



SEAL SCIENCE, INC.

PolyKing™ and PolySpring™ Seals

Piston and Rod Seals for
MIL-G-5514F and Industrial Glands

PolyKing and PolySpring Seals and Seal Systems

Seal Science is your One-Stop source for almost every type of Seal and Seal System component. Seal Science offers the user the ability to select standard and Special Seals as well as custom engineered and manufactured components. Our molding, machining, bonding and stamping abilities can fabricate just about anything you can design! Call Seal Science For:

Seals	PolyKing O-Ring loaded U-cups PolySpring, spring loaded PTFE Seals Piston & Rod U-cups Wipers & Excluders T- Seals & Capped T-Seals Seals Kits & Assemblies Custom Seals Piston & Rod PTFE & Urethane Seals
Seal Design	Seal Science engineering staff has decades of experience to assist in the most difficult applications.
Materials	Seal Science offers a wide range of Rubber, Urethane, PTFE, High Performance Elastomers, TPE, and High Performance Plastics.
Processes	Seal Science utilizes Compression, Transfer and Injection Molding and Bonding; CNC, Manual and Screw Machining, Ram Extruding and Sintering, Close Tolerance Grinding, High Speed Knife Trimming, Die Cutting and Stamping.

When you need to specify, design or order Seals or Components

Call Seal Science!

Other Seal Science Products

- Molded Rubber
- Bonded Rubber
- Rubber Grinding
- Conductive Elastomers
- Vacuum Cups
- Diaphragms
- Injection Molded Performance Plastics
- Injection Molded Urethanes & TPE
- Die-Cutting and Stamping
- Machined Plastics
- O-Rings and Back Up Rings
- Rotary Shaft seals

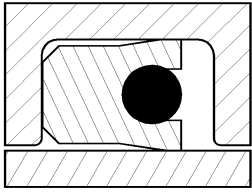
Table of Contents

Introduction (How to use this catalog)	Section A
The Full range of seals	1
Seal Selection Guide	3
Seal Selection Charts	6
Trouble Shooting Guide	11
Seals for Standard industrial Grooves	Section B
PolyKing Styles	1
PolyKing Part Numbering Systems	2
PolyKing Groove Design Guide (Table 1)	3
PolyKing Part Numbers	5
Seals for Standard Industrial O-Ring Grooves	Section C
PolyKing Styles For No Back-Up Width O-Ring Grooves	1
Standard Industrial No Back-Up Width O-Ring Grooves (Table 2)	2
PolySpring Styles For No Back-Up Width O-Ring Grooves	3
PolySpring Part Numbering System	4
PolyKing Styles For One and Two Back-Up Width Industrial O-Ring Grooves	5
Part Numbering System for One and Two Back-Up Width PolyKings	5
Standard One and Two Back-Up Width Industrial Grooves (Table 3)	6
PolyKing Piston and Rod O-Ring Energized Square and Rectangular Cap Seals (Table 4)	7
Standard Grooves For O-Ring Energized Square and Rectangular Cap Seals	8
Wipers	Section D
Standard Wiper Styles	1
Standard Wiper Grooves and Part Numbering System (Table 5)	2
Materials	Section E
Elastomer Jacket and Lip Materials (Table 6)	1
Elastomer Energizer & Back-Up Ring Materials (Tables 7 and 8)	3
Engineered Plastic Jacket & Cap Material & Spring Materials (Tables 9 and 10)	4
PolyKings and PolySprings for MIL-G-5514F Grooves	Section F
PolyKing F Styles for MIL-G-5514F Grooves	1
PolySpring F Styles for MIL-G-5514F Grooves	2
MIL-G-5514 Grooves	3
Flat Caps for Mil-G5514F Bore With Nonstandard Groove	7
Flat Caps for Mil-G5514F Rod With Nonstandard Groove	8
Wear Rings	Section G
Wear Rings	1
Engineering Application Form	Inside back cover

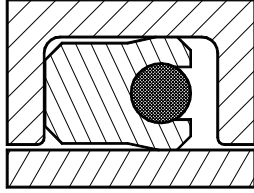
The information contained in this catalog is based on reliable sources, test data and our experience. We believe it to be accurate. However, it is intended only as a guide for use at your discretion. The performance of seals depends on many factors not necessarily in Seal Science Incorporated's control. Seal Science Incorporated is not responsible for design suitability. Therefore, it is strongly recommended that you have the part(s) tested in your assembly, using your equipment, material and manpower. There are no warranties which extend beyond the description in this catalog. Seal Science Incorporated assumes no liability for special or consequential damages.

Seal Science

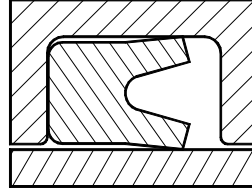
Typical Seal Styles for Industrial Grooves



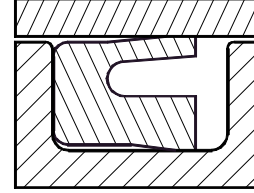
PolyKing O



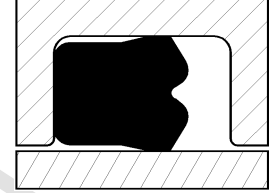
PolyKing B



PolyKing US

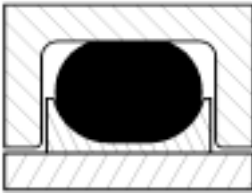


PolyKing TL

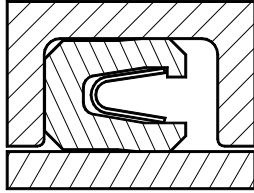


PolyKing HE

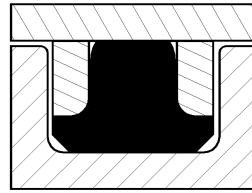
Typical Seal Styles for Standard Industrial O-Ring Grooves



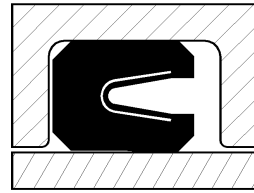
PolyKing C



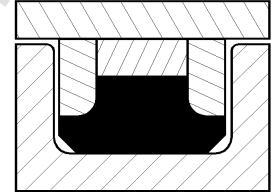
PolySpring



PolyKing T

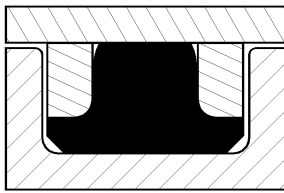


PolyKing S

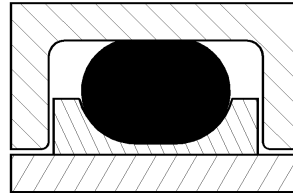


PolyKing H

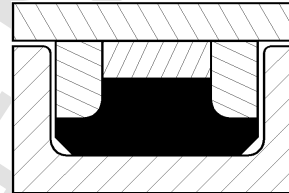
Typical Seal Styles for Wide Industrial O-Ring Grooves



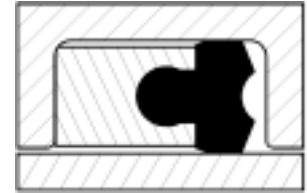
PolyKing TW



PolyKing CW

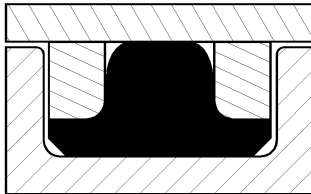


PolyKing HW

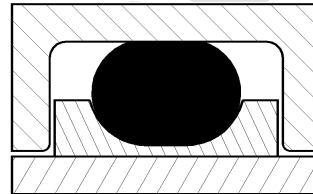


Poly King HB

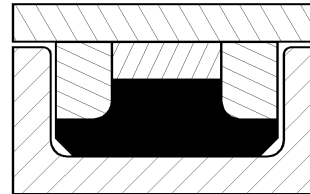
Typical Seal Styles for Extra Wide Industrial O-Ring Grooves



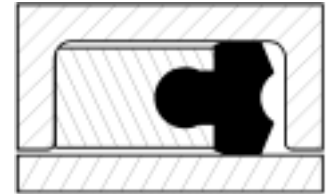
PolyKing TX



PolyKing CX

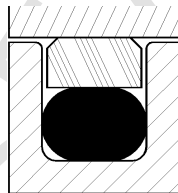


PolyKing HX

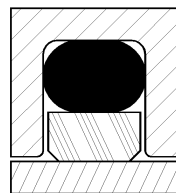


Poly King HBX

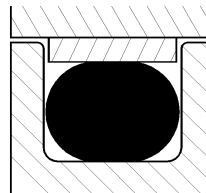
Typical Seal Styles for Standard Cap Seal Grooves



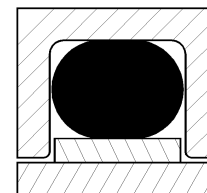
PolyKing PP



PolyKing PR



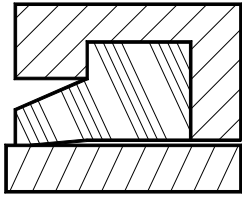
PolyKing PP



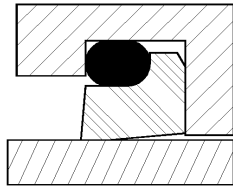
PolyKing PR

Seal Science

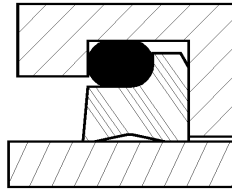
Typical Seal Styles for Standard Wiper Grooves



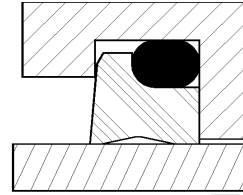
Excluder D



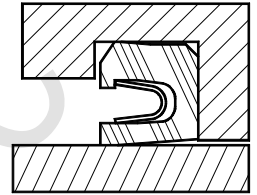
Excluder B



Excluder DC

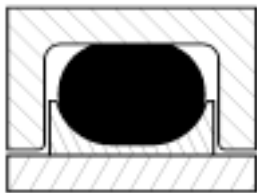


Excluder CD

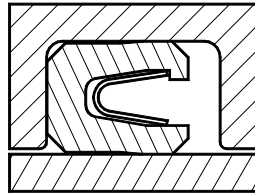


Excluder S

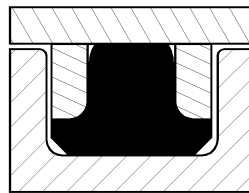
Typical Seal Styles for MIL-G-5514 Rev F Grooves No Back-Up Width



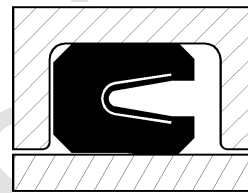
PolyKing FC



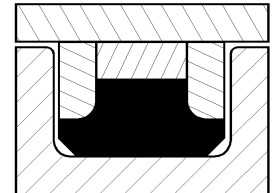
PolySpring F



PolyKing FT

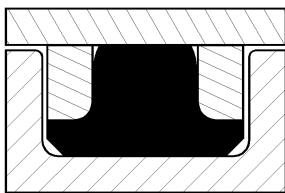


PolyKing FS

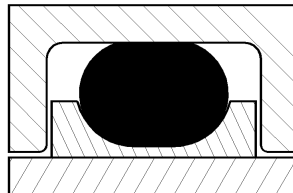


PolyKing FH

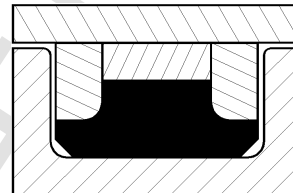
One Back-Up Width



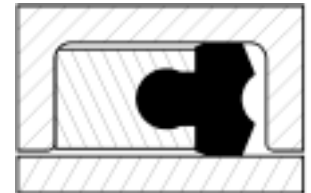
PolyKing FT1



PolyKing FC1

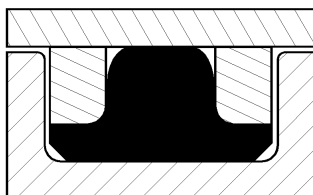


PolyKing FH1

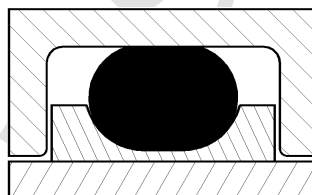


PolyKing FHB

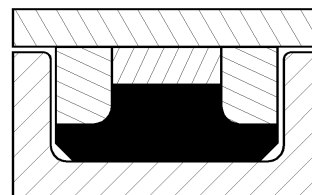
Two Back-Up Width



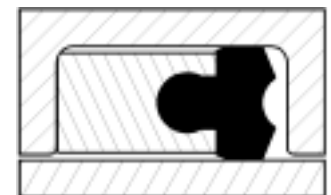
PolyKing FT2



PolyKing FC2

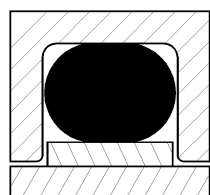


PolyKing FH2

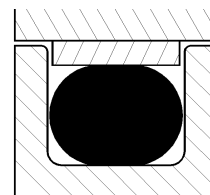


PolyKing FHD

Typical Seal Styles for Mil-G-5514 Rod or Bore with special Grooves



PolyKing FPR



PolyKing FPP

Seal Science, Inc.

Seal Selection Guide

To help with selecting the proper Sealing Components for your applications, we have developed the following Work Sheet for your use. All areas of this guide may not pertain to your specific application, but fill this out as thoroughly as possible. Proper Seal Selection must include consideration in the following 5 essential areas:

- A. Application Type**
- B. Seal Material Selection**
- C. Engineering Considerations**
- D. Hardware Information**
- E. Sealing Requirements**

A. Application Type

Determine your application(s) type from the following:

New Design _____ Existing Design _____ Qty/year _____

Target price _____ O-Ring _____ Gasket _____ Other _____

Piston _____ Rod _____ Face _____ Rotary Shaft _____

Are prototypes needed? _____ When? _____ Testing Required _____

Type and length of qualification tests _____

Previous design and failure description _____

B. Seal Material Selection

The optimum material should be selected to insure compatibility with all fluids and gases in a system. Be certain to include an analysis of all media. For example, lube oils and greases are often overlooked. Exposure for a shorter period of time and at lower percentage concentrations can mean longer seal lives. The material selection may involve analyzing how much of the seal is exposed to exactly what media.

Careful attention should also be paid to the temperatures a seal may be exposed to. High or low temperatures can greatly affect a seal's life and performance. It is critical to try to determine the true exposure levels and deviations for optimal material selection. (The selection chart 3 can help to begin the search for the optimum seal material)

List all media being selected _____

C. Engineering Considerations

The following questionnaire will give the designer some application issues to consider. Analyze all mechanical components and how they operate individually and in concert with all other system hardware.

1. Is the seal Static _____ Dynamic _____
2. Lowest Sealing temp. _____ Duration _____
3. Highest Sealing temp. _____ Duration _____
4. Normal Operation temp. _____ Duration _____
5. Sealing pressure: Operating _____ Proof _____ Burst _____
6. Is the pressure constant? _____
7. Are there pressure pulsations? _____ Dithering? _____
8. What is the pressure differential across the seal? _____
9. What is the stroke? _____ Frequency _____ Speed _____
10. Rotation _____ Degrees _____ Speed _____
11. Oscillation _____ Describe _____
12. Dynamic duty cycle in minutes/hr or day _____
13. Friction limitations _____
14. Seal life required _____
15. Potential environmental contamination to be excluded _____

D. Hardware Considerations

Analysis should be given to insure proper room for seal grooves, to minimize clearance gaps, to apply the proper materials, and processes to optimize finishes at the seal surface area.

1. Bore dia. _____ Material _____ Hardness _____ Finish _____
2. Rod dia. _____ Material _____ Hardness _____ Finish _____
3. Rod Groove Dia. _____ Tolerance _____ Surface Finish _____
Rod Groove width _____ Tolerance _____
4. Wiper Groove Dia. _____ Tolerance _____ Clearance Dia. _____
Wiper Groove width _____ Tolerance _____
5. Piston Dia. _____ Material _____ Tolerance _____ Finish _____
6. Piston Groove Dia. _____ Tolerance _____ Surface Finish _____
Piston Groove Width _____ Tolerance _____
7. Wear ring groove dia. _____ (or) Bore _____ Tolerance _____
Wear ring groove width _____ Tolerance _____
8. Clearance Gap: Rod/Bore _____
Piston/Bore _____
9. Are there system bearings? _____
10. Are there groove and or general machining constraints or considerations? _____

E. Sealing Requirements

1. What is the allowable leak rate? _____

2. Are there seal installation concerns? (Seals in difficult grooves, threads, sharp areas) _____

3. Are there component assembly concerns? _____

4. Do you need installation tools/tooling? _____

5. Do you need help with tooling design? _____

6. Do you have slip-stick concerns? (Dynamic stroke chatter or noise) _____

Now that you have the

- A. Application type**
- B. Seal Material Selection**
- C. Engineering Considerations**
- D. Hardware Information**
- E. Sealing Requirements**

You are now ready to analyze the type or types of seal designs that may best apply to your criteria. But first consider the following:

1. Remember to compensate for seal squeeze volume displacement in compression seal type applications. Rubber is basically not compressible. You are merely forcing a volume displacement.
2. If this is a replacement seal for an existing application, see the "trouble shooting guide" found on page A-11.

Remember, the addition of lubricants to the elastomer and/or the use of PTFE & PTFE filled materials can help decrease friction and change some selection criteria. At this point, you may have to consider this before making your final choice. You may also have to choose more than one style of seal as there are often multiple selections that may be acceptable. Cost and availability is a consideration at times. Please consult Seal Science with your application information and we can assist you in designing and selecting the optimum seal for your testing.

If you need assistance, there is a compact form of this application work sheet on the inside back cover. Please photocopy it, fill it out and fax it to Seal Science.

Use the following charts to begin your selection:

Chart 1 For seal cross section type

Chart 2 For seal lip configuration

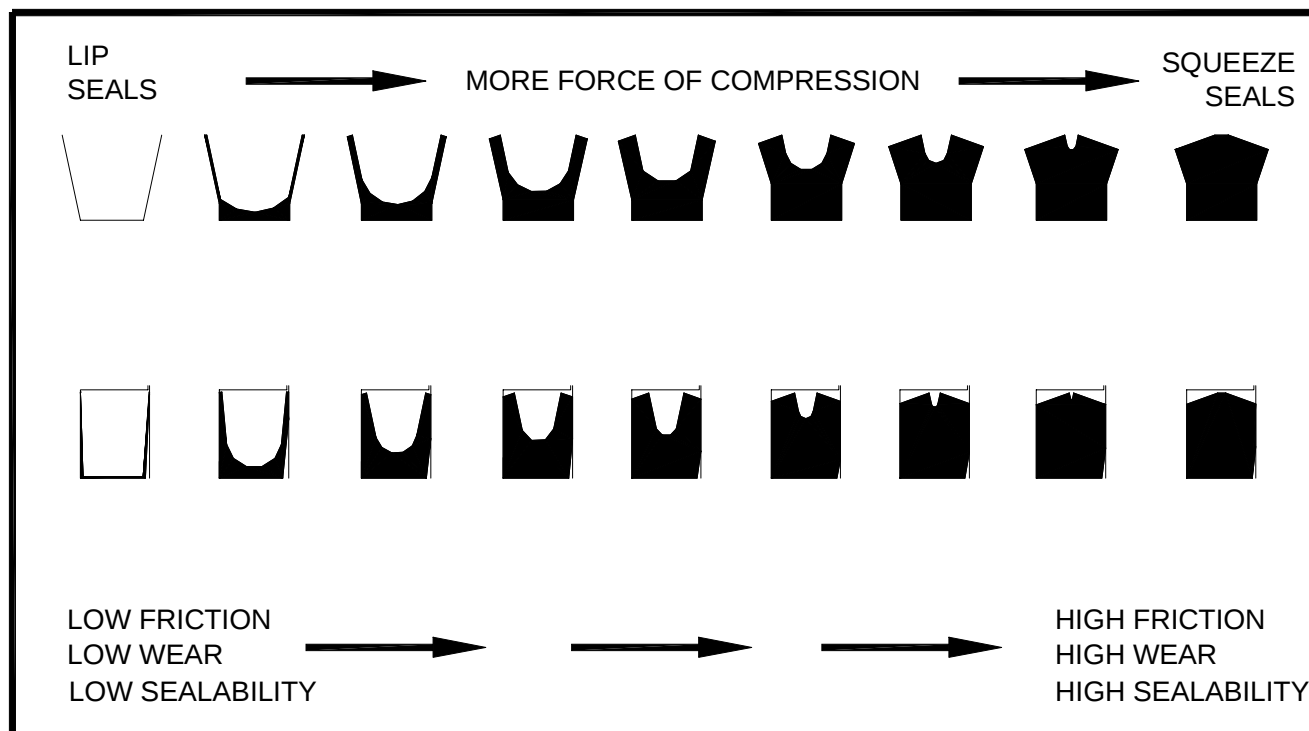
Chart 3 For basic material selection

Chart 4 For relative material costs

Use the rest of our catalog for your specific Sealing Components and their material selection.

SEAL CROSS SECTION TYPE

COMPRESSION VS WEAR & FRICTION COMPARISON
CHART 1



EFFECTS OF LIP CONFIGURATION
CHART 2

	LIP SHAPE	LIP INSTALLED	PRESSURE PATTERN	SEALABILITY	HYDROPLANING RESISTANCE	CONTAMINATION RESISTANCE
1	>	>		HIGH	HIGH	POOR
2	7	7		HIGH	HIGH	GOOD
3	)	)		MEDIUM	MEDIUM	POOR
4	]	]		LOW	LOW	GOOD
5	/	/		LOW	LOW	EXCELLENT

POLYMER DESCRIPTION AND GENERAL INFORMATION CHART 3

Material		Chemical Group	Generally Resistant to	Generally Attacked by
Thermosets				
NR, IR	Natural Rubber. Isoprene	Polyisoprene	Most moderate wet or dry chemicals, organic acids, alcohols, ketones, aldehydes	Ozone, strong acids, fats, oils, greases, most hydrocarbons
SBR, BR	Butadiene, Styrene butadiene	Styrene, Butadiene copolymer, Polybutadiene	Similar to Natural Rubber	Similar to natural rubber
IIR	Butyl	Isobutylene, Isoprene polymer	Water and steam	Petroleum solvents, coal, tar, solvents, aromatic hydrocarbons
EPM, EPDM	Ethylene Propylene	Ethylene Propylene copolymer and terpolymer	Water, steam and brake fluids	Mineral oils and solvents, aromatic hydrocarbons
NBR	Nitrile	Butadiene, Acrylonitrile copolymer	Many hydrocarbons, fats, oils, greases, hydraulic fluids, chemicals	Ozone, ketones, esters, aldehydes, chlorinated and nitro hydrocarbons
HNBR	Hydrogenated Nitrile	Butadiene, Acrylonitrile copolymer	Similar to NBR but with improved chemical resistance and higher service temperature	Ozone, ketones, esters, aldehydes, chlorinated and nitro hydrocarbons
CO, ECO	Epichlorohydrin	Epichlorohydrin polymer and copolymer	Similar to NBR with ozone resistance	Ketones, esters, aldehydes, chlorinated and nitro hydrocarbons
CR	Neoprene®	Chloroprene polymer	Moderate chemicals and acids, ozone, fats, greases, many oils and solvents	Strong oxidizing acids, ketones, esters, chlorinated, aromatic and nitro hydrocarbons
CSM	Hypalon®	Chlorosulfonated polyethylene	Similar to Neoprene with improved acid and ozone resistance	Concentrated oxidizing acids, esters, ketones, chlorinated, aromatic and nitro hydrocarbons
CM, CPE	Tyran®	Chlorinated polyethylene	Similar to Neoprene with improved acid and ozone resistance	Concentrated oxidizing acids, esters, ketones, chlorinated, aromatic and nitro hydrocarbons
T	Polysulfide	Organic Polysulfide polymer	Ozone, oils, solvents, thinners, esters, ketones, aromatic hydrocarbons	Mercaptans, chlorinated and nitro hydrocarbons, esters, amines, heterocyclics
SI, VQM	Silicone	Organic Silicone polymer	Moderate or oxidizing chemicals, ozone, concentrated sodium hydroxide	Many solvents, oils, concentrated acids, dilute sodium hydroxide
FSI, FVMQ	Fluorosilicone	Fluorinated organic Silicone polymer	Moderate or oxidizing chemicals, ozone, aromatics chlorinated solvents, bases	Brake fluids, hydrazine, ketones

POLYMER DESCRIPTION AND GENERAL INFORMATION CHART 3

Material		Chemical Group	Generally Resistant to	Generally Attacked by
Thermosets				
TFE/P	Tetrafluoroethylene-propylene	Fluorinated copolymer	Steam, amines and amine corrosion inhibitors, caustics, high pH media. wet sour gas, oil	Aromatic hydrocarbons, chlorinated solvents, ethers, limited in low temperatures
ACM	Polyacrylate	Copolymer of acrylic ester and acrylic halide	Ozone, extreme pressure, lubricants, hot oils, petroleum solvents, animal and vegetable fats	Water, alcohol, glycols, alkali, esters, aromatic hydrocarbons, halogenated hydrocarbons, phenol
FKM# 1	Fluoroelastomer	Standard fluorocarbon dipolymer 66% fluorine	All aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils	Ketones, low molecular weight esters and alcohols and nitrogen containing compounds
FKM# 2	Fluoroelastomer	Standard or special type fluorocarbon. Typically >66% fluorine	Same as FKM #1. Greater chemical resistance	Ketones, low molecular weight esters and nitrogen containing compounds
	Zalak®	Proprietary fluorocarbon	Greater resistance to acid, base, alcohol, amine and esters than FKM	Nitrogen containing compounds
FFKM	Perfluoroelastomer	Fully fluorinated fluorocarbon	Best fluid resistance of any elastomer	Fluorocarbon containing refrigerants cause minor effects
Thermoplastics				
AU, EU	Urethane	Urethane polymer	Ozone, hydrocarbons, moderate chemicals, fats, oils and greases	Concentrated acids, esters, ketones, chlorinated and nitro hydrocarbons and hot water
PTFE	Polytetrafluoroethylene		Nearly inert	Metallic sodium, fluorocarbon containing refrigerants cause minor swelling
UHM W	Ultra High Molecular Weight	Polyethylene	Water, oils, weak acids, alcohols	Ethers, ozone, strong acids, toluene, turpentine, vinyl acetate and chlorinated solvents
PA	Nylon	Polyamide	Oils, esters, ketones hydrocarbons	Hydroscopic, acids and alcohols
PK		Polyketone		
PEEK	Polyetheretherketone		Alcohols, aldehydes, ketones, bases, esters, hydrocarbons, oils.	Strong acids, halogens, phenol and sodium

Noeprone, Hypalon, Tyrin and Zalac are registered trademarks of DuPont Dow



MATERIAL COST COMPARISONS CHART 4

RELATIVE COSTS, MEDIA COMPATIBILITY AND GENERAL TEMPERATURE RANGES

NITRILES - 1 – 3*

Regular	- NBR	-60 to 275 F
Carboxilated	- XNBR	-60 to 300 F
Highly Saturated	- HNBR	-50 to 350 F
Oil resistance/Hydrocarbons		

EPDM - 1.5 – 3*

Oxidation/Brakes fluid water		-50 to 300 F
Conductives/Nonconductive		

NATURAL - 1 – 3*

High tensile/ Good wear		-70 to 300 F
-------------------------	--	--------------

NEOPRENE - 1.5 – 3*

Water resistance		-60 to 300 F
------------------	--	--------------

FLUOROCARBON - 15 – 50*

VITON – Dupont, 3M, Ausimont, Daikin		-15 to 400 F
Chemical Resistance		

AFLAS - 15 – 25* - Dupont only

Oilfield downhole, acids		-20 to 375 F
--------------------------	--	--------------

SILICONE - 3 – 7*

Temperature resistance		-80 to 400 F
High heat – Static seals – FDA –Medical, Conductives		
Compression, transfer, liquid injection		
HIGH TEMP GRADES TO	600 F	
LOW TEMP GRADES TO	-175 F	

FLUOROSILICONE - 20 – 30*

Chemical resistance –better than Silicone		-100 to 375 F
High temp – Chemical resistance		
Poor Gas Permeability		

URETHANE - 4 – 7*

Wear resistance – High tensile		
TPU 70A Duro to D hardnesses		-60 to 200 F
MILLABLE 30 A Duro and up		-60 to 275 F

PERFLUOROELASTOMERS - 400 - 3,000*

Cost and availability depending on market conditions		-5 to 400 F
Excellent chemical resistance		
Excellent temperature resistance		



MATERIAL COST COMPARISONS CHART 4

RELATIVE COSTS, MEDIA COMPATIBILITY AND GENERAL TEMPERATURE RANGES

UHMW/PE	1 – 3*	-450 to 180° F Not resistant to ethers, ozone, strong acids, toluene, turpentine, vinyl acetate and chlorinated solvents
Nylon	2.25 – 3*	
Moly filled Nylon	3.50 – 4*	
Acetal	2 – 4*	
Polyketone (PK)	10 – 20*	-100 to 375° F
Polytetrafluoroethylene (PTFE)	5 – 8*	-100 to 450° F Not resistant to metallic sodium and swells slightly in fluorinated media
Filled Polytetrafluoroethylene (PTFE)	5 – 30*	-100 to 450° F Not resistant to metallic sodium and swells slightly in fluorinated media. Also, chemical resistance is diminished by the fillers.
Modified Polytetrafluoroethylene	12 – 18*	-100 to 450° F Not resistant to metallic sodium and swells slightly in fluorinated media
Polyetheretherketone (PEEK)	35 – 60*	

* Relative cost.

DISCLAIMER: SEAL SCIENCE DOES NOT WARRANTY OR GUARANTEE ANY OF THE ABOVE INFORMATION. EACH APPLICATION HAS UNIQUE CONDITIONS. INFORMATION PROVIDED AS A GENERAL GUIDE ONLY. CONSULT SEAL SCIENCE ENGINEERING FOR ACTUAL APPLICATION AND TECHNICAL INFORMATION.



PROBLEM SOLVING AND TROUBLESHOOTING

Proper seal selection is critical to avoid sealing problems or failure. However, various changes in application or unforeseen operating conditions may require evaluation of the seal after selection.

Careful examination of the sealing components is helpful to solve the problem. Seal problems usually occur one of two ways, by leakage or by friction. The following discussion of failure modes is useful to correct or optimize seal selection.

A. Leakage –Slow

1. Installation Damage – a small nick or cut creates instant leakage
2. Insufficient low pressure sealing – caused by:
 - a. Insufficient interference at sealing lip
 - b. Seal wear or compression set
 - c. Chemical induced shrinkage
3. Lack of proper static seals or o-rings
4. Frictional wear – See G.
5. Small amounts of debris or contaminant lodged in the system
6. Sudden overheating of other components
7. Out-of-Alignment mating components – See H.

B. Leakage – Progressive

1. Excessive wear
2. Excessive compression set of sealing surface
3. Propagating or growing tear, wear or score mark

C. Leakage – Catastrophic

1. Torn seal
2. Extrusion of seal out of gland area
3. Spiral/ twisting of seal surface within the gland
4. Pressure failure caused by:
 - a. Over pressure or system “spike”
 - b. Incorrect/Improper orientation of 2 opposing seals
5. Excessive Contamination

D. Leakage – Irregular

1. Start up leakage due to low pressure or cold mating surfaces
2. Irregular loading over a large range
3. Temperature and viscosity changes
4. Spike loads



E. Friction – “Stiction”

1. Inadequate lubrication due to:
 - a. excessive or fine finish on mating surfaces
 - b. contamination of fluid
 - c. deterioration of fluid
 - d. viscosity change
 - e. worn surface treatment (if used on seal)

F. Friction – Seizing

1. Damaged or bent components
2. Pressure trap between opposing seals
3. Extrusion of seal out of gland causes interference
4. Seal swell caused by an incompatible fluid
5. Mis-orientation of seal on installation or during operation

G. Friction – Scoring

1. External contamination caused by lack of/incorrect wiper or scraper
2. Installation contamination
3. Excessive loads or off-center loads caused metal to metal damage at Mating surfaces

H. Friction – Drift

1. Improper/unequal loading
2. Incorrect/poor wear rings

I. Friction – Drag

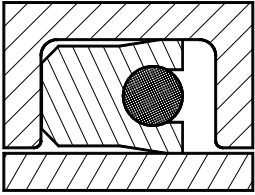
1. Incorrect seal, seal size, or seal interference
2. Expansion of components caused by temperature
3. Seal swelling caused by incompatible fluid or lubricant
4. Misoriented or incorrectly installed seal.
5. Excessive contamination and debris

J. Friction – Temperature

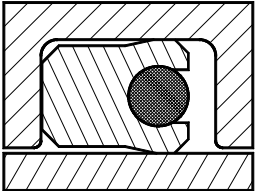
1. Improper lubrication caused by:
 - a. deteriorating fluid
 - b. contaminated fluid
 - c. diluted fluid
 - d. Swelling of seal

PolyKing Styles

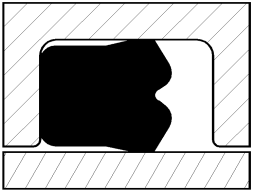
For Standard Industrial Grooves



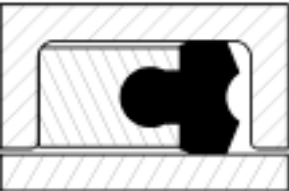
PolyKing O: Can be either a rod or a piston seal. This seal is an o-ring energized version of the U-Cup. It is a uni-directional seal and can be made from any combination of elastomer compounds. Temperature and fluid compatibility are limited by the elastomer compounds. The standard compounds are 90A urethane jacket and nitrile expander.



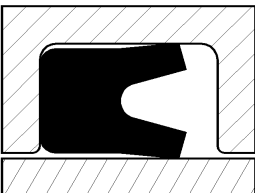
PolyKing B: Can be either a rod or a piston seal. This seal is a bevel lip version of the PolyKing O. This improves sealability at the expense of higher friction and the potential to hydroplane at high speed. Temperature and fluid compatibility are similar to the PolyKing O. The standard compounds are 90A urethane jacket and nitrile expander.



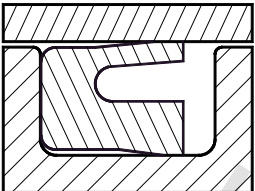
PolyKing HE: The homogenous PolyKing E can be used as either a rod or a piston seal. This uni-directional seal has the stability of a square ring with greater sealability than an o-ring. Temperature is limited by the elastomer compound. The standard compound is 70A nitrile.



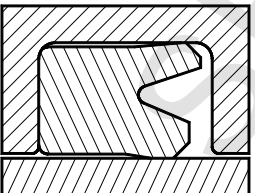
PolyKing HB: Can be either a rod or a piston seal. This uni-directional seal has the advantage of an elastomer sealing lip with good stability and extrusion resistance. Temperature and fluid compatibility are limited by the elastomer and heel materials. The standard compounds are 60D urethane heel and 70A nitrile lip.



PolyKing US: Can be either a rod or a piston seal. This seal has the lowest molding cost of the seals in this catalog. It is a uni-directional seal and can be made from any elastomer compound. Temperature and fluid compatibility are limited by the elastomer compound. The standard compound is 90A urethane.



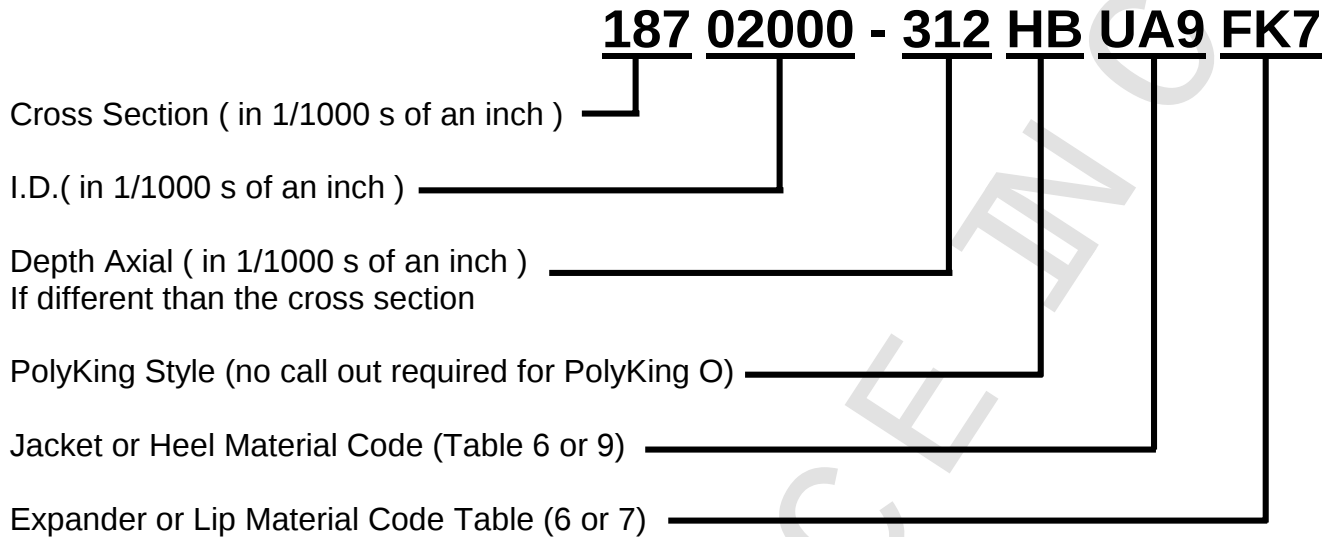
PolyKing TLP and TLR: Normally used as a piston seal in pneumatic applications that can tolerate a small amount of leakage. This is a very low friction uni-directional seal that can be made from any elastomer compound. Temperature is limited by the elastomer compound. Call out if rod or piston. The standard compound is 90A urethane.



PolyKing UNP and UNR: The unsymmetrical U-Cup can be used as either a rod or a piston seal. Temperature is limited by the elastomer compound. Call out if rod or piston. Available with a bump heel. The standard compound is 90A urethane.

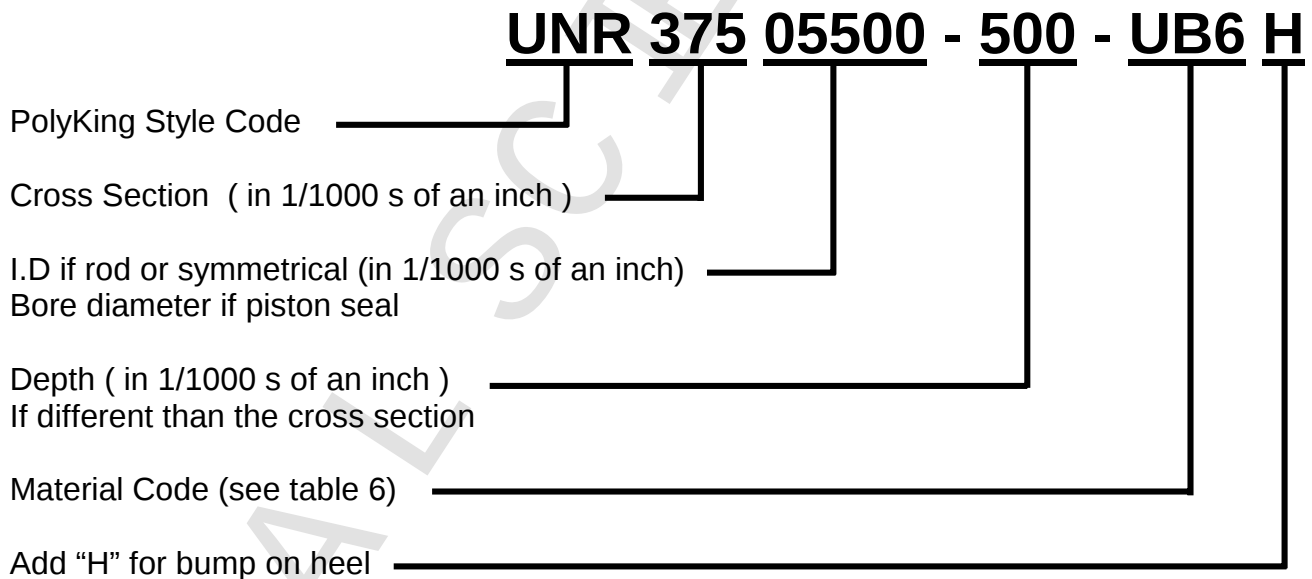
Part Numbering Systems

Part Numbering System for PolyKing B, HB, HE and O Styles



Both material codes are required if either is not the standard for the part.

Part Numbering System for PolyKing UNP, UNR, US, TLP and TLR Styles



Please contact Seal Science for available sizes.

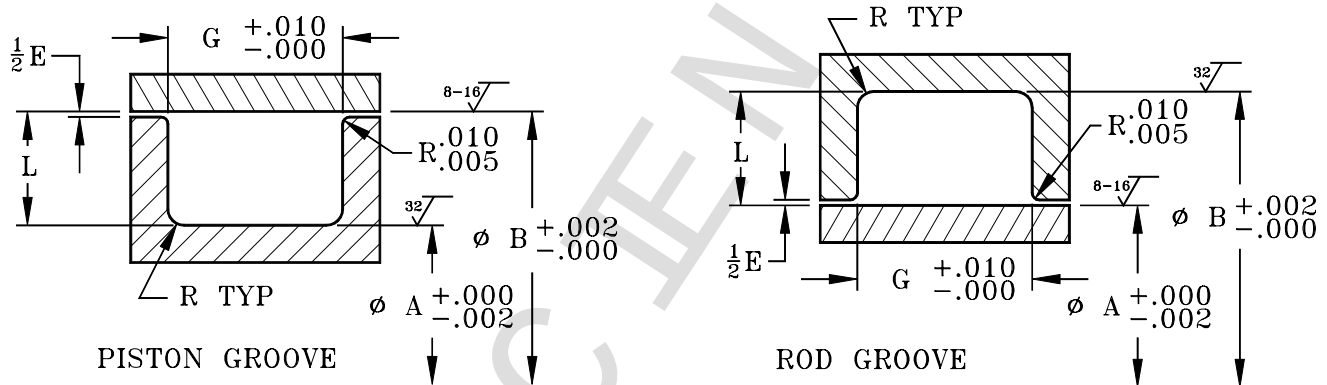
Industrial Grooves for PolyKing

B, HB, HE, O, TLP, TLR, UP, UR and US

Table 1

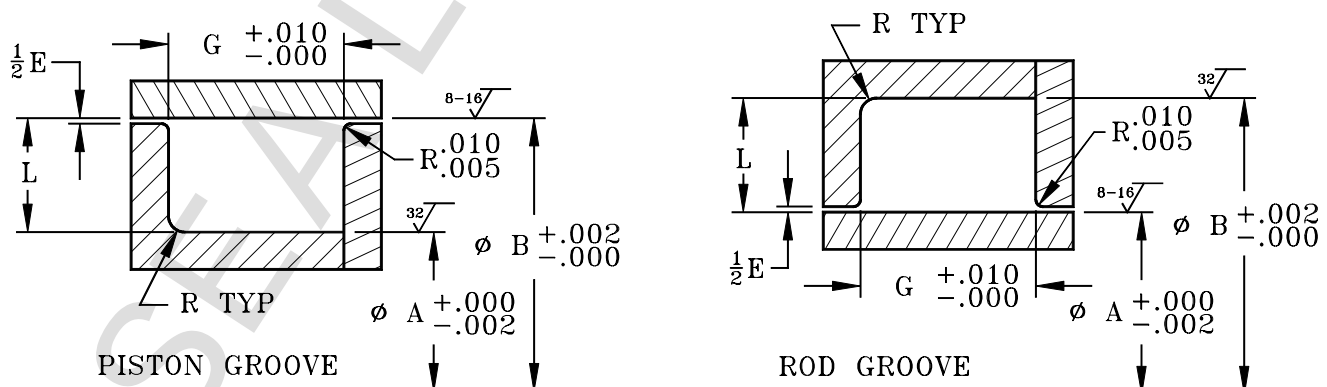
Cross Section	L	Ø A	Ø B	G	R	Diameter A Range	E max
1/8	.125	ØB-.250	ØA+.250	Equals seal length times 1.1 (or plus 10%)	.010/.025	.125/1.250	.004
3/16	.188	ØB-.376	ØA+.376		.010/.025	.187/4.500	.005
1/4	.250	ØB-.500	ØA+.500		.010/.025	.250/16.000	.006
5/16	.312	ØB-.625	ØA+.625		.020/.035	.375/16.500	.007
3/8	.375	ØB-.750	ØA+.750		.020/.035	.500/17.000	.008
1/2	.500	ØB-1.000	ØA+1.000		.020/.035	1.000/18.000	.010
5/8	.625	ØB-1.250	ØA+1.250		.020/.035	1.250/20.000	.012
3/4	.750	ØB-1.500	ØA+1.500		.020/.035	3.000/24.000	.014
1.000	1.000	ØB-2.000	ØA+2.000		.020/.035	3.000/32.000	.018

One Piece Groove



Two Piece Groove

For ease of installation use this style of groove when the smaller diameter divided by the cross section is less than 20 ($\phi A/L < 20$).



Design and Part Number Examples

- 1) Design a gland starting with a 2 inch diameter rod, determine the groove dimensions for a 3/16 inch cross section and specify the part number for a PolyKing O. Go to page B-3 for the groove dimensions.

$$\varnothing A = 2.000/1.998$$

$$\varnothing B = 2.000 + .375 = 2.375 \text{ add the tolerance and } \varnothing B = 2.375/2.377$$

$$G = \text{Seal length plus } 10\% \quad .188 \times 1.1 = .207 \text{ include the tolerance } .207/.217$$

Check for the groove style: $\varnothing A/L = 2.000/.188 = 10.6$ therefore a two piece groove should be used.

Then go to page B-2 for the part numbering system.

The part number is: **18702000**

Note: The PolyKing Style designator is omitted because this is a PolyKing O. Because the materials are the designated standards, the material codes are also omitted.

- 2) Design a groove for a low friction pneumatic piston seal starting with a 10 inch diameter bore, determine the groove dimensions for a 1/4 inch cross section and specify the part number for a PolyKing TLP made out of 90A urethane. Go to page B-3 for groove dimensions.

$$\varnothing B = 10.000/10.002$$

$$\varnothing A = 10.000 - .500 = 9.500 \text{ add the tolerance and } \varnothing A = 9.500/9.498$$

$$G = \text{Seal length plus } 10\% \quad .250 \times 1.1 = .275 \text{ include the tolerance } .275/.285$$

Check for the groove style: $\varnothing A/L = 9.500/.250 = 38.0$ therefore a one piece groove may be used.

Go to page B-2 for the part numbering system.

The part number is: **TLP250-10000-UA9**

- 3) Design a gland for a 2000 psi hydraulic bi-directional piston seal. The bore diameter is 6 inches and you want a 1/4 cross section. Also specify the part number.

Since this is an high pressure application a PolyKing H is the best choice. And, if the fluid is standard hydraulic oil, a nitrile energizer will work fine. For long life a bronze filled TFE cap and Moly filled Nylon back-up rings are ideal. Go to page C-2 for the groove dimensions.

$$\varnothing B = 6.000/6.002$$

$$\varnothing A = 6.000 - .500 = 5.500 \text{ add the tolerance and } \varnothing A = 5.500/5.498$$

$$G = .375/.385$$

The Piston diameter is 5.993/5.999 in order to keep the extrusion gap "E" to a minimum.

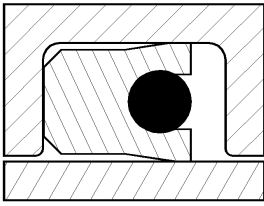
Check for the groove style: $\varnothing A/L = 5.500/.250 = 22$ therefore a one piece groove may be used.

Go to page C-1 for the part numbering system.

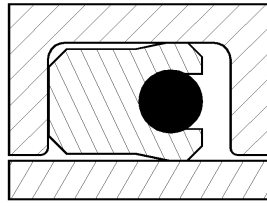
The part number is: **KHP4-06000-T80-N-N20**

- 4) Design a gland for a 9000psi rod seal. The rod is 3 inches in diameter and you want a cross section of 1/4 inch. Also specify the part number.

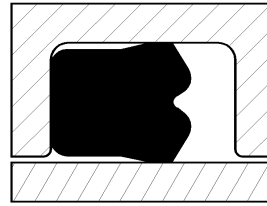
This pressure is outside of the capability of these seals. Please contact the factory for any **very high pressure or unusual seal problem.**



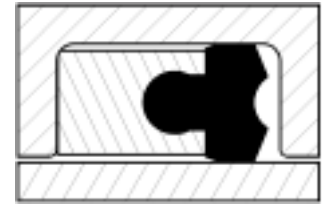
PolyKing O



PolyKing B



PolyKing HE



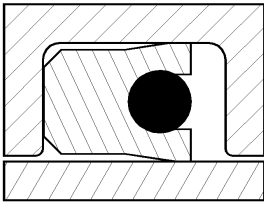
PolyKing HB

X(X) at the end of the part number is the PolyKing style

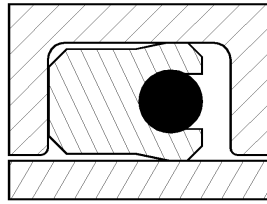
1/8" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	HEIGHT
12500062X(X)	1/16	5/16	1/8
12500093X(X)	3/32	11/32	1/8
12500125X(X)	1/8	3/8	1/8
12500125-250 X(X)	1/8	3/8	1/4
12500140X(X)	9/64	25/64	1/8
12500187X(X)	3/16	7/16	1/8
12500187-250 X(X)	3/16	7/16	1/4
12500250X(X)	1/4	1/2	1/8
12500250-250 X(X)	1/4	1/2	1/4
12500312X(X)	5/16	9/16	1/8
12500312-250 X(X)	5/16	9/16	1/4
12500359X(X)	23/64	39/64	1/8
12500375X(X)	3/8	5/8	1/8
12500375-187 X(X)	3/8	5/8	3/16
12500375-250 X(X)	3/8	5/8	1/4
12500437X(X)	7/16	11/16	1/8
12500437-250 X(X)	7/16	11/16	1/4
12500500X(X)	1/2	3/4	1/8
12500500-250 X(X)	1/2	3/4	1/4
12500531X(X)	17/32	25/32	1/8
12500562X(X)	9/16	13/16	1/8
12500562-250 X(X)	9/16	13/16	1/4
12500625X(X)	5/8	7/8	1/8
12500625-125 X(X)	5/8	7/8	1/8
12500625-187 X(X)	5/8	7/8	3/16
12500625-250 X(X)	5/8	7/8	1/4
12500687X(X)	11/16	15/16	1/8
12500687-250 X(X)	11/16	15/16	1/4
12500750X(X)	3/4	1	1/8
12500750-125 X(X)	3/4	1	1/8
12500750-187 X(X)	3/4	1	3/16
12500750-250 X(X)	3/4	1	1/4
12500800-250 X(X)	.800	1.050	1/4
12500812X(X)	13/16	1 1/16	1/8
12500812-125 X(X)	13/16	1 1/16	1/8
12500812-250 X(X)	13/16	1 1/16	1/4
12500875X(X)	7/8	1 1/8	1/8
12500875-187 X(X)	7/8	1 1/8	3/16
12500875-250 X(X)	7/8	1 1/8	1/4
12500906X(X)	29/32	1 5/32	1/8
12500937X(X)	15/16	1 3/16	1/8
12500937-250 X(X)	15/16	1 3/16	1/4
12501000X(X)	1	1 1/4	1/8

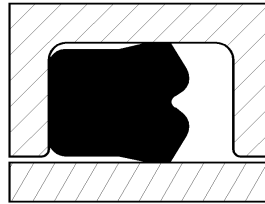
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	HEIGHT
12501000-156 X(X)	1	1 1/4	5/32
12501000-172 X(X)	1	1 1/4	.172
12501000-187 X(X)	1	1 1/4	3/16
12501000-250 X(X)	1	1 1/4	1/4
12501062X(X)	1 1/16	1 5/16	1/8
12501062-170 X(X)	1 1/16	1 5/16	.170
12501062-250 X(X)	1 1/16	1 5/16	1/4
12501125X(X)	1 1/8	1 3/8	1/8
12501125-250 X(X)	1 1/8	1 3/8	1/4
12501187X(X)	1 3/16	1 7/16	1/8
12501187-187 X(X)	1 3/16	1 7/16	3/16
12501187-250 X(X)	1 3/16	1 7/16	1/4
12501250X(X)	1 1/4	1 1/2	1/8
12501250-187 X(X)	1 1/4	1 1/2	3/16
12501250-250 X(X)	1 1/4	1 1/2	1/4
12501312X(X)	1 5/16	1 9/16	1/8
12501312-187 X(X)	1 5/16	1 9/16	3/16
12501375X(X)	1 3/8	1 5/8	1/8
12501375-125 X(X)	1 3/8	1 5/8	1/8
12501375-250 X(X)	1 3/8	1 5/8	1/4
12501437X(X)	1 7/16	1 11/16	1/8
12501437-250 X(X)	1 7/16	1 11/16	1/4
12501500X(X)	1 1/2	1 3/4	1/8
12501500-125 X(X)	1 1/2	1 3/4	1/8
12501500-250 X(X)	1 1/2	1 3/4	1/4
12501562X(X)	1 9/16	1 13/16	1/8
12501625X(X)	1 5/8	1 7/8	1/8
12501625-250 X(X)	1 5/8	1 7/8	1/4
12501687X(X)	1 11/16	1 15/16	1/8
12501750X(X)	1 3/4	2	1/8
12501750-250 X(X)	1 3/4	2	1/4
12501875X(X)	1 7/8	2 1/8	1/8
12501875-125 X(X)	1 7/8	2 1/8	1/8
12502000X(X)	2	2 1/4	1/8
12502000-187 X(X)	2	2 1/4	3/16
12502000-250 X(X)	2	2 1/4	1/4
12502125X(X)	2 1/8	2 3/8	1/8
12502125-250 X(X)	2 1/8	2 3/8	1/4
12502250X(X)	2 1/4	2 1/2	1/8
12502375X(X)	2 3/8	2 5/8	1/8
12502375-250 X(X)	2 3/8	2 5/8	1/4
12502500X(X)	2 1/2	2 3/4	1/8
12502500-250 X(X)	2 1/2	2 3/4	1/4



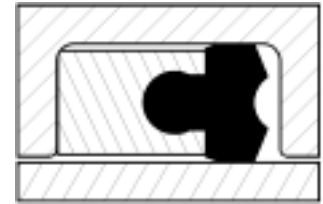
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	HEIGHT
12502625X(X)	2 5/8	2 7/8	1/8
12502750X(X)	2 3/4	3	1/8
12502875X(X)	2 7/8	3 1/8	1/8
12503000X(X)	3	3 1/4	1/8
12503000-250 X(X)	3	3 1/4	1/4
12503250X(X)	3 1/4	3 1/2	1/8
12503500X(X)	3 1/2	3 3/4	1/8
12503500-250 X(X)	3 1/2	3 3/4	1/4
12503625X(X)	3 5/8	3 7/8	1/8

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	HEIGHT
12503625-187 X(X)	3 5/8	3 7/8	3/16
12504000X(X)	4	4 1/4	1/8
12504250X(X)	4 1/4	4 1/2	1/8
12504375X(X)	4 3/8	4 5/8	1/8
12504500X(X)	4 1/2	4 3/4	1/8
12504500-187 X(X)	4 1/2	4 3/4	3/16
12504750X(X)	4 3/4	5	1/8
12505000X(X)	5	5 1/4	1/8
12505750X(X)	5 3/4	6	1/8

5/32" CROSS SECTION

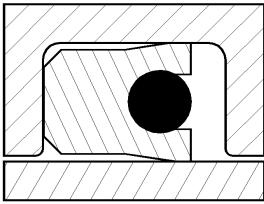
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
15600437X(X)	7/16	3/4	5/32
15600750X(X)	3/4	1 1/16	5/32
15600937X(X)	15/16	1 1/4	5/32
15601000X(X)	1	1 5/16	5/32
15601062X(X)	1 1/16	1 3/8	5/32
15601187X(X)	1 3/16	1 1/2	5/32

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
15601250X(X)	1 1/4	1 9/16	5/32
15601375X(X)	1 3/8	1 11/16	5/32
15601500X(X)	1 1/2	1 13/16	5/32
15601500-312 X(X)	1 1/2	1 13/16	5/16
15602062X(X)	2 1/16	2 3/8	5/32

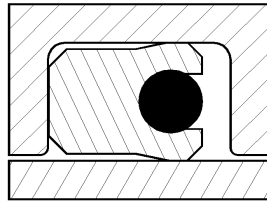
3/16" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
18700187X(X)	3/16	9/16	3/16
18700250X(X)	1/4	5/8	3/16
18700250-312 X(X)	1/4	5/8	5/16
18700312X(X)	5/16	11/16	3/16
18700312-312 X(X)	5/16	11/16	5/16
18700375X(X)	3/8	3/4	3/16
18700375-312 X(X)	3/8	3/4	5/16
18700437X(X)	7/16	13/16	3/16
18700437-312 X(X)	7/16	13/16	5/16
18700500X(X)	1/2	7/8	3/16
18700500-312 X(X)	1/2	7/8	5/16
18700562X(X)	9/16	15/16	3/16
18700562-312 X(X)	9/16	15/16	5/16
18700625X(X)	5/8	1	3/16
18700625-312 X(X)	5/8	1	5/16
18700656X(X)	21/32	1 1/32	3/16
18700687X(X)	11/16	1 1/16	3/16
18700687-312 X(X)	11/16	1 1/16	5/16
18700750X(X)	3/4	1 1/8	3/16
18700750-250 X(X)	3/4	1 1/8	1/4

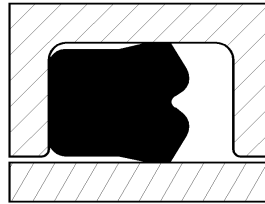
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
18700750-312 X(X)	3/4	1 1/8	5/16
18700750-375 X(X)	3/4	1 1/8	3/8
18700812X(X)	13/16	1 3/16	3/16
18700812-312 X(X)	13/16	1 3/16	5/16
18700875X(X)	7/8	1 1/4	3/16
18700875-312 X(X)	7/8	1 1/4	5/16
18700875-375 X(X)	7/8	1 1/4	3/8
18700937X(X)	15/16	1 5/16	3/16
18701000X(X)	1	1 3/8	3/16
18701000-250 X(X)	1	1 3/8	1/4
18701000-312 X(X)	1	1 3/8	5/16
18701062X(X)	1 1/16	1 7/16	3/16
18701062-312 X(X)	1 1/16	1 7/16	5/16
18701125X(X)	1 1/8	1 1/2	3/16
18701125-187 X(X)	1 1/8	1 1/2	3/16
18701125-312 X(X)	1 1/8	1 1/2	5/16
18701187X(X)	1 3/16	1 9/16	3/16
18701187-312 X(X)	1 3/16	1 9/16	5/16
18701250X(X)	1 1/4	1 5/8	3/16
18701250-250 X(X)	1 1/4	1 5/8	1/4



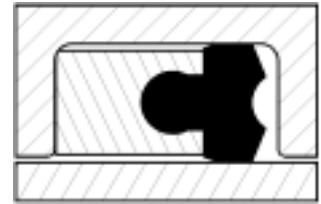
PolyKing O



PolyKing B



PolyKing HE

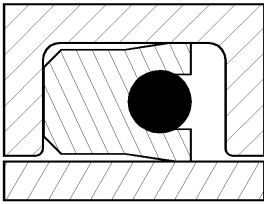


PolyKing HB

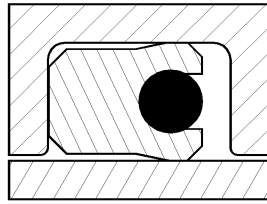
X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
18701250-312 X(X)	1 1/4	1 5/8	5/16
18701250-375 X(X)	1 1/4	1 5/8	3/8
18701312X(X)	1 5/16	1 11/16	3/16
18701312-187 X(X)	1 5/16	1 11/16	3/16
18701312-312 X(X)	1 5/16	1 11/16	5/16
18701375X(X)	1 3/8	1 3/4	3/16
18701375-312 X(X)	1 3/8	1 3/4	5/16
18701375-375 X(X)	1 3/8	1 3/4	3/8
18701437X(X)	1 7/16	1 13/16	3/16
18701437-312 X(X)	1 7/16	1 13/16	5/16
18701500X(X)	1 1/2	1 7/8	3/16
18701500-250 X(X)	1 1/2	1 7/8	1/4
18701500-281 X(X)	1 1/2	1 7/8	9/32
18701500-312 X(X)	1 1/2	1 7/8	5/16
18701500-375 X(X)	1 1/2	1 7/8	3/8
18701562X(X)	1 9/16	1 15/16	3/16
18701562-250 X(X)	1 9/16	1 15/16	1/4
18701625X(X)	1 5/8	2	3/16
18701625-250 X(X)	1 5/8	2	1/4
18701625-312 X(X)	1 5/8	2	5/16
18701625-375 X(X)	1 5/8	2	3/8
18701687X(X)	1 11/16	2 1/16	3/16
18701687-375 X(X)	1 11/16	2 1/16	3/8
18701750X(X)	1 3/4	2 1/8	3/16
18701750-312 X(X)	1 3/4	2 1/8	5/16
18701750-375 X(X)	1 3/4	2 1/8	3/8
18701812X(X)	1 13/16	2 3/16	3/16
18701875X(X)	1 7/8	2 1/4	3/16
18701875-375 X(X)	1 7/8	2 1/4	3/8
18701937X(X)	1 15/16	2 5/16	3/16
18701937-281 X(X)	1 15/16	2 5/16	9/32
18701937-375 X(X)	1 15/16	2 5/16	3/8
18702000X(X)	2	2 3/8	3/16
18702000-312 X(X)	2	2 3/8	5/16
18702000-375 X(X)	2	2 3/8	3/8
18702062X(X)	2 1/16	2 7/16	3/16
18702125X(X)	2 1/8	2 1/2	3/16
18702125-375 X(X)	2 1/8	2 1/2	3/8
18702187-375 X(X)	2 3/16	2 9/16	3/8
18702250X(X)	2 1/4	2 5/8	3/16
18702250-312 X(X)	2 1/4	2 5/8	5/16
18702250-375 X(X)	2 1/4	2 5/8	3/8
18702375X(X)	2 3/8	2 3/4	3/16
18702375-281 X(X)	2 3/8	2 3/4	9/32
18702375-375 X(X)	2 3/8	2 3/4	3/8
18702375-437 X(X)	2 3/8	2 3/4	7/16

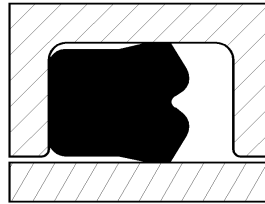
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
18702500X(X)	2 1/2	2 7/8	3/16
18702500-250 X(X)	2 1/2	2 7/8	1/4
18702500-375 X(X)	2 1/2	2 7/8	3/8
18702625X(X)	2 5/8	3	3/16
18702625-281 X(X)	2 5/8	3	9/32
18702625-312 X(X)	2 5/8	3	5/16
18702625-375 X(X)	2 5/8	3	3/8
18702750X(X)	2 3/4	3 1/8	3/16
18702750-281 X(X)	2 3/4	3 1/8	9/32
18702750-375 X(X)	2 3/4	3 1/8	3/8
18702875X(X)	2 7/8	3 1/4	3/16
18702875-281 X(X)	2 7/8	3 1/4	9/32
18702875-375 X(X)	2 7/8	3 1/4	3/8
18703000X(X)	3	3 3/8	3/16
18703000-250 X(X)	3	3 3/8	1/4
18703000-375 X(X)	3	3 3/8	3/8
18703125X(X)	3 1/8	3 1/2	3/16
18703125-375 X(X)	3 1/8	3 1/2	3/8
18703187-375 X(X)	3 3/16	3 9/16	3/8
18703250X(X)	3 1/4	3 5/8	3/16
18703250-312 X(X)	3 1/4	3 5/8	5/16
18703250-375 X(X)	3 1/4	3 5/8	3/8
18703375X(X)	3 3/8	3 3/4	3/16
18703375-250 X(X)	3 3/8	3 3/4	1/4
18703375-375 X(X)	3 3/8	3 3/4	3/8
18703500X(X)	3 1/2	3 7/8	3/16
18703500-281 X(X)	3 1/2	3 7/8	9/32
18703500-375 X(X)	3 1/2	3 7/8	3/8
18703625X(X)	3 5/8	4	3/16
18703625-312 X(X)	3 5/8	4	5/16
18703625-375 X(X)	3 5/8	4	3/8
18703750X(X)	3 3/4	4 1/8	3/16
18703750-375 X(X)	3 3/4	4 1/8	3/8
18703875X(X)	3 7/8	4 1/4	3/16
18703875-375 X(X)	3 7/8	4 1/4	3/8
18704000X(X)	4	4 3/8	3/16
18704000-312 X(X)	4	4 3/8	5/16
18704000-375 X(X)	4	4 3/8	3/8
18704125X(X)	4 1/8	4 1/2	3/16
18704125-375 X(X)	4 1/8	4 1/2	3/8
18704187-378 X(X)	4 3/16	4 9/16	3/8
18704250X(X)	4 1/4	4 5/8	3/16
18704250-312 X(X)	4 1/4	4 5/8	5/16
18704250-375 X(X)	4 1/4	4 5/8	3/8
18704375X(X)	4 3/8	4 3/4	3/16
18704375-375 X(X)	4 3/8	4 3/4	3/8



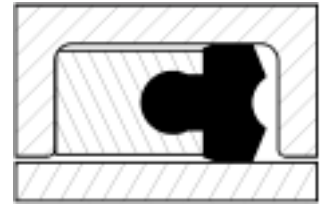
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
18704500X(X)	4 1/2	4 7/8	3/16
18704500-375 X(X)	4 1/2	4 7/8	3/8
18704625X(X)	4 5/8	5	3/16
18704625-312X(X)	4 5/8	5	5/16
18704625-375X(X)	4 5/8	5	3/8
18704750X(X)	4 3/4	5 1/8	3/16
18704875-375X(X)	4 7/8	5 1/4	3/8
18705000-281X(X)	5	5 3/8	9/32
18705000-375X(X)	5	5 3/8	3/8

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
18705250X(X)	5 1/4	5 5/8	3/16
18705500-375X(X)	5 1/2	5 7/8	3/8
18705687X(X)	5 11/16	6 1/16	3/16
18705875X(X)	5 7/8	6 1/4	3/16
18706000X(X)	6	6 3/8	3/16
18706000-375X(X)	6	6 3/8	3/8
18706312X(X)	6 5/16	6 11/16	3/16
18707000-375X(X)	7	7 3/8	3/8
18707500-250X(X)	7 1/2	7 7/8	1/4

7/32 CROSS SECTION

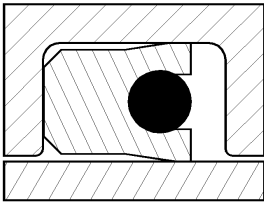
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
21800312X(X)	5/16	3/4	7/32
21800437X(X)	7/16	7/8	7/32
21800437X(X)	7/16	7/8	7/32
21800562X(X)	9/16	1	7/32
21800750X(X)	3/4	1 3/16	7/32
21800937X(X)	15/16	1 3/8	7/32
21801750X(X)	1 3/4	2 3/16	7/32

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
21802062X(X)	2 1/16	2 1/2	7/32
21802500X(X)	2 1/2	2 15/16	7/32
21802562X(X)	2 9/16	3	7/32
21802812X(X)	2 13/16	3 1/4	7/32
21803000X(X)	3	3 7/16	7/32
21803062X(X)	3 1/16	3 1/2	7/32
21803437X(X)	3 7/16	3 7/8	7/32

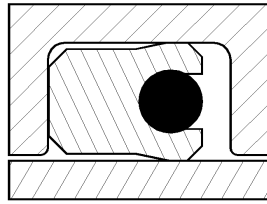
1/4" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
25000250X(X)	1/4	3/4	1/4
25000250-375 X(X)	1/4	3/4	3/8
25000312X(X)	5/16	13/16	1/4
25000375X(X)	3/8	7/8	1/4
25000437X(X)	7/16	15/16	1/4
25000437-375 X(X)	7/16	15/16	3/8
25000500X(X)	1/2	1	1/4
25000500-375 X(X)	1/2	1	3/8
25000562X(X)	9/16	1 1/16	1/4
25000562-375 X(X)	9/16	1 1/16	3/8
25000625X(X)	5/8	1 1/8	1/4
25000625-375 X(X)	5/8	1 1/8	3/8
25000687X(X)	11/16	1 3/16	1/4
25000687-375 X(X)	11/16	1 3/16	3/8
25000750X(X)	3/4	1 1/4	1/4
25000750-375 X(X)	3/4	1 1/4	3/8
25000812X(X)	13/16	1 5/16	1/4
25000875X(X)	7/8	1 3/8	1/4
25000875-375 X(X)	7/8	1 3/8	3/8

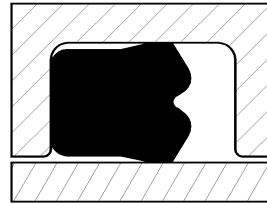
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
25000937X(X)	15/16	1 7/16	1/4
25001000X(X)	1	1 1/2	1/4
25001000-375 X(X)	1	1 1/2	3/8
25001062X(X)	1 1/16	1 9/16	1/4
25001093X(X)	1 3/32	1 19/32	1/4
25001125X(X)	1 1/8	1 5/8	1/4
25001125-375 X(X)	1 1/8	1 5/8	3/8
25001187X(X)	1 3/16	1 11/16	1/4
25001250X(X)	1 1/4	1 3/4	1/4
25001250-375 X(X)	1 1/4	1 3/4	3/8
25001312X(X)	1 5/16	1 13/16	1/4
25001312-375 X(X)	1 5/16	1 13/16	3/8
25001375X(X)	1 3/8	1 7/8	1/4
25001375-375 X(X)	1 3/8	1 7/8	3/8
25001437X(X)	1 7/16	1 15/16	1/4
25001500X(X)	1 1/2	2	1/4
25001500-375 X(X)	1 1/2	2	3/8
25001625X(X)	1 5/8	2 1/8	1/4
25001625-375 X(X)	1 5/8	2 1/8	3/8



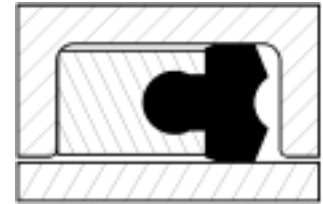
PolyKing O



PolyKing B



PolyKing HE

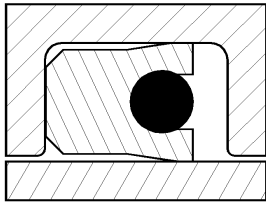


PolyKing HB

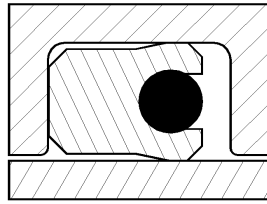
X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
25001750X(X)	1 3/4	2 1/4	1/4
25001750-375 X(X)	1 3/4	2 1/4	3/8
25001875X(X)	1 7/8	2 3/8	1/4
25001875-375 X(X)	1 7/8	2 3/8	3/8
25001937-375 X(X)	1 15/16	2 7/16	3/8
25002000X(X)	2	2 1/2	1/4
25002000-375 X(X)	2	2 1/2	3/8
25002125X(X)	2 1/8	2 5/8	1/4
25002125-375 X(X)	2 1/8	2 5/8	3/8
25002250X(X)	2 1/4	2 3/4	1/4
25002250-375 X(X)	2 1/4	2 3/4	3/8
25002250-562 X(X)	2 1/4	2 3/4	9/16
25002375X(X)	2 3/8	2 7/8	1/4
25002375-375 X(X)	2 3/8	2 7/8	3/8
25002500X(X)	2 1/2	3	1/4
25002500-375 X(X)	2 1/2	3	3/8
25002562-375 X(X)	2 9/16	3 1/16	3/8
25002625X(X)	2 5/8	3 1/8	1/4
25002625-375 X(X)	2 5/8	3 1/8	3/8
25002750X(X)	2 3/4	3 1/4	1/4
25002750-375 X(X)	2 3/4	3 1/4	3/8
25002875X(X)	2 7/8	3 3/8	1/4
25002875-375 X(X)	2 7/8	3 3/8	3/8
25003000X(X)	3	3 1/2	1/4
25003000-375 X(X)	3	3 1/2	3/8
25003000-562 X(X)	3	3 1/2	9/16
25003125X(X)	3 1/8	3 5/8	1/4
25003125-375 X(X)	3 1/8	3 5/8	3/8
25003250X(X)	3 1/4	3 3/4	1/4
25003250-375 X(X)	3 1/4	3 3/4	3/8
25003375X(X)	3 3/8	3 7/8	1/4
25003375-375 X(X)	3 3/8	3 7/8	3/8
25003500X(X)	3 1/2	4	1/4
25003500-375 X(X)	3 1/2	4	3/8
25003625X(X)	3 5/8	4 1/8	1/4
25003625-375 X(X)	3 5/8	4 1/8	3/8
25003750X(X)	3 3/4	4 1/4	1/4
25003750-375 X(X)	3 3/4	4 1/4	3/8
25003750-562 X(X)	3 3/4	4 1/4	9/16
25003850X(X)	3.850	4.345	1/4
25003875X(X)	3 7/8	4 3/8	1/4
25003875-375 X(X)	3 7/8	4 3/8	3/8
25004000X(X)	4	4 1/2	1/4
25004000-375 X(X)	4	4 1/2	3/8
25004000-562 X(X)	4	4 1/2	9/16
25004062-375 X(X)	4 1/16	4 9/16	3/8

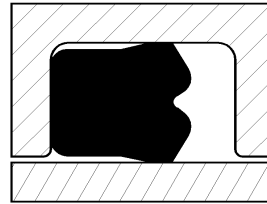
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
25004125X(X)	4 1/8	4 5/8	1/4
25004125-375 X(X)	4 1/8	4 5/8	3/8
25004125-562 X(X)	4 1/8	4 5/8	9/16
25004250X(X)	4 1/4	4 3/4	1/4
25004250-375 X(X)	4 1/4	4 3/4	3/8
25004250-562 X(X)	4 1/4	4 3/4	9/16
25004375X(X)	4 3/8	4 7/8	1/4
25004375-562 X(X)	4 3/8	4 7/8	9/16
25004437-375 X(X)	4 7/16	4 15/16	3/8
25004500X(X)	4 1/2	5	1/4
25004500-375 X(X)	4 1/2	5	3/8
25004500-500 X(X)	4 1/2	5	1/2
25004500-562 X(X)	4 1/2	5	9/16
25004625X(X)	4 5/8	5 1/8	1/4
25004750X(X)	4 3/4	5 1/4	1/4
25004750-375 X(X)	4 3/4	5 1/4	3/8
25004750-562 X(X)	4 3/4	5 1/4	9/16
25004875X(X)	4 7/8	5 3/8	1/4
25004875-375 X(X)	4 7/8	5 3/8	3/8
25004875-562 X(X)	4 7/8	5 3/8	9/16
25005000X(X)	5	5 1/2	1/4
25005000-375 X(X)	5	5 1/2	3/8
25005000-562 X(X)	5	5 1/2	9/16
25005125X(X)	5 1/8	5 5/8	1/4
25005250X(X)	5 1/4	5 3/4	1/4
25005250-375 X(X)	5 1/4	5 3/4	3/8
25005250-562 X(X)	5 1/4	5 3/4	9/16
25005375X(X)	5 3/8	5 7/8	1/4
25005375-375 X(X)	5 3/8	5 7/8	3/8
25005375-562 X(X)	5 3/8	5 7/8	9/16
25005500X(X)	5 1/2	6	1/4
25005500-375 X(X)	5 1/2	6	3/8
25005500-562 X(X)	5 1/2	6	9/16
25005625X(X)	5 5/8	6 1/8	1/4
25005625-562 X(X)	5 5/8	6 1/8	9/16
25005750X(X)	5 3/4	6 1/4	1/4
25005750-562 X(X)	5 3/4	6 1/4	9/16
25005875X(X)	5 7/8	6 3/8	1/4
25005875-562 X(X)	5 7/8	6 3/8	9/16
25006000X(X)	6	6 1/2	1/4
25006000-375 X(X)	6	6 1/2	3/8
25006000-437 X(X)	6	6 1/2	7/16
25006000-562 X(X)	6	6 1/2	9/16
25006250X(X)	6 1/4	6 3/4	1/4
25006250-562 X(X)	6 1/4	6 3/4	9/16
25006500X(X)	6 1/2	7	1/4



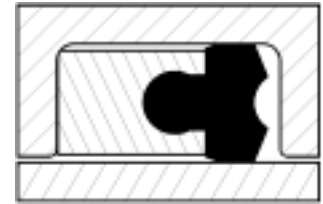
PolyKing O



PolyKing B



PolyKing HE



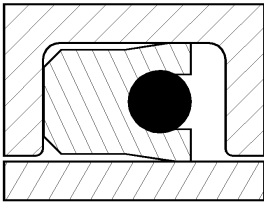
PolyKing HB

X(X) at the end of the part number is the PolyKing style

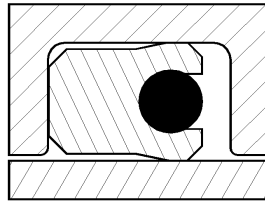
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
25006500-375 X(X)	6 1/2	7	3/8
25006500-562 X(X)	6 1/2	7	9/16
25006625-375 X(X)	6 5/8	7 1/8	3/8
25006750X(X)	6 3/4	7 1/4	1/4
25006750-375 X(X)	6 3/4	7 1/4	3/8
25006750-562 X(X)	6 3/4	7 1/4	9/16
25007000X(X)	7	7 1/2	1/4
25007000-375 X(X)	7	7 1/2	3/8
25007000-562 X(X)	7	7 1/2	9/16
25007125X(X)	7 1/8	7 5/8	1/4
25007250X(X)	7 1/4	7 3/4	1/4
25007250-562 X(X)	7 1/4	7 3/4	9/16
25007437X(X)	7 7/16	7 15/16	1/4
25007500X(X)	7 1/2	8	1/4
25007500-375 X(X)	7 1/2	8	3/8
25007500-562 X(X)	7 1/2	8	9/16
25007750X(X)	7 3/4	8 1/4	1/4
25007750-375 X(X)	7 3/4	8 1/4	3/8
25007750-562 X(X)	7 3/4	8 1/4	9/16
25007812X(X)	7 13/16	8 5/16	1/4
25008000X(X)	8	8 1/2	1/4
25008000-562 X(X)	8	8 1/2	9/16
25008125-562 X(X)	8 1/8	8 5/8	9/16
25008250X(X)	8 1/4	8 3/4	1/4
25008250-375 X(X)	8 1/4	8 3/4	3/8
25008250-437 X(X)	8 1/4	8 3/4	7/16
25008250-562 X(X)	8 1/4	8 3/4	9/16
25008500X(X)	8 1/2	9	1/4
25008500-375 X(X)	8 1/2	9	3/8
25008500-562 X(X)	8 1/2	9	9/16
25008750X(X)	8 3/4	9 1/4	1/4
25009000X(X)	9	9 1/2	1/4
25009000-375 X(X)	9	9 1/2	3/8
25009250X(X)	9 1/4	9 3/4	1/4
25009500X(X)	9 1/2	10	1/4
25009500-562 X(X)	9 1/2	10	9/16
25009750X(X)	9 3/4	10 1/4	1/4
25009750-375 X(X)	9 3/4	10 1/4	3/8
25009750-562 X(X)	9 3/4	10 1/4	9/16
25010000X(X)	10	10 1/2	1/4
25010000-562 X(X)	10	10 1/2	9/16

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
25010250-562 X(X)	10 1/4	10 3/4	9/16
25010500X(X)	10 1/2	11	1/4
25010500-500 X(X)	10 1/2	11	1/2
25010500-562 X(X)	10 1/2	11	9/16
25010750X(X)	10 3/4	11 1/4	1/4
25010875X(X)	10 7/8	11 3/8	1/4
25011000X(X)	11	11 1/2	1/4
25011000-562 X(X)	11	11 1/2	9/16
25011250X(X)	11 1/4	11 3/4	1/4
25011250-375 X(X)	11 1/4	11 3/4	3/8
25011250-562 X(X)	11 1/4	11 3/4	9/16
25012750-562 X(X)	12 3/4	13 1/4	9/16
25011500X(X)	11 1/2	12	1/4
25011750X(X)	11 3/4	12 1/4	1/4
25012000X(X)	12	12 1/2	1/4
25012500X(X)	12 1/2	13	1/4
25013000X(X)	13	13 1/2	1/4
25013000-562 X(X)	13	13 1/2	9/16
25013500X(X)	13 1/2	14	1/4
25013500X(X)	13 1/2	14	1/4
25014000X(X)	14	14 1/2	1/4
25014000-375 X(X)	14	14 1/2	3/8
25014125X(X)	14 1/8	14 5/8	1/4
25014250X(X)	14 1/4	14 3/4	1/4
25014500-375 X(X)	14 1/2	15	3/8
25015000-562 X(X)	15	15 1/2	9/16
25015750-562 X(X)	15 3/4	16 1/4	9/16
25016000-250 X(X)	16	16 1/2	1/4
25016000-375 X(X)	16	16 1/2	3/8
25019000X(X)	19	19 1/2	1/4
25019125-562 X(X)	19 1/8	19 5/8	9/16
25019500-312 X(X)	19 1/2	20	5/16
25021000-312 X(X)	21	21 1/2	5/16
25021750-375 X(X)	21 3/4	22 1/4	3/8
25022062-375 X(X)	22 1/16	22 9/16	3/8
25022500-312 X(X)	22 1/2	23	5/16
25023000-375 X(X)	23	23 1/2	3/8
25023500X(X)	23 1/2	24	1/4
25023750-375 X(X)	23 3/4	24 1/4	3/8
25024500X(X)	24 1/2	25	1/4

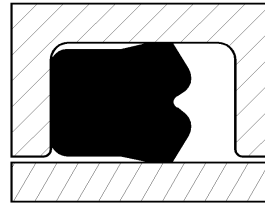
Please contact Seal Science for available sizes.



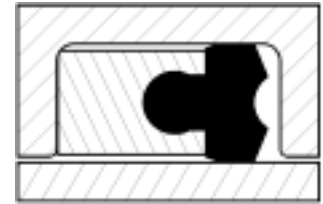
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing style

9/32" CROSS SECTION

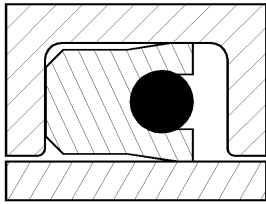
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
28100187X(X)	3/16	3/4	9/32
28100687X(X)	11/16	1 1/4	9/32
28102250-375 X(X)	2 1/4	2 13/16	3/8
28102312X(X)	2 5/16	2 7/8	9/32
28102562X(X)	2 9/16	3 1/8	9/32
28102937-500 X(X)	2 15/16	3 1/2	1/2
28103437-500 X(X)	3 7/16	4	1/2
28103687-375 X(X)	3 11/16	4 1/4	3/8
28103875-500 X(X)	3 7/8	4 7/16	1/2
28103937-500 X(X)	3 15/16	4 1/2	1/2
28104437X(X)	4 7/16	5	9/32

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
28104437-500 X(X)	4 7/16	5	1/2
28104687-625 X(X)	4 11/16	5 1/4	5/8
48104937-343 X(X)	4 15/16	5 1/2	11/32
48104937-500 X(X)	4 15/16	5 1/2	1/2
28105000X(X)	5	5 9/16	9/32
28105437X(X)	5 7/16	6	9/32
28105937-500 X(X)	5 15/16	6 1/2	1/2
28106437X(X)	6 7/16	7	9/32
28106937-500 X(X)	6 15/16	7 1/2	1/2
28108500X(X)	8 1/2	9 1/16	9/32
2810937-500 X(X)	8 15/16	9 1/2	1/2

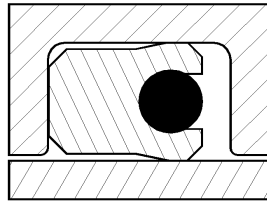
5/16" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
31200250X(X)	1/4	7/8	5/16
31200375X(X)	3/8	1	5/16
31200437X(X)	7/16	1 1/16	5/16
31200500X(X)	1/2	1 1/8	5/16
31200625X(X)	5/8	1 1/4	5/16
31200687X(X)	11/16	1 5/16	5/16
31200750X(X)	3/4	1 3/8	5/16
31200750-500 X(X)	3/4	1 3/8	1/2
31200812X(X)	13/16	1 7/16	5/16
31200812-500 X(X)	13/16	1 7/16	1/2
31200875X(X)	7/8	1 1/2	5/16
31201000X(X)	1	1 5/8	5/16
31201000-500 X(X)	1	1 5/8	1/2
31201062X(X)	1 1/16	1 11/16	5/16
31201125X(X)	1 1/8	1 3/4	5/16
31201125-500 X(X)	1 1/8	1 3/4	1/2
31201187X(X)	1 3/16	1 13/16	5/16
31201187-500 X(X)	1 3/16	1 13/16	1/2
31201250X(X)	1 1/4	1 7/8	5/16
31201250-500 X(X)	1 1/4	1 7/8	1/2
31201312X(X)	1 5/16	1 15/16	5/16
31201375X(X)	1 3/8	2	5/16
31201375-500 X(X)	1 3/8	2	1/2
31201437-500 X(X)	1 7/16	2 1/16	1/2
31201500X(X)	1 1/2	2 1/8	5/16
31201500-500 X(X)	1 1/2	2 1/8	1/2
31201625X(X)	1 5/8	2 1/4	5/16

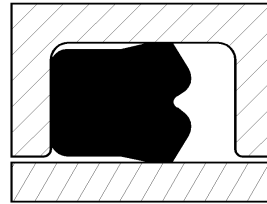
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
31201625-500 X(X)	1 5/8	2 1/4	1/2
31201687X(X)	1 11/16	2 5/16	5/16
31201687-500 X(X)	1 11/16	2 5/16	1/2
31201750X(X)	1 3/4	2 3/8	5/16
31201750-500 X(X)	1 3/4	2 3/8	1/2
31201875X(X)	1 7/8	2 1/2	5/16
31201875-500 X(X)	1 7/8	2 1/2	1/2
31201937X(X)	1 15/16	2 9/16	5/16
31202000X(X)	2	2 5/8	5/16
31202000-500 X(X)	2	2 5/8	1/2
31202000-562 X(X)	2	2 5/8	9/16
31202125X(X)	2 1/8	2 3/4	5/16
31202125-500 X(X)	2 1/8	2 3/4	1/2
31202125-625 X(X)	2 1/8	2 3/4	5/8
31202250X(X)	2 1/4	2 7/8	5/16
31202250-500 X(X)	2 1/4	2 7/8	1/2
31202312X(X)	2 5/16	2 15/16	5/16
31202375X(X)	2 3/8	3	5/16
31202375-500 X(X)	2 3/8	3	1/2
31202500X(X)	2 1/2	3 1/8	5/16
31202500-500 X(X)	2 1/2	3 1/8	1/2
31202562X(X)	2 9/16	3 3/16	5/16
31202625X(X)	2 5/8	3 1/4	5/16
31202625-500 X(X)	2 5/8	3 1/4	1/2
31202750X(X)	2 3/4	3 3/8	5/16
31202750-500 X(X)	2 3/4	3 3/8	1/2
31202875X(X)	2 7/8	3 1/2	5/16



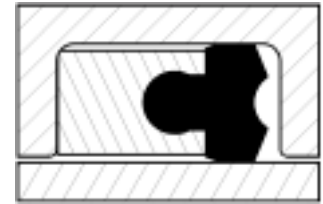
PolyKing O



PolyKing B



PolyKing HE

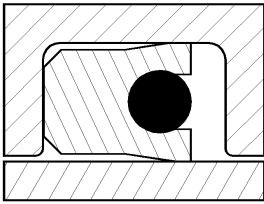


PolyKing HB

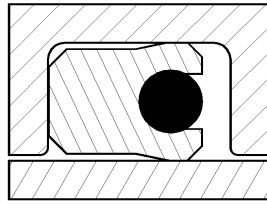
X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
31202875-500 X(X)	2 7/8	3 1/2	1/2
31203000X(X)	3	3 5/8	5/16
31203000-500 X(X)	3	3 5/8	1/2
31203000-562 X(X)	3	3 5/8	9/16
31203125X(X)	3 1/8	3 3/4	5/16
31203125-500 X(X)	3 1/8	3 3/4	1/2
31203250X(X)	3 1/4	3 7/8	5/16
31203250-500 X(X)	3 1/4	3 7/8	1/2
31203375X(X)	3 3/8	4	5/16
31203375-500 X(X)	3 3/8	4	1/2
31203500X(X)	3 1/2	4 1/8	5/16
31203500-500 X(X)	3 1/2	4 1/8	1/2
31203625X(X)	3 5/8	4 1/4	5/16
31203625-500 X(X)	3 5/8	4 1/4	1/2
31203750X(X)	3 3/4	4 3/8	5/16
31203750-375 X(X)	3 3/4	4 3/8	3/8
31203750-500 X(X)	3 3/4	4 3/8	1/2
31203750-625 X(X)	3 3/4	4 3/8	5/8
31203875X(X)	3 7/8	4 1/2	5/16
31203875-500 X(X)	3 7/8	4 1/2	1/2
31204000X(X)	4	4 5/8	5/16
31204000-500 X(X)	4	4 5/8	1/2
31204000-562 X(X)	4	4 5/8	9/16
31204125X(X)	4 1/8	4 3/4	5/16
31204125-500 X(X)	4 1/8	4 3/4	1/2
31204125-562 X(X)	4 1/8	4 3/4	9/16
31204125-625 X(X)	4 1/8	4 3/4	5/8
31204250X(X)	4 1/4	4 7/8	5/16
31204250-500 X(X)	4 1/4	4 7/8	1/2
31204250-562 X(X)	4 1/4	4 7/8	9/16
31204375X(X)	4 3/8	5	5/16
31204375-500 X(X)	4 3/8	5	1/2
31204375-562 X(X)	4 3/8	5	9/16
31204375-625 X(X)	4 3/8	5	5/8
31204500X(X)	4 1/2	5 1/8	5/16
31204500-562 X(X)	4 1/2	5 1/8	9/16
31204500-625 X(X)	4 1/2	5 1/8	5/8
31204625-625 X(X)	4 5/8	5 1/4	5/8
31204750X(X)	4 3/4	5 3/8	5/16
31204750-500 X(X)	4 3/4	5 3/8	1/2
31204750-625 X(X)	4 3/4	5 3/8	5/8
31204875X(X)	4 7/8	5 1/2	5/16
31205000X(X)	5	5 5/8	5/16
31205000-625 X(X)	5	5 5/8	5/8
31205125X(X)	5 1/8	5 3/4	5/16
31205125-625 X(X)	5 1/8	5 3/4	5/8

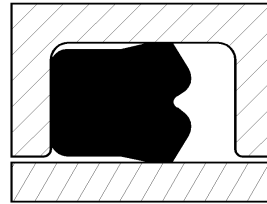
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
31205250X(X)	5 1/4	5 7/8	5/16
31205250-625 X(X)	5 1/4	5 7/8	5/8
31205375X(X)	5 3/8	6	5/16
31205375-625 X(X)	5 3/8	6	5/8
31205500X(X)	5 1/2	6 1/8	5/16
31205500-625 X(X)	5 1/2	6 1/8	5/8
31205625-625 X(X)	5 5/8	6 1/4	5/8
31205750X(X)	5 3/4	6 3/8	5/16
31205750-625 X(X)	5 3/4	6 3/8	5/8
31205875X(X)	5 7/8	6 1/2	5/16
31206000X(X)	6	6 5/8	5/16
31206000-625 X(X)	6	6 5/8	5/8
31206125X(X)	6 1/8	6 3/4	5/16
31206250X(X)	6 1/4	6 7/8	5/16
31206375X(X)	6 3/8	7	5/16
31206375-625 X(X)	6 3/8	7	5/8
31206500X(X)	6 1/2	7 1/8	5/16
31206500-625 X(X)	6 1/2	7 1/8	5/8
31206625X(X)	6 5/8	7 1/4	5/16
31206625-625 X(X)	6 5/8	7 1/4	5/8
31206750X(X)	6 3/4	7 3/8	5/16
31206750-625 X(X)	6 3/4	7 3/8	5/8
31207000X(X)	7	7 5/8	5/16
31207000-625 X(X)	7	7 5/8	5/8
31207250X(X)	7 1/4	7 7/8	5/16
31207250-625 X(X)	7 1/4	7 7/8	5/8
31207312X(X)	7 5/16	7 15/16	5/16
31207375X(X)	7 3/8	8	5/16
31207375-625 X(X)	7 3/8	8	5/8
31207500X(X)	7 1/2	8 1/8	5/16
31207500-625 X(X)	7 1/2	8 1/8	5/8
31207625-500 X(X)	7 5/8	8 1/4	1/2
31207750X(X)	7 3/4	8 3/8	5/16
31207875-625 X(X)	7 7/8	8 1/2	5/8
31208000X(X)	8	8 5/8	5/16
31208000-625 X(X)	8	8 5/8	5/8
31208250X(X)	8 1/4	8 7/8	5/16
31208375-625 X(X)	8 3/8	9	5/8
31208500X(X)	8 1/2	9 1/8	5/16
31208500-625 X(X)	8 1/2	9 1/8	5/8
31208875X(X)	8 7/8	9 1/2	5/16
31209000-500 X(X)	9	9 5/8	1/2
31209250-625 X(X)	9 1/4	9 7/8	5/8
31209375-625 X(X)	9 3/8	10	5/8
31209625X(X)	9 5/8	10 1/4	5/16
31209625-625 X(X)	9 5/8	10 1/4	5/8



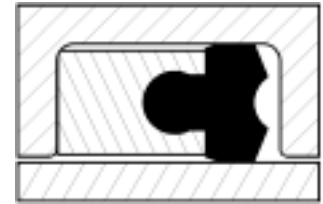
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
31209750-625 X(X)	9 3/4	10 3/8	5/8
31210125X(X)	10 1/8	10 3/4	5/16
31210375-625 X(X)	10 3/8	11	5/8
31212000X(X)	12	12 5/8	5/16
31212250-625 X(X)	12 1/4	12 7/8	5/8
31212500-625 X(X)	12 1/2	13 1/8	5/8
31212750X(X)	12 3/4	13 3/8	5/16

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
31213375X(X)	13 3/8	14	5/16
31214250X(X)	14 1/4	14 7/8	5/16
31214875X(X)	14 7/8	15 1/2	5/16
31215375-625 X(X)	15 3/8	16	5/8
31215625-625 X(X)	15 5/8	16 1/4	5/8
31215875X(X)	15 7/8	16 1/2	5/16
31221812X(X)	21 13/16	22 7/16	5/16

11/32" CROSS SECTION

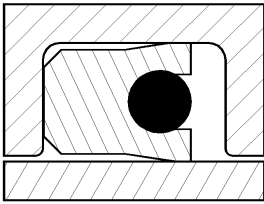
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
34300750X(X)	3/4	1 7/16	11/32
34301062X(X)	1 1/16	1 3/4	11/32
34301312X(X)	1 5/16	2	11/32
34301812X(X)	1 13/16	2 1/2	11/32
34302312X(X)	2 5/16	3	11/32

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
34302500X(X)	2 1/2	3 3/16	11/32
34302687X(X)	2 11/16	3 3/8	11/32
34302812-375 X(X)	2 13/16	3 1/2	3/8
34309312X(X)	9 5/16	10	11/32

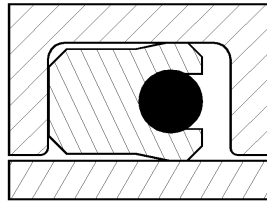
3/8" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
375005003X(X)	1/2	1 1/4	3/8
37500625X(X)	5/8	1 3/8	3/8
37500750X(X)	3/4	1 1/2	3/8
37500750-625 X(X)	3/4	1/2	5/8
37500875X(X)	7/8	1 5/8	3/8
37500937X(X)	15/16	1 11/16	3/8
37501000X(X)	1	1 3/4	3/8
37501000-625 X(X)	1	1 3/4	5/8
37501125X(X)	1 1/8	1 7/8	3/8
37501250X(X)	1 1/4	2	3/8
37501250-625 X(X)	1 1/4	2	5/8
37501312X(X)	1 5/16	2 1/16	3/8
37501312-437 X(X)	1 5/16	2 1/16	7/16
37501375X(X)	1 3/8	2 1/8	3/8
37501375-625 X(X)	1 3/8	2 1/8	5/8
37051437X(X)	1 7/16	2 3/16	3/8
37501500X(X)	1 1/2	2 1/4	3/8
37501500-500 X(X)	1 1/2	2 1/4	1/2
37501500-625 X(X)	1 1/2	2 1/4	5/8
37501562X(X)	1 9/16	2 5/16	3/8
37501625X(X)	1 5/8	2 3/8	3/8
37501625-375 X(X)	1 5/8	2 3/8	3/8
37501625-625 X(X)	1 5/8	2 3/8	5/8

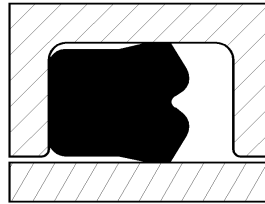
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37501750X(X)	1 3/4	2 1/2	3/8
37501750-500 X(X)	1 3/4	2 1/2	1/2
37501750-625 X(X)	1 3/4	2 1/2	5/8
37501875X(X)	1 7/8	2 5/8	3/8
37501875-625 X(X)	1 7/8	2 5/8	5/8
37502000X(X)	2	2 3/4	3/8
37502000-500 X(X)	2	2 3/4	1/2
37502000-625 X(X)	2	2 3/4	5/8
37502062X(X)	2 1/16	2 13/16	3/8
37502125X(X)	2 1/8	2 7/8	3/8
37502125-625 X(X)	2 1/8	2 7/8	5/8
37502250X(X)	2 1/4	3	3/8
37502250-500 X(X)	2 1/4	3	1/2
37502250-625 X(X)	2 1/4	3	5/8
37502375X(X)	2 3/8	3 1/8	3/8
37502375-625 X(X)	2 3/8	3 1/8	5/8
37502437X(X)	2 7/16	3 3/16	3/8
37502500X(X)	2 1/2	3 1/4	3/8
37502500-500 X(X)	2 1/2	3 1/4	1/2
37502500-625 X(X)	2 1/2	3 1/4	5/8
37502500-937 X(X)	2 1/2	3 1/4	15/16
37502625X(X)	2 5/8	3 3/8	3/8
37502625-625 X(X)	2 5/8	3 3/8	5/8



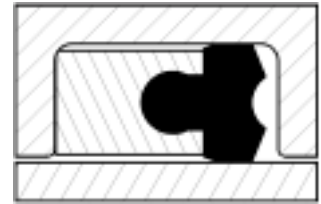
PolyKing O



PolyKing B



PolyKing HE

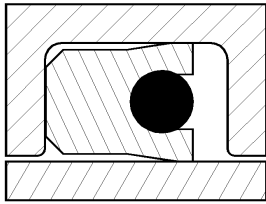


PolyKing HB

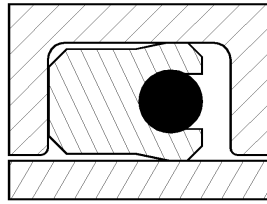
X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37502687X(X)	2 11/16	3 7/16	3/8
37502750X(X)	2 3/4	3 1/2	3/8
37502750-500 X(X)	2 3/4	3 1/2	1/2
37502750-625 X(X)	2 3/4	3 1/2	5/8
37502875X(X)	2 7/8	3 5/8	3/8
37502875-625 X(X)	2 7/8	3 5/8	5/8
37502937X(X)	2 15/16	3 11/16	3/8
37503000X(X)	3	3 3/4	3/8
37503000-500 X(X)	3	3 3/4	1/2
37503000-625 X(X)	3	3 3/4	5/8
37503125X(X)	3 1/8	3 7/8	3/8
37503125-625 X(X)	3 1/8	3 7/8	5/8
37503250X(X)	3 1/4	4	3/8
37503250-500 X(X)	3 1/4	4	1/2
37503250-625 X(X)	3 1/4	4	5/8
37503375X(X)	3 3/8	4 1/8	3/8
37503375-625 X(X)	3 3/8	4 1/8	5/8
37503500X(X)	3 1/2	4 1/4	3/8
37503500-500 X(X)	3 1/2	4 1/4	1/2
37503500-625 X(X)	3 1/2	4 1/4	5/8
37503625X(X)	3 5/8	4 3/8	3/8
37503625-625 X(X)	3 5/8	4 3/8	5/8
37503750X(X)	3 3/4	4 1/2	3/8
37503750-500 X(X)	3 3/4	4 1/2	1/2
37503750-625 X(X)	3 3/4	4 1/2	5/8
37503843X(X)	3 27/32	4 19/32	3/8
37503875X(X)	3 7/8	4 5/8	3/8
37503875-625 X(X)	3 7/8	4 5/8	5/8
37504000X(X)	4	4 3/4	3/8
37504000-500 X(X)	4	4 3/4	1/2
37504000-625 X(X)	4	4 3/4	5/8
37504062X(X)	4 1/16	4 13/16	3/8
37504125X(X)	4 1/8	4 7/8	3/8
37504125-625 X(X)	4 1/8	4 7/8	5/8
37504250X(X)	4 1/4	5	3/8
37504250-500 X(X)	4 1/4	5	1/2
37504250-625 X(X)	4 1/4	5	5/8
37504375X(X)	4 3/8	5 1/8	3/8
37504375-625 X(X)	4 3/8	5 1/8	5/8
37504500X(X)	4 1/2	5 1/4	3/8
37504500-500 X(X)	4 1/2	5 1/4	1/2
37504500-625 X(X)	4 1/2	5 1/4	5/8
37504625X(X)	4 5/8	5 3/8	3/8
37504625-625 X(X)	4 5/8	5 3/8	5/8
37504750X(X)	4 3/4	5 1/2	3/8
37504750-500 X(X)	4 3/4	5 1/2	1/2

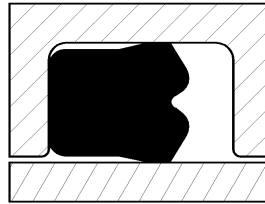
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37504750-625 X(X)	4 3/4	5 1/2	5/8
37504875X(X)	4 7/8	5 5/8	3/8
37504875-625 X(X)	4 7/8	5 5/8	5/8
37505000X(X)	5	5 3/4	3/8
37505000-500 X(X)	5	5 3/4	1/2
37505000-625 X(X)	5	5 3/4	5/8
37505125X(X)	5 1/8	5 7/8	3/8
37505125-625 X(X)	5 1/8	5 7/8	5/8
37505250X(X)	5 1/4	6	3/8
37505250-500 X(X)	5 1/4	6	1/2
37505250-625 X(X)	5 1/4	6	5/8
37505250-750 X(X)	5 1/4	6	3/4
37505375X(X)	5 3/8	6 1/8	3/8
37505375-625 X(X)	5 3/8	6 1/8	5/8
37505500X(X)	5 1/2	6 1/4	3/8
37505500-500 X(X)	5 1/2	6 1/4	1/2
37505500-625 X(X)	5 1/2	6 1/4	5/8
37505625X(X)	5 5/8	6 3/8	3/8
37505625-625 X(X)	5 5/8	6 3/8	5/8
37505750X(X)	5 3/4	6 1/2	3/8
37505750-500 X(X)	5 3/4	6 1/2	1/2
37505750-625 X(X)	5 3/4	6 1/2	5/8
37505875X(X)	5 7/8	6 5/8	3/8
37505875-625 X(X)	5 7/8	6 5/8	5/8
37506000X(X)	6	6 3/4	3/8
37506000-500 X(X)	6	6 3/4	1/2
37506000-625 X(X)	6	6 3/4	5/8
37506250X(X)	6 1/4	7	3/8
37506250-500 X(X)	6 1/4	7	1/2
37506250-625 X(X)	6 1/4	7	5/8
37506500X(X)	6 1/2	7 1/4	3/8
37506500-500 X(X)	6 1/2	7 1/4	1/2
37506500-625 X(X)	6 1/2	7 1/4	5/8
37506750X(X)	6 3/4	7 1/2	3/8
37506750-500 X(X)	6 3/4	7 1/2	1/2
37506750-562 X(X)	6 3/4	7 1/2	9/16
37506750-625 X(X)	6 3/4	7 1/2	5/8
37506875-625 X(X)	6 7/8	7 5/8	5/8
37507000X(X)	7	7 3/4	3/8
37507000-500 X(X)	7	7 3/4	1/2
37507000-625 X(X)	7	7 3/4	5/8
37507250X(X)	7 1/4	8	3/8
37507250-500 X(X)	7 1/4	8	1/2
37507250-625 X(X)	7 1/4	8	5/8
37507250-750 X(X)	7 1/4	8	3/4
37507375-500 X(X)	7 3/8	8 1/8	1/2



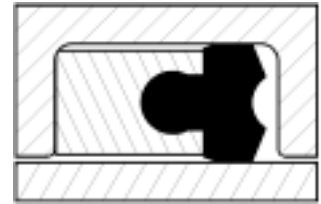
PolyKing O



PolyKing B



PolyKing HE

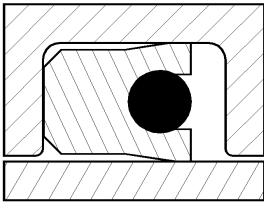


PolyKing HB

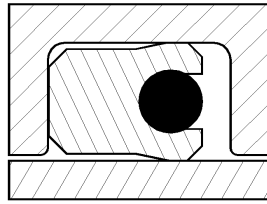
X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37507500X(X)	7 1/2	8 1/4	3/8
37507500-500 X(X)	7 1/2	8 1/4	1/2
37507500-625 X(X)	7 1/2	8 1/4	5/8
37507625X(X)	7 5/8	8 3/8	3/8
37507750X(X)	7 3/4	8 1/2	3/8
37507750-500 X(X)	7 3/4	8 1/2	1/2
37507750-625 X(X)	7 3/4	8 1/2	5/8
37508000X(X)	8	8 3/4	3/8
37508000-500 X(X)	8	8 3/4	1/2
37508000-500 X(X)	8	8 3/4	5/8
37508250X(X)	8 1/4	9	3/8
37508250-500 X(X)	8 1/4	9	1/2
37508250-625 X(X)	8 1/4	9	5/8
37508500X(X)	8 1/2	9 1/4	3/8
37508500-625 X(X)	8 1/2	9 1/4	5/8
37508562X(X)	8 9/16	9 5/16	3/8
37508625X(X)	8 5/8	9 3/8	3/8
37508687X(X)	8 11/16	9 7/16	3/8
37508750X(X)	8 3/4	9 1/2	3/8
37508750-500 X(X)	8 3/4	9 1/2	1/2
37508750-625 X(X)	8 3/4	9 1/2	5/8
37508750-750 X(X)	8 3/4	9 1/2	3/4
37508875-625 X(X)	8 7/8	9 5/8	5/8
37509000X(X)	9	9 3/4	3/8
37509000-625 X(X)	9	9 3/4	5/8
37509250X(X)	9 1/4	10	3/8
37509250-625 X(X)	9 1/4	10	5/8
37509500X(X)	9 1/2	10 1/4	3/8
37509625-625 X(X)	9 5/8	10 3/8	5/8
37509750X(X)	9 3/4	10 1/2	3/8
37509750-500 X(X)	9 3/4	10 1/2	1/2
37509750-625 X(X)	9 3/4	10 1/2	5/8
37509875X(X)	9 7/8	10 5/8	3/8
37510000X(X)	10	10 3/4	3/8
37510250-500 X(X)	10 1/4	11	1/2
37510250-625 X(X)	10 1/4	11	5/8
37510250-750 X(X)	10 1/4	11	3/4
37510500X(X)	10 1/2	11 1/4	3/8
37510500-625 X(X)	10 1/2	11 1/4	5/8
37510750X(X)	10 3/4	11 1/2	3/8
37510750-625 X(X)	10 3/4	11 1/2	5/8
37511000X(X)	11	11 3/4	3/8
37511250X(X)	11 1/4	12	3/8
37511250-625 X(X)	11 1/4	12	5/8
37511500X(X)	11 1/2	12 1/4	3/8
37511500-625 X(X)	11 1/2	12 1/4	5/8

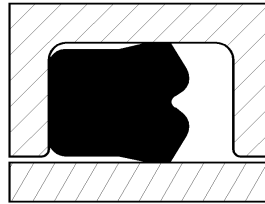
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37511750X(X)	11 3/4	12 1/2	3/8
37511750-625 X(X)	11 3/4	12 1/2	5/8
37511750-750 X(X)	11 3/4	12 1/2	3/4
37512000X(X)	12	12 3/4	3/8
37512000-625 X(X)	12	12 3/4	5/8
37512250X(X)	12 1/4	13	3/8
37512250-625 X(X)	12 1/4	13	5/8
37512500X(X)	12 1/2	13 1/4	3/8
37512500-625X(X)	12 1/2	13 1/4	5/8
37512750X(X)	12 3/4	13 1/2	3/8
37512750-625 X(X)	12 3/4	13 1/2	5/8
37513000X(X)	13	13 3/4	3/8
37513000-625 X(X)	13	13 3/4	5/8
37513250X(X)	13 1/4	14	3/8
37513500X(X)	13 1/2	14 1/4	3/8
37513500-625 X(X)	13 1/2	14 1/4	5/8
37513750X(X)	13 3/4	14 1/2	3/8
37513750-625 X(X)	13 3/4	14 1/2	5/8
37514000X(X)	14	14 3/4	3/8
37514250-625 X(X)	14 1/4	15	5/8
37514500X(X)	14 1/2	15 1/4	3/8
37514750X(X)	14 3/4	15 1/2	3/8
37514750-625 X(X)	14 3/4	15 1/2	5/8
37514875-625 X(X)	14 7/8	15 5/8	5/8
37515000X(X)	15	15 3/4	3/8
37515250-625 X(X)	15 1/4	16	5/8
37515500X(X)	15 1/2	16 1/4	3/8
37515750X(X)	15 3/4	16 1/2	3/8
37516000X(X)	16	16 3/4	3/8
37516250X(X)	16 1/4	17	3/8
37516500X(X)	16 1/2	17 1/4	3/8
37517250X(X)	17 1/4	18	3/8
37519250-625 X(X)	19 1/4	20	5/8
37523000X(X)	23	23 3/4	3/8
37524000-625 X(X)	24	24 3/4	5/8
37525000-625 X(X)	25	25 3/4	5/8
37525750-625 X(X)	25 3/4	26 1/2	5/8
37526750-625 X(X)	26 3/4	27 1/2	5/8
37527250X(X)	27 1/4	28	3/8
37527625X(X)	27 5/8	28 3/8	3/8
37529000-625 X(X)	29	29 3/4	5/8
37530000-625 X(X)	30	30 3/4	5/8
37531750X(X)	31 3/4	32 1/2	3/8
37532500X(X)	32 1/2	33 1/4	3/8
37535000-625 X(X)	35	35 3/4	5/8
37537000-625 X(X)	37	37 3/4	5/8



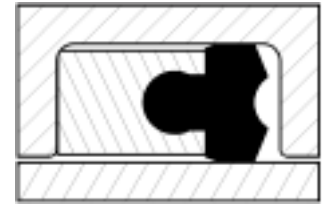
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37537500X(X)	37 1/2	38 1/4	3/8
37538500X(X)	38 1/2	39 1/4	3/8

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
37540000-625 X(X)	40	40 3/4	5/8

13/32 CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
40601187X(X)	1 3/16	2	13/32
40601250X(X)	1 1/4	2 1/16	13/32
40601437X(X)	1 7/16	2 1/4	13/32
40601687X(X)	1 11/16	2 1/2	13/32
40601750X(X)	1 3/4	2 9/16	13/32

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
40602187X(X)	2 3/16	3	13/32
40602687X(X)	2 11/16	3 1/2	13/32
40607187X(X)	7 3/16	8	13/32
40610187-500 X(X)	10 3/16	11	1/2
40613187X(X)	13 3/16	14	13/32

7/16" CROSS SECTION

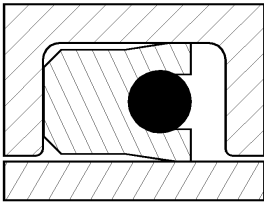
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
43701000X(X)	1	1 7/8	7/16
43701125-500 X(X)	1 1/8	2	1/2
43701250X(X)	1 1/4	2 1/8	7/16
43701375X(X)	1 3/8	2 1/4	7/16
43701437X(X)	1 7/16	2 5/16	7/16
43701500X(X)	1 1/2	2 3/8	7/16
43701750X(X)	1 3/4	2 5/8	7/16
43701875X(X)	1 7/8	2 3/4	7/16
43702000X(X)	2	2 7/8	7/16
43702125X(X)	2 1/8	3	7/16
43702250-375 X(X)	2 1/4	3 1/8	3/8
43702250-625 X(X)	2 1/4	3 1/8	5/8
43702500X(X)	2 1/2	3 3/8	7/16
43702500-625 X(X)	2 1/2	3 3/8	5/8
43702875X(X)	2 7/8	3 3/4	7/16
43703000X(X)	3	3 7/8	7/16
43703000-687 X(X)	3	3 7/8	11/16
43703125X(X)	3 1/8	4	7/16
43703125-687 X(X)	3 1/8	4	11/16

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
43703250X(X)	3 1/4	4 1/8	7/16
43703375-500 X(X)	3 3/8	4 1/4	1/2
43703625X(X)	3 5/8	4 1/2	7/16
43703875-500 X(X)	3 7/8	4 3/4	1/2
43703875-750 X(X)	3 7/8	4 3/4	3/4
43704000X(X)	4	4 7/8	7/16
43704000-625 X(X)	4	4 7/8	5/8
43704500X(X)	4 1/2	5 3/8	7/16
43704500-750 X(X)	4 1/2	5 3/8	3/4
43704750X(X)	4 3/4	5 5/8	7/16
43704750-625 X(X)	4 3/4	5 5/8	5/8
43704750-750 X(X)	4 3/4	5 5/8	3/4
43704875-562 X(X)	4 7/8	5 3/4	9/16
43705000-750 X(X)	5	5 7/8	3/4
43705125X(X)	5 1/8	6	7/16
43705125-500 X(X)	5 1/8	6	1/2
43705500X(X)	5 1/2	6 3/8	7/16
43706750-750 X(X)	6 3/4	7 5/8	3/4
43719375-500 X(X)	19 3/8	20 1/4	1/2

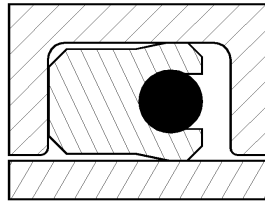
1/2" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
50000625X(X)	5/8	1 5/8	1/2
50000750X(X)	3/4	1 3/4	1/2
50001000X(X)	1	2	1/2
50001000-750 X(X)	1	2	3/4
50001125X(X)	1 1/8	2 1/8	1/2

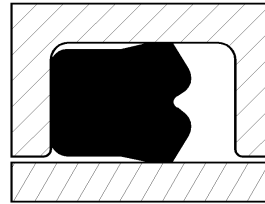
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
50001125-750 X(X)	1 1/8	2 1/8	3/4
50001187X(X)	1 3/16	2 3/16	1/2
50001250X(X)	1 1/4	2 1/4	1/2
50001312X(X)	1 5/16	2 5/16	1/2
50001375X(X)	1 3/8	2 3/8	1/2



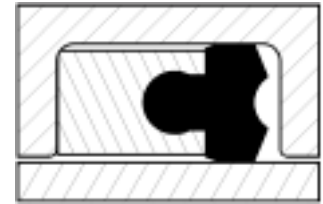
PolyKing O



PolyKing B



PolyKing HE

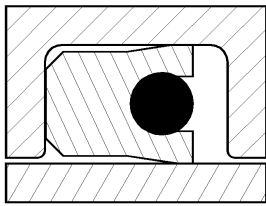


PolyKing HB

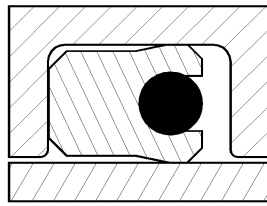
X(X) at the end of the part number is the PolyKing Style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
50001500X(X)	1 1/2	2 1/2	1/2
50001500-750 X(X)	1 1/2	2 1/2	3/4
50001750X(X)	1 3/4	2 3/4	1/2
50001750-750 X(X)	1 3/4	2 3/4	3/4
50001875X(X)	1 7/8	2 7/8	1/2
50002000X(X)	2	3	1/2
50002000-750 X(X)	2	3	3/4
50002125X(X)	2 1/8	3 1/8	1/2
50002250X(X)	2 1/4	3 1/4	1/2
50002375X(X)	2 3/8	3 3/8	1/2
50002500X(X)	2 1/2	3 1/2	1/2
50002500-750 X(X)	2 1/2	3 1/2	3/4
50002750X(X)	2 3/4	3 3/4	1/2
50002875X(X)	2 7/8	3 7/8	1/2
50003000X(X)	3	4	1/2
50003000-750 X(X)	3	4	3/4
50003250X(X)	3 1/4	4 1/4	1/2
50003250-750 X(X)	3 1/4	4 1/4	3/4
50003375-625 X(X)	3 3/8	4 3/8	5/8
50003500X(X)	3 1/2	4 1/2	1/2
50003500-750 X(X)	3 1/2	4 1/2	3/4
50003625X(X)	3 5/8	4 5/8	1/2
50003750X(X)	3 3/4	4 3/4	1/2
50003750-687 X(X)	3 3/4	4 3/4	11/16
50003875-750 X(X)	3 7/8	4 7/8	3/4
50004000X(X)	4	5	1/2
50004000-750 X(X)	4	5	3/4
50004125X(X)	4 1/8	5 1/8	1/2
50004250X(X)	4 1/4	5 1/4	1/2
50004250-750 X(X)	4 1/4	5 1/4	3/4
50004312X(X)	4 5/16	5 5/16	1/2
50004375X(X)	4 3/8	5 5/8	1/2
50004375-625 X(X)	4 3/8	5 3/8	5/8
50004375-750 X(X)	4 3/8	5 3/8	3/4
50004500X(X)	4 1/2	5 1/2	1/2
50004500-750 X(X)	4 1/2	5 1/2	3/4
50004750X(X)	4 3/4	5 3/4	1/2
50004750-687 X(X)	4 3/4	5 3/4	11/16
50004750-750 X(X)	4 3/4	5 3/4	3/4
5004875-562 X(X)	4 7/8	5 7/8	9/16
50005000X(X)	5	6	1/2
50005000-750 X(X)	5	6	3/4
50005125X(X)	5 1/8	6 1/8	1/2
50005125-750 X(X)	5 1/8	6 1/8	3/4
50005250X(X)	5 1/4	6 1/4	1/2
50005250-750 X(X)	5 1/4	6 1/4	3/4

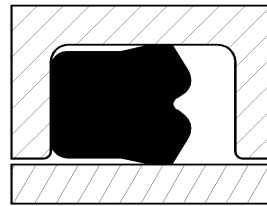
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
50005375X(X)	5 3/8	6 3/8	1/2
50005437X(X)	5 7/16	6 7/16	1/2
50005500X(X)	5 1/2	6 1/2	1/2
50005500-750 X(X)	5 1/2	6 1/2	3/4
50005750X(X)	5 3/4	6 3/4	1/2
50005750-750 X(X)	5 3/4	6 3/4	3/4
50006000X(X)	6	7	1/2
50006000-750 X(X)	6	7	3/4
50006250X(X)	6 1/4	7 1/4	1/2
50006250-750X(X)	6 1/4	7 1/4	3/4
50006375X(X)	6 3/8	7 3/8	1/2
50006500X(X)	6 1/2	7 1/2	1/2
50006500-750 X(X)	6 1/2	7 1/2	3/4
50006750X(X)	6 3/4	7 3/4	1/2
50006750-750 X(X)	6 3/4	7 3/4	3/4
50007000X(X)	7	8	1/2
50007000-750 X(X)	7	8	3/4
50007250X(X)	7 1/4	8 1/4	1/2
50007250-750 X(X)	7 1/4	8 1/4	3/4
50007500X(X)	7 1/2	8 1/2	1/2
50007500-750 X(X)	7 1/2	8 1/2	3/4
50007750X(X)	7 3/4	8 3/4	1/2
50007750-750 X(X)	7 3/4	8 3/4	3/4
50008000X(X)	8	9	1/2
50008000-750 X(X)	8	9	3/4
50008125X(X)	8 1/8	9 1/8	1/2
50008250X(X)	8 1/4	9 1/4	1/2
50008250-750 X(X)	8 1/4	9 1/4	3/4
50008500X(X)	8 1/2	9 1/2	1/2
50008500-750 X(X)	8 1/2	9 1/2	3/4
50008750X(X)	8 3/4	9 3/4	1/2
50008875-750 X(X)	8 7/8	9 7/8	3/4
50009000X(X)	9	10	1/2
50009000-750 X(X)	9	10	3/4
50009250-750 X(X)	9 1/4	10 1/4	3/4
50009500X(X)	9 1/2	10 1/2	1/2
50009500-750 X(X)	9 1/2	10 1/2	3/4
50009750X(X)	9 3/4	10 3/4	1/2
50010000X(X)	10	11	1/2
50010000-750 X(X)	10	11	3/4
5010250-750 X(X)	10 1/4	11 1/4	3/4
50010500X(X)	10 1/2	11 1/2	1/2
50010500-750 X(X)	10 1/2	11 1/2	3/4
50010625-750 X(X)	10 5/8	11 5/8	3/4
50010750X(X)	10 3/4	11 3/4	1/2
50010750-750 X(X)	10 3/4	11 3/4	3/4



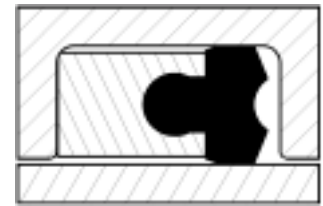
PolyKing O



PolyKing B



PolyKing HE



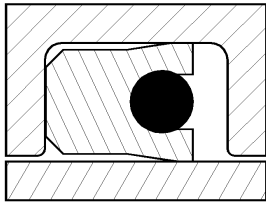
PolyKing HB

X(X) at the end of the part number is the PolyKing Style

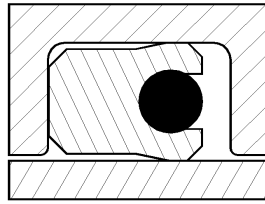
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
50010875X(X)	10 7/8	11 7/8	1/2
50011000X(X)	11	12	1/2
50011000-750 X(X)	11	12	3/4
50011250X(X)	11 1/4	12 1/4	1/2
50011375X(X)	11 3/8	12 3/8	1/2
50011375+750 X(X)	11 3/8	12 3/8	3/4
50011500X(X)	11 1/2	12 1/2	1/2
50011500-750 X(X)	11 1/2	12 1/2	3/4
50011750X(X)	11 3/4	12 3/4	1/2
50011750-750 X(X)	11 3/4	12 3/4	3/4
50011875-750 X(X)	11 7/8	12 7/8	3/4
50012000X(X)	12	13	1/2
50012000-750 X(X)	12	13	3/4
50012125-750 X(X)	12 1/8	13 1/8	3/4
50012250-750 X(X)	12 1/4	13 1/4	3/4
50012500-750 X(X)	12 1/2	13 1/2	3/4
50012750X(X)	12 3/4	13 3/4	1/2
50013000X(X)	13	14	1/2
50013000-750 X(X)	13	14	3/4
50013250X(X)	13 1/4	14 1/4	1/2
50013250-750 X(X)	13 1/4	14 1/4	3/4
50013500-750 X(X)	13 1/2	14 1/2	3/4
50014000X(X)	14	15	1/2
50014000-750 X(X)	14	15	3/4
50014500X(X)	14 1/2	15 1/2	1/2
50014750X(X)	14 3/4	15 3/4	1/2
50014750-750 X(X)	14 3/4	15 3/4	3/4
50015000X(X)	15	16	1/2
50015000-750 X(X)	15	16	3/4
50015500-750 X(X)	15 1/2	16 1/2	3/4
50015750X(X)	15 3/4	16 3/4	1/2
50016000-750 X(X)	16	17	3/4
50016500-750 X(X)	16 1/2	17 1/2	3/4
50016750-750 X(X)	16 3/4	17 3/4	3/4
50017000X(X)	17	18	1/2
50017000-750 X(X)	17	18	3/4
50017500X(X)	17 1/2	18 1/2	1/2
50017500-750 X(X)	17 1/2	18 1/2	3/4
50018000-750 X(X)	18	19	3/4
50018500-750 X(X)	18 1/2	19 1/2	3/4

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
50019000X(X)	19	20	1/2
50019000-750 X(X)	19	20	3/4
50019500X(X)	19 1/2	20 1/2	1/2
50019625-750 X(X)	19 5/8	20 5/8	3/4
50020000X(X)	20	21	1/2
50020000-750 X(X)	20	21	3/4
50020250-750 X(X)	20 1/4	21 1/4	3/4
50020500-750 X(X)	20 1/2	21 1/2	3/4
50021000X(X)	21	22	1/2
50021000-750 X(X)	21	22	3/4
50021500-750 X(X)	21 1/2	22 1/2	3/4
50022750-625 X(X)	22 3/4	23 3/4	5/8
50023000X(X)	23	24	1/2
50024000-750 X(X)	24	25	3/4
50024500-750 X(X)	24 1/2	25 1/2	3/4
50024875-750 X(X)	24 7/8	25 7/8	3/4
50025250-750 X(X)	25 1/4	26 1/4	3/4
50026000X(X)	26	27	1/2
50026125-750 X(X)	26 1/8	27 1/8	3/4
50026500X(X)	26 1/2	27 1/2	1/2
50026500-750 X(X)	26 1/2	27 1/2	3/4
50027000-750 X(X)	27	28	3/4
50027500-750 X(X)	27 1/2	28 1/2	3/4
50028000X(X)	28	29	1/2
50028500-750 X(X)	28 1/2	29 1/2	3/4
50029000-750 X(X)	29	30	3/4
50030750-750 X(X)	30 3/4	31 3/4	3/4
50031000X(X)	31	32	1/2
50032000X(X)	32	33	1/2
50033000-750 X(X)	33	34	3/4
50034500-750 X(X)	34 1/2	35 1/2	3/4
50037000-750 X(X)	37	38	3/4
50038000-750 X(X)	38	39	3/4
50038750-750 X(X)	38 3/4	39 3/4	3/4
50041000-750 X(X)	41	42	3/4
50042000-750 X(X)	42	43	3/4
50043500-750 X(X)	43 1/2	44 1/2	3/4
50044125-750 X(X)	44 1/8	45 1/8	3/4
50047500-750 X(X)	47 1/2	48 1/2	3/4

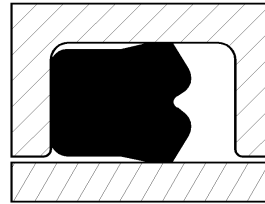
Please contact Seal Science for available sizes.



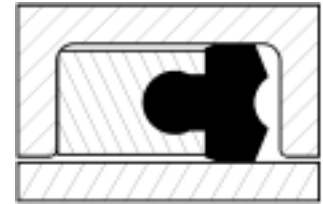
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing Style

9/16" CROSS SECTION

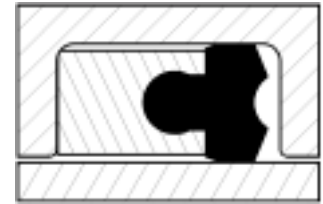
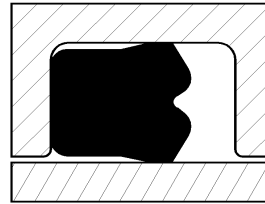
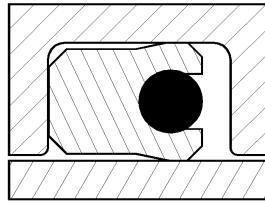
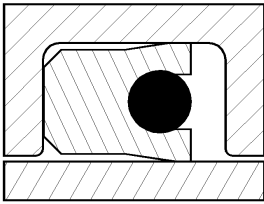
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
56201875-875 X(X)	1 7/8	3	7/8
56202250-875 X(X)	2 1/4	3 3/8	7/8
53202375-875 X(X)	2 3/8	3 1/2	7/8
56202500X(X)	2 1/2	3 5/8	9/16
56202625X(X)	2 5/8	3 3/4	9/16

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
56202875-875 X(X)	2 7/8	4	7/8
56204125X(X)	4 1/8	5 1/4	9/16
56205500X(X)	5 1/2	6 5/8	9/16
56206750X(X)	6 3/4	7 7/8	9/16
56212562-875 X(X)	12 9/16	13 11/16	7/8

5/8" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
62501250X(X)	1 1/4	2 1/2	5/8
62501750X(X)	1 3/4	3	5/8
62501812X(X)	1 13/16	3 1/16	5/8
62501875X(X)	1 7/8	3 1/8	5/8
62501875-1000 X(X)	1 7/8	3 1/8	1
62502000X(X)	2	3 1/4	5/8
62502250X(X)	2 1/4	3 1/2	5/8
62502375X(X)	2 3/8	3 5/8	5/8
62502500X(X)	2 1/2	3 3/4	5/8
62502750X(X)	2 3/4	4	5/8
62502750-1000 X(X)	2 3/4	4	1
62502812X(X)	2 13/16	4 1/16	5/8
62502875-1000 X(X)	2 7/8	4 1/8	1
62503000X(X)	3	4 1/4	5/8
62503250X(X)	3 1/4	4 1/2	5/8
62503250-1000 X(X)	3 1/4	4 1/2	1
62503375X(X)	3 3/8	4 5/8	5/8
62503500X(X)	3 1/2	4 3/4	5/8
62503500-1000 X(X)	3 1/2	4 3/4	1
62503750X(X)	3 3/4	5	5/8
62503750-1000 X(X)	3 3/4	5	1
62503875X(X)	3 7/8	5 1/8	5/8
62504000X(X)	4	5 1/4	5/8
62504250X(X)	4 1/4	5 1/2	5/8
62504250-1000 X(X)	4 1/4	5 1/2	1
62504500X(X)	4 1/2	5 1/2	5/8
62504625X(X)	4 5/8	5 7/8	5/8
62504750X(X)	4 3/4	6	5/8
62504750-1000 X(X)	4 3/4	6	1
62505000X(X)	5	6 1/4	5/8
62505000-1000 X(X)	5	6 1/4	1
62505250-1000 X(X)	5 1/4	6 1/2	1
62505500X(X)	5 1/2	6 3/4	5/8

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
62505500-1000 X(X)	5 1/2	6 3/4	1
62505750X(X)	5 3/4	7	5/8
62506000X(X)	6	7 1/4	5/8
62506000-1000 X(X)	6	7 1/4	1
62506031X(X)	6 1/32	7 9/32	5/8
62506250X(X)	6 1/4	7 1/2	5/8
62506500X(X)	6 1/2	7 3/4	5/8
62506500-1000 X(X)	6 1/2	7 3/4	1
62506625X(X)	6 5/8	7 7/8	5/8
62506750X(X)	6 3/4	8	5/8
62506750-1000 X(X)	6 3/4	8	1
62506812X(X)	6 13/16	8 1/16	5/8
62506875X(X)	6 7/8	8 1/8	5/8
62507000X(X)	7	8 1/4	5/8
62507000-1000 X(X)	7	8 1/4	1
62507125-1000 X(X)	7 1/8	8 3/8	1
62507250-1000 X(X)	7 1/4	8 1/2	1
62507500-1000 X(X)	7 1/2	8 3/4	1
62507750X(X)	7 3/4	9	5/8
62507750-1000 X(X)	7 3/4	9	1
62508000X(X)	8	9 1/4	5/8
62508187X(X)	8 3/16	9 7/16	5/8
62508187-1000 X(X)	8 3/16	9 7/16	1
62508250X(X)	8 1/4	9 1/2	5/8
62508250-1000 X(X)	8 1/4	9 1/2	1
62508375X(X)	8 3/8	9 5/8	5/8
62508500X(X)	8 1/2	9 3/4	5/8
62508500-1000 X(X)	8 1/2	9 3/4	1
62508625X(X)	8 5/8	9 7/8	5/8
62508750X(X)	8 3/4	10	5/8
62508750-1000 X(X)	8 3/4	10	1
62509000X(X)	9	10 1/4	5/8
62509000-1000 X(X)	9	10 1/4	1



PolyKing O

PolyKing B

PolyKing HE

PolyKing HB

X(X) at the end of the part number is the PolyKing Style

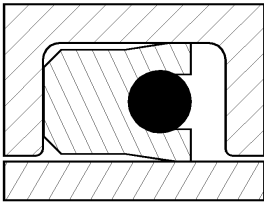
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
62509250X(X)	9 1/4	10 1/2	5/8
62509750X(X)	9 3/4	11	5/8
62509750-1000 X(X)	9 3/4	11	1
62509875-1000 X(X)	9 7/8	11 1/8	1
62510000X(X)	10	11 1/4	5/8
62510000-1000 X(X)	10	11 1/4	1
62510250X(X)	10 1/4	11 1/2	5/8
62510500X(X)	10 1/2	11 3/4	5/8
62510500-750 X(X)	10 1/2	11 3/4	3/4
62511000X(X)	11	12 1/4	5/8
62511000-1000 X(X)	11	12 1/4	1
62511250-1000 X(X)	11 1/4	12 1/2	1
62511500-1000 X(X)	11 1/2	12 3/4	1
62511750-1000 X(X)	11 3/4	13	1
62512000X(X)	12	13 1/4	5/8
62512000-1000 X(X)	12	13 1/4	1
62512250X(X)	12 1/4	13 1/2	5/8
62512250-1000 X(X)	12 1/4	13 1/2	1
62512500-1000 X(X)	12 1/2	13 3/4	1

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
62512750X(X)	12 3/4	14	5/8
62512750-1000 X(X)	12 3/4	14	1
62513000X(X)	13	14 1/4	5/8
62513500-875 X(X)	13 1/2	14 3/4	7/8
62514000-1000 X(X)	14	15 1/4	1
62514750X(X)	14 3/4	16	5/8
62515000X(X)	15	16 1/4	5/8
62515500-1000 X(X)	15 1/2	16 3/4	1
62516750X(X)	16 3/4	18	5/8
62517500-1000 X(X)	17 1/2	18 3/4	1
62517750-1000 X(X)	17 3/4	19	1
62518000-1000 X(X)	18	19 1/4	1 1/4
62518750X(X)	18 3/4	20	5/8
62518750-1000 X(X)	18 3/4	20	1
62519250X(X)	19 1/4	20 1/2	5/8
62519750-1000 X(X)	19 3/4	21	1
62520000X(X)	20	21 1/4	5/8
62524750X(X)	24 3/4	26	5/8
62530000-1000 X(X)	30	30 1/4	1

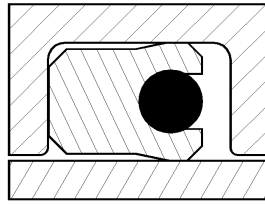
3/4" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
75002000-1125 X(X)	2	3 1/2	1 1/8
75002750-1125X(X)	2 3/4	4 1/4	1 1/8
75003000X(X)	3	4 1/2	3/4
75003125X(X)	3 1/8	4 5/8	3/4
75003500X(X)	3 1/2	5	3/4
75003750X(X)	3 3/4	5 1/4	3/4
75004000X(X)	4	5 1/2	3/4
75004250X(X)	4 1/4	5 3/4	3/4
75004500X(X)	4 1/2	6	3/4
75005000X(X)	5	6 1/2	3/4
75005250X(X)	5 1/4	6 3/4	3/4
75005500X(X)	5 1/2	7	3/4
75005500-1250 X(X)	5 1/2	7	1 1/4
75006000X(X)	6	7 1/2	3/4
75006250-1250 X(X)	6 1/4	7 3/4	1 1/4
75006500X(X)	6 1/2	8	3/4
75006500-1250 X(X)	6 1/2	8	1 1/4
75007000X(X)	7	8 1/2	3/4
75007000-1250 X(X)	7	8 1/2	1 1/4
75007125X(X)	7 1/8	8 5/8	3/4
75007500X(X)	7 1/2	9	3/4
75007500-1250 X(X)	7 1/2	9	1 1/4
75008000X(X)	8	9 1/2	3/4

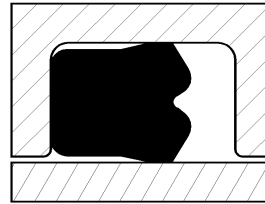
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
75008000-1125 X(X)	8	9 1/2	1 1/8
75008250X(X)	8 1/4	9 3/4	3/4
75008375X(X)	8 3/8	9 7/8	3/4
75008500X(X)	8 1/2	10	3/4
75008500-1125 X(X)	8 1/2	10	1 1/8
75008500-1250 X(X)	8 1/2	10	1 1/4
75009000X(X)	9	10 1/2	3/4
75009000-1250 X(X)	9	10 1/2	1 1/4
75009500X(X)	9 1/2	11	3/4
75009750-1250 X(X)	9 3/4	11 1/4	1 1/4
75009812-1250 X(X)	9 13/16	11 5/16	1 1/4
75010000X(X)	10	11 1/2	3/4
75010000-1250 X(X)	10	11 1/2	1 1/4
75010500X(X)	10 1/2	12	3/4
75010500-1000 X(X)	10 1/2	12	1
75010750X(X)	10 3/4	12 1/4	3/4
75011000X(X)	11	12 1/2	3/4
75011000-1250 X(X)	11	12 1/2	1 1/4
75011500-1250X(X)	11 1/2	13	1 1/4
75012000X(X)	12	13 1/2	3/4
75012000-1250 X(X)	12	13 1/2	1 1/4
75012500X(X)	12 1/2	14	3/4
75012500-1250 X(X)	12 1/2	14	1 1/4



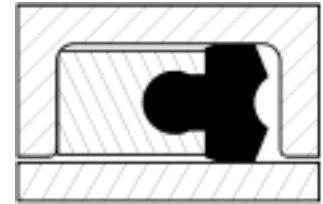
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing Style

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
75013000X(X)	13	14 1/2	3/4
75013000-1000 X(X)	13	14 1/2	1
75013500X(X)	13 1/2	15	3/4
75013750X(X)	13 3/4	15 1/4	3/4
75014000X(X)	14	15 1/2	3/4
75014000-1250 X(X)	14	15 1/2	1 1/4
75014250X(X)	14 1/4	15 3/4	3/4
75014500X(X)	14 1/2	16	3/4
75014750X(X)	14 3/4	16 1/4	3/4
75015000-1250 X(X)	15	16 1/2	1 1/4
75015625-1250 X(X)	15 5/8	17 1/8	1 1/4
75016000X(X)	16	17 1/2	3/4
75016500X(X)	16 1/2	18	3/4
75016500-1250 X(X)	16 1/2	18	1 1/4
75017375-1250 X(X)	17 3/8	18 7/8	1 1/4
75017625-1250 X(X)	17 5/8	19 1/8	1 1/4
75018000X(X)	18	19 1/2	3/4
75018000-1250 X(X)	18	19 1/2	1 1/4
75019000X(X)	19	20 1/2	3/4

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
75019000-1250 X(X)	19	20 1/2	1 1/4
75020000-1000 X(X)	20	20 1/2	1
75020000-1250 X(X)	20	20 1/2	1 1/4
75020500X(X)	20 1/2	22	3/4
75020500-1000 X(X)	20 1/2	22	1
75021000-1250 X(X)	21	22 1/2	1 1/4
75021500-1250 X(X)	21 1/2	23	1 1/4
75022000X(X)	22	23 1/2	3/4
75022000-1250 X(X)	22	23 1/2	1 1/4
75022500X(X)	22 1/2	24	3/4
75022500-1250 X(X)	22 1/2	24	1 1/4
75023500-1250 X(X)	23 1/2	25	1 1/4
75024000-1250 X(X)	24	25 1/2	1 1/4
75025500X(X)	25 1/2	27	3/4
75025500-875 X(X)	25 1/2	27	7/8
75026000X(X)	26	27 1/2	3/4
75029500-1500 X(X)	29 1/2	31	1 1/2
75032000-875 X(X)	32	33 1/2	7/8

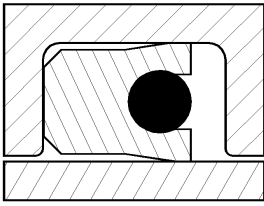
7/8" CROSS SECTION

PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
87505000-1000 X(X)	5	6 3/4	1
87507750X(X)	7 3/4	9 1/2	7/8
87508500X(X)	8 1/2	10 1/4	7/8
87509750X(X)	9 3/4	11 1/2	7/8
87510000X(X)	10	11 3/4	7/8
87513000-1375 X(X)	13	14 3/4	1 3/8
87514000-1500 X(X)	14	15 3/4	1 1/2
87516000-1250 X(X)	16	17 3/4	1 1/4

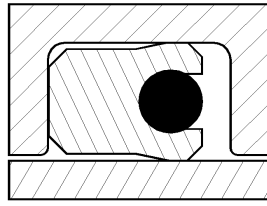
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
87516000-1375 X(X)	16	17 3/4	1 3/8
87516250X(X)	16 1/4	18	7/8
87518000-1250 X(X)	18	19 3/4	1 1/4
87519250X(X)	19 1/4	21	7/8
87519937-1375 X(X)	19 15/16	21 11/16	1 3/8
87520000X(X)	20	21 3/4	7/8
87524000-1250 X(X)	24	25 3/4	1 1/4
87536000-1375 X(X)	36	37 3/4	1 1/4

1" CROSS SECTION

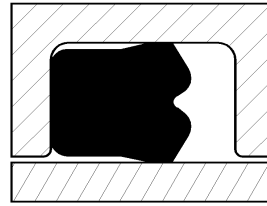
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	Height
100002000X(X)	2	4	1
100003000X(X)	3	5	1
100004000X(X)	4	6	1
100004250X(X)	4 1/4	6 1/4	1
100006000X(X)	6	8	1
100007000X(X)	7	9	1
100007500X(X)	7 1/2	9 1/2	1



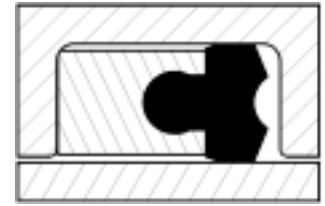
PolyKing O



PolyKing B



PolyKing HE



PolyKing HB

X(X) at the end of the part number is the PolyKing Style

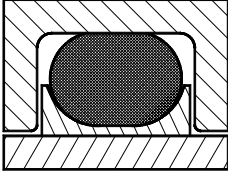
PART NUMBER	INSIDE DIAMETER	OUTSIDE DIAMETER	HEIGHT
100008000X(X)	8	10	1
100010000X(X)	10	12	1
100011750X(X)	11 3/4	13 3/4	1
100012000X(X)	12	14	1
100012000-1500 X(X)	12	14	1 1/2
100012500X(X)	12 1/2	14 1/2	1
100013000X(X)	13	15	1
100014000X(X)	14	16	1
100014500X(X)	14 1/2	16 1/2	1
100015000-1500 X(X)	15	17	1 1/2
100016000X(X)	16	18	1
100016000-1250 X(X)	16	18	1 1/4
100017000-1250 X(X)	17	19	1 1/4
100017500-1500 X(X)	17 1/2	19 1/2	1 1/2
100018500X(X)	18 1/2	20 1/2	1
100020000-1500 X(X)	20	22	1 1/2
100021250-1500 X(X)	21 1/4	23 1/4	1 1/2
100022000-1375 X(X)	22	24	1 3/8
100023375X(X)	23 3/8	25 3/8	1
100024000-1500 X(X)	24	26	1 1/2
100026000-1500 X(X)	26	28	1 1/2
100028000X(X)	28	30	1
100029000-1500 X(X)	29	31	1 1/2
100030000-1500 X(X)	30	32	1 1/2
100033375-1500 X(X)	33 3/8	35 3/8	1 1/2

Please contact Seal Science for available sizes.

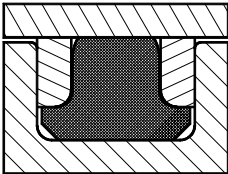
PolyKing Styles

For Standard Industrial No Back-up Width O-ring Grooves

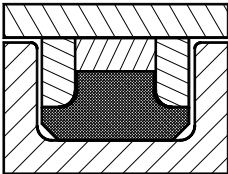
See Table 2 for groove dimensions



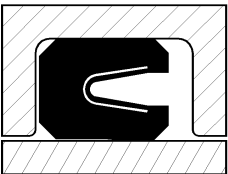
PolyKing C: Can be either a rod or a piston seal. This is an inexpensive way to get the low friction of TFE in a bi-directional seal. Temperature and fluid compatibility are only limited by the o-ring compound. Call out if rod or piston.



PolyKing T: Normally used as a piston seal. Use this bi-directional seal in cases of higher pressure or large extrusion gaps. Temperature and fluid compatibility are limited by the elastomer and back-up materials. Call out if rod or piston. This seal is not available in 1/16 cross section. The pressure on this seal may be double that listed under E max on Table 2.



PolyKing H: Normally used as a piston seal. This seal has the high pressure advantages of the PolyKing T and friction advantages of the PolyKing C. Temperature and fluid compatibility are limited by the elastomer and back-up materials. Call out if rod or piston. This seal is not available in 1/16 cross section. The pressure on this seal may be double that listed under E max on Table 2.



PolyKing S: Can be either a rod or a piston seal. This spring energized uni-directional elastomeric seal compensates for compression set in the elastomer. Temperature and fluid compatibility are limited by the elastomer compound. This seal is not available in 1/16 cross section.

PolyKing Part Numbering System (Styles CP, CR, HP, HR, S, TP, TR)

K H P 3 - 05000 - T80 - N - N20

PolyKing Style Code

P for piston seal or
R for rod seal (if required)

Cross Section Code

Replace Dash with M if Micro Grooved

For Rod Seals $\varnothing A$ in 1/1000 s of an inch
For Piston Seals $\varnothing B$ in 1/1000 s of an inch

Replace Dash with N if Notched

Jacket or Cap Material Code (if required use table 6 or 9)

Energizer Material Code
(if required use table 7, for PolyKing T use table 6)

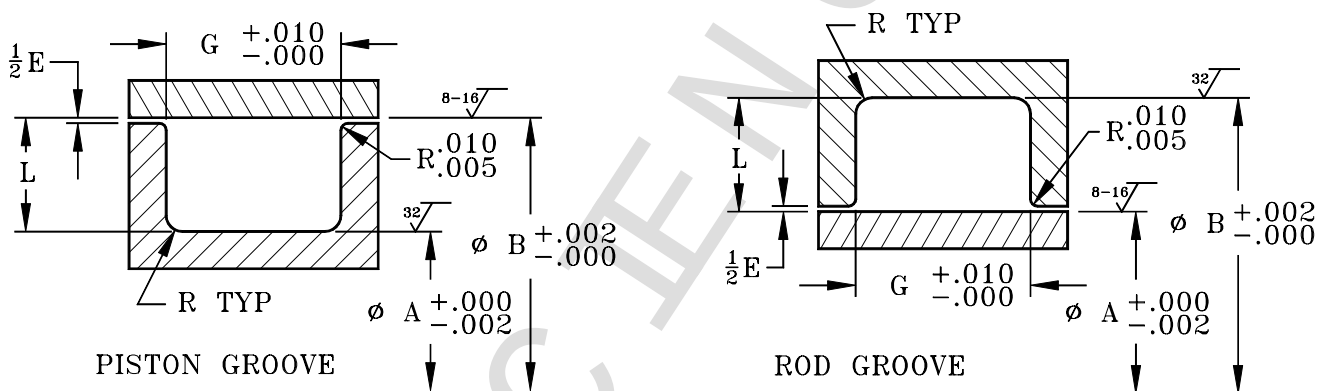
Back-Up Ring Material Code
(if required use table 8)

Standard Industrial Groove Dimensions For PolySpring and PolyKing Styles CP, CR, HP, HR, S, TP and TR

Table 2

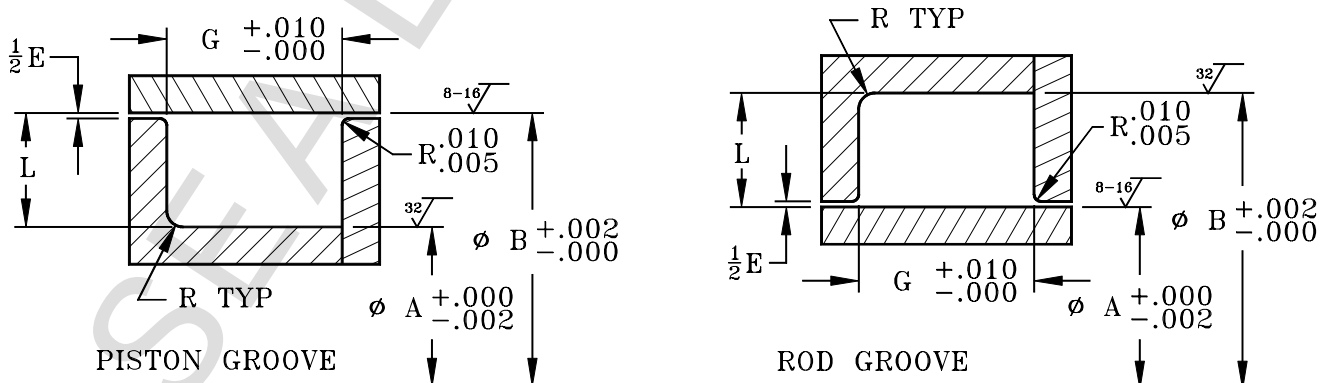
Cross Section		L	Ø A	Ø B	G	R	Diameter A Range	E max	
Nominal	Code							800 psi	1500psi
1/6	0	.062	ØB-.124	ØA+.124	.094	.005/.015	.150/3.500	.016	.005
3/32	1	.093	ØB-.186	ØA+.186	.141	.005/.015	.250/5.500	.016	.005
1/8	2	.125	ØB-.250	ØA+.250	.188	.010/.025	.300/6.500	.020	.006
3/16	3	.188	ØB-.376	ØA+.376	.281	.020/.035	.475/9.500	.020	.006
1/4	4	.250	ØB-.500	ØA+.500	.375	.020/.035	1.000/19.500	.020	.007
3/8	5	.375	ØB-.750	ØA+.750	.500	.020/.035	1.250/19.500	.020	.007

One Piece Groove



Two Piece Groove

For ease of installation use this style of groove when the smaller diameter divided by the cross section is less than 20 ($\phi A/L < 20$).

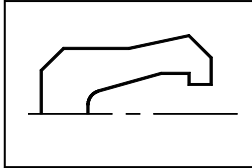


PolySpring Styles

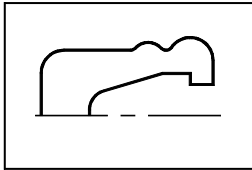
All of these seal designs fit in the grooves shown on table 2

PolySprings are unidirectional reciprocating seals for use on either rod or piston. They can be manufactured from any machinable plastic (see Table 9 on page E-4). There are four lip configurations that can be energized with an o-ring or two styles of metal spring.

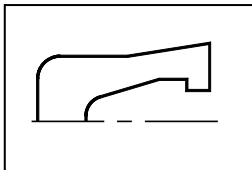
Lip Styles



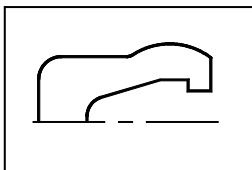
TYPE B lips are recommended as the general purpose style. The bevel lip creates a high unit load at the sealing line resulting in excellent sealability.



TYPE D lips provide good sealability and are recommended as the general purpose style requiring some redundancy. This lip style is not available 1/16 or 3/32 cross sections.

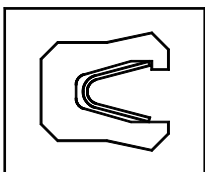


TYPE S lips are intended for use primarily as scrapers. They are also used to prevent seal hydroplaning in high speed systems.

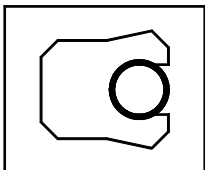


TYPE T lips are mainly used on linear motion systems with poor angular control.

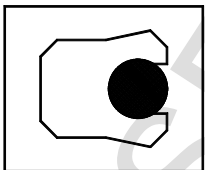
Energizer Styles



TYPE F spring is the general purpose lip seal energizer. It provides good loading over most of its range of squeeze.



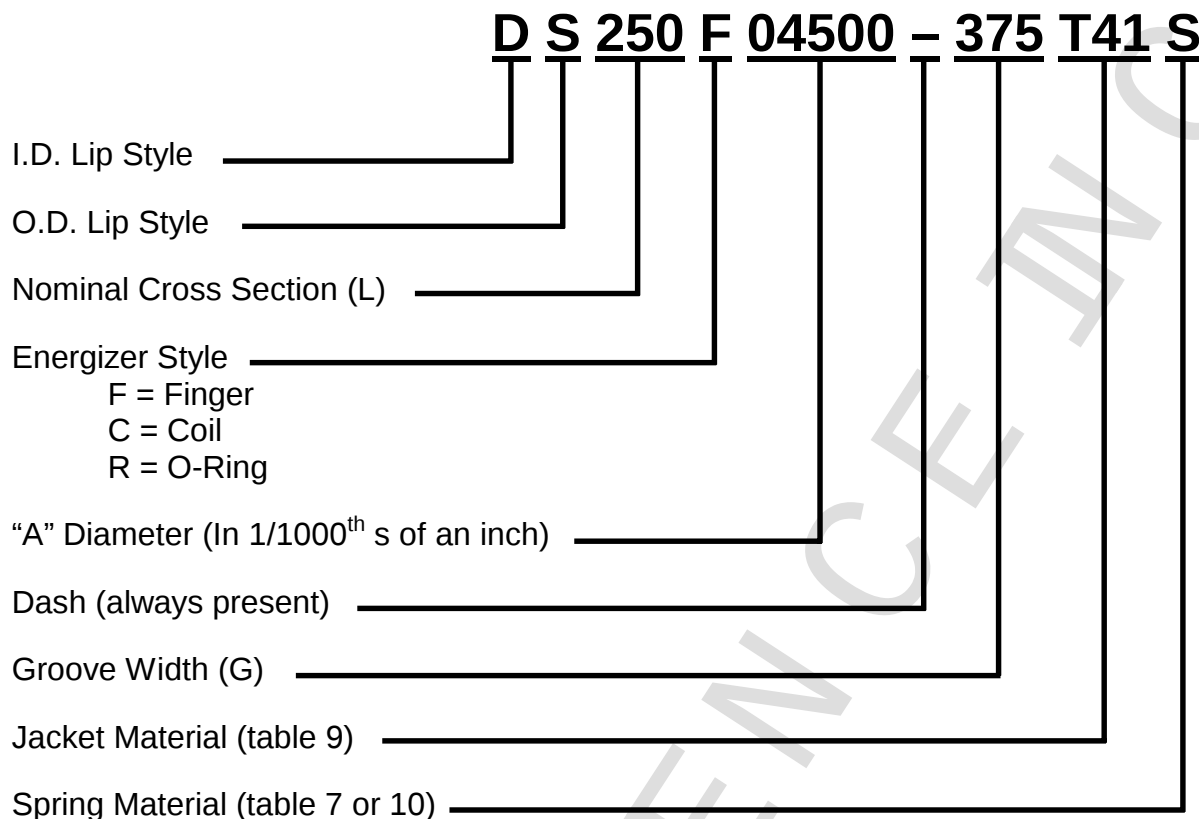
TYPE C spring is generally used in static applications because they provide very high unit load but not much wear compensation.



TYPE R energizer is an inexpensive alternate to a metal spring and can be used where temperature and fluid compatibility are not an issue.

Part Numbers

PolySpring Part Numbering System



Example:

Design and specify the part number of a piston seal for a cylinder with a 6” bore where the media to be sealed can be any hydraulic fluid including mineral oil, phosphate ester oil and “green” hydraulic fluids. The operating temperature is 40° F to 210° F. System pressure is 2000 psi and max velocity is 10 feet per minute. Also, it is desirable to have a one piece piston which means using a 1/8” cross section.

Because of the diverse media possibilities there are no viable elastomeric seals, therefore a spring energized filled PTFE seal is recommended. For the best sealability the B style lip proper choice. The jacket material that is compatible with the fluid and is the longest wearing is the T80 bronze filled PTFE. The spring can be 301 SST.

Go to page C-2 for the groove dimensions

Ø B = 6.000/6.002

Ø A = B-.250= 5.750/5.748

The groove length “G” = .188/.198

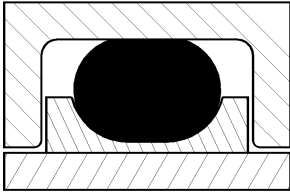
The part number is: **BB125F05750-188T80S**

The above information is for standard radial seals **Seal Science** also engineers and manufactures rotary, oscillatory, inside and outside face seals, and custom designed spring energized seals. For assistance with your application contact the factory.

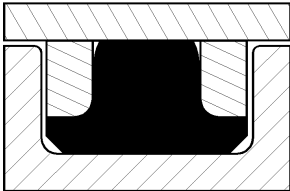
Wide and Extra Wide PolyKing Styles

For use in one or two back-up width standard industrial o-ring grooves

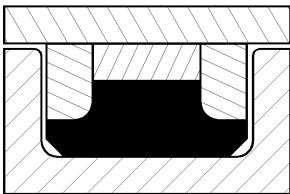
See Table 3 for groove dimensions



PolyKing C: Can be either a rod or a piston seal. This is an inexpensive way to get the low friction of TFE in a bi-directional seal. Temperature and fluid compatibility are only limited by the o-ring compound.

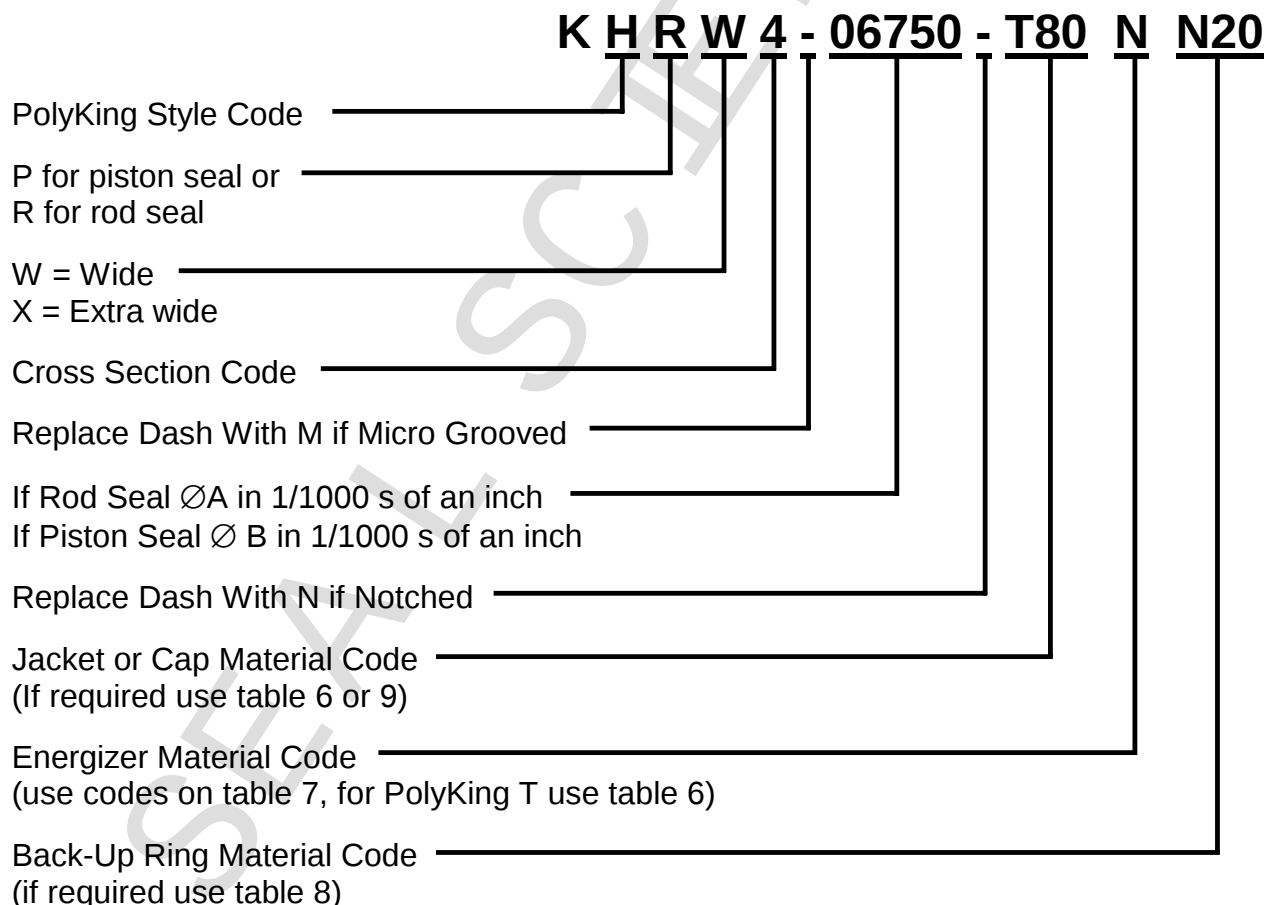


PolyKing T: Normally used as a piston seal. Use this bi-directional seal in cases of higher pressure or large extrusion gaps. Temperature and fluid compatibility are limited by the elastomer and back-up materials. Use table 5 for the elastomer material code.



PolyKing H: Normally used as a piston seal. This seal has the high pressure advantages of the PolyKing T and friction advantages of the PolyKing C. Temperature and fluid compatibility are limited by the elastomer and back-up materials. Not available in 1/16 cross section.

Wide and Extra wide PolyKing Part Numbering System

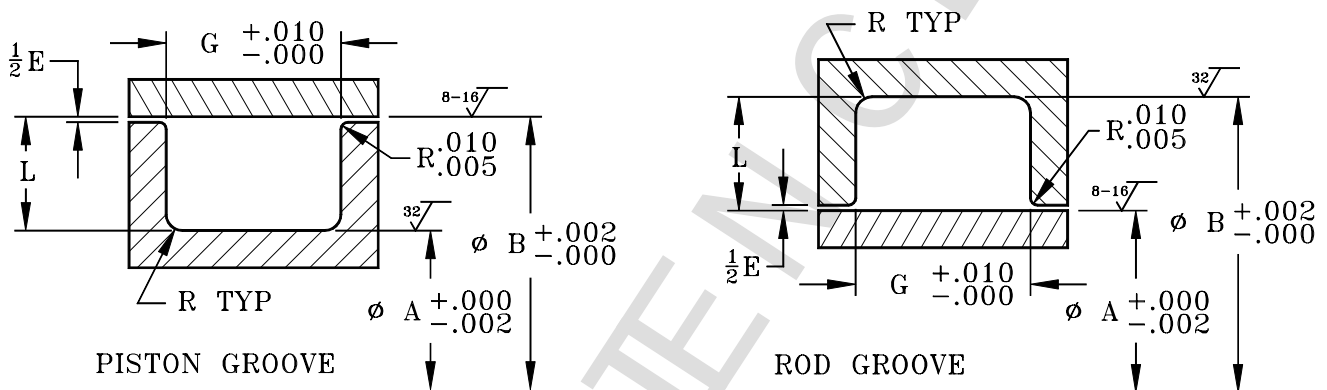


Wide and Extra Wide Industrial Grooves for PolySpring and PolyKing

Table 3

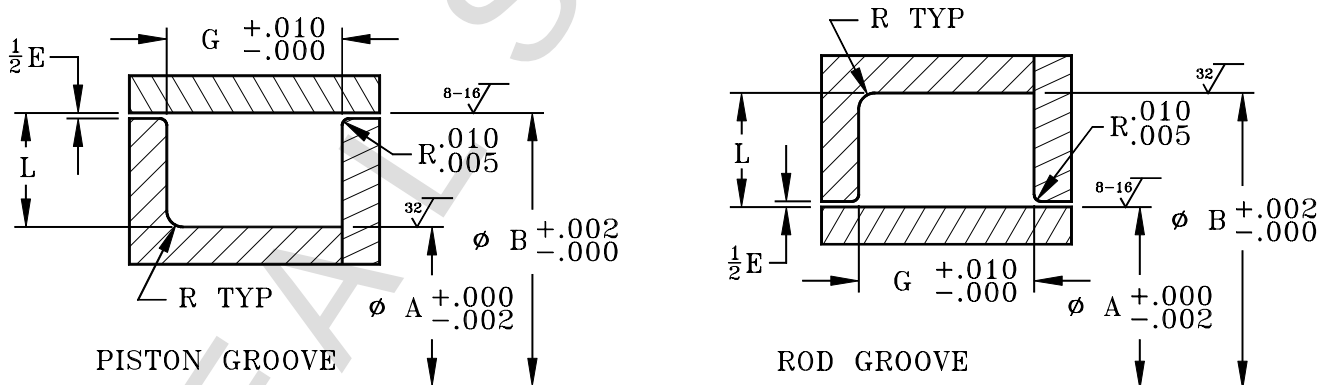
Cross Section		L	Ø A	Ø B	G		R	Diameter A Range	E max
Nominal	Code				Wide	Xtra			
1/16	0	.062	ØB-.124	ØA+.124	.138	.205	.005/.015	.150/3.500	.008
3/32	1	.093	ØB-.186	ØA+.186	.171	.238	.115/.015	.250/5.500	.008
1/8	2	.125	ØB-.250	ØA+.250	.208	.275	.010/.025	.300/6.500	.010
3/16	3	.188	ØB-.375	ØA+.375	.311	.410	.010/.025	.475/9.500	.010
1/4	4	.250	ØB-.500	ØA+.500	.408	.538	.010/.025	1.000/19.500	.010
3/8	5	.375	ØB-.750	ØA+.750	.550	.675	.020/.035	1.250/19.500	.010

One Piece Groove



Two Piece Groove

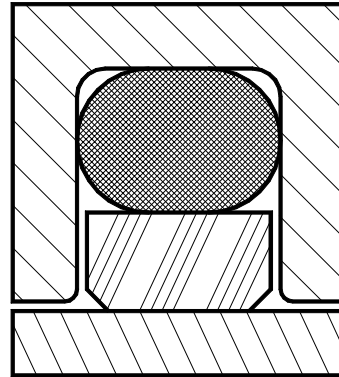
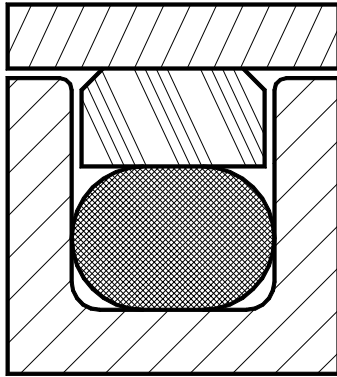
For ease of installation use this style of groove when the smaller diameter divided by the cross section is less than 20 ($\phi A/L < 20$).



These grooves may also be used for PolySpring spring energized seals. See page C-4 for the spring energized seal part numbering system.

Standard Industrial Groove Dimensions

For PolyKing PP and PR



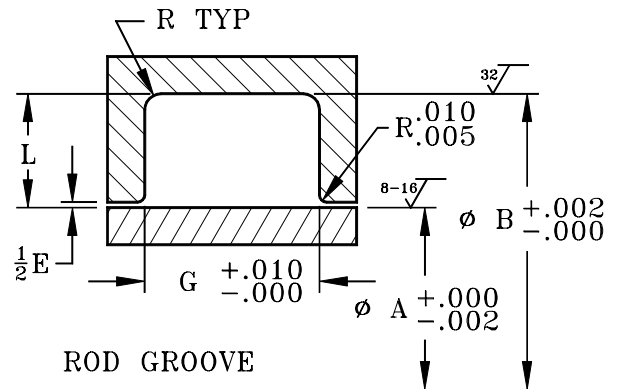
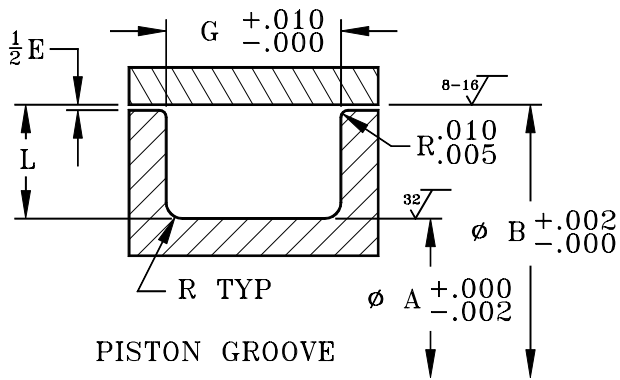
PolyKing PP and PR: Are simple bi-directional seals for piston or rod applications. They consist of an o-ring and a PTFE or filled PTFE cap.

Table 4

Cross Section		L	Ø A	Ø B	G	R	Diameter Range	E max
Nominal	Code							
1/6	0	.062	ØB-.124	ØA+.124	.079	.005/.015	.150/3.500	.004
	A	.087	ØB-.174	ØA+.174	.081		.500/1.500	
	B	.128	ØB-.256	ØA+.256				
3/32	1	.093	ØB-.186	ØA+.186	.112	.005/.015	.250/5.500	.005
	C	.149	ØB-.298	ØA+.298	.126		.625/5.500	
	D	.193	ØB-.386	ØA+.386			1.500/5.500	
1/8	2	.125	ØB-.250	ØA+.250	.149	.010/.025	.300/6.500	.006
	E	.212	ØB-.424	ØA+.424	.164		1.500/5.500	
	F	.258	ØB-.516	ØA+.516			5.500/12.00	
3/16	3	.188	ØB-.376	ØA+.376	.221	.020/.035	.475/9.500	.007
	G	.308	ØB-.616	ØA+.616	.247		3.000/12.000	
1/4	4	.250	ØB-.500	ØA+.500	.297	.020/.035	1.000/19.500	.008
	H	.415	ØB-.830	ØA+.830	.320		5.000/16.000	
3/8	5	.375	ØB-.750	ØA+.750	.405	.020/.035	2.500/20.000	.010
	J	.557	ØB-1.114	ØA+1.114	.431		6.000/20.000	

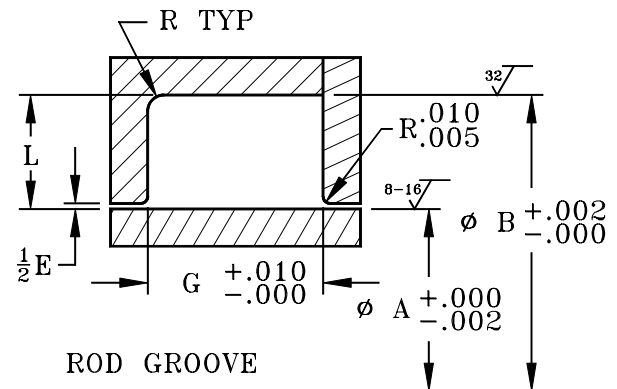
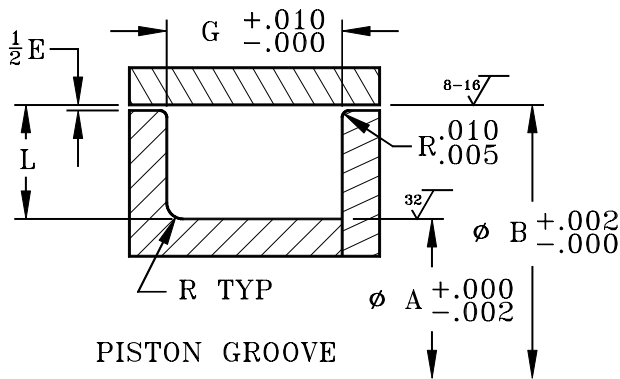
These seals are available as step cut or solid rings. For solid rings add the suffix G. For step cut rings add the suffix P.

One Piece Groove



Two Piece Groove

For ease of installation use this style of groove when the smaller diameter divided by the cross section is less than 20 ($\phi A/L < 20$).



PR F - 02500 - T80 - N - G

Rod (R) or Piston (P)

Cross Section Code

Replace Dash with M if Micro Grooved

Rod Dia in 1/1000ths (Rod Seal)

Bore Dia in 1/1000ths (Piston Seal)

Replace Dash with N if Notched

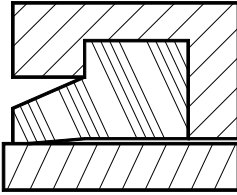
Cap Material (see page E-4, table 9)

O-ring Material (see page E-3, table 7)

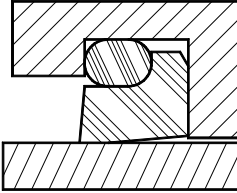
Cut type (G if uncut or P if step cut)

Wiper Styles

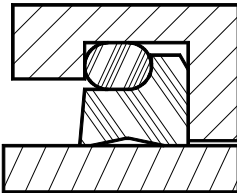
The following Wiper fit in the grooves shown on Table 4



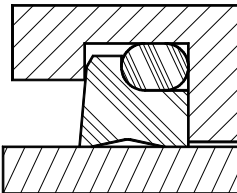
Wiper D: Is the basic wiper for this groove. The most common material for this snap in wiper is 90A urethane. This wiper is available with both the standard heel and a slotted heel.



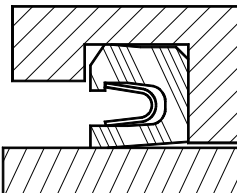
Wiper B: Is a basic O-ring energized wiper. The type B Wiper is better at preventing dust and fluids from migrating around the O.D. than the type D.



Wiper DC: Is an o-ring energized dual contact wiper this provides limited sealing of weepage from the seals. The volume between the seals and the wiper should be vented to prevent a build up of pressure in this area. The jacket can be made from filled PTFE or urethane.

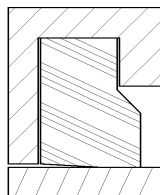
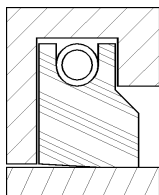


Wiper CD: Similar to the DC wiper. More aggressive in wiping the weepage than the CD Wiper. The volume between the seals and the wiper must be vented to prevent a build up of pressure in this area. The jacket can be made from filled PTFE or urethane.



Wiper S: Is a spring energized wiper that usually has a filled PTFE jacket. This wiper is used when temperature or environment make an elastomer unsuitable.

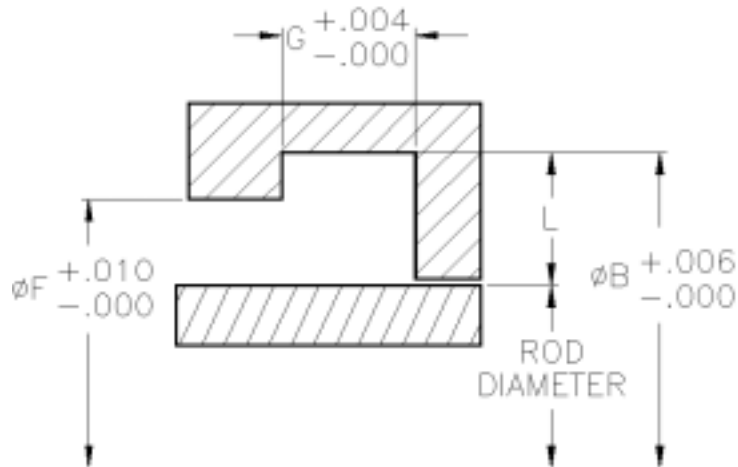
AN Grooves



Wipers G and A: For “AN” groove wipers – consult factory.

Table 5

Cross Section Nominal	L	Ø B	Ø F	G	Diameter Range
1/8	.124	ØROD+.247	ØROD+.160	.124	.250/.688
3/16	.186	ØROD+.372	ØROD+.245	.187	.750/1.938
1/4	.249	ØROD+.497	ØROD+.327	.249	2.000/4.375
3/8	.374	ØROD+.747	ØROD+.493	.374	4.500/9.750
1/2	.499	ØROD+.997	ØROD+.659	.499	10.000/20.000



DC - 02500-T40-N

Wiper Style

Replace dash with
S if slotted

Rod diameter in
1000th s of an inch

Wiper material (see jacket
material codes, tables 6 and 9)

Energizer material (if required, table 7 or 10)

Table 6
PolyKing Elastomer Jacket and Lip Material Codes

Material Code	Hardness Shore	Description	Fluid Examples		Temp Range °F		Comments
			Use With	Do Not Use With	Low	High	
AF7	75A	Aflas	Glycols Steam Hot water Acids	Hydrocarbon or Chlorinated solvents Ethers	-20	+400	Excellent resistance to ozone, sour gas and oil, phosphate ester, hydraulic fluids, glycol, brake fluid steam and radiation.
BU7	70A	Butyl	Alcohol Water Skydrol Pydrane Ammonia	Petroleum oils & fuels Toluene Trichloroethane	-65	+200	Best resistance to gas permeation, but EP has replaced butyl in most applications because EP has better heat and compression set resistance.
CC7	70A	Chloroprene	Alcohol Engine coolant Vegetable oil Animal fats Ammonia	Petroleum Fuels Most petroleum oils Toluene Acetone Ethyl Acetate	-40	+225	Conforms to FDA requirements (except for milk & edible oils). Reference CFR 177.2600. Meets spec AMS 3209.
CC9	90A						
EP7	70A	Ethylene Propylene	Water Alcohol Acetone Ammonia Engine coolant Vegetable oil Animal fats	Petroleum oils & fuels Tolulene Trichloroethane	-65	+200	Conforms to FDA requirements (except for milk & edible oils). Reference CFR 177.2600.
EP8	80A						
FK7	75A	Fluorocarbon	Gasoline Jet fuel Synthetic jet engine lube oil MIL-L-7808 Tolulene Trichloroethane	Acetone Ethyl acetate Skydrol	-20	+400	Meets MIL-R-83248, Type I, Class 2. Meets MIL-R-25897, Type I, Class 2.
FK9	90A						
FS7	70A	Fluorosilicone	Petroleum oils Gasoline Jet fuel Synthetic jet engine lube oil MIL-L-7808 Tolulene	Acetone Ethyl Acetate	-80	+350	Meets MIL-R-25988, Class I, Grade 70.

Material Code	Hardness Shore	Description	Fluid Examples		Temp Range °F		Comments
			Use With	Do Not Use With	Low	High	
			Alcohol Silicone oil				
HN7	70A	Highly Saturated Nitrile	Freon 134A	Brake fluid	-35	+350	Excellent chemical and high temperature resistance.
HN9	90A		Hydrocarbons Oils	Oxygenated solvents			
NB7	70A	Nitrile	Oils Gasoline Hydraulic Fluids Pneumatic Fluids	Steam Hot Water Brake Fluid Phosphate Esters	-65	+250	General purpose
NB9	90A						
NL7	70A	Lubricated Nitrile			-40	+200	Less friction than Nitrile
NL9	90A						
	70A	Carboxilated Nitrile			-20	+250	Higher wear resistance than nitrile
XN9	90A						
XL7	70A	Lubricated Carboxilated Nitrile			-20	+250	Less friction than carboxilated nitrile Reduces “stiction” problems
XL9	90A						
NR5	50A	Natural Rubber	Water Non-organic compounds	Oils and Gasoline Hydrocarbon solvents	-70	+200	Excellent tear, abrasion and resilience properties. Poor heat and ozone resistance.
SL7	70A	Silicone	Dry heat Alcohol Vegetable oils Oxygen	Petroleum oils & fuels	-80	+400	Meets AMS 3304. Meets ZZ-R-765B, Class 2, Grade 70. Conforms to FDA requirements. Reference CFR 177.2600.
HD5	55D	Polyester Elastomer	Water Phosphate Esters Fuels Hydraulic fluids Radiation	Acetic Acid Perchloroethylene Toluene Carbon Tetrachloride Strong solvents	-80	+250	FDA compliant grades are available (consult factory for material code)
UA7	75A	Urethane	Hydraulic fluids	Alkalis	-30	+225	Superior abrasion resistance. Excellent tear strength. Resistant to ozone and sunlight.
UA9	90A		Oils	Acids			
UD5	55D		Mild fuels Low Temp water	Solvents Hot water			

Table 7

O-Ring Energizer Material Codes

Material Code	Description	Temperature Range °F	
		Low	High
A	Aflas	-20	+400
B	Butyl	-65	+200
C	Chloroprene	-40	+225
E	Ethylene Propylene	-65	+200
F	Fluorocarbon	-20	+400
G	Fluorosilicone	-80	+350
H	Highly Saturated Nitrile	-35	+350
N	Nitrile	-65	+200
R	Natural Rubber	-70	+200
S	Silicone	-80	+400

Table 8

Back-Up Ring Material Codes

Material Code	Description	Temp Range °F		Comments
		Low	High	
A00	Acetal	-40	+225	Good tensile strength, low water absorption
N00	Nylon	-40	+225	Good tensile strength, low cost hydroscopic
N20	MoS ₂ filled Nylon	-40	+225	Lubricated, similar to N00
P00	PEEK	-100	+500	Excellent tensile strength throughout temperature range. Very low water absorption.
P95	Lubricated PEEK	-100	+500	Bearing grade lubrication. Similar to P00.
T00	Unfilled PTFE	-100	+350	Moderate tensile strength. Nearly inert. Very low friction.
T01	Long wearing PTFE	-100	+350	Specially processed long wearing TFE with properties similar to T00 (color coded for identification)
T12	Glass filled TFE	-100	+500	Good compression and shear strength. Can be abrasive.
T16	Glass MoS ₂ filled TFE	-100	+500	Lubricated material similar to T12.
T22	Graphite filled TFE	-100	+500	Moderate tensile strength. Extremely low friction.
T91	Polyhydroxybenzoic acid filled TFE	-100	+500	Moderate tensile strength. Non-abrasive, can be used with aluminum. Low friction
Z00	PK	-100	+375	Good tensile strength and chemical resistance. Low water absorption.
Z15	Glass filled PK	-100	+375	Similar to Z00 with improved tensile strength.
Z96	Carbon fiber filled PK	-100	+375	Similar to Z00 with improved tensile strength.
Z97	Lubricated PK	-100	+375	Lubricated material similar to Z00 but with reduced tensile strength.

Table 9

Jacket and Cap Material Codes

Material Code	Description	Temp Range °F		Comments
		Low	High	
M00	Unfilled TFM	-100	+450	Nearly inert. Low gas permeability. Generally used as a static seal
M01	Long wearing TFM	-100	+450	TFM that is specially processed for longer wear. Color-coded for identification.
T00	Unfilled PTFE	-100	+450	Nearly inert. Generally used as a static seal
T01	Long wearing PTFE	-100	+450	TFE that is specially processed for longer wear. Color-coded for identification.
T12	Glass filled TFE	-100	+500	Good compressive strength and creep resistance. Can be abrasive.
T14	Glass filled TFE	-100	+500	Similar to T12, but with increased glass content. Excellent compressive strength. Can be abrasive.
T16	Glass MoS ₂ filled TFE	-100	+500	Similar to T12, except for lower friction due to the MoS ₂ . Excellent creep resistance. Good for high pressure applications
T21	Carbon filled TFE	-100	+550	Good high temperature static seal material
T22	Graphite filled TFE	-100	+500	Lowest static friction. May be abrasive in rotary or dry environments.
T40	Mineral MoS ₂ filled TFE	-100	+500	Long wearing and low friction. May be abrasive in rotary applications.
T41	Mineral filled TFE	-100	+500	USDA approved for contact with meat and dairy products.
T80	Bronze filled TFE	-100	+500	Longest wearing of the TFEs. Good thermal conductivity.
T91	Polymer filled TFE	-100	+550	Non-abrasive, good for use on soft mating materials. Also, excellent at high temperatures.
T93	MoS ₂ filled TFE	-100	+500	Low friction material without the abrasive problems of graphite.
W00	UHMW-PE	-450	+180	Longest wearing material. Excellent at cryogenic temperatures. Restricted by low upper temperature range and limiting PV.

Table 10

Spring Energizer Material Codes

Material Code	Description	<u>Comments</u>
E	Elgiloy	Best spring material, also most expensive. Excellent corrosion resistance. Meets N.A.C.E. MR-01-75.
F	316 SST	Good corrosion resistance. Worst spring for load and fatigue life.
H	Hastaloy C-276	Excellent corrosion resistance.
N	Inconel 718	For extreme temperatures. Good spring qualities.
D	17-4 PH SST	Good Corrosion resistance. Meets N.A.C.E. MR-01-75.
P	17-7 PH SST	Used in cryogenic and many military-aerospace applications.
S	301 SST	General purpose spring material

PolyKing F Styles

For MIL-G-5514 Rev. F grooves
For Aircraft, Aerospace and Defense applications

Part Numbering System

F HR 2 - 460 - T80 - N - N20

PolyKing Style Code
Including P for piston seal
or R for rod seal

Back-Up width code
0 = no back-up width groove
1 = one back-up width groove
2 = two back-up width groove

Replace Dash With M if Micro Grooved

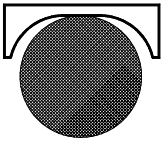
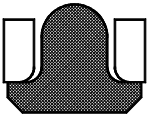
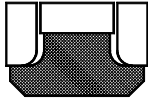
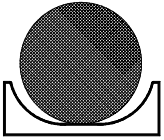
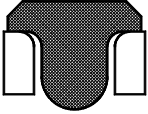
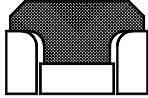
Mil-G-5514 Rev F Dash Number

Replace Dash With N if Notched

Cap Material Code (if required use table 9)

Energizer Material Code
(use table 7, for PolyKing FTP and FTR use table 6)

Back-Up Ring Material Code (If Required use table 8)

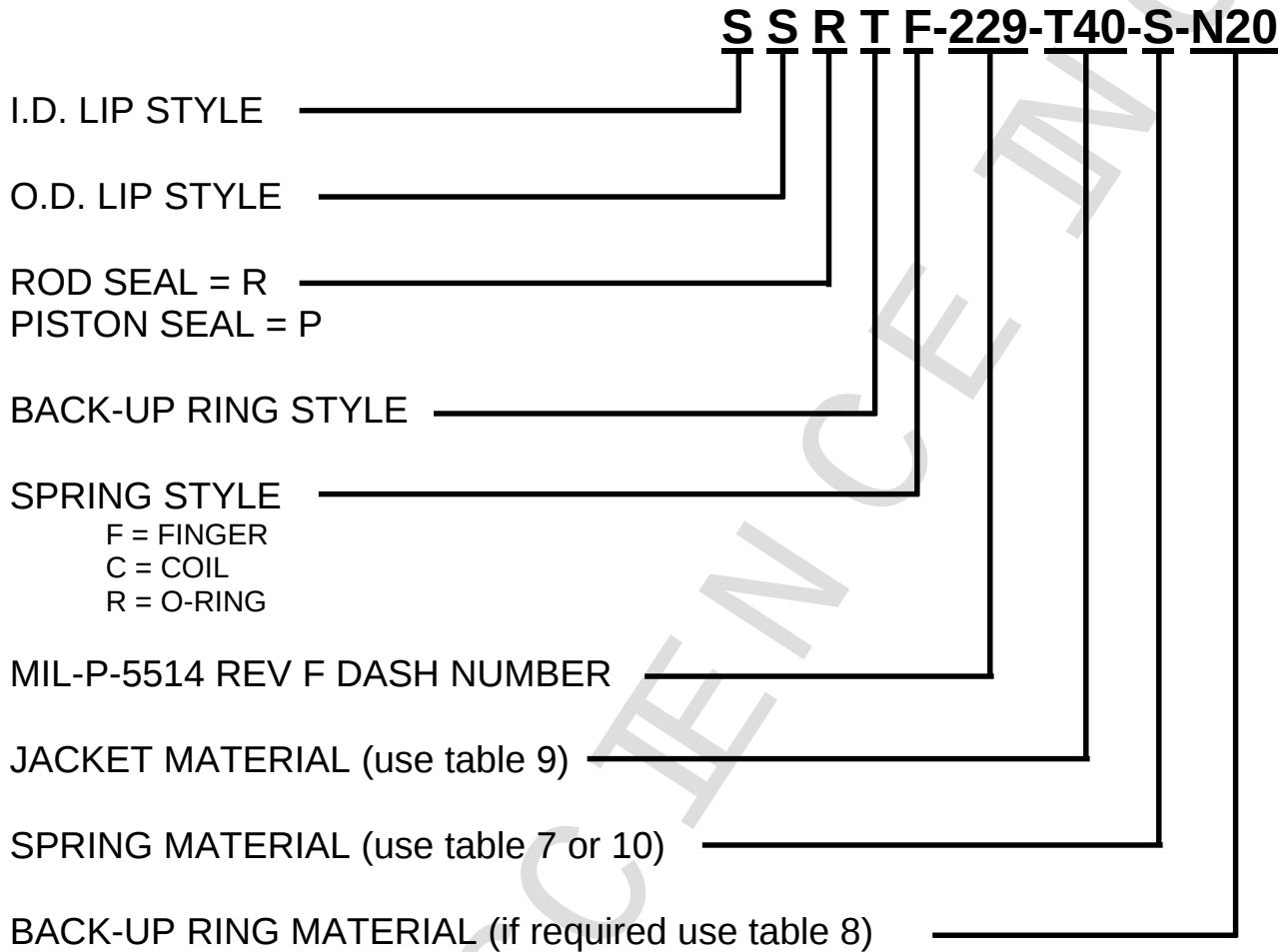
<u>PolyKing</u> F Style			
Code	CP	TP	HP
			
Code	CR	TR	HR

Note: An R in the code denotes a rod seal and a P denotes a piston seal

PolySpring F Styles

Spring energized seals for MIL-5514 Ref. F
For use in Aircraft, Aerospace and Defense applications.

PART NUMBERING SYSTEM



LIP STYLES			
B	D	S	T

Back-Up Ring Styles

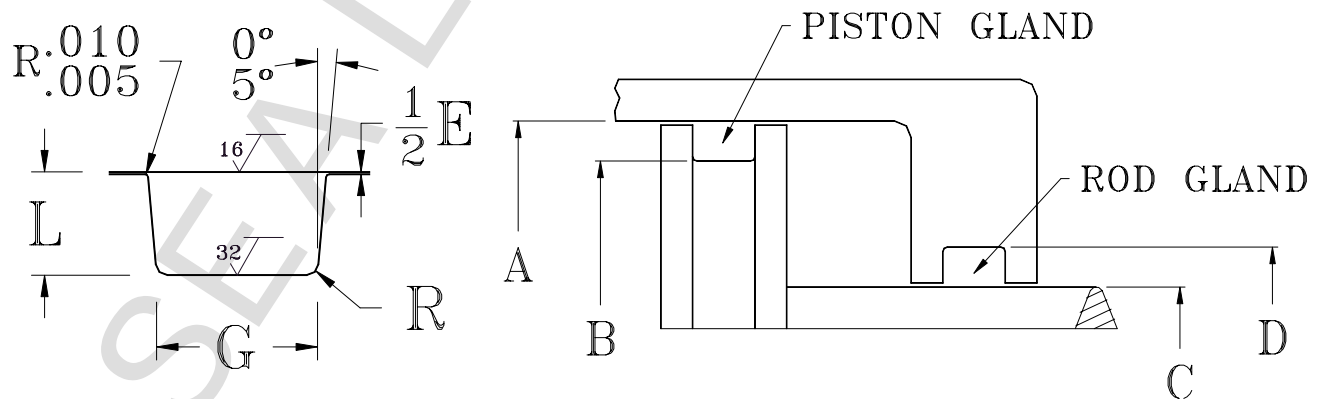
Groove Width	Zero Back-Up width groove		One Back-Up width groove			
Back-Up Ring Style						
Code	O	T	I	D	S	C

Groove Width	Two Back-Up width groove				
Back-Up Ring Style					
Code	Z	E	D	A	F

Mil-G-5514F Glands

For Military Hydraulic Systems

GLAND SIZE	L GLAND DEPTH	E DIAMETRAL CLEARANCE MAX.	G +.010/-0.000 GROOVE WIDTH			R GROOVE RADIUS	ECCEN- TRICITY MAX
			NO BACK-UP RING	ONE BACK-UP RING	TWO BACK-UP RINGS		
001	.031 to .032	.004	.063			.005 to .015	.002
002	.040 to .041	.004	.073			.005 to .015	.002
003	.048 to .049	.004	.083			.005 to .015	.002
004	.057 to .058	.004	.094	.149	.207	.005 to .015	.002
005	.0565 to .0575	.004	.094	.149	.207	.005 to .015	.002
006 Through 012	.056 to .057	.004	.094	.149	.207	.005 to .015	.002
013 Through 028	.056 to .058	.005	.094	.149	.207	.005 to .015	.002
110 Through 116	.089 to .091	.005	.141	.183	.245	.005 to .015	.002
117 Through 149	.089 to .091	.005 to .007	.141	.183	.245	.005 to .015	.002
210 Through 222	.121 to .123	.006	.188	.235	.304	.010 to .025	.003
223 Through 247	.121 to .123	.006 to .008	.188	.235	.304	.010 to .025	.003
325 Through 349	.186 to .188	.006 to .008	.281	.334	.424	.020 to .035	.004
425 Through 460	.238 to .241	.009 to .011	.375	.475	.579	.020 to .035	.005



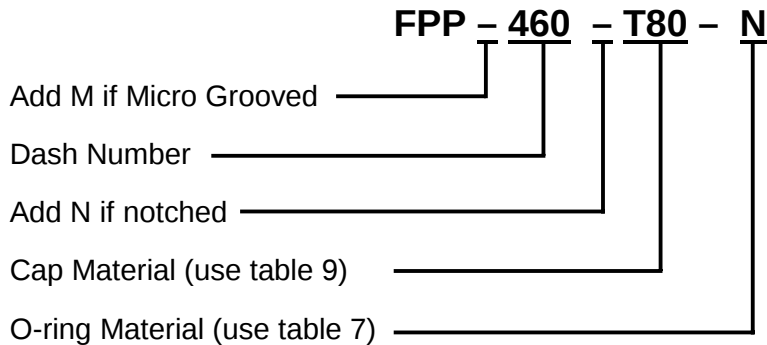
DASH NUMBER	A CYLINDER BORE		B PISTON GROOVE DIA		C ROD O.D.		D ROD GLAND GROVE O.D.	
001	.095	↑	.033	↑	.033	↑	.095	↑
002	.128		.048		.048		.128	
003	.159		.063		.063		.159	
004	.190		.076		.076		.190	
005	.221		.108		.108		.221	
006	.235	+0.001	.123	+0.000	.123	+0.000	.235	+0.001
007	.266	-0.000	.154	-0.001	.154	-0.001	.266	-0.001
008	.297		.185		.185		.297	
009	.329		.217		.217		.329	
010	.360		.248		.248		.360	
011	.422		.310		.310		.422	
012	.485	↓	.373	↓	.373	↓	.485	↓
*013	.550	↑	.438	↑	.435	↑	.547	↑
*014	.613		.501		.498		.610	
*015	.675		.563		.560		.672	
*016	.738		.626		.623		.735	
*017	.800		.688		.685		.797	
*018	.863		.751		.748		.860	
*019	.925		.813		.810		.922	
*020	.991	+0.002	.879	+0.000	.873	+0.000	.985	+0.002
*021	1.053	-0.000	.941	-0.002	.935	-0.002	1.047	-0.000
*022	1.116		1.004		.998		1.110	
*023	1.178		1.066		1.060		1.172	
*024	1.241		1.129		1.123		1.235	
*025	1.303		1.191		1.185		1.297	
*026	1.366		1.254		1.248		1.360	
*027	1.428		1.316		1.310		1.422	
*028	1.491	↓	1.379	↓	1.373	↓	1.485	↓
110	.550	↑	.372	↑	.373	↑	.551	↑
111	.613		.435		.435		.613	
112	.675	+0.002	.497	+0.000	.498	+0.000	.676	+0.002
113	.738	-0.000	.560	-0.002	.560	-0.002	.738	-0.000
114	.800		.622		.623		.801	
115	.863	↓	.685	↓	.685	↓	.863	↓
116	.925		.747		.748		.926	
*117	.991		.813		.810		.988	
*118	1.053	+0.002	.875	+0.000	.873	+0.000	1.051	+0.002
*119	1.116	-0.000	.938	-0.002	.935	-0.002	1.113	-0.000
*120	1.178	↑	1.000	↑	.998	↑	1.176	↑
*121	1.241		1.063		1.060		1.238	
*122	1.303		1.125		1.123		1.301	
*123	1.366		1.188		1.185		1.363	
*124	1.428		1.250		1.248		1.426	
*125	1.491		1.313		1.310		1.488	
*126	1.553		1.375		1.373		1.551	
*127	1.616		1.438		1.435		1.613	
*128	1.678		1.500		1.498		1.676	
*129	1.741		1.563		1.560		1.738	
*130	1.805		1.627		1.623		1.801	
*131	1.867		1.689		1.685		1.863	
*132	1.930		1.752		1.748		1.926	
*133	1.992		1.814		1.810		1.988	
*134	2.055	↓	1.877	↓	1.873	↓	2.051	↓
*135	2.118	+0.002	1.940	+0.000	1.936	+0.000	2.114	+0.002
*136	2.180	-0.000	2.002	-0.002	1.998	-0.002	2.176	-0.000

DASH NUMBER	A CYLINDER BORE		B PISTON GROOVE DIA		C ROD O.D.		D ROD GLAND GROVE O.D.	
*137	2.243	↑	2.065	↑	2.061	↑	2.239	↑
*138	2.305		2.127		2.123		2.301	
*139	2.368		2.190		2.186		2.364	
*140	2.430		2.252		2.248		2.426	
*141	2.493		2.315		2.311		2.489	
*142	2.555		2.377		2.373		2.551	
*143	2.618	+ .002	2.440	+ .000	2.436	+ .000	2.614	+ .002
*144	2.680	- .000	2.502	- .002	2.498	- .002	2.676	- .000
*145	2.743		2.565		2.561		2.739	
*146	2.805		2.627		2.623		2.801	
*147	2.868		2.690		2.686		2.864	
*148	2.930		2.752		2.748		2.926	
*149	2.993	↓	2.815	↓	2.811	↓	2.989	↓
210	.991	↑	.748	↑	.748	↑	.991	↑
211	1.053		.810		.810		1.053	
212	1.116		.873		.873		1.116	
213	1.178		.935		.935		1.178	
214	1.241		.998		.998		1.241	
215	1.303	+ .002	1.060	+ .000	1.060	+ .000	1.303	+ .002
216	1.366	- .000	1.123	- .002	1.123	- .002	1.366	- .000
217	1.428		1.185		1.185		1.428	
218	1.491		1.248		1.248		1.491	
219	1.553		1.310		1.310		1.553	
220	1.616		1.373		1.373		1.616	
221	1.678	↓	1.435	↓	1.435	↓	1.678	↓
222	1.741		1.498		1.498		1.741	
*223	1.867	+ .002	1.624	+ .000	1.623	+ .000	1.866	+ .002
*224	1.992	- .000	1.749	- .002	1.748	- .002	1.991	- .000
*225	2.118	↑	1.875	↑	1.873	↑	2.116	↑
*226	2.243		2.000		1.998		2.241	
*227	2.368		2.125		2.123		2.366	
*228	2.493		2.250		2.248		2.491	
*229	2.618		2.375		2.373		2.616	
*230	2.743		2.500		2.498		2.741	
*231	2.868		2.625		2.623		2.866	
*232	2.993		2.750		2.748		2.991	
*233	3.118		2.875		2.873		3.116	
*234	3.243		3.000		2.997		3.240	
*235	3.368		3.125		3.122		3.365	
*236	3.493		3.250		3.247		3.490	
*237	3.618		3.375		3.372		3.615	
*238	3.743		3.500		3.497		3.740	
*239	3.868		3.625		3.622		3.865	
*240	3.993		3.750		3.747		3.990	
*241	4.118		3.875		3.872		4.115	
*242	4.243		4.000		3.997		4.240	
*243	4.368		4.125		4.122		4.365	
*244	4.493	↓	4.250	↓	4.247	↓	4.490	↓
*245	4.618		4.375		4.372		4.615	
*246	4.743	+ .002	4.500	+ .000	4.497	+ .000	4.740	+ .002
*247	4.868	- .000	4.625	- .002	4.622	- .002	4.865	- .000
325	1.867	↑	1.495	↑	1.498	↑	1.870	↑
326	1.992		1.620		1.623		1.995	
327	2.118	+ .002	1.746	+ .000	1.748	+ .000	2.120	+ .002
328	2.243	- .000	1.871	- .002	1.873	- .002	2.245	- .000
329	2.368	↓	1.996	↓	1.998	↓	2.370	↓

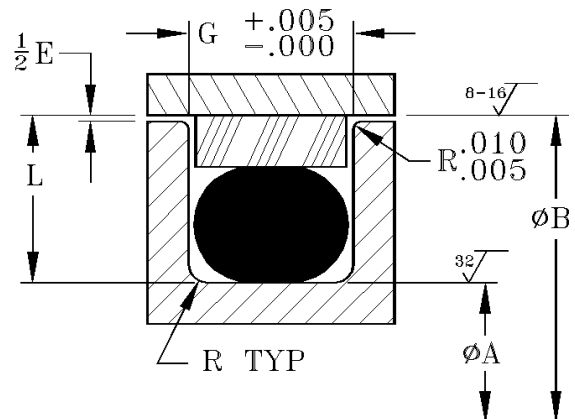
DASH NUMBER	A CYLINDER BORE		B PISTON GROOVE DIA		C ROD O.D.		D ROD GLAND GROVE O.D.	
330	2.493	+0.002	2.121	+0.000	2.123	+0.000	2.495	+0.002
331	2.618	-0.000	2.246	-0.002	2.248	-0.002	2.620	-0.000
332	2.743	↑	2.371	↑	2.373	↑	2.745	↑
333	2.868		2.496		2.498		2.870	
334	2.993		2.621		2.623		2.995	
335	3.118		2.746		2.748		3.120	
336	3.243		2.871		2.873		3.245	
337	3.368		2.996		2.997		3.369	
338	3.493		3.121		3.122		3.494	
339	3.618		3.246		3.247		3.619	
340	3.743		3.371		3.372		3.744	
341	3.868		3.496		3.497		3.869	
342	3.993		3.621		3.622		3.994	
343	4.118		3.746		3.747		4.119	
344	4.243		3.871		3.872		4.244	
345	4.368		3.996		3.997		4.369	
346	4.493	↓	4.121	↓	4.122	↓	4.494	↓
347	4.618		4.246		4.247		4.619	
348	4.743	+0.002	4.371	+0.000	4.372	+0.000	4.744	+0.002
349	4.868	-0.000	4.496	-0.002	4.497	-0.002	4.869	-0.000
425	4.974	+0.003	4.497	+0.000	4.497	+0.000	4.974	+0.003
426	5.099	-0.000	4.622	-0.003	4.622	-0.003	5.099	-0.000
427	5.224	↑	4.747	↑	4.747	↑	5.224	↑
428	5.349		4.872		4.872		5.349	
429	5.474		4.997		4.997		5.474	
430	5.599		5.122		5.122		5.599	
431	5.724		5.247		5.247		5.724	
432	5.849		5.372		5.372		5.849	
433	5.974		5.497		5.497		5.974	
434	6.099		5.622		5.622		6.099	
435	6.224		5.747		5.747		6.224	
436	6.349		5.872		5.872		6.349	
437	6.474		5.997		5.997		6.474	
438	6.724		6.247		6.247		6.724	
439	6.974		6.497		6.497		6.974	
440	7.224		6.747		6.747		7.224	
441	7.474		6.997		6.997		7.474	
442	7.724		7.247		7.247		7.724	
443	7.974	↓	7.497	↓	7.497	↓	7.974	↓
444	8.224		7.747		7.747		8.244	
445	8.474	+0.003	7.997	+0.000	7.997	+0.000	8.474	+0.003
446	8.974	-0.000	8.497	-0.003	8.497	-0.003	8.974	-0.000
447	9.474	↑	8.997	↑	8.997	↑	9.474	↑
448	9.974		9.497		9.497		9.974	
449	10.474		9.997		9.997		10.474	
450	10.974		10.497		10.497		10.974	
451	11.474		10.997		10.997		11.474	
452	11.974		11.497		11.497		11.974	
453	12.474	+0.004	11.997	+0.000	11.997	+0.000	12.474	+0.004
454	12.974	-0.000	12.497	-0.004	12.497	-0.004	12.974	-0.000
455	13.474		12.997		12.997		13.474	
456	13.974		13.497		13.497		13.974	
457	14.474		13.997		13.997		14.474	
458	14.974		14.497		14.497		14.974	
459	15.474		14.997		14.997		15.474	
460	15.974	↓	15.497	↓	15.497	↓	15.974	↓

Non-Standard Grooves Mil-G-5514 Bore

PolyKing FPP: Are simple bi-directional seals for piston applications. They consist of an o-ring and a PTFE or filled PTFE cap.



Dash Number	G	R	E
006-012	.080	.005-.015	.004
013-028	.080	.005-.015	.005
111-149	.113	.005-.015	.005
211-247	.149	.010-.025	.006
326-349	.220	.020-.030	.007
426-437	.295	.020-.030	.010



Dash Number	A Diameter	B Diameter
	+0.000 -0.001	+0.001 -0.000
006	.093	.235
007	.123	.266
008	.154	.297
009	.185	.329
010	.217	.360
011	.248	.422
012	.310	.485
	+0.000 -0.002	+0.002 -0.000
013	.373	.550
014	.438	.613
015	.501	.675
016	.563	.738
017	.626	.800
018	.688	.863
019	.751	.925
020	.813	.993
021	.881	1.055
022	.943	1.118
023	1.006	1.180
024	1.068	1.243
025	1.131	1.305
026	1.193	1.368
027	1.256	1.430
028	1.318	1.493
111	.373	.613
112	.435	.676
113	.498	.738
114	.560	.801
115	.623	.863
116	.685	.926
117	.748	.993
118	.815	1.056
119	.878	1.118
120	.940	1.181

Dash Number	A Diameter	B Diameter
	+0.000 -0.002	+0.002 -0.000
121	1.003	1.243
122	1.065	1.306
123	1.128	1.368
124	1.190	1.431
125	1.253	1.493
126	1.315	1.558
127	1.380	1.620
128	1.442	1.683
129	1.505	1.742
130	1.564	1.805
131	1.627	1.867
132	1.689	1.930
133	1.752	1.992
134	1.814	2.005
135	1.877	2.118
136	1.940	2.180
137	2.002	2.243
138	2.065	2.305
139	2.127	2.368
140	2.190	2.430
141	2.252	2.493
142	2.315	2.555
143	2.377	2.618
144	2.440	2.680
145	2.502	2.743
146	2.565	2.805
147	2.627	2.868
148	2.690	2.930
149	2.752	2.993
211	.748	1.053
212	.810	1.116
213	.873	1.178
214	.935	1.241
215	.998	1.303
216	1.060	1.366

Dash Number	A Diameter	B Diameter
	+0.000 -0.002	+0.002 -0.000
217	1.123	1.428
218	1.185	1.491
219	1.248	1.553
220	1.310	1.616
221	1.373	1.678
222	1.435	1.741
223	1.498	1.868
224	1.625	1.993
225	1.750	2.118
226	1.875	2.243
227	2.000	2.368
228	2.125	2.493
229	2.250	2.618
230	2.375	2.743
231	2.500	2.868
232	2.625	2.993
233	2.750	3.118
234	2.875	3.243
235	3.000	3.368
236	3.125	3.493
237	3.250	3.618
238	3.375	3.743
239	3.500	3.868
240	3.625	3.993
241	3.750	4.118
242	3.875	4.243
243	4.000	4.368
244	4.125	4.493
245	4.250	4.618
246	4.375	4.743
247	4.500	4.868
326	1.498	1.995
327	1.623	2.120
328	1.748	2.245
329	1.873	2.370

Dash Number	A Diameter	B Diameter
	+0.000 -0.002	+0.002 -0.000
330	1.998	2.495
331	2.123	2.620
332	2.248	2.745
333	2.373	2.870
334	2.498	2.995
335	2.623	3.120
336	2.748	3.245
337	2.873	3.369
338	2.997	3.494
339	3.122	3.619
340	3.247	3.744
341	3.372	3.869
342	3.497	3.994
343	3.622	4.119
344	3.747	4.244
345	3.872	4.369
346	3.997	4.494
347	4.122	4.619
348	4.247	4.744
349	4.372	4.869
	+0.000 -0.003	+0.003 -0.000
426	4.497	5.099
427	4.622	5.224
428	4.747	5.349
429	4.872	5.474
430	4.997	5.599
431	5.122	5.724
432	5.247	5.849
433	5.372	5.974
434	5.497	6.099
435	5.622	6.224
436	5.747	6.349
437	5.872	6.474

Non-Standard Grooves Mil-G-5514 Rod

PolyKing FPR: Are simple bi-directional seals for rod applications. They consist of an o-ring and a PTFE or filled PTFE cap.

FPR - 460 - T80 - N

Add M if Micro Grooved

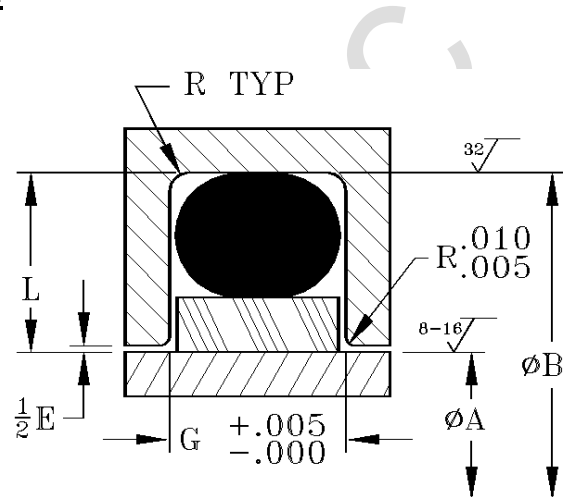
Dash Number

Add N if notched

Cap Material (use table 9)

O-ring Material (use table 7)

Dash Number	G	R	E
006-012	.080	.005-.015	.004
013-028	.080	.005-.015	.005
110-148	.113	.005-.015	.005
210-246	.149	.010-.025	.006
325-348	.220	.020-.030	.007
425-436	.295	.020-.030	.010



Dash Number	A Diameter	B Diameter
	+0.000	+0.001
	-0.001	-0.000
006	.123	.266
007	.154	.297
008	.185	.329
009	.217	.360
010	.248	.422
011	.310	.485
012	.373	.550
	+0.000	+0.002
	-0.002	-0.000
013	.438	.613
014	.501	.675
015	.563	.738
016	.626	.800
017	.688	.863
018	.751	.925
019	.813	.993
020	.881	1.055
021	.943	1.118
022	1.006	1.180
023	1.068	1.243
024	1.131	1.305
025	1.193	1.368
026	1.256	1.430
027	1.318	1.493
110	.373	.613
111	.435	.676
112	.498	.738
113	.560	.801
114	.623	.863
115	.685	.926
116	.748	.993
117	.815	1.056
118	.878	1.118
119	.940	1.181
120	1.003	1.243
121	1.065	1.306

Dash Number	A Diameter	B Diameter
	+0.000	+0.002
	-0.002	-0.000
122	1.128	1.368
123	1.190	1.431
124	1.253	1.493
125	1.315	1.558
126	1.380	1.620
127	1.442	1.683
128	1.505	1.742
129	1.564	1.805
130	1.627	1.867
131	1.689	1.930
132	1.752	1.992
133	1.814	2.005
134	1.877	2.118
135	1.940	2.180
136	2.002	2.243
137	2.065	2.305
138	2.127	2.368
139	2.190	2.430
140	2.252	2.493
141	2.315	2.555
142	2.377	2.618
143	2.440	2.680
144	2.502	2.743
145	2.565	2.805
146	2.627	2.868
147	2.690	2.930
148	2.752	2.993
210	.748	1.053
211	.810	1.116
212	.873	1.178
213	.935	1.241
214	.998	1.303
215	1.060	1.366
216	1.123	1.428
217	1.185	1.491
218	1.248	1.553

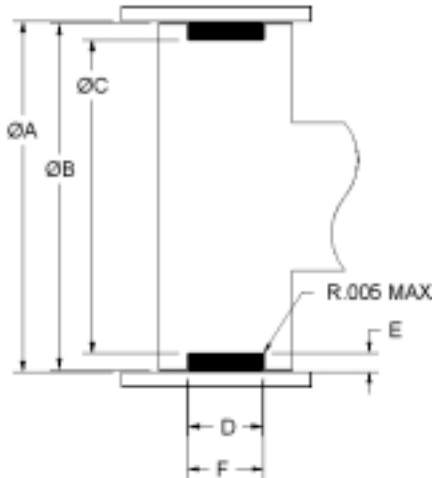
Dash Number	A Diameter	B Diameter
	+0.000	+0.002
	-0.002	-0.000
219	1.310	1.616
220	1.373	1.678
221	1.435	1.741
222	1.498	1.868
223	1.625	1.993
224	1.750	2.118
225	1.875	2.243
226	2.000	2.368
227	2.125	2.493
228	2.250	2.618
229	2.375	2.743
230	2.500	2.868
231	2.625	2.993
232	2.750	3.118
233	2.875	3.243
234	3.000	3.368
235	3.125	3.493
236	3.250	3.618
237	3.375	3.743
238	3.500	3.868
239	3.625	3.993
240	3.750	4.118
241	3.875	4.243
242	4.000	4.368
243	4.125	4.493
244	4.250	4.618
245	4.375	4.743
246	4.500	4.868
325	1.498	1.995
326	1.623	2.120
327	1.748	2.245
328	1.873	2.370
329	1.998	2.495
330	2.123	2.620
331	2.248	2.745
332	2.373	2.870

Dash Number	A Diameter	B Diameter
	+0.000	+0.002
	-0.002	-0.000
333	2.498	2.995
334	2.623	3.120
335	2.748	3.245
336	2.873	3.369
337	2.997	3.494
338	3.122	3.619
339	3.247	3.744
340	3.372	3.869
341	3.497	3.994
342	3.622	4.119
343	3.747	4.244
344	3.872	4.369
345	3.997	4.494
346	4.122	4.619
347	4.247	4.744
348	4.372	4.869
	+0.000	+0.003
	-0.003	-0.000
425	4.497	5.099
426	4.622	5.224
427	4.747	5.349
428	4.872	5.474
429	4.997	5.599
430	5.122	5.724
431	5.247	5.849
432	5.372	5.974
433	5.497	6.099
434	5.622	6.224
435	5.747	6.349
436	5.872	6.474

Wear Rings

Wear rings are used to support the rod or piston to prevent metal to metal contact. Seal Science wear rings are made from high strength non-metallic materials designed to provide good bearing support with low friction.

Piston Installation



Formulas for calculating piston and groove dimensions.

$$C_{MAX} = A_{MIN} - [.001 + 2(E_{MAX})]$$

$$C = C_{MAX} + .000/-\text{machining tolerance}$$

$$B_{MAX} = C_{MIN} + 2(E_{MIN} - \text{desired metal clearance})$$

$$B = B_{MAX} + .000/-\text{machining tolerance}$$

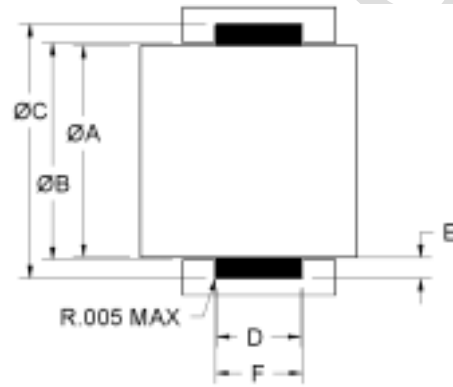
If wear ring length is $\text{⌀} .500$

$$F_{MIN} = D + .010 \quad F = F_{MIN} + .010/- .000$$

If wear ring length is $> .500$

$$F_{MIN} = D + .015 \quad F = F_{MIN} + .005/- .000$$

Rod Installation



Formulas for calculating piston and groove dimensions.

$$C_{MAX} = A_{MIN} - [.001 + 2(E_{MAX})]$$

$$C = C_{MAX} + .000/-\text{machining tolerance}$$

$$B_{MAX} = C_{MIN} + 2(E_{MIN} - \text{desired metal clearance})$$

$$B = B_{MAX} + .000/-\text{machining tolerance}$$

If wear ring length is $\text{⌀} .500$

$$F_{MIN} = D + .010 \quad F = F_{MIN} + .010/- .000$$

If wear ring length is $> .500$

$$F_{MIN} = D + .015 \quad F = F_{MIN} + .005/- .000$$

Part Numbering System

W 2 - 02625 - 750 - N20

Cross Section in $1/16^{\text{ths}}$ of an inch

$\text{Ø} A$ in 1000^{ths} of an inch

Length in 1000^{ths} of an inch

Material (use table 8 or 9)

West Coast Office:

Seal Science, Incorporated
 17131 Daimler
 Irvine, CA 92614-5508
 TEL: (949) 253-3130

FAX: (949) 253-3141

**SEAL SCIENCE, INC.**

E-MAIL: info@sealscience.com
 Visit our website at: www.sealscience.com

East Coast Office:

Seal Science, Incorporated
 6343 Winside Drive
 Bethlehem, PA 18017-9350
 TEL: (610) 837-8787

FAX: (610) 837-8789

ENGINEERING APPLICATION FORM**CUSTOMER INFORMATION**

COMPANY _____ REQUESTOR'S NAME _____
 TELEPHONE _____ FAX _____
 ADDRESS _____ CITY _____ STATE _____ ZIP CODE _____

APPLICATION TYPE

☐ EXISTING, is the current seal working? _____ What is the current design? _____ What is the current cost? _____
☐ NEW DESIGN ☐ VENDOR PROBLEM QUANTITY PER YEAR _____
☐ STATIC ☐ DYNAMIC ☐ UNIDIRECTIONAL ☐ BIDIRECTIONAL
☐ RECIPROCATING ☐ ROTARY ☐ OSCILLATORY WHEN IS INPUT REQUIRED ? _____
☐ PISTON ☐ ROD ☐ FACE WHEN ARE PROTOTYPES NEEDED ? _____
☐ O-RING ☐ GASKET (PROVIDE SKETCH) _____
☐ OTHER, DESCRIBE (PROVIDE SKETCH) _____

ENGINEERING DETAILS

TEMPERATURE: LOW _____ NORMAL _____ MAX _____
 PRESSURE: OPERATING _____ PROOF _____ BURST _____
 STROKE (TOTAL) _____ FREQUENCY _____ DUTY CYCLE _____
 ROTATION (DEGREES) _____ RPM _____ DUTY CYCLE _____
 MEDIA TO BE SEALED _____
 LEAKAGE REQUIREMENT _____ FRICTION LIMITATIONS _____
 SEAL LIFE REQUIRED _____

HARDWARE INFORMATION

☐ SEAL SCIENCE TO PROVIDE GROOVE DETAILS

BORE DIA. _____ MAT'L _____ HARDNESS _____ FINISH _____ MAT'L _____
 ROD DIA. _____ TOLERANCE _____ HARDNESS _____ FINISH _____ MAT'L _____
 GROOVE DIA. _____ TOLERANCE _____ GROOVE WIDTH _____ TOLERANCE _____
 PISTON DIA. _____ TOLERANCE _____ OR THROAT DIA. _____ TOLERANCE _____
 EXTRUSION GAP: MAX _____ MIN _____ Are any bearings required? _____

Are there any current recommendations/quotes? _____
 What does your company make? _____
 What does this equipment do? _____
 Can you provide a sketch or drawings? _____
 Is there anything else you can tell me about this application? _____
 Are there any other projects I can help you with? _____



Here at Seal Science we proudly manufacture a wide range of products from a large variety of materials. Including but not limited to:

- Vacuum cups
- Molded and machined engineered plastics
- Tight tolerance rubber grinding
- Custom compounding of PTFE and rubber
- Conductive elastomers
- O-rings and Back-up rings (inch, metric and JIS)
- Custom seals of rubber, PTFE, plastic and metal
- Rubber bonding to metal and plastic
- Custom Diaphragms
- Gaskets
- Engineered plastic bearings



SEAL SCIENCE, INC.

West Coast Office:

Seal Science, Incorporated
17131 Daimler
Irvine, CA 92614-5508
TEL: (949) 253-3130
FAX: (949) 253-3141

East Coast Office:

Seal Science, Incorporated
6343 Winside Drive
Bethlehem, PA 18017-9350
TEL: (610) 837-8787
FAX: (610) 837-8789

E-MAIL: info@sealscience.com

Visit our website at www.sealscience.com

The information contained in this catalog is based on reliable sources, test data and our experience. We believe it to be accurate. However, it is intended only as a guide for use at your discretion. The performance of seals depends on many factors not necessarily in Seal Science Incorporated's control. Seal Science Incorporated is not responsible for design suitability. Therefore, it is strongly recommended that you have the part(s) tested in your assembly, using your equipment, material and manpower. There are no warranties which extend beyond the description in this catalog. Seal Science Incorporated assumes no liability for special or consequential damages.

