

PTFE Fluid Power Seals



Catalog EPS 5360/USA



PTFE FLUID POWER



WARNING:

Failure, improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury or property damage.

For safe and trouble-free use of these products, it is important that you read and follow the Parker Seal Group Product Safety Guide. This Safety Guide can be referenced and downloaded free of charge at www.parkerseals.com and can be ordered, without charge, as Parker Publication No. PSG 5004 by calling 1-800-C-PARKER.

This document, along with other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors, provides product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through his or her own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

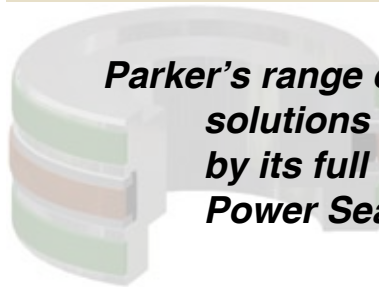
OFFER OF SALE

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Parker's range of sealing system solutions is complemented by its full line of PTFE Fluid Power Seal profiles.

Since its discovery, polytetrafluoroethylene (PTFE) has been the material of choice for applications requiring ultra low friction, chemical compatibility and functional use over a wide range of temperatures. For these reasons PTFE is an excellent choice for use in fluid sealing applications.

PTFE is not an elastic material. In order to be effective in dynamic fluid seal applications, highly resilient Parker rubber energizers are assembled with the PTFE component. The rubber element keeps the PTFE seal in constant contact with the sealing surface. To enhance the physical properties of PTFE, quality fillers are blended with the PTFE to create unique Parker PTFE compounds offering enhanced extrusion resistance, wear, resilience, and stability.

Parker's family of PTFE Fluid Power Seals, together with its full line of rubber and polyurethane sealing components, give fluid power engineers the ability to procure a full system of seals from one source. Parker PTFE Fluid Power Seals provide the added benefit that can only be offered from the unique physical characteristics of PTFE. This PTFE Fluid Power Seal Catalog provides a description of Parker's full range of PTFE Fluid Power Seals along with the part numbering and gland design details needed to specify Parker Fluid Power Seals in your application.

Engineering Excellence

Parker Hannifin Corporation's Engineered Polymer Systems (EPS) Division has a dedicated PTFE engineering team strategically focused on achieving innovative sealing solutions for the most demanding engineering applications. Our application design engineers use state-of-the-art CAD (2D/3D modeling) systems to custom fit innovative sealing designs to meet and exceed the unique standards set forth by our customers.

Parker's engineering staff is consistently dedicated and willing to explore new ideas with the companies and individuals we serve. Different companies come to Parker for different reasons, but our engineering role is always the same...working to help those companies, with Parker's engineering expertise, to make anything possible.

Introduction

Quality Commitment

Parker is committed to consistently delivering excellence in quality and service through our continuous improvement of our people, products and systems. Our PTFE manufacturing facilities are certified to AS9100 and ISO/9000 standards.

Our commitment to quality and service is supported by our investment in technologically advanced test and inspection methods. We're constantly striving to improve customer satisfaction and product quality through the implementation of:

- Six Sigma methodology
- Lean manufacturing
- TQM methodology
- Advanced product quality planning (APQP)
- Feasibility studies
- Kaizen events

Manufacturing Excellence

The production of PTFE Fluid Power Seals typically involves a seven step process. From order entry to manufacturing to shipping, Parker Engineered Polymer Systems Division has a highly trained production staff utilizing state of the art equipment. Designed to improve efficiency, our internet based EDI capabilities allow you to track your order in real-time from anywhere in the world.

1. Order Entry
 - Parker Distributor
 - Parker Service Center
 - EDI - PH Connect

2. Material
 - Blending
 - Pelletization
 - Custom compounds
 - Rapid turn around

3. PTFE Molding
 - One-shot finished molding
 - 1/4 " to 36" standard molds
 - Custom billets up to 72"
 - 2 to 1,000-ton presses



Automatic molding

4. PTFE Sintering
 - Precision temperature control
 - Multiple sintering methods

5. PTFE Machining
 - CNC production from 1/4" to 72"
 - High speed milling
 - Live tool capabilities
 - Auto load and unload
 - Up to 7 axis capability
 - Parametric programming



CNC machining

6. Secondary operations
 - Automatic notching
 - Laser marking
 - Assembly & kitting

7. Packaging & Shipping
 - Advanced Ship Notice (ASN)
 - Bar coding
 - Kitting
 - Custom packaging
 - Electronic invoicing



Large diameter CNC

















Custom billets



One-shot finished molding

Product Selection Guide

Table 1.

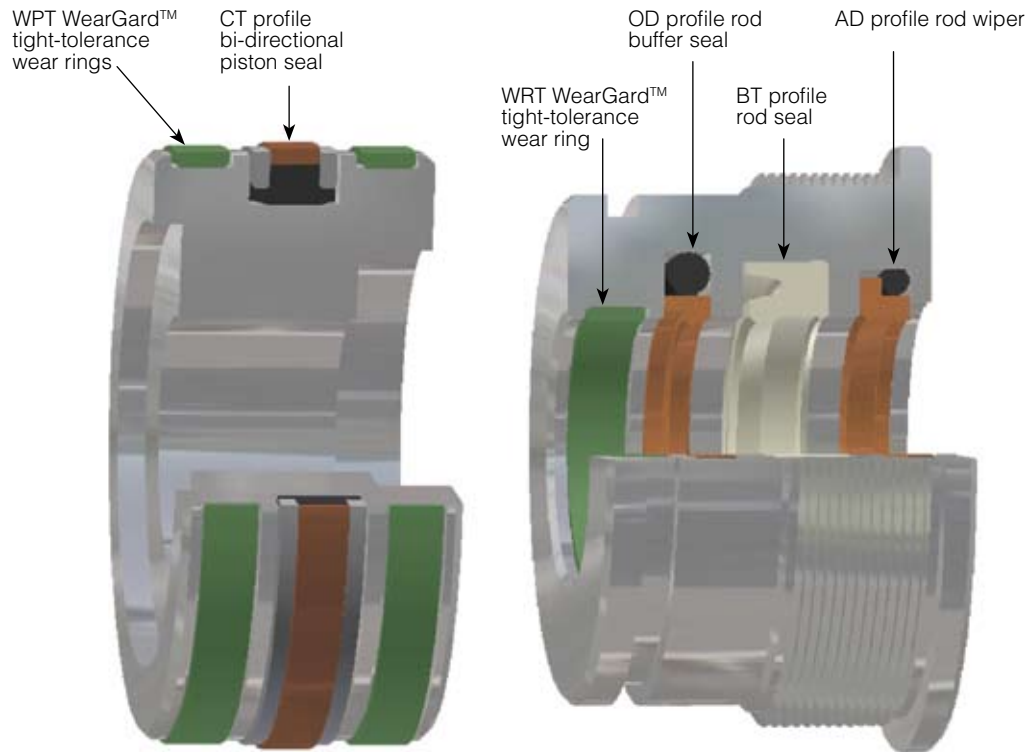
Profile Cross Section	Profile Reference	Hydraulic Duty			General Description	Typical Applications	Page
		Light	Medium	Heavy			
Linear Piston Seals							
	S5	✓	✓		Light to medium duty, bi-directional piston seal	Agriculture hydraulics; Mobile hydraulics; Machine tools; Presses	17
	R5		✓	✓	Medium to heavy duty bi-directional piston seal	Standard cylinders; Mobile hydraulics; Integrated pistons; Presses	21
	CT			✓	Heavy duty, bi-directional piston seal with back up rings to protect against shock loads and contamination	Mobile hydraulics; Refuse truck cylinders; Shock load applications	24
	CQ		✓	✓	Medium to heavy duty bi-directional piston seal with OD rubber ring seal in the cap to eliminate drift	Lift truck hydraulics; Standard cylinders; Piston accumulators	29
	OE	✓	✓		Light to medium duty, bi-directional piston seal	Mobile hydraulics; Machine tools; Injection molding machines; Presses	34
	CP	✓	✓		Light to medium duty, bi-directional piston seal to retrofit O-ring glands	Valves; Chemical industry; Machine tools	44
	OA	✓	✓		Light to medium duty, bi-directional piston seal	Machine tools; Quick acting cylinders; Servo hydraulics	51
Linear Rod Seals							
	OD	✓	✓	✓	Buffer seal used with primary rod seal (BT, BD or Type B Polypak) or installed in tandem to form a rod sealing system	Mobile hydraulics; Standard cylinders; Injection molding machines; Servo hydraulics; Hydraulic hammers	57
	ON	✓	✓		Light to medium duty, bi-directional rod seal	Machine tools; Quick acting cylinders; Servo hydraulics	64
	CR	✓	✓		Light to medium duty, bi-directional rod seal to retrofit O-ring glands	Valves; Chemical industry; Machine tools	70
	OC	✓	✓		Light to medium duty, bi-directional rod seal	Machine tools; Quick acting cylinders; Servo hydraulics	77
Linear Rod Wiper							
	AD	✓	✓	✓	Double lip rod wiper for light, medium and heavy duty applications	Industrial hydraulics; Chemical industry; Steel mills; Robotics	83
Rotary Bore							
	OQ	✓	✓		Bi-directional labyrinth seal for light to medium duty, rotating bore applications	Swivel joints; Hose reels; Machine tools; Rotating track rings	93
Rotary Shaft							
	OR	✓	✓		Bi-directional labyrinth seal for light to medium duty, rotating shaft applications	Swivel joints; Hose reels; Machine tools; Rotating track rings	99

Introduction

Parker Sealing Systems

Parker’s selection of products is the largest in the industry for hydraulic and pneumatic sealing systems, and our value-added services are unequalled.

Shown below is a complete sealing system featuring Parker’s PTFE fluid power seals, WearGard™ wear rings and Parker’s proprietary Resilon™ BT profile rod seal.



Testing and Validation

Finite Element Analysis

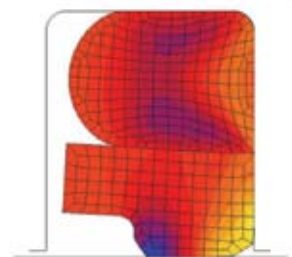
EPS Division uses Non-linear Finite Element Analysis (FEA) for design optimization during its product design development cycle. Utilizing FEA streamlines the prototyping phase of seal development by improving performance predictability, which cost-effectively accelerates speed to market.

Parker’s core-competencies using FEA simulation include:

- Determining friction effects and sealability
- Analyzing the contact pressure profile to better understand seal contact behavior under pressure and temperature
- Analyzing material extrusion, friction build-up and slipping effects on the seal surface

at higher temperatures and pressures

- Accurate prediction of seal failure modes by analyzing fatigue and plastic strain relaxation
- Developing force vs. deflection plots for axial and radial sealing capabilities
- Understanding the principal strain regions associated with the design



FEA model of OD profile at high pressure

FEA results are often validated using real-time mechanical product testing.

Mechanical Test Lab

Parker's mechanical test lab is an important asset for validating new designs and qualifying seals to customers' performance specifications. EPS Division has a sophisticated mechanical testing lab with several breakthrough advanced technologies.

Product validation and testing is carried out in accordance with ASTM specifications, Society of Automotive Engineers, military standards and aerospace standards. Test equipment enables Parker engineers to validate seals and sealing systems for hydraulic, pneumatic and rotary systems as well as design custom validation tests. A sampling of our mechanical test facilities includes:

Hydraulic:

Cylinder

- Life cycle
- Side load simulation
- 3,500 to 10,000 psi
- Benchmark analysis
- Environmental control

Pressurized Chamber Testing

- Variable speed control
- Environmental control
- Performance/endurance

Customer Specific Hardware

- 4 motor simultaneous
- Swivel testing
- Elevator cylinder
- Spool valves

Pneumatic:

Cylinder

- 120 psi
- Side load simulation
- Side by side analysis
- Environmental control

Rotary:

Hydraulic

- Variable speed
- Endurance
- 4 spindle concurrent

Consumer:

Power Hand Tools

- Nail and staple guns
- Impact absorption
- Endurance



Low pressure life cycle testing



Pneumatic cylinder testing



High pressure hydraulic leakage testing



Concurrent rotary hydraulic testing

Introduction

Global Manufacturing

Working with the Parker Seal Group gives you access to all of Parker, which is a sizeable advantage.

As the world leader in motion control technologies, we believe anything is possible. Our market-smart professionals can work with you to investigate problems and customize product for real world solutions.

From phone or on-site service... to application-specific prototype development ... our territory managers and application engineers will work cross-divisionally, even globally, to create total systems solutions that lessen your engineering burden, reduce total costs, and improve operating efficiency.

Parker Seal Group's global PTFE manufacturing facilities include:

North America:

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Czech Republic



Parker PTFE Fluid Power Seal Materials

Parker EPS has over 300 PTFE compounds and polymeric materials for the manufacture of Fluid Power Seals. Our material offering includes non-filled PTFE, standard and specialty filled PTFE compounds, custom blends, UHMW polyethylene and thermoplastic elastomers. Depending upon your design criteria, Parker can meet your seal material requirements for PTFE sealing in most all environmental and operating conditions.



Material Development Lab

In addition, our Material Development Lab is equipped to carry out testing for material characterization such as Fourier Transform Infrared (FTIR) spectrophotometer, thermal conductivity, Tribometer-PTFE wear testing, Differential Scanning Calorimeter (DSC), deformation under load, etc.

If your application demands unique material specifications, our in-house chemists have the expertise and capability to work with you in specifying and validating optimal materials to meet your requirements.

Advantages of PTFE

Low Friction

The low coefficient of friction (.06) of PTFE material results from low interfacial forces between its surface and other materials that come in contact. This behavior of PTFE material eliminates any possibility of stick-slip effects in dynamic sealing applications.

Wide Temperature Range (-450 °F to 600 °F / -268 °C to 315 °C)

PTFE's high melting point and morphological characteristics allow components made from the resin to be used continuously at service temperatures to 600 °F (315 °C). Above this temperature the components' physical properties may tend to decrease, causing heat-aging and material degradation. The polymer itself might remain unaffected if the temperature is insufficient for thermal degradation. For sealing cryogenic fluids below -450 °F (-268 °C), special designs using PTFE and other fluoropolymers are available.

Chemical Compatibility

The intrapolymer chain bond strengths of PTFE compounds preclude reaction with most chemicals, thereby making them chemically inert at elevated temperatures and pressures with virtually all industrial chemicals and solvents.

Dry Running Capability

Due to the strength of the carbon-fluorine and carbon-carbon single bonds, PTFE compounds have high thermal stability and self-lubricating capabilities, offering continuous dry running ability in dynamic sealing applications.

Temperature Cycling

PTFE compounds have the unique ability to resist material degradation, heat-aging and alteration in physical properties during temperature cycling. Most elastomers undergo compression set during temperature cycling, causing material degradation in elastomeric seals.

High Surface Speeds

The low friction characteristics and resistance to heat of PTFE make it the ideal candidate for high surface speed applications. PTFE compounds perform exceptionally well in high surface speed sealing applications where O-rings or U-cups made of elastomers fail due to heat generation.

Low Water Absorptivity

For PTFE compounds to absorb water, the surface must remain wet for a long enough time for water to become physiochemically associated with the polymer chains. Water is a very high energy medium and PTFE has a very low surface energy. Therefore, these events are energetically incompatible and only occur under special circumstances and to a small extent.

Low Dielectric Constant and Dissipation Factor

PTFE compounds provide low, if not the lowest, values for these parameters. These low values arise from the polymer's nonpolarity as well as the tight electron hold in the ultra polymer bonds.

Enhancing Performance of PTFE with Fillers

The only requirement for an additive to qualify as a filler for PTFE is that it should be able to withstand the sintering temperatures of PTFE. Sintering involves exposure to temperatures close to 700 °F (371 °C) for several hours.

A number of fillers are used in combination with PTFE. For the best results for your sealing applications, please contact Parker EPS Division design and application engineering at (801) 972-3000.

Non-Filled PTFE**0100 – Virgin PTFE**

Virgin PTFE has no fillers and is considered FDA and potable water safe. Fillers are used to enhance some of the physical properties when needed.

Filled PTFE**0102 – Modified Virgin PTFE**

Pigmented. Same basic properties as virgin, but with increased wear and creep resistance and lower gas permeability.

0120 — Mineral Filled

Mineral is ideal for improved higher temperatures and offers low abrasion to soft surfaces. PTFE with this filler can easily be qualified to FDA and other food-grade specifications.

0203 — Fiberglass Filled

Glass fiber is the most common filler with a positive impact on creep performance of PTFE. Glass fiber adds wear resistance and offers good compression strength.

0204 / 0205 — Molybdenum Disulfide and Fiberglass Filled

Molybdenum disulfide increases the hardness of the surface while decreasing friction. It is normally used in small proportions combined with other fillers such as glass. MoS₂ is inert towards most chemicals.

0301 — Graphite Filled

Graphite filled PTFE has an extremely low coefficient of friction due to the low friction characteristics of graphite. Graphite is chemically inert. Graphite imparts excellent wear properties and high PV to PTFE.

0307 — Carbon-Graphite Filled

Carbon reduces creep, increases hardness and elevates the thermal conductivity of PTFE. Carbon-graphite compounds have good wear resistance and perform well in non-lubricated applications.

0401 / 0402 – Bronze Filled

Bronze is a self lubricated, long-wearing material that offers superior frictional characteristics and high temperature capabilities.

0501 / 0502 — Carbon Fiber Filled

Carbon fiber lowers creep, increases flex and compressive modulus and raises hardness. Coefficient of thermal expansion is lowered and thermal conductivity is higher for compounds of carbon fiber filled PTFE. This is ideal for automotive applications in shock absorbers and water pumps.

0601 — Aromatic Polyester Filled

Aromatic polyester is excellent for high temperatures and has excellent wear resistance against soft, dynamic surfaces. Not recommended for sealing applications involving steam.

Material and Profile Combinations

See **Table 2** for standard and optional PTFE materials available for respective Parker Fluid Power seal profiles.

Standard (■) vs Optional (□) materials in respective profiles.

Table 2.

Material	Profile													
	S5	R5	CT	CQ	OE	CP	OA	OD	ON	CR	OC	AD	OQ	OR
0100						□				□		□		
0102						□	■	□		□	■			
0120	□	□			□	□		□	□	□			□	□
0203	■	■		□	□				□					
0204			□				□				□		■	■
0301					□				□				□	□
0307			□		□			□	□				□	□
0401	□	□	■	■	■	■		■	■	■	□	■		
0502												□	□	□
0601					□				□					

Features of Other Machinable Plastics

UHMW Polyethylene

- Temperature range -360 °F to 180 °F (-217 °C to 82 °C)
- Excellent wear and abrasion resistance
- Good lubricity in water
- Excellent sealing of light gases at low pressures
- Excellent high pressure extrusion resistance
- Moderate abrasion to soft hardware
- Excellent wear resistance in reciprocating applications

Hytrel® Thermoplastic (TPE) Elastomer

- Temperature Range -80 °F to 275 °F (-62 °C to 135 °C)
- Excellent wear and extrusion resistance
- Excellent sealing of light gases at low pressures
- Excellent high pressure extrusion resistance
- Low abrasion to soft dynamic hardware material
- Minimum dynamic surface hardness 25 Rc
- Excellent wear resistance in reciprocating applications
- Good wear resistance in rotary application

Polychlorotrifluoroethylene (PCTFE)

- Excellent electrical properties
- Stable for continuous usage until 400 °F (204 °C); slow degradation begins at 500 °F (260 °C) and accelerates at 570 °F (300 °C)
- Low creep at room temperature

Polyetheretherketone (PEEK)

- Chemically Inert
- Very strong and rigid
- Temperature range -80 °F to 500 °F (-62° °C to 260 °C)
- Excellent abrasion resistance

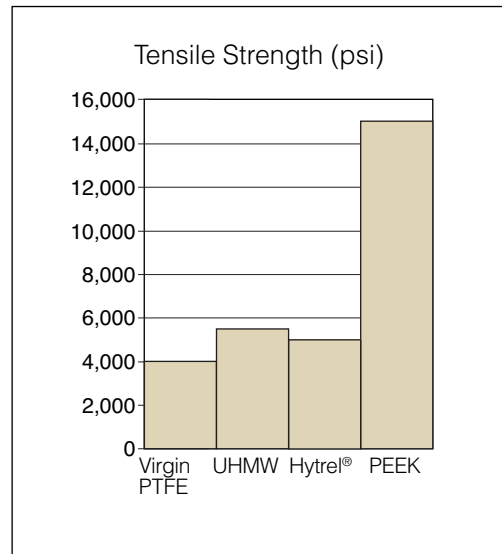


Figure 1. Ultimate Tensile Strength

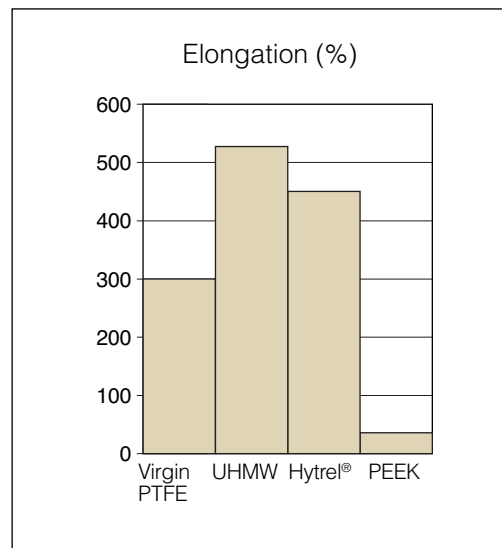


Figure 2. Ultimate Elongation

Materials**PTFE Materials — Typical Physical Properties****Table 3.**

Parker Material Code	Material	Color	Typical Applications & Description	Service Temperature Range °F (°C)	Tensile Strength in psi at Break (bar)	Elongation in %	Hardness Shore D
0100	Virgin PTFE	White	Excellent for Cryogenic applications. Good for gases.	-425 to 450 (-254 to 233)	4575 (316)	400	60
0102	Modified PTFE	Turquoise	Lower creep, reduced permeability and good wear resistance.	-320 to 450 (-195 to 282)	4600 (317)	390	60
0120	Mineral Filled PTFE	White	Excellent low abrasion to soft surfaces & improved upper temperature performances. FDA Materials.	-360 to 550 (-218 to 288)	4070 (281)	270	65
0203	Fiberglass Filled PTFE	Gold	Excellent compressive strength and good wear resistance.	-200 to 575 (-129 to 302)	3480 (240)	190	67
0204	Fiberglass & Moly Filled PTFE	Gray	Excellent for extreme conditions such as high pressure & temperature and for longer wear life on hardened dynamic surfaces.	-200 to 575 (-129 to 302)	3100 (214)	245	62
0301	Graphite Filled PTFE	Black	Excellent for corrosive service. Low abrasion to soft shafts. Good in unlubricated service.	-250 to 550 (-157 to 288)	3200 (221)	260	60
0307	Carbon-Graphite Filled PTFE	Black	Excellent wear resistance and reduces creep.	-360 to 575 (-218 to 302)	2250 (155)	100	64
0401	Bronze Filled PTFE	Bronze	Excellent extrusion resistance and high compressive loads.	-200 to 575 (-129 to 302)	3200 (221)	250	63
0502	Carbon Fiber Filled PTFE	Brown	Good for strong alkali and hydrofluoric acid. Good in water service.	-200 to 550 (-129 to 288)	3200 (221)	312	60
0601	Aromatic Polyester Filled PTFE	Tan	Excellent high temperature capabilities & excellent wear resistance.	-200 to 575 (-129 to 302)	2500 (172)	200	61

PTFE Materials — Typical Physical Properties (continued)

Table 3.

Parker Material Code	Coefficient of Friction	Thermal Conductivity (in W/mK)	Coefficient of Thermal Expansion (in/in/°F x 10 ⁻⁵ at 203 °F)	Permanent Deformation Under Load (70 °F 2000 psi in %)	Chemical Compatibility Rating	Wear Resistance Rating	High Pressure Extrusion Resistance Rating	FDA/NSF Compliant
0100	0.05 - 0.10	0.30	11	7.0	5	1	1	Y
0102	0.05 - 0.10	0.29	11	6.9	5	2	2	Y
0120	0.08 - 0.12	0.23	11	4.2	5	3	4	Y
0203	0.08 - 0.12	0.27	10	6.0	5	5	5	N
0204	0.08 - 0.12	0.28	11	6.0	5	4	4	N
0301	0.07 - 0.09	0.39	11	3.5	5	4	3	N
0307	0.08 - 0.11	0.35	8	2.5	5	4	4	N
0401	0.18 - 0.22	0.45	10	4.4	4	4	4	N
0502	0.09 - 0.12	0.31	13	1.8	4	5	5	N
0601	0.09 - 0.13	0.32	9	5.5	4	4	4	N

Note: We emphasize that this tabulation should be used as a guide only.

The above data is based primarily on laboratory and service tests, but does not take into account all variables that can be encountered in actual use. Therefore, it is always advisable to test the material under actual service conditions before specification. If this is not practical, tests should be devised that simulate service conditions as closely as possible.

Parker EPS Division also offers unique material blends and recipes along with a wide variety of other PTFE filler combinations and colors to enhance seal performance in the most extreme application needs. For guidance on material selection for extreme applications, please contact an EPS Division PTFE Application Engineer at 801-972-3000.

*Since surface speed, pressure, under-lip temperature, media lubricity and abrasiveness significantly affect the level of shaft hardness needed in an application, the user should upgrade from these recommended minimums as the application becomes more severe.

Materials

The following table lists material codes that apply to the rubber energizer used with PTFE fluid power seals. List the corresponding material code in the appropriate location in the part number. Parker has a full range of rubber compounds to suit various temperature, pressure and chemical compatibility requirements. If your application requires an alternate rubber compound, not listed, please consult a Parker application engineer.

Rubber Energizer Materials — Typical Properties and Recommendations

Table 4.

Material Code	Material Description	Shore A Hardness	Temperature Range	Recommended Use	Not Recommend For Use
A	Nitrile (NBR)	70	-30 °F to 250 °F (-34 °C to 121 °C)	<ul style="list-style-type: none"> Petroleum oils and fluids Diesel fuel and fuel oils Cold water Silicone oil and grease Mineral oil and grease Vegetable oil HFA, HFB and HFC fluids 	<ul style="list-style-type: none"> Aromatic hydrocarbons Chlorinated hydrocarbons Polar solvents (MEK, ketone, acetone) Phosphate ester fluids Strong acids Automotive brake fluid
B	Low Temperature Nitrile (NBR)	75	-65 °F to 225 °F (-55 °C to 107 °C)		
C	Clean Grade Nitrile (NBR)	70	-30 °F to 250 °F (-34 °C to 121 °C)	<ul style="list-style-type: none"> Potable water Food service 	
D	Hydrogenated Nitrile (HNBR)	70	-23 °F to 300 °F (-32 °C to 149 °C)	<ul style="list-style-type: none"> Diesel fuel and fuel oils Dilute acids and bases 	
F	Fluorocarbon (FKM)	70	-15 °F to 400 °F (-26 °C to 205 °C)	<ul style="list-style-type: none"> Petroleum oils and fluids Cold water Silicone greases and oils Aliphatic hydrocarbons Aromatic hydrocarbons Fuels Fuels with methanol content 	<ul style="list-style-type: none"> Glycol based brake fluids Ammonia gas, amines, alkalis Superheated steam Low molecular organic acids
K	Ethylene Propylene Rubber (EPDM)	70	-70 °F to 250 °F (-57 °C to 121 °C)	<ul style="list-style-type: none"> Hot water Glycol based brake fluids Many organic and inorganic acids Cleaning agents Soda and potassium alkalis Phosphate ester based fluids Many polar solvents 	<ul style="list-style-type: none"> Petroleum oils and fluids Mineral oil products
L	Ethylene Propylene Rubber (EPDM)	80	-70 °F to 250 °F (-57 °C to 121 °C)		

The following table is a list of back up ring materials for use with PTFE fluid power seals. List the corresponding back up ring material code in the appropriate location in the part number.

Back Up Ring Materials — Typical Application Ranges and Recommendations

Table 5.

Material Code	Material Description	Pressure Rating *	Temperature Range	Recommended Use
A	Nylon, Molybdenum Di-Sulfide Filled	7,500 psi (517 bar)	-40 °F to 250 °F (-40 °C to 121 °C)	<ul style="list-style-type: none"> • Petroleum oils and fluids • Diesel fuel and fuel oils • Phosphate ester fluids • Silicone oil and grease • Mineral oil and grease
B	Nylon Glass Filled	7,500 psi (517 bar)	-40 °F to 275 °F (-40 °C to 135 °C)	<ul style="list-style-type: none"> • Reduced water absorption • Improved thermal stability
C	Acetal	6,000 psi (414 bar)	-40 °F to 250 °F (-40 °C to 121 °C)	<ul style="list-style-type: none"> • HFA, HFB and HFC fluids • Water • Petroleum oils and fluids • Diesel fuel and fuel oils • Mineral oil and grease
D	PTFE PPS Filled	5000 psi (345 bar)	-100 °F to 450 °F (-73 °C to 232 °C)	<ul style="list-style-type: none"> • Extended temperature, pressure and media resistance
E	PEEK Virgin	10,000 psi (690 bar)	-40 °F to 450 °F (-40 °C to 232 °C)	<ul style="list-style-type: none"> • Extended temperature, pressure and media resistance

* Pressure ratings are a general guide only. Pressure ratings are reduced if wear rings are used.

Hardware Considerations

General Guidelines for Hardware Design

For easy assembly and to avoid damage to the seal during assembly, Parker recommends that designers adhere to the tolerances, surface finishes, leading edge chamfers and dimensions shown in this catalog.

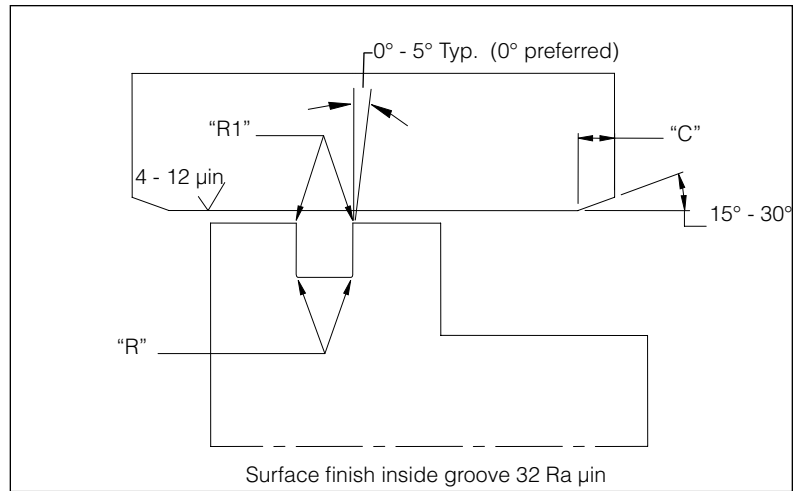


Figure 3.

Hardware Recommendations — Piston.

Table 6.

Inch				Metric			
Piston Size Inch	"R" Max Radius	"R1" Max Radius	"C" Min Chamfer	Piston Size (mm)	"R" Max Radius	"R1" Max Radius	"C" Min Chamfer
0.125 < 1.500	0.020	0.005	0.080	3.0 < 38	0.50	0.20	2.0
1.500 < 6.000	0.025	0.005	0.125	38 < 150	0.60	0.20	3.0
6.000 < 10.000	0.030	0.005	0.250	150 < 250	0.75	0.20	6.0
10.000 and Up	0.035	0.005	0.300	250 and Up	0.90	0.20	8.0

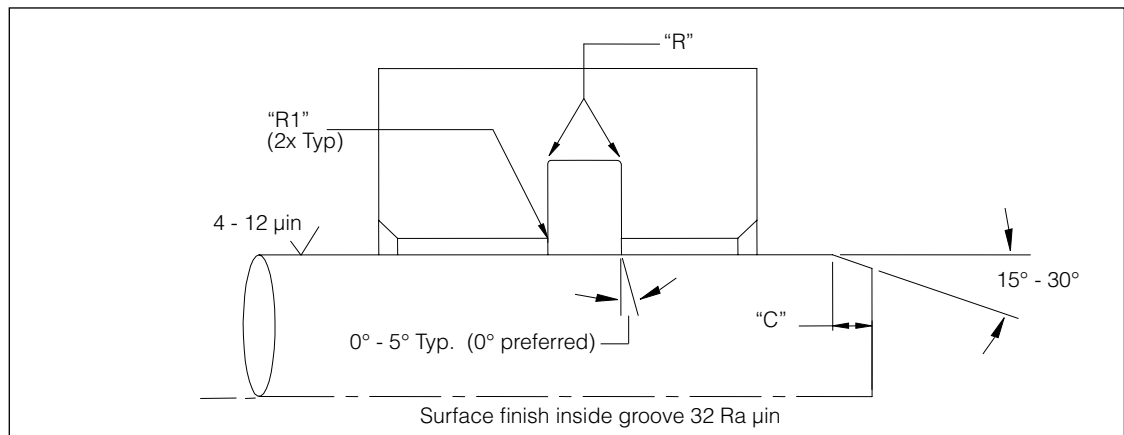


Figure 4.

Hardware Recommendations — Rod.

Table 7.

Inch				Metric			
Rod Size Inch	"R" Max Radius	"R1" Max Radius	"C" Min Chamfer	Rod Size (mm)	"R" Max Radius	"R1" Max Radius	"C" Min Chamfer
0.125 < 1.500	0.020	0.005	0.080	3.0 < 38	0.50	0.20	2.0
1.500 < 6.000	0.025	0.005	0.125	38 < 150	0.60	0.20	3.0
6.000 < 10.000	0.030	0.005	0.250	150 < 250	0.75	0.20	6.0
10.000" and Up	0.035	0.005	0.300	250 and Up	0.90	0.20	8.0

Fluid Power Seal Installation

Piston Seals

The installation of Piston Seals can be greatly improved with the use of installation tooling. The tooling not only makes the installation easier, but also safer. The seal is less likely to be damaged using the proper tooling. The tooling is highly recommended and cost effective when doing high volume installation.

1. Inspect all hardware and tooling for any contamination, burrs or sharp edges. Clean, debur, chamfer, or radius where necessary. Make sure the piston and groove are undamaged.
2. Carefully install the O-ring or rubber energizer into the groove to ensure proper seating.
3. Install the expanding mandrel on to the piston.
4. Place the seal onto the expanding mandrel and gently push the seal up the ramp using the pusher.
5. Slide the resizing tool over the seal to compress the seal to its original diameter.

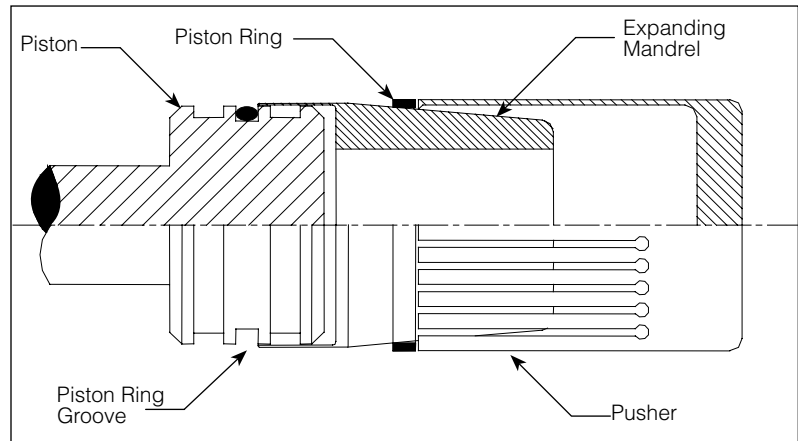


Figure 5. Installation of Piston Seal With Tooling

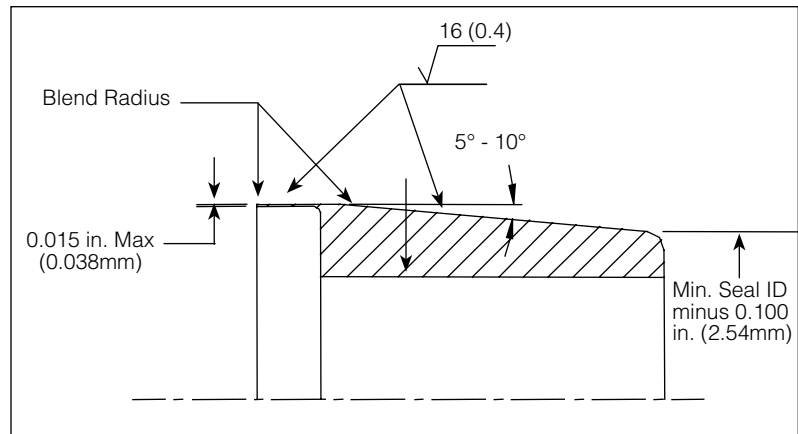


Figure 6. Expanding Mandrel

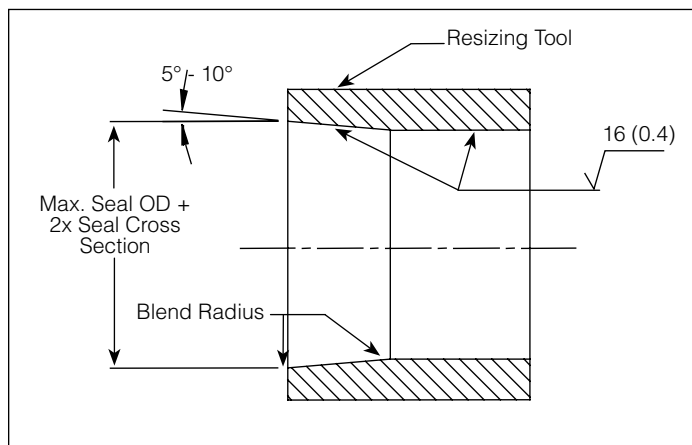


Figure 7. Resizing Tool

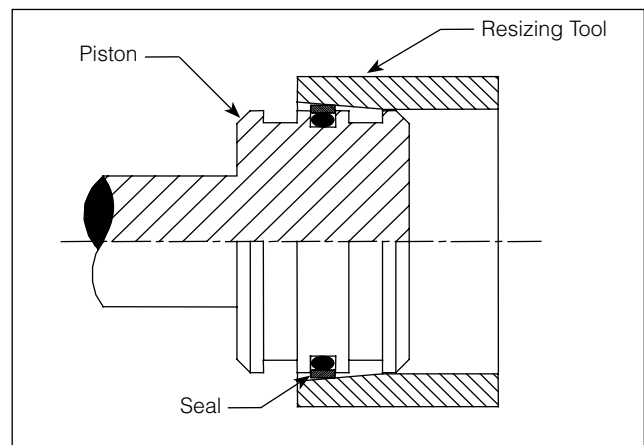


Figure 8. Resizing

Note: To aid in the installation, the seal can be lubricated with the fluid it will be sealing. Preheating the seal to as high as 300 °F (150 °C) in either oil or air will soften the seal and aid in the stretching and installation.

Care must be taken to prevent burns when using the heating option.

Installation

Rod Seals

Many PTFE seals can be manipulated by hand for installing into the seal gland. Not all PTFE seals can be manipulated in this manner. Small diameter parts or parts with large cross sections may require a two piece (split) gland for installation. Using installation tools that gouge, dent or damage PTFE rings must be avoided. The following instructions provide the steps for the proper installation of PTFE seals. If needed, please consult the factory for additional installation recommendations.

1. Inspect all hardware and tooling for any contamination, burrs, or sharp edges. Clean, debur, chamfer, or radius where necessary. Make sure the bore, groove and rod are undamaged.
2. Carefully install the O-ring or rubber energizer into the groove to ensure proper seating.
3. By hand, gently fold the seal into a kidney shape (Figure 9) and install in groove.
4. Unfold the seal into the gland by hand or use a resizing tool (Figure 10) to re-expand the seal.

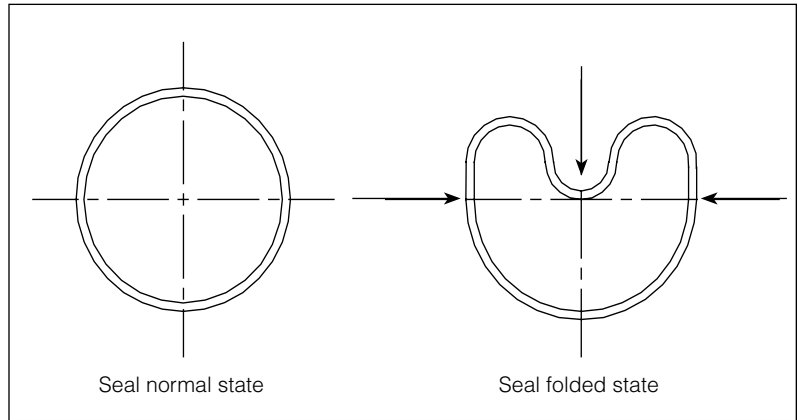


Figure 9. Rod seal folding

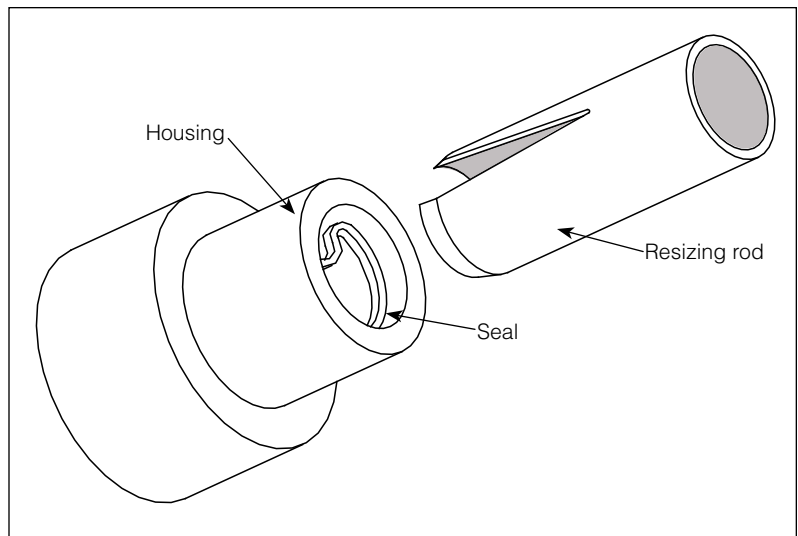
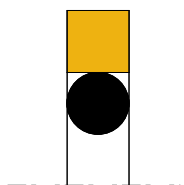


Figure 10. Rod seal installation

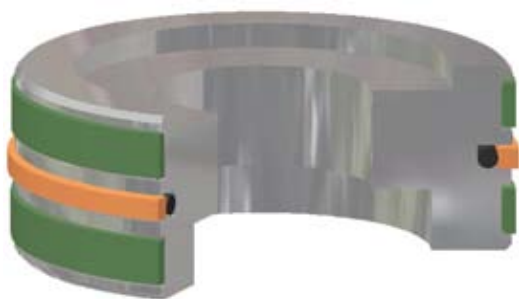
S5 Profile



S5 Profile



S5 Cross Section



S5 installed in Piston Gland

S5 Profile, Linear Piston Seal

The Parker S5 profile is a bi-directional piston seal for use in low to medium duty hydraulic actuators. The S5 profile is a simple two piece design comprised of a standard size Parker O-ring energizing a glass filled PTFE cap. The S5 profile offers long wear and low friction, and because of its short assembly length, requires minimal gland space on the piston. The seal is commonly used in applications such as agriculture hydraulics, mobile hydraulics, machine tools, and hydraulic presses. Parker's S5 profile is designed to retrofit non-Parker seals of similar design and is an updated version of the Parker S5000 piston seal.

Technical Data

Standard Materials

Cap:	0203	15% fiberglass filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 3,500 psi (240 bar) without wear rings
1,000 to 2,500 psi (70 to 175 bar) with wear rings

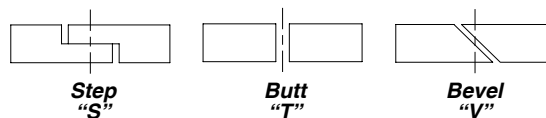
Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved by using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

Options

Split Rings: To aid in installation, the PTFE ring can be supplied in one of the following split configurations. To indicate that the S5 profile is to be split, add the appropriate split type indicator to the end of the part number.

S = Step Cut
T = Butt Cut
V = Bevel cut

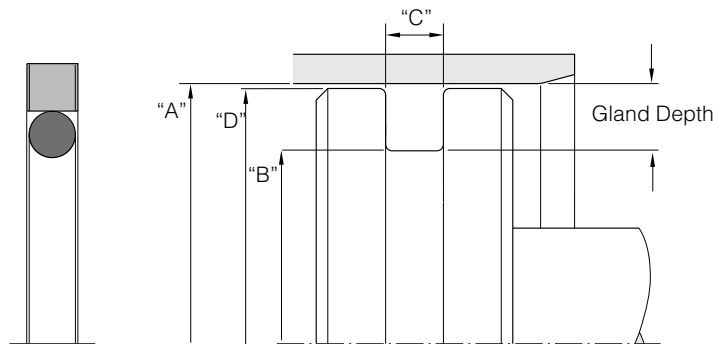
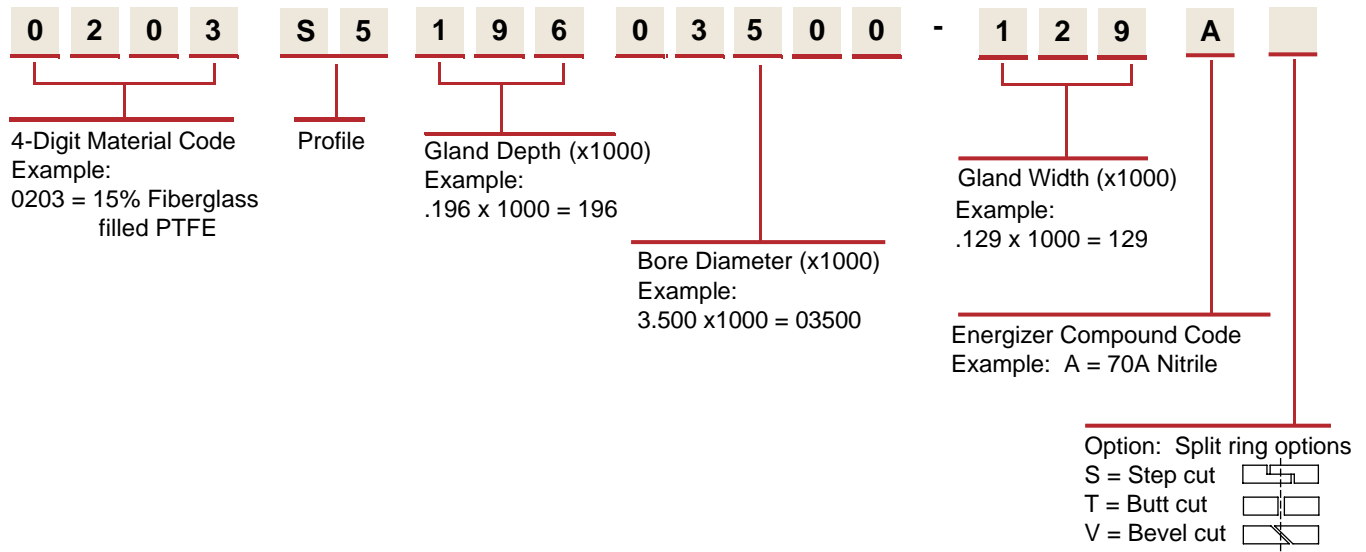


Metric: To configure metric part numbering, see Table 10 on Page 20, and call Customer Service for availability.

S5 Profile

Part Number Nomenclature — S5 Profile

Table 8. S5 Profile — Inch



Gland Dimensions — S5 Profile

Table 9. S5 Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston (0203 Cap Material)			O-ring Dash Number	S5 Part Number
			1000 psi (70 bar)	2500 psi (175 bar)	3500 psi (245 bar)		
+ .002/- .000	+ .001/- .001	+ .002/- .002					
0.500	0.240	0.083	0.484	0.490	0.496	009	0203S513000500-083A
0.750	0.490	0.083	0.734	0.740	0.746	013	0203S513000750-083A
0.875	0.615	0.083	0.859	0.865	0.871	016	0203S513000875-083A
1.000	0.740	0.083	0.984	0.990	0.996	017	0203S513001000-083A
1.125	0.865	0.083	1.109	1.115	1.121	019	0203S513001125-083A
1.250	0.990	0.083	1.234	1.240	1.246	022	0203S513001250-083A
1.375	1.115	0.083	1.359	1.365	1.371	023	0203S513001375-083A
1.500	1.240	0.083	1.484	1.490	1.496	025	0203S513001500-083A
+ .002/- .000	+ .002/- .002	+ .002/- .002					
1.625	1.233	0.122	1.605	1.613	1.619	123	0203S519601625-122A
1.750	1.358	0.122	1.730	1.738	1.744	125	0203S519601750-122A
1.875	1.483	0.122	1.855	1.863	1.869	127	0203S519601875-122A

Table 9. S5 Gland Dimensions — Inch (continued)

			"D" Minimum Diameter Piston (0203 Cap Material)				
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1000 psi (70 bar)	2500 psi (175 bar)	3500 psi (245 bar)	O-ring Dash Number	S5 Part Number
+0.003/-0.000	+0.002/-0.002	+0.003/-0.003					
2.000	1.608	0.129	1.980	1.988	1.994	129	0203S519602000-129A
2.125	1.733	0.129	2.105	2.113	2.119	131	0203S519602125-129A
2.250	1.858	0.129	2.230	2.238	2.244	133	0203S519602250-129A
2.375	1.983	0.129	2.355	2.363	2.369	135	0203S519602375-129A
2.500	2.108	0.129	2.480	2.488	2.494	137	0203S519602500-129A
2.625	2.233	0.129	2.605	2.613	2.619	139	0203S519602625-129A
2.750	2.358	0.129	2.730	2.738	2.744	141	0203S519602750-129A
2.875	2.483	0.129	2.855	2.863	2.869	143	0203S519602875-129A
3.000	2.608	0.129	2.980	2.988	2.994	145	0203S519603000-129A
3.250	2.858	0.129	3.230	3.238	3.244	149	0203S519603250-129A
3.375	2.983	0.129	3.355	3.363	3.369	150	0203S519603375-129A
3.500	3.108	0.129	3.480	3.488	3.494	151	0203S519603500-129A
3.625	3.233	0.129	3.605	3.613	3.619	152	0203S519603625-129A
3.750	3.358	0.129	3.730	3.738	3.744	152	0203S519603750-129A
4.000	3.608	0.129	3.980	3.988	3.994	153	0203S519604000-129A
4.250	3.858	0.129	4.230	4.238	4.244	154	0203S519604250-129A
4.500	4.108	0.129	4.480	4.488	4.494	155	0203S519604500-129A
4.750	4.358	0.129	4.730	4.738	4.744	156	0203S519604750-129A
4.875	4.483	0.129	4.855	4.863	4.869	156	0203S519604875-129A
5.000	4.608	0.129	4.980	4.988	4.994	157	0203S519605000-129A
5.250	4.858	0.129	5.230	5.238	5.244	158	0203S519605250-129A
5.500	5.108	0.129	5.480	5.488	5.494	159	0203S519605500-129A
+0.004/-0.000	+0.003/-0.003	+0.004/-0.004					
5.750	5.232	0.159	5.726	5.734	5.740	251	0203S525905750-159A
5.875	5.357	0.159	5.851	5.859	5.865	252	0203S525905875-159A
6.000	5.482	0.159	5.976	5.984	5.990	253	0203S525906000-159A
6.250	5.732	0.159	6.226	6.234	6.240	255	0203S525906250-159A
6.500	5.982	0.159	6.476	6.484	6.490	257	0203S525906500-159A
6.750	6.232	0.159	6.726	6.734	6.740	258	0203S525906750-159A
7.000	6.482	0.159	6.976	6.984	6.990	259	0203S525907000-159A
7.125	6.607	0.159	7.101	7.109	7.115	260	0203S525907125-159A
7.250	6.732	0.159	7.226	7.234	7.240	260	0203S525907250-159A
7.500	6.982	0.159	7.476	7.484	7.490	261	0203S525907500-159A
7.750	7.232	0.159	7.726	7.734	7.740	262	0203S525907750-159A
8.000	7.482	0.159	7.976	7.984	7.990	263	0203S525908000-159A
8.250	7.732	0.159	8.226	8.234	8.240	264	0203S525908250-159A
8.500	7.982	0.159	8.476	8.484	8.490	265	0203S525908500-159A
8.750	8.232	0.159	8.726	8.734	8.740	266	0203S525908750-159A
9.000	8.482	0.159	8.976	8.984	8.990	267	0203S525909000-159A
9.250	8.732	0.159	9.226	9.234	9.240	268	0203S525909250-159A

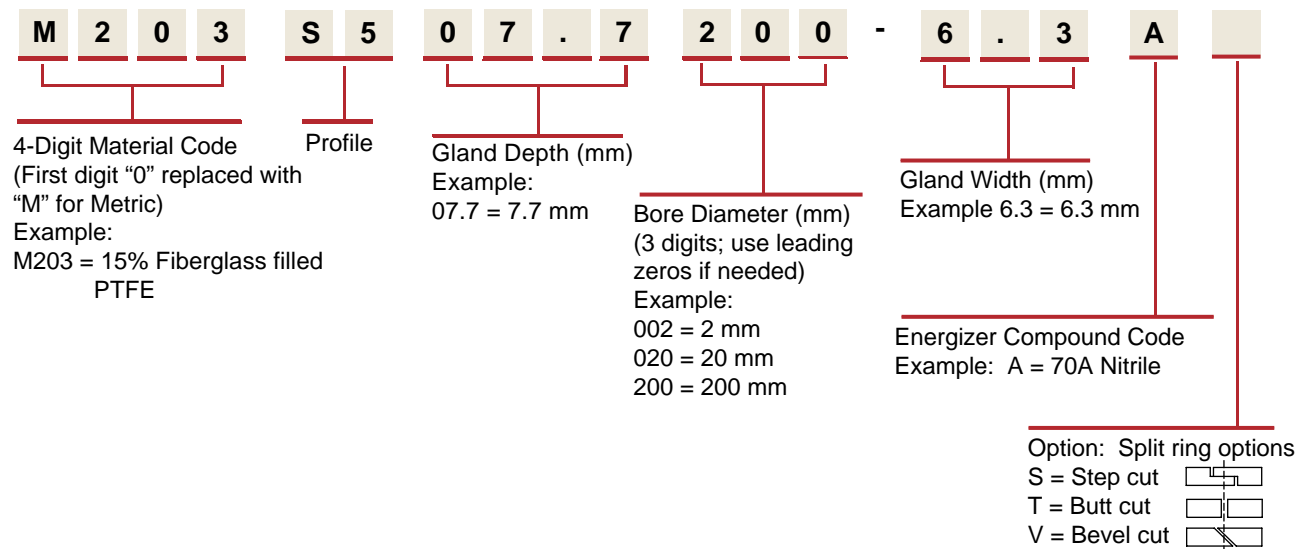
S5 Profile

Table 9. S5 Gland Dimensions — Inch (continued)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston (0203 Cap Material)			O-ring Dash Number	S5 Part Number
			1000 psi (70 bar)	2500 psi (175 bar)	3500 psi (245 bar)		
9.500	8.982	0.159	9.476	9.484	9.490	269	0203S525909500-159A
9.750	9.232	0.159	9.726	9.734	9.740	270	0203S525909750-159A
10.000	9.482	0.159	9.976	9.984	9.990	271	0203S525910000-159A
10.250	9.732	0.159	10.226	10.234	10.240	272	0203S525910250-159A
10.500	9.982	0.159	10.476	10.484	10.490	273	0203S525910500-159A
10.750	10.232	0.159	10.726	10.734	10.740	274	0203S525910750-159A
11.000	10.482	0.159	10.976	10.984	10.990	275	0203S525911000-159A
11.500	10.982	0.159	11.476	11.484	11.490	276	0203S525911500-159A
12.000	11.482	0.159	11.976	11.984	11.990	277	0203S525912000-159A
12.500	11.982	0.159	12.476	12.484	12.490	278	0203S525912500-159A
13.000	12.482	0.159	12.976	12.984	12.990	278	0203S525913000-159A
14.000	13.482	0.159	13.976	13.984	13.990	279	0203S525914000-159A
15.000	14.482	0.159	14.976	14.984	14.990	280	0203S525915000-159A
16.000	15.482	0.159	15.976	15.984	15.990	281	0203S525916000-159A

Part Number Nomenclature — S5 Profile

Table 10. S5 Profile — Metric

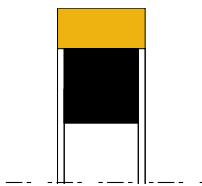


R5 Profile

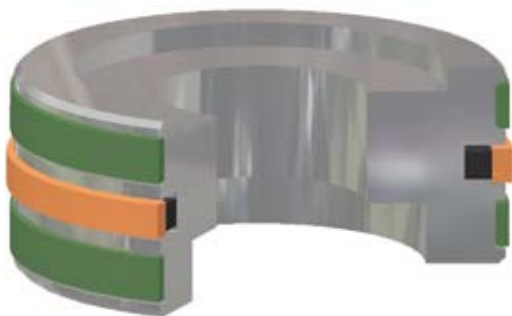
Catalog EPS 5360/USA



R5 Profile



R5 Cross Section



R5 installed in Piston Gland

R5 Profile, Linear Profile Seal

The Parker R5 profile is a bi-directional piston seal for use in medium to heavy duty hydraulic actuators. The R5 profile is a two piece design comprised of a standard size rubber square ring energizing a rectangular shaped PTFE cap. The R5 profile offers excellent stability, long wear, low friction and extrusion protection. The seal is commonly used in applications such as agriculture hydraulics, mobile hydraulics, machine tools, and hydraulic presses. Parker's R5 profile is designed to retrofit non-Parker seals of similar design and is an updated version of the Parker R5100 piston seal.

Technical Data

Standard Materials

Cap:	0203	15% fiberglass filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (350 bar) without wear rings
1,500 to 3,000 psi (100 to 200 bar) with wear rings

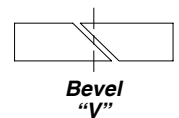
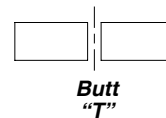
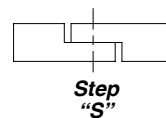
Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
Higher temperature can be achieved by using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

Options

Split Rings: To aid in installation, the PTFE ring can be supplied in one of the following split configurations. To indicate that the R5 profile is to be split, add the appropriate split type indicator to the end of the part number.

S = Step Cut
T = Butt Cut
V = Bevel cut

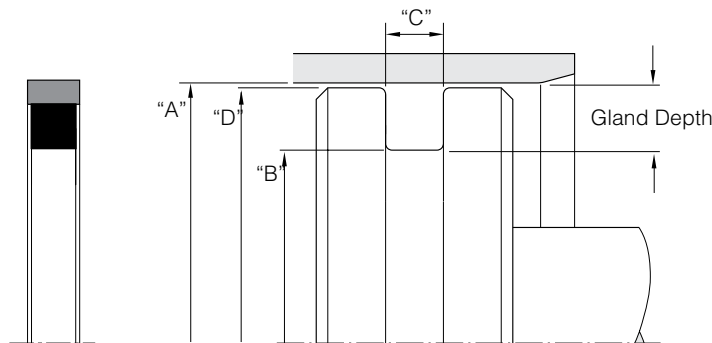
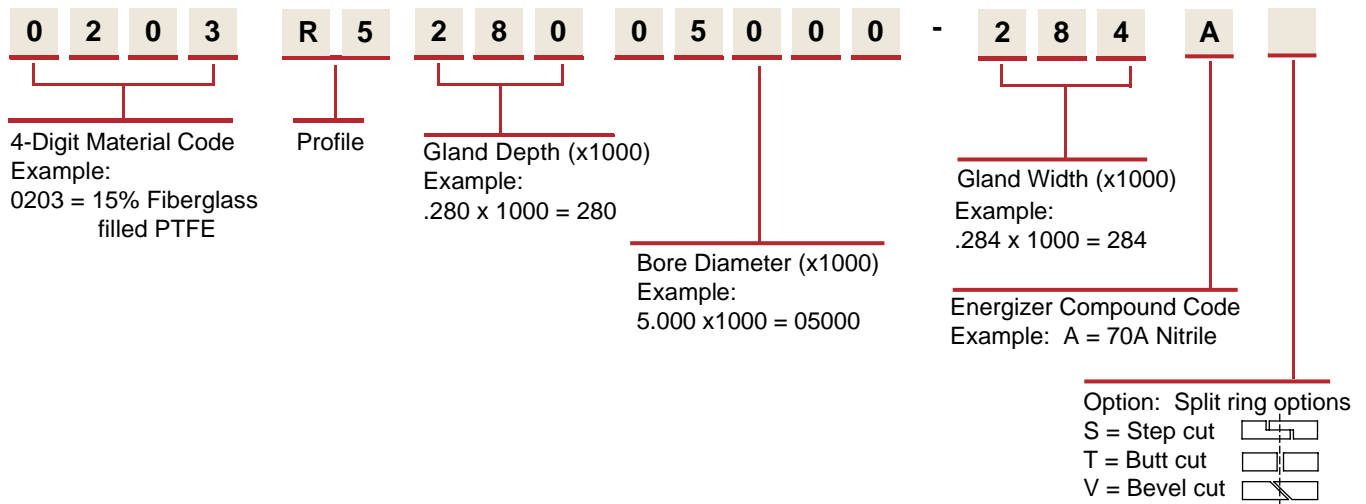


Metric: To configure metric part numbering, see Table 13 on Page 23, and call Customer Service for availability.

R5 Profile

Part Number Nomenclature — R5 Profile

Table 11. R5 Profile — Inch



Gland Dimensions — R5 Profile

Table 12. R5 Gland Dimensions — Inch

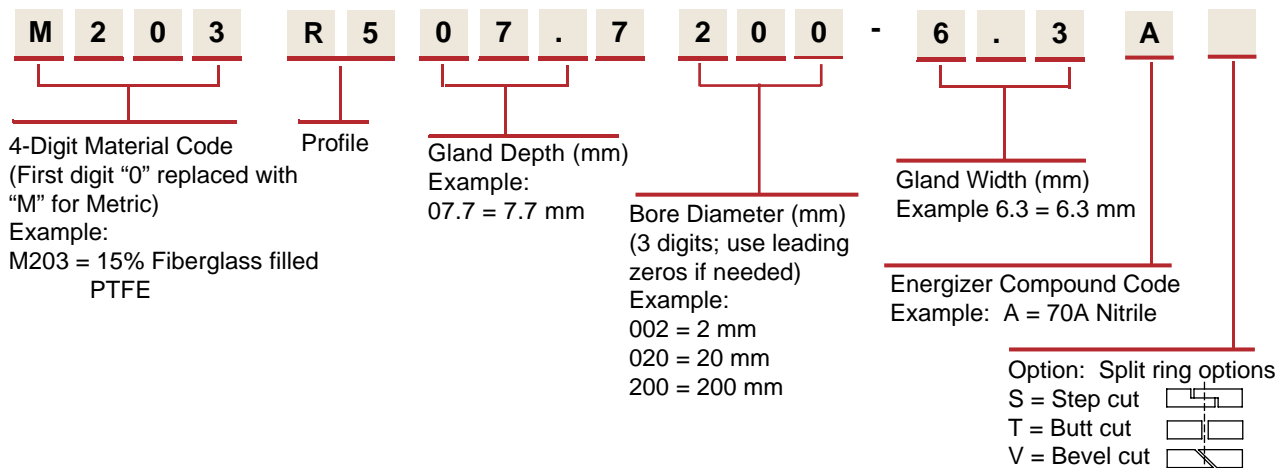
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			Square Ring Dash Number	R5 Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
+0.002/-0.000	+0.001/-0.001	+0.002/-0.002					
1.000	0.692	0.129	0.974	0.990	0.994	115	0203R515501000-129A
1.250	0.942	0.129	1.224	1.240	1.244	119	0203R515501250-129A
1.500	1.192	0.129	1.474	1.490	1.494	123	0203R515501500-129A
1.750	1.442	0.129	1.724	1.740	1.744	127	0203R515501750-129A
2.000	1.692	0.129	1.974	1.990	1.994	131	0203R515502000-129A
2.250	1.942	0.129	2.224	2.240	2.244	135	0203R515502250-129A
2.500	2.192	0.129	2.474	2.490	2.494	139	0203R515502500-129A
2.750	2.442	0.129	2.724	2.740	2.744	143	0203R515502750-129A
+0.003/-0.000	+0.002/-0.002	+0.002/-0.002					
3.000	2.444	0.284	2.960	2.980	2.993	333	0203R528003000-284A
3.250	2.694	0.284	3.210	3.230	3.243	335	0203R528003250-284A
3.500	2.944	0.284	3.460	3.480	3.493	337	0203R528003500-284A
3.750	3.194	0.284	3.710	3.730	3.743	339	0203R528003750-284A
4.000	3.444	0.284	3.960	3.980	3.993	341	0203R528004000-284A
4.125	3.569	0.284	4.085	4.105	4.118	342	0203R528004125-284A

Table 12. R5 Gland Dimensions — Inch (continued)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			Square Ring Dash Number	R5 Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
4.250	3.694	0.284	4.210	4.230	4.243	343	0203R528004250-284A
4.500	3.944	0.284	4.460	4.480	4.493	345	0203R528004500-284A
4.750	4.194	0.284	4.710	4.730	4.743	347	0203R528004750-284A
5.000	4.444	0.284	4.960	4.980	4.993	349	0203R528005000-284A
+0.004/-0.000	+0.003/-0.003	+0.003/-0.003					
5.250	4.488	0.379	5.200	5.217	5.242	425	0203R538105250-379A
5.500	4.738	0.379	5.450	5.467	5.492	427	0203R538105500-379A
5.750	4.988	0.379	5.700	5.717	5.742	429	0203R538105750-379A
6.000	5.238	0.379	5.950	5.967	5.992	431	0203R538106000-379A
6.250	5.488	0.379	6.200	6.217	6.242	433	0203R538106250-379A
6.500	5.738	0.379	6.450	6.467	6.492	435	0203R538106500-379A
6.750	5.988	0.379	6.700	6.717	6.742	437	0203R538106750-379A
7.000	6.238	0.379	6.950	6.967	6.992	438	0203R538107000-379A
7.250	6.488	0.379	7.200	7.217	7.242	439	0203R538107250-379A
7.500	6.738	0.379	7.450	7.467	7.492	440	0203R538107500-379A
7.750	6.988	0.379	7.700	7.717	7.742	441	0203R538107750-379A
8.000	7.238	0.379	7.950	7.967	7.992	442	0203R538108000-379A
8.250	7.488	0.379	8.200	8.217	8.242	443	0203R538108250-379A
8.500	7.738	0.379	8.450	8.467	8.492	444	0203R538108500-379A
+0.004/-0.000	+0.004/-0.004	+0.004/-0.004					
9.000	8.122	0.379	8.936	8.956	8.991	445	0203R543909000-379A
9.500	8.622	0.379	9.436	9.456	9.491	446	0203R543909500-379A
10.000	9.122	0.379	9.936	9.956	9.991	447	0203R543910000-379A
11.000	10.122	0.379	10.936	10.956	10.991	449	0203R543911000-379A
12.000	11.122	0.379	11.936	11.956	11.991	451	0203R543912000-379A
13.000	12.122	0.379	12.936	12.956	12.991	453	0203R543913000-379A
14.000	13.122	0.379	13.936	13.956	13.991	455	0203R543914000-379A

Part Number Nomenclature — R5 Profile

Table 13. R5 Profile — Metric



CT Profile, Linear Piston Seal



CT Profile

The Parker CT Profile is a robust design for medium to heavy duty hydraulic piston seal applications. The CT Profile is an excellent choice for sealing mobile hydraulic applications that experience shock loads. The CT profile is a four piece assembly made up of a rubber energizer, PTFE cap and two back up rings. In application, fluid pressure forces the rubber energizer to apply increased load against the PTFE cap and back up rings. This results in increased sealing force against the bore and allows the back up rings to close off the extrusion gap between the piston and the bore. Once activated by pressure, the back up rings protect the seal from extruding and keep internal contamination away from the PTFE cap. Parker's CT profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A nitrile
Back up rings:	A	Wear resistant, moly filled nylon

For alternate compounds please refer to Tables 3 and 4.

Range of Application

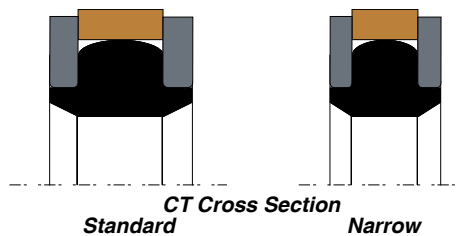
Pressure: 6,500 psi (448 bar) without wear rings
5,000 psi (345 bar) with wear rings

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate energizer and back up ring compounds.

Velocity: 5 fps (1.5 m/s)

Options

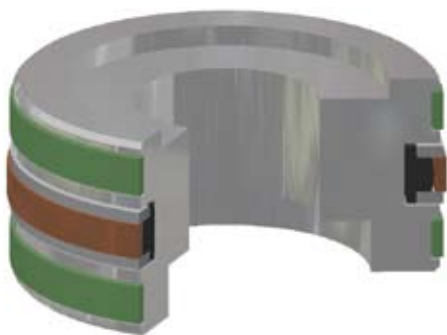
Metric: To configure metric part numbering, see Table 16 on Page 28, and call Customer Service for availability.



CT Cross Section

Standard

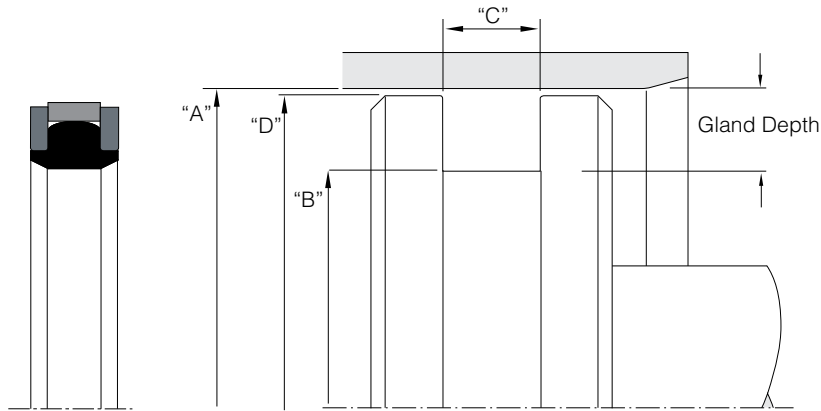
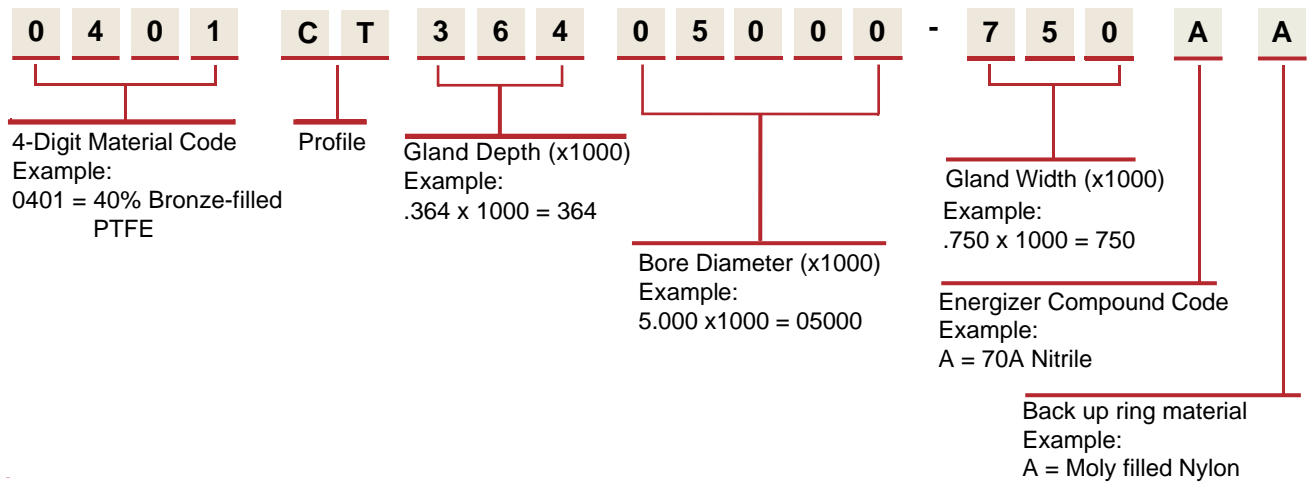
Narrow



CT installed in Piston Gland

Part Number Nomenclature — CT Profile

Table 14. CT Profile — Inch



Gland Dimensions — CT Profile

Table 15. CT Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston		CT Part Number (Narrow)
			5000 psi (345 bar)	6500 psi (450 bar)	
+ .002/- .000	+ .000/- .002	+ .010/- .000			
1.500	0.942	0.295	1.478	1.484	0401CT27901500-295AA
2.000	1.442	0.295	1.979	1.985	0401CT27902000-295AA
2.250	1.692	0.295	2.229	2.235	0401CT27902250-295AA
2.500	1.942	0.295	2.479	2.485	0401CT27902500-295AA
2.750	2.192	0.295	2.729	2.735	0401CT27902750-295AA
+ .003/- .000	+ .000/- .002	+ .010/- .000			
3.000	2.442	0.420	2.969	2.984	0401CT27903000-420AA
3.250	2.692	0.420	3.219	3.234	0401CT27903250-420AA
3.500	2.942	0.420	3.469	3.484	0401CT27903500-420AA
3.750	3.192	0.420	3.719	3.734	0401CT27903750-420AA
4.000	3.442	0.420	3.969	3.984	0401CT27904000-420AA
4.250	3.692	0.420	4.219	4.234	0401CT27904250-420AA
4.500	3.942	0.420	4.469	4.484	0401CT27904500-420AA
4.750	4.192	0.420	4.719	4.734	0401CT27904750-420AA

CT Profile

Table 15. CT Gland Dimensions — Inch (continued)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston		CT Part Number (Standard)
			5000 psi (345 bar)	6500 psi (450 bar)	
+ .002/- .000	+ .000/- .002	+ .010/- .000			
1.000	0.628	0.424	0.978	0.984	0401CT18601000-424AA
1.063	0.691	0.424	1.041	1.047	0401CT18601063-424AA
1.125	0.753	0.424	1.103	1.109	0401CT18601125-424AA
1.188	0.816	0.424	1.166	1.172	0401CT18601188-424AA
1.250	0.878	0.424	1.228	1.234	0401CT18601250-424AA
1.313	0.941	0.424	1.291	1.297	0401CT18601313-424AA
1.375	1.003	0.424	1.353	1.359	0401CT18601375-424AA
1.438	1.066	0.424	1.416	1.422	0401CT18601438-424AA
1.500	1.128	0.424	1.478	1.484	0401CT18601500-424AA
1.563	1.191	0.424	1.541	1.547	0401CT18601563-424AA
1.625	1.253	0.424	1.603	1.609	0401CT18601625-424AA
1.688	1.316	0.424	1.666	1.672	0401CT18601688-424AA
1.750	1.378	0.424	1.728	1.734	0401CT18601750-424AA
1.875	1.503	0.424	1.853	1.859	0401CT18601875-424AA
+ .003/- .000	+ .000/- .003	+ .010/- .000			
2.000	1.628	0.424	1.979	1.985	0401CT18602000-424AA
2.125	1.753	0.424	2.104	2.110	0401CT18602125-424AA
2.250	1.878	0.424	2.229	2.235	0401CT18602250-424AA
2.375	2.003	0.424	2.354	2.360	0401CT18602375-424AA
2.500	2.128	0.424	2.479	2.485	0401CT18602500-424AA
2.625	2.253	0.424	2.604	2.610	0401CT18602625-424AA
2.750	2.378	0.424	2.729	2.735	0401CT18602750-424AA
2.875	2.503	0.424	2.854	2.860	0401CT18602875-424AA
+ .004/- .000	+ .000/- .003	+ .010/- .000			
3.000	2.522	0.579	2.969	2.984	0401CT23903000-579AA
3.125	2.647	0.579	3.094	3.109	0401CT23903125-579AA
3.250	2.772	0.579	3.219	3.234	0401CT23903250-579AA
3.375	2.897	0.579	3.344	3.359	0401CT23903375-579AA
3.500	3.022	0.579	3.469	3.484	0401CT23903500-579AA
3.625	3.147	0.579	3.594	3.609	0401CT23903625-579AA
3.750	3.272	0.579	3.719	3.734	0401CT23903750-579AA
3.875	3.397	0.579	3.844	3.859	0401CT23903875-579AA
4.000	3.522	0.579	3.969	3.984	0401CT23904000-579AA
4.125	3.647	0.579	4.094	4.109	0401CT23904125-579AA
4.250	3.772	0.579	4.219	4.234	0401CT23904250-579AA
4.375	3.897	0.579	4.344	4.359	0401CT23904375-579AA
4.500	4.022	0.579	4.469	4.484	0401CT23904500-579AA
4.625	4.147	0.579	4.594	4.609	0401CT23904625-579AA
4.750	4.272	0.579	4.719	4.734	0401CT23904750-579AA
4.875	4.397	0.579	4.844	4.859	0401CT23904875-579AA
5.000	4.272	0.750	4.966	4.980	0401CT36405000-750AA
5.125	4.397	0.750	5.091	5.105	0401CT36405125-750AA



CT Profile

Table 15. CT Gland Dimensions — Inch (continued)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston		CT Part Number (Standard)
			5000 psi (345 bar)	6500 psi (450 bar)	
5.250	4.522	0.750	5.216	5.230	0401CT36405250-750AA
5.375	4.647	0.750	5.341	5.355	0401CT36405375-750AA
+0.004/-0.000	+0.000/-0.004	+0.010/-0.000			
5.500	4.772	0.750	5.466	5.480	0401CT36405500-750AA
5.625	4.897	0.750	5.591	5.605	0401CT36405625-750AA
5.750	5.022	0.750	5.716	5.730	0401CT36405750-750AA
5.875	5.147	0.750	5.841	5.855	0401CT36405875-750AA
6.000	5.272	0.750	5.966	5.980	0401CT36406000-750AA
6.125	5.397	0.750	6.091	6.105	0401CT36406125-750AA
6.250	5.522	0.750	6.216	6.230	0401CT36406250-750AA
6.375	5.647	0.750	6.341	6.355	0401CT36406375-750AA
6.500	5.772	0.750	6.466	6.480	0401CT36406500-750AA
6.750	6.022	0.750	6.716	6.730	0401CT36406750-750AA
7.000	6.272	0.750	6.966	6.980	0401CT36407000-750AA
+0.005/-0.000	+0.000/-0.004	+0.010/-0.000			
7.250	6.522	0.750	7.217	7.231	0401CT36407250-750AA
7.500	6.772	0.750	7.467	7.481	0401CT36407500-750AA
7.750	7.022	0.750	7.717	7.731	0401CT36407750-750AA
+0.005/-0.000	+0.000/-0.005	+0.010/-0.000			
8.000	7.272	0.750	7.967	7.981	0401CT36408000-750AA
8.250	7.522	0.750	8.217	8.231	0401CT36408250-750AA
8.500	7.772	0.750	8.467	8.481	0401CT36408500-750AA
8.750	8.022	0.750	8.717	8.731	0401CT36408750-750AA
9.000	8.272	0.750	8.967	8.981	0401CT36409000-750AA
9.500	8.772	0.750	9.467	9.481	0401CT36409500-750AA
10.000	9.272	0.750	9.967	9.981	0401CT36410000-750AA
10.500	9.772	0.750	10.467	10.481	0401CT36410500-750AA
11.000	10.272	0.750	10.967	10.981	0401CT36411000-750AA
11.500	10.772	0.750	11.467	11.481	0401CT36411500-750AA
12.000	11.272	0.750	11.967	11.981	0401CT36412000-750AA
+0.006/-0.000	+0.000/-0.005	+0.010/-0.000			
12.500	11.772	0.750	12.468	12.482	0401CT36412500-750AA
13.000	12.272	0.750	12.968	12.982	0401CT36413000-750AA
+0.006/-0.000	+0.000/-0.006	+0.010/-0.000			
13.500	12.772	0.750	13.468	13.482	0401CT36413500-750AA
14.000	13.272	0.750	13.968	13.982	0401CT36414000-750AA
14.500	13.772	0.750	14.468	14.482	0401CT36414500-750AA
15.000	14.272	0.750	14.968	14.982	0401CT36415000-750AA
15.500	14.772	0.750	15.468	15.482	0401CT36415500-750AA
16.000	15.272	0.750	15.968	15.982	0401CT36416000-750AA
16.500	15.772	0.750	16.468	16.482	0401CT36416500-750AA
17.000	16.272	0.750	16.968	16.982	0401CT36417000-750AA
17.500	16.772	0.750	17.468	17.482	0401CT36417500-750AA



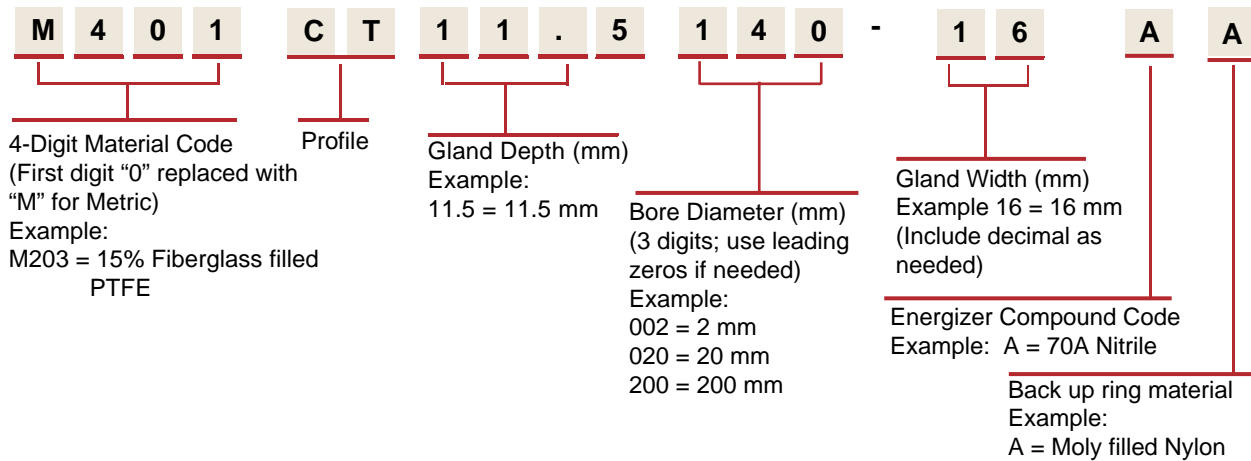
CT Profile

Table 15. CT Gland Dimensions — Inch (continued)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston		CT Part Number (Standard)
			5000 psi (345 bar)	6500 psi (450 bar)	
18.000	17.272	0.750	17.968	17.982	0401CT36418000-750AA
18.500	17.772	0.750	18.468	18.482	0401CT36418500-750AA
19.000	18.272	0.750	18.968	18.982	0401CT36419000-750AA
19.500	18.772	0.750	19.468	19.482	0401CT36419500-750AA
20.000	19.272	0.750	19.968	19.982	0401CT36420000-750AA

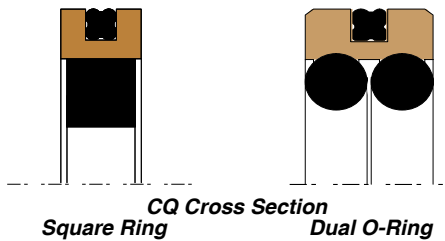
Part Number Nomenclature — CT Profile

Table 16. CT Profile — Metric

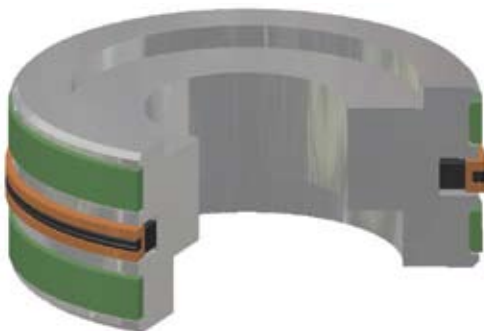




CQ Profile



CQ Cross Section
Square Ring Dual O-Ring



CQ installed in Piston Gland

CQ Profile, Linear Piston Seal

The Parker CQ profile is a bi-directional piston seal for use in medium to heavy duty hydraulic actuators. The CQ profile is a unique seal design that includes a rubber quad seal in the PTFE cap to ensure drift free performance. The PTFE cap is a stable rectangular shape and is energized, depending on its cross section, by a single square ring energizer or dual Parker O-rings. The CQ piston seal is commonly used in applications such as mobile hydraulics, lift trucks, standard cylinders and piston accumulators. Parker's CQ profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (350 bar) without wear rings
1,500 to 3,000 psi (100 to 200 bar) with wear rings

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

Options

Notched Walls: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the side face of the gland and the seal. Consult EPS Division for the availability and cost to add side notches to the CQ profile.

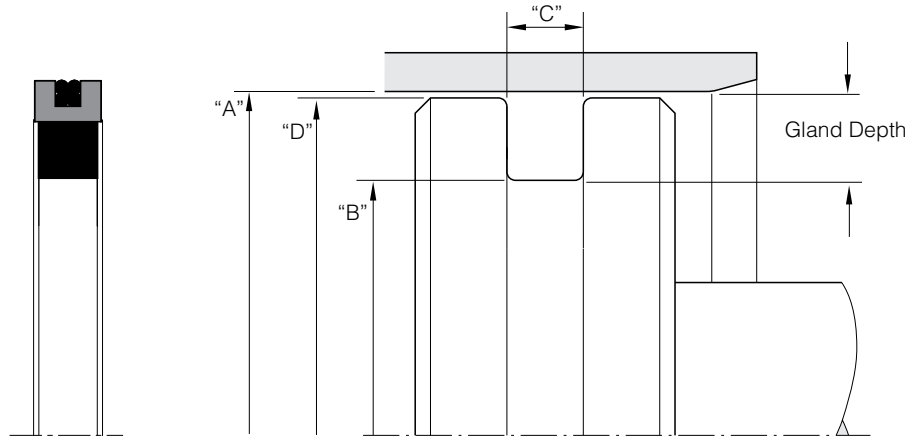
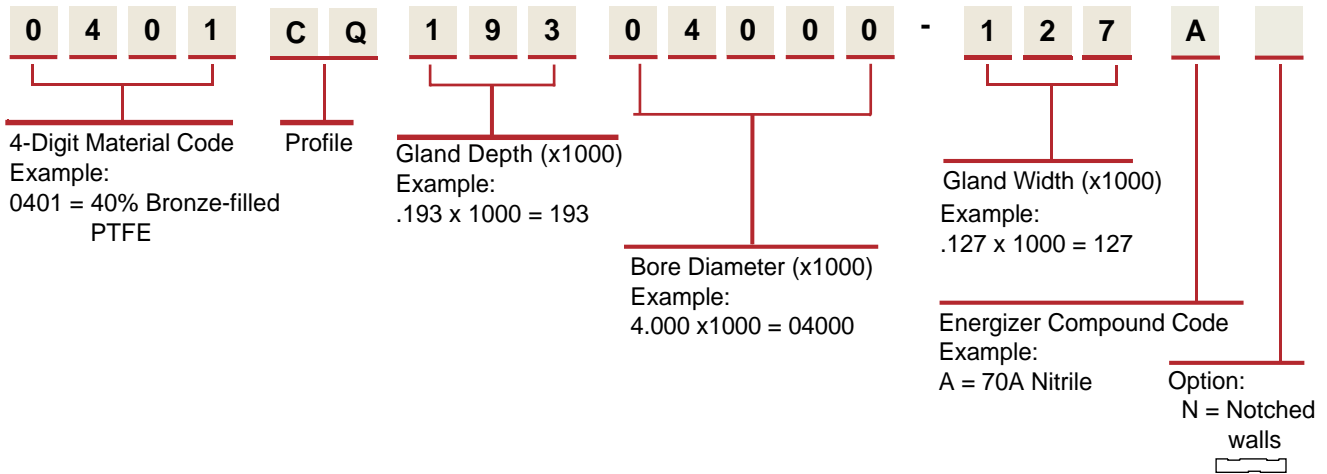
N = Notched walls 

Metric: To configure metric part numbering, see Table 19 on Page 33, and call Customer Service for availability.

CQ Profile

Part Number Nomenclature — CQ Profile

Table 17. CQ Profile — Inch



Gland Dimension — CQ Profile

Table 18. CQ Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			Quad Seal Dash No.	Square Ring No.	CQ Part Number (Square Ring)
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)			
+ .002/- .000	+ .000/- .003	+ .005/- .000						
1.500	0.884	0.288	1.470	1.480	1.492	125	316	0401CQ30801500-288A
2.000	1.384	0.288	1.970	1.980	1.992	133	324	0401CQ30802000-288A
2.250	1.634	0.288	2.210	2.220	2.238	136	326	0401CQ30802250-288A
2.500	1.884	0.288	2.460	2.470	2.488	140	328	0401CQ30802500-288A
2.750	2.134	0.288	2.710	2.720	2.738	145	330	0401CQ30802750-288A
3.000	2.384	0.288	2.960	2.970	2.988	148	332	0401CQ30803000-288A
3.250	2.634	0.288	3.210	3.220	3.238	151	334	0401CQ30803250-288A
3.500	2.884	0.288	3.460	3.470	3.488	152	336	0401CQ30803500-288A
3.750	3.134	0.288	3.710	3.720	3.738	153	338	0401CQ30803750-288A
4.000	3.384	0.288	3.960	3.970	3.988	154	340	0401CQ30804000-288A
4.250	3.634	0.288	4.210	4.220	4.238	155	342	0401CQ30804250-288A
4.500	3.884	0.288	4.460	4.470	4.488	156	344	0401CQ30804500-288A

Table 18. CQ Profile — Inch (cont'd)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			Quad Seal Dash No.	Square Ring No.	CQ Part Number (Square Ring)
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)			
4.750	4.134	0.288	4.710	4.720	4.738	157	346	0401CQ30804750-288A
+0.004/-0.000	+0.000/-0.006	+0.005/-0.000						
5.000	4.384	0.288	4.960	4.970	4.988	158	348	0401CQ30805000-288A
5.250	4.542	0.288	5.202	5.210	5.234	159	350	0401CQ30805250-288A
5.500	4.660	0.375	5.452	5.460	5.484	160	426	0401CQ42005500-375A
5.750	4.910	0.375	5.702	5.710	5.734	161	428	0401CQ42005750-375A
6.000	5.160	0.375	5.952	5.960	5.984	162	430	0401CQ42006000-375A
6.500	5.660	0.375	6.452	6.460	6.484	164	434	0401CQ42006500-375A
7.000	6.160	0.375	6.952	6.960	6.984	166	437	0401CQ42007000-375A
7.500	6.660	0.375	7.452	7.460	7.484	168	439	0401CQ42007500-375A
8.000	7.160	0.375	7.952	7.960	7.984	170	441	0401CQ42008000-375A
9.000	8.160	0.375	8.952	8.960	8.984	174	445	0401CQ42009000-375A
10.000	9.160	0.375	9.952	9.960	9.984	178	447	0401CQ42010000-375A

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			Quad Seal Dash No.	Dual O-Ring Dash No.	CQ Part Number (Dual O-Ring)
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)			
+0.002/-0.000	+0.000/-0.003	+0.005/-0.000						
1.500	1.106	0.248	1.470	1.480	1.492	028	121	0401CQ19701500-248A
1.562	1.168	0.248	1.532	1.542	1.554	028	122	0401CQ19701562-248A
1.625	1.231	0.248	1.595	1.605	1.617	029	123	0401CQ19701625-248A
1.687	1.293	0.248	1.657	1.667	1.679	029	124	0401CQ19701687-248A
1.750	1.356	0.248	1.720	1.730	1.742	030	125	0401CQ19701750-248A
1.875	1.481	0.248	1.845	1.855	1.867	031	127	0401CQ19701875-248A
2.000	1.606	0.248	1.970	1.980	1.992	032	129	0401CQ19702000-248A
2.125	1.731	0.248	2.085	2.095	2.113	033	131	0401CQ19702125-248A
2.250	1.856	0.248	2.210	2.220	2.238	034	133	0401CQ19702250-248A
2.375	1.981	0.248	2.335	2.345	2.363	035	135	0401CQ19702375-248A
2.500	2.106	0.248	2.460	2.470	2.488	036	137	0401CQ19702500-248A
2.625	2.231	0.248	2.585	2.595	2.613	037	139	0401CQ19702625-248A
2.750	2.356	0.248	2.710	2.720	2.738	038	141	0401CQ19702750-248A
2.875	2.481	0.248	2.835	2.845	2.863	039	143	0401CQ19702875-248A
3.000	2.488	0.326	2.960	2.970	2.988	149	229	0401CQ25603000-326A
3.125	2.613	0.326	3.085	3.095	3.113	150	230	0401CQ25603125-326A
3.250	2.738	0.326	3.210	3.220	3.238	151	231	0401CQ25603250-326A
3.375	2.863	0.326	3.335	3.345	3.363	151	232	0401CQ25603375-326A
3.500	2.988	0.326	3.460	3.470	3.488	152	233	0401CQ25603500-326A
3.625	3.113	0.326	3.585	3.595	3.613	152	234	0401CQ25603625-326A
3.750	3.238	0.326	3.710	3.720	3.738	153	235	0401CQ25603750-326A

CQ Profile

Table 18. CQ Gland Dimensions — Inch (cont'd)

			"D" Minimum Diameter Piston					
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	Quad Seal Dash No.	Dual O-Ring Dash No.	CQ Part Number (Dual O-Ring)
3.875	3.363	0.326	3.835	3.845	3.863	153	236	0401CQ25603875-326A
4.000	3.488	0.326	3.960	3.970	3.988	154	237	0401CQ25604000-326A
4.125	3.613	0.326	4.085	4.095	4.113	154	238	0401CQ25604125-326A
4.250	3.738	0.326	4.210	4.220	4.238	155	239	0401CQ25604250-326A
4.375	3.863	0.326	4.335	4.345	4.363	155	240	0401CQ25604375-326A
4.500	3.988	0.326	4.460	4.470	4.488	156	241	0401CQ25604500-326A
4.625	4.113	0.326	4.585	4.595	4.613	156	242	0401CQ25604625-326A
4.750	4.238	0.326	4.710	4.720	4.738	157	243	0401CQ25604750-326A
4.875	4.363	0.326	4.835	4.845	4.863	157	244	0401CQ25604875-326A
+ .004/- .000	+ .000/- .006	+ .005/- .000						
5.000	4.292	0.484	4.952	4.960	4.984	248	346	0401CQ35405000-484A
5.125	4.417	0.484	5.077	5.085	5.109	249	347	0401CQ35405125-484A
5.250	4.542	0.484	5.202	5.210	5.234	250	348	0401CQ35405250-484A
5.375	4.667	0.484	5.327	5.335	5.359	251	349	0401CQ35405375-484A
5.500	4.792	0.484	5.452	5.460	5.484	252	350	0401CQ35405500-484A
5.625	4.917	0.484	5.577	5.585	5.609	253	351	0401CQ35405625-484A
5.750	5.042	0.484	5.702	5.710	5.734	254	352	0401CQ35405750-484A
5.875	5.167	0.484	5.827	5.835	5.859	255	353	0401CQ35405875-484A
6.000	5.292	0.484	5.952	5.960	5.984	256	354	0401CQ35406000-484A
6.250	5.542	0.484	6.202	6.210	6.234	258	356	0401CQ35406250-484A
6.500	5.792	0.484	6.452	6.460	6.484	259	358	0401CQ35406500-484A
6.750	6.042	0.484	6.702	6.710	6.734	260	360	0401CQ35406750-484A
7.000	6.292	0.484	6.952	6.960	6.984	261	361	0401CQ35407000-484A
7.250	6.542	0.484	7.202	7.210	7.234	262	362	0401CQ35407250-484A
7.500	6.792	0.484	7.452	7.460	7.484	263	363	0401CQ35407500-484A
7.750	7.042	0.484	7.702	7.710	7.734	264	364	0401CQ35407750-484A
8.000	7.292	0.484	7.952	7.960	7.984	265	365	0401CQ35408000-484A
8.250	7.542	0.484	8.202	8.210	8.234	266	366	0401CQ35408250-484A
8.500	7.792	0.484	8.452	8.460	8.484	267	367	0401CQ35408500-484A
8.750	8.042	0.484	8.702	8.710	8.734	268	368	0401CQ35408750-484A
9.000	8.292	0.484	8.952	8.960	8.984	269	369	0401CQ35409000-484A
9.250	8.542	0.484	9.202	9.210	9.234	270	370	0401CQ35409250-484A
9.500	8.792	0.484	9.452	9.460	9.484	271	371	0401CQ35409500-484A
9.750	9.042	0.484	9.702	9.710	9.734	272	372	0401CQ35409750-484A
10.000	9.292	0.484	9.952	9.960	9.984	273	373	0401CQ35410000-484A
10.500	9.792	0.484	10.452	10.460	10.484	274	375	0401CQ35410500-484A
11.000	10.292	0.484	10.952	10.960	10.984	275	377	0401CQ35411000-484A
11.500	10.792	0.484	11.452	11.460	11.484	276	378	0401CQ35411500-484A
+ .006/- .000	+ .000/- .008	+ .005/- .000						
12.000	10.780	0.642	11.952	11.960	11.984	380	450	0401CQ61012000-642A
12.500	11.280	0.642	12.452	12.460	12.484	381	451	0401CQ61012500-642A
13.000	11.780	0.642	12.952	12.960	12.984	381	452	0401CQ61013000-642A

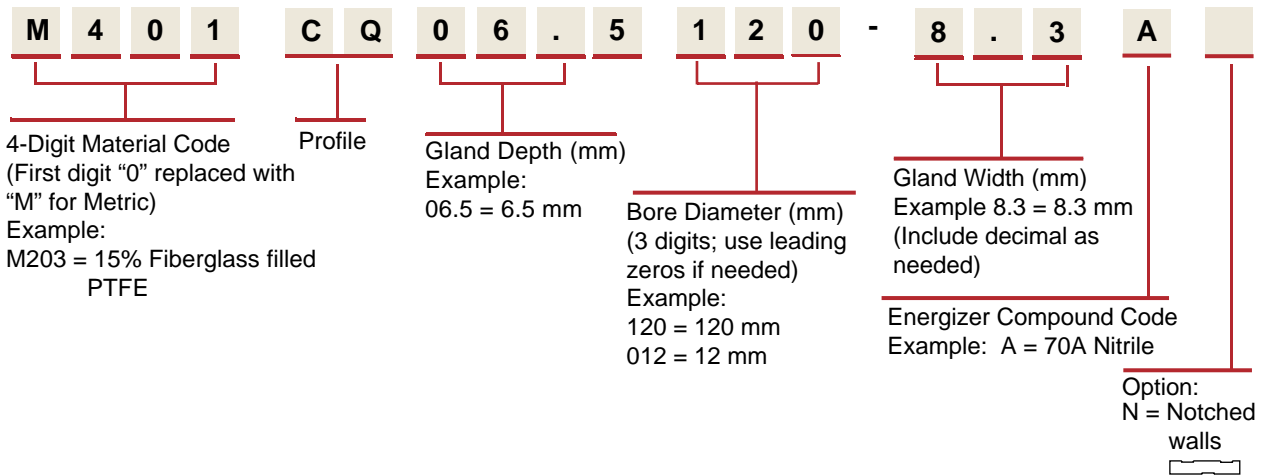


Table 18. CQ Gland Dimensions — Inch (cont'd)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			Quad Seal Dash No.	Dual O-Ring Dash No.	CQ Part Number (Dual O-Ring)
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)			
13.500	12.280	0.642	13.452	13.460	13.484	382	453	0401CQ61013500-642A
14.000	12.780	0.642	13.952	13.960	13.984	382	454	0401CQ61014000-642A
14.500	13.280	0.642	14.452	14.460	14.484	383	455	0401CQ61014500-642A
15.000	13.780	0.642	14.952	14.960	14.984	383	456	0401CQ61015000-642A
15.500	14.280	0.642	15.452	15.460	15.484	384	457	0401CQ61015500-642A
16.000	14.780	0.642	15.952	15.960	15.984	384	458	0401CQ61016000-642A
16.500	15.280	0.642	16.452	16.460	16.484	385	459	0401CQ61016500-642A
17.000	15.780	0.642	16.952	16.960	16.984	385	460	0401CQ61017000-642A
17.500	16.280	0.642	17.452	17.460	17.484	386	461	0401CQ61017500-642A
18.000	16.780	0.642	17.952	17.960	17.984	386	462	0401CQ61018000-642A
18.500	17.280	0.642	18.452	18.460	18.484	387	463	0401CQ61018500-642A
19.000	17.780	0.642	18.952	18.960	18.984	387	464	0401CQ61019000-642A
19.500	18.280	0.642	19.452	19.460	19.484	388	465	0401CQ61019500-642A
20.000	18.780	0.642	19.952	19.960	19.984	388	466	0401CQ61020000-642A

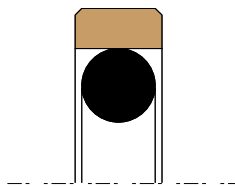
Part Number Nomenclature — CQ Profile

Table 19. CQ Profile — Metric

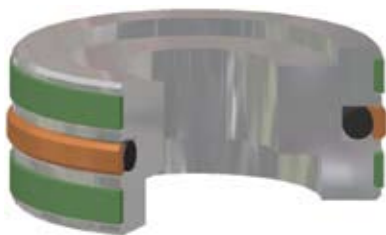




OE Profile



OE Cross Section



OE installed in Piston Gland

OE Profile, Linear Piston Seal

The Parker OE profile is a bi-directional piston seal for use in low to medium duty hydraulic actuators. The OE profile is a simple two piece design comprised of a standard size Parker O-ring energizing a wear resistant PTFE cap. The OE profile offers long wear and low friction, and because of its short assembly length, requires minimal gland space on the piston. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's OE profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (345 bar) without wear rings
1,000 to 3,000 psi (103 to 206 bar) with wear rings

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

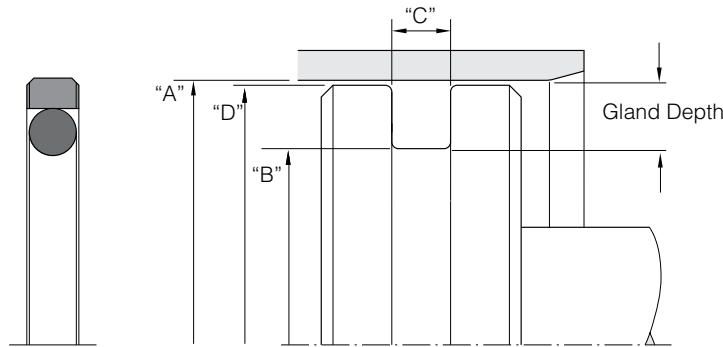
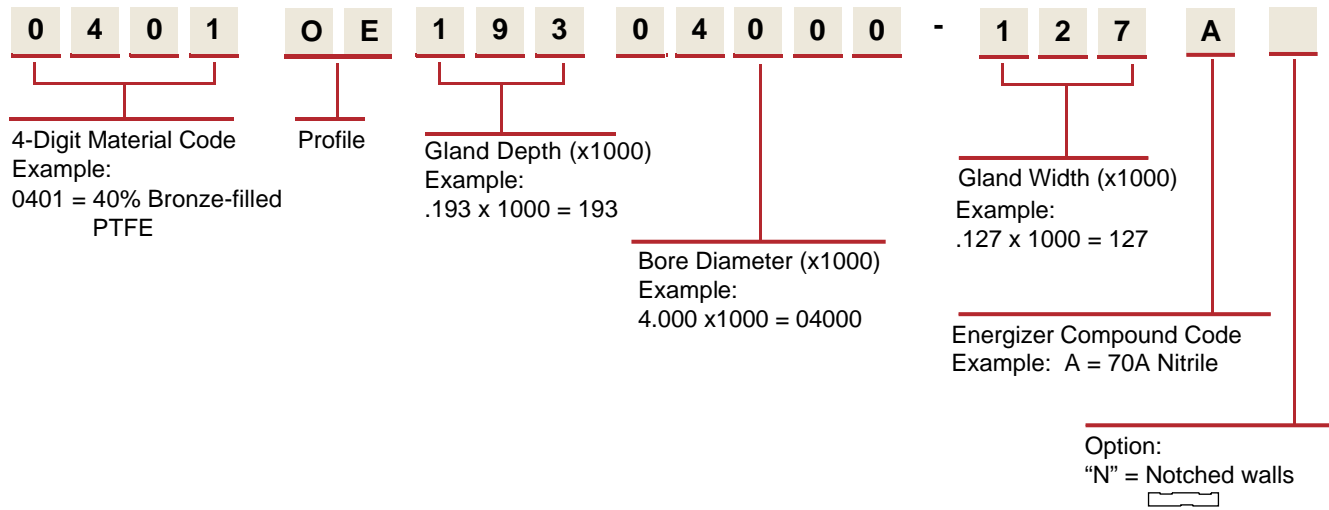
Options

Notched side walls: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the side face of the gland and the seal. Consult EPS Division for the availability and cost to add side notches to the OE profile.

N = Notched walls 

Part Number Nomenclature — OE Profile

Table 20. OE Profile — Inch



Gland Dimension — OE Profile

Table 21. OE Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
+0.001/-0.000	+0.000/-0.001	+0.005/-0.000					
0.500	0.326	0.081	0.480	0.485	0.488	011	0401OE08700500-081A
0.562	0.388	0.081	0.542	0.547	0.550	012	0401OE08700562-081A
0.625	0.451	0.081	0.605	0.610	0.613	013	0401OE08700625-081A
0.687	0.513	0.081	0.667	0.672	0.675	014	0401OE08700687-081A
0.750	0.576	0.081	0.730	0.735	0.738	015	0401OE08700750-081A
0.812	0.638	0.081	0.792	0.797	0.800	016	0401OE08700812-081A
0.875	0.701	0.081	0.855	0.860	0.863	017	0401OE08700875-081A
0.937	0.763	0.081	0.917	0.922	0.925	018	0401OE08700937-081A
1.000	0.826	0.081	0.980	0.985	0.988	019	0401OE08701000-081A
1.062	0.888	0.081	1.042	1.047	1.050	020	0401OE08701062-081A
1.125	0.951	0.081	1.105	1.110	1.113	021	0401OE08701125-081A

OE Profile

Table 21. OE Gland Dimensions — Inch (cont'd)

			"D" Minimum Diameter Piston				
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OE Part Number
1.187	1.013	0.081	1.167	1.172	1.175	022	0401OE08701187-081A
1.250	1.076	0.081	1.230	1.235	1.238	023	0401OE08701250-081A
1.312	1.138	0.081	1.292	1.297	1.300	024	0401OE08701312-081A
1.375	1.201	0.081	1.355	1.360	1.363	025	0401OE08701375-081A
1.437	1.263	0.081	1.417	1.422	1.425	026	0401OE08701437-081A
1.500	1.326	0.081	1.480	1.485	1.488	027	0401OE08701500-081A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000					
0.500	0.244	0.081	0.475	0.480	0.486	010	0401OE12800500-081A
0.562	0.306	0.081	0.537	0.542	0.548	011	0401OE12800562-081A
0.625	0.369	0.081	0.600	0.605	0.611	012	0401OE12800625-081A
0.687	0.431	0.081	0.662	0.667	0.673	013	0401OE12800687-081A
0.750	0.494	0.081	0.725	0.730	0.736	014	0401OE12800750-081A
0.812	0.556	0.081	0.787	0.792	0.798	015	0401OE12800812-081A
0.875	0.619	0.081	0.850	0.855	0.861	016	0401OE12800875-081A
0.937	0.681	0.081	0.912	0.917	0.923	017	0401OE12800937-081A
1.000	0.744	0.081	0.975	0.980	0.986	018	0401OE12801000-081A
1.062	0.806	0.081	1.037	1.042	1.048	019	0401OE12801062-081A
1.125	0.869	0.081	1.100	1.105	1.111	020	0401OE12801125-081A
1.187	0.931	0.081	1.162	1.167	1.173	021	0401OE12801187-081A
1.250	0.994	0.081	1.225	1.230	1.236	022	0401OE12801250-081A
1.312	1.056	0.081	1.287	1.292	1.298	023	0401OE12801312-081A
1.375	1.119	0.081	1.350	1.355	1.361	024	0401OE12801375-081A
1.437	1.181	0.081	1.412	1.417	1.423	025	0401OE12801437-081A
1.500	1.244	0.081	1.475	1.480	1.486	026	0401OE12801500-081A
+0.002/-0.000	+0.000/-0.003	+0.005/-0.000					
0.750	0.452	0.126	0.720	0.725	0.734	111	0401OE14900750-126A
0.812	0.514	0.126	0.782	0.787	0.796	112	0401OE14900812-126A
0.875	0.577	0.126	0.845	0.850	0.859	113	0401OE14900875-126A
0.937	0.639	0.126	0.907	0.912	0.921	114	0401OE14900937-126A
1.000	0.702	0.126	0.970	0.975	0.984	115	0401OE14901000-126A
1.062	0.764	0.126	1.032	1.037	1.046	116	0401OE14901062-126A
1.125	0.827	0.126	1.095	1.100	1.109	117	0401OE14901125-126A
1.187	0.889	0.126	1.157	1.162	1.171	118	0401OE14901187-126A
1.250	0.952	0.126	1.220	1.225	1.234	119	0401OE14901250-126A
1.312	1.014	0.126	1.282	1.287	1.296	120	0401OE14901312-126A
1.375	1.077	0.126	1.345	1.350	1.359	121	0401OE14901375-126A
1.437	1.139	0.126	1.407	1.412	1.421	122	0401OE14901437-126A
1.500	1.202	0.126	1.470	1.475	1.484	123	0401OE14901500-126A
1.562	1.264	0.126	1.532	1.537	1.546	124	0401OE14901562-126A
1.625	1.327	0.126	1.595	1.600	1.609	125	0401OE14901625-126A
1.687	1.389	0.126	1.657	1.662	1.671	126	0401OE14901687-126A
1.750	1.452	0.126	1.720	1.725	1.734	127	0401OE14901750-126A



Table 21. OE Gland Dimensions — Inch (cont'd)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
1.875	1.577	0.126	1.845	1.850	1.859	129	0401OE14901875-126A
2.000	1.702	0.126	1.970	1.975	1.984	131	0401OE14902000-126A
2.125	1.827	0.126	2.095	2.100	2.109	133	0401OE14902125-126A
2.250	1.952	0.126	2.220	2.225	2.234	135	0401OE14902250-126A
2.375	2.077	0.126	2.345	2.350	2.359	137	0401OE14902375-126A
2.500	2.202	0.126	2.470	2.475	2.484	139	0401OE14902500-126A
2.625	2.327	0.126	2.595	2.600	2.609	141	0401OE14902625-126A
2.750	2.452	0.126	2.720	2.725	2.734	143	0401OE14902750-126A
1.562	1.176	0.120	1.532	1.537	1.546	123	0401OE19301562-120A
1.625	1.239	0.120	1.595	1.600	1.609	124	0401OE19301625-120A
1.687	1.301	0.120	1.657	1.662	1.671	125	0401OE19301687-120A
1.750	1.364	0.120	1.720	1.725	1.734	126	0401OE19301750-120A
1.875	1.489	0.120	1.845	1.850	1.859	128	0401OE19301875-120A
2.000	1.614	0.127	1.970	1.975	1.984	130	0401OE19302000-127A
2.125	1.739	0.127	2.095	2.100	2.109	132	0401OE19302125-127A
2.250	1.864	0.127	2.220	2.225	2.234	134	0401OE19302250-127A
2.375	1.989	0.127	2.345	2.350	2.359	136	0401OE19302375-127A
2.500	2.114	0.127	2.470	2.475	2.484	138	0401OE19302500-127A
2.625	2.239	0.127	2.595	2.600	2.609	140	0401OE19302625-127A
2.750	2.364	0.127	2.720	2.725	2.734	142	0401OE19302750-127A
2.875	2.489	0.127	2.845	2.850	2.859	144	0401OE19302875-127A
3.000	2.614	0.127	2.970	2.975	2.984	146	0401OE19303000-127A
3.125	2.739	0.127	3.095	3.100	3.109	148	0401OE19303125-127A
3.250	2.864	0.127	3.220	3.225	3.234	150	0401OE19303250-127A
3.375	2.989	0.127	3.345	3.350	3.359	151	0401OE19303375-127A
3.500	3.114	0.127	3.470	3.475	3.484	151	0401OE19303500-127A
3.625	3.239	0.127	3.595	3.600	3.609	152	0401OE19303625-127A
3.750	3.364	0.127	3.720	3.725	3.734	152	0401OE19303750-127A
3.875	3.489	0.127	3.845	3.850	3.859	153	0401OE19303875-127A
4.000	3.614	0.127	3.970	3.975	3.984	153	0401OE19304000-127A
4.125	3.739	0.127	4.095	4.100	4.109	154	0401OE19304125-127A
4.250	3.864	0.127	4.220	4.225	4.234	154	0401OE19304250-127A
4.375	3.989	0.127	4.345	4.350	4.359	155	0401OE19304375-127A
4.500	4.114	0.127	4.470	4.475	4.484	155	0401OE19304500-127A
4.625	4.239	0.127	4.595	4.600	4.609	156	0401OE19304625-127A
4.750	4.364	0.127	4.720	4.725	4.734	156	0401OE19304750-127A
4.875	4.489	0.127	4.845	4.850	4.859	157	0401OE19304875-127A
5.000	4.614	0.127	4.970	4.975	4.984	157	0401OE19305000-127A
5.125	4.739	0.127	5.095	5.100	5.109	158	0401OE19305125-127A
5.250	4.864	0.127	5.220	5.225	5.234	158	0401OE19305250-127A
5.375	4.989	0.127	5.345	5.350	5.359	159	0401OE19305375-127A
5.500	5.114	0.127	5.470	5.475	5.484	159	0401OE19305500-127A

OE Profile

Table 21. OE Gland Dimensions — Inch (cont'd)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
+ .003/- .000	+ .000/- .004	+ .005/- .000					
1.562	1.138	0.166	1.527	1.532	1.546	217	0401OE21201562-166A
1.625	1.201	0.166	1.590	1.595	1.609	218	0401OE21201625-166A
1.687	1.263	0.166	1.652	1.657	1.671	219	0401OE21201687-166A
1.750	1.326	0.166	1.715	1.720	1.734	221	0401OE21201750-166A
1.875	1.451	0.166	1.840	1.845	1.859	222	0401OE21201875-166A
2.000	1.576	0.166	1.965	1.970	1.984	223	0401OE21202000-166A
2.125	1.701	0.166	2.090	2.095	2.109	224	0401OE21202125-166A
2.250	1.826	0.166	2.215	2.220	2.234	225	0401OE21202250-166A
2.375	1.951	0.166	2.340	2.345	2.359	226	0401OE21202375-166A
2.500	2.076	0.166	2.465	2.470	2.484	227	0401OE21202500-166A
2.625	2.201	0.166	2.590	2.595	2.609	228	0401OE21202625-166A
2.750	2.326	0.166	2.715	2.720	2.734	229	0401OE21202750-166A
2.875	2.451	0.166	2.840	2.845	2.859	230	0401OE21202875-166A
3.000	2.576	0.166	2.965	2.970	2.984	231	0401OE21203000-166A
3.125	2.701	0.166	3.090	3.095	3.109	232	0401OE21203125-166A
3.250	2.826	0.166	3.215	3.220	3.234	233	0401OE21203250-166A
3.375	2.951	0.166	3.340	3.345	3.359	234	0401OE21203375-166A
3.500	3.076	0.166	3.465	3.470	3.484	235	0401OE21203500-166A
3.625	3.201	0.166	3.590	3.595	3.609	236	0401OE21203625-166A
3.750	3.326	0.166	3.715	3.720	3.734	237	0401OE21203750-166A
3.875	3.451	0.166	3.840	3.845	3.859	238	0401OE21203875-166A
4.000	3.576	0.166	3.965	3.970	3.984	239	0401OE21204000-166A
4.125	3.701	0.166	4.090	4.095	4.109	240	0401OE21204125-166A
4.250	3.826	0.166	4.215	4.220	4.234	241	0401OE21204250-166A
4.375	3.951	0.166	4.340	4.345	4.359	242	0401OE21204375-166A
4.500	4.076	0.166	4.465	4.470	4.484	243	0401OE21204500-166A
4.625	4.201	0.166	4.590	4.595	4.609	244	0401OE21204625-166A
4.750	4.326	0.166	4.715	4.720	4.734	245	0401OE21204750-166A
4.875	4.451	0.166	4.840	4.845	4.859	246	0401OE21204875-166A
5.000	4.576	0.166	4.965	4.970	4.984	247	0401OE21205000-166A
5.125	4.701	0.166	5.090	5.095	5.109	248	0401OE21205125-166A
5.250	4.826	0.166	5.215	5.220	5.234	249	0401OE21205250-166A
5.375	4.951	0.166	5.340	5.345	5.359	250	0401OE21205375-166A
5.500	5.076	0.166	5.465	5.470	5.484	251	0401OE21205500-166A
+ .003/- .000	+ .000/- .005	+ .005/- .000					
5.625	5.109	0.157	5.585	5.593	5.607	251	0401OE25805625-157A
5.750	5.234	0.157	5.710	5.718	5.732	252	0401OE25805750-157A
5.875	5.359	0.157	5.835	5.843	5.857	253	0401OE25805875-157A
6.000	5.484	0.157	5.960	5.968	5.982	254	0401OE25806000-157A
6.125	5.609	0.157	6.085	6.093	6.107	255	0401OE25806125-157A
6.250	5.734	0.157	6.210	6.218	6.232	256	0401OE25806250-157A
6.375	5.859	0.157	6.335	6.343	6.357	257	0401OE25806375-157A



Table 21. OE Gland Dimensions — Inch (Continued)

“A” Bore Diameter	“B” Groove Diameter	“C” Groove Width	“D” Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
6.500	5.984	0.157	6.460	6.468	6.482	258	0401OE25806500-157A
6.750	6.234	0.157	6.710	6.718	6.732	259	0401OE25806750-157A
7.000	6.484	0.157	6.960	6.968	6.982	260	0401OE25807000-157A
7.250	6.734	0.157	7.210	7.218	7.232	261	0401OE25807250-157A
7.500	6.984	0.157	7.460	7.468	7.482	262	0401OE25807500-157A
7.750	7.234	0.157	7.710	7.718	7.732	263	0401OE25807750-157A
8.000	7.484	0.157	7.960	7.968	7.982	264	0401OE25808000-157A
8.250	7.734	0.157	8.210	8.218	8.232	265	0401OE25808250-157A
8.500	7.984	0.157	8.460	8.468	8.482	266	0401OE25808500-157A
9.000	8.484	0.157	8.960	8.968	8.982	268	0401OE25809000-157A
9.500	8.984	0.157	9.460	9.468	9.482	270	0401OE25809500-157A
10.000	9.484	0.157	9.960	9.968	9.982	272	0401OE25810000-157A
10.500	9.984	0.157	10.460	10.468	10.482	274	0401OE25810500-157A
11.000	10.484	0.157	10.960	10.968	10.982	275	0401OE25811000-157A
11.500	10.984	0.157	11.460	11.468	11.482	276	0401OE25811500-157A
12.000	11.484	0.157	11.960	11.968	11.982	277	0401OE25812000-157A
+0.003/-0.000	+0.000/-0.006	+0.005/-0.000					
3.125	2.509	0.247	3.080	3.090	3.105	333	0401OE30803125-247A
3.250	2.634	0.247	3.205	3.215	3.230	334	0401OE30803250-247A
3.375	2.759	0.247	3.330	3.340	3.355	335	0401OE30803375-247A
3.500	2.884	0.247	3.455	3.465	3.480	336	0401OE30803500-247A
3.625	3.009	0.247	3.580	3.590	3.605	337	0401OE30803625-247A
3.750	3.134	0.247	3.705	3.715	3.730	338	0401OE30803750-247A
3.875	3.259	0.247	3.830	3.840	3.855	339	0401OE30803875-247A
4.000	3.384	0.247	3.955	3.965	3.980	340	0401OE30804000-247A
4.125	3.509	0.247	4.080	4.090	4.105	341	0401OE30804125-247A
4.250	3.634	0.247	4.205	4.215	4.230	342	0401OE30804250-247A
4.375	3.759	0.247	4.330	4.340	4.355	343	0401OE30804375-247A
4.500	3.884	0.247	4.455	4.465	4.480	344	0401OE30804500-247A
4.625	4.009	0.247	4.580	4.590	4.605	345	0401OE30804625-247A
4.750	4.134	0.247	4.705	4.715	4.730	346	0401OE30804750-247A
4.875	4.259	0.247	4.830	4.840	4.855	347	0401OE30804875-247A
5.000	4.384	0.247	4.955	4.965	4.980	348	0401OE30805000-247A
5.125	4.509	0.247	5.080	5.090	5.105	349	0401OE30805125-247A
5.250	4.634	0.247	5.205	5.215	5.230	350	0401OE30805250-247A
5.375	4.759	0.247	5.330	5.340	5.355	351	0401OE30805375-247A
5.500	4.884	0.247	5.455	5.465	5.480	352	0401OE30805500-247A
5.625	5.009	0.247	5.580	5.590	5.605	353	0401OE30805625-247A
5.750	5.134	0.247	5.705	5.715	5.730	354	0401OE30805750-247A
5.875	5.259	0.247	5.830	5.840	5.855	355	0401OE30805875-247A
6.000	5.384	0.247	5.955	5.965	5.980	356	0401OE30806000-247A
6.125	5.509	0.247	6.080	6.090	6.105	357	0401OE30806125-247A
6.250	5.634	0.247	6.205	6.215	6.230	358	0401OE30806250-247A

OE Profile

Table 21. OE Gland Dimensions — Inch (Continued)

			"D" Minimum Diameter Piston				
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OE Part Number
6.375	5.759	0.247	6.330	6.340	6.355	359	0401OE30806375-247A
6.500	5.884	0.247	6.455	6.465	6.480	360	0401OE30806500-247A
6.750	6.134	0.247	6.705	6.715	6.730	361	0401OE30806750-247A
7.000	6.384	0.247	6.955	6.965	6.980	362	0401OE30807000-247A
7.250	6.634	0.247	7.205	7.215	7.230	363	0401OE30807250-247A
7.500	6.884	0.247	7.455	7.465	7.480	364	0401OE30807500-247A
7.750	7.134	0.247	7.705	7.715	7.730	365	0401OE30807750-247A
8.000	7.384	0.247	7.955	7.965	7.980	366	0401OE30808000-247A
8.250	7.634	0.247	8.205	8.215	8.230	367	0401OE30808250-247A
8.500	7.884	0.247	8.455	8.465	8.480	368	0401OE30808500-247A
9.000	8.384	0.247	8.955	8.965	8.980	370	0401OE30809000-247A
9.500	8.884	0.247	9.455	9.465	9.480	372	0401OE30809500-247A
10.000	9.384	0.247	9.955	9.965	9.980	374	0401OE30810000-247A
10.500	9.884	0.247	10.455	10.465	10.480	376	0401OE30810500-247A
11.000	10.384	0.247	10.955	10.965	10.980	377	0401OE30811000-247A
11.500	10.884	0.247	11.455	11.465	11.480	378	0401OE30811500-247A
12.000	11.384	0.247	11.955	11.965	11.980	379	0401OE30812000-247A
+ .004/- .000	+ .000/- .007	+ .005/- .000					
5.375	4.545	0.320	5.325	5.335	5.351	425	0401OE41505375-320A
5.500	4.670	0.320	5.450	5.460	5.476	426	0401OE41505500-320A
5.625	4.795	0.320	5.575	5.585	5.601	427	0401OE41505625-320A
5.750	4.920	0.320	5.700	5.710	5.726	428	0401OE41505750-320A
5.875	5.045	0.320	5.825	5.835	5.851	429	0401OE41505875-320A
6.000	5.170	0.320	5.950	5.960	5.976	430	0401OE41506000-320A
6.125	5.295	0.320	6.075	6.085	6.101	431	0401OE41506125-320A
6.250	5.420	0.320	6.200	6.210	6.226	432	0401OE41506250-320A
6.375	5.545	0.320	6.325	6.335	6.351	433	0401OE41506375-320A
6.500	5.670	0.320	6.450	6.460	6.476	435	0401OE41506500-320A
6.750	5.920	0.320	6.700	6.710	6.726	436	0401OE41506750-320A
7.000	6.170	0.320	6.950	6.960	6.976	437	0401OE41507000-320A
7.250	6.420	0.320	7.200	7.210	7.226	438	0401OE41507250-320A
7.500	6.670	0.320	7.450	7.460	7.476	439	0401OE41507500-320A
7.750	6.920	0.320	7.700	7.710	7.726	440	0401OE41507750-320A
8.000	7.170	0.320	7.950	7.960	7.976	441	0401OE41508000-320A
8.250	7.420	0.320	8.200	8.210	8.226	442	0401OE41508250-320A
8.500	7.670	0.320	8.450	8.460	8.476	443	0401OE41508500-320A
9.000	8.170	0.320	8.950	8.960	8.976	445	0401OE41509000-320A
9.500	8.670	0.320	9.450	9.460	9.476	446	0401OE41509500-320A
10.000	9.170	0.320	9.950	9.960	9.976	447	0401OE41510000-320A
10.500	9.670	0.320	10.450	10.460	10.476	448	0401OE41510500-320A
11.000	10.170	0.320	10.950	10.960	10.976	449	0401OE41511000-320A
11.500	10.670	0.320	11.450	11.460	11.476	450	0401OE41511500-320A
12.000	11.170	0.320	11.950	11.960	11.976	451	0401OE41512000-320A

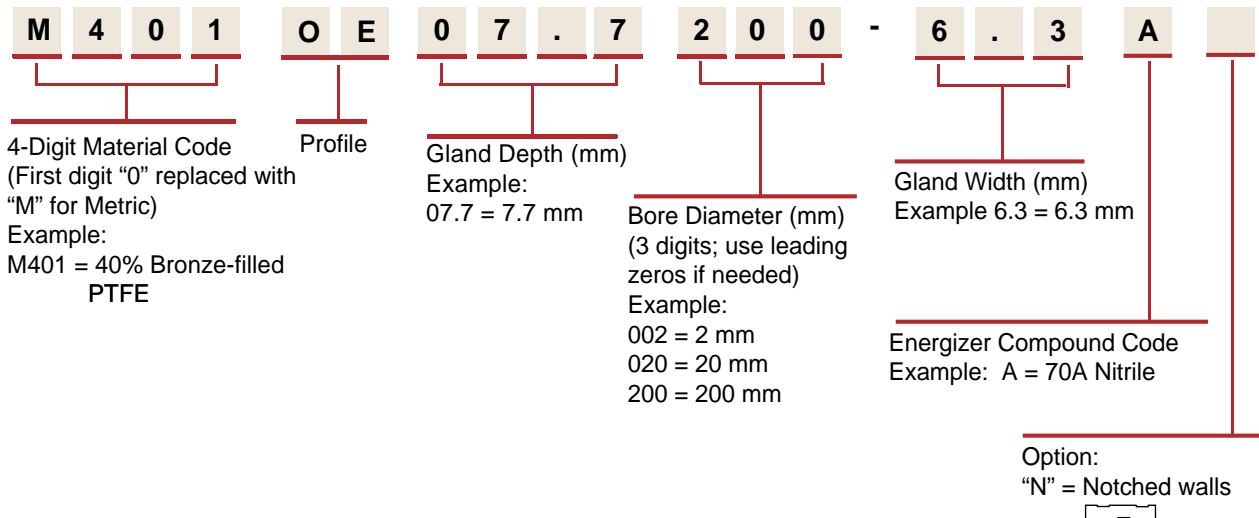


Table 21. OE Gland Dimensions — Inch (cont'd)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
12.500	11.670	0.320	12.450	12.460	12.476	452	0401OE41512500-320A
13.000	12.170	0.320	12.950	12.960	12.976	453	0401OE41513000-320A
13.500	12.670	0.320	13.450	13.460	13.476	454	0401OE41513500-320A
14.000	13.170	0.320	13.950	13.960	13.976	455	0401OE41514000-320A
14.500	13.670	0.320	14.450	14.460	14.476	456	0401OE41514500-320A
15.000	14.170	0.320	14.950	14.960	14.976	457	0401OE41515000-320A
15.500	14.670	0.320	15.450	15.460	15.476	458	0401OE41515500-320A
16.000	15.170	0.320	15.950	15.960	15.976	459	0401OE41516000-320A

Part Number Nomenclature — OE Profile

Table 22. OE Profile — Metric



Gland Dimension — OE Profile

Table 23. OE Gland Dimensions — Metric

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
+ .02/- .00	+ .00/- .05	+ .02/- .00					
8.00	3.00	2.20	7.50	7.60	7.70	005	M401OE02.5008-2.2A
10.00	5.00	2.20	9.50	9.60	9.70	010	M401OE02.5010-2.2A
11.00	6.00	2.20	10.50	10.60	10.70	010	M401OE02.5011-2.2A
12.00	7.00	2.20	11.50	11.60	11.70	010	M401OE02.5012-2.2A
13.00	8.00	2.20	12.50	12.60	12.70	011	M401OE02.5013-2.2A
14.00	9.00	2.20	13.50	13.60	13.70	011	M401OE02.5014-2.2A
+ .05/- .00	+ .00/- .07	+ .02/- .00					
16.00	8.50	3.20	15.20	15.30	15.60	109	M401OE03.7016-3.2A

OE Profile

Table 23. OE Gland Dimensions — Metric (cont'd)

			"D" Minimum Diameter Piston				
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OE Part Number
18.00	10.50	3.20	17.20	17.30	17.60	110	M401OE03.7018-3.2A
20.00	12.50	3.20	19.20	19.30	19.60	112	M401OE03.7020-3.2A
22.00	14.50	3.20	21.20	21.30	21.60	113	M401OE03.7022-3.2A
24.00	16.50	3.20	23.20	23.30	23.60	114	M401OE03.7024-3.2A
25.00	17.50	3.20	24.20	24.30	24.60	115	M401OE03.7025-3.2A
28.00	20.50	3.20	27.20	27.30	27.60	117	M401OE03.7028-3.2A
30.00	22.50	3.20	29.20	29.30	29.60	118	M401OE03.7030-3.2A
32.00	24.50	3.20	31.20	31.30	31.60	119	M401OE03.7032-3.2A
35.00	27.50	3.20	34.20	34.30	34.60	121	M401OE03.7035-3.2A
36.00	28.50	3.20	35.20	35.30	35.60	122	M401OE03.7036-3.2A
38.00	30.50	3.20	37.20	37.30	37.60	123	M401OE03.7038-3.2A
40.00	32.50	3.20	39.20	39.30	39.60	124	M401OE03.7040-3.2A
+0.07/-0.00	+0.00/-0.10	+0.02/-0.00					
25.00	14.00	4.20	24.10	24.20	24.60	207	M401OE05.5025-4.2A
32.00	21.00	4.20	31.10	31.20	31.60	211	M401OE05.5032-4.2A
40.00	29.00	4.20	39.10	39.20	39.60	216	M401OE05.5040-4.2A
45.00	34.00	4.20	44.10	44.20	44.60	219	M401OE05.5045-4.2A
50.00	39.00	4.20	49.10	49.20	49.60	222	M401OE05.5050-4.2A
55.00	44.00	4.20	54.10	54.20	54.60	224	M401OE05.5055-4.2A
60.00	49.00	4.20	59.10	59.20	59.60	225	M401OE05.5060-4.2A
63.00	52.00	4.20	62.10	62.20	62.60	226	M401OE05.5063-4.2A
65.00	54.00	4.20	64.10	64.20	64.60	227	M401OE05.5065-4.2A
70.00	59.00	4.20	69.10	69.20	69.60	228	M401OE05.5070-4.2A
75.00	64.00	4.20	74.10	74.20	74.60	230	M401OE05.5075-4.2A
80.00	69.00	4.20	79.10	79.20	79.60	231	M401OE05.5080-4.2A
100.00	89.00	4.20	99.10	99.20	99.60	238	M401OE05.5100-4.2A
+0.07/-0.00	+0.00/-0.15	+0.02/-0.00					
50.00	34.50	6.30	48.90	49.10	49.50	324	M401OE07.7050-6.3A
63.00	47.50	6.30	61.90	62.10	62.50	328	M401OE07.7063-6.3A
70.00	54.50	6.30	68.90	69.10	69.50	330	M401OE07.7070-6.3A
80.00	64.50	6.30	78.90	79.10	79.50	333	M401OE07.7080-6.3A
85.00	69.50	6.30	83.90	84.10	84.50	335	M401OE07.7085-6.3A
90.00	74.50	6.30	88.90	89.10	89.50	336	M401OE07.7090-6.3A
95.00	79.50	6.30	93.90	94.10	94.50	338	M401OE07.7095-6.3A
100.00	84.50	6.30	98.90	99.10	99.50	339	M401OE07.7100-6.3A
105.00	89.50	6.30	103.90	104.10	104.50	341	M401OE07.7105-6.3A
110.00	94.50	6.30	108.90	109.10	109.50	342	M401OE07.7110-6.3A
115.00	99.50	6.30	113.90	114.10	114.50	344	M401OE07.7115-6.3A
120.00	104.50	6.30	118.90	119.10	119.50	345	M401OE07.7120-6.3A
125.00	109.50	6.30	123.90	124.10	124.50	347	M401OE07.7125-6.3A
130.00	114.50	6.30	128.90	129.10	129.50	349	M401OE07.7130-6.3A
132.00	116.50	6.30	130.90	131.10	131.50	349	M401OE07.7132-6.3A
135.00	119.50	6.30	133.90	134.10	134.50	350	M401OE07.7135-6.3A

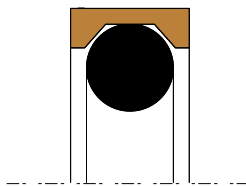


Table 23. OE Gland Dimensions — Metric (cont'd)

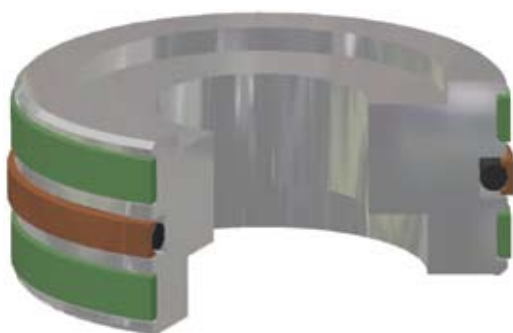
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Diameter Piston			O-ring Dash Number	OE Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
140.00	124.50	6.30	138.90	139.10	139.50	352	M401OE07.7140-6.3A
145.00	129.50	6.30	143.90	144.10	144.50	353	M401OE07.7145-6.3A
160.00	144.50	6.30	158.90	159.10	159.50	358	M401OE07.7160-6.3A
200.00	184.50	6.30	198.90	199.10	199.50	366	M401OE07.7200-6.3A
+ .10/- .00	+ .00/- .17	+ .02/- .00					
135.00	114.00	8.10	133.80	134.00	134.40	425	M401OE10.5135-8.1A
140.00	119.00	8.10	138.80	139.00	139.40	426	M401OE10.5140-8.1A
145.00	124.00	8.10	143.80	144.00	144.40	428	M401OE10.5145-8.1A
150.00	129.00	8.10	148.80	149.00	149.40	430	M401OE10.5150-8.1A
155.00	134.00	8.10	153.80	154.00	154.40	431	M401OE10.5155-8.1A
160.00	139.00	8.10	158.80	159.00	159.40	433	M401OE10.5160-8.1A
165.00	144.00	8.10	163.80	164.00	164.40	434	M401OE10.5165-8.1A
170.00	149.00	8.10	168.80	169.00	169.40	435	M401OE10.5170-8.1A
175.00	154.00	8.10	173.80	174.00	174.40	437	M401OE10.5175-8.1A
180.00	159.00	8.10	178.80	179.00	179.40	438	M401OE10.5180-8.1A
185.00	164.00	8.10	183.80	184.00	184.40	438	M401OE10.5185-8.1A
190.00	169.00	8.10	188.80	189.00	189.40	439	M401OE10.5190-8.1A
195.00	174.00	8.10	193.80	194.00	194.40	440	M401OE10.5195-8.1A
200.00	179.00	8.10	198.80	199.00	199.40	441	M401OE10.5200-8.1A
205.00	184.00	8.10	203.80	204.00	204.40	442	M401OE10.5205-8.1A
210.00	189.00	8.10	208.80	209.00	209.40	443	M401OE10.5210-8.1A
215.00	194.00	8.10	213.80	214.00	214.40	443	M401OE10.5215-8.1A
220.00	199.00	8.10	218.80	219.00	219.40	444	M401OE10.5220-8.1A
225.00	204.00	8.10	223.80	224.00	224.40	445	M401OE10.5225-8.1A
230.00	209.00	8.10	228.80	229.00	229.40	445	M401OE10.5230-8.1A
235.00	214.00	8.10	233.80	234.00	234.40	445	M401OE10.5235-8.1A
240.00	219.00	8.10	238.80	239.00	239.40	446	M401OE10.5240-8.1A
245.00	224.00	8.10	243.80	244.00	244.40	446	M401OE10.5245-8.1A
250.00	229.00	8.10	248.80	249.00	249.40	447	M401OE10.5250-8.1A



CP Profile



CP Cross Section



CP installed in Piston Gland

CP Profile, Linear Piston Seal

The Parker CP profile is a cap seal with anti-extrusion, low friction, and low wear features. The CP profile is a bi-directional piston seal for use in low to medium duty applications. The CP profile retrofits into an O-ring groove sized for a standard size Parker O-ring without modification. There are three CP profiles to match the groove width for a single O-ring, O-ring with one back up, or an O-ring with two back up rings. Because of the unique design of the filled PTFE cap, the CP profile offers long wear, low friction and anti-extrusion. Because of its short assembly length, only minimal gland space is needed to fit the seal on the piston. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's CP profile is designed to retrofit non-Parker seals of similar design.

- CP0 goes into a standard O-ring groove.
- CP1 goes into an O-ring groove designed for one back up ring.
- CP2 goes into an O-ring groove designed for two back up rings.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (345 bar)

Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 16 fps (5 m/s)

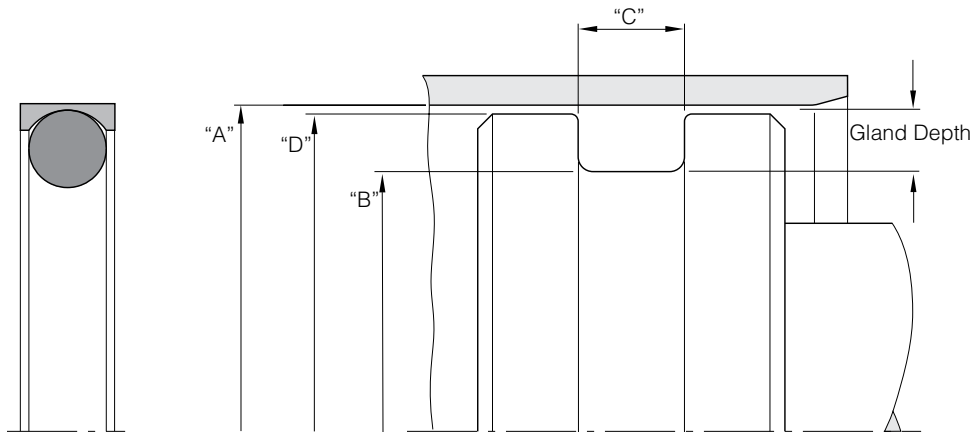
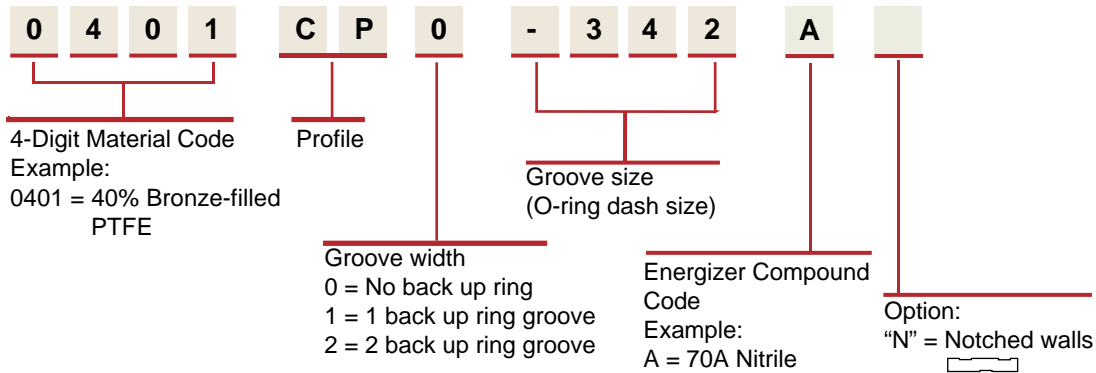
Options

Notched side walls: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the side face of the gland and the seal. Consult EPS Division for the availability and cost to add side notches to the CP profile.

N = Notched walls 

Part Number Nomenclature — CP Profile

Table 24. CP Profile — Inch



Gland Dimension — CP Profile

Table 25. CP Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width (CP0)	"C" Groove Width (CP1)	"C" Groove Width (CP2)	"D" Minimum Piston Dia. 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000			
0.250	0.140	0.093	0.138	0.205	0.246	006	0401CPX-006A
0.281	0.171	0.093	0.138	0.205	0.277	007	0401CPX-007A
0.312	0.202	0.093	0.138	0.205	0.308	008	0401CPX-008A
0.344	0.234	0.093	0.138	0.205	0.340	009	0401CPX-009A
0.375	0.265	0.093	0.138	0.205	0.371	010	0401CPX-010A
0.437	0.327	0.093	0.138	0.205	0.433	011	0401CPX-011A
0.500	0.390	0.093	0.138	0.205	0.496	012	0401CPX-012A
0.562	0.452	0.093	0.138	0.205	0.557	013	0401CPX-013A
0.625	0.515	0.093	0.138	0.205	0.620	014	0401CPX-014A
0.687	0.577	0.093	0.138	0.205	0.682	015	0401CPX-015A
0.750	0.640	0.093	0.138	0.205	0.745	016	0401CPX-016A
0.812	0.702	0.093	0.138	0.205	0.807	017	0401CPX-017A
0.875	0.765	0.093	0.138	0.205	0.870	018	0401CPX-018A
0.937	0.827	0.093	0.138	0.205	0.932	019	0401CPX-019A

CP Profile

Table 25. CP Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width (CP0)	"C" Groove Width (CP1)	"C" Groove Width (CP2)	"D" Minimum Piston Dia. 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
1.000	0.890	0.093	0.138	0.205	0.995	020	0401CPX-020A
1.062	0.952	0.093	0.138	0.205	1.057	021	0401CPX-021A
1.125	1.015	0.093	0.138	0.205	1.120	022	0401CPX-022A
1.187	1.077	0.093	0.138	0.205	1.182	023	0401CPX-023A
1.250	1.140	0.093	0.138	0.205	1.245	024	0401CPX-024A
1.312	1.202	0.093	0.138	0.205	1.307	025	0401CPX-025A
1.375	1.265	0.093	0.138	0.205	1.370	026	0401CPX-026A
1.437	1.327	0.093	0.138	0.205	1.432	027	0401CPX-027A
1.500	1.390	0.093	0.138	0.205	1.495	028	0401CPX-028A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000			
0.312	0.136	0.140	0.171	0.238	0.307	104	0401CPX-104A
0.343	0.167	0.140	0.171	0.238	0.338	105	0401CPX-105A
0.375	0.199	0.140	0.171	0.238	0.370	106	0401CPX-106A
0.406	0.230	0.140	0.171	0.238	0.401	107	0401CPX-107A
0.437	0.261	0.140	0.171	0.238	0.432	108	0401CPX-108A
0.500	0.324	0.140	0.171	0.238	0.495	109	0401CPX-109A
0.562	0.386	0.140	0.171	0.238	0.557	110	0401CPX-110A
0.625	0.449	0.140	0.171	0.238	0.620	111	0401CPX-111A
0.687	0.511	0.140	0.171	0.238	0.682	112	0401CPX-112A
0.750	0.574	0.140	0.171	0.238	0.745	113	0401CPX-113A
0.812	0.636	0.140	0.171	0.238	0.807	114	0401CPX-114A
0.875	0.699	0.140	0.171	0.238	0.870	115	0401CPX-115A
0.937	0.761	0.140	0.171	0.238	0.932	116	0401CPX-116A
1.000	0.824	0.140	0.171	0.238	0.995	117	0401CPX-117A
1.062	0.886	0.140	0.171	0.238	1.057	118	0401CPX-118A
1.125	0.949	0.140	0.171	0.238	1.120	119	0401CPX-119A
1.187	1.011	0.140	0.171	0.238	1.182	120	0401CPX-120A
1.250	1.074	0.140	0.171	0.238	1.245	121	0401CPX-121A
1.312	1.136	0.140	0.171	0.238	1.307	122	0401CPX-122A
1.375	1.199	0.140	0.171	0.238	1.370	123	0401CPX-123A
1.437	1.261	0.140	0.171	0.238	1.432	124	0401CPX-124A
1.500	1.324	0.140	0.171	0.238	1.495	125	0401CPX-125A
1.562	1.386	0.140	0.171	0.238	1.557	126	0401CPX-126A
1.625	1.449	0.140	0.171	0.238	1.620	127	0401CPX-127A
1.687	1.511	0.140	0.171	0.238	1.682	128	0401CPX-128A
1.750	1.574	0.140	0.171	0.238	1.745	129	0401CPX-129A
1.812	1.636	0.140	0.171	0.238	1.806	130	0401CPX-130A
1.875	1.699	0.140	0.171	0.238	1.869	131	0401CPX-131A
1.937	1.761	0.140	0.171	0.238	1.931	132	0401CPX-132A
2.000	1.824	0.140	0.171	0.238	1.994	133	0401CPX-133A
2.062	1.886	0.140	0.171	0.238	2.056	134	0401CPX-134A
2.125	1.949	0.140	0.171	0.238	2.119	135	0401CPX-135A
2.187	2.011	0.140	0.171	0.238	2.181	136	0401CPX-136A
2.250	2.074	0.140	0.171	0.238	2.244	137	0401CPX-137A



Table 25. CP Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width (CP0)	"C" Groove Width (CP1)	"C" Groove Width (CP2)	"D" Minimum Piston Dia. 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
2.312	2.136	0.140	0.171	0.238	2.306	138	0401CPX-138A
2.375	2.199	0.140	0.171	0.238	2.369	139	0401CPX-139A
2.437	2.261	0.140	0.171	0.238	2.431	140	0401CPX-140A
2.500	2.324	0.140	0.171	0.238	2.493	141	0401CPX-141A
2.562	2.386	0.140	0.171	0.238	2.555	142	0401CPX-142A
2.625	2.449	0.140	0.171	0.238	2.618	143	0401CPX-143A
2.687	2.511	0.140	0.171	0.238	2.680	144	0401CPX-144A
2.750	2.574	0.140	0.171	0.238	2.743	145	0401CPX-145A
2.812	2.636	0.140	0.171	0.238	2.805	146	0401CPX-146A
2.875	2.699	0.140	0.171	0.238	2.868	147	0401CPX-147A
2.937	2.761	0.140	0.171	0.238	2.930	148	0401CPX-148A
3.000	2.824	0.140	0.171	0.238	2.993	149	0401CPX-149A
+0.002/-.000	+0.000/-.002	+0.005/-.000	+0.005/-.000	+0.005/-.000			
0.437	0.195	0.187	0.208	0.275	0.432	201	0401CPX-201A
0.500	0.258	0.187	0.208	0.275	0.495	202	0401CPX-202A
0.562	0.320	0.187	0.208	0.275	0.557	203	0401CPX-203A
0.625	0.383	0.187	0.208	0.275	0.620	204	0401CPX-204A
0.687	0.445	0.187	0.208	0.275	0.682	205	0401CPX-205A
0.750	0.508	0.187	0.208	0.275	0.745	206	0401CPX-206A
0.812	0.570	0.187	0.208	0.275	0.807	207	0401CPX-207A
0.875	0.633	0.187	0.208	0.275	0.870	208	0401CPX-208A
0.937	0.695	0.187	0.208	0.275	0.932	209	0401CPX-209A
1.000	0.758	0.187	0.208	0.275	0.995	210	0401CPX-210A
1.062	0.820	0.187	0.208	0.275	1.057	211	0401CPX-211A
1.125	0.883	0.187	0.208	0.275	1.120	212	0401CPX-212A
1.187	0.945	0.187	0.208	0.275	1.182	213	0401CPX-213A
1.250	1.008	0.187	0.208	0.275	1.245	214	0401CPX-214A
1.312	1.070	0.187	0.208	0.275	1.307	215	0401CPX-215A
1.375	1.133	0.187	0.208	0.275	1.370	216	0401CPX-216A
1.437	1.195	0.187	0.208	0.275	1.432	217	0401CPX-217A
1.500	1.258	0.187	0.208	0.275	1.495	218	0401CPX-218A
1.562	1.320	0.187	0.208	0.275	1.557	219	0401CPX-219A
1.625	1.383	0.187	0.208	0.275	1.620	220	0401CPX-220A
1.687	1.445	0.187	0.208	0.275	1.682	221	0401CPX-221A
1.750	1.508	0.187	0.208	0.275	1.745	222	0401CPX-222A
1.875	1.633	0.187	0.208	0.275	1.869	223	0401CPX-223A
2.000	1.758	0.187	0.208	0.275	1.994	224	0401CPX-224A
2.125	1.883	0.187	0.208	0.275	2.119	225	0401CPX-225A
2.250	2.008	0.187	0.208	0.275	2.244	226	0401CPX-226A
2.375	2.133	0.187	0.208	0.275	2.369	227	0401CPX-227A
2.500	2.258	0.187	0.208	0.275	2.493	228	0401CPX-228A
2.625	2.383	0.187	0.208	0.275	2.618	229	0401CPX-229A
2.750	2.508	0.187	0.208	0.275	2.743	230	0401CPX-230A

CP Profile

Table 25. CP Gland Dimensions — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width (CP0)	"C" Groove Width (CP1)	"C" Groove Width (CP2)	"D" Minimum Piston Dia. 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
2.875	2.633	0.187	0.208	0.275	2.868	231	0401CPX-231A
3.000	2.758	0.187	0.208	0.275	2.993	232	0401CPX-232A
3.125	2.883	0.187	0.208	0.275	3.118	233	0401CPX-233A
3.250	3.008	0.187	0.208	0.275	3.243	234	0401CPX-234A
3.375	3.133	0.187	0.208	0.275	3.368	235	0401CPX-235A
3.500	3.258	0.187	0.208	0.275	3.493	236	0401CPX-236A
3.625	3.383	0.187	0.208	0.275	3.618	237	0401CPX-237A
3.750	3.508	0.187	0.208	0.275	3.743	238	0401CPX-238A
3.875	3.633	0.187	0.208	0.275	3.868	239	0401CPX-239A
4.000	3.758	0.187	0.208	0.275	3.993	240	0401CPX-240A
4.125	3.883	0.187	0.208	0.275	4.118	241	0401CPX-241A
4.250	4.008	0.187	0.208	0.275	4.243	242	0401CPX-242A
4.375	4.133	0.187	0.208	0.275	4.368	243	0401CPX-243A
4.500	4.258	0.187	0.208	0.275	4.492	244	0401CPX-244A
4.625	4.383	0.187	0.208	0.275	4.617	245	0401CPX-245A
4.750	4.508	0.187	0.208	0.275	4.742	246	0401CPX-246A
4.875	4.633	0.187	0.208	0.275	4.867	247	0401CPX-247A
5.000	4.758	0.187	0.208	0.275	4.992	248	0401CPX-248A
+0.002/-.000	+0.000/-.002	+0.005/-.000	+0.005/-.000	+0.005/-.000			
0.812	0.442	0.281	0.311	0.410	0.806	309	0401CPX-309A
0.875	0.505	0.281	0.311	0.410	0.869	310	0401CPX-310A
0.937	0.567	0.281	0.311	0.410	0.931	311	0401CPX-311A
1.000	0.630	0.281	0.311	0.410	0.994	312	0401CPX-312A
1.062	0.692	0.281	0.311	0.410	1.056	313	0401CPX-313A
1.125	0.755	0.281	0.311	0.410	1.119	314	0401CPX-314A
1.187	0.817	0.281	0.311	0.410	1.181	315	0401CPX-315A
1.250	0.880	0.281	0.311	0.410	1.244	316	0401CPX-316A
1.312	0.942	0.281	0.311	0.410	1.306	317	0401CPX-317A
1.375	1.005	0.281	0.311	0.410	1.369	318	0401CPX-318A
1.437	1.067	0.281	0.311	0.410	1.431	319	0401CPX-319A
1.500	1.130	0.281	0.311	0.410	1.494	320	0401CPX-320A
1.562	1.192	0.281	0.311	0.410	1.556	321	0401CPX-321A
1.625	1.255	0.281	0.311	0.410	1.619	322	0401CPX-322A
1.687	1.317	0.281	0.311	0.410	1.681	323	0401CPX-323A
1.750	1.380	0.281	0.311	0.410	1.744	324	0401CPX-324A
+0.002/-.000	+0.000/-.004	+0.005/-.000	+0.005/-.000	+0.005/-.000			
1.875	1.505	0.281	0.311	0.410	1.869	325	0401CPX-325A
2.000	1.630	0.281	0.311	0.410	1.994	326	0401CPX-326A
2.125	1.755	0.281	0.311	0.410	2.119	327	0401CPX-327A
2.250	1.880	0.281	0.311	0.410	2.244	328	0401CPX-328A
2.375	2.005	0.281	0.311	0.410	2.369	329	0401CPX-329A
2.500	2.130	0.281	0.311	0.410	2.493	330	0401CPX-330A
2.625	2.255	0.281	0.311	0.410	2.618	331	0401CPX-331A



Table 25. CP Gland Dimensions — Inch

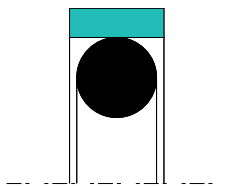
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width (CP0)	"C" Groove Width (CP1)	"C" Groove Width (CP2)	"D" Minimum Piston Dia. 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
2.750	2.380	0.281	0.311	0.410	2.743	332	0401CPX-332A
2.875	2.505	0.281	0.311	0.410	2.868	333	0401CPX-333A
3.000	2.630	0.281	0.311	0.410	2.993	334	0401CPX-334A
3.125	2.755	0.281	0.311	0.410	3.118	335	0401CPX-335A
3.250	2.880	0.281	0.311	0.410	3.243	336	0401CPX-336A
3.375	3.005	0.281	0.311	0.410	3.368	337	0401CPX-337A
3.500	3.130	0.281	0.311	0.410	3.493	338	0401CPX-338A
3.625	3.255	0.281	0.311	0.410	3.618	339	0401CPX-339A
3.750	3.380	0.281	0.311	0.410	3.743	340	0401CPX-340A
3.875	3.505	0.281	0.311	0.410	3.868	341	0401CPX-341A
4.000	3.630	0.281	0.311	0.410	3.993	342	0401CPX-342A
4.125	3.755	0.281	0.311	0.410	4.118	343	0401CPX-343A
4.250	3.880	0.281	0.311	0.410	4.243	344	0401CPX-344A
4.375	4.005	0.281	0.311	0.410	4.368	345	0401CPX-345A
4.500	4.130	0.281	0.311	0.410	4.492	346	0401CPX-346A
4.625	4.255	0.281	0.311	0.410	4.617	347	0401CPX-347A
4.750	4.380	0.281	0.311	0.410	4.742	348	0401CPX-348A
4.875	4.505	0.281	0.311	0.410	4.867	349	0401CPX-349A
5.000	4.630	0.281	0.311	0.410	4.992	350	0401CPX-350A
+0.002/-0.000	+0.000/-0.004	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000			
5.000	4.526	0.375	0.408	0.538	4.991	425	0401CPX-425A
5.125	4.651	0.375	0.408	0.538	5.116	426	0401CPX-426A
5.250	4.776	0.375	0.408	0.538	5.241	427	0401CPX-427A
5.375	4.901	0.375	0.408	0.538	5.366	428	0401CPX-428A
5.500	5.026	0.375	0.408	0.538	5.491	429	0401CPX-429A
5.625	5.151	0.375	0.408	0.538	5.616	430	0401CPX-430A
5.750	5.276	0.375	0.408	0.538	5.741	431	0401CPX-431A
5.875	5.401	0.375	0.408	0.538	5.866	432	0401CPX-432A
6.000	5.526	0.375	0.408	0.538	5.991	433	0401CPX-433A
6.125	5.651	0.375	0.408	0.538	6.116	434	0401CPX-434A
6.250	5.776	0.375	0.408	0.538	6.241	435	0401CPX-435A
6.375	5.901	0.375	0.408	0.538	6.366	436	0401CPX-436A
6.500	6.026	0.375	0.408	0.538	6.491	437	0401CPX-437A
6.750	6.276	0.375	0.408	0.538	6.741	438	0401CPX-438A
7.000	6.526	0.375	0.408	0.538	6.991	439	0401CPX-439A
7.250	6.776	0.375	0.408	0.538	7.241	440	0401CPX-440A
7.500	7.026	0.375	0.408	0.538	7.491	441	0401CPX-441A
7.750	7.276	0.375	0.408	0.538	7.741	442	0401CPX-442A
8.000	7.526	0.375	0.408	0.538	7.991	443	0401CPX-443A
8.250	7.776	0.375	0.408	0.538	8.241	444	0401CPX-444A
8.500	8.026	0.375	0.408	0.538	8.491	445	0401CPX-445A
9.000	8.526	0.375	0.408	0.538	8.990	446	0401CPX-446A
9.500	9.026	0.375	0.408	0.538	9.489	447	0401CPX-447A
10.000	9.526	0.375	0.408	0.538	9.989	448	0401CPX-448A

CP Profile**Table 25. CP Gland Dimensions — Inch**

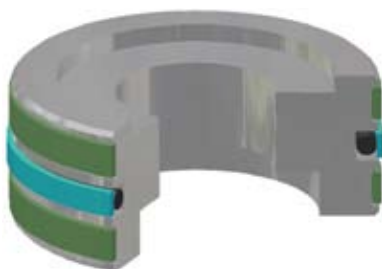
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width (CP0)	"C" Groove Width (CP1)	"C" Groove Width (CP2)	"D" Minimum Piston Dia. 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
10.500	10.026	0.375	0.408	0.538	10.489	449	0401CPX-449A
11.000	10.526	0.375	0.408	0.538	10.989	450	0401CPX-450A
11.500	11.026	0.375	0.408	0.538	11.489	451	0401CPX-451A
12.000	11.526	0.375	0.408	0.538	11.989	452	0401CPX-452A
12.500	12.026	0.375	0.408	0.538	12.489	453	0401CPX-453A
13.000	12.526	0.375	0.408	0.538	12.989	454	0401CPX-454A
13.500	13.026	0.375	0.408	0.538	13.489	455	0401CPX-455A
14.000	13.526	0.375	0.408	0.538	13.989	456	0401CPX-456A
14.500	14.026	0.375	0.408	0.538	14.489	457	0401CPX-457A
15.000	14.526	0.375	0.408	0.538	14.989	458	0401CPX-458A
15.500	15.026	0.375	0.408	0.538	15.489	459	0401CPX-459A
16.000	15.526	0.375	0.408	0.538	15.989	460	0401CPX-460A



OA Profile



OA Cross Section



OA Installed in piston Gland

OA Profile, Linear Piston Seal

The Parker OA profile is a bi-directional piston seal for use in low to medium duty hydraulic actuators. The OA profile is a two piece design utilizing a rectangular PTFE cap and standard size Parker O-ring. The OA profile is an excellent choice for applications requiring a compact design. The unique properties of the modified PTFE provide added wear resistance for improved cycle life. Parker's OA profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0102	Pigment filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 1,500 psi (100 bar)
Higher pressures can be achieved using alternate PTFE compounds

Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

Options

Notched side walls

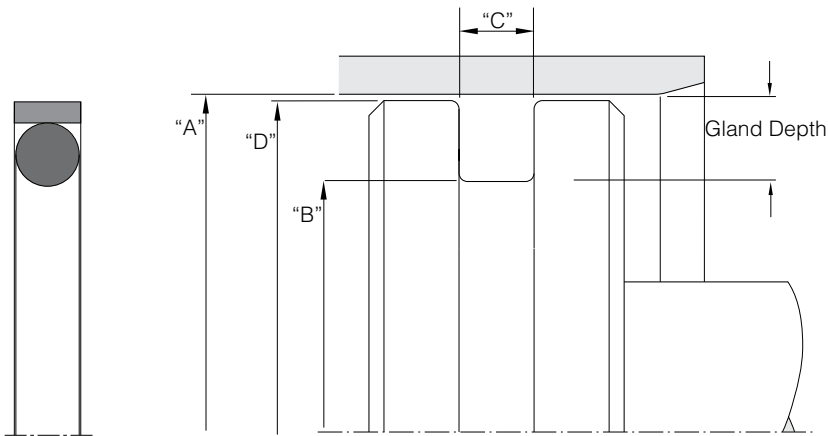
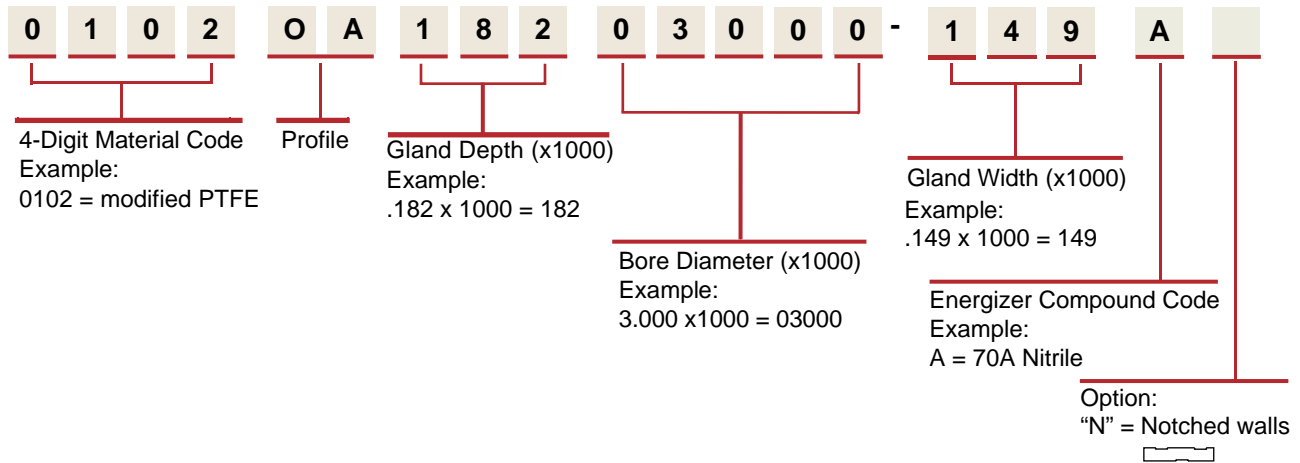
Notches can be added to the side walls of the PTFE cap. This can help to optimize the seal's response to fluid pressure. Notched side walls help ensure that fluid pressure fills the cavity between the side face of the seal and the side face of the seal gland. Consult EPS Division for the availability and cost to add side notches to the OA profile.

N = Notched walls 

OA Profile

Part Number Nomenclature —OA Profile

Table 26. OA Profile — Inch



Gland Dimensions — OA Profile

Table 27. OA Profile — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Piston Diameter 1500 psi (100 bar)	Max Radius	O-ring Dash Number	OA Part Number
+0.001/-0.000	+0.000/-0.001	+0.005/-0.000				
0.281	0.139	0.079	0.277	0.020	006	0102OA07200281-079A
0.312	0.169	0.079	0.308	0.020	007	0102OA07200312-079A
0.344	0.200	0.079	0.340	0.020	008	0102OA07200344-079A
0.375	0.231	0.079	0.371	0.020	009	0102OA07200375-079A
0.437	0.263	0.079	0.433	0.020	010	0102OA07200437-079A
0.500	0.326	0.079	0.496	0.020	011	0102OA08700500-079A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000				
0.562	0.388	0.079	0.557	0.020	012	0102OA08700562-079A
0.625	0.452	0.079	0.620	0.020	013	0102OA08700625-079A
0.687	0.515	0.079	0.682	0.020	014	0102OA08700687-079A
0.750	0.577	0.079	0.745	0.020	015	0102OA08700750-079A
0.812	0.640	0.079	0.807	0.020	016	0102OA08700812-079A
0.875	0.702	0.079	0.870	0.020	017	0102OA08700875-079A
0.937	0.765	0.079	0.932	0.020	018	0102OA08700937-079A

Table 27. OA Gland Dimensions — Inch (cont'd)

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Piston Diameter 1500 psi (100 bar)	Max Radius	O-ring Dash Number	OA Part Number
1.000	0.827	0.079	0.995	0.020	019	0102OA08701000-079A
1.062	0.890	0.079	1.057	0.020	020	0102OA08701062-079A
1.125	0.952	0.079	1.120	0.020	021	0102OA08701125-079A
1.187	1.015	0.079	1.182	0.020	022	0102OA08701187-079A
1.250	1.078	0.079	1.245	0.020	023	0102OA08701250-079A
1.312	1.140	0.079	1.307	0.020	024	0102OA08701312-079A
1.375	1.202	0.079	1.370	0.020	025	0102OA08701375-079A
1.437	1.265	0.079	1.432	0.020	026	0102OA08701437-079A
1.500	1.327	0.079	1.495	0.020	027	0102OA08701500-079A
+0.003/-0.000	+0.000/-0.003	+0.005/-0.000				
0.625	0.388	0.112	0.620	0.020	110	0102OA11800625-112A
0.687	0.451	0.112	0.682	0.020	111	0102OA11800687-112A
0.750	0.513	0.112	0.745	0.020	112	0102OA11800750-112A
0.812	0.576	0.112	0.807	0.020	113	0102OA11800812-112A
0.875	0.638	0.112	0.870	0.020	114	0102OA11800875-112A
0.937	0.701	0.112	0.932	0.020	115	0102OA11800937-112A
1.000	0.763	0.112	0.995	0.020	116	0102OA11801000-112A
1.062	0.826	0.112	1.057	0.020	117	0102OA11801062-112A
1.125	0.888	0.112	1.120	0.020	118	0102OA11801125-112A
1.187	0.951	0.112	1.182	0.020	119	0102OA11801187-112A
1.250	1.013	0.112	1.245	0.020	120	0102OA11801250-112A
1.312	1.076	0.112	1.307	0.020	121	0102OA11801312-112A
1.375	1.138	0.112	1.370	0.020	122	0102OA11801375-112A
1.437	1.201	0.112	1.432	0.020	123	0102OA11801437-112A
1.500	1.263	0.112	1.495	0.020	124	0102OA11801500-112A
1.562	1.326	0.112	1.557	0.020	125	0102OA11801562-112A
1.625	1.388	0.112	1.620	0.020	126	0102OA11801625-112A
1.687	1.451	0.112	1.682	0.020	127	0102OA11801687-112A
1.750	1.513	0.112	1.745	0.020	128	0102OA11801750-112A
1.812	1.576	0.112	1.807	0.020	129	0102OA11801812-112A
1.875	1.638	0.112	1.870	0.020	130	0102OA11801875-112A
1.937	1.701	0.112	1.932	0.020	131	0102OA11801937-112A
2.000	1.763	0.112	1.995	0.020	132	0102OA11802000-112A
2.062	1.826	0.112	2.057	0.020	133	0102OA11802062-112A
2.125	1.888	0.112	2.120	0.020	134	0102OA11802125-112A
2.187	1.951	0.112	2.182	0.020	135	0102OA11802187-112A
2.250	2.013	0.112	2.245	0.020	136	0102OA11802250-112A
2.312	2.076	0.112	2.307	0.020	137	0102OA11802312-112A
2.375	2.138	0.112	2.370	0.020	138	0102OA11802375-112A
2.437	2.201	0.112	2.432	0.020	139	0102OA11802437-112A
2.500	2.263	0.112	2.495	0.020	140	0102OA11802500-112A
2.562	2.326	0.112	2.557	0.020	141	0102OA11802562-112A
2.625	2.388	0.112	2.620	0.020	142	0102OA11802625-112A

OA Profile**Table 27. OA Gland Dimensions — Inch (cont'd)**

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Piston Diameter 1500 psi (100 bar)	Max Radius	O-ring Dash Number	OA Part Number
2.687	2.451	0.112	2.682	0.020	143	0102OA11802687-112A
2.750	2.513	0.112	2.745	0.020	144	0102OA11802750-112A
2.812	2.576	0.112	2.807	0.020	145	0102OA11802812-112A
2.875	2.638	0.112	2.870	0.020	146	0102OA11802875-112A
2.937	2.701	0.112	2.932	0.020	147	0102OA11802937-112A
3.000	2.763	0.112	2.995	0.020	148	0102OA11803000-112A
+0.004/-0.000	+0.000/-0.004	+0.005/-0.000				
1.062	0.762	0.149	1.056	0.030	210	0102OA15001062-149A
1.125	0.824	0.149	1.119	0.030	211	0102OA15001125-149A
1.187	0.887	0.149	1.181	0.030	212	0102OA15001187-149A
1.250	0.950	0.149	1.244	0.030	213	0102OA15001250-149A
1.312	1.012	0.149	1.306	0.030	214	0102OA15001312-149A
1.375	1.074	0.149	1.369	0.030	215	0102OA15001375-149A
1.437	1.137	0.149	1.431	0.030	216	0102OA15001437-149A
1.500	1.199	0.149	1.494	0.030	217	0102OA15001500-149A
1.562	1.262	0.149	1.556	0.030	218	0102OA15001562-149A
1.625	1.324	0.149	1.619	0.030	219	0102OA15001625-149A
1.687	1.387	0.149	1.681	0.030	220	0102OA15001687-149A
1.750	1.450	0.149	1.744	0.030	221	0102OA15001750-149A
1.875	1.512	0.149	1.869	0.030	222	0102OA18201875-149A
2.000	1.637	0.149	1.994	0.030	223	0102OA18202000-149A
2.125	1.762	0.149	2.119	0.030	224	0102OA18202125-149A
2.250	1.887	0.149	2.244	0.030	225	0102OA18202250-149A
2.375	2.012	0.149	2.369	0.030	226	0102OA18202375-149A
2.500	2.137	0.149	2.494	0.030	227	0102OA18202500-149A
2.625	2.262	0.149	2.619	0.030	228	0102OA18202625-149A
2.750	2.387	0.149	2.744	0.030	229	0102OA18202750-149A
2.875	2.512	0.149	2.869	0.030	230	0102OA18202875-149A
3.000	2.637	0.149	2.994	0.030	231	0102OA18203000-149A
3.125	2.762	0.149	3.119	0.030	232	0102OA18203125-149A
3.250	2.887	0.149	3.244	0.030	233	0102OA18203250-149A
3.375	3.012	0.149	3.369	0.030	234	0102OA18203375-149A
3.500	3.137	0.149	3.494	0.030	235	0102OA18203500-149A
3.625	3.262	0.149	3.619	0.030	236	0102OA18203625-149A
3.750	3.387	0.149	3.744	0.030	237	0102OA18203750-149A
3.875	3.512	0.149	3.869	0.030	238	0102OA18203875-149A
4.000	3.637	0.149	3.994	0.030	239	0102OA18204000-149A
4.125	3.762	0.149	4.119	0.030	240	0102OA18204125-149A
4.250	3.887	0.149	4.244	0.030	241	0102OA18204250-149A
4.375	4.012	0.149	4.369	0.030	242	0102OA18204375-149A
4.500	4.137	0.149	4.494	0.030	243	0102OA18204500-149A
4.625	4.262	0.149	4.619	0.030	244	0102OA18204625-149A
4.750	4.387	0.149	4.744	0.030	245	0102OA18204750-149A

Table 27. OA Gland Dimensions — Inch (cont'd)

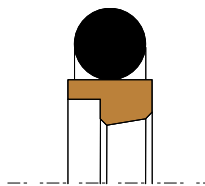
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Piston Diameter 1500 psi (100 bar)	Max Radius	O-ring Dash Number	OA Part Number
4.875	4.512	0.149	4.869	0.030	246	0102OA18204875-149A
5.000	4.637	0.149	4.994	0.030	247	0102OA18205000-149A
+0.005/-0.000	+0.000/-0.005	+0.005/-0.000				
2.000	1.509	0.221	1.993	0.050	325	0102OA24602000-221A
2.125	1.634	0.221	2.118	0.050	326	0102OA24602125-221A
2.250	1.759	0.221	2.243	0.050	327	0102OA24602250-221A
2.375	1.884	0.221	2.368	0.050	328	0102OA24602375-221A
2.500	2.009	0.221	2.493	0.050	329	0102OA24602500-221A
2.625	2.134	0.221	2.618	0.050	330	0102OA24602625-221A
2.750	2.259	0.221	2.743	0.050	331	0102OA24602750-221A
2.875	2.384	0.221	2.868	0.050	332	0102OA24602875-221A
3.000	2.509	0.221	2.993	0.050	333	0102OA24603000-221A
3.125	2.634	0.221	3.118	0.050	334	0102OA24603125-221A
3.250	2.759	0.221	3.243	0.050	335	0102OA24603250-221A
3.375	2.884	0.221	3.368	0.050	336	0102OA24603375-221A
3.500	3.009	0.221	3.493	0.050	337	0102OA24603500-221A
3.625	3.134	0.221	3.618	0.050	338	0102OA24603625-221A
3.750	3.259	0.221	3.743	0.050	339	0102OA24603750-221A
3.875	3.384	0.221	3.868	0.050	340	0102OA24603875-221A
4.000	3.509	0.221	3.993	0.050	341	0102OA24604000-221A
4.125	3.634	0.221	4.118	0.050	342	0102OA24604125-221A
4.250	3.759	0.221	4.243	0.050	343	0102OA24604250-221A
4.375	3.884	0.221	4.368	0.050	344	0102OA24604375-221A
4.500	4.009	0.221	4.493	0.050	345	0102OA24604500-221A
4.625	4.134	0.221	4.618	0.050	346	0102OA24604625-221A
4.750	4.259	0.221	4.743	0.050	347	0102OA24604750-221A
4.875	4.384	0.221	4.868	0.050	348	0102OA24604875-221A
5.000	4.509	0.221	4.993	0.050	349	0102OA24605000-221A
+0.006/-0.000	+0.000/-0.006	+0.005/-0.000				
5.125	4.532	0.297	5.117	0.060	425	0102OA29705125-297A
5.250	4.657	0.297	5.242	0.060	426	0102OA29705250-297A
5.375	4.782	0.297	5.367	0.060	427	0102OA29705375-297A
5.500	4.907	0.297	5.492	0.060	428	0102OA29705500-297A
5.625	5.032	0.297	5.617	0.060	429	0102OA29705625-297A
5.750	5.157	0.297	5.742	0.060	430	0102OA29705750-297A
5.875	5.282	0.297	5.867	0.060	431	0102OA29705875-297A
6.000	5.407	0.297	5.992	0.060	432	0102OA29706000-297A
6.125	5.532	0.297	6.117	0.060	433	0102OA29706125-297A
6.250	5.657	0.297	6.242	0.060	434	0102OA29706250-297A
6.375	5.782	0.297	6.367	0.060	435	0102OA29706375-297A
6.500	5.907	0.297	6.492	0.060	436	0102OA29706500-297A
6.750	6.032	0.297	6.742	0.060	437	0102OA35906750-297A
7.000	6.282	0.297	6.992	0.060	438	0102OA35907000-297A

OA Profile**Table 27. OA Gland Dimensions — Inch (cont'd)**

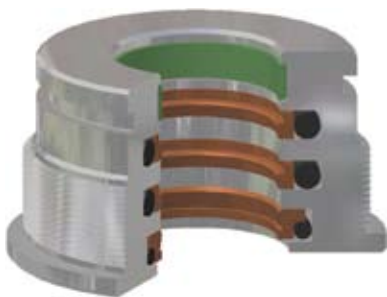
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Minimum Piston Diameter 1500 psi (100 bar)	Max Radius	O-ring Dash Number	OA Part Number
7.250	6.532	0.297	7.242	0.060	439	0102OA35907250-297A
7.500	6.782	0.297	7.492	0.060	440	0102OA35907500-297A
7.750	7.032	0.297	7.742	0.060	441	0102OA35907750-297A
8.000	7.282	0.297	7.992	0.060	442	0102OA35908000-297A
8.250	7.532	0.297	8.242	0.060	443	0102OA35908250-297A
8.500	7.782	0.297	8.492	0.060	444	0102OA35908500-297A
9.000	8.032	0.297	8.992	0.060	445	0102OA48409000-297A
9.500	8.532	0.297	9.492	0.060	446	0102OA48409500-297A
10.000	9.032	0.297	9.992	0.060	447	0102OA48410000-297A
10.500	9.532	0.297	10.492	0.060	448	0102OA48410500-297A
11.000	10.032	0.297	10.992	0.060	449	0102OA48411000-297A
11.500	10.532	0.297	11.492	0.060	450	0102OA48411500-297A
12.000	11.032	0.297	11.992	0.060	451	0102OA48412000-297A
12.500	11.532	0.297	12.492	0.060	452	0102OA48412500-297A
13.000	12.032	0.297	12.992	0.060	453	0102OA48413000-297A
13.500	12.532	0.297	13.492	0.060	454	0102OA48413500-297A
14.000	13.032	0.297	13.992	0.060	455	0102OA48414000-297A
14.500	13.532	0.297	14.492	0.060	456	0102OA48414500-297A
15.000	14.032	0.297	14.992	0.060	457	0102OA48415000-297A
15.500	14.532	0.297	15.492	0.060	458	0102OA48415500-297A
16.000	15.032	0.297	15.992	0.060	459	0102OA48416000-297A



OD Profile



OD Cross Section



OD installed in Rod Gland

OD Profile, Linear Rod Seal

The Parker OD profile is a rod seal that can be used as a buffer seal in conjunction with other primary rod seals or in tandem with itself, creating a zero leak seal. The OD is a uni-directional seal, with a unique design that allows the seal to relieve pressure build up. This pressure relief feature allows the OD to be used in a tandem or multiple seal arrangement. The OD features low friction, long life, and versatility.

When the rod is going through its power stroke (higher pressure) the seal is riding on a sealing point, creating a high compression point and limiting leakage. As the rod goes to its return stroke, it rocks forward, creating a larger sealing surface on the rod. The compression force is spread out over a larger area, reducing the load on the rod. This allows any trapped fluid to easily return to the system.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 6,500 psi (448 bar) without wear rings
5,000 psi (345 bar) with wear rings

Temperature: -30 °F to 250 °F (-34 °C to 121 °C).
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 13 fps (4 m/s)

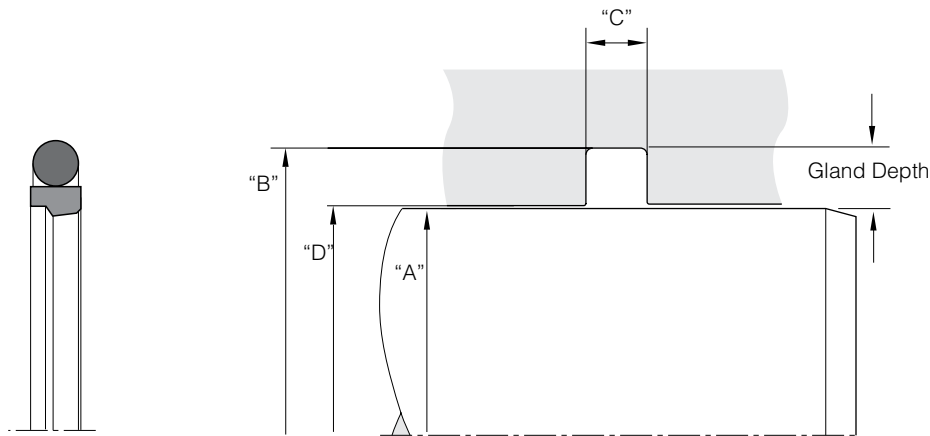
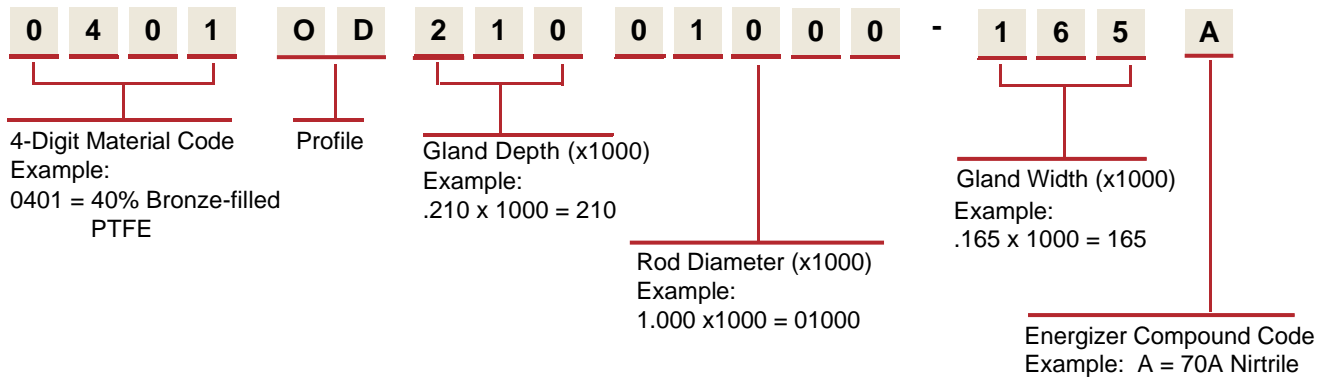
Options

Metric: To configure metric part numbering, see Table 30 on Page 61, and call Customer Service for availability.

OD Profile

Part Number Nomenclature —OD Profile

Table 28. OD Profile — Inch



Gland Dimensions — OD Profile

Table 29. OD Profile — Inch

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
+ .000 / - .001	+ .001 / - .000	+ .008 / - .000					
0.313	0.599	0.126	0.345	0.337	0.329	111	0401OD14300313-126A
0.375	0.661	0.126	0.407	0.399	0.391	112	0401OD14300375-126A
+ .000 / - .002	+ .002 / - .000	+ .008 / - .000					
0.438	0.724	0.126	0.470	0.462	0.454	113	0401OD14300438-126A
0.500	0.786	0.126	0.532	0.524	0.516	114	0401OD14300500-126A
0.563	0.849	0.126	0.595	0.587	0.579	115	0401OD14300563-126A
0.625	0.911	0.126	0.657	0.649	0.641	116	0401OD14300625-126A
0.688	0.974	0.126	0.720	0.712	0.704	117	0401OD14300688-126A
+ .000 / - .002	+ .002 / - .000	+ .008 / - .000					
0.750	1.170	0.165	0.782	0.774	0.768	213	0401OD21000750-165A
0.813	1.233	0.165	0.845	0.837	0.831	214	0401OD21000813-165A
0.875	1.295	0.165	0.907	0.899	0.893	215	0401OD21000875-165A
0.938	1.358	0.165	0.970	0.962	0.956	216	0401OD21000938-165A

Table 29. OD Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
1.000	1.420	0.165	1.032	1.024	1.018	217	0401OD21001000-165A
1.063	1.483	0.165	1.095	1.087	1.081	218	0401OD21001063-165A
1.125	1.545	0.165	1.157	1.149	1.143	219	0401OD21001125-165A
1.188	1.608	0.165	1.220	1.212	1.206	220	0401OD21001188-165A
1.250	1.670	0.165	1.282	1.274	1.268	221	0401OD21001250-165A
1.313	1.733	0.165	1.345	1.337	1.331	222	0401OD21001313-165A
1.375	1.795	0.165	1.407	1.399	1.393	222	0401OD21001375-165A
1.438	1.858	0.165	1.470	1.462	1.456	223	0401OD21001438-165A
+0.000 / -.002	+0.002/-.000	+0.008/-.000					
1.500	2.094	0.248	1.540	1.528	1.520	327	0401OD29701500-248A
1.563	2.157	0.248	1.603	1.591	1.583	327	0401OD29701563-248A
1.625	2.219	0.248	1.665	1.653	1.645	328	0401OD29701625-248A
1.688	2.282	0.248	1.728	1.716	1.708	328	0401OD29701688-248A
1.750	2.344	0.248	1.790	1.778	1.770	329	0401OD29701750-248A
1.813	2.407	0.248	1.853	1.841	1.833	329	0401OD29701813-248A
1.875	2.469	0.248	1.915	1.903	1.895	330	0401OD29701875-248A
1.938	2.532	0.248	1.978	1.966	1.958	330	0401OD29701938-248A
+0.000 / -.003	+0.003/-.000	+0.008/-.000					
2.000	2.594	0.248	2.040	2.028	2.020	331	0401OD29702000-248A
2.125	2.719	0.248	2.165	2.153	2.145	332	0401OD29702125-248A
2.250	2.844	0.248	2.290	2.278	2.270	333	0401OD29702250-248A
2.375	2.969	0.248	2.415	2.403	2.395	334	0401OD29702375-248A
2.500	3.094	0.248	2.540	2.528	2.520	335	0401OD29702500-248A
2.625	3.219	0.248	2.665	2.653	2.645	336	0401OD29702625-248A
2.750	3.344	0.248	2.790	2.778	2.770	337	0401OD29702750-248A
2.875	3.469	0.248	2.915	2.903	2.895	338	0401OD29702875-248A
3.000	3.594	0.248	3.040	3.028	3.020	339	0401OD29703000-248A
3.125	3.719	0.248	3.165	3.153	3.145	340	0401OD29703125-248A
3.250	3.844	0.248	3.290	3.278	3.270	341	0401OD29703250-248A
3.375	3.969	0.248	3.415	3.403	3.395	342	0401OD29703375-248A
3.500	4.094	0.248	3.540	3.528	3.520	343	0401OD29703500-248A
3.625	4.219	0.248	3.665	3.653	3.645	344	0401OD29703625-248A
3.750	4.344	0.248	3.790	3.778	3.770	345	0401OD29703750-248A
3.875	4.469	0.248	3.915	3.903	3.895	346	0401OD29703875-248A
4.000	4.594	0.248	4.040	4.028	4.020	347	0401OD29704000-248A
4.125	4.719	0.248	4.165	4.153	4.145	348	0401OD29704125-248A
4.250	4.844	0.248	4.290	4.278	4.270	349	0401OD29704250-248A
4.375	4.969	0.248	4.415	4.403	4.395	350	0401OD29704375-248A
4.500	5.094	0.248	4.540	4.528	4.520	351	0401OD29704500-248A
4.625	5.219	0.248	4.665	4.653	4.645	352	0401OD29704625-248A
+0.000 / -.004	+0.004/-.000	+0.008/-.000					
4.750	5.344	0.248	4.790	4.778	4.770	353	0401OD29704750-248A
4.875	5.469	0.248	4.915	4.903	4.895	354	0401OD29704875-248A

OD Profile**Table 29. OD Gland Dimensions — Inch (cont'd)**

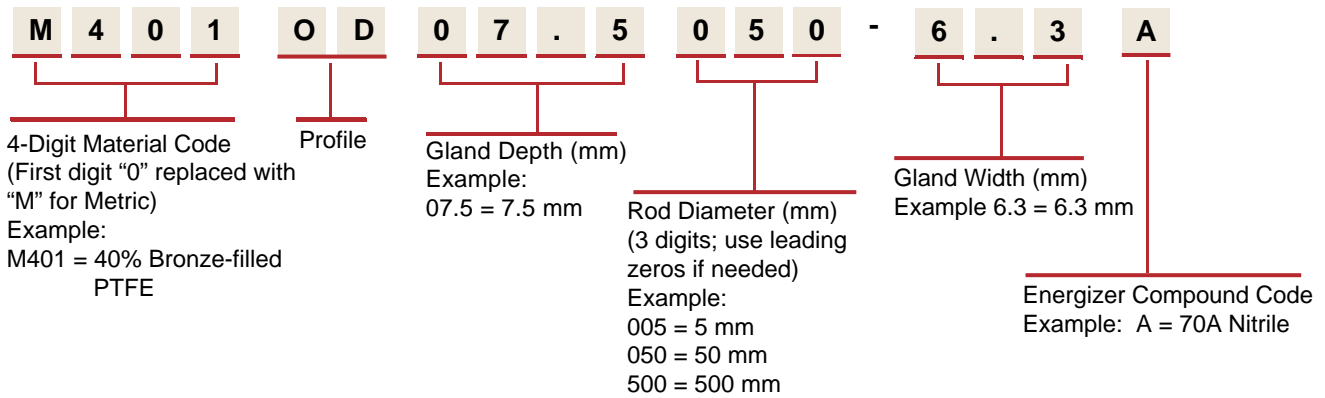
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
5.000	5.594	0.248	5.040	5.028	5.020	355	0401OD29705000-248A
5.125	5.719	0.248	5.165	5.153	5.145	356	0401OD29705125-248A
5.250	5.844	0.248	5.290	5.278	5.270	357	0401OD29705250-248A
5.375	5.969	0.248	5.415	5.403	5.395	358	0401OD29705375-248A
5.500	6.094	0.248	5.540	5.528	5.520	359	0401OD29705500-248A
5.625	6.219	0.248	5.665	5.653	5.645	360	0401OD29705625-248A
5.750	6.344	0.248	5.790	5.778	5.770	361	0401OD29705750-248A
6.000	6.594	0.248	6.040	6.028	6.020	362	0401OD29706000-248A
6.250	6.844	0.248	6.290	6.278	6.270	363	0401OD29706250-248A
6.500	7.094	0.248	6.540	6.528	6.520	364	0401OD29706500-248A
6.750	7.344	0.248	6.790	6.778	6.770	365	0401OD29706750-248A
7.000	7.594	0.248	7.040	7.028	7.020	366	0401OD29707000-248A
+0.000 / -.005	+0.005/-.000	+0.008/-.000					
7.250	7.844	0.248	7.290	7.278	7.270	367	0401OD29707250-248A
7.500	8.094	0.248	7.540	7.528	7.520	368	0401OD29707500-248A
7.750	8.344	0.248	7.790	7.778	7.770	369	0401OD29707750-248A
+0.000 / -.005	+0.005/-.000	+0.008/-.000					
8.000	8.806	0.319	8.048	8.034	8.024	445	0401OD40308000-319A
8.250	9.056	0.319	8.298	8.284	8.274	446	0401OD40308250-319A
8.500	9.306	0.319	8.548	8.534	8.524	446	0401OD40308500-319A
8.750	9.556	0.319	8.798	8.784	8.774	447	0401OD40308750-319A
9.000	9.806	0.319	9.048	9.034	9.024	447	0401OD40309000-319A
9.250	10.056	0.319	9.298	9.284	9.274	448	0401OD40309250-319A
9.500	10.306	0.319	9.548	9.534	9.524	448	0401OD40309500-319A
9.750	10.556	0.319	9.798	9.784	9.774	449	0401OD40309750-319A
+0.000 / -.005	+0.005/-.000	+0.008/-.000					
10.000	10.944	0.319	10.048	10.034	10.024	450	0401OD47210000-319A
10.500	11.444	0.319	10.548	10.534	10.524	451	0401OD47210500-319A
11.000	11.944	0.319	11.048	11.034	11.024	452	0401OD47211000-319A
11.500	12.444	0.319	11.548	11.534	11.524	453	0401OD47211500-319A
12.000	12.944	0.319	12.048	12.034	12.024	454	0401OD47212000-319A
+0.000 / -.006	+0.006/-.000	+0.008/-.000					
12.500	13.444	0.319	12.548	12.534	12.524	454	0401OD47212500-319A
13.000	13.944	0.319	13.048	13.034	13.024	455	0401OD47213000-319A
13.500	14.444	0.319	13.548	13.534	13.524	456	0401OD47213500-319A
14.000	14.944	0.319	14.048	14.034	14.024	457	0401OD47214000-319A
14.500	15.444	0.319	14.548	14.534	14.524	458	0401OD47214500-319A
15.000	15.944	0.319	15.048	15.034	15.024	459	0401OD47215000-319A
15.500	16.444	0.319	15.548	15.534	15.524	460	0401OD47215500-319A
16.000	16.944	0.319	16.048	16.034	16.024	461	0401OD47216000-319A
16.500	17.444	0.319	16.548	16.534	16.524	462	0401OD47216500-319A
17.000	17.944	0.319	17.048	17.034	17.024	463	0401OD47217000-319A
17.500	18.444	0.319	17.548	17.534	17.524	464	0401OD47217500-319A

Table 29. OD Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
18.000	18.944	0.319	18.048	18.034	18.024	465	0401OD47218000-319A
18.500	19.444	0.319	18.548	18.534	18.524	466	0401OD47218500-319A
19.000	19.944	0.319	19.048	19.034	19.024	467	0401OD47219000-319A
19.500	20.444	0.319	19.548	19.534	19.524	468	0401OD47219500-319A
+0.000 / -0.007	+0.007/-0.000	+0.008/-0.000					
20.000	20.944	0.319	20.048	20.034	20.024	469	0401OD47220000-319A

Part Number Nomenclature — OD Profile

Table 30. OD Profile — Metric



Gland Dimensions — OD Profile

Table 31. OD Profile — Metric

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			100 bar (1500 psi)	200 bar (3000 psi)	345 bar (5800 psi)		
+0.00/-0.04	+0.04/-0.00	+0.20/-0.00					
8.00	15.20	3.20	8.80	8.50	8.30	111	M401OD03.6008-3.2A
10.00	17.20	3.20	10.80	10.50	10.30	112	M401OD03.6010-3.2A
12.00	19.20	3.20	12.80	12.50	12.30	113	M401OD03.6012-3.2A
14.00	21.20	3.20	14.80	14.50	14.30	114	M401OD03.6014-3.2A
15.00	22.20	3.20	15.80	15.50	15.30	115	M401OD03.6015-3.2A
16.00	23.20	3.20	16.80	16.50	16.30	116	M401OD03.6016-3.2A
18.00	25.20	3.20	18.80	18.50	18.30	117	M401OD03.6018-3.2A
+0.00/-0.05	+0.05/-0.00	+0.20/-0.00					
20.00	30.60	4.20	20.80	20.50	20.40	213	M401OD05.3020-4.2A
22.00	32.60	4.20	22.80	22.50	22.40	215	M401OD05.3022-4.2A
25.00	35.60	4.20	25.80	25.50	25.40	217	M401OD05.3025-4.2A

OD Profile**Table 31. OD Gland Dimensions — Metric (cont'd)**

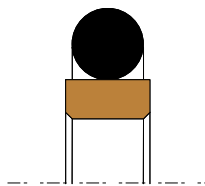
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			100 bar (1500 psi)	200 bar (3000 psi)	345 bar (5800 psi)		
28.00	38.60	4.20	28.80	28.50	28.40	219	M401OD05.3028-4.2A
30.00	40.60	4.20	30.80	30.50	30.40	220	M401OD05.3030-4.2A
+0.00/-0.06	+0.06/-0.00	+0.20/-0.00					
32.00	42.60	4.20	32.80	32.50	32.40	221	M401OD05.3032-4.2A
35.00	45.60	4.20	35.80	35.50	35.40	222	M401OD05.3035-4.2A
36.00	46.60	4.20	36.80	36.50	36.40	223	M401OD05.3036-4.2A
+0.00/-0.06	+0.06/-0.00	+0.20/-0.00					
40.00	55.00	6.30	41.00	40.60	40.40	327	M401OD07.5040-6.3A
42.00	57.00	6.30	43.00	42.60	42.40	328	M401OD07.5042-6.3A
45.00	60.00	6.30	46.00	45.60	45.40	329	M401OD07.5045-6.3A
48.00	63.00	6.30	49.00	48.60	48.40	330	M401OD07.5048-6.3A
50.00	65.00	6.30	51.00	50.60	50.40	331	M401OD07.5050-6.3A
+0.00 / -0.07	+0.07/-0.00	+0.20/-0.00					
52.00	67.00	6.30	53.00	52.60	52.40	331	M401OD07.5052-6.3A
55.00	70.00	6.30	56.00	55.60	55.40	332	M401OD07.5055-6.3A
56.00	71.00	6.30	57.00	56.60	56.40	333	M401OD07.5056-6.3A
60.00	75.00	6.30	61.00	60.60	60.40	334	M401OD07.5060-6.3A
63.00	78.00	6.30	64.00	63.60	63.40	335	M401OD07.5063-6.3A
65.00	80.00	6.30	66.00	65.60	65.40	335	M401OD07.5065-6.3A
70.00	85.00	6.30	71.00	70.60	70.40	337	M401OD07.5070-6.3A
75.00	90.00	6.30	76.00	75.60	75.40	339	M401OD07.5075-6.3A
80.00	95.00	6.30	81.00	80.60	80.40	340	M401OD07.5080-6.3A
+0.00/-0.09	+0.09/-0.00	+0.20/-0.00					
85.00	100.00	6.30	86.00	85.60	85.40	342	M401OD07.5085-6.3A
90.00	105.00	6.30	91.00	90.60	90.40	343	M401OD07.5090-6.3A
95.00	110.00	6.30	96.00	95.60	95.40	345	M401OD07.5095-6.3A
100.00	115.00	6.30	101.00	100.60	100.40	347	M401OD07.5100-6.3A
105.00	120.00	6.30	106.00	105.60	105.40	348	M401OD07.5105-6.3A
110.00	125.00	6.30	111.00	110.60	110.40	350	M401OD07.5110-6.3A
115.00	130.00	6.30	116.00	115.60	115.40	351	M401OD07.5115-6.3A
120.00	135.00	6.30	121.00	120.60	120.40	353	M401OD07.5120-6.3A
+0.00/-0.10	+0.10/-0.00	+0.20/-0.00					
125.00	140.00	6.30	126.00	125.60	125.40	354	M401OD07.5125-6.3A
130.00	145.00	6.30	131.00	130.60	130.40	356	M401OD07.5130-6.3A
135.00	150.00	6.30	136.00	135.60	135.40	358	M401OD07.5135-6.3A
140.00	155.00	6.30	141.00	140.60	140.40	359	M401OD07.5140-6.3A
150.00	165.00	6.30	151.00	150.60	150.40	362	M401OD07.5150-6.3A
160.00	175.00	6.30	161.00	160.60	160.40	363	M401OD07.5160-6.3A
170.00	185.00	6.30	171.00	170.60	170.40	365	M401OD07.5170-6.3A
180.00	195.00	6.30	181.00	180.60	180.40	366	M401OD07.5180-6.3A
190.00	205.00	6.30	191.00	190.60	190.40	368	M401OD07.5190-6.3A

Table 31. OD Gland Dimensions — Metric (cont'd)

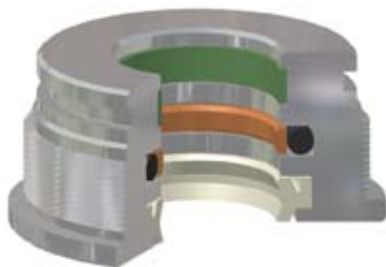
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	OD Part Number
			100 bar (1500 psi)	200 bar (3000 psi)	345 bar (5800 psi)		
+0.00/-0.12	+0.12/-0.00	+0.20/-0.00					
200.00	220.60	8.10	201.20	200.70	200.50	446	M401OD10.3200-8.1A
210.00	230.60	8.10	211.20	210.70	210.5	446	M401OD10.3210-8.1A
220.00	240.60	8.10	221.20	220.70	220.50	447	M401OD10.3220-8.1A
230.00	250.60	8.10	231.20	230.70	230.50	448	M401OD10.3230-8.1A
240.00	260.60	8.10	241.20	240.70	240.50	449	M401OD10.3240-8.1A
250.00	270.60	8.10	251.20	250.70	250.50	450	M401OD10.3250-8.1A
+0.00/-0.13	+0.13/-0.00	+0.20/-0.00					
260.00	280.60	8.10	261.20	260.70	260.50	450	M401OD10.3260-8.1A
270.00	294.20	8.10	271.20	270.70	270.50	452	M401OD12.1270-8.1A
280.00	304.20	8.10	281.20	280.70	280.50	453	M401OD12.1280-8.1A
290.00	314.20	8.10	291.20	290.70	290.50	454	M401OD12.1290-8.1A
300.00	324.20	8.10	301.20	300.70	300.50	455	M401OD12.1300-8.1A
+0.00/-0.14	+0.14/-0.00	+0.20/-0.00					
320.00	344.20	8.10	321.20	320.70	320.50	458	M401OD12.1320-8.1A
350.00	374.20	8.10	351.20	350.70	350.50	458	M401OD12.1350-8.1A
360.00	384.20	8.10	361.20	360.70	360.50	462	M401OD12.1360-8.1A
400.00	424.20	8.10	401.20	400.70	400.50	367	M401OD12.1400-8.1A
+0.00/-0.15	+0.15/-0.00	+0.20/-0.00					
420.00	444.20	8.10	421.20	420.70	420.50	463	M401OD12.1420-8.1A
450.00	474.20	8.10	451.20	450.70	450.50	466	M401OD12.1450-8.1A
460.00	484.20	8.10	461.20	460.70	460.50	468	M401OD12.1460-8.1A
480.00	504.20	8.10	481.20	480.70	480.50	469	M401OD12.1480-8.1A
500.00	524.20	8.10	501.20	500.70	500.5	469	M401OD12.1500-8.1A



ON Profile



ON Cross Section



ON installed in Rod Gland

ON Profile, Linear Rod Seal

The Parker ON profile is a bi-directional rod seal for use in low to medium duty hydraulic actuators. The ON profile is a simple two piece design comprised of a standard size Parker O-ring energizing a wear resistant PTFE cap. The ON profile offers long wear and low friction, and because of its short assembly length, requires minimal space in the rod housing. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's ON profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (345 bar) without wear rings
1,000 - 3,000 psi (103 - 206 bar) with wear rings

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

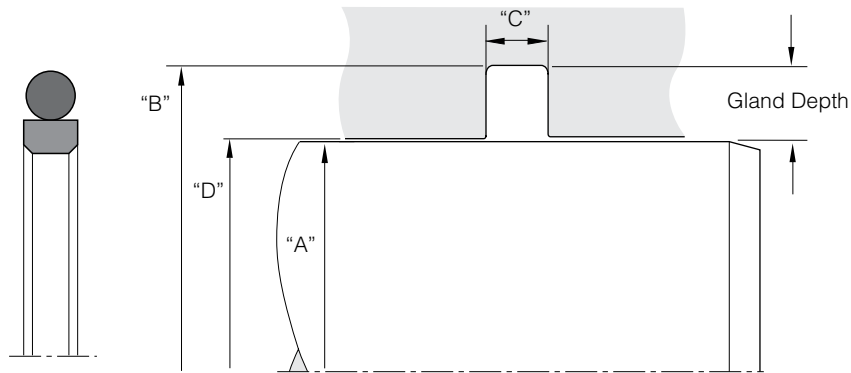
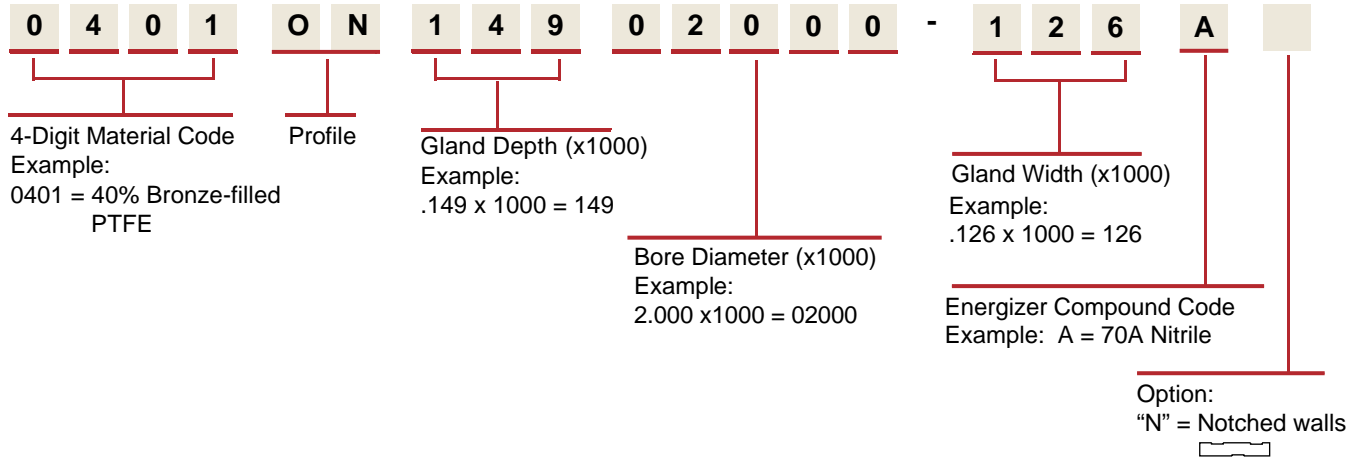
Options

Notched side walls: Notches can be added to the side walls of the PTFE cap. This can help to optimize the seal's response to fluid pressure. Notched side walls help ensure that fluid pressure fills the cavity between the side face of the seal and the side face of the seal gland. Consult EPS Division for the availability and cost to add side notches to the ON profile.

N = Notched walls 

Part Number Nomenclature — ON Profile

Table 32. ON Profile — Inch



Gland Dimensions — ON Profile

Table 33. ON Profile — Inch

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	ON Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
+0.000/-0.001	+0.001/-0.000	+0.005/-0.000					
0.500	0.674	0.081	0.520	0.515	0.512	015	0401ON08700500-081A
0.562	0.736	0.081	0.582	0.577	0.574	016	0401ON08700562-081A
0.625	0.799	0.081	0.645	0.640	0.637	017	0401ON08700625-081A
0.687	0.861	0.081	0.707	0.702	0.699	018	0401ON08700687-081A
0.750	0.924	0.081	0.770	0.765	0.762	019	0401ON08700750-081A
0.812	0.986	0.081	0.832	0.827	0.824	020	0401ON08700812-081A
0.875	1.049	0.081	0.895	0.890	0.887	021	0401ON08700875-081A
0.937	1.111	0.081	0.957	0.952	0.949	022	0401ON08700937-081A
1.000	1.174	0.081	1.020	1.015	1.012	023	0401ON08701000-081A
1.062	1.236	0.081	1.082	1.077	1.074	024	0401ON08701062-081A
1.125	1.299	0.081	1.145	1.140	1.137	025	0401ON08701125-081A
1.187	1.361	0.081	1.207	1.202	1.199	026	0401ON08701187-081A
1.250	1.424	0.081	1.270	1.265	1.262	027	0401ON08701250-081A

ON Profile**Table 33. ON Gland Dimensions — Inch (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	ON Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
1.312	1.486	0.081	1.332	1.327	1.324	028	0401ON08701312-081A
1.375	1.549	0.081	1.395	1.390	1.387	028	0401ON08701375-081A
1.437	1.611	0.081	1.457	1.452	1.449	029	0401ON08701437-081A
1.500	1.674	0.081	1.520	1.515	1.512	030	0401ON08701500-081A
+0.000/-0.002	+0.002/-0.000	+0.005/-0.000					
0.750	1.048	0.126	0.780	0.775	0.766	118	0401ON14900750-126A
0.812	1.110	0.126	0.842	0.837	0.828	119	0401ON14900812-126A
0.875	1.173	0.126	0.905	0.900	0.891	120	0401ON14900875-126A
0.937	1.235	0.126	0.967	0.962	0.953	121	0401ON14900937-126A
1.000	1.298	0.126	1.030	1.025	1.016	122	0401ON14901000-126A
1.062	1.360	0.126	1.092	1.087	1.078	123	0401ON14901062-126A
1.125	1.423	0.126	1.155	1.150	1.141	124	0401ON14901125-126A
1.187	1.485	0.126	1.217	1.212	1.203	125	0401ON14901187-126A
1.250	1.548	0.126	1.280	1.275	1.266	126	0401ON14901250-126A
1.312	1.610	0.126	1.342	1.337	1.328	127	0401ON14901312-126A
1.375	1.673	0.126	1.405	1.400	1.391	128	0401ON14901375-126A
1.437	1.735	0.126	1.467	1.462	1.453	129	0401ON14901437-126A
1.500	1.798	0.126	1.530	1.525	1.516	130	0401ON14901500-126A
1.562	1.860	0.126	1.592	1.587	1.578	131	0401ON14901562-126A
1.625	1.923	0.126	1.655	1.650	1.641	132	0401ON14901625-126A
1.687	1.985	0.126	1.717	1.712	1.703	133	0401ON14901687-126A
1.750	2.048	0.126	1.780	1.775	1.766	134	0401ON14901750-126A
1.875	2.173	0.126	1.905	1.900	1.891	136	0401ON14901875-126A
2.000	2.298	0.126	2.030	2.025	2.016	138	0401ON14902000-126A
2.125	2.423	0.126	2.155	2.150	2.141	140	0401ON14902125-126A
2.250	2.548	0.126	2.280	2.275	2.266	142	0401ON14902250-126A
2.375	2.673	0.126	2.405	2.400	2.391	144	0401ON14902375-126A
2.500	2.798	0.126	2.530	2.525	2.516	146	0401ON14902500-126A
2.625	2.923	0.126	2.655	2.650	2.641	148	0401ON14902625-126A
2.750	3.048	0.126	2.780	2.775	2.766	150	0401ON14902750-126A
+0.000/-0.003	+0.003/-0.000	+0.005/-0.000					
1.562	1.986	0.166	1.597	1.592	1.578	224	0401ON21201562-166A
1.625	2.049	0.166	1.660	1.655	1.641	225	0401ON21201625-166A
1.687	2.111	0.166	1.722	1.717	1.703	225	0401ON21201687-166A
1.750	2.174	0.166	1.785	1.780	1.766	225	0401ON21201750-166A
1.875	2.299	0.166	1.910	1.905	1.891	226	0401ON21201875-166A
2.000	2.424	0.166	2.035	2.030	2.016	228	0401ON21202000-166A
2.125	2.549	0.166	2.160	2.155	2.141	228	0401ON21202125-166A
2.250	2.674	0.166	2.285	2.280	2.266	229	0401ON21202250-166A
2.375	2.799	0.166	2.410	2.405	2.391	230	0401ON21202375-166A
2.500	2.924	0.166	2.535	2.530	2.516	231	0401ON21202500-166A
2.625	3.049	0.166	2.660	2.655	2.641	232	0401ON21202625-166A

Table 33. ON Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	ON Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
2.750	3.174	0.166	2.785	2.780	2.766	233	0401ON21202750-166A
2.875	3.299	0.166	2.910	2.905	2.891	234	0401ON21202875-166A
3.000	3.424	0.166	3.035	3.030	3.016	235	0401ON21203000-166A
3.125	3.549	0.166	3.160	3.155	3.141	236	0401ON21203125-166A
3.250	3.674	0.166	3.285	3.280	3.266	237	0401ON21203250-166A
3.375	3.799	0.166	3.410	3.405	3.391	238	0401ON21203375-166A
3.500	3.924	0.166	3.535	3.530	3.516	239	0401ON21203500-166A
3.625	4.049	0.166	3.660	3.655	3.641	240	0401ON21203625-166A
3.750	4.174	0.166	3.785	3.780	3.766	241	0401ON21203750-166A
3.875	4.299	0.166	3.910	3.905	3.891	242	0401ON21203875-166A
4.000	4.424	0.166	4.035	4.030	4.016	243	0401ON21204000-166A
4.125	4.549	0.166	4.160	4.155	4.141	244	0401ON21204125-166A
4.250	4.674	0.166	4.285	4.280	4.266	245	0401ON21204250-166A
4.375	4.799	0.166	4.410	4.405	4.391	246	0401ON21204375-166A
4.500	4.924	0.166	4.535	4.530	4.516	247	0401ON21204500-166A
4.625	5.049	0.166	4.660	4.655	4.641	248	0401ON21204625-166A
4.750	5.174	0.166	4.785	4.780	4.766	249	0401ON21204750-166A
4.875	5.299	0.166	4.910	4.905	4.891	250	0401ON21204875-166A
5.000	5.424	0.166	5.035	5.030	5.016	251	0401ON21205000-166A
5.125	5.549	0.166	5.160	5.155	5.141	252	0401ON21205125-166A
5.250	5.674	0.166	5.285	5.280	5.266	253	0401ON21205250-166A
5.375	5.799	0.166	5.410	5.405	5.391	254	0401ON21205375-166A
5.500	5.924	0.166	5.535	5.530	5.516	255	0401ON21205500-166A
+0.000/-0.004	+0.004/-0.000	+0.005/-0.000					
3.000	3.616	0.247	3.045	3.035	3.020	339	0401ON30803000-247A
3.125	3.741	0.247	3.170	3.160	3.145	340	0401ON30803125-247A
3.250	3.866	0.247	3.295	3.285	3.270	341	0401ON30803250-247A
3.375	3.991	0.247	3.420	3.410	3.395	342	0401ON30803375-247A
3.500	4.116	0.247	3.545	3.535	3.520	343	0401ON30803500-247A
3.625	4.241	0.247	3.670	3.660	3.645	344	0401ON30803625-247A
3.750	4.366	0.247	3.795	3.785	3.770	345	0401ON30803750-247A
3.875	4.491	0.247	3.920	3.910	3.895	346	0401ON30803875-247A
4.000	4.616	0.247	4.045	4.035	4.020	347	0401ON30804000-247A
4.125	4.741	0.247	4.170	4.160	4.145	348	0401ON30804125-247A
4.250	4.866	0.247	4.295	4.285	4.270	349	0401ON30804250-247A
4.375	4.991	0.247	4.420	4.410	4.395	350	0401ON30804375-247A
4.500	5.116	0.247	4.545	4.535	4.520	351	0401ON30804500-247A
4.625	5.241	0.247	4.670	4.660	4.645	352	0401ON30804625-247A
4.750	5.366	0.247	4.795	4.785	4.770	353	0401ON30804750-247A
4.875	5.491	0.247	4.920	4.910	4.895	354	0401ON30804875-247A
5.000	5.616	0.247	5.045	5.035	5.020	355	0401ON30805000-247A
5.125	5.741	0.247	5.170	5.160	5.145	356	0401ON30805125-247A

ON Profile**Table 33. ON Gland Dimensions — Inch (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	ON Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
5.250	5.866	0.247	5.295	5.285	5.270	357	0401ON30805250-247A
5.375	5.991	0.247	5.420	5.410	5.395	358	0401ON30805375-247A
5.500	6.116	0.247	5.545	5.535	5.520	359	0401ON30805500-247A
5.625	6.241	0.247	5.670	5.660	5.645	360	0401ON30805625-247A
5.750	6.366	0.247	5.795	5.785	5.770	361	0401ON30805750-247A
5.875	6.491	0.247	5.920	5.910	5.895	361	0401ON30805875-247A
6.000	6.616	0.247	6.045	6.035	6.020	362	0401ON30806000-247A
6.125	6.741	0.247	6.170	6.160	6.145	362	0401ON30806125-247A
6.250	6.866	0.247	6.295	6.285	6.270	363	0401ON30806250-247A
6.375	6.991	0.247	6.420	6.410	6.395	363	0401ON30806375-247A
6.500	7.116	0.247	6.545	6.535	6.520	364	0401ON30806500-247A
6.750	7.366	0.247	6.795	6.785	6.770	365	0401ON30806750-247A
7.000	7.616	0.247	7.045	7.035	7.020	366	0401ON30807000-247A
7.250	7.866	0.247	7.295	7.285	7.270	367	0401ON30807250-247A
7.500	8.116	0.247	7.545	7.535	7.520	368	0401ON30807500-247A
7.750	8.366	0.247	7.795	7.785	7.770	369	0401ON30807750-247A
+0.000/-0.005	+0.005/-0.000	+0.005/-0.000					
8.000	8.616	0.247	8.045	8.035	8.020	370	0401ON30808000-247A
8.250	8.866	0.247	8.295	8.285	8.270	371	0401ON30808250-247A
8.500	9.116	0.247	8.545	8.535	8.520	372	0401ON30808500-247A
9.000	9.616	0.247	9.045	9.035	9.020	373	0401ON30809000-247A
9.500	10.116	0.247	9.545	9.535	9.520	375	0401ON30809500-247A
10.000	10.616	0.247	10.045	10.035	10.020	377	0401ON30810000-247A
10.500	11.116	0.247	10.545	10.535	10.520	378	0401ON30810500-247A
11.000	11.616	0.247	11.045	11.035	11.020	379	0401ON30811000-247A
11.500	12.116	0.247	11.545	11.535	11.520	380	0401ON30811500-247A
12.000	12.616	0.247	12.045	12.035	12.020	381	0401ON30812000-247A
+0.000/-0.005	+0.005/-0.000	+0.005/-0.000					
5.375	6.205	0.320	5.425	5.415	5.399	435	0401ON41505375-320A
5.500	6.330	0.320	5.550	5.540	5.524	436	0401ON41505500-320A
5.625	6.455	0.320	5.675	5.665	5.649	437	0401ON41505625-320A
5.750	6.580	0.320	5.800	5.790	5.774	437	0401ON41505750-320A
5.875	6.705	0.320	5.925	5.915	5.899	438	0401ON41505875-320A
6.000	6.830	0.320	6.050	6.040	6.024	438	0401ON41506000-320A
6.125	6.955	0.320	6.175	6.165	6.149	439	0401ON41506125-320A
6.250	7.080	0.320	6.300	6.290	6.274	439	0401ON41506250-320A
6.375	7.205	0.320	6.425	6.415	6.399	440	0401ON41506375-320A
6.500	7.330	0.320	6.550	6.540	6.524	440	0401ON41506500-320A
6.750	7.580	0.320	6.800	6.790	6.774	441	0401ON41506750-320A
7.000	7.830	0.320	7.050	7.040	7.024	442	0401ON41507000-320A
7.250	8.080	0.320	7.300	7.290	7.274	443	0401ON41507250-320A
7.500	8.330	0.320	7.550	7.540	7.524	444	0401ON41507500-320A

Table 33. ON Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat			O-ring Dash Number	ON Part Number
			1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)		
7.750	8.580	0.320	7.800	7.790	7.774	445	0401ON41507750-320A
+0.000/-0.006	+0.006/-0.000	+0.005/-0.000					
8.000	8.830	0.320	8.050	8.040	8.024	445	0401ON41508000-320A
8.250	9.080	0.320	8.300	8.290	8.274	446	0401ON41508250-320A
8.500	9.330	0.320	8.550	8.540	8.524	446	0401ON41508500-320A
9.000	9.830	0.320	9.050	9.040	9.024	447	0401ON41509000-320A
9.500	10.330	0.320	9.550	9.540	9.524	448	0401ON41509500-320A
10.000	10.830	0.320	10.050	10.040	10.024	449	0401ON41510000-320A
10.500	11.330	0.320	10.550	10.540	10.524	450	0401ON41510500-320A
11.000	11.830	0.320	11.050	11.040	11.024	451	0401ON41511000-320A
11.500	12.330	0.320	11.550	11.540	11.524	452	0401ON41511500-320A
12.000	12.830	0.320	12.050	12.040	12.024	453	0401ON41512000-320A
12.500	13.330	0.320	12.550	12.540	12.524	454	0401ON41512500-320A
13.000	13.830	0.320	13.050	13.040	13.024	455	0401ON41513000-320A
+0.000/-0.007	+0.007/-0.000	+0.005/-0.000					
13.500	14.330	0.320	13.550	13.540	13.524	456	0401ON41513500-320A
14.000	14.830	0.320	14.050	14.040	14.024	457	0401ON41514000-320A
14.500	15.330	0.320	14.550	14.540	14.524	458	0401ON41514500-320A
15.000	15.830	0.320	15.050	15.040	15.024	459	0401ON41515000-320A
15.500	16.330	0.320	15.550	15.540	15.524	460	0401ON41515500-320A
16.000	16.830	0.320	16.050	16.040	16.024	461	0401ON41516000-320A



CR Profile

CR Profile, Linear Rod Seal

The Parker CR profiles are cap seals with anti-extrusion, low friction and low wear features. The seal is a bi-directional rod seal for use in low to medium duty applications. The CR profiles will fit into a standard O-ring groove with a standard size Parker O-ring without modification. There are three CR sizes that correspond with the back up rings that are used with standard O-rings. The CR profiles are designed as two back up rings connected by a wear resistant, low friction PTFE cap seal. The CR profile offers long wear, low friction and anti-extrusion, and because of its short assembly length, requires minimal space in the rod housing. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's CR profiles are designed to retrofit non-Parker seals of similar design.

- CR0 fits a standard O-ring groove
- CR1 fits an O-ring groove designed for one back up ring
- CR2 fits an O-ring groove designed for two back up rings

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (345 bar)

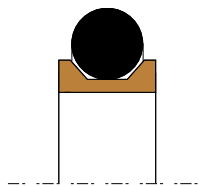
Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 16 fps (5 m/s)

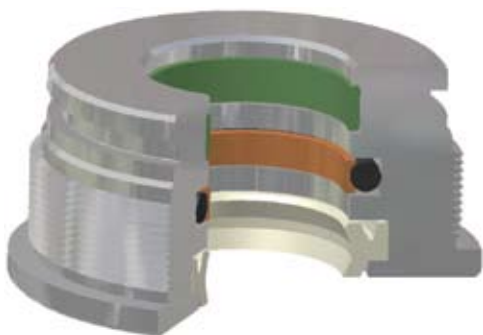
Options

Notched side walls: Notches can be added to the side walls of the PTFE cap. This can help to optimize the seal's response to fluid pressure. Notched side walls help ensure that fluid pressure fills the cavity between the side face of the seal and the side face of the seal gland. Consult EPS Division for the availability and cost to add side notches to the CR profile.

N = Notched walls 



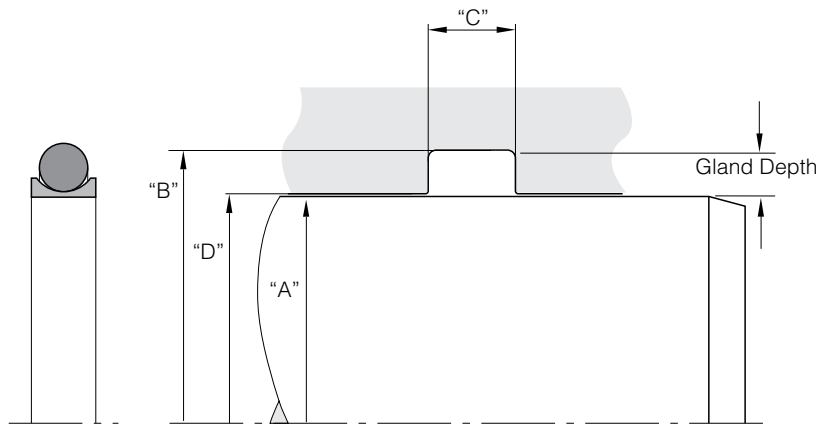
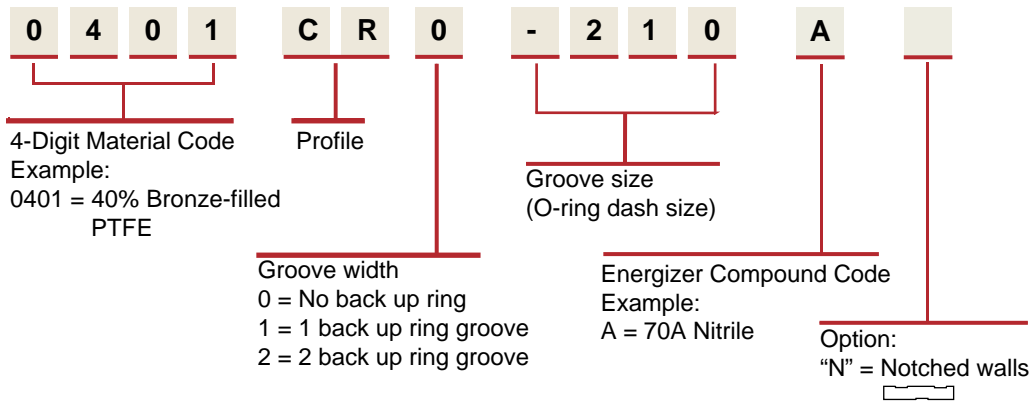
CR Cross Section



CR installed in Rod Gland

Part Number Nomenclature —CR Profile

Table 34. CR Profile — Inch



Gland Dimensions — CR Profile

Table 35. CR Profile — Inch

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
+0.000/-0.002	+0.002/-0.000	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000			
0.125	0.235	0.093	0.138	0.205	0.129	006	0401CR X-006A
0.156	0.266	0.093	0.138	0.205	0.160	007	0401CR X-007A
0.187	0.297	0.093	0.138	0.205	0.191	008	0401CR X-008A
0.219	0.329	0.093	0.138	0.205	0.223	009	0401CR X-009A
0.250	0.360	0.093	0.138	0.205	0.254	010	0401CR X-010A
0.312	0.422	0.093	0.138	0.205	0.316	011	0401CR X-011A
0.375	0.485	0.093	0.138	0.205	0.379	012	0401CR X-012A
0.437	0.547	0.093	0.138	0.205	0.442	013	0401CR X-013A
0.500	0.610	0.093	0.138	0.205	0.505	014	0401CR X-014A
0.562	0.672	0.093	0.138	0.205	0.567	015	0401CR X-015A
0.625	0.735	0.093	0.138	0.205	0.630	016	0401CR X-016A
0.687	0.797	0.093	0.138	0.205	0.692	017	0401CR X-017A
0.750	0.860	0.093	0.138	0.205	0.755	018	0401CR X-018A
0.812	0.922	0.093	0.138	0.205	0.817	019	0401CR X-019A
0.875	0.985	0.093	0.138	0.205	0.880	020	0401CR X-020A
0.937	1.047	0.093	0.138	0.205	0.942	021	0401CR X-021A

CR Profile**Table 35. CR Gland Dimensions — Inch (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
1.000	1.110	0.093	0.138	0.205	1.005	022	0401CR X-022A
1.062	1.172	0.093	0.138	0.205	1.067	023	0401CR X-023A
1.125	1.235	0.093	0.138	0.205	1.130	024	0401CR X-024A
1.187	1.297	0.093	0.138	0.205	1.192	025	0401CR X-025A
1.250	1.360	0.093	0.138	0.205	1.255	026	0401CR X-026A
1.312	1.422	0.093	0.138	0.205	1.317	027	0401CR X-027A
1.375	1.485	0.093	0.138	0.205	1.380	028	0401CR X-028A
+0.000/-0.002	+0.002/-0.000	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000			
0.125	0.301	0.140	0.171	0.238	0.130	104	0401CR X-104A
0.156	0.332	0.140	0.171	0.238	0.161	105	0401CR X-105A
0.187	0.363	0.140	0.171	0.238	0.192	106	0401CR X-106A
0.218	0.394	0.140	0.171	0.238	0.223	107	0401CR X-107A
0.250	0.426	0.140	0.171	0.238	0.255	108	0401CR X-108A
0.312	0.488	0.140	0.171	0.238	0.317	109	0401CR X-109A
0.375	0.551	0.140	0.171	0.238	0.380	110	0401CR X-110A
0.437	0.613	0.140	0.171	0.238	0.442	111	0401CR X-111A
0.500	0.676	0.140	0.171	0.238	0.505	112	0401CR X-112A
0.562	0.738	0.140	0.171	0.238	0.567	113	0401CR X-113A
0.625	0.801	0.140	0.171	0.238	0.630	114	0401CR X-114A
0.687	0.863	0.140	0.171	0.238	0.692	115	0401CR X-115A
0.750	0.926	0.140	0.171	0.238	0.755	116	0401CR X-116A
0.812	0.988	0.140	0.171	0.238	0.817	117	0401CR X-117A
0.875	1.051	0.140	0.171	0.238	0.880	118	0401CR X-118A
0.937	1.113	0.140	0.171	0.238	0.942	119	0401CR X-119A
1.000	1.176	0.140	0.171	0.238	1.005	120	0401CR X-120A
1.062	1.238	0.140	0.171	0.238	1.067	121	0401CR X-121A
1.125	1.301	0.140	0.171	0.238	1.130	122	0401CR X-122A
1.187	1.363	0.140	0.171	0.238	1.192	123	0401CR X-123A
1.250	1.426	0.140	0.171	0.238	1.255	124	0401CR X-124A
1.312	1.488	0.140	0.171	0.238	1.317	125	0401CR X-125A
1.375	1.551	0.140	0.171	0.238	1.380	126	0401CR X-126A
1.437	1.613	0.140	0.171	0.238	1.443	127	0401CR X-127A
1.500	1.676	0.140	0.171	0.238	1.506	128	0401CR X-128A
1.562	1.738	0.140	0.171	0.238	1.568	129	0401CR X-129A
1.625	1.801	0.140	0.171	0.238	1.631	130	0401CR X-130A
1.687	1.863	0.140	0.171	0.238	1.693	131	0401CR X-131A
1.750	1.926	0.140	0.171	0.238	1.756	132	0401CR X-132A
1.812	1.988	0.140	0.171	0.238	1.819	133	0401CR X-133A
1.875	2.051	0.140	0.171	0.238	1.882	134	0401CR X-134A
1.937	2.113	0.140	0.171	0.238	1.944	135	0401CR X-135A
2.000	2.176	0.140	0.171	0.238	2.007	136	0401CR X-136A
2.062	2.238	0.140	0.171	0.238	2.069	137	0401CR X-137A
2.125	2.301	0.140	0.171	0.238	2.132	138	0401CR X-138A

Table 35. CR Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
2.187	2.363	0.140	0.171	0.238	2.194	139	0401CR X-139A
2.250	2.426	0.140	0.171	0.238	2.257	140	0401CR X-140A
2.312	2.488	0.140	0.171	0.238	2.319	141	0401CR X-141A
2.375	2.551	0.140	0.171	0.238	2.382	142	0401CR X-142A
2.437	2.613	0.140	0.171	0.238	2.444	143	0401CR X-143A
2.500	2.676	0.140	0.171	0.238	2.507	144	0401CR X-144A
2.562	2.738	0.140	0.171	0.238	2.569	145	0401CR X-145A
2.625	2.801	0.140	0.171	0.238	2.632	146	0401CR X-146A
2.687	2.863	0.140	0.171	0.238	2.694	147	0401CR X-147A
2.750	2.926	0.140	0.171	0.238	2.757	148	0401CR X-148A
2.812	2.988	0.140	0.171	0.238	2.819	149	0401CR X-149A
2.875	3.051	0.140	0.171	0.238	2.882	150	0401CR X-150A
3.000	3.176	0.140	0.171	0.238	3.007	151	0401CR X-151A
+ .000/- .002	+ .002/- .000	+ .005/- .000	+ .005/- .000	+ .005/- .000			
0.187	0.429	0.187	0.208	0.275	0.192	201	0401CR X-201A
0.250	0.492	0.187	0.208	0.275	0.255	202	0401CR X-202A
0.312	0.554	0.187	0.208	0.275	0.317	203	0401CR X-203A
0.375	0.617	0.187	0.208	0.275	0.380	204	0401CR X-204A
0.437	0.679	0.187	0.208	0.275	0.442	205	0401CR X-205A
0.500	0.742	0.187	0.208	0.275	0.505	206	0401CR X-206A
0.562	0.804	0.187	0.208	0.275	0.567	207	0401CR X-207A
0.625	0.867	0.187	0.208	0.275	0.630	208	0401CR X-208A
0.687	0.929	0.187	0.208	0.275	0.692	209	0401CR X-209A
0.750	0.992	0.187	0.208	0.275	0.755	210	0401CR X-210A
0.812	1.054	0.187	0.208	0.275	0.817	211	0401CR X-211A
0.875	1.117	0.187	0.208	0.275	0.880	212	0401CR X-212A
0.937	1.179	0.187	0.208	0.275	0.942	213	0401CR X-213A
1.000	1.242	0.187	0.208	0.275	1.005	214	0401CR X-214A
1.062	1.304	0.187	0.208	0.275	1.067	215	0401CR X-215A
1.125	1.367	0.187	0.208	0.275	1.130	216	0401CR X-216A
1.187	1.429	0.187	0.208	0.275	1.192	217	0401CR X-217A
1.250	1.492	0.187	0.208	0.275	1.255	218	0401CR X-218A
1.312	1.554	0.187	0.208	0.275	1.317	219	0401CR X-219A
1.375	1.617	0.187	0.208	0.275	1.380	220	0401CR X-220A
1.437	1.679	0.187	0.208	0.275	1.442	221	0401CR X-221A
1.500	1.742	0.187	0.208	0.275	1.505	222	0401CR X-222A
1.625	1.867	0.187	0.208	0.275	1.632	223	0401CR X-223A
1.750	1.992	0.187	0.208	0.275	1.757	224	0401CR X-224A
1.875	2.117	0.187	0.208	0.275	1.882	225	0401CR X-225A
2.000	2.242	0.187	0.208	0.275	2.007	226	0401CR X-226A
2.125	2.367	0.187	0.208	0.275	2.132	227	0401CR X-227A
2.250	2.492	0.187	0.208	0.275	2.257	228	0401CR X-228A
2.375	2.617	0.187	0.208	0.275	2.382	229	0401CR X-229A

CR Profile**Table 35. CR Gland Dimensions — Inch (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
2.500	2.742	0.187	0.208	0.275	2.507	230	0401CR X-230A
2.625	2.867	0.187	0.208	0.275	2.632	231	0401CR X-231A
2.750	2.992	0.187	0.208	0.275	2.757	232	0401CR X-232A
2.875	3.117	0.187	0.208	0.275	2.882	233	0401CR X-233A
3.000	3.242	0.187	0.208	0.275	3.007	234	0401CR X-234A
3.125	3.367	0.187	0.208	0.275	3.132	235	0401CR X-235A
3.250	3.492	0.187	0.208	0.275	3.257	236	0401CR X-236A
3.375	3.617	0.187	0.208	0.275	3.382	237	0401CR X-237A
3.500	3.742	0.187	0.208	0.275	3.507	238	0401CR X-238A
3.625	3.867	0.187	0.208	0.275	3.632	239	0401CR X-239A
3.750	3.992	0.187	0.208	0.275	3.757	240	0401CR X-240A
3.875	4.117	0.187	0.208	0.275	3.882	241	0401CR X-241A
4.000	4.242	0.187	0.208	0.275	4.007	242	0401CR X-242A
4.125	4.367	0.187	0.208	0.275	4.132	243	0401CR X-243A
4.250	4.492	0.187	0.208	0.275	4.257	244	0401CR X-244A
4.375	4.617	0.187	0.208	0.275	4.382	245	0401CR X-245A
4.500	4.742	0.187	0.208	0.275	4.508	246	0401CR X-246A
4.625	4.867	0.187	0.208	0.275	4.633	247	0401CR X-247A
4.750	4.992	0.187	0.208	0.275	4.758	248	0401CR X-248A
4.875	5.117	0.187	0.208	0.275	4.883	249	0401CR X-249A
5.000	5.242	0.187	0.208	0.275	5.008	250	0401CR X-250A
+0.000/-.002	+0.002/-.000	+0.005/-.000	+0.005/-.000	+0.005/-.000			
0.437	0.807	0.281	0.311	0.410	0.443	309	0401CR X-309A
0.500	0.870	0.281	0.311	0.410	0.506	310	0401CR X-310A
0.562	0.932	0.281	0.311	0.410	0.568	311	0401CR X-311A
0.625	0.995	0.281	0.311	0.410	0.631	312	0401CR X-312A
0.687	1.057	0.281	0.311	0.410	0.693	313	0401CR X-313A
0.750	1.120	0.281	0.311	0.410	0.756	314	0401CR X-314A
0.812	1.182	0.281	0.311	0.410	0.818	315	0401CR X-315A
0.875	1.245	0.281	0.311	0.410	0.881	316	0401CR X-316A
0.937	1.307	0.281	0.311	0.410	0.943	317	0401CR X-317A
1.000	1.370	0.281	0.311	0.410	1.006	318	0401CR X-318A
1.062	1.432	0.281	0.311	0.410	1.068	319	0401CR X-319A
1.125	1.495	0.281	0.311	0.410	1.131	320	0401CR X-320A
1.187	1.557	0.281	0.311	0.410	1.193	321	0401CR X-321A
1.250	1.620	0.281	0.311	0.410	1.256	322	0401CR X-322A
1.312	1.682	0.281	0.311	0.410	1.318	323	0401CR X-323A
1.375	1.745	0.281	0.311	0.410	1.381	324	0401CR X-324A
+0.000/-.002	+0.004/-.000	+0.005/-.000	+0.005/-.000	+0.005/-.000			
1.500	1.870	0.281	0.311	0.410	1.507	325	0401CR X-325A
1.625	1.995	0.281	0.311	0.410	1.632	326	0401CR X-326A
1.750	2.120	0.281	0.311	0.410	1.757	327	0401CR X-327A
1.875	2.245	0.281	0.311	0.410	1.882	328	0401CR X-328A

Table 35. CR Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
2.000	2.370	0.281	0.311	0.410	2.007	329	0401CR X-329A
2.125	2.495	0.281	0.311	0.410	2.132	330	0401CR X-330A
2.250	2.620	0.281	0.311	0.410	2.257	331	0401CR X-331A
2.375	2.745	0.281	0.311	0.410	2.382	332	0401CR X-332A
2.500	2.870	0.281	0.311	0.410	2.507	333	0401CR X-333A
2.625	2.995	0.281	0.311	0.410	2.632	334	0401CR X-334A
2.750	3.120	0.281	0.311	0.410	2.757	335	0401CR X-335A
2.875	3.245	0.281	0.311	0.410	2.882	336	0401CR X-336A
3.000	3.370	0.281	0.311	0.410	3.007	337	0401CR X-337A
3.125	3.495	0.281	0.311	0.410	3.132	338	0401CR X-338A
3.250	3.620	0.281	0.311	0.410	3.257	339	0401CR X-339A
3.375	3.745	0.281	0.311	0.410	3.382	340	0401CR X-340A
3.500	3.870	0.281	0.311	0.410	3.507	341	0401CR X-341A
3.625	3.995	0.281	0.311	0.410	3.632	342	0401CR X-342A
3.750	4.120	0.281	0.311	0.410	3.757	343	0401CR X-343A
3.875	4.245	0.281	0.311	0.410	3.882	344	0401CR X-344A
4.000	4.370	0.281	0.311	0.410	4.007	345	0401CR X-345A
4.125	4.495	0.281	0.311	0.410	4.132	346	0401CR X-346A
4.250	4.620	0.281	0.311	0.410	4.257	347	0401CR X-347A
4.375	4.745	0.281	0.311	0.410	4.382	348	0401CR X-348A
4.500	4.870	0.281	0.311	0.410	4.507	349	0401CR X-349A
4.625	4.995	0.281	0.311	0.410	4.632	350	0401CR X-350A
4.750	5.120	0.281	0.311	0.410	4.757	351	0401CR X-351A
4.875	5.245	0.281	0.311	0.410	4.882	352	0401CR X-352A
5.000	5.370	0.281	0.311	0.410	5.007	353	0401CR X-353A
+0.000/-0.002	+0.004/-0.000	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000			
4.500	4.974	0.375	0.408	0.538	4.509	425	0401CR X-425A
4.625	5.099	0.375	0.408	0.538	4.634	426	0401CR X-426A
4.750	5.224	0.375	0.408	0.538	4.759	427	0401CR X-427A
4.875	5.349	0.375	0.408	0.538	4.884	428	0401CR X-428A
5.000	5.474	0.375	0.408	0.538	5.009	429	0401CR X-429A
5.125	5.599	0.375	0.408	0.538	5.134	430	0401CR X-430A
5.250	5.724	0.375	0.408	0.538	5.259	431	0401CR X-431A
5.375	5.849	0.375	0.408	0.538	5.384	432	0401CR X-432A
5.500	5.974	0.375	0.408	0.538	5.509	433	0401CR X-433A
5.625	6.099	0.375	0.408	0.538	5.634	434	0401CR X-434A
5.750	6.224	0.375	0.408	0.538	5.759	435	0401CR X-435A
5.875	6.349	0.375	0.408	0.538	5.884	436	0401CR X-436A
6.000	6.474	0.375	0.408	0.538	6.009	437	0401CR X-437A
6.250	6.724	0.375	0.408	0.538	6.259	438	0401CR X-438A
6.500	6.974	0.375	0.408	0.538	6.510	439	0401CR X-439A
6.750	7.224	0.375	0.408	0.538	6.760	440	0401CR X-440A
7.000	7.474	0.375	0.408	0.538	7.010	441	0401CR X-441A

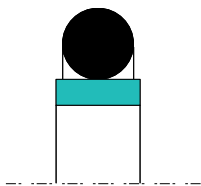
CR Profile

Table 35. CR Gland Dimensions — Inch (cont'd)

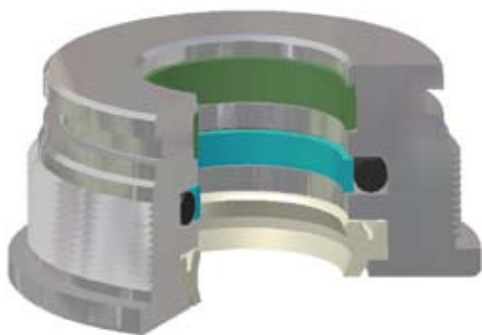
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
7.250	7.724	0.375	0.408	0.538	7.260	442	0401CR X-442A
7.500	7.974	0.375	0.408	0.538	7.510	443	0401CR X-443A
7.750	8.224	0.375	0.408	0.538	7.760	444	0401CR X-444A
8.000	8.474	0.375	0.408	0.538	8.010	445	0401CR X-445A
8.500	8.974	0.375	0.408	0.538	8.510	446	0401CR X-446A
9.000	9.474	0.375	0.408	0.538	9.010	447	0401CR X-447A
9.500	9.974	0.375	0.408	0.538	9.510	448	0401CR X-448A
10.000	10.474	0.375	0.408	0.538	10.010	449	0401CR X-449A
10.500	10.974	0.375	0.408	0.538	10.510	450	0401CR X-450A
11.000	11.474	0.375	0.408	0.538	11.010	451	0401CR X-451A
11.500	11.974	0.375	0.408	0.538	11.510	452	0401CR X-452A
12.000	12.474	0.375	0.408	0.538	12.010	453	0401CR X-453A
12.500	12.974	0.375	0.408	0.538	12.510	454	0401CR X-454A
13.000	13.474	0.375	0.408	0.538	13.010	455	0401CR X-455A
13.500	13.974	0.375	0.408	0.538	13.510	456	0401CR X-456A
14.000	14.474	0.375	0.408	0.538	14.010	457	0401CR X-457A
14.500	14.974	0.375	0.408	0.538	14.510	458	0401CR X-458A
15.000	15.474	0.375	0.408	0.538	15.010	459	0401CR X-459A
15.500	15.974	0.375	0.408	0.538	15.510	460	0401CR X-460A
16.000	16.474	0.375	0.408	0.538	16.010	461	0401CR X-461A



OC Profile



OC Cross Section



OC installed in Rod Gland

OC Profile

The Parker OC profile is a bi-directional rod seal for use in low to medium duty hydraulic actuators. The OC profile is a two piece design utilizing a rectangular PTFE cap and standard size Parker O-ring. The OC profile is an excellent choice for applications requiring a compact design. The unique properties of the modified PTFE provide added wear resistance for improved cycle life. Parker's OC profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0102	Pigment filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 1,500 psi (100 bar)
Higher pressures can be achieved using alternate PTFE compounds

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

Options

Notched: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the side face of the gland and the seal. Consult EPS Division for the availability and cost to add side notches to the OC profile.

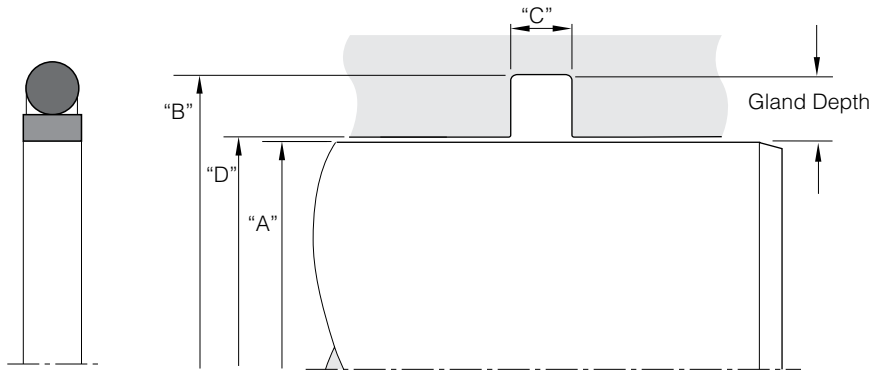
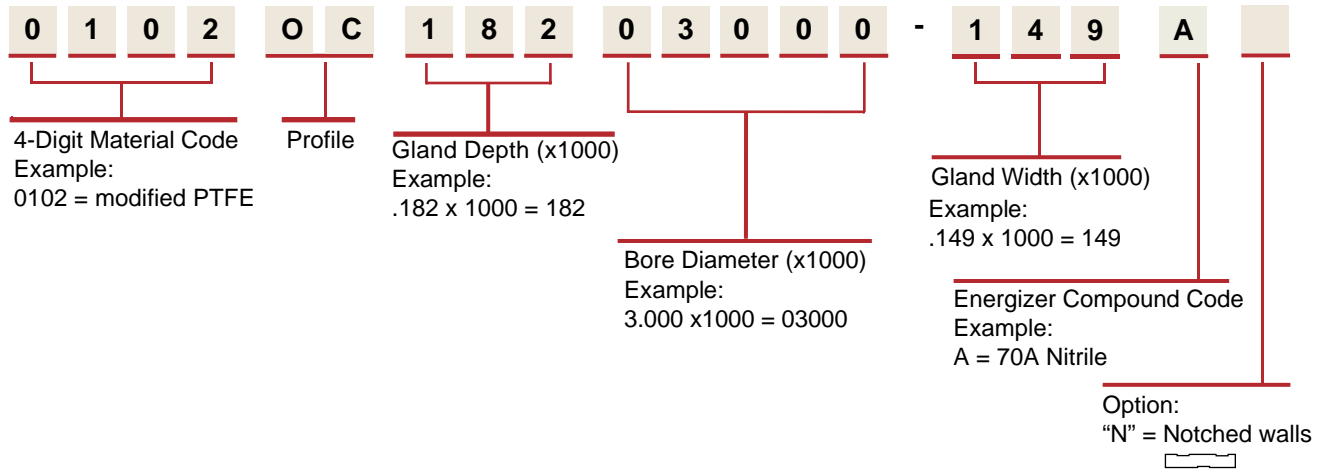
N= Notched walls



OC Profile

Part Number Nomenclature — OC Profile

Table 36. OC Profile — Inch



Gland Dimensions — OC Profile

Table 37. OC Profile — Inch

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	Maximum Diameter Throat 1500 psi (100 bar)	O-Ring Dash Number	Max Radius	OC Part Number
+ .001/- .000	+ .000/- .001	+ .005/- .000				
0.125	0.268	0.079	0.129	007	0.020	0102OC07200125-079A
0.156	0.299	0.079	0.160	008	0.020	0102OC07200156-079A
0.187	0.331	0.079	0.191	009	0.020	0102OC07200187-079A
0.219	0.362	0.079	0.223	010	0.020	0102OC07200219-079A
0.250	0.424	0.079	0.254	011	0.020	0102OC08700250-079A
0.312	0.487	0.079	0.316	012	0.020	0102OC08700312-079A
0.375	0.547	0.079	0.379	013	0.020	0102OC08700375-079A
+ .002/- .000	+ .000/- .002	+ .005/- .000				
0.437	0.610	0.079	0.442	014	0.020	0102OC08700437-079A
0.500	0.672	0.079	0.505	015	0.020	0102OC08700500-079A
0.562	0.735	0.079	0.567	016	0.020	0102OC08700562-079A
0.625	0.797	0.079	0.680	017	0.020	0102OC08700675-079A
0.687	0.860	0.079	0.692	018	0.020	0102OC08700687-079A
0.750	0.922	0.079	0.755	019	0.020	0102OC08700750-079A
0.812	0.985	0.079	0.817	020	0.020	0102OC08700812-079A

Table 37. OC Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	Maximum Diameter Throat 1500 psi (100 bar)	O-Ring Dash Number	Max Radius	OC Part Number
0.875	1.047	0.079	0.880	021	0.020	0102OC08700875-079A
0.937	1.110	0.079	0.942	022	0.020	0102OC08700937-079A
1.000	1.172	0.079	1.005	023	0.020	0102OC08701000-079A
1.062	1.235	0.079	1.067	024	0.020	0102OC08701062-079A
1.125	1.298	0.079	1.130	025	0.020	0102OC08701125-079A
1.188	1.360	0.079	1.193	026	0.020	0102OC08701188-079A
1.250	1.422	0.079	1.255	027	0.020	0102OC08701250-079A
1.312	1.485	0.079	1.317	028	0.020	0102OC08701312-079A
+0.003/-0.000	+0.000/-0.003	+0.005/-0.000				
0.375	0.611	0.112	0.380	111	0.020	0102OC11800375-112A
0.437	0.674	0.112	0.442	112	0.020	0102OC11800437-112A
0.500	0.736	0.112	0.505	113	0.020	0102OC11800500-112A
0.562	0.799	0.112	0.567	114	0.020	0102OC11800562-112A
0.625	0.862	0.112	0.630	115	0.020	0102OC11800625-112A
0.687	0.924	0.112	0.692	116	0.020	0102OC11800687-112A
0.750	0.986	0.112	0.755	117	0.020	0102OC11800750-112A
0.812	1.049	0.112	0.817	118	0.020	0102OC11800812-112A
0.875	1.111	0.112	0.880	119	0.020	0102OC11800875-112A
0.937	1.174	0.112	0.942	120	0.020	0102OC11800937-112A
1.000	1.236	0.112	1.005	121	0.020	0102OC11801000-112A
1.062	1.299	0.112	1.067	122	0.020	0102OC11801062-112A
1.125	1.362	0.112	1.130	123	0.020	0102OC11801125-112A
1.187	1.424	0.112	1.192	124	0.020	0102OC11801187-112A
1.250	1.486	0.112	1.255	125	0.020	0102OC11801250-112A
1.312	1.549	0.112	1.317	126	0.020	0102OC11801312-112A
1.375	1.611	0.112	1.380	127	0.020	0102OC11801375-112A
1.437	1.674	0.112	1.442	128	0.020	0102OC11801437-112A
1.500	1.736	0.112	1.505	129	0.020	0102OC11801500-112A
1.562	1.799	0.112	1.567	130	0.020	0102OC11801562-112A
1.625	1.862	0.112	1.630	131	0.020	0102OC11801625-112A
1.687	1.924	0.112	1.692	132	0.020	0102OC11801687-112A
1.750	1.986	0.112	1.755	133	0.020	0102OC11801750-112A
1.812	2.049	0.112	1.817	134	0.020	0102OC11801812-112A
1.875	2.111	0.112	1.880	135	0.020	0102OC11801875-112A
1.937	2.174	0.112	1.942	136	0.020	0102OC11801937-112A
2.000	2.236	0.112	2.005	137	0.020	0102OC11802000-112A
2.062	2.299	0.112	2.067	138	0.020	0102OC11802062-112A
2.125	2.362	0.112	2.130	139	0.020	0102OC11802125-112A
2.187	2.424	0.112	2.192	140	0.020	0102OC11802187-112A
2.250	2.486	0.112	2.255	141	0.020	0102OC11802250-112A
2.312	2.549	0.112	2.317	142	0.020	0102OC11802312-112A
2.375	2.611	0.112	2.380	143	0.020	0102OC11802375-112A
2.437	2.674	0.112	2.442	144	0.020	0102OC11802437-112A
2.500	2.736	0.112	2.505	145	0.020	0102OC11802500-112A

OC Profile**Table 37. OC Gland Dimensions — Inch (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	Maximum Diameter Throat 1500 psi (100 bar)	O-Ring Dash Number	Max Radius	OC Part Number
2.562	2.799	0.112	2.567	146	0.020	0102OC11802562-112A
2.625	2.862	0.112	2.630	147	0.020	0102OC11802625-112A
2.687	2.924	0.112	2.692	148	0.020	0102OC11802687-112A
2.750	2.986	0.112	2.755	149	0.020	0102OC11802750-112A
+ .004/- .000	+ .000/- .004	+ .005/- .000				
0.750	1.050	0.149	0.756	211	0.030	0102OC15000750-149A
0.812	1.113	0.149	0.818	212	0.030	0102OC15000812-149A
0.875	1.175	0.149	0.881	213	0.030	0102OC15000875-149A
0.937	1.238	0.149	0.943	214	0.030	0102OC15000937-149A
1.000	1.300	0.149	1.006	215	0.030	0102OC15001000-149A
1.062	1.363	0.149	1.068	216	0.030	0102OC15001062-149A
1.125	1.426	0.149	1.131	217	0.030	0102OC15001125-149A
1.187	1.488	0.149	1.193	218	0.030	0102OC15001187-149A
1.250	1.550	0.149	1.256	219	0.030	0102OC15001250-149A
1.312	1.613	0.149	1.318	220	0.030	0102OC15001312-149A
1.375	1.675	0.149	1.381	221	0.030	0102OC15001375-149A
1.437	1.738	0.149	1.443	222	0.030	0102OC15001437-149A
1.500	1.863	0.149	1.506	223	0.030	0102OC18201500-149A
1.625	1.988	0.149	1.631	224	0.030	0102OC18201625-149A
1.750	2.113	0.149	1.756	225	0.030	0102OC18201750-149A
1.875	2.238	0.149	1.881	226	0.030	0102OC18201875-149A
2.000	2.363	0.149	2.006	227	0.030	0102OC18202000-149A
2.125	2.488	0.149	2.131	228	0.030	0102OC18202125-149A
2.250	2.613	0.149	2.256	229	0.030	0102OC18202250-149A
2.375	2.738	0.149	2.381	230	0.030	0102OC18202375-149A
2.500	2.863	0.149	2.506	231	0.030	0102OC18202500-149A
2.625	2.988	0.149	2.631	232	0.030	0102OC18202625-149A
2.750	3.113	0.149	2.756	233	0.030	0102OC18202750-149A
2.875	3.238	0.149	2.881	234	0.030	0102OC18202875-149A
3.000	3.363	0.149	3.006	235	0.030	0102OC18203000-149A
3.125	3.488	0.149	3.131	236	0.030	0102OC18203125-149A
3.250	3.613	0.149	3.256	237	0.030	0102OC18203250-149A
3.375	3.738	0.149	3.381	238	0.030	0102OC18203375-149A
3.500	3.863	0.149	3.506	239	0.030	0102OC18203500-149A
3.625	3.988	0.149	3.631	240	0.030	0102OC18203625-149A
3.750	4.113	0.149	3.756	241	0.030	0102OC18203750-149A
3.875	4.238	0.149	3.881	242	0.030	0102OC18203875-149A
4.000	4.363	0.149	4.006	243	0.030	0102OC18204000-149A
4.125	4.488	0.149	4.131	244	0.030	0102OC18204125-149A
4.250	4.613	0.149	4.256	245	0.030	0102OC18204250-149A
4.375	4.738	0.149	4.381	246	0.030	0102OC18204375-149A
4.500	4.863	0.149	4.506	247	0.030	0102OC18204500-149A
4.625	4.988	0.149	4.631	248	0.030	0102OC18204625-149A

Table 37. OC Gland Dimensions — Inch (cont'd)

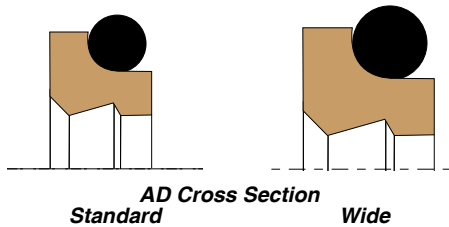
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	Maximum Diameter Throat 1500 psi (100 bar)	O-Ring Dash Number	Max Radius	OC Part Number
+0.005/-0.000	+0.000/-0.005	+0.005/-0.000				
1.500	1.991	0.221	1.507	326	0.050	0102OC24601500-221A
1.625	2.116	0.221	1.632	327	0.050	0102OC24601625-221A
1.750	2.241	0.221	1.757	328	0.050	0102OC24601750-221A
1.875	2.366	0.221	1.882	329	0.050	0102OC24601875-221A
2.000	2.491	0.221	2.007	330	0.050	0102OC24602000-221A
2.125	2.616	0.221	2.132	331	0.050	0102OC24602125-221A
2.250	2.741	0.221	2.257	332	0.050	0102OC24602250-221A
2.375	2.866	0.221	2.382	333	0.050	0102OC24602375-221A
2.500	2.991	0.221	2.507	334	0.050	0102OC24602500-221A
2.625	3.116	0.221	2.632	335	0.050	0102OC24602625-221A
2.750	3.241	0.221	2.757	336	0.050	0102OC24602750-221A
2.875	3.366	0.221	2.882	337	0.050	0102OC24602875-221A
3.000	3.491	0.221	3.007	338	0.050	0102OC24603000-221A
3.125	3.616	0.221	3.132	339	0.050	0102OC24603125-221A
3.250	3.741	0.221	3.257	340	0.050	0102OC24603250-221A
3.375	3.866	0.221	3.382	341	0.050	0102OC24603375-221A
3.500	3.991	0.221	3.507	342	0.050	0102OC24603500-221A
3.625	4.116	0.221	3.632	343	0.050	0102OC24603625-221A
3.750	4.241	0.221	3.757	344	0.050	0102OC24603750-221A
3.875	4.366	0.221	3.882	345	0.050	0102OC24603875-221A
4.000	4.491	0.221	4.007	346	0.050	0102OC24604000-221A
4.125	4.616	0.221	4.132	347	0.050	0102OC24604125-221A
4.250	4.741	0.221	4.257	348	0.050	0102OC24604250-221A
4.375	4.866	0.221	4.382	349	0.050	0102OC24604375-221A
+0.006/-0.000	+0.000/-0.006	+0.005/-0.000				
4.500	5.093	0.297	4.508	426	0.060	0102OC29704500-297A
4.625	5.218	0.297	4.633	427	0.060	0102OC29704625-297A
4.750	5.343	0.297	4.758	428	0.060	0102OC29704750-297A
4.875	5.468	0.297	4.883	429	0.060	0102OC29704875-297A
5.000	5.593	0.297	5.008	430	0.060	0102OC29705000-297A
5.125	5.718	0.297	5.133	431	0.060	0102OC29705125-297A
5.250	5.843	0.297	5.258	432	0.060	0102OC29705250-297A
5.375	5.968	0.297	5.383	433	0.060	0102OC29705375-297A
5.500	6.093	0.297	5.508	434	0.060	0102OC29705500-297A
5.625	6.218	0.297	5.633	435	0.060	0102OC29705625-297A
5.750	6.343	0.297	5.758	436	0.060	0102OC29705750-297A
5.875	6.468	0.297	5.883	437	0.060	0102OC29705875-297A
6.000	6.718	0.297	6.008	438	0.060	0102OC35906000-297A
6.250	6.968	0.297	6.258	439	0.060	0102OC35906250-297A
6.500	7.218	0.297	6.508	440	0.060	0102OC35906500-297A
6.750	7.468	0.297	6.758	441	0.060	0102OC35906750-297A
7.000	7.718	0.297	7.008	442	0.060	0102OC35907000-297A

OC Profile**Table 37. OC Gland Dimensions — Inch (cont'd)**

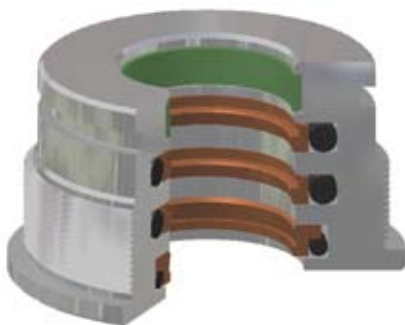
“A” Rod Diameter	“B” Groove Diameter	“C” Groove Width	Maximum Diameter Throat 1500 psi (100 bar)	O-Ring Dash Number	Max Radius	OC Part Number
7.250	7.968	0.297	7.258	443	0.060	0102OC35907250-297A
7.500	8.218	0.297	7.508	444	0.060	0102OC35907500-297A
7.750	8.468	0.297	7.758	445	0.060	0102OC35907750-297A
8.000	8.968	0.297	8.008	446	0.060	0102OC48408000-297A
8.500	9.468	0.297	8.508	447	0.060	0102OC48408500-297A
9.000	9.968	0.297	9.008	448	0.060	0102OC48409000-297A
9.500	10.468	0.297	9.508	449	0.060	0102OC48409500-297A
10.000	10.968	0.297	10.008	450	0.060	0102OC48410000-297A
10.500	11.468	0.297	10.508	451	0.060	0102OC48410500-297A
11.000	11.968	0.297	11.008	452	0.060	0102OC48411000-297A
11.500	12.468	0.297	11.508	453	0.060	0102OC48411500-297A
12.000	12.968	0.297	12.008	454	0.060	0102OC48412000-297A
12.500	13.468	0.297	12.508	455	0.060	0102OC48412500-297A
13.000	13.968	0.297	13.008	456	0.060	0102OC48413000-297A
13.500	14.468	0.297	13.508	457	0.060	0102OC48413500-297A
14.000	14.968	0.297	14.008	458	0.060	0102OC48414000-297A
14.500	15.468	0.297	14.508	459	0.060	0102OC48414500-297A
15.000	15.968	0.297	15.008	460	0.060	0102OC48415000-297A



AD Profile



AD Cross Section
Standard Wide



AD installed in Rod Gland

AD Profile, Linear Rod Wiper

The Parker AD profile is a double acting rod wiper for use in low to medium duty hydraulic actuators. On the extend stroke, it seals the fluid in the cylinder, preventing leakage. On the retract stroke, the outside profile prevents contamination from entering the system. The AD profile is a simple two piece design comprised of a standard size Parker O-ring energizing the doubling acting wiper / seal. The AD profile offers long wear and low friction. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's AD profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0401	40% bronze filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 5,000 psi (345 bar) without wear rings
1,000 to 3,000 psi (103 to 206 bar) with wear rings

Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 5 fps (1.5 m/s)

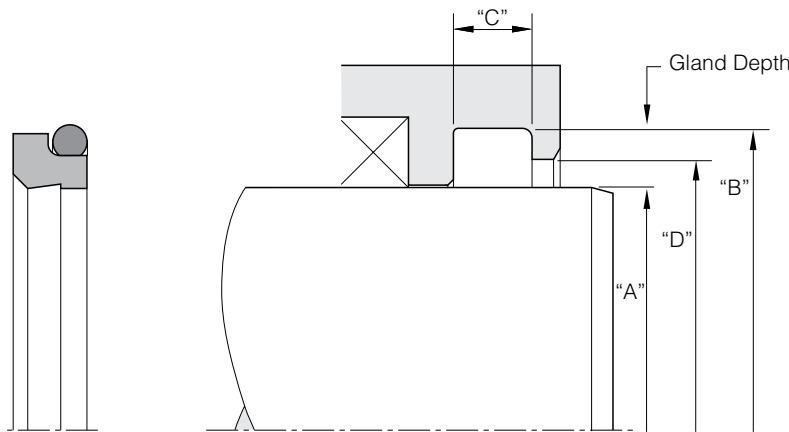
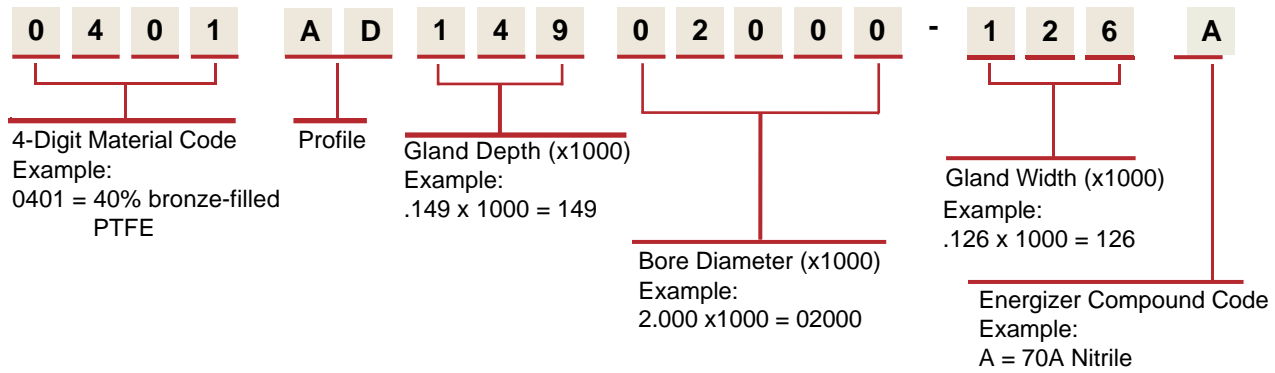
Options

Metric: For metric part numbering, see Tables 40 and 41 on Page 89.

AD Profile

Part Number Nomenclature — AD Profile

Table 38. AD Profile — Inch



Gland Dimensions — AD Profile

Table 39. AD Profile — Inch

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
+ .000 / - .002	+ .001 / - .000	+ .008 / - .000	+ .003 / - .000		
0.250	0.440	0.146	0.310	011	0401AD09500250-146A
0.313	0.503	0.146	0.373	012	0401AD09500313-146A
0.375	0.565	0.146	0.435	013	0401AD09500375-146A
+ .000 / - .002	+ .002 / - .000	+ .008 / - .000	+ .004 / - .000		
0.438	0.628	0.146	0.498	014	0401AD09500438-146A
0.500	0.690	0.146	0.560	015	0401AD09500500-146A
0.563	0.753	0.146	0.623	016	0401AD09500563-146A
0.625	0.815	0.146	0.685	017	0401AD09500625-146A
0.688	0.878	0.146	0.748	018	0401AD09500688-146A
0.750	0.940	0.146	0.810	019	0401AD09500750-146A
0.813	1.003	0.146	0.873	020	0401AD09500813-146A
0.875	1.065	0.146	0.935	021	0401AD09500875-146A
0.938	1.128	0.146	0.998	022	0401AD09500938-146A
1.000	1.190	0.146	1.060	023	0401AD09501000-146A

Table 39. AD Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
+0.000 / -.002	+0.002 / -.000	+0.008 / -.000	+0.004 / -.000		
0.500	0.770	0.196	0.560	113	0401AD13500500-196A
0.563	0.833	0.196	0.623	114	0401AD13500563-196A
0.625	0.895	0.196	0.685	115	0401AD13500625-196A
0.688	0.958	0.196	0.748	116	0401AD13500688-196A
0.750	1.020	0.196	0.810	117	0401AD13500750-196A
0.813	1.083	0.196	0.873	118	0401AD13500813-196A
0.875	1.145	0.196	0.935	119	0401AD13500875-196A
0.938	1.208	0.196	0.998	120	0401AD13500938-196A
1.000	1.270	0.196	1.060	121	0401AD13501000-196A
1.063	1.333	0.196	1.123	122	0401AD13501063-196A
1.125	1.395	0.196	1.185	123	0401AD13501125-196A
1.188	1.458	0.196	1.248	124	0401AD13501188-196A
1.250	1.520	0.196	1.310	125	0401AD13501250-196A
1.313	1.583	0.196	1.373	126	0401AD13501313-196A
1.375	1.645	0.196	1.435	127	0401AD13501375-196A
1.438	1.708	0.196	1.498	128	0401AD13501438-196A
1.500	1.770	0.196	1.560	129	0401AD13501500-196A
1.563	1.833	0.196	1.623	130	0401AD13501563-196A
1.625	1.895	0.196	1.685	131	0401AD13501625-196A
1.688	1.958	0.196	1.748	132	0401AD13501688-196A
1.750	2.020	0.196	1.810	133	0401AD13501750-196A
1.813	2.083	0.196	1.873	134	0401AD13501813-196A
1.875	2.145	0.196	1.935	135	0401AD13501875-196A
1.938	2.208	0.196	1.998	136	0401AD13501938-196A
+0.000 / -.003	+0.003 / -.000	+0.008 / -.000	+0.006 / -.000		
2.000	2.270	0.196	2.060	137	0401AD13502000-196A
2.063	2.333	0.196	2.123	138	0401AD13502063-196A
2.125	2.395	0.196	2.185	139	0401AD13502125-196A
2.188	2.458	0.196	2.248	140	0401AD13502188-196A
2.250	2.520	0.196	2.310	141	0401AD13502250-196A
2.375	2.645	0.196	2.435	143	0401AD13502375-196A
2.500	2.770	0.196	2.560	145	0401AD13502500-196A
2.625	2.895	0.196	2.685	147	0401AD13502625-196A
2.750	3.020	0.196	2.810	149	0401AD13502750-196A
2.875	3.145	0.196	2.935	151	0401AD13502875-196A
3.000	3.270	0.196	3.060	151	0401AD13503000-196A
3.125	3.395	0.196	3.185	152	0401AD13503125-196A
3.250	3.520	0.196	3.310	152	0401AD13503250-196A
3.375	3.645	0.196	3.435	153	0401AD13503375-196A
3.500	3.770	0.196	3.560	153	0401AD13503500-196A
3.625	3.895	0.196	3.685	154	0401AD13503625-196A
3.750	4.020	0.196	3.810	154	0401AD13503750-196A
3.875	4.145	0.196	3.935	155	0401AD13503875-196A

AD Profile**Table 39. AD Gland Dimensions — Inch (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
4.000	4.270	0.196	4.060	155	0401AD13504000-196A
4.125	4.395	0.196	4.185	156	0401AD13504125-196A
4.250	4.520	0.196	4.310	156	0401AD13504250-196A
4.375	4.645	0.196	4.435	157	0401AD13504375-196A
4.500	4.770	0.196	4.560	157	0401AD13504500-196A
4.625	4.895	0.196	4.685	158	0401AD13504625-196A
+ .000 / -.004	+ .004 / -.000	+ .008 / -.000	+ .008 / -.000		
4.750	5.020	0.196	4.810	158	0401AD13504750-196A
4.875	5.145	0.196	4.935	159	0401AD13504875-196A
5.000	5.270	0.196	5.060	159	0401AD13505000-196A
5.125	5.395	0.196	5.185	160	0401AD13505125-196A
5.250	5.520	0.196	5.310	160	0401AD13505250-196A
5.375	5.645	0.196	5.435	161	0401AD13505375-196A
5.500	5.770	0.196	5.560	161	0401AD13505500-196A
5.625	5.895	0.196	5.685	162	0401AD13505625-196A
5.750	6.020	0.196	5.810	162	0401AD13505750-196A
6.000	6.270	0.196	6.060	163	0401AD13506000-196A
+ .000 / -.004	+ .004 / -.000	+ .008 / -.000	+ .008 / -.000		
6.000	6.344	0.236	6.060	258	0401AD17206000-236A
6.250	6.594	0.236	6.310	259	0401AD17206250-236A
6.500	6.844	0.236	6.560	260	0401AD17206500-236A
6.750	7.094	0.236	6.810	261	0401AD17206750-236A
7.000	7.344	0.236	7.060	262	0401AD17207000-236A
+ .000 / -.005	+ .005 / -.000	+ .008 / -.000	+ .010 / -.000		
7.250	7.594	0.236	7.310	263	0401AD17207250-236A
7.500	7.844	0.236	7.560	264	0401AD17207500-236A
7.750	8.094	0.236	7.810	265	0401AD17207750-236A
8.000	8.344	0.236	8.060	266	0401AD17208000-236A
8.250	8.594	0.236	8.310	267	0401AD17208250-236A
8.500	8.844	0.236	8.560	268	0401AD17208500-236A
8.750	9.094	0.236	8.810	269	0401AD17208750-236A
9.000	9.344	0.236	9.060	270	0401AD17209000-236A
9.250	9.594	0.236	9.310	271	0401AD17209250-236A
9.500	9.844	0.236	9.560	272	0401AD17209500-236A
9.750	10.094	0.236	9.810	273	0401AD17209750-236A
10.000	10.344	0.236	10.060	274	0401AD17209875-236A
+ .000 / -.005	+ .005 / -.000	+ .008 / -.000	+ .010 / -.000		
10.000	10.480	0.332	10.080	377	0401AD24010000-332A
10.500	10.980	0.332	10.580	378	0401AD24010500-332A
11.000	11.480	0.332	11.080	379	0401AD24011000-332A
11.500	11.980	0.332	11.580	380	0401AD24011500-332A
12.000	12.480	0.332	12.080	381	0401AD24012000-332A
+ .000 / -.006	+ .006 / -.000	+ .008 / -.000	+ .012 / -.000		
12.500	12.980	0.332	12.580	381	0401AD24012500-332A

Table 39. AD Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
13.000	13.480	0.332	13.080	382	0401AD24013000-332A
13.500	13.980	0.332	13.580	382	0401AD24013500-332A
14.000	14.480	0.332	14.080	383	0401AD24014000-332A
14.500	14.980	0.332	14.580	383	0401AD24014500-332A
15.000	15.480	0.332	15.080	384	0401AD24015000-332A
15.500	15.980	0.332	15.580	384	0401AD24015500-332A
16.000	16.480	0.332	16.080	385	0401AD24016000-332A
16.500	16.980	0.332	16.580	385	0401AD24016500-332A
17.000	17.480	0.332	17.080	386	0401AD24017000-332A
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Wide)
+0.000 / -.002	+0.002 / -.000	+0.008 / -.000	+0.004 / -.000		
1.500	1.846	0.248	1.560	131	0401AD17301500-248A
1.563	1.909	0.248	1.623	132	0401AD17301563-248A
1.625	1.971	0.248	1.685	133	0401AD17301625-248A
1.688	2.034	0.248	1.748	134	0401AD17301688-248A
1.750	2.096	0.248	1.810	135	0401AD17301750-248A
1.813	2.159	0.248	1.873	136	0401AD17301813-248A
1.875	2.221	0.248	1.935	136	0401AD17301875-248A
1.938	2.284	0.248	1.998	137	0401AD17301938-248A
+0.000 / -.003	+0.003 / -.000	+0.008 / -.000	+0.006 / -.000		
2.000	2.346	0.248	2.060	138	0401AD17302000-248A
2.125	2.471	0.248	2.185	140	0401AD17302125-248A
2.250	2.596	0.248	2.310	142	0401AD17302250-248A
2.375	2.721	0.248	2.435	144	0401AD17302375-248A
2.500	2.846	0.248	2.560	146	0401AD17302500-248A
2.625	2.971	0.248	2.685	148	0401AD17302625-248A
+0.000 / -.003	+0.003 / -.000	+0.008 / -.000	+0.006 / -.000		
2.750	3.230	0.319	2.830	234	0401AD24002750-319A
2.875	3.355	0.319	2.955	235	0401AD24002875-319A
3.000	3.480	0.319	3.080	236	0401AD24003000-319A
3.125	3.605	0.319	3.205	237	0401AD24003125-319A
3.250	3.730	0.319	3.330	238	0401AD24003250-319A
3.375	3.855	0.319	3.455	239	0401AD24003375-319A
3.500	3.980	0.319	3.580	240	0401AD24003500-319A
3.625	4.105	0.319	3.705	240	0401AD24003625-319A
3.750	4.230	0.319	3.830	241	0401AD24003750-319A
3.875	4.355	0.319	3.955	242	0401AD24003875-319A
4.000	4.480	0.319	4.080	243	0401AD24004000-319A
4.125	4.605	0.319	4.205	244	0401AD24004125-319A
4.250	4.730	0.319	4.330	245	0401AD24004250-319A
4.375	4.855	0.319	4.455	246	0401AD24004375-319A
4.500	4.980	0.319	4.580	247	0401AD24004500-319A
4.625	5.105	0.319	4.705	248	0401AD24004625-319A

AD Profile**Table 39. AD Gland Dimensions — Inch (cont'd)**

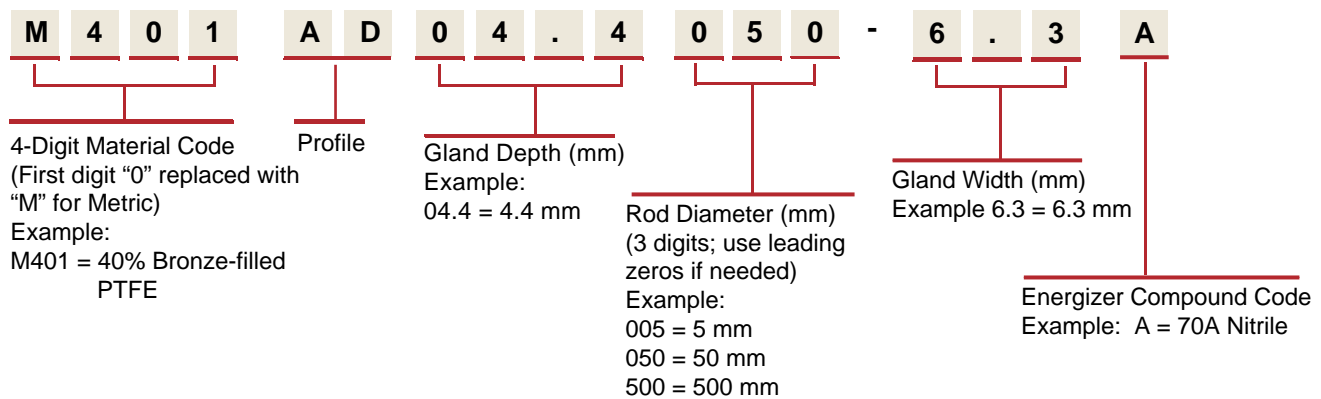
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Wide)
+ .000 / -.004	+ .004 / -.000	+ .008 / -.000	+ .008 / -.000		
4.750	5.230	0.319	4.830	249	0401AD24004750-319A
4.875	5.355	0.319	4.955	250	0401AD24004875-319A
5.000	5.480	0.319	5.080	251	0401AD24005000-319A
5.125	5.605	0.319	5.205	252	0401AD24005125-319A
5.250	5.730	0.319	5.330	253	0401AD24005250-319A
5.375	5.855	0.319	5.455	254	0401AD24005375-319A
+ .000 / -.004	+ .004 / -.000	+ .008 / -.000	+ .008 / -.000		
5.500	6.130	0.374	5.600	359	0401AD31505500-374A
5.625	6.255	0.374	5.725	360	0401AD31505625-374A
5.750	6.380	0.374	5.850	361	0401AD31505750-374A
6.000	6.630	0.374	6.100	362	0401AD31506000-374A
6.250	6.880	0.374	6.350	363	0401AD31506250-374A
6.500	7.130	0.374	6.600	364	0401AD31506500-374A
6.750	7.380	0.374	6.850	365	0401AD31506750-374A
7.000	7.630	0.374	7.100	366	0401AD31507000-374A
+ .000 / -.005	+ .005 / -.000	+ .008 / -.000	+ .008 / -.000		
7.250	7.880	0.374	7.350	367	0401AD31507250-374A
7.500	8.130	0.374	7.600	368	0401AD31507500-374A
7.750	8.380	0.374	7.850	369	0401AD31507750-374A
8.000	8.630	0.374	8.100	370	0401AD31508000-374A
8.250	8.880	0.374	8.350	371	0401AD31508250-374A
8.500	9.130	0.374	8.600	372	0401AD31508500-374A
8.750	9.380	0.374	8.850	373	0401AD31508750-374A
9.000	9.630	0.374	9.100	374	0401AD31509000-374A
9.250	9.880	0.374	9.350	375	0401AD31509250-374A
9.500	10.130	0.374	9.600	376	0401AD31509500-374A
9.750	10.380	0.374	9.850	377	0401AD31509750-374A
+ .000 / -.005	+ .005 / -.000	+ .008 / -.000	+ .010 / -.000		
10.000	10.630	0.374	10.100	377	0401AD315010000-374A
10.500	11.130	0.374	10.600	378	0401AD315010500-374A
11.000	11.630	0.374	11.100	379	0401AD315011000-374A
11.500	12.130	0.374	11.600	380	0401AD315011500-374A
12.000	12.630	0.374	12.100	381	0401AD315012000-374A
12.500	13.130	0.374	12.600	381	0401AD315012500-374A
13.000	13.630	0.374	13.100	382	0401AD315013000-374A
13.500	14.130	0.374	13.600	382	0401AD315013500-374A
14.000	14.630	0.374	14.100	383	0401AD315014000-374A
14.500	15.130	0.374	14.600	383	0401AD315014500-374A
15.000	15.630	0.374	15.100	384	0401AD315015000-374A
15.500	16.130	0.374	15.600	384	0401AD315015500-374A
+ .000 / -.006	+ .006 / -.000	+ .008 / -.000	+ .012 / -.000		
16.000	16.944	0.551	16.100	461	0401AD472016000-551A
16.500	17.444	0.551	16.600	462	0401AD472016500-551A
17.000	17.944	0.551	17.100	463	0401AD472017000-551A

Table 39. AD Gland Dimensions — Inch (cont'd)

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Wide)
17.500	18.444	0.551	17.600	464	0401AD472017500-551A
18.000	18.944	0.551	18.100	465	0401AD472018000-551A
18.500	19.444	0.551	18.600	466	0401AD472018500-551A
19.000	19.944	0.551	19.100	467	0401AD472019000-551A
19.500	20.444	0.551	19.600	468	0401AD472019500-551A
20.000	20.944	0.551	20.100	469	0401AD472020000-551A

Part Number Nomenclature — AD Profile

Table 40. AD Profile — Metric



Gland Dimensions — AD Profile

Table 41. AD Profile — Metric

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
+0.00 / -.04	+0.04 / -.00	+0.40 / -.00	+0.09 / -.00		
8.00	12.80	3.70	9.50	012	M401AD02.4008-3.7A
10.00	14.80	3.70	11.50	013	M401AD02.4010-3.7A
+0.00 / -.04	+0.04 / -.00	+0.40 / -.00	+0.11 / -.00		
12.00	18.80	5.00	13.50	113	M401AD03.4012-5A
14.00	20.80	5.00	15.50	114	M401AD03.4014-5A
15.00	21.80	5.00	16.50	115	M401AD03.4015-5A
16.00	22.80	5.00	17.50	115	M401AD03.4016-5A
18.00	24.80	5.00	19.50	117	M401AD03.4018-5A
+0.00 / -.05	+0.05 / -.00	+0.40 / -.00	+0.13 / -.00		
20.00	26.80	5.00	21.50	118	M401AD03.4020-5A
22.00	28.80	5.00	23.50	119	M401AD03.4022-5A
25.00	31.80	5.00	26.50	121	M401AD03.4025-5A
28.00	34.80	5.00	29.50	123	M401AD03.4028-5A
30.00	36.80	5.00	31.50	124	M401AD03.4030-5A

AD Profile**Table 41. AD Gland Dimensions — Metric (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
+0.00 / -.06	+0.06 / -.00	+0.40 / -.00	+0.16 / -.00		
32.00	38.80	5.00	33.50	126	M401AD03.4032-5A
35.00	41.80	5.00	36.50	127	M401AD03.4035-5A
36.00	42.80	5.00	37.50	128	M401AD03.4036-5A
40.00	46.80	5.00	41.50	131	M401AD03.4040-5A
42.00	48.80	5.00	43.50	132	M401AD03.4042-5A
45.00	51.80	5.00	46.50	134	M401AD03.4045-5A
48.00	54.80	5.00	49.50	136	M401AD03.4048-5A
50.00	56.80	5.00	51.50	137	M401AD03.4050-5A
+0.00 / -.07	+0.07 / -.00	+0.40 / -.00	+0.19 / -.00		
52.00	58.80	5.00	53.50	138	M401AD03.4052-5A
55.00	61.80	5.00	56.50	140	M401AD03.4055-5A
56.00	62.80	5.00	57.50	141	M401AD03.4056-5A
60.00	66.80	5.00	61.50	143	M401AD03.4060-5A
63.00	69.80	5.00	64.50	145	M401AD03.4063-5A
+0.00 / -.07	+0.07 / -.00	+0.40 / -.00	+0.19 / -.00		
65.00	73.80	6.00	66.50	231	M401AD04.4065-6A
70.00	78.80	6.00	71.50	233	M401AD04.4070-6A
75.00	83.80	6.00	76.50	234	M401AD04.4075-6A
80.00	88.80	6.00	81.50	236	M401AD04.4080-6A
+0.00 / -.09	+0.09 / -.00	+0.40 / -.00	+0.22 / -.00		
85.00	93.80	6.00	86.50	238	M401AD04.4085-6A
90.00	98.80	6.00	91.50	239	M401AD04.4090-6A
95.00	103.80	6.00	96.50	241	M401AD04.4095-6A
100.00	108.80	6.00	101.50	242	M401AD04.4100-6A
105.00	113.80	6.00	106.50	244	M401AD04.4105-6A
110.00	118.80	6.00	111.50	245	M401AD04.4110-6A
115.00	123.80	6.00	116.50	247	M401AD04.4115-6A
120.00	128.80	6.00	121.50	248	M401AD04.4120-6A
+0.00 / -.10	+0.10 / -.00	+0.40 / -.00	+0.25 / -.00		
125.00	133.80	6.00	126.50	250	M401AD04.4125-6A
130.00	138.80	6.00	131.50	252	M401AD04.4130-6A
135.00	143.80	6.00	136.50	253	M401AD04.4135-6A
140.00	148.80	6.00	141.50	255	M401AD04.4140-6A
150.00	158.80	6.00	151.50	258	M401AD04.4150-6A
160.00	168.80	6.00	161.50	259	M401AD04.4160-6A
170.00	178.80	6.00	171.50	261	M401AD04.4170-6A
180.00	188.80	6.00	181.50	263	M401AD04.4180-6A
+0.00 / -.12	+0.12 / -.00	+0.40 / -.00	+0.29 / -.00		
190.00	198.80	6.00	191.50	264	M401AD04.4190-6A
200.00	208.80	6.00	201.50	266	M401AD04.4200-6A
210.00	218.80	6.00	211.50	267	M401AD04.4210-6A
220.00	228.80	6.00	221.50	269	M401AD04.4220-6A
230.00	238.80	6.00	231.50	270	M401AD04.4230-6A
240.00	248.80	6.00	241.50	272	M401AD04.4240-6A

Table 41. AD Gland Dimensions — Metric (cont'd)

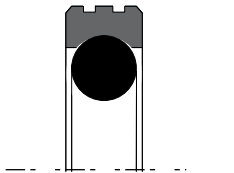
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Standard)
250.00	258.80	6.00	251.50	274	M401AD04.4250-6A
+0.00 / -.13	+ .13 / -.00	+ .40 / -.00	+ .32 / -.00		
260.00	272.20	8.40	262.00	377	M401AD06.1260-8.4A
270.00	282.20	8.40	272.00	378	M401AD06.1270-8.4A
280.00	292.20	8.40	282.00	379	M401AD06.1280-8.4A
290.00	302.20	8.40	292.00	380	M401AD06.1290-8.4A
300.00	312.20	8.40	302.00	381	M401AD06.1300-8.4A
+0.00 / -.14	+ .14 / -.00	+ .40 / -.00	+ .36 / -.00		
320.00	332.20	8.40	322.00	382	M401AD06.1320-8.4A
350.00	362.20	8.40	352.00	383	M401AD06.1350-8.4A
360.00	372.20	8.40	362.00	383	M401AD06.1360-8.4A
400.00	412.20	8.40	402.00	385	M401AD06.1400-8.4A
420.00	432.20	8.40	422.00	385	M401AD06.1420-8.4A
+0.00 / -.16	+ .16 / -.00	+ .40 / -.00	+ .40 / -.00		
450.00	466.00	11.00	452.00	464	M401AD08.0450-11A
480.00	496.00	11.00	482.00	467	M401AD08.0480-11A
500.00	516.00	11.00	502.00	468	M401AD08.0500-11A
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Wide)
+0.00 / -.06	+ .06 / -.00	+ .40 / -.00	+ .16 / -.00		
30.00	37.60	4.20	31.50	125	M401AD03.8030-4.2A
32.00	39.60	4.20	33.50	126	M401AD03.8032-4.2A
35.00	42.60	4.20	36.50	128	M401AD03.8035-4.2A
36.00	43.60	4.20	37.50	128	M401AD03.8036-4.2A
40.00	48.80	6.30	41.50	132	M401AD04.4040-6.3A
42.00	50.80	6.30	43.50	133	M401AD04.4042-6.3A
45.00	53.80	6.30	46.50	135	M401AD04.4045-6.3A
48.00	56.80	6.30	49.50	137	M401AD04.4048-6.3A
50.00	58.80	6.30	51.50	138	M401AD04.4050-6.3A
+0.00 / -.07	+ .07 / -.00	+ .40 / -.00	+ .19 / -.00		
52.00	60.80	6.30	53.50	139	M401AD04.4052-6.3A
55.00	63.80	6.30	56.50	141	M401AD04.4055-6.3A
56.00	64.80	6.30	57.50	142	M401AD04.4056-6.3A
60.00	68.80	6.30	61.50	144	M401AD04.4060-6.3A
63.00	71.80	6.30	64.50	146	M401AD04.4063-6.3A
65.00	73.80	6.30	66.50	147	M401AD04.4065-6.3A
+0.00 / -.09	+ .09 / -.00	+ .40 / -.00	+ .22 / -.00		
70.00	82.20	6.30	72.00	234	M401AD06.1070-6.3A
75.00	87.20	6.30	77.00	235	M401AD06.1075-6.3A
80.00	92.20	6.30	82.00	237	M401AD06.1080-6.3A
85.00	97.20	6.30	87.00	238	M401AD06.1085-6.3A
90.00	102.20	6.30	92.00	240	M401AD06.1090-6.3A
95.00	107.20	6.30	97.00	241	M401AD06.1095-6.3A
100.00	112.20	6.30	102.00	243	M401AD06.1100-6.3A

AD Profile**Table 41. AD Gland Dimensions — Metric (cont'd)**

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Relief Diameter	O-Ring Dash Number	AD Part Number (Wide)
105.00	117.20	6.30	107.00	244	M401AD06.1105-6.3A
110.00	122.20	6.30	112.00	246	M401AD06.1110-6.3A
115.00	127.20	6.30	117.00	248	M401AD06.1115-6.3A
120.00	132.20	6.30	122.00	249	M401AD06.1120-6.3A
+ .00 / - .10	+ .10 / - .00	+ .40 / - .00	+ .25 / - .00		
125.00	137.20	6.30	127.00	251	M401AD06.1125-6.3A
130.00	142.20	6.30	132.00	252	M401AD06.1130-6.3A
135.00	147.20	6.30	137.00	254	M401AD06.1135-6.3A
+ .00 / - .10	+ .10 / - .00	+ .40 / - .00	+ .25 / - .00		
140.00	156.00	9.50	142.50	359	M401AD08.0140-9.5A
150.00	166.00	9.50	152.50	361	M401AD08.0150-9.5A
160.00	176.00	9.50	162.50	363	M401AD08.0160-9.5A
170.00	186.00	9.50	172.50	364	M401AD08.0170-9.5A
180.00	196.00	9.50	182.50	366	M401AD08.0180-9.5A
+ .00 / - .12	+ .12 / - .00	+ .40 / - .00	+ .29 / - .00		
190.00	206.00	9.50	192.50	367	M401AD08.0190-9.5A
200.00	216.00	9.50	202.50	369	M401AD08.0200-9.5A
210.00	226.00	9.50	212.50	371	M401AD08.0210-9.5A
220.00	236.00	9.50	222.50	372	M401AD08.0220-9.5A
230.00	246.00	9.50	232.50	374	M401AD08.0230-9.5A
240.00	256.00	9.50	242.50	375	M401AD08.0240-9.5A
250.00	266.00	9.50	252.50	377	M401AD08.0250-9.5A
+ .00 / - .13	+ .13 / - .00	+ .40 / - .00	+ .32 / - .00		
260.00	276.00	9.50	262.50	378	M401AD08.0260-9.5A
280.00	296.00	9.50	282.50	379	M401AD08.0280-9.5A
300.00	316.00	9.50	302.50	381	M401AD08.0300-9.5A
320.00	336.00	9.50	322.50	381	M401AD08.0320-9.5A
350.00	366.00	9.50	352.50	383	M401AD08.0350-9.5A
360.00	376.00	9.50	362.50	383	M401AD08.0360-9.5A
+ .00 / - .16	+ .16 / - .00	+ .40 / - .00	+ .40 / - .00		
400.00	424.00	14.00	402.50	461	M401AD12.0400-14A
500.00	524.00	14.00	502.50	469	M401AD12.0500-14A
600.00	624.00	14.00	602.50	473	M401AD12.0600-14A



OQ Profile



OQ Cross Section



OQ installed in Rotary Gland

OQ Profile, Rotary Bore Seal

The Parker OQ profile is a bi-directional piston seal for use in low to medium duty rotary or oscillating applications. The OQ profile is a simple two piece design comprised of a standard size Parker O-ring energizing a wear resistant PTFE cap. The OQ profile offers long wear, low friction and no slipstick. The PTFE inner diameter is designed with a special interference with the O-ring to eliminate spinning between the O-ring and seal. Special grooves are designed into the PTFE outer diameter to provide lubrication and create a labyrinth effect for reduced leakage. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's OQ profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0204	5% Fiberglass, 5% Molybdenum Disulfide filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 4,500 psi (300 bar)

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 6.5 fps (2.0 m/s)

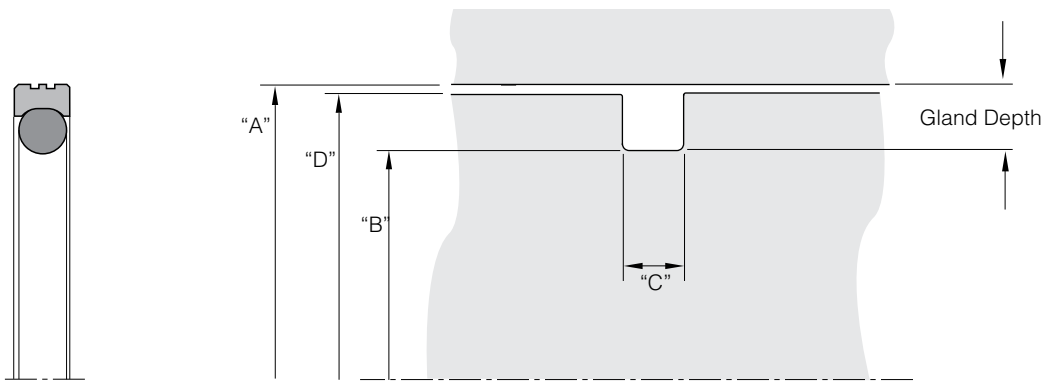
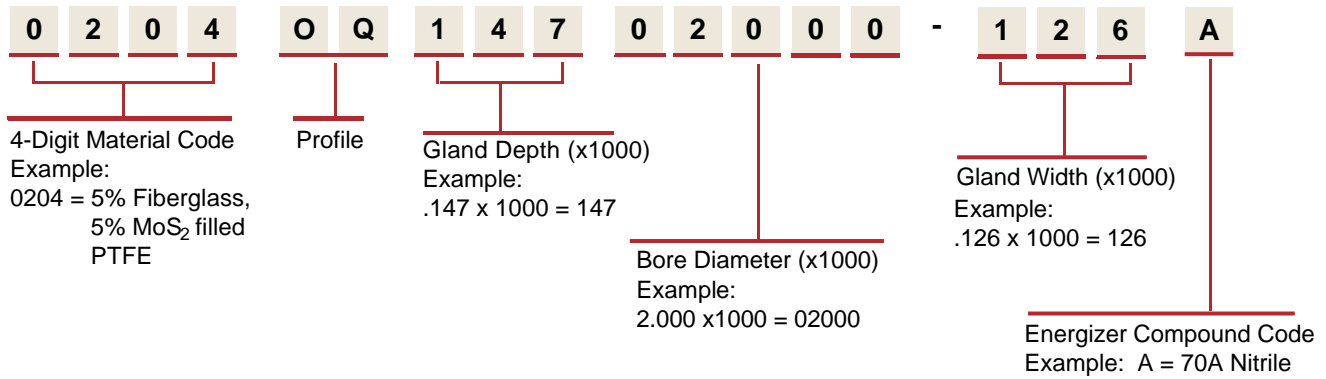
Options

Metric: For metric part numbering, see Tables 44 and 45 on Page 97.

OQ Profile

Part Number Nomenclature — OQ Profile

Table 42. OQ Profile — Inch



Gland Dimensions — OQ Profile

Table 43. OQ Profile — Inch

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Piston		O-ring Dash Number	OQ Part Number
			1000 psi (70 bar)	3000 psi (200 bar)		
+0.001/-0.000	+0.000/-0.001	+0.008/-0.000				
0.375	0.182	0.087	0.355	0.361	008	0204OQ09700375-087A
+0.002/-0.000	+0.000/-0.002	+0.008/-0.000				
0.438	0.245	0.087	0.418	0.424	010	0204OQ09700438-087A
0.500	0.307	0.087	0.480	0.486	011	0204OQ09700500-087A
0.563	0.370	0.087	0.543	0.549	012	0204OQ09700563-087A
0.625	0.432	0.087	0.605	0.611	013	0204OQ09700625-087A
0.688	0.495	0.087	0.668	0.674	014	0204OQ09700688-087A
0.750	0.557	0.087	0.730	0.736	015	0204OQ09700750-087A
0.813	0.620	0.087	0.793	0.799	016	0204OQ09700813-087A
0.875	0.682	0.087	0.855	0.861	017	0204OQ09700875-087A
0.938	0.745	0.087	0.918	0.924	018	0204OQ09700938-087A
1.000	0.807	0.087	0.980	0.986	019	0204OQ09701000-087A
1.125	0.932	0.087	1.105	1.111	021	0204OQ09701125-087A
1.250	1.057	0.087	1.230	1.236	023	0204OQ09701250-087A
1.375	1.182	0.087	1.355	1.361	025	0204OQ09701375-087A

Table 43. OQ Gland Dimensions — Inch (cont'd)

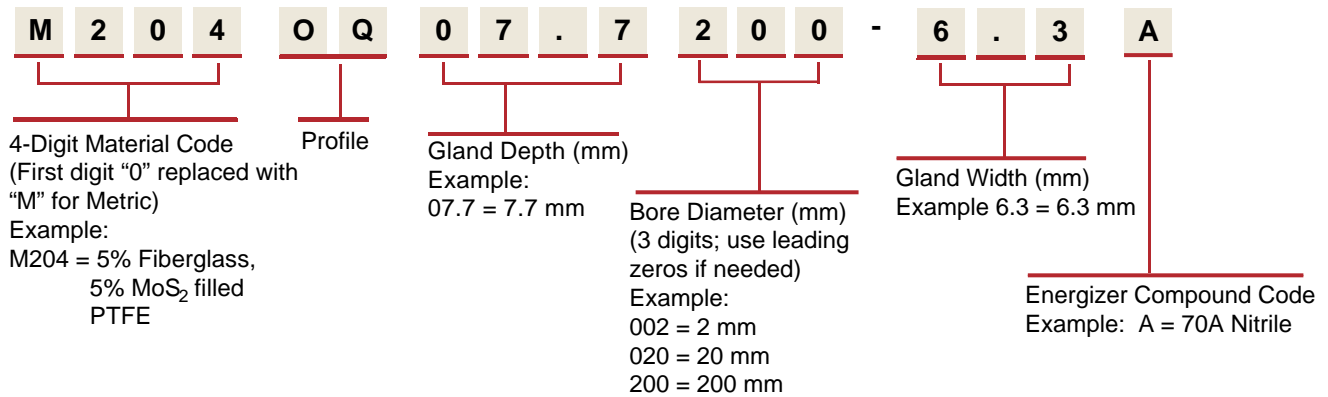
			"D" Maximum Diameter Piston			
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1000 psi (70 bar)	3000 psi (200 bar)	O-ring Dash Number	OQ Part Number
+0.002/-0.000	+0.000/-0.002	+0.008/-0.000				
1.500	1.205	0.126	1.470	1.480	123	0204OQ14801500-126A
1.625	1.330	0.126	1.595	1.605	125	0204OQ14801625-126A
1.750	1.455	0.126	1.720	1.730	127	0204OQ14801750-126A
1.875	1.580	0.126	1.845	1.855	129	0204OQ14801875-126A
+0.003/-0.000	+0.000/-0.003	+0.008/-0.000				
2.000	1.705	0.126	1.970	1.980	131	0204OQ14802000-126A
2.125	1.830	0.126	2.095	2.105	133	0204OQ14802125-126A
2.250	1.955	0.126	2.220	2.230	135	0204OQ14802250-126A
2.375	2.080	0.126	2.345	2.355	137	0204OQ14802375-126A
2.500	2.205	0.126	2.470	2.480	139	0204OQ14802500-126A
2.625	2.330	0.126	2.595	2.605	141	0204OQ14802625-126A
2.750	2.455	0.126	2.720	2.730	143	0204OQ14802750-126A
2.875	2.580	0.126	2.845	2.855	145	0204OQ14802875-126A
+0.003/-0.000	+0.000/-0.003	+0.008/-0.000				
3.000	2.567	0.165	2.960	2.970	230	0204OQ21703000-165A
3.125	2.692	0.165	3.085	3.095	231	0204OQ21703125-165A
3.250	2.817	0.165	3.210	3.220	232	0204OQ21703250-165A
3.375	2.942	0.165	3.335	3.345	233	0204OQ21703375-165A
3.500	3.067	0.165	3.460	3.470	234	0204OQ21703500-165A
3.625	3.192	0.165	3.585	3.595	235	0204OQ21703625-165A
3.750	3.317	0.165	3.710	3.720	236	0204OQ21703750-165A
3.875	3.442	0.165	3.835	3.845	237	0204OQ21703875-165A
4.000	3.567	0.165	3.960	3.970	238	0204OQ21704000-165A
4.125	3.692	0.165	4.085	4.095	239	0204OQ21704125-165A
4.250	3.817	0.165	4.210	4.220	240	0204OQ21704250-165A
4.375	3.942	0.165	4.335	4.345	241	0204OQ21704375-165A
4.500	4.067	0.165	4.460	4.470	242	0204OQ21704500-165A
4.625	4.192	0.165	4.585	4.595	243	0204OQ21704625-165A
+0.004/-0.000	+0.000/-0.004	+0.008/-0.000				
4.750	4.317	0.165	4.710	4.720	244	0204OQ21704750-165A
4.875	4.442	0.165	4.835	4.845	245	0204OQ21704875-165A
5.000	4.567	0.165	4.960	4.970	246	0204OQ21705000-165A
5.125	4.692	0.165	5.085	5.095	247	0204OQ21705125-165A
5.250	4.817	0.165	5.210	5.220	248	0204OQ21705250-165A
5.375	4.942	0.165	5.335	5.345	249	0204OQ21705375-165A
5.500	5.067	0.165	5.460	5.470	250	0204OQ21705500-165A
5.625	5.192	0.165	5.585	5.595	251	0204OQ21705625-165A
5.750	5.317	0.165	5.710	5.720	252	0204OQ21705750-165A
5.875	5.442	0.165	5.835	5.845	253	0204OQ21705875-165A
+0.004/-0.000	+0.000/-0.004	+0.008/-0.000				
6.000	5.390	0.248	5.955	5.965	355	0204OQ30506000-248A
6.250	5.640	0.248	6.205	6.215	357	0204OQ30506250-248A

OQ Profile**Table 43. OQ Gland Dimensions — Inch (cont'd)**

			“D” Maximum Diameter Piston			
“A” Bore Diameter	“B” Groove Diameter	“C” Groove Width	1000 psi (70 bar)	3000 psi (200 bar)	O-ring Dash Number	OQ Part Number
6.500	5.890	0.248	6.455	6.465	359	0204OQ30506500-248A
6.750	6.140	0.248	6.705	6.715	361	0204OQ30506750-248A
7.000	6.390	0.248	6.955	6.965	362	0204OQ30507000-248A
+0.005/-0.000	+0.000/-0.005	+0.008/-0.000				
7.250	6.640	0.248	7.205	7.215	363	0204OQ30507250-248A
7.500	6.890	0.248	7.455	7.465	364	0204OQ30507500-248A
7.750	7.140	0.248	7.705	7.715	365	0204OQ30507750-248A
8.000	7.390	0.248	7.955	7.965	366	0204OQ30508000-248A
8.250	7.640	0.248	8.205	8.215	367	0204OQ30508250-248A
8.500	7.890	0.248	8.455	8.465	368	0204OQ30508500-248A
8.750	8.140	0.248	8.705	8.715	369	0204OQ30508750-248A
9.000	8.390	0.248	8.955	8.965	370	0204OQ30509000-248A
9.250	8.640	0.248	9.205	9.215	371	0204OQ30509250-248A
9.500	8.890	0.248	9.455	9.465	372	0204OQ30509500-248A
9.750	9.140	0.248	9.705	9.715	373	0204OQ30509750-248A
10.000	9.390	0.248	9.955	9.965	374	0204OQ30510000-248A
10.500	9.890	0.248	10.455	10.465	376	0204OQ30510500-248A
11.000	10.390	0.248	10.955	10.965	377	0204OQ30511000-248A
11.500	10.890	0.248	11.455	11.465	378	0204OQ30511500-248A
+0.006/-0.000	+0.000/-0.006	+0.008/-0.000				
12.000	11.173	0.319	11.950	11.960	451	0204OQ41412000-319A
12.500	11.673	0.319	12.450	12.460	452	0204OQ41412500-319A
13.000	12.173	0.319	12.950	12.960	453	0204OQ41413000-319A
13.500	12.673	0.319	13.450	13.460	454	0204OQ41413500-319A
14.000	13.173	0.319	13.950	13.960	455	0204OQ41414000-319A
14.500	13.673	0.319	14.450	14.460	456	0204OQ41414500-319A
15.000	14.173	0.319	14.950	14.960	457	0204OQ41415000-319A
15.500	14.673	0.319	15.450	15.460	458	0204OQ41415500-319A
16.000	15.173	0.319	15.950	15.960	459	0204OQ41416000-319A
16.500	15.673	0.319	16.450	16.460	460	0204OQ41416500-319A
17.000	16.173	0.319	16.950	16.960	461	0204OQ41417000-319A
17.500	16.673	0.319	17.450	17.460	462	0204OQ41417500-319A
18.000	17.173	0.319	17.950	17.960	463	0204OQ41418000-319A
18.500	17.673	0.319	18.450	18.460	464	0204OQ41418500-319A
19.000	18.173	0.319	18.950	18.960	465	0204OQ41419000-319A
19.500	18.673	0.319	19.450	19.460	466	0204OQ41419500-319A
+0.007/-0.000	+0.000/-0.007	+0.008/-0.000				
20.000	19.173	0.319	19.950	19.960	467	0204OQ41420000-319A

Part Number Nomenclature — OQ Profile

Table 44. OQ Profile — Metric



Gland Dimensions — OQ Profile

Table 45. OQ Profile — Metric

"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Piston		O-ring Dash Number	OQ Part Number
			1000 psi (70 bar)	3000 psi (200 bar)		
+ .04/- .00	+ .00 /- .04	+ .20/- .00				
8.00	3.10	2.20	7.70	7.80	006	M204OQ02.5008-2.2A
10.00	5.10	2.20	9.70	9.80	008	M204OQ02.5010-2.2A
12.00	7.10	2.20	11.70	11.80	010	M204OQ02.5012-2.2A
16.00	11.10	2.20	15.70	15.80	016	M204OQ02.5016-2.2A
+ .05/- .00	+ .00 /- .04	+ .20/- .00				
20.00	15.10	2.20	19.70	19.80	015	M204OQ02.5020-2.2A
22.00	17.10	2.20	21.70	21.80	016	M204OQ02.5022-2.2A
25.00	20.10	2.20	24.70	24.80	018	M204OQ02.5025-2.2A
+ .06/- .00	+ .00 /- .05	+ .20/- .00				
30.00	25.10	2.20	29.70	29.80	021	M204OQ02.5030-2.2A
32.00	27.10	2.20	31.70	31.80	023	M204OQ02.5032-2.2A
+ .06/- .00	+ .00 /- .06	+ .20/- .00				
40.00	32.50	3.20	39.60	39.70	124	M204OQ03.8040-3.2A
45.00	37.50	3.20	44.60	44.70	127	M204OQ03.8045-3.2A
50.00	42.50	3.20	49.60	49.70	130	M204OQ03.8050-3.2A
+ .07/- .00	+ .00 /- .07	+ .20/- .00				
55.00	47.50	3.20	54.60	54.70	133	M204OQ03.8055-3.2A
63.00	55.50	3.20	62.60	62.70	138	M204OQ03.8063-3.2A
70.00	62.50	3.20	69.60	69.70	143	M204OQ03.8070-3.2A
+ .07/- .00	+ .00 /- .07	+ .20/- .00				
80.00	69.00	4.20	79.60	79.50	231	M204OQ05.5080-4.2A
+ .09/- .00	+ .00 /- .09	+ .20/- .00				
90.00	79.00	4.20	89.60	89.50	234	M204OQ05.5090-4.2A
100.00	89.00	4.20	99.60	99.50	237	M204OQ05.5100-4.2A
110.00	99.00	4.20	109.60	109.50	241	M204OQ05.5110-4.2A
120.00	109.00	4.20	119.60	119.50	244	M204OQ05.5120-4.2A

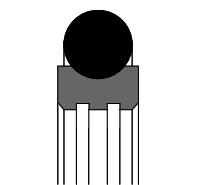
OQ Profile**Table 45. OQ Gland Dimensions — Metric (cont'd)**

			"D" Maximum Diameter Piston		O-ring Dash Number	OQ Part Number
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	1000 psi (70 bar)	3000 psi (200 bar)		
+ .10/- .00	+ .00 /- .10	+ .20/- .00				
125.00	114.00	4.20	124.60	124.50	245	M204OQ05.5125-4.2A
130.00	119.00	4.20	129.60	129.50	247	M204OQ05.5130-4.2A
+ .10/- .00	+ .00 /- .10	+ .20/- .00				
140.00	124.50	6.30	139.40	139.50	352	M204OQ07.8140-6.3A
150.00	134.50	6.30	149.40	149.50	355	M204OQ07.8150-6.3A
160.00	144.50	6.30	159.40	159.50	358	M204OQ07.8160-6.3A
+ .12/- .00	+ .00 /- .12	+ .20/- .00				
200.00	184.50	6.30	199.40	199.50	366	M204OQ07.8200-6.3A
220.00	204.50	6.30	219.40	219.50	369	M204OQ07.8220-6.3A
230.00	214.50	6.30	229.40	229.50	370	M204OQ07.8230-6.3A
240.00	224.50	6.30	239.40	239.50	372	M204OQ07.8240-6.3A
250.00	234.50	6.30	249.40	249.50	374	M204OQ07.8250-6.3A
+ .13/- .00	+ .00 /- .13	+ .20/- .00				
300.00	284.50	6.30	299.40	299.50	379	M204OQ07.8300-6.3A
320.00	304.50	6.30	319.40	319.50	381	M204OQ07.8320-6.3A
+ .14/- .00	+ .00 /- .14	+ .20/- .00				
400.00	379.00	8.10	399.40	399.50	458	M204OQ10.5400-8.1A
+ .16/- .00	+ .00 /- .16	+ .20/- .00				
500.00	479.00	8.10	499.40	499.50	467	M204OQ10.5500-8.1A
+ .18/- .00	+ .00 /- .18	+ .20/- .00				
600.00	579.00	8.10	599.40	599.50	472	M204OQ10.5600-8.1A

OR Profile, Rotary Shaft Seal



OR Profile



OR Cross Section



OR installed on Rotary Shaft Gland

The Parker OR profile is a bi-directional rod seal for use in low to medium duty rotary or oscillating applications. The OR profile is a simple two piece design comprised of a standard size Parker O-ring energizing a wear resistant PTFE cap. The OR profile offers long wear, low friction and no slipstick. This PTFE outer diameter is designed with a special interference with the O-ring to eliminate spinning between the O-ring and seal. Special grooves are designed into the PTFE inner diameter to provide lubrication and create a labyrinth effect for reduced leakage. The seal is commonly used in applications such as mobile hydraulics, machine tools, injection molding machines and hydraulic presses. Parker's OR profile is designed to retrofit non-Parker seals of similar design.

Technical Data

Standard Materials

Cap:	0401	5% fiberglass, 5% Molybdenum Disulfide filled PTFE
Energizer:	A	70A Nitrile

For alternate compounds please refer to Tables 3 and 4.

Range of Application

Pressure: 4,500 psi (300 bar)

Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

Velocity: 6.5 fps (2.0 m/s)

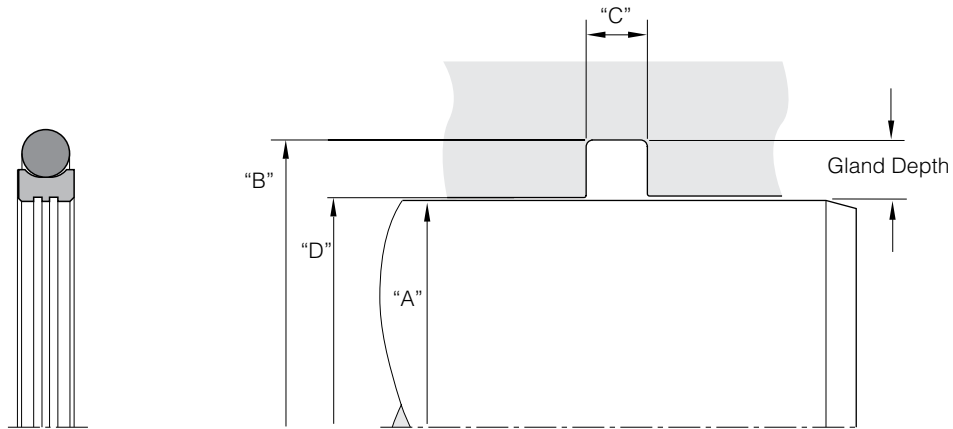
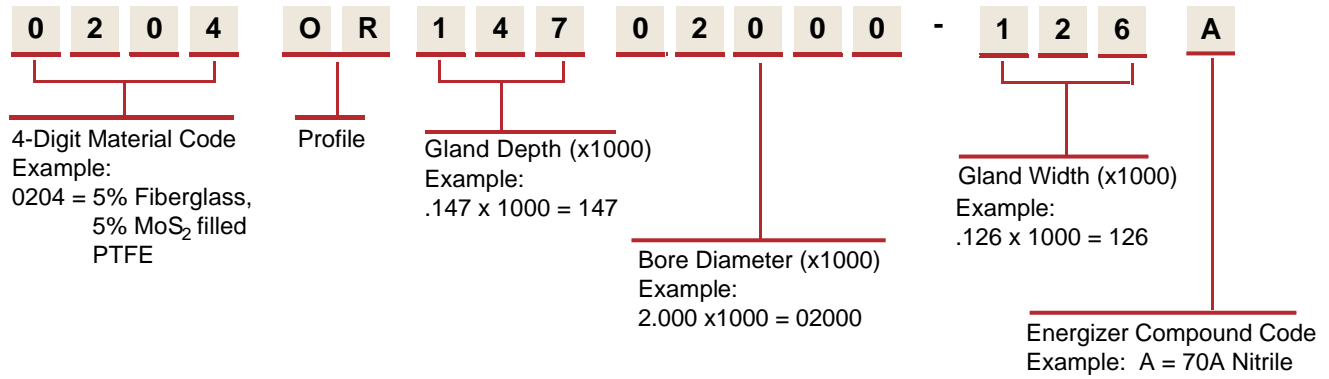
Options

Metric: For metric part numbering, see Tables 48 and 49 on Page 103.

OR Profile

Part Number Nomenclature —OR Profile

Table 46. OR Profile — Inch



Gland Dimensions — OR Profile

Table 47. OR Profile — Inch

"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	"D" Maximum Diameter Throat		O-ring Dash Number	OR Part Number
			1000 psi (70 bar)	3000 psi (200 bar)		
+ .000/- .001	+ .001/- .000	+ .008/- .000				
0.313	0.506	0.087	0.333	0.327	012	0204OR09700313-087A
0.375	0.568	0.087	0.395	0.389	013	0204OR09700375-087A
+ .000/- .002	+ .002/- .000	+ .008/- .000				
0.438	0.631	0.087	0.458	0.452	014	0204OR09700438-087A
0.500	0.693	0.087	0.520	0.514	015	0204OR09700500-087A
0.563	0.756	0.087	0.583	0.577	016	0204OR09700563-087A
0.625	0.818	0.087	0.645	0.639	017	0204OR09700625-087A
0.688	0.881	0.087	0.708	0.702	018	0204OR09700688-087A
0.750	0.943	0.087	0.770	0.764	019	0204OR09700750-087A
0.813	1.006	0.087	0.833	0.827	020	0204OR09700813-087A
0.875	1.068	0.087	0.895	0.889	021	0204OR09700875-087A
0.938	1.131	0.087	0.958	0.952	022	0204OR09700938-087A
1.000	1.193	0.087	1.020	1.014	023	0204OR09701000-087A

Table 47. OR Gland Dimensions — Inch (cont'd)

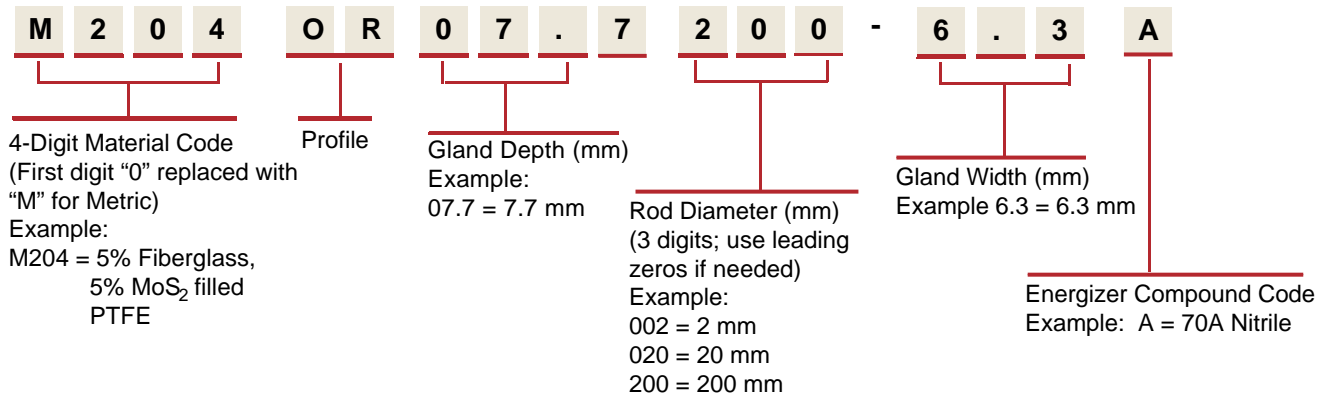
			"D" Maximum Diameter Throat			
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1000 psi (70 bar)	3000 psi (200 bar)	O-ring Dash Number	OR Part Number
1.125	1.318	0.087	1.145	1.139	025	0204OR09701125-087A
1.250	1.443	0.087	1.270	1.264	027	0204OR09701250-087A
1.375	1.568	0.087	1.395	1.389	028	0204OR09701375-087A
+0.000/-0.002	+0.003/-0.000	+0.008/-0.000				
1.500	1.795	0.126	1.530	1.520	130	0204OR14801500-126A
1.625	1.920	0.126	1.655	1.645	132	0204OR14801625-126A
1.750	2.045	0.126	1.780	1.770	134	0204OR14801750-126A
1.875	2.170	0.126	1.905	1.895	135	0204OR14801875-126A
+0.000/-0.003	+0.003/-0.000	+0.008/-0.000				
2.000	2.295	0.126	2.030	2.020	137	0204OR14802000-126A
2.125	2.420	0.126	2.155	2.145	139	0204OR14802125-126A
2.250	2.545	0.126	2.280	2.270	141	0204OR14802250-126A
2.375	2.670	0.126	2.405	2.395	143	0204OR14802375-126A
2.500	2.795	0.126	2.530	2.520	145	0204OR14802500-126A
2.625	2.920	0.126	2.655	2.645	147	0204OR14802625-126A
2.750	3.045	0.126	2.780	2.770	149	0204OR14802750-126A
2.875	3.170	0.126	2.905	2.895	150	0204OR14802875-126A
+0.000/-0.003	+0.003/-0.000	+0.008/-0.000				
3.000	3.433	0.165	3.040	3.030	235	0204OR21703000-165A
3.125	3.558	0.165	3.165	3.155	236	0204OR21703125-165A
3.250	3.683	0.165	3.290	3.280	237	0204OR21703250-165A
3.375	3.808	0.165	3.415	3.405	238	0204OR21703375-165A
3.500	3.933	0.165	3.540	3.530	239	0204OR21703500-165A
3.625	4.058	0.165	3.665	3.655	240	0204OR21703625-165A
3.750	4.183	0.165	3.790	3.780	241	0204OR21703750-165A
3.875	4.308	0.165	3.915	3.905	242	0204OR21703875-165A
4.000	4.433	0.165	4.040	4.030	243	0204OR21704000-165A
4.125	4.558	0.165	4.165	4.155	244	0204OR21704125-165A
4.250	4.683	0.165	4.290	4.280	245	0204OR21704250-165A
+0.000/-0.003	+0.004/-0.000	+0.008/-0.000				
4.375	4.808	0.165	4.415	4.405	246	0204OR21704375-165A
4.500	4.933	0.165	4.540	4.530	247	0204OR21704500-165A
4.625	5.058	0.165	4.665	4.655	248	0204OR21704625-165A
+0.000/-0.004	+0.004/-0.000	+0.008/-0.000				
4.750	5.183	0.165	4.790	4.780	249	0204OR21704750-165A
4.875	5.308	0.165	4.915	4.905	250	0204OR21704875-165A
5.000	5.433	0.165	5.040	5.030	251	0204OR21705000-165A
5.125	5.558	0.165	5.165	5.155	252	0204OR21705125-165A
5.250	5.683	0.165	5.290	5.280	253	0204OR21705250-165A
5.375	5.808	0.165	5.415	5.405	254	0204OR21705375-165A
5.500	5.933	0.165	5.540	5.530	255	0204OR21705500-165A
5.625	6.058	0.165	5.665	5.655	256	0204OR21705625-165A
5.750	6.183	0.165	5.790	5.780	257	0204OR21705750-165A

OR Profile**Table 47. OR Gland Dimensions — Inch (cont'd)**

			"D" Maximum Diameter Throat			
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1000 psi (70 bar)	3000 psi (200 bar)	O-ring Dash Number	OR Part Number
5.875	6.308	0.165	5.915	5.905	258	0204OR21705875-165A
+0.000/-0.004	+0.004/-0.000	+0.008/-0.000				
6.000	6.610	0.248	6.045	6.035	362	0204OR30506000-248A
6.250	6.860	0.248	6.295	6.285	363	0204OR30506250-248A
6.500	7.110	0.248	6.545	6.535	364	0204OR30506500-248A
6.750	7.360	0.248	6.795	6.785	365	0204OR30506750-248A
7.000	7.610	0.248	7.045	7.035	365	0204OR30507000-248A
+0.000/-0.005	+0.005/-0.000	+0.008/-0.000				
7.250	7.860	0.248	7.295	7.285	366	0204OR30507250-248A
7.500	8.110	0.248	7.545	7.535	367	0204OR30507500-248A
7.750	8.360	0.248	7.795	7.785	368	0204OR30507750-248A
8.000	8.610	0.248	8.045	8.035	369	0204OR30508000-248A
8.250	8.860	0.248	8.295	8.285	370	0204OR30508250-248A
8.500	9.110	0.248	8.545	8.535	371	0204OR30508500-248A
8.750	9.360	0.248	8.795	8.785	372	0204OR30508750-248A
9.000	9.610	0.248	9.045	9.035	373	0204OR30509000-248A
9.250	9.860	0.248	9.295	9.285	374	0204OR30509250-248A
9.500	10.110	0.248	9.545	9.535	375	0204OR30509500-248A
9.750	10.360	0.248	9.795	9.785	376	0204OR30509750-248A
10.000	10.610	0.248	10.045	10.035	377	0204OR30510000-248A
10.500	11.110	0.248	10.545	10.535	378	0204OR30510500-248A
11.000	11.610	0.248	11.045	11.035	379	0204OR30511000-248A
11.500	12.110	0.248	11.545	11.535	380	0204OR30511500-248A
+0.000/-0.006	+0.006/-0.000	+0.008/-0.000				
12.000	12.827	0.319	12.050	12.040	453	0204OR41412000-319A
12.500	13.327	0.319	12.550	12.540	454	0204OR41412500-319A
13.000	13.827	0.319	13.050	13.040	455	0204OR41413000-319A
13.500	14.327	0.319	13.550	13.540	456	0204OR41413500-319A
14.000	14.827	0.319	14.050	14.040	457	0204OR41414000-319A
14.500	15.327	0.319	14.550	14.540	458	0204OR41414500-319A
15.000	15.827	0.319	15.050	15.040	459	0204OR41415000-319A
15.500	16.327	0.319	15.550	15.540	460	0204OR41415500-319A
16.000	16.827	0.319	16.050	16.040	461	0204OR41416000-319A
16.500	17.327	0.319	16.550	16.540	462	0204OR41416500-319A
17.000	17.827	0.319	17.050	17.040	463	0204OR41417000-319A
17.500	18.327	0.319	17.550	17.540	464	0204OR41417500-319A
18.000	18.827	0.319	18.050	18.040	465	0204OR41418000-319A
18.500	19.327	0.319	18.550	18.540	466	0204OR41418500-319A
19.000	19.827	0.319	19.050	19.040	467	0204OR41419000-319A
19.500	20.327	0.319	19.550	19.540	468	0204OR41419500-319A
+0.000/-0.007	+0.007/-0.000	+0.008/-0.000				
20.000	20.827	0.319	20.050	20.040	469	0204OR41420000-319A

Part Number Nomenclature — OR Profile

Table 48. OR Profile — Metric



Gland Dimensions — OR Profile

Table 49. OR Profile — Metric

			"D" Maximum Diameter Throat			
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	100 bar (1500 psi)	200 bar (3000 psi)	O-ring Dash Number	OR Part Number
+ .00 / - .04	+ .40 / - .00	+ .20 / - .00				
6.00	10.90	2.20	6.30	6.20	011	M204OR02.5006-2.2A
8.00	12.90	2.20	8.30	8.20	012	M204OR02.5008-2.2A
10.00	14.90	2.20	10.30	10.20	013	M204OR02.5010-2.2A
12.00	16.90	2.20	12.30	12.20	014	M204OR02.5012-2.2A
+ .00 / - .04	+ .05 / - .00	+ .20 / - .00				
14.00	18.90	2.20	14.30	14.20	016	M204OR02.5014-2.2A
15.00	19.90	2.20	15.30	15.20	016	M204OR02.5015-2.2A
16.00	20.90	2.20	16.30	16.20	017	M204OR02.5016-2.2A
18.00	22.90	2.20	18.30	18.20	018	M204OR02.5018-2.2A
+ .00 / - .05	+ .05 / - .00	+ .20 / - .00				
20.00	27.50	3.20	20.40	20.30	118	M204OR03.8020-3.2A
22.00	29.50	3.20	22.50	22.30	119	M204OR03.8022-3.2A
+ .00 / - .05	+ .07 / - .00	+ .20 / - .00				
25.00	32.50	3.20	25.40	25.30	121	M204OR03.8025-3.2A
28.00	35.50	3.20	28.40	28.30	123	M204OR03.8028-3.2A
30.00	37.50	3.20	30.40	30.30	124	M204OR03.8030-3.2A
+ .00 / - .06	+ .07 / - .00	+ .20 / - .00				
32.00	39.50	3.20	32.50	32.30	126	M204OR03.8032-3.2A
35.00	42.50	3.20	35.40	35.30	127	M204OR03.8035-3.2A
36.00	43.50	3.20	36.40	36.30	128	M204OR03.8036-3.2A
+ .00 / - .06	+ .07 / - .00	+ .20 / - .00				
40.00	51.00	4.20	40.50	40.40	224	M204OR05.5040-4.2A
42.00	53.00	4.20	42.50	42.50	224	M204OR05.5042-4.2A
45.00	56.00	4.20	45.50	45.40	225	M204OR05.5045-4.2A
48.00	59.00	4.20	48.50	48.40	226	M204OR05.5048-4.2A
50.00	61.00	4.20	50.50	50.40	227	M204OR05.5050-4.2A
52.00	63.00	4.20	52.50	52.50	227	M204OR05.5052-4.2A

OR Profile**Table 49. OE Gland Dimensions — Metric (cont'd)**

			"D" Maximum Diameter Throat		O-ring Dash Number	OR Part Number
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	100 bar (1500 psi)	200 bar (3000 psi)		
+ .00 / - .07	+ .07 / - .00	+ .20 / - .00				
55.00	66.00	4.20	55.50	55.40	228	M204OR05.5055-4.2A
56.00	67.00	4.20	56.50	56.40	229	M204OR05.5056-4.2A
60.00	71.00	4.20	60.50	60.40	230	M204OR05.5060-4.2A
63.00	74.00	4.20	63.50	63.40	231	M204OR05.5063-4.2A
+ .00 / - .07	+ .09 / - .00	+ .20 / - .00				
65.00	76.00	4.20	65.50	65.40	232	M204OR05.5065-4.2A
70.00	81.00	4.20	70.50	70.40	233	M204OR05.5070-4.2A
75.00	86.00	4.20	75.50	75.40	234	M204OR05.5075-4.2A
80.00	91.00	4.20	80.50	80.40	236	M204OR05.5080-4.2A
85.00	96.00	4.20	85.50	85.40	237	M204OR05.5085-4.2A
+ .00 / - .09	+ .09 / - .00	+ .20 / - .00				
90.00	101.00	4.20	90.50	90.40	239	M204OR05.5090-4.2A
95.00	106.00	4.20	95.50	95.40	241	M204OR05.5095-4.2A
100.00	111.00	4.20	100.50	100.40	243	M204OR05.5100-4.2A
105.00	116.00	4.20	105.50	105.40	242	M204OR05.5105-4.2A
110.00	121.00	4.20	110.50	110.40	246	M204OR05.5110-4.2A
115.00	126.00	4.20	115.50	115.40	247	M204OR05.5115-4.2A
120.00	131.00	4.20	120.50	120.40	248	M204OR05.5120-4.2A
+ .00 / - .10	+ .10 / - .00	+ .20 / - .00				
125.00	136.00	4.20	125.50	125.40	250	M204OR05.5125-4.2A
130.00	141.00	4.20	130.50	130.40	251	M204OR05.5130-4.2A
135.00	146.00	4.20	135.50	135.40	253	M204OR05.5135-4.2A
140.00	151.00	4.20	140.50	140.40	255	M204OR05.5140-4.2A
150.00	161.00	4.20	150.50	150.40	257	M204OR05.5150-4.2A
160.00	171.00	4.20	160.50	160.40	259	M204OR05.5160-4.2A
170.00	181.00	4.20	170.50	170.40	261	M204OR05.5170-4.2A
180.00	191.00	4.20	180.50	180.40	263	M204OR05.5180-4.2A
190.00	201.00	4.20	190.50	190.40	264	M204OR05.5190-4.2A
+ .00 / - .12	+ .12 / - .00	+ .20 / - .00				
200.00	215.50	6.30	200.60	200.50	369	M204OR07.8200-6.3A
210.00	225.50	6.30	210.60	210.50	370	M204OR07.8210-6.3A
220.00	235.50	6.30	220.60	220.50	372	M204OR07.8220-6.3A
230.00	245.50	6.30	230.60	230.50	374	M204OR07.8230-6.3A
240.00	255.50	6.30	240.60	240.50	375	M204OR07.8240-6.3A
250.00	265.50	6.30	250.60	250.50	377	M204OR07.8250-6.3A
+ .00 / - .13	+ .13 / - .00	+ .20 / - .00				
280.00	301.00	8.10	280.60	280.50	451	M204OR10.5280-8.1A
300.00	321.00	8.10	300.60	300.50	453	M204OR10.5300-8.1A
320.00	341.00	8.10	320.60	320.50	454	M204OR10.5320-8.1A
350.00	371.00	8.10	350.60	350.50	456	M204OR10.5350-8.1A
360.00	381.00	8.10	360.60	360.50	457	M204OR10.5360-8.1A

Table 49. OR Gland Dimensions — Metric (cont'd)

			"D" Maximum Diameter Throat			
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	100 bar (1500 psi)	200 bar (3000 psi)	O-ring Dash Number	OR Part Number
+ .00 / - .14	+ .14 / - .00	+ .20 / - .00				
400.00	421.00	8.10	400.60	400.50	460	M204OR10.5400-8.1A
420.00	441.00	8.10	420.60	420.50	462	M204OR10.5420-8.1A
450.00	471.00	8.10	450.60	450.50	465	M204OR10.5450-8.1A
480.00	501.00	8.10	480.60	480.50	467	M204OR10.5480-8.1A
+ .00 / - .16	+ .16 / - .00	+ .20 / - .00				
500.00	521.00	8.10	500.60	500.50	469	M204OR10.5500-8.1A
600.00	621.00	8.10	600.60	600.50	472	M204OR10.5600-8.1A

Design Action Request Form

Catalog EPS 5360/USA

NEED HELP? If you need assistance, please photocopy these three pages, Use the Notes pages to submit a sketch if necessary. Fill out the required information and fax to (801) 973-4019. Use the information below and other information in this catalog to determine the dimensions needed. We will contact you to discuss your specific application and make recommendations. If you need help filling out this form, please call Applications Engineering at (801) 972-3000.

ENGINEERED POLYMER SYSTEMS DIVISION DESIGN ACTION REQUEST

EPS Division

2220 South 3600 West
Salt Lake City, UT
Tel: (801) 972-3000
Fax: (801) 973-4019

Applications Engineering Use:

Project # _____
Date Entered _____
Date Required _____
Prepared by _____
Territory Mgr. _____
Distributor _____
Dist. Sales _____

Referred by _____
Lead # _____

COMPANY: _____ FAX NUMBER: _____
ADDRESS: _____ P.O. BOX: _____ MAIL STOP: _____
CITY: _____ STATE: _____ ZIP: _____ COUNTRY: _____
CONTACT: _____ TITLE: _____ PHONE: _____ EXT: _____
ALT. CONTACT: _____ TITLE: _____ PHONE: _____ EXT: _____
E-MAIL: _____

EQUIPMENT/MANUFACTURER: _____ MODEL NO.: _____
EXISTING SEAL MANUFACTURER: _____ PART NO.: _____
REASON FOR CHANGE: PERFORMANCE DELIVERY NEW APPLICATION PRICE
CURRENT PRICE: _____ @ _____ PCS. MONTHLY USAGE: _____ HOURS OPERATION: _____ HOURS SERV. LIFE: _____
TARGET PRICE: _____ @ _____ PCS. QUOTE QTY.: _____ PROTO QTY.: _____ DATE PROTO REQ'D.: _____
SPECIAL INSPECTION REQUIREMENTS: YES NO SPECIAL PACKAGING REQUIREMENTS: YES NO
EXPLAIN: _____

MOTION

STATIC RECIPROCATING OSCILLATORY ROTARY

PRODUCT TYPE

NON-ROTARY — FILL OUT SECOND PAGE

ROD/SHAFT WIPER
 PISTON BEARING
 INTERNAL FACE VANE
 EXTERNAL FACE NON-SEAL

ROTARY — FILL OUT THIRD PAGE

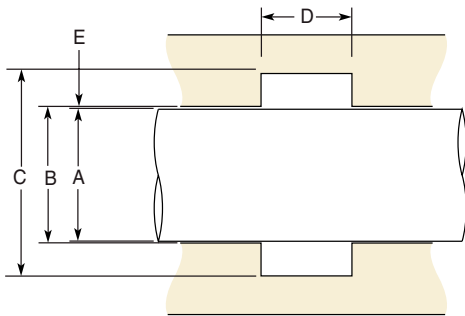
SOLID SEAL PTFE LIP SEAL
 SPLIT SEAL ELASTOMER LIP SEAL
 BEARING ISOLATOR



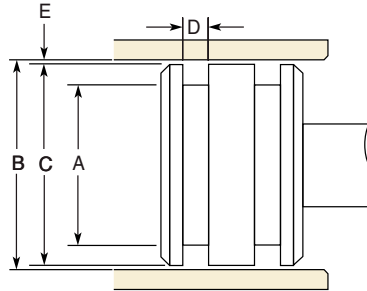
Design Action Request Form

OPERATING PARAMETERS	UNIT (CIRCLE ONE)	MINIMUM	OPERATING	MAXIMUM
TEMPERATURE:	°K °F °C	_____	_____	_____
PRESSURE:	PSI BAR MPA	_____	_____	_____
STROKE LENGTH (RECIPROCATING):	INCH MM	_____	_____	_____
CYCLE RATE:	CYCLES/MIN CYCLES/HR HZ	_____	_____	_____
DEGREE OF ARC (OSCILLATING):	DEGREES	_____	_____	_____
VELOCITY:	FT/MIN. MM/MIN.	_____	_____	_____
VACUUM:	IN HG TORR	_____	_____	_____
ROTARY SPEED	RPM	_____	_____	_____
MEDIA TO BE SEALED: _____				

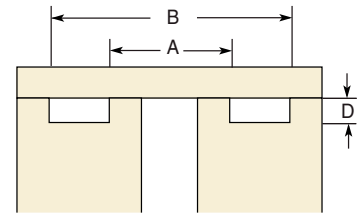
Rod



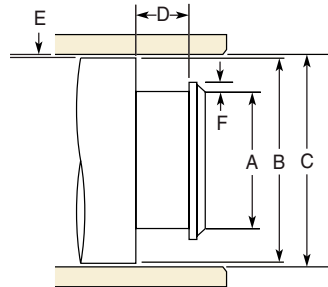
Piston



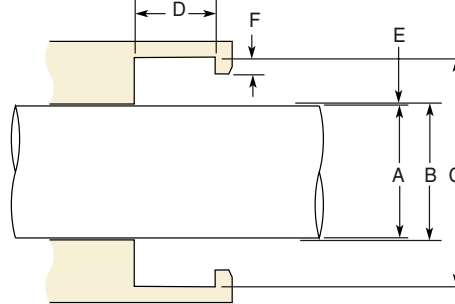
Face Seal



Other Piston



Other Rod



HARDWARE SPECIFICATIONS

A DIAMETER: MIN. _____ MAX. _____
 B DIAMETER: MIN. _____ MAX. _____
 C DIAMETER: MIN. _____ MAX. _____
 D GROOVE WIDTH: MIN. _____ MAX. _____
 E RADIAL CLEARANCE: MIN. _____ MAX. _____
 F ROD / PISTON STEP HEIGHT: MIN. _____ MAX. _____
 SIDE LOAD (LBS. NEWTONS): _____
 MIL-G-5514 O-RING DASH #: _____ BACK-UP WIDTH _____
 AS4716 O-RING DASH #: _____ BACK-UP WIDTH _____
 RUNOUT (TIR) _____
 ECCENTRICITY _____

HARDWARE DRAWINGS INCLUDED WITH DAR: YES NO

HARDNESS _____ FINISH _____ MAT'L _____
 HARDNESS _____ FINISH _____ MAT'L _____
 HARDNESS _____ FINISH _____ MAT'L _____
 CAN HARDWARE BE CHANGED? YES NO
 HOW? _____

PERFORMANCE REQUIREMENTS (CIRCLE ONE)

FRICTION: LBS OZ GMS BREAKOUT _____ DYNAMIC _____
 EXPECTED LIFE: CYC HRS YRS _____
 MAX. LEAKAGE: DROPS CC/MIN _____
 MOST CRITICAL ASPECT: _____
 CONTAMINATION: _____

GLAND TYPE

___ SPLIT ___ OPEN

METRIC

YES



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Catalog EPS 5360/USA

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Parker EPS Division designs and manufactures engineered elastomeric, polymeric and plastic seals and sealing systems for dynamic applications. EPS Division has a worldwide sealing network consisting of manufacturing locations in Utah, Texas, New York, Illinois and Baja, Mexico; and more than 200 distributor and service center locations in nine countries.

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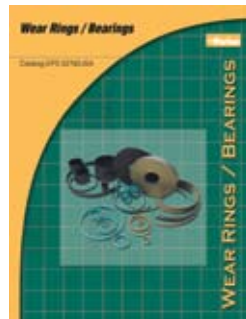
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See: *Catalog EPS 3800 & 5225*



See: *Catalog EPS 5276*

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Parker offers a complete line of MolyGard™, WearGard™ and PTFE standard and tight-tolerance wear rings and bearings to meet the full spectrum of sealing needs, from heavy duty hydraulic cylinders to pneumatic applications requiring low friction, long life and self-lubrication.



of urethanes as well as traditional elastomers in standard inch and metric sizes.

See: *Catalog PPD 3600*

Rod Wipers & Scrapers

Parker is the leading manufacturer of rod wipers and scrapers in a variety of geometries to suit any rod application. Parker's rod wipers are offered in a wide range

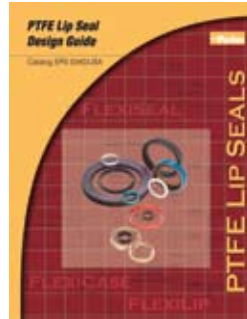


sealing, both in hydraulic and pneumatic applications.

See: *Catalog PPD 5225*

U-Cups Seals

Parker's U-cup seals are compact and versatile. Varying lip design configurations coupled with the broad range of available Parker materials mean versatility in U-cup



PTFE Lip Seals

Parker manufactures a wide range of PTFE lip seals to meet the unique temperature, chemical and low friction requirements of high-performance systems. FlexiSeal®, FlexiLip™ and FlexiCase™ lip seals are available in standard inch, metric and custom designs.

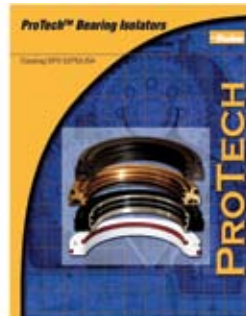
See: Catalog EPS 5340



Integrated Piston Assembly

Parker's Integrated Piston combines the piston, bearing and seal into a self-contained package for low, medium and high pressure hydraulic cylinder applications.

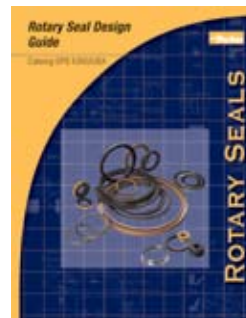
See: Catalog EPS 5220



ProTech Bearing Isolators

ProTech bearing isolators are the ultimate in bearing protection with unitized, two-piece, non-contact design. ProTech provides zero lubricant leakage and total exclusion of contaminants.

See: Catalog EPS 5275



Rotary Shaft Seals

Parker offers a complete line of rotary seal products including the proprietary Clipper® Oil Seal design with integrally molded rubber/fiber outer case and elastomeric inner lip. Varying profiles include factory split, MIST, single-lip, dual lip, excluder and molded-in spring. Parker Oil Seals are elastomer-lipped, metal retained

rotary shaft seals available in a multitude of configurations.

See: Catalog EPS 5350

Offer of Sale

Catalog EPS 5360/USA

The items described in this document are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any item described in this document, when communicated to Parker Hannifin Corporation, its subsidiary or any authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgements, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of invoice of the items purchased hereunder. Seller reserves the right to charge interest on all past due amounts. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided in the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship at the time of delivery. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be

destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefor upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity for Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter "Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after the Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, place or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights. If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgements resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Any special requirements for items to be provided by Seller hereunder including without limitation; compliance with military specifications, special documentation, or testing requirements, must be communicated to Seller in writing at the time the items are first requested. Any such requests that are communicated to Seller after preparation to manufacture an item has commenced may result in additional charges for rework or remanufacture of the item.

13. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either more than two (2) years after the cause of action accrues.



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