
42	59	4.5	RB	NBR
45	62	4.5	RB	NBR
45	**63**	**4.5**	**9RB**	**NBR**
48	65	4.5	RB	NBR
50	70	5.5	RB	NBR
50	**72**	**5.5**	**9RB**	**NBR**

Shaft	Bore	Width	Type	Material
52	72	4.5	RB	NBR
55	75	5.5	RB	NBR
55	**77**	**5.5**	**9RB**	**NBR**
55	77	5.5	RB	NBR
58	78	5.5	RB	NBR
60	80	5.5	RB	NBR
60	**82**	**5.5**	**9RB**	**NBR**
62	82	5.5	RB	NBR
65	85	5.5	RB	NBR
65	**87**	**5.5**	**9RB**	**NBR**
65	87	5.5	RB	NBR
68	88	5.5	RB	NBR
70	90	5.5	RB	NBR
70	**92**	**5.5**	**9RB**	**NBR**
72	92	5.5	RB	NBR
75	95	5.5	RB	NBR
75	**97**	**5.5**	**9RB**	**NBR**
78	98	5.5	RB	NBR
80	100	5.5	RB	NBR
80	**102**	**5.5**	**9RB**	**NBR**
85	105	5.5	RB	NBR
85	**107**	**5.5**	**9RB**	**NBR**
85	107	5.5	RB	NBR
90	110	5.5	RB	NBR
90	**112**	**5.5**	**9RB**	**NBR**
95	115	5.5	RB	NBR
95	**117**	**5.5**	**9RB**	**NBR**
100	120	5.5	RB	NBR
100	**122**	**5.5**	**9RB**	**NBR**
105	125	5.5	RB	NBR
105	**143**	**5.5**	**9RB**	**NBR**
135	159	6.5	RB	NBR

VK End Caps

End Caps are used in order to seal bearings, e.g., in gearboxes, where the shaft does not pass through the housing wall. This product offers great advantages for design and production. The End Caps are designed to fit directly in housing bores for rotary shaft lip seals which means that a shaft can easily be left or right hand oriented.
Harwal End Caps are made of cold rolled steel and Nitrile (NBR) rubber (70 IRHD).

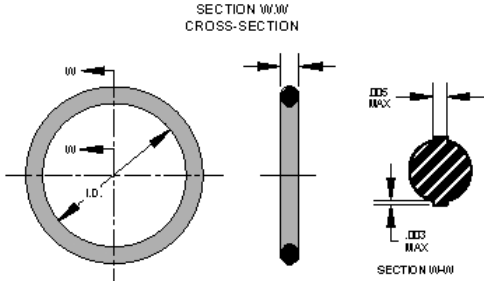
VKHP End Caps

Offered exclusively at Harwal
High Pressure End Caps – **For pressure up to 50 PSI** – NBR & Viton® Materials

VK & **VKHP** Size Listing **Bold = VKHP**

Bore		Width	Bore		Width	Bore		Width	Bore		Width	Bore		Width
13	x	4.5	32	x	05	47	x	6.5	65	x	10	**100**	**x**	**12**
15	x	05	32	x	07	47	x	07	68	x	08	105	x	10
16	x	04	**32**	**x**	**08**	**47**	**x**	**07**	**70**	**x**	**08**	110	x	10
18	x	03	32	x	9.5	47	x	08	70	x	10	110	x	12
19	x	5.5	35	x	3.5	47	x	10	70	x	12	**110**	**x**	**12**
19	x	07	35	x	4.5	**50**	**x**	**07**	72	x	09	120	x	12
20	x	04	35	x	07	50	x	07	**72**	**x**	**09**	**120**	**x**	**12**
21	x	04	35	x	08	50	x	10	72	x	10	125	x	12
22	x	05	**35**	**x**	**08**	52	x	6.5	72	x	12	**125**	**x**	**12**
22	**x**	**05**	36	x	4.5	**52**	**x**	**07**	75	x	07	130	x	12
22	x	06	37	x	05	52	x	07	75	x	10	140	x	10
22	x	07	37	x	07	52	x	08	75	x	12	140	x	12
24	x	05	**37**	**x**	**07**	52	x	10	80	x	07	140	x	15
24	x	07	37	x	10	**52**	**x**	**10**	80	x	08	150	x	13
24	**x**	**07**	38	x	07	55	x	07	80	x	10	150	x	15
25	x	05	39	x	04	55	x	09	80	x	12	**150**	**x**	**15**
25	x	07	40	x	4.5	55	x	10	**80**	**x**	**12**	160	x	15
26	x	04	40	x	07	**55**	**x**	**10**	85	x	10	**160**	**x**	**15**
26	x	6.5	**40**	**x**	**07**	60	x	07	85	x	12	170	x	15
26	x	07	40	x	10	**60**	**x**	**07**	**85**	**x**	**12**	180	x	12
28	x	04	42	x	06	60	x	08	90	x	08	190	x	10
28	x	07	42	x	07	60	x	10	90	x	10	190	x	12
28	**x**	**07**	**42**	**x**	**07**	62	x	07	90	x	12	200	x	13
30	x	3.5	42	x	9.5	62	x	08	**90**	**x**	**12**	215	x	15
30	x	05	**42**	**x**	**9.5**	**62**	**x**	**08**	92	x	10	230	x	14
30	**x**	**06**	45	x	07	62	x	10	95	x	10	**240**	**x**	**15**
30	x	08	45	x	08	62	x	12	100	x	10	250	x	15
30	x	08	47	x	04	65	x	08	100	x	12	260	x	15

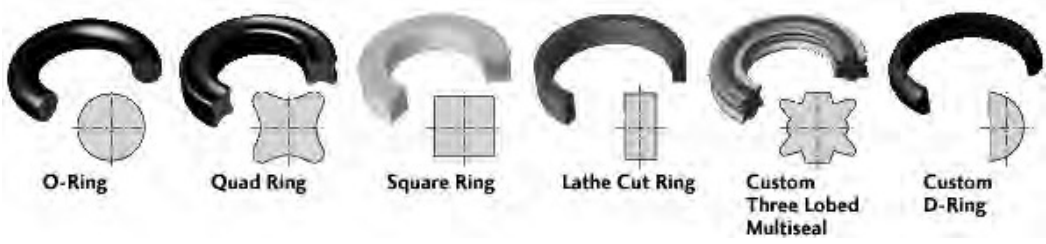
Standard & Metric O-Ring Kits



Part#	Shaft	Bore	Width	Qty/kit
3x2	3	7	2	18
4x2	4	8	2	18
5x2	5	9	2	18
6x2	6	10	2	18
7x2	7	11	2	17
8x2	8	12	2	17
10x2	10	14	2	17
10x2.5	10	15	2.5	14
11x2.5	11	16	2.5	14
12x2.5	12	17	2.5	14
14x2.5	14	19	2.5	14
16x2.5	16	21	2.5	14
17x2.5	17	22	2.5	14
19x2.5	19	24	2.5	14
19x3	19	25	3	12
20x3	20	26	3	12
22x3	22	28	3	12
24x3	24	30	3	12
25x3	25	31	3	12
27x3	27	33	3	12
28x3	28	34	3	12
30x3	30	36	3	12
32x3	32	38	3	12
33x3	33	39	3	12
35x3	35	41	3	12
36x3	36	42	3	12
38x3	38	44	3	12
38x4	38	46	4	9
42x4	42	50	4	9
45x4	45	53	4	9

AS-568#	Shaft	Bore	Width	Qty/kit
-006	1/8	1/4	1/16	20
-007	5/32	9/32	1/16	20
-008	3/16	5/16	1/16	20
-009	7/32	11/32	1/16	20
-010	1/4	3/8	1/16	20
-011	5/16	7/16	1/16	20
-012	3/8	1/2	1/16	20
-110	3/8	9/16	3/32	13
-111	7/16	5/8	3/32	13
-112	1/2	11/16	3/32	13
-113	9/16	3/4	3/32	13
-114	5/8	13/16	3/32	13
-115	11/16	7/8	3/32	13
-116	3/4	15/16	3/32	13
-210	3/4	1	1/8	10
-211	13/16	1-1/16	1/8	10
-212	7/8	1-1/8	1/8	10
-213	15/16	1-3/16	1/8	10
-214	1	1-1/4	1/8	10
-215	1-1/16	1-5/16	1/8	10
-216	1-1/8	1-3/8	1/8	10
-217	1-3/16	1-7/16	1/8	10
-218	1-1/4	1-1/2	1/8	10
-219	1-5/16	1-9/16	1/8	10
-220	1-3/8	1-5/8	1/8	10
-221	1-7/16	1-11/16	1/8	10
-222	1-1/2	1-3/4	1/8	10
-325	1-1/2	1-7/8	3/16	7
-326	1-5/8	2	3/16	7
-327	1-3/4	2-1/8	3/16	7

Other available O-Ring Designs



302 Stainless Steel Springs

Stainless Steel Springs can be sold separately or pre-installed in seals ordered from Harwal.
Non-magnetic 316 & Monel Stainless is also available on special order.
316 Stainless is a stock item for us.

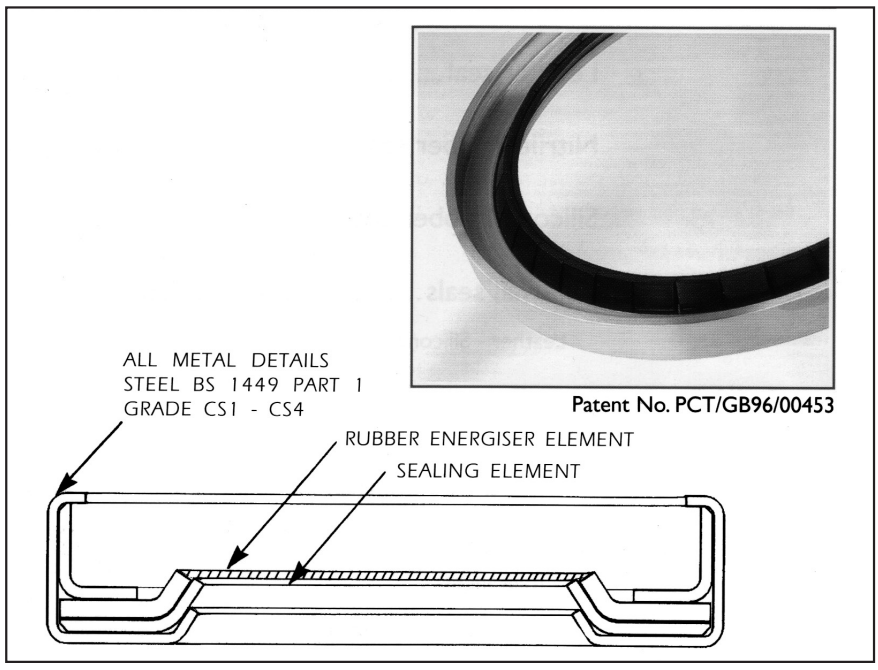
Harwal springs have male & female ends. WE STOCK 1000's
Also available in large spools (any size - any length)
Please call for pricing.
Springs can be joined together and/or cut to make ANY length.

Pre-Cut sizes will come joined and will fit in a seal with the corresponding I.D.

Un-Cut lengths may come joined or open. Either can be requested.
Dimensions for un-cut lengths are listed as follows:
length x overall thickness x thread thickness

Pre-Cut Sizes: (I.D. of Seal)	Un-Cut Lengths:	Non-magnetic 316 Stainless:
6 mm	41.5 x 1.2 x 2	**Pre-Cut:**
7 mm	56 x 1.7 x .4	22mm
8 mm	58.5 x 1.2 x .2	35mm
9 mm	83.5 x 1.2 x .2	55mm
10 mm	87.5 x 1.2 x .2	
11 mm	100 x 1.2 x .2	**Un-Cut Lengths:**
12 mm	100 x 2 x .35	270 x 3 x .5
15 mm	133 x 2 x .3	500 x 3 x .5
16 mm	150 x 1.5 x .25	
17 mm	163 x 1.5 x .25	
20 mm	164.5 x 1.8 x .3	
22 mm	193 x 2.3 x .4	
25 mm	270 x 2 x .5	
30 mm	270 x 2.3 x .5	
35 mm	300 x 2.8 x .5	
40 mm	365 x 2.5 x .4	
45 mm	365 x 2.5 x .5	
50 mm	500 x 3 x .5	
55 mm	600 x 3 x .5	
60 mm	650 x 3 x .5	
65 mm	800 x 3 x .5	
70 mm		
75 mm		
80 mm		
85 mm		
90 mm		
95 mm		
100 mm		
105 mm		
110 mm		

"Safegard" Seal



METAL MATERIALS

Mild steel - BS1449 EN2 CR4 Stainless steel - BS1449 Part 2 Grade 316 Brass - BS2870 1987

SEALING LIP

Nitrile, Viton, PTFE.

Standard section (Difference between O/D and I/D) 25mm to 60mm 1in to 2⅜in

SAFEGUARD SEAL

- The 'Safegard' patented and unique design improves on seals currently available, provides maximum bearing protection and superior sealing performance.
- 'Safegard' is a suitable replacement for the open backed and fully metal enclosed (metal clad) seal.
- Cost effective replacement for heavy duty, larger diameter seals, including finger spring designs.
- Can also be supplied with lugs.
- Inner diameter dependent on size of seal and run-out on shaft size +2.5mm +/- 0.5mm.
- Shape of sealing lip depending on interference required.
- Pressure design available.

Temperature range

-60°C to + 250°C
-76°F to + 482°F

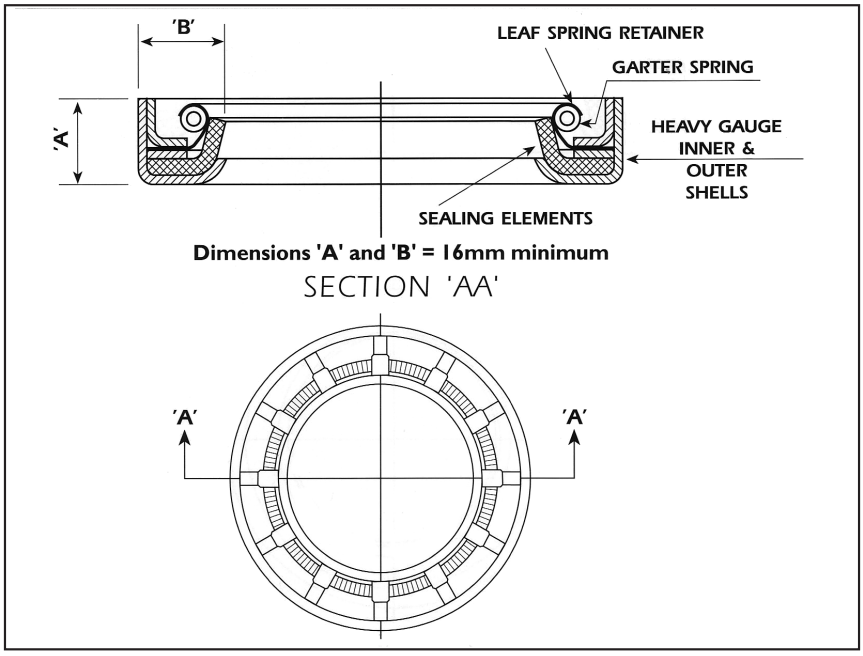
Speeds

Maximum shaft speed
45m/s 147ft/s

Sizes

Outer Diameter
152mm to 1737mm 6in to 68in
Dependent on material
width
12.7mm to 35mm ½ in to 1⅜ in

Leaf Spring Retainer Seal



METAL MATERIALS

Outer/Inner shell and base washer = Mild steel as standard.
Garter Spring = Galvanised Steel as standard.
Leaf spring retainer = Stainless steel (AISI 301 S2I) as standard
Also avalible in non ferrous metals.

LEAF SPRING RETAINER SEAL

NITRILE

SILICONE

VITON®

PTFE

Temperature range
-60˚C to + 250˚C -76˚F to + 482˚F

Speeds
Sealing surface speeds up to 15m/s 49ft/s

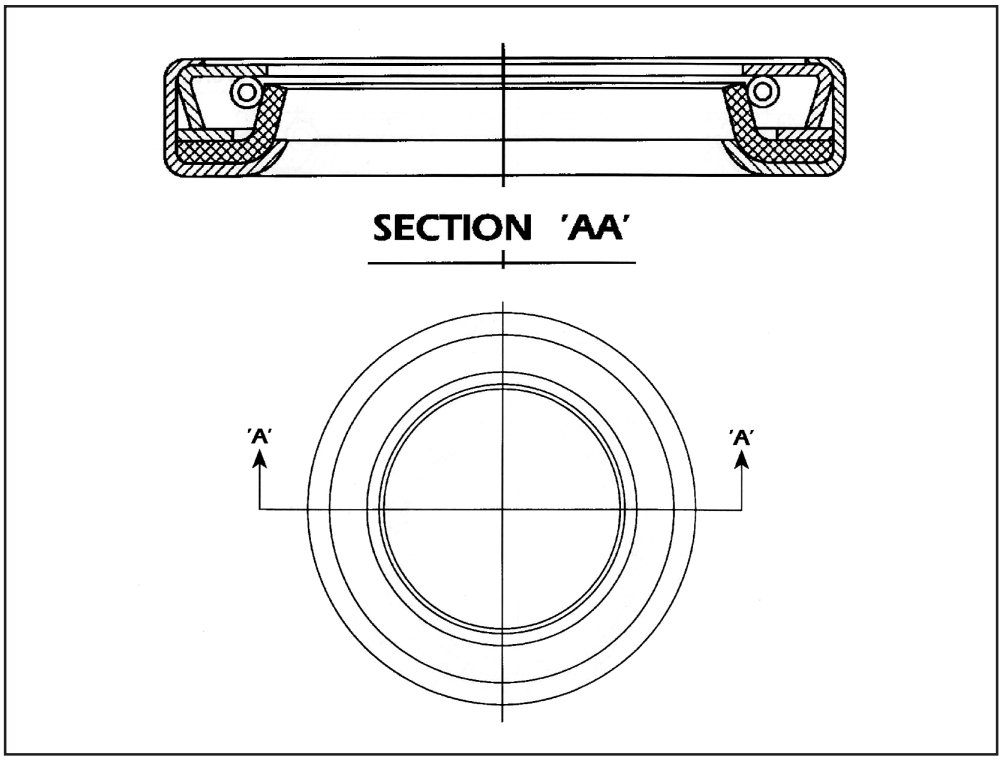
Sizes
From 150mm O/dia to 1737mm O/dia 5.9in to 68in

- Replacement for Garlock 64 style and Gaco S.M.K. style.
- Heavy duty applications e.g. rolling mills, paper mills, etc.
- Excellent for shaft misalignment. Maximum 2/3mm dependent on shaft speed.

For further information please contact our technical department.

VITON is the Registered Trade Mark of E.I. Dupont De Nemourns Inc. Delaware, USA

Metal Cased VITON® Rubber Seal



METAL MATERIALS

Outer/inner shell and base washer = Mild steel as standard.
Garter Spring = Galvanised steel as standard.
Also availible in non ferrous metals.

VITON® RUBBER SEAL

- Capable of being retrofitted for all other manufacturers types.
- Excellent for wide temperature ranges.
- Resistant to most of the special lubricants and chemicals that destroy nitrile polyacrylates or silicones.
- Superior performance and wear in heat and harsh environments.
- Used in similar applications to nitrile but having additional termperature and chemical resistance.

For multi-lip designs please consult our technical department.

VITON is the Registered Trade Mark of E.I. Dupont De Nemourns Inc. Delaware, USA

Temperature range

-40°C to + 250°C
-130°F to + 482°F

Speeds

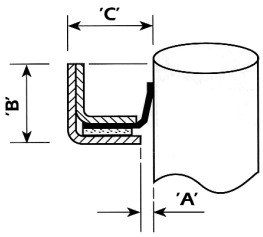
Maximum shaft speed
15m/s 49ft/s

Sizes

From
50mm O/dia to 1727mm
O/dia 2in to 68in

High Pressure P.T.F.E. Seals

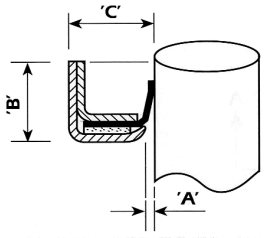
Style HHP1



SPECIAL SEAL DESIGN

Size range from 30mm 0/dia. to 530 0/dia.
Pressure up to 5 bar. Vacuum 0.1 torr.
Dimension 'A' = 0.5mm 'B' = 6mm 'C' = 7mm
Metal parts = Stainless steel (BS 1449 Pt2 1983/ANSI 1316)
Sealing element = Black or White PTFE
Captive Elastomer = VITON (up to 250°C)

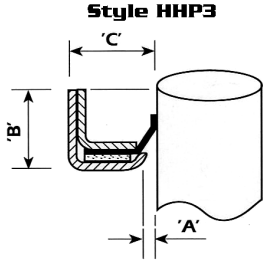
Style HHP2



SPECIAL SEAL DESIGN

Size range from 30mm 0/dia. to 530 0/dia.
Pressure up to 10 bar. Vacuum 0.1 torr.
Dimension 'A' = 0.25mm 'B' = 6mm 'C' = 7mm
Metal parts = Stainless steel (BS 1449 Pt2 1983/ANSI 1316)
Sealing element = Black or White PTFE
Captive Elastomer = VITON (up to 250°C)

Style HHP3



STANDARD SEAL DESIGN

Size range from 46mm 0/dia. to 530 0/dia.
Pressure up to 25 bar. Vacuum 0.1 torr.
Dimension 'A' = 1.5mm 'B' = 6mm 'C' = 8mm
Metal parts = Stainless steel (BS 1449 Pt2 1983/ANSI 1316)
Sealing element = Black or White PTFE
Captive Elastomer = VITON (up to 250°C)
P.T.F.E. Element is supported by metal outer case

HIGH PRESSURE P.T.F.E. SEALS

- Features pressure seal up to 25 Bar (367psi).
- Our equivalent to Garlock P.S. and Elring styles.
- Applications include Pumps, Agitators, Blowers, Rotating Compressors, Mixers, etc.
- Excellent for extreme temperatures, high pressure, high speeds and corrosive liquids & gases.
- P.T.F.E. sealing lip with any number of other combinations.

Seals are also available in multi-lip designs. For further information please consult our technical department.

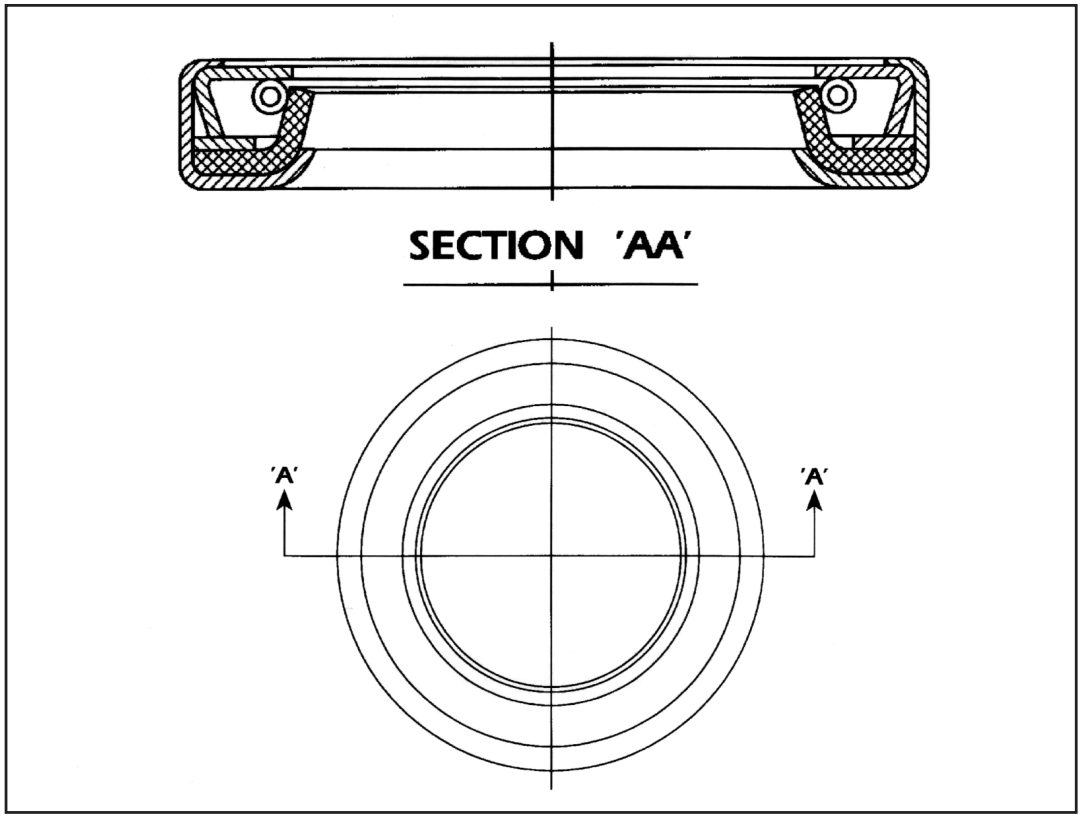
VITON is the Registered Trade Mark of E.I. Dupont De Nemourns Inc. Delaware, USA

Temperature range
-90°C to + 250°C -130°F to + 482°F

Speeds
Sealing surface speeds up to 45m/s 147.6ft/s

Sizes
From 30mm O/dia to 530mm O/dia 1.2in to 20.9in

Metal Cased P.T.F.E. Seal



METAL MATERIALS

Outer/inner shell and base washer = Mild steel as standard.
Garter Spring = Galvanised steel as standard.
Also availible in non ferrous metals.

STANDARD P.T.F.E. SEAL

- Capable of being retrofitted for all other manufacturers types.
- Excellent for wide temperature range.
- Ability to run in dry conditions.
- Very low coefficient of friction.
- Outstanding resistance to modern day chemicals.

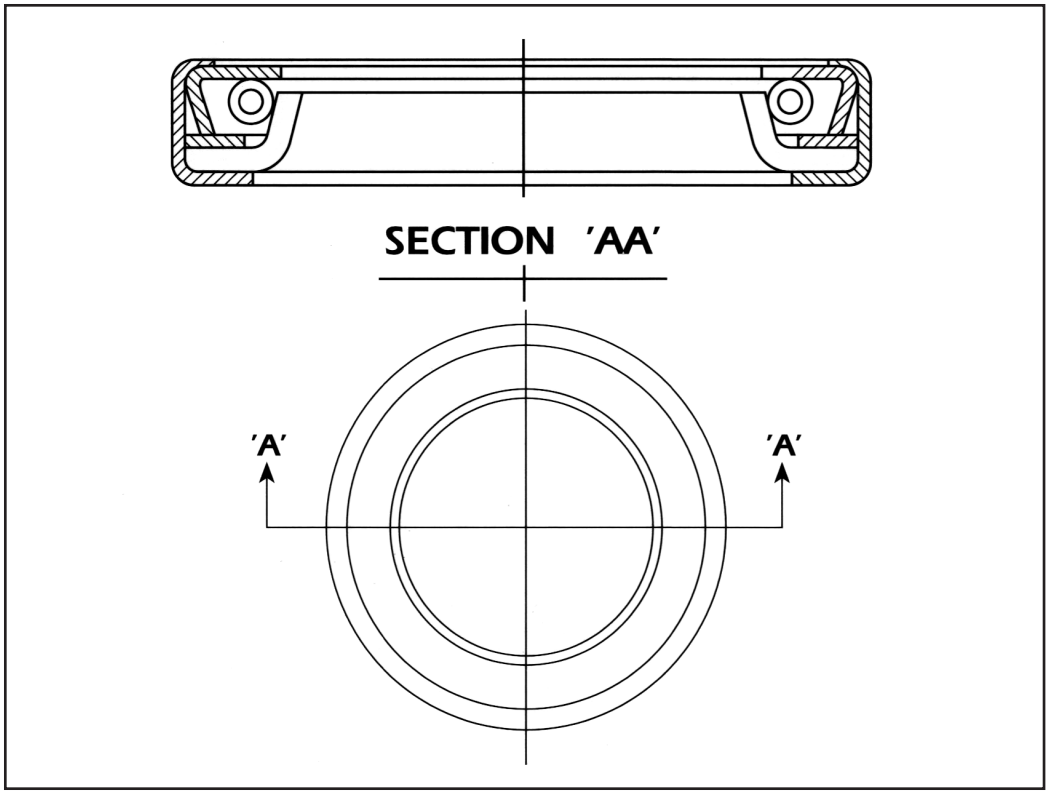
For multi-lip designs please consult our technical departments.

Temperature range
-90°C to + 300°C -130°F to + 572°F

Speeds
Maximum shaft speed 45m/s 147.6ft/s

Sizes
from 50mm O/dia to 1220mm O/dia 2in to 48in

Metal Cased Leather Oil Seal



METAL MATERIALS

Outer/inner shell and base washer = Mild steel as standard.
Garter Spring = Galvanised steel as standard.
Also availible in non ferrous metals.

METAL CASED LEATHER OIL SEAL

- Capable of being retrofitted for all other manufacturers types.
- This seal should normally be used for oils and grease.
- Particular applications for retrofit. For worn and poor shaft conditions.
- Can be used for intermittent dry running.

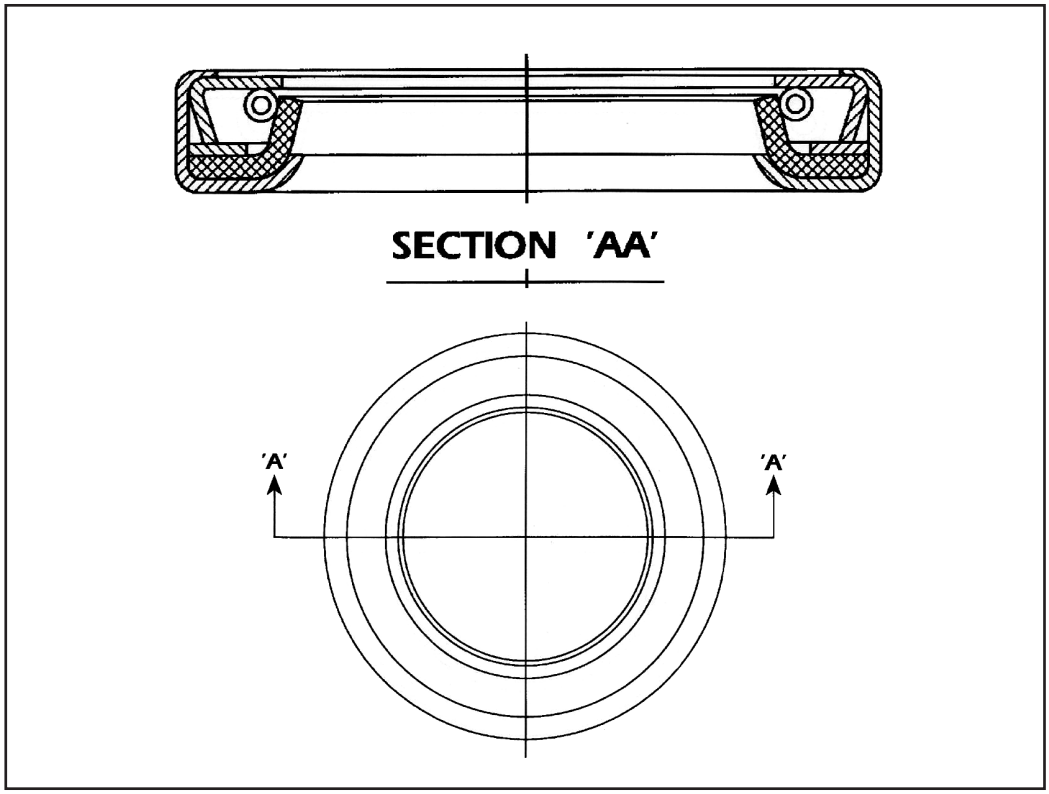
For multi-lip designs please consult our technical department.

Temperature range
-30°C to + 90°C -22°F to + 194°F

Speeds
Speeds up to 10m/s 33ft/s

Sizes
36mm O/dia to 1220mm O/dia 1.4in to 48in

Metal Cased NITRILE Rubber Seal



METAL MATERIALS

Outer/inner shell and base washer = Mild steel as standard.
Garter Spring = Galvanised steel as standard.
Also availible in non ferrous metals.

NITRILE RUBBER SEAL

- Capable of being retrofitted for all other manufacturers types.
- Excellent for most mineral oils and greases.
- Design can be manufactured from 3 Bar to 12 Bar, 44 psi to 176 psi.
- Can perform in dry running conditions only intermittently.

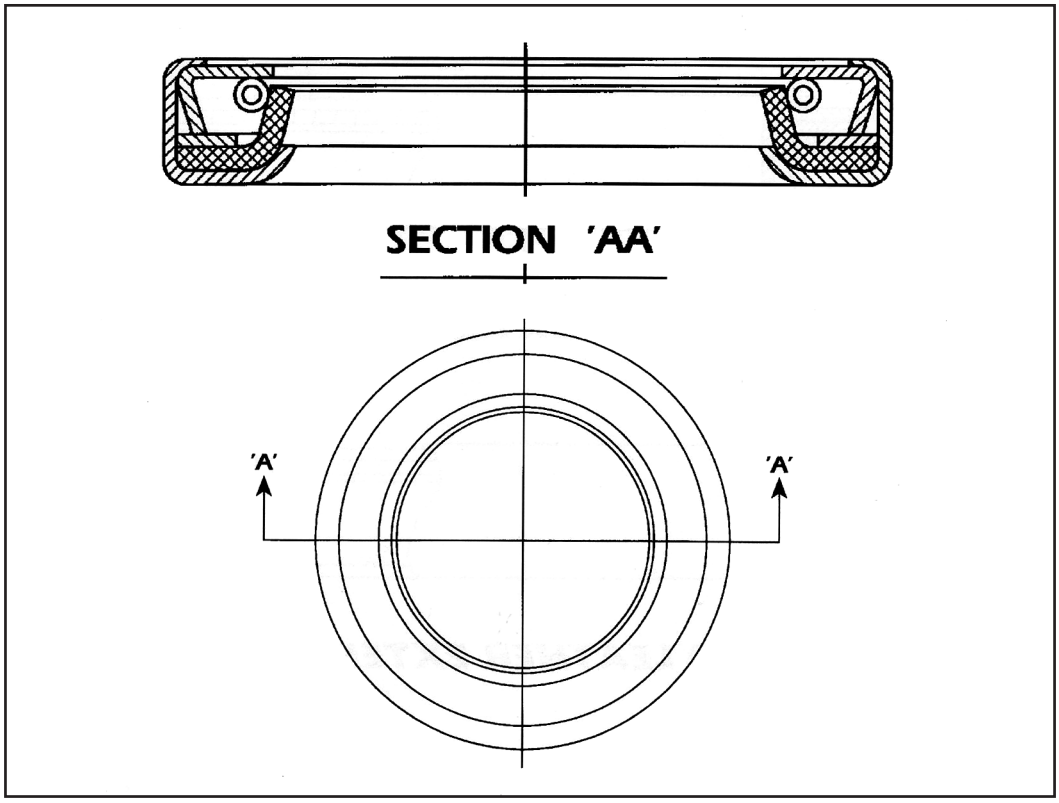
For multi-lip designs please consult our technical department.

Temperature range
-54˚C to + 120˚C -65˚F to + 248˚F

Speeds
Maximum shaft speed 15m/s 49ft/s

Sizes
Outer Diameter 50mm O/dia to 1727mm O/dia 2in to 68in

Metal Cased SILICONE Rubber Seal



METAL MATERIALS

Outer/inner shell and base washer = Mild steel as standard.
Garter Spring = Galvanised steel as standard.
Also availible in non ferrous metals.

SILICONE RUBBER SEAL

- Capable of being retrofitted for all other manufacturers types.
- Excellent for wide temperature range.
- Absorbs lubricant minimising friction and wear.
- This Material should not be used in drying conditions.

For multi-lip designs please consult our technical department.

Temperature range
-70°C to + 200°C -94°F to + 392°F

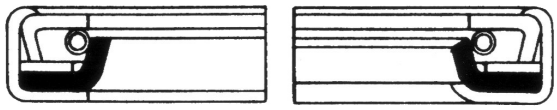
Speeds
Speeds up to 15m/s 49ft/s

Sizes
50mm O/dia to 1727mm O/dia 2in to 68in

Other available designs

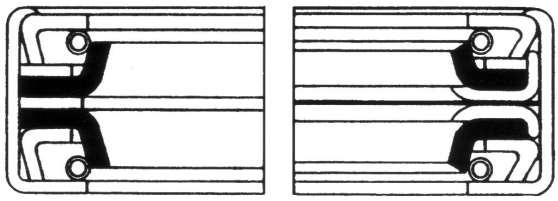
The most popular design in our range of seals. A spring loaded element enclosed in a steel casing presents a robust seal.

Standard - Leather **Standard - Rubber**



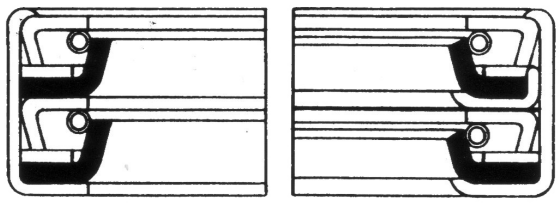
Two sealing members with opposed lips. One to exclude foreign matter the other to retain lubricant.

HD1 HD1R



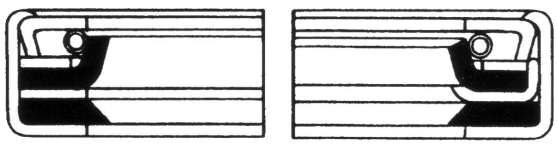
Again dual elements designed for applications of a more critical nature.

HD2 HD2R



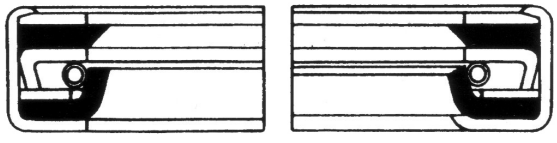
When duplicate sealing members are required, but the width does not allow HDI to be used, then HD3 is an excellent alternative. The washer prevents dirt etc, damaging the main element.

HD3 HD3R



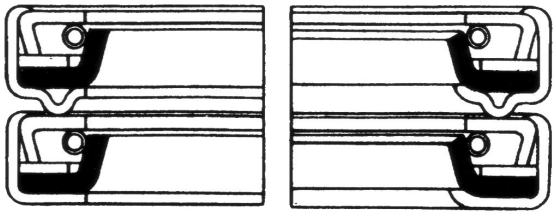
A further variation of dual sealing. Here the spring loaded element is preceded by a washer.

HD4 HD4R



From time to time arduous conditions require a special dual seal which will allow grease to be administered to the center cavity after the seal is installed, thereby cleaning the wiping lips of extraneous matter. Such is the make up of our HD5.

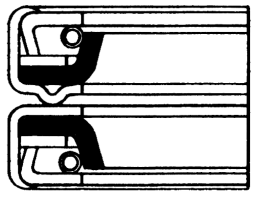
HD5 HD5R



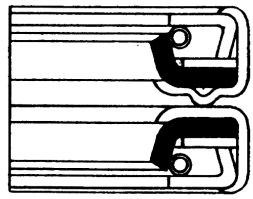
Other available designs

Two seals fitted back to back, one with indentations, which allows the easy passage of lubricant administered through a grease nipple.

HD6

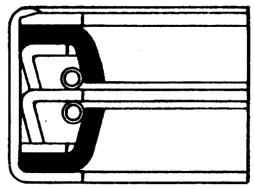


HD6R

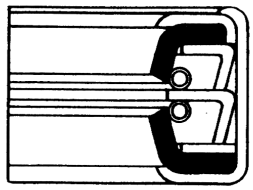


A dual seal with both lips facing each other, allowing a liberal quantity of grease to be prepacked before assembly. Particularly suitable when automatic grease feed is not possible.

HG1

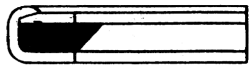


HG1R

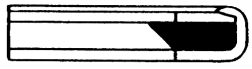


Where both axial and radial dimensions are restricted we offer a springless seal.

HG2

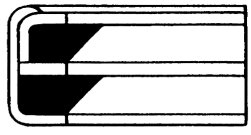


HG2R

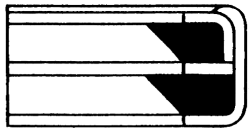


Limited space requiring dual sealing poses a problem which is overcome by our HG2 type.

HG3

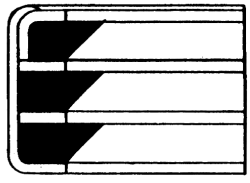


HG3R

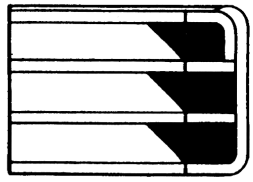


A triple lipped springless seal is ideal for grease and thick oils.

HD1



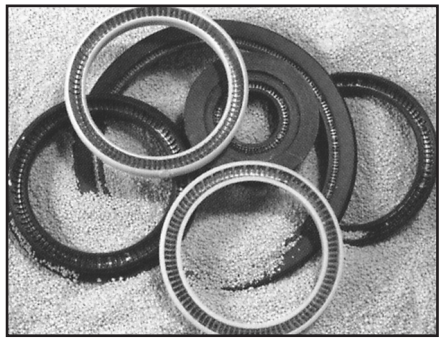
HD1R



VERTEC Teflon® Seals

Material Features

- Virtually unlimited chemical compatibility
- Minimal break-away and running friction
- Self lubricating, dry running
- Kind of soft dynamic surfaces
- Minimal temperature increase from friction



Standard Delivery 4-6 Weeks!

VERTEC Rotary Shaft Seals

Features:

- 5 standard part geometry's
- Fluorocarbon O-ring static seal on O.D.
- Standard cross section range .200 – .750
- Size range from .125" – 4.000" shafts

Function:

- Shaft speeds up to 6000 fpm
- Rotary motion only
- Pressures from vacuum to 200 PSI
- Pressure/velocity Combination 250,000 (PSI FT/MIN)
- Temperatures range from – 100 to 500F*

*Upper temperature ranges may require a non-standard seal.

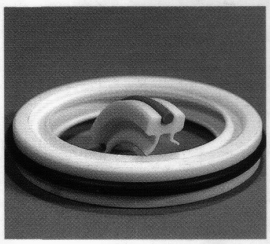
VERTEC Spring Energized Seals

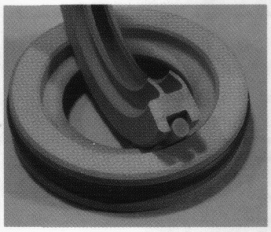
Features:

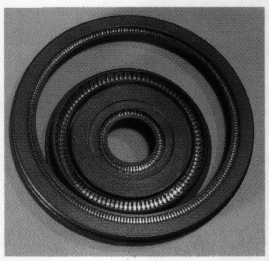
4 standard cross sections
Shaft size range .125" – 16"
4 Standard part geometry's
Stainless cantilever beam
Finger springs

Function:

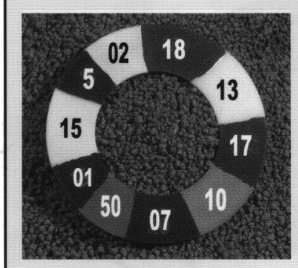
Rotary motion up to 300 fpm
Reciprocating motion
Static applications
Temperature ranges from cryogenic to 600F*
Radial and face seal geometry's
Pressure from vacuum
To 20,000+ PSI







#	SEAL TYPE	SEAL DESCRIPTION	SAMPLE PART
1	MS	SINGLE LIP SEALS ARE DESIGNED FOR ROTARY SPEEDS TO 4000 FEET PER MINUTE, AND PRESSURES TO 60 PSI. PRESSURE - VELOCITY COMBINATION TO 200,000 PV.	
2	MD	DOUBLE LIP SEALS OFFER AN ADDITIONAL LIP FACING THE PRESSURE SIDE. THE SECOND LIP INCREASES THE PRESSURE RATING TO 150 PSI. PRESSURE - VELOCITY COMBINATION TO 200,000 PV.	
3	DL	DUST LIP SEALS OFFER THE SAME FEATURES AS THE TYPE MS. THE ADDITION OF A DUST LIP FACING THE ATMOSPHERE SIDE PREVENTS ALL EXTERNAL CONTAMINATION.	
4	MR	REVERSE LIP SEALS ARE USED WHEN THE NORMAL LIP CONTACT AREA ON THE SHAFT CAN NOT BE USED. SHAFT KEYWAYS, SPLINES, AND SNAP-RING GROOVES CAN ALL BE AVOIDED WITH THIS SEAL TYPE.	
5	MB	THE DOUBLE LIP AND DOUBLE O-RING SEALS ARE SPACED TO ALLOW FOR TWO AIR PURGE OR DRAIN HOLES TO BE PLACED IN THE CENTER OF THE SEAL. CONTAMINANT BUILD UP AROUND THE PRIMARY SEALING LIP CAN BE PURGED TO INCREASE THE SEAL LIFE.	
6	PS	SPRING ENERGIZED SEAL EXCELS IN RECIPROCATING MOTION. SPECIFICALLY DESIGNED TO FIT MOST STANDARD O-RING GROOVES. THESE SEAL USE A STAINLESS STEEL CANTILEVER BEAM SPRING TO ENERGIZE THE PTFE JACKET. ADDITIONALLY, TYPE PS SEALS CAN BE USED FOR SLOW ROTAR	
7	PE	HIGHER PRESSURE SPRING ENERGIZED SEALS OFFER THE SAME FEATURES AS THE TYPE PS. THE INCREASED WIDTH ALLOWS THE SEAL TO HANDLE INCREASED PRESSURE WITHOUT FEAR OF SEAL FAILURE DUE TO EXTRUSION	
8	SS	OFFERS A SHARP SCRAPING EDGE THAT REMOVES EXCESS OIL OR DEBRIS FROM THE ROD OR BORE SURFACE. USED PRIMARILY IN RECIPROCATING APPLICATIONS. THE SCRAPING EDGE CAN BE MANUFACTURED TO MATE WITH THE EXISTING DYNAMIC SURFACE.	
9	FS	A CLAMPING FLANGE PREVENTS THE SEAL FROM ROTATING WITH THE DYNAMIC SURFACE. SPECIAL HARDWARE CONFIGURATION MAY BE REQUIRED. CONSULT THE FACTORY FOR RECOMMENDATIONS.	

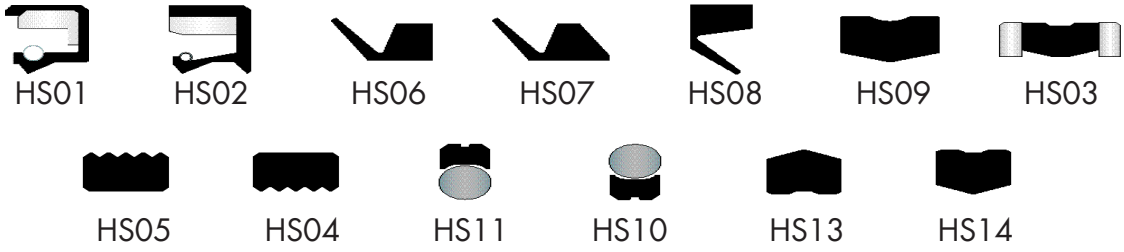


CODE	MATERIAL DESCRIPTION	RECOMMENDED CONTACT SURFACE HARDNESS MIN.	COLOR
01	GRAPHITE FILLED PTFE, OFFERS LOW WEAR, LOW COEFFICIENT OF FRICTION, A SUPERIOR MATERIAL FOR DYNAMIC APPLICATIONS, KIND TO SOFT HARDWARE MATERIALS	ROCKWELL B 76	BLACK
02	MINERAL FILLED PTFE, FDA APPROVED MATERIALS ARE COMBINED TO ACHIEVE: IMPROVED WEAR, LONGER LIFE, AND FDA CLEARANCE. THIS SEAL MATERIAL IS USED IN BOTH STATIC AND DYNAMIC APPLICATION.	ROCKWELL B 76	OFF WHITE
13	VIRGIN PTFE, USED IN STATIC AND VERY SLOW DYNAMIC APPLICATIONS. VERY GOOD CRYOGENIC CAPABILITIES AND IS FDA APPROVED	ROCKWELL B 76	WHITE
18	FIBERGLASS AND MOLYBDENUM DISULFIDE FILLED PTFE, USED IN STATIC AND DYNAMIC PRESSURIZED APPLICATIONS FOR SUPERIOR SEAL LIFE	ROCKWELL C 41	GRAY BLACK
07	PROPRIETARY FDA APPROVED FILLED PTFE. APPROVED FOR DAIRY CONTACT, OFFERS SUPERIOR WEAR CHARACTERISTICS THAT EXCEED OTHER MATERIALS USED IN DYNAMIC FOOD AND DRUG PROCESSING EQUIPMENT APPLICATIONS.	ROCKWELL B 76	BLACK
15	FIBERGLASS FILLED PTFE, HAS ADDED STRENGTH FOR APPLICATIONS WITH HIGH TEMPERATURE AND PRESSURE COMBINATIONS, ALSO USED IN HIGH PRESSURE APPLICATIONS FOR ITS EXTRUSION RESISTANCE	ROCKWELL C 41	OFF WHITE
25	FIBERGLASS FILLED PTFE, VERY SIMILAR TO 06 MATERIAL WITH HIGHER FIBERGLASS CONTENT FOR ADDED STRENGTH AND EXTRUSION RESISTANCE AT ELEVATED TEMPERATURES AND PRESSURES	ROCKWELL C 41	OFF WHITE
17	CARBON FILLED PTFE USED PRIMARILY AS A BACK-UP RING MATERIAL WORKING IN COMBINATION WITH ANOTHER SEAL. MATERIAL OFFERS HIGH TEMPERATURE AND EXTRUSION RESISTANCE.	ROCKWELL C 41	BLACK
09	CARBON GRAPHITE FILLED PTFE, USED IN SEALING ABRASIVE MEDIA SUCH AS DUST, SAND, OR WATER. EXCELLENT FOR HARSH ATMOSPHERIC CONDITIONS, CAN BE USED ON SOFTER MATING MATERIALS	ROCKWELL B 76	BLACK
10	POLYIMIDE FILLED PTFE, OFFERS LOW WEAR AND SUPERIOR LOW FRICTION PROPERTIES, KIND TO SOFTER MATING SURFACES, EXCELLENT FOR DYNAMIC NON-LUBRICATED APPLICATIONS	ROCKWELL B 76	GOLD
11	AEROMATIC FIBER FILLED PTFE, OFFERS LOW WEAR, AND LOW FRICTION PROPERTIES, USED IN NON ABRASIVE HIGH TEMPERATURE APPLICATIONS, EXCELLENT LOW SPEED AND STATIC MATERIAL	ROCKWELL B 76	TAN BROWN
27	PROPRIETARY FILLED PTFE, OFFERS LOW WEAR AND FRICTION PROPERTIES, USED IN GENERAL APPLICATIONS WHERE LONG SEAL LIFE IS REQUIRED. NOT RECOMMEND FOR ABRASIVE APPLICATIONS.	ROCKWELL B 76	GRAY PURPLE
05	PROPRIETARY FILLED PTFE, OFFERS LOW WEAR AND EXCEPTIONAL THERMAL STABILITY. USED IN LARGER DIAMETERS WHERE BORE RETENTION IS CRITICAL. SHOULD BE CONSIDERED FOR RECIPROCATING AND SLOW ROTARY MOVEMENT.	ROCKWELL C 50	GRAY BLACK

Made-To-Order Parts

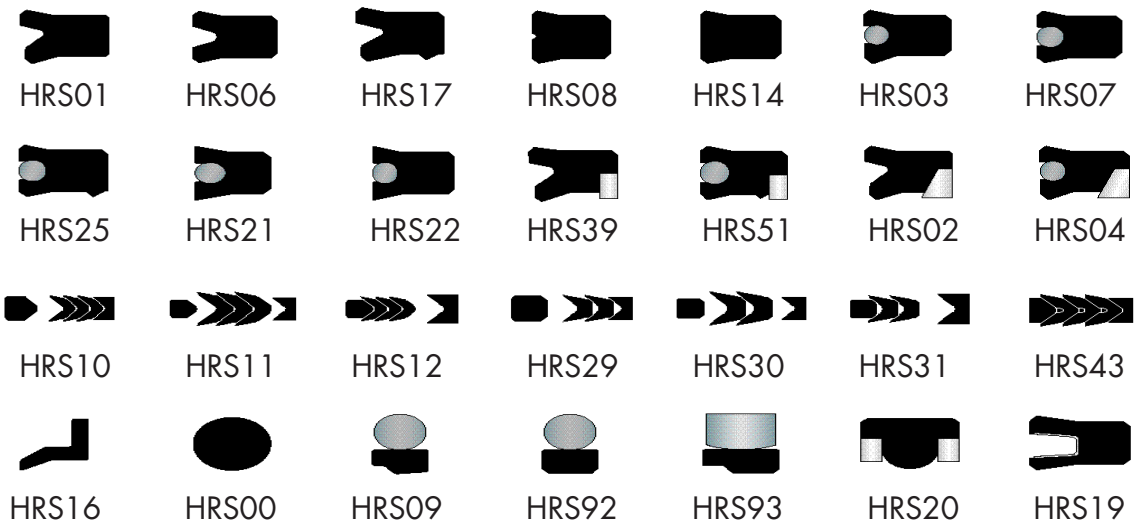
7-10 business day delivery on most parts.
Expediting is available in as little as 2 business days!

Rotary Shaft Seals



Rod Wiper Seals

Rod Seals



Available Materials	Material Code	Material Color
General Purpose Polyurethane	GP-PUR	Clear, Cream, Black, Green
Hot Water Resistant Polyurethane	H-PUR	Blue, Red
Nitrile Buna Rubber	NBR	Black
Hydrogenated Nitrile	H-NBR	Green, Black
Flourocarbon	Viton®, FKM	Brown, Black
Ethylene Propylene	EPDM	Black
Silicone	SIL	Orange, Light Blue
Floro-Silicone	F-SIL	Blue, White
Perflouroelastomer	Aflas®	Black
Ultra High Molecular Weight Polyethylene	UHMW	White

Available Materials	Material Code	Material Color
Polyacetal	Pom	White, Black, Orange
Polyetheretherkeytone	Virgin Peek	Tan
Thermoplastic Elastomer	Hytrel	Black, Natural
Polyamid	Nylon	Black, Natural, Orange, Blue
PTFE Filled Polyamid	Turcite X	Turquoise
Polytetrafluoroethylene	Virgin PTFE	White
Polytetrafluoroethylene	TFB40%	Bronze
Polytetrafluoroethylene	TFN Nickel Filled PTFE	Gray
Polytetrafluoroethylene	TFC Carbon Graphite	Black
Composites	Phenolic Polyester,Linen	White, Blue

Made-To-Order Parts

7-10 business day delivery on most parts.
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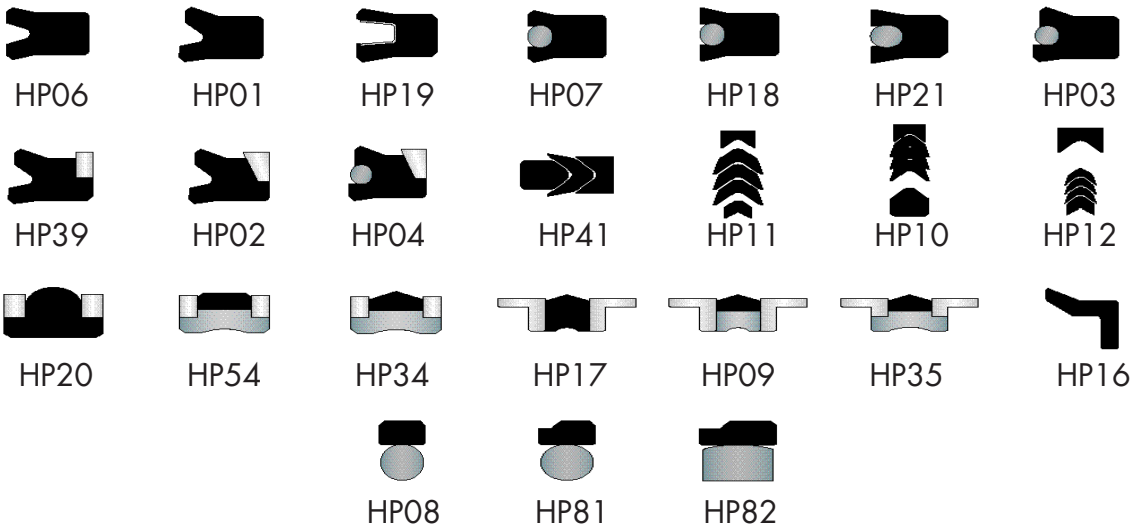
Guide Bands

HG01 HG03 HG04 HG05 HG06 HG07 HG08

Back-Up Rings

HB01 HB09 HB10 HB11 HB12 HB13

Piston Seals



HP06 HP01 HP19 HP07 HP18 HP21 HP03

HP39 HP02 HP04 HP41 HP11 HP10 HP12

HP20 HP54 HP34 HP17 HP09 HP35 HP16

HP08 HP81 HP82

Available Materials	Material Code	Material Color
General Purpose Polyurethane	GP-PUR	Clear, Cream, Black, Green
Hot Water Resistant Polyurethane	H-PUR	Blue, Red
Nitrile Buna Rubber	NBR	Black
Hydrogenated Nitrile	H-NBR	Green, Black
Flourocarbon	Viton®, FKM	Brown, Black
Ethylene Propylene	EPDM	Black
Silicone	SIL	Orange, Light Blue
Floro-Silicone	F-SIL	Blue, White
Perflouroelastomer	Aflas®	Black
Ultra High Molecular Weight Polyethylene	UHMW	White

Available Materials	Material Code	Material Color
Polyacetal	Pom	White, Black, Orange
Polyetheretherkeytone	Virgin Peek	Tan
Thermoplastic Elastomer	Hytrel	Black, Natural
Polyamid	Nylon	Black, Natural, Orange, Blue
PTFE Filled Polyamid	Turcite X	Turquoise
Polytetrafluoroethylene	Virgin PTFE	White
Polytetrafluoroethylene	TFB40%	Bronze
Polytetrafluoroethylene	TFN Nickel Filled PTFE	Gray
Polytetrafluoroethylene	TFC Carbon Graphite	Black
Composites	Phenolic Polyester,Linen	White, Blue

HARWAL

Serving America's Power Transmission Industry

Warranty

Harwal International warrants that all products sold shall be free from defects in material and workmanship for a period of one year from date of purchase. At our option, any product proven unable to meet the sealing and design capabilities for which it was produced shall be replaced free of charge including freight charges, but not the cost of installation, and providing that the product was not subject to negligence, accident, or damages beyond our control. The seller renders all technical advice, recommendations and services gratis. They are based on technical data which the seller believes to be reliable, and are intended for use by persons having skill and know-how, at their own discretion and risk. All other warranties, expressed or implied, including warranty of merchantability, are hereby disclaimed. We shall not be responsible for consequential damages in whole or in part.

Claims - Returns

Claims covering shortages or errors on shipments must be reported within 15 days after invoice date. Merchandise may not be returned without verbal authorization. A restocking charge of up to 50% may be applied unless an offsetting order is placed at time of return.

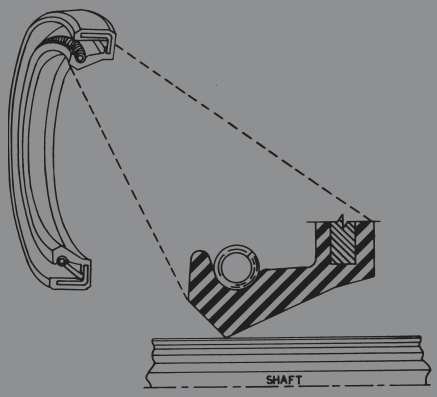
Credit Policy

Our payment terms for all open accounts are NET 30 days. Accounts outstanding over 30 days are reviewed daily. All accounts that reach 50 days past due (80 days from invoice date) may be automatically changed to a C.O.D. account. Accounts that are over 90 days past due will be on hold, and a C.O.D. plus FULL back balance will be necessary for orders to ship. To avoid C.O.D. fees a credit card may be used. Harwal accepts VISA or MASTERCARD for your convenience.

Information Policy

Harwal International makes great efforts to assure the information in this catalog to be accurate. However because of the sheer number of items being added and/or being discontinued, errors may exist.

Comments or suggestions are greatly appreciated!



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