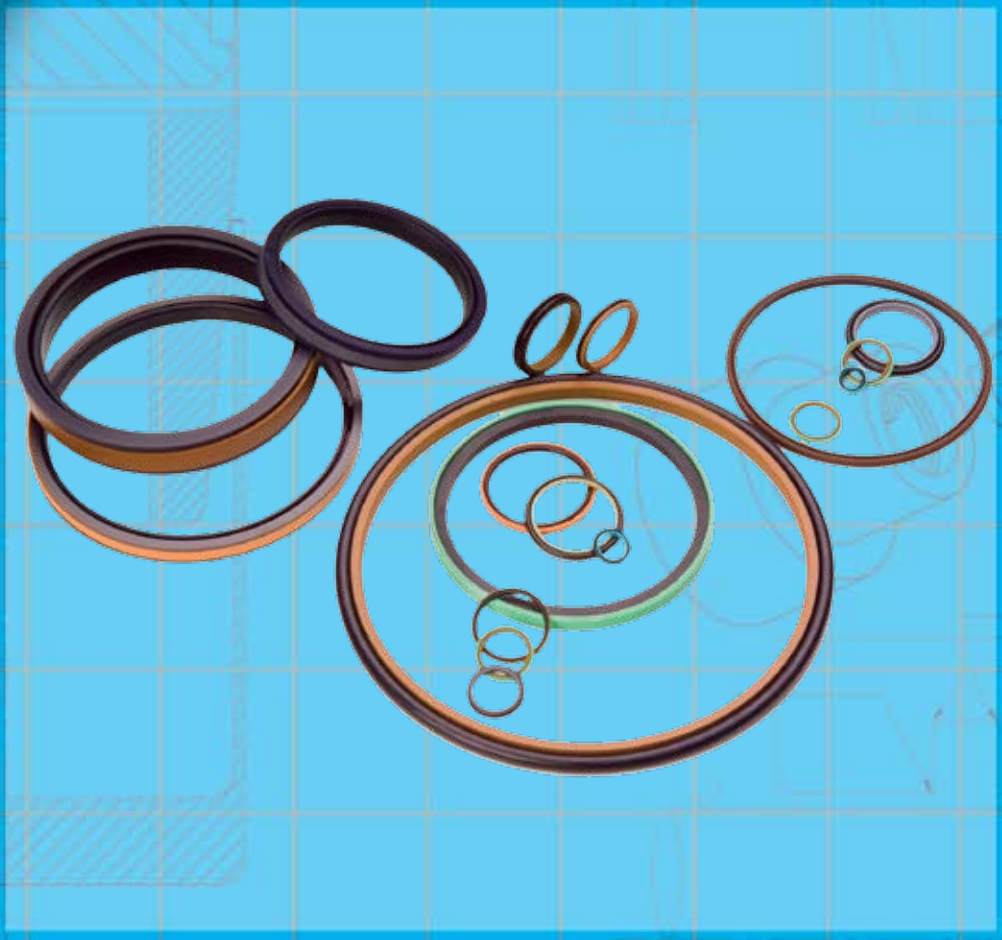
PTFE Fluid Power Seals

Catalog EPS 5360/USA



PTFE FLUID POWER

anything Parker Possible™

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

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document entitled “Offer of Sale.”

Parker

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Introduction

Contents

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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019
www.parkerseals.com

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
   - ¼ " 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 ¼" 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

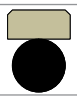
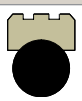
Custom billets

One-shot finished molding

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Product Selection Guide

Table 1.

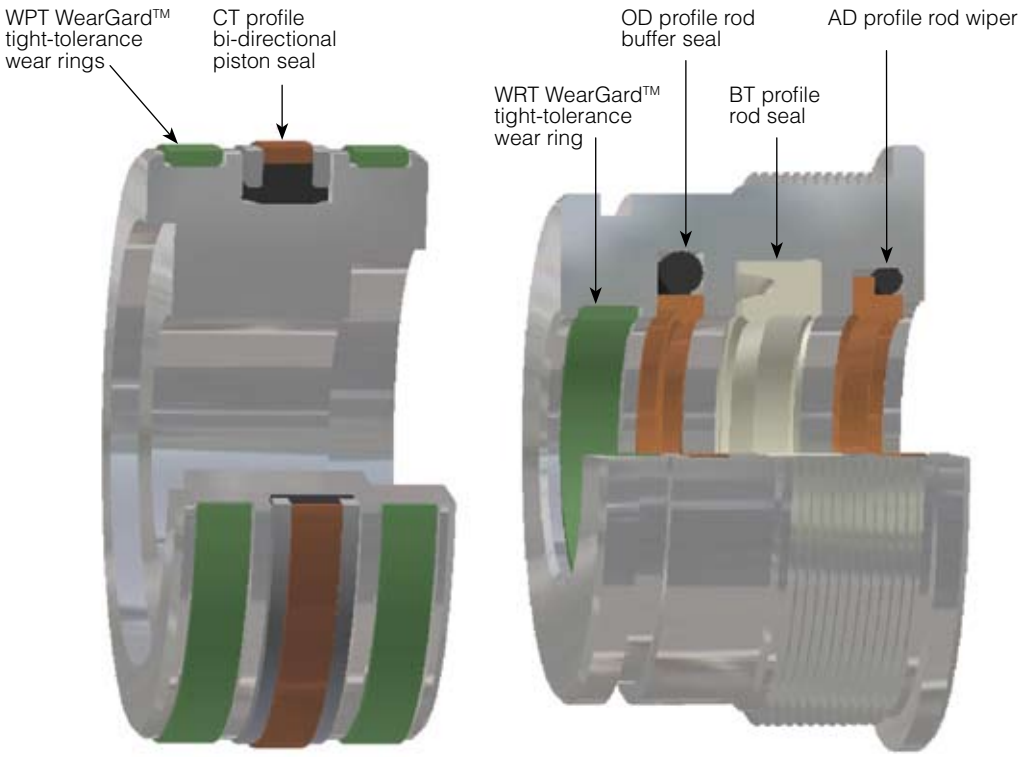
		Hydraulic Duty					
		Light	*Medium*	*Heavy*			
Profile Cross Section	**Profile Reference**				**General Description**	**Typical Applications**	**Page**
Linear Piston Seals							
	**S5**	✓	✓		Light to medium duty, bi-directional piston seal	Agriculture hydraulics; Mobile hydraulics; Machine tools; Presses	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

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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.



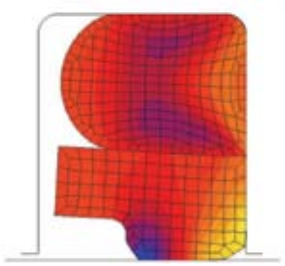
Testing and Validation

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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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:

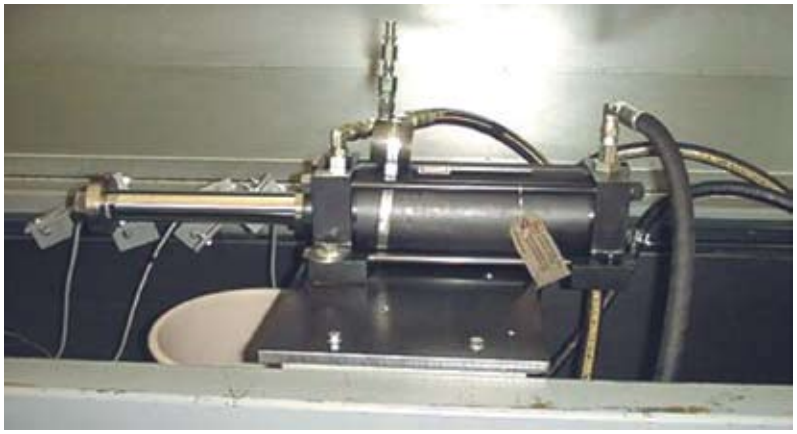
Hydraulic

- Variable speed
- Endurance
- 4 spindle concurrent

Consumer:

Power Hand Tools

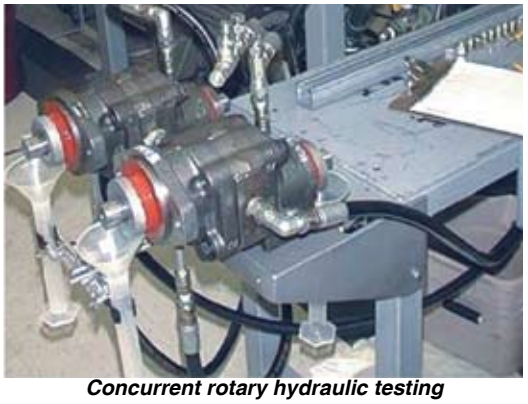
- Nail and staple guns
- Impact absorption
- Endurance



Low pressure life cycle testing

Pneumatic cylinder testing

High pressure hydraulic leakage testing



Concurrent rotary hydraulic testing

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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:

Seal Group Headquarters, North America
Cleveland, OH 44124
Ph: (216) 896-3000

PTFE Operations:

EPS Division, Elgin, Illinois
Ph: (847) 783-4300

EPS Division, Marion, New York
Ph: (315) 926-4211

EPS Division, Baja, Mexico
Ph: (619) 671-3257

EPS Division Chicago (Elgin) PTFE Operations

Europe

Seal Group Headquarters, Europe
Pleidelsheim, Germany
Ph: (+49) 7144 206 0

PTFE Operations:

Polar Seals ApS, Espergaerde, Denmark
Ph: (+45) 49 121700

Advanced Products NV, Boom, Belgium
Ph: (+32) 3 880 81 50

Sadska, Czech Republic
Ph: (+420) 325 555 111

Denmark

Belgium

Asia

Parker Hannifin Motion & Control Co., Ltd.
Shanghai, China
Ph: (+86) 21 28995181

Czech Republic

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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. MoS_2 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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

Polychlorotriflouroethylene (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

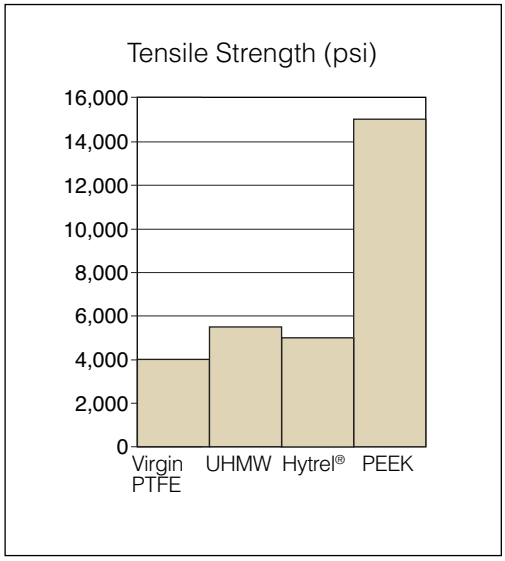


Figure 1. Ultimate Tensile Strength

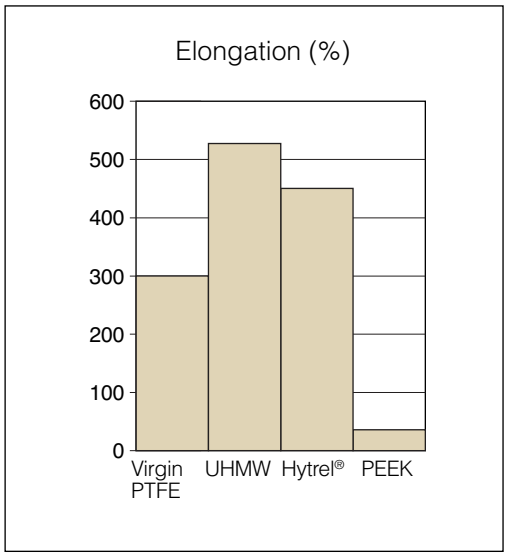


Figure 2. Ultimate Elongation

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
					5 = Excellent 1 = Fair			
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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)	• 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	• 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)	• Potable water • Food service	
D	Hydrogenated Nitrile (HNBR)	70	-23 °F to 300 °F (-32 °C to 149 °C)	• Diesel fuel and fuel oils • Dilute acids and bases	
F	Fluorocarbon (FKM)	70	-15 °F to 400 °F (-26 °C to 205 °C)	• Petroleum oils and fluids • Cold water • Silicone greases and oils • Aliphatic hydrocarbons • Aromatic hydrocarbons • Fuels • Fuels with methanol content	• 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)	• Hot water • Glycol based brake fluids • Many organic and inorganic acids • Cleaning agents • Soda and potassium alkalis • Phosphate ester based fluids • Many polar solvents	• Petroleum oils and fluids • Mineral oil products
L	Ethylene Propylene Rubber (EPDM)	80	-70 °F to 250 °F (-57 °C to 121 °C)		

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)	• 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)	• Reduced water absorption • Improved thermal stability
C	Acetal	6,000 psi (414 bar)	-40 °F to 250 °F (-40 °C to 121 °C)	• 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)	• Extended temperature, pressure and media resistance
E	PEEK Virgin	10,000 psi (690 bar)	-40 °F to 450 °F (-40 °C to 232 °C)	• Extended temperature, pressure and media resistance

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

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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.

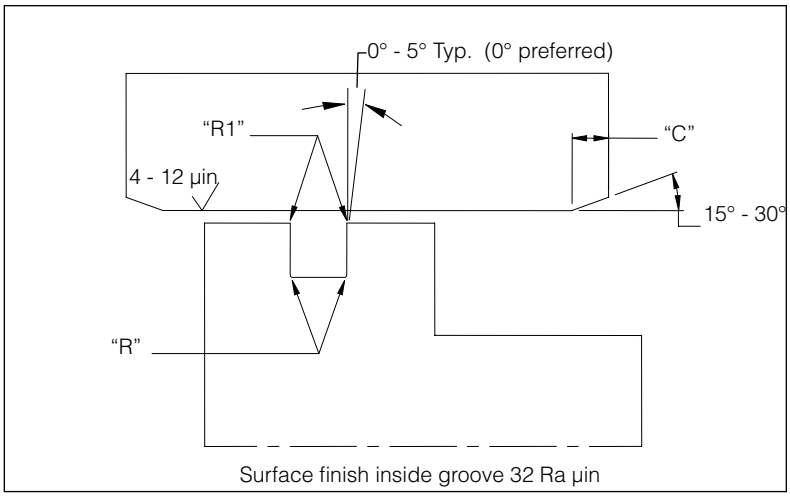


Figure 3.

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

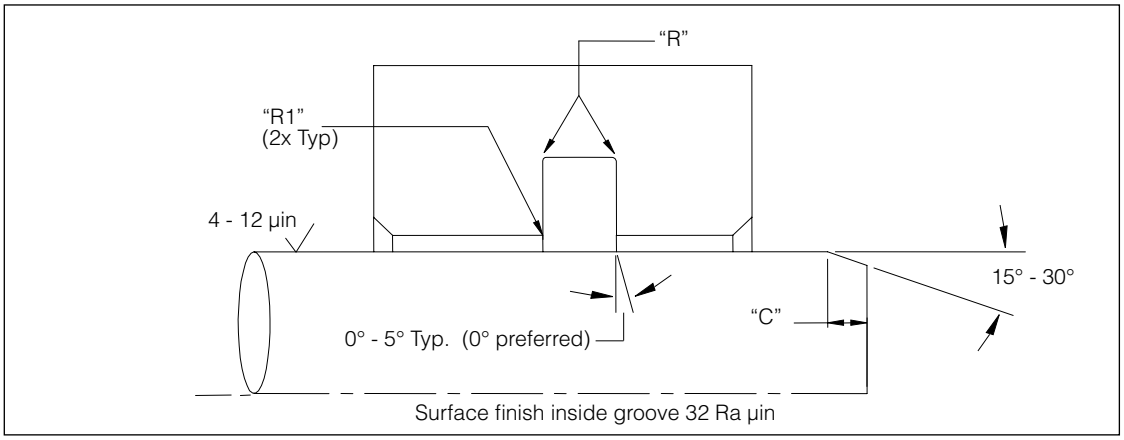


Figure 4.

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

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019
www.parkerseals.com

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.

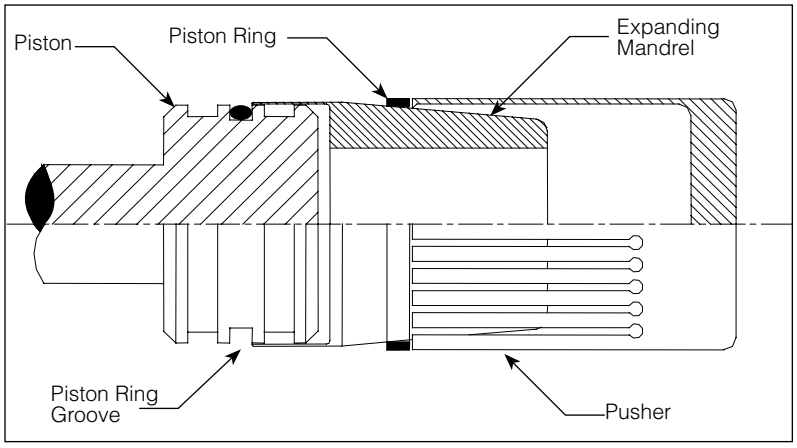


Figure 5. Installation of Piston Seal With Tooling

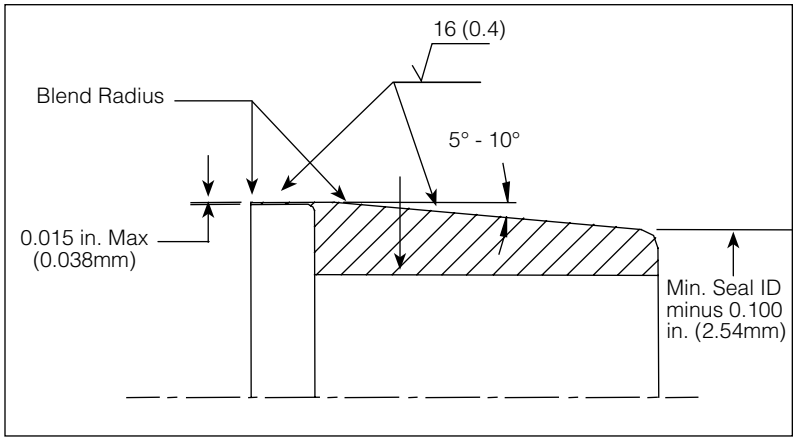


Figure 6. Expanding Mandrel

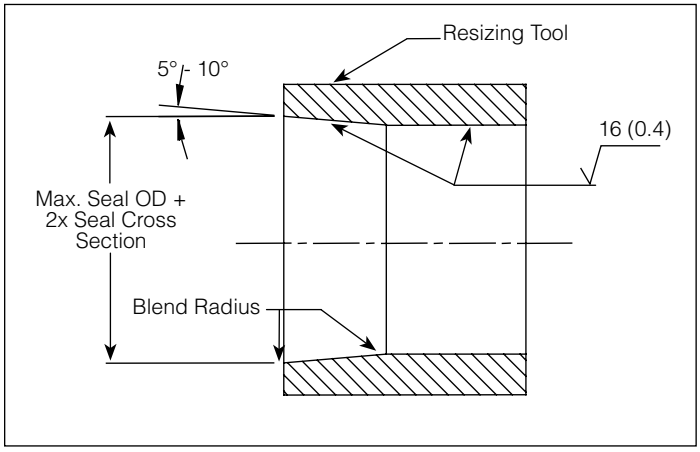


Figure 7. Resizing Tool

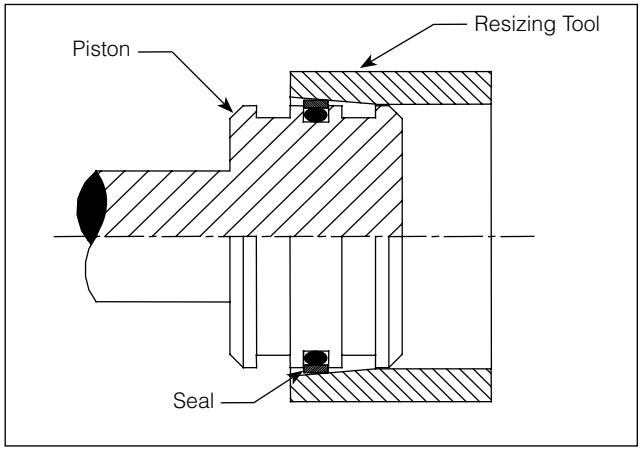


Figure 8. Resizing

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.**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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.

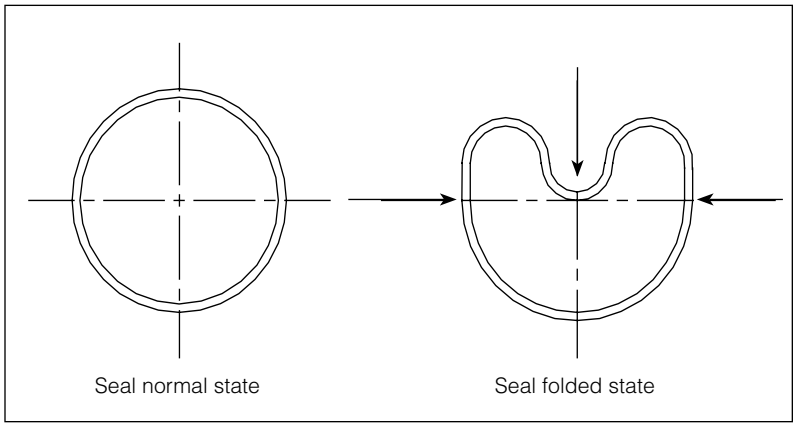


Figure 9. Rod seal folding

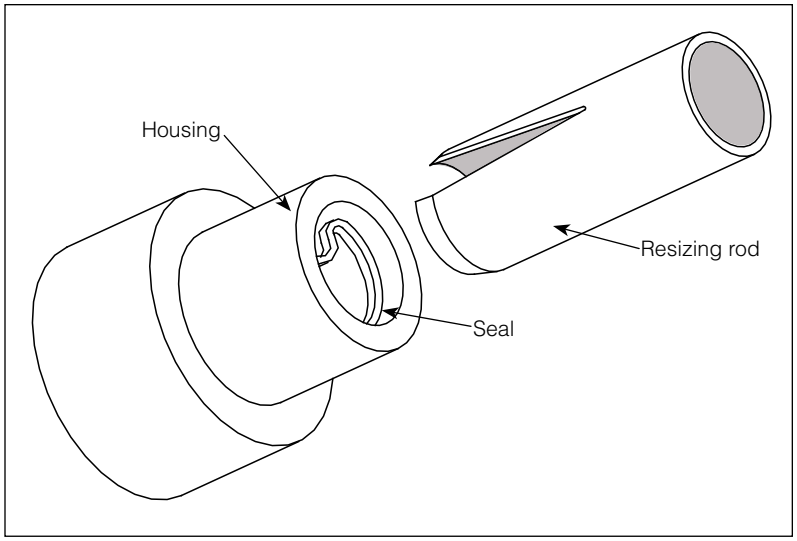
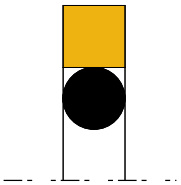


Figure 10. Rod seal installation

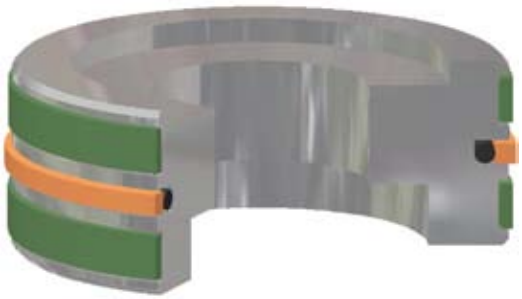
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

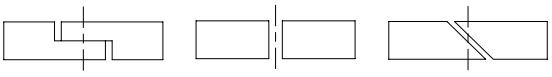
Temperature: -30 °F to 250 °F (-34 °C to 121 °C)
A wider temperature range can be achieved by using alternate O-ring compounds.

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



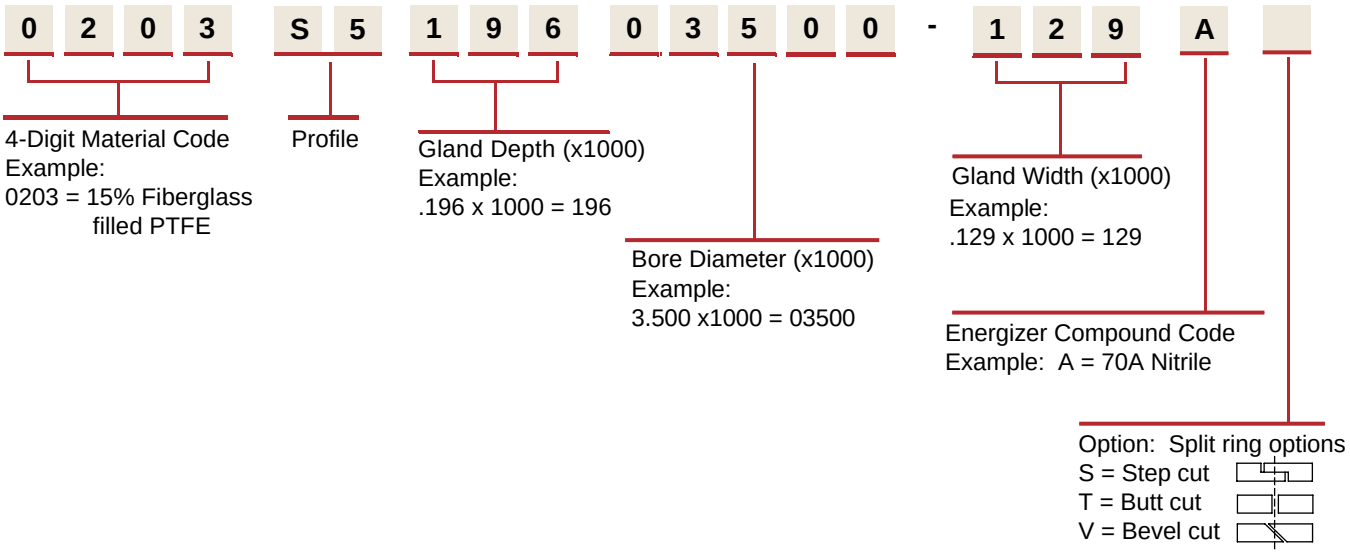
Metric: To configure metric part numbering, see Table 10 on Page 20, and call Customer Service for availability.

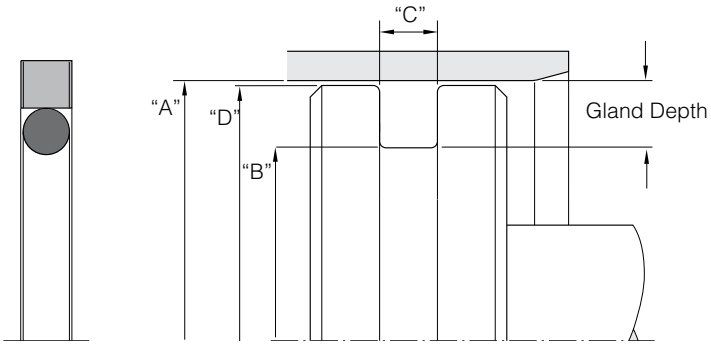
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

S5 Profile

Part Number Nomenclature — S5 Profile

Table 8. S5 Profile — Inch





Gland Dimensions — S5 Profile

Table 9. S5 Gland Dimensions — Inch

			"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
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
+.003/-.000	+.002/-.002	+.003/-.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**
+.004/-.000	+.003/-.003	+.004/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

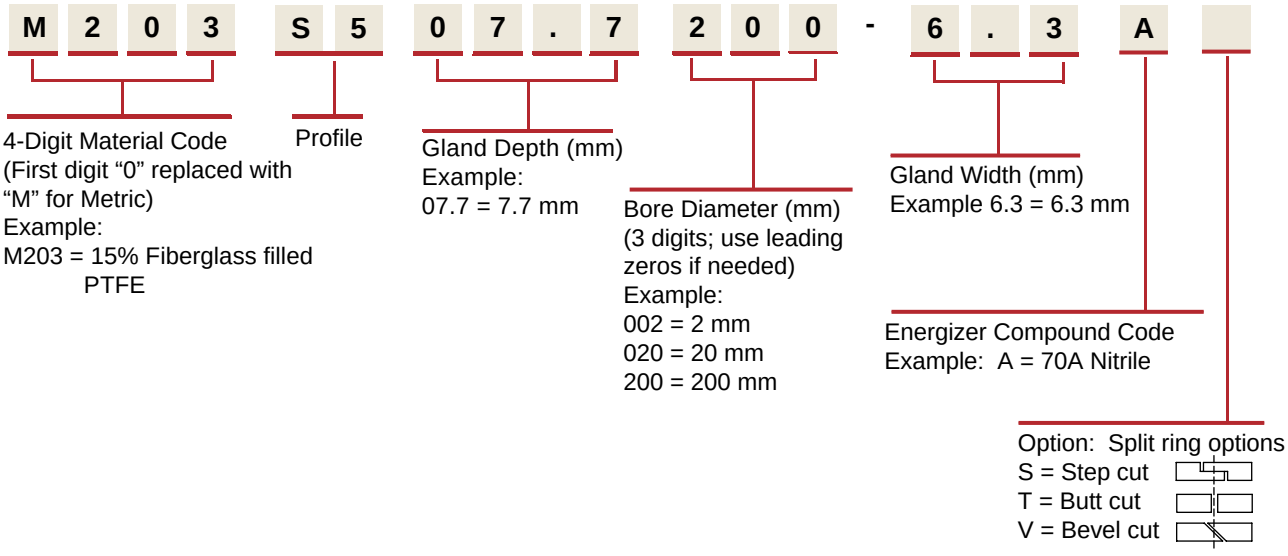
S5 Profile

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
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

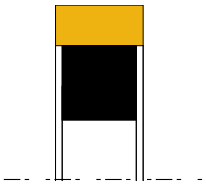
Table 10. S5 Profile — Metric



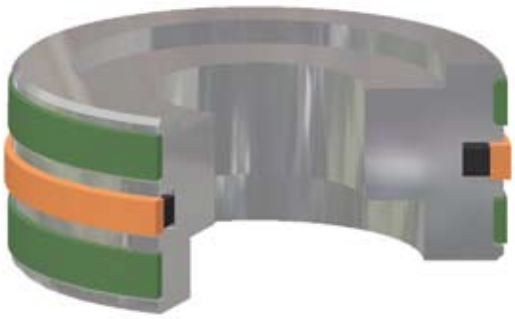
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

R5 Profile

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

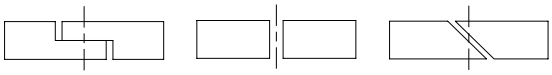
Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
Higher temperature can be achieved by using alternate O-ring compounds.

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

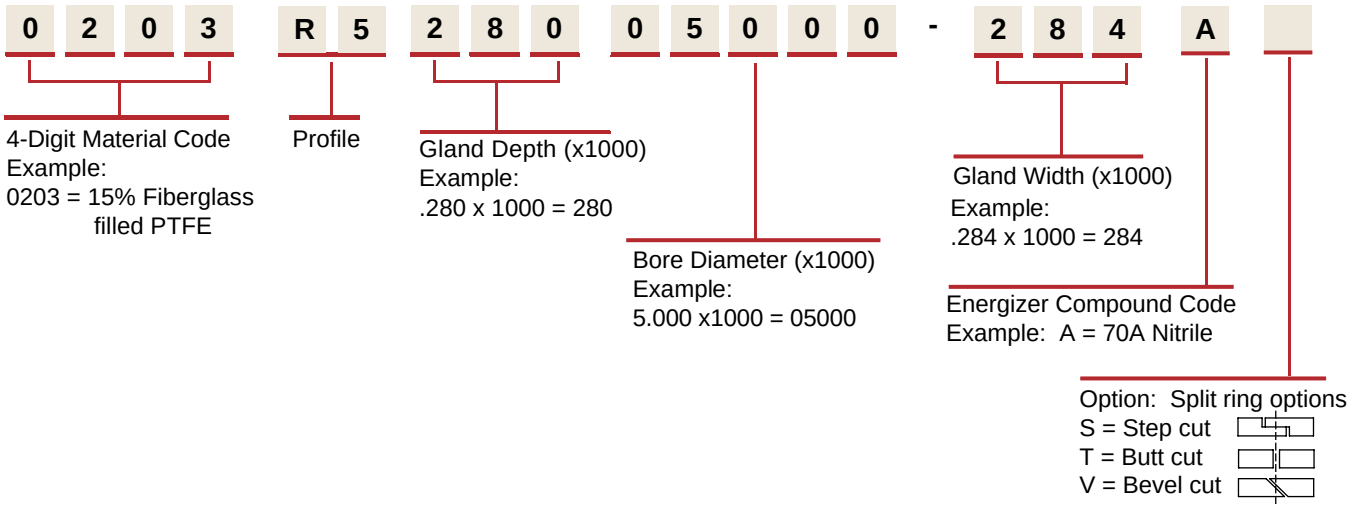


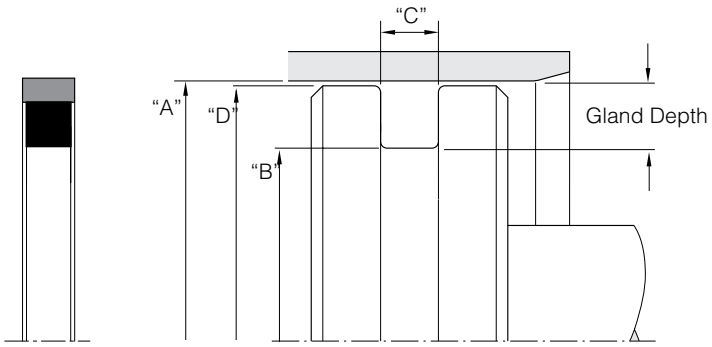
Metric: To configure metric part numbering, see Table 13 on Page 23, and call Customer Service for availability.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Part Number Nomenclature — R5 Profile

Table 11. R5 Profile — Inch





Gland Dimensions — R5 Profile

Table 12. R5 Gland Dimensions — Inch

			"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)	Square Ring Dash Number	R5 Part Number
+.002/-.000	+.001/-.001	+.002/-.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**
+.003/-.000	+.002/-.002	+.002/-.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**

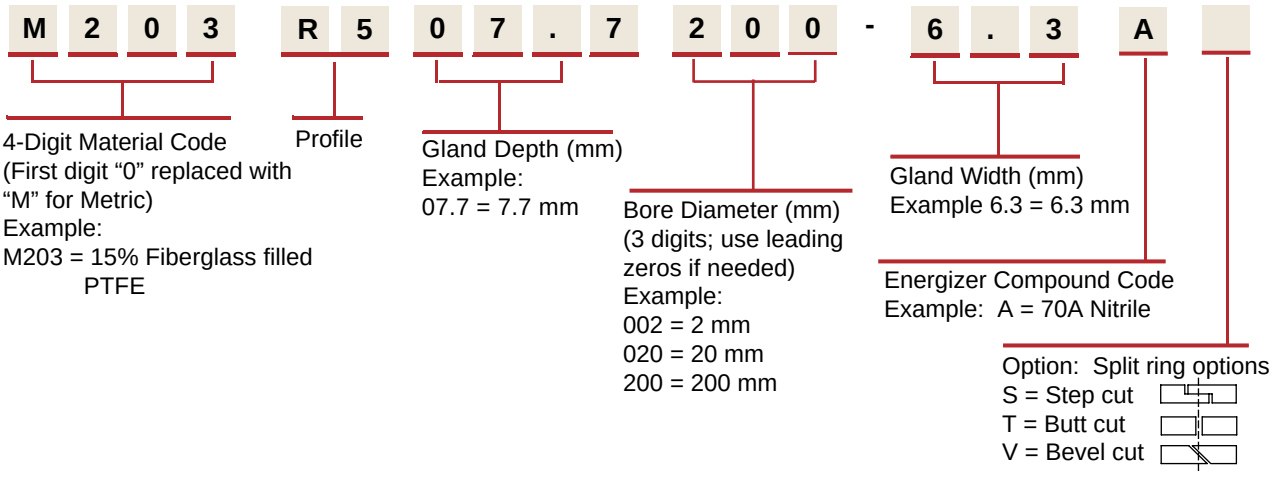
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Table 12. R5 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)	Square Ring Dash Number	R5 Part Number
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**
+.004/-.000	+.003/-.003	+.003/-.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**
+.004/-.000	+.004/-.004	+.004/-.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

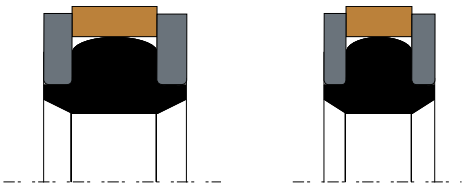
Table 13. R5 Profile — Metric



Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

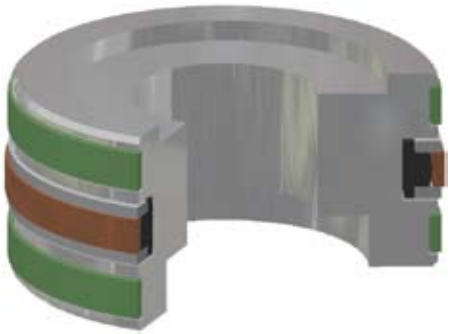
CT Profile

CT Profile



CT Cross Section

Standard *Narrow*



CT installed in Piston Gland

CT Profile, Linear Piston Seal

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)

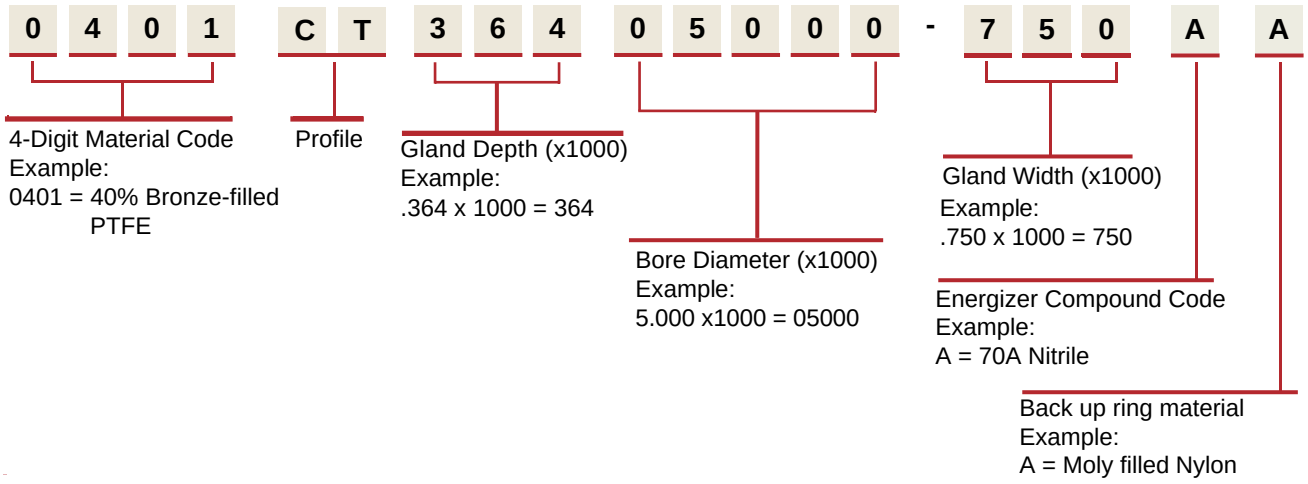
Options

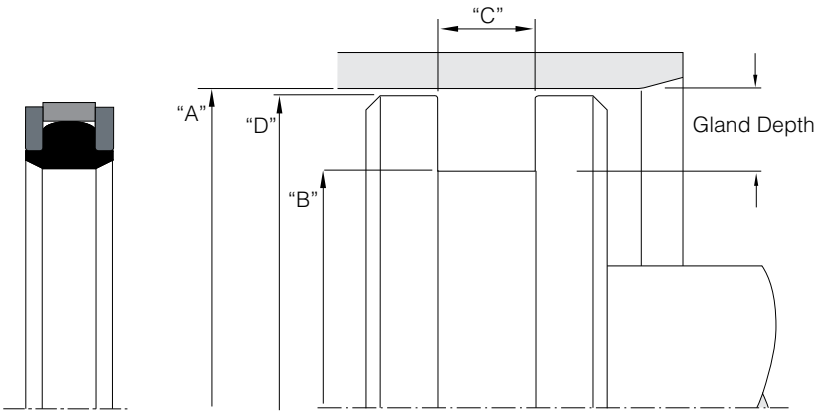
Metric: To configure metric part numbering, see Table 16 on Page 28, and call Customer Service for availability.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Part Number Nomenclature — CT Profile

Table 14. CT Profile — Inch





Gland Dimensions — CT Profile

Table 15. CT Gland Dimensions — Inch

			"D" Minimum Diameter Piston		
"A" Bore Diameter	**"B" Groove Diameter**	**"C" Groove Width**	**5000 psi (345 bar)**	**6500 psi (450 bar)**	**CT Part Number (Narrow)**
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

CT Profile

Table 15. CT Gland Dimensions — Inch (continued)

			"D" Minimum Diameter Piston		
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	5000 psi (345 bar)	6500 psi (450 bar)	CT Part Number (Standard)
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Table 15. CT Gland Dimensions — Inch (continued)

			"D" Minimum Diameter Piston		
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	5000 psi (345 bar)	6500 psi (450 bar)	CT Part Number (Standard)
5.250	4.522	0.750	5.216	5.230	**0401CT36405250-750AA**
5.375	4.647	0.750	5.341	5.355	**0401CT36405375-750AA**
+.004/-.000	+.000/-.004	+.010/-.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**
+.005/-.000	+.000/-.004	+.010/-.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**
+.005/-.000	+.000/-.005	+.010/-.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**
+.006/-.000	+.000/-.005	+.010/-.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**
+.006/-.000	+.000/-.006	+.010/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

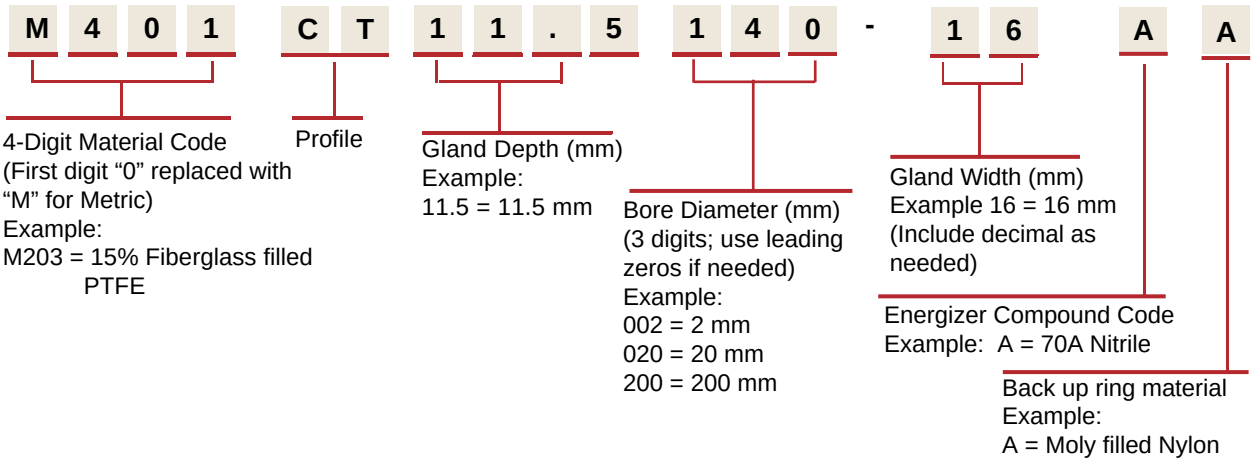
CT Profile

Table 15. CT Gland Dimensions — Inch (continued)

			"D" Minimum Diameter Piston		
"A" Bore Diameter	"B" Groove Diameter	"C" Groove Width	5000 psi (345 bar)	6500 psi (450 bar)	CT Part Number (Standard)
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

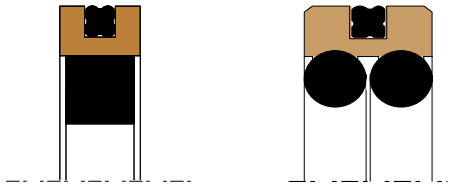
Table 16. CT Profile — Metric



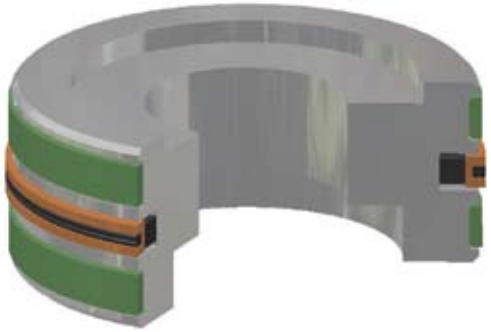
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

CQ Profile

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

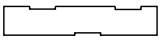
Pressure: 5,000 psi (350 bar) without wear rings
1,500 to 3,000 psi (100 to 200 bar) with wear rings

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.

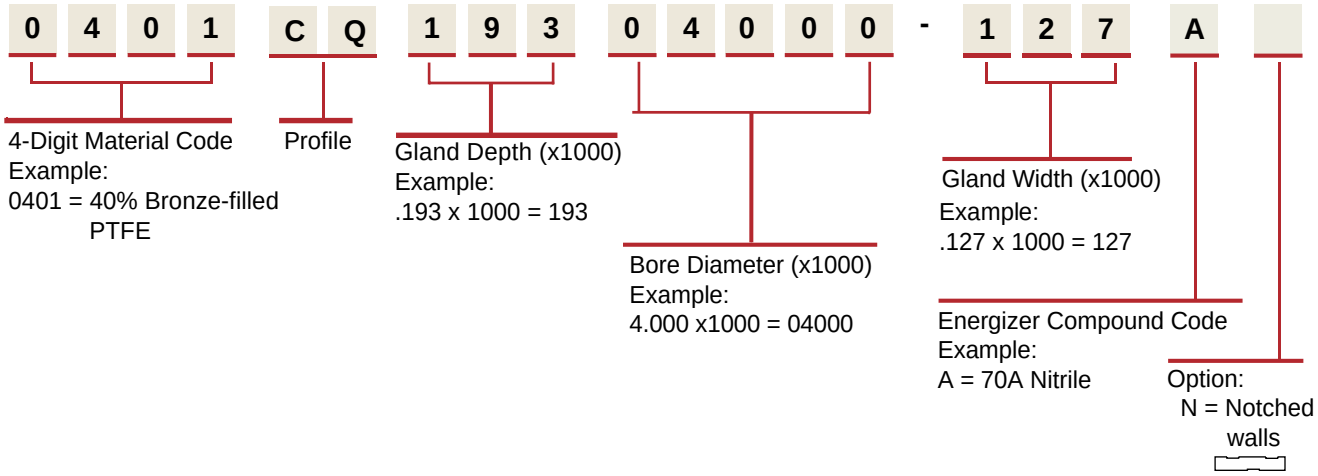
N = Notched walls 

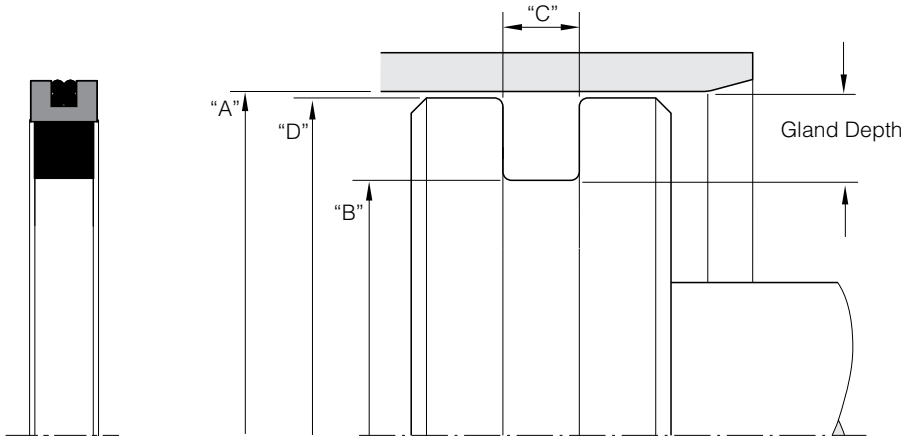
Metric: To configure metric part numbering, see Table 19 on Page 33, and call Customer Service for availability.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Part Number Nomenclature — CQ Profile

Table 17. CQ Profile — Inch





Gland Dimension — CQ Profile

Table 18. CQ Gland Dimensions — Inch

			"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.	Square Ring No.	CQ Part Number (Square Ring)
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Table 18. CQ Profile — 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.	Square Ring No.	CQ Part Number (Square Ring)
4.750	4.134	0.288	4.710	4.720	4.738	157	346	**0401CQ30804750-288A**
+.004/-.000	+.000/-.006	+.005/-.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**

			"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)
+.002/-.000	+.000/-.003	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

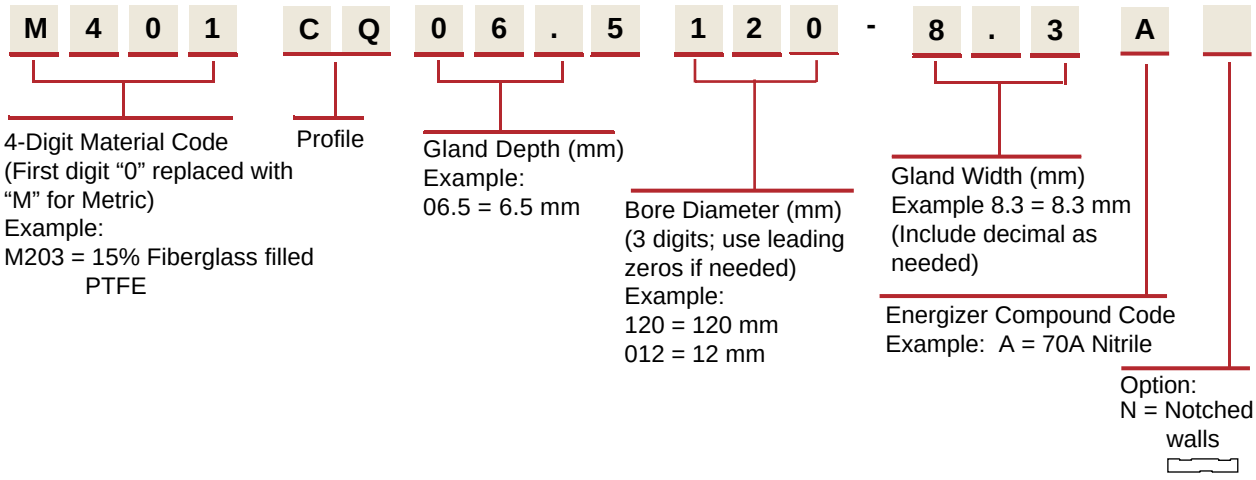
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)
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

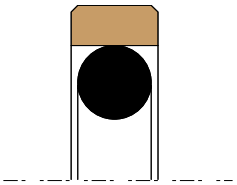


Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

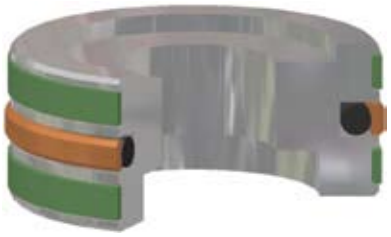
OE Profile, Linear Piston Seal

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.

OE Profile



OE Cross Section



OE installed in Piston Gland

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

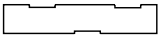
Pressure: 5,000 psi (345 bar) without wear rings
1,000 to 3,000 psi (103 to 206 bar) with wear rings

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

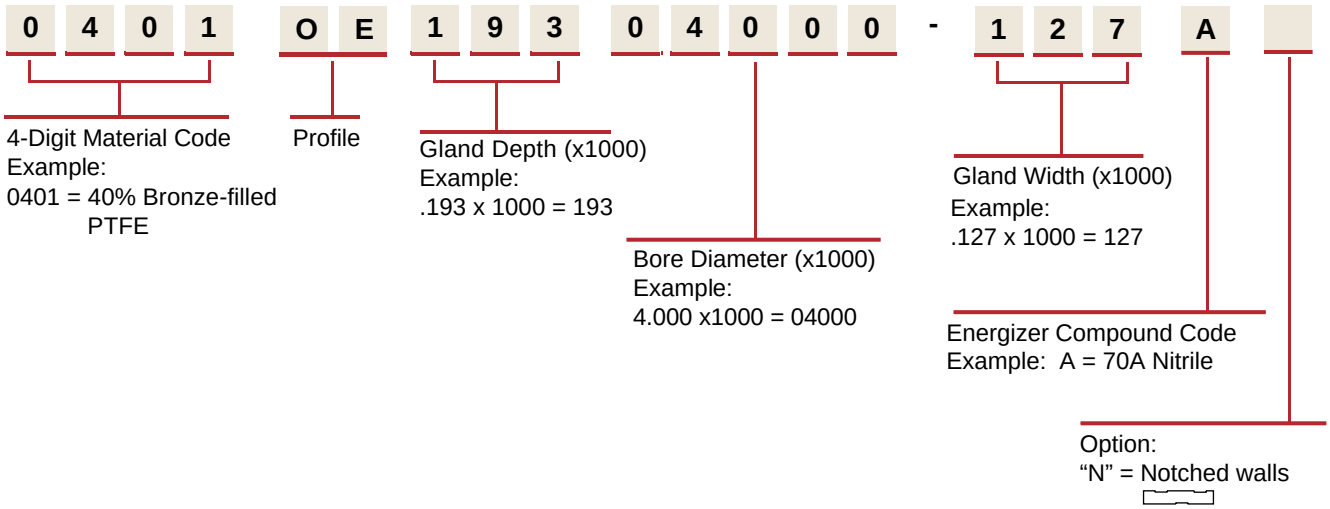
Notched side walls: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the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

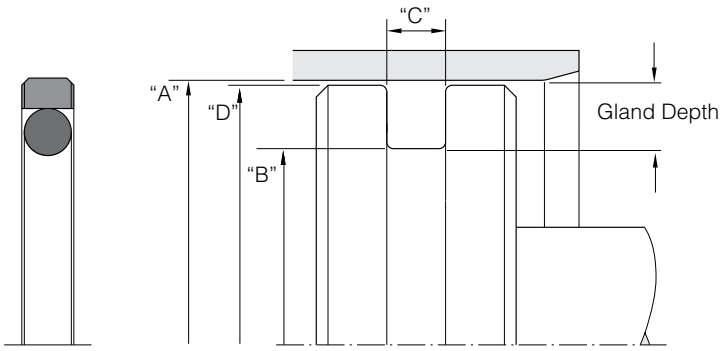
N = Notched walls 

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Part Number Nomenclature — OE Profile

Table 20. OE Profile — Inch





Gland Dimension — OE Profile

Table 21. OE Gland Dimensions — Inch

			"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
+.001/-.000	+.000/-.001	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.002/-.000	+.000/-.002	+.005/-.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**
+.002/-.000	+.000/-.003	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
1.875	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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
6.500	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**
+.003/-.000	+.000/-.006	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

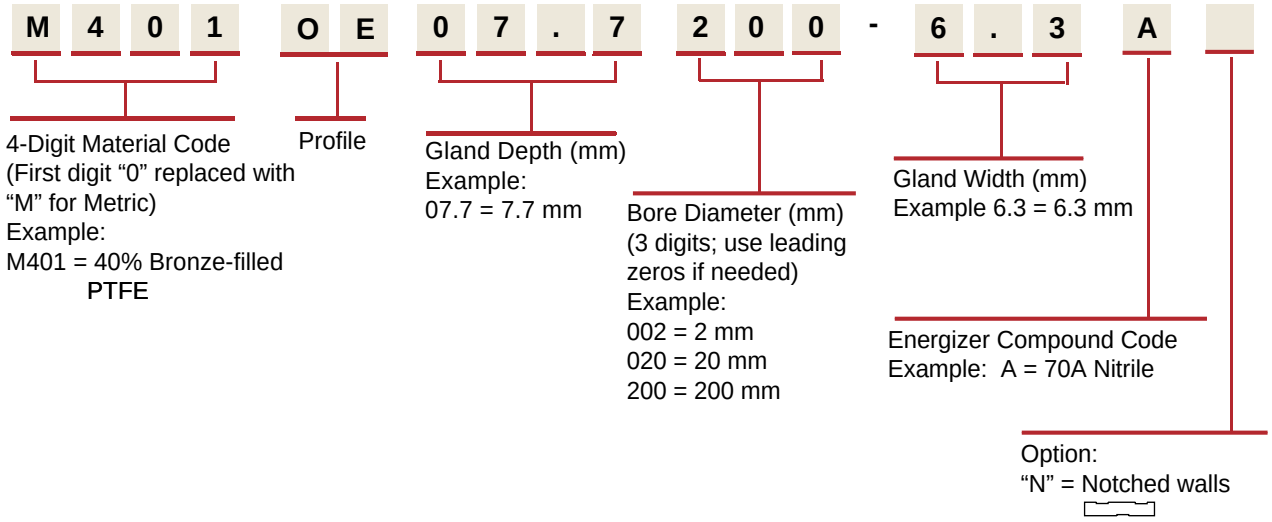
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
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

			"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
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.07/-.00	+.00/-.10	+.02/-.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**
+.07/-.00	+.00/-.15	+.02/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

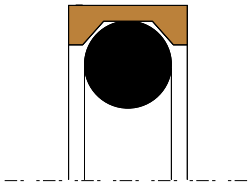
Table 23. OE Gland Dimensions — Metric (cont'd)

			"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
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**

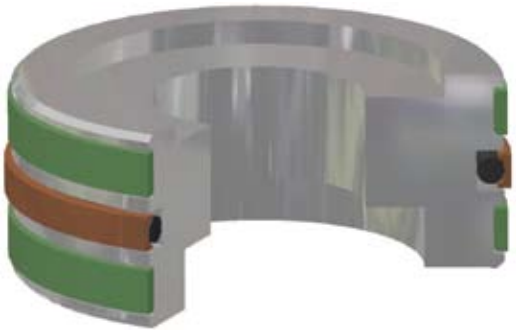
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

CP Profile

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

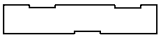
Pressure: 5,000 psi (345 bar)

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

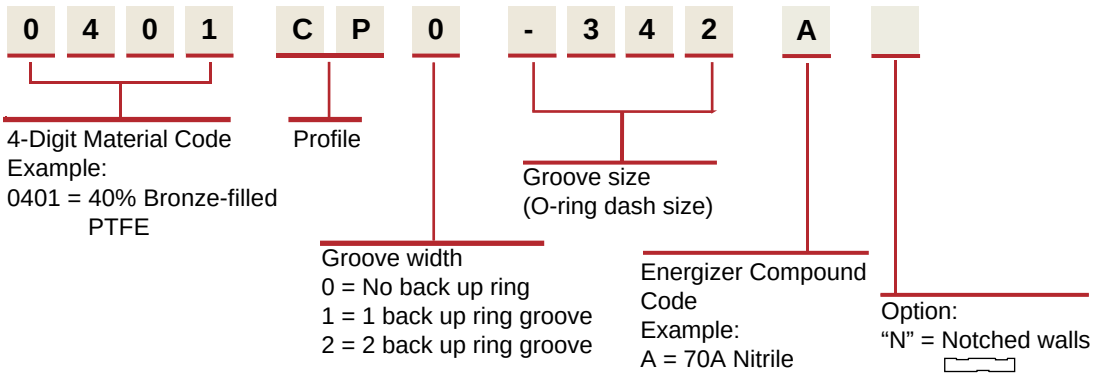
Notched side walls: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the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

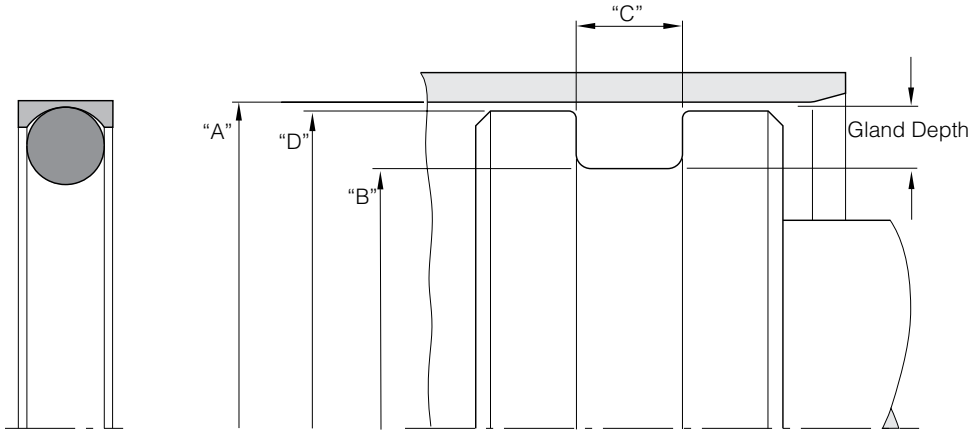
N = Notched walls 

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)
+.002/-.000	+.000/-.002	+.005/-.000	+.005/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.002/-.000	+.000/-.002	+.005/-.000	+.005/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.002/-.000	+.000/-.002	+.005/-.000	+.005/-.000	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.002/-.000	+.000/-.002	+.005/-.000	+.005/-.000	+.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**
+.002/-.000	+.000/-.004	+.005/-.000	+.005/-.000	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.002/-.000	+.000/-.004	+.005/-.000	+.005/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

CP Profile

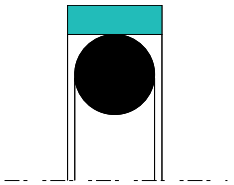
Table 25. CP Gland Dimensions — Inch

"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**

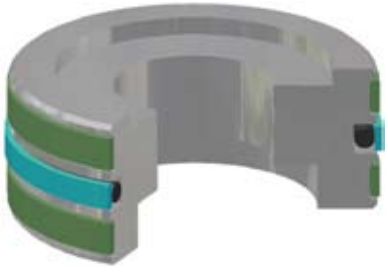
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OA Profile

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

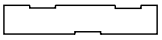
Temperature: -40 °F to 250 °F (-40 °C to 121 °C)
A wider temperature range can be achieved using alternate O-ring compounds.

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.

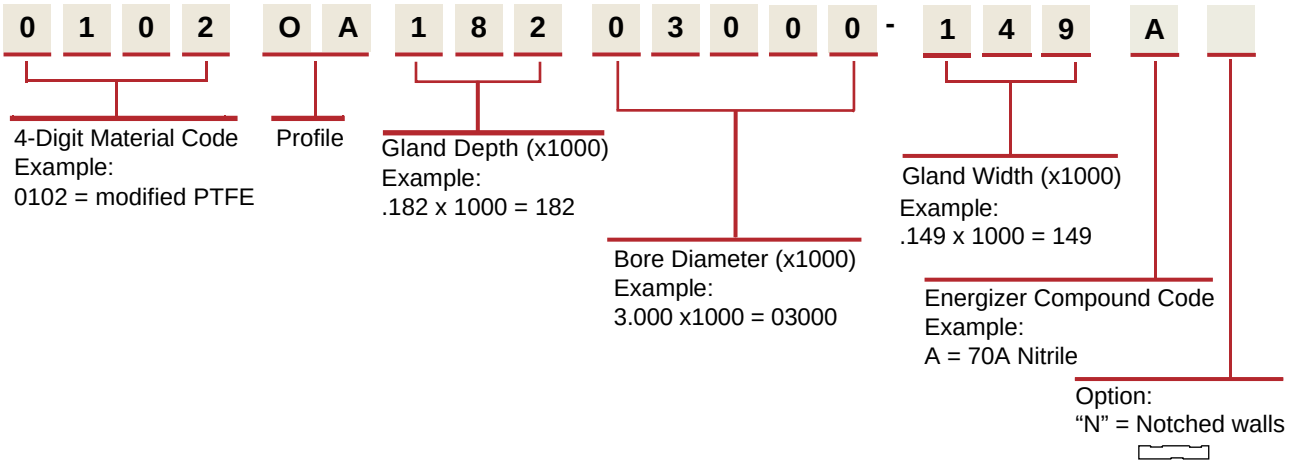
N = Notched walls 

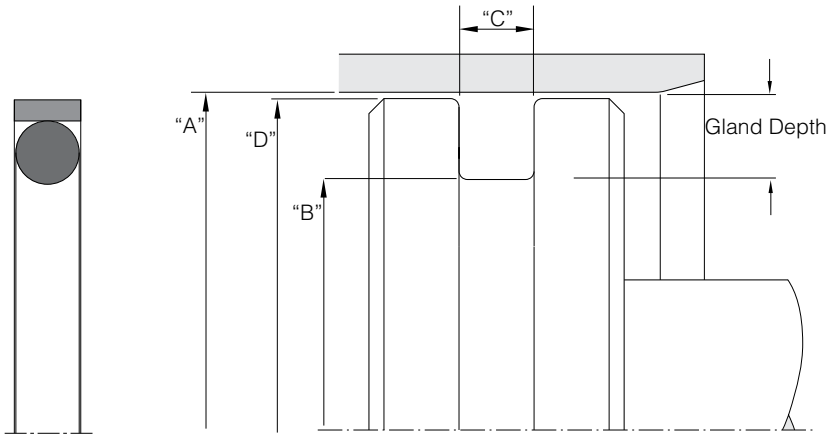
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
+.001/-.000	+.000/-.001	+.005/-.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**
+.002/-.000	+.000/-.002	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.003/-.000	+.000/-.003	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.004/-.000	+.000/-.004	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.005/-.000	+.000/-.005	+.005/-.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**
+.006/-.000	+.000/-.006	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

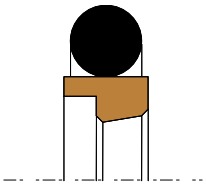
Table 27. OA Gland Dimensions — Inch (cont'd)

"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**

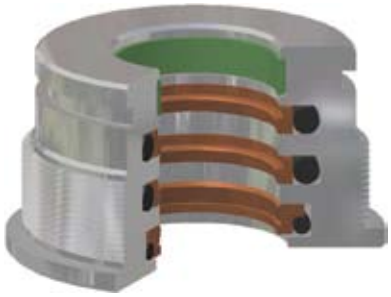
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OD Profile

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.

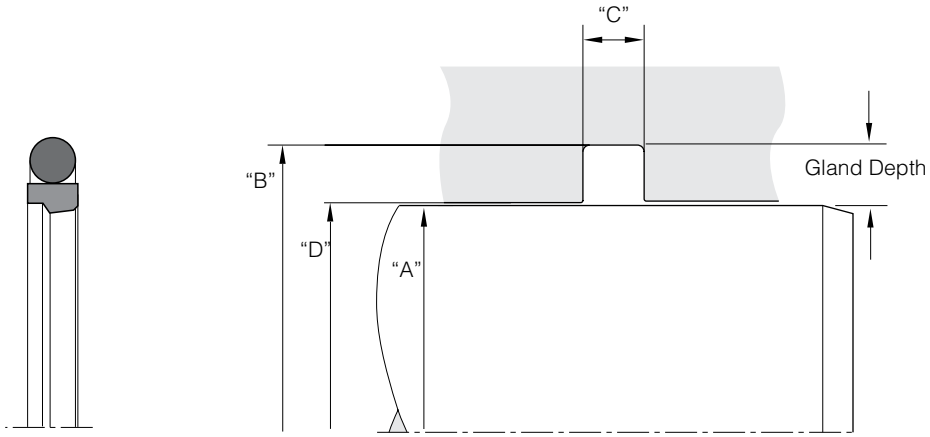
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OD Profile

Part Number Nomenclature —OD Profile

Table 28. OD Profile — Inch

0 4 0 1	O D	2 1 0	0 1 0 0 0	-	1 6 5	A
4-Digit Material Code Example: 0401 = 40% Bronze-filled PTFE	Profile	Gland Depth (x1000) Example: .210 x 1000 = 210	Rod Diameter (x1000) Example: 1.000 x1000 = 01000		Gland Width (x1000) Example: .165 x 1000 = 165	Energizer Compound Code Example: A = 70A Nirtrile



Gland Dimensions — OD Profile

Table 29. OD Profile — Inch

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OD Part Number
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OD Part Number
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**
+.000 / -.002	+.002/-.000	+.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**
+.000 / -.003	+.003/-.000	+.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**
+.000 / -.004	+.004/-.000	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OD Profile

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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OD Part Number
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**
+.000 / -.005	+.005/-.000	+.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**
+.000 / -.005	+.005/-.000	+.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**
+.000 / -.005	+.005/-.000	+.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**
+.000 / -.006	+.006/-.000	+.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**

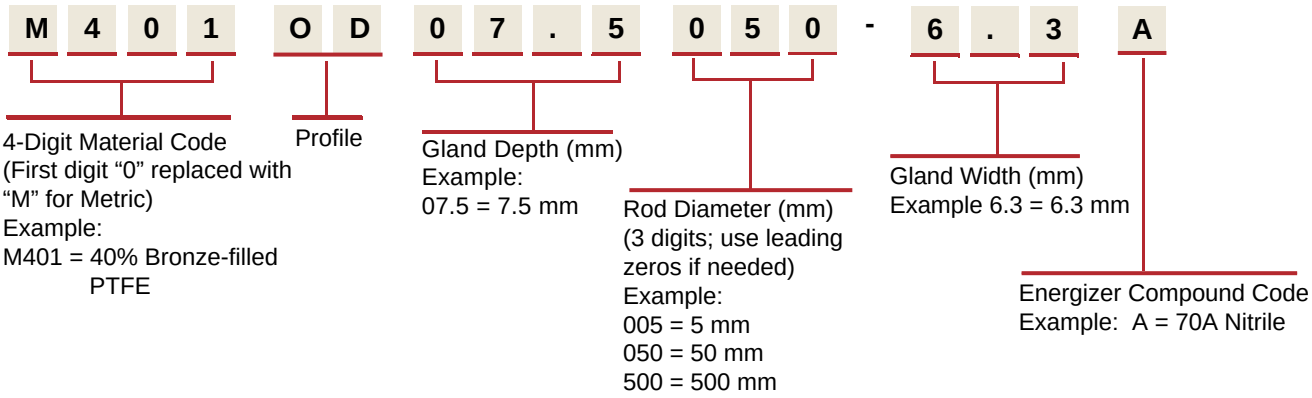
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	OD Part Number
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**
+.000 / -.007	+.007/-.000	+.008/-.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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	100 bar (1500 psi)	200 bar (3000 psi)	345 bar (5800 psi)	O-ring Dash Number	OD Part Number
+.00/-.04	+.04/-.00	+.20/-.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**
+.00/-.05	+.05/-.00	+.20/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OD Profile

Table 31. OD 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)	345 bar (5800 psi)	O-ring Dash Number	OD Part Number
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**
+.00/-.06	+.06/.-00	+.20/-.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**
+.00/-.06	+.06/-.00	+.20/-.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**
+.00 / -.07	+.07/-.00	+.20/-.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**
+.00/-.09	+.09/-.00	+.20/-.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**
+.00/-.10	+.10/-.00	+.20/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

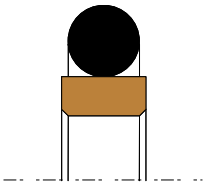
Table 31. OD Gland Dimensions — Metric (cont'd)

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	100 bar (1500 psi)	200 bar (3000 psi)	345 bar (5800 psi)	O-ring Dash Number	OD Part Number
+.00/-.12	+.12/-.00	+.20/-.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**
+.00/-.13	+.13/-.00	+.20/-.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**
+.00/-.14	+.14/-.00	+.20/-.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**
+.00/-.15	+.15/-.00	+.20/-.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**

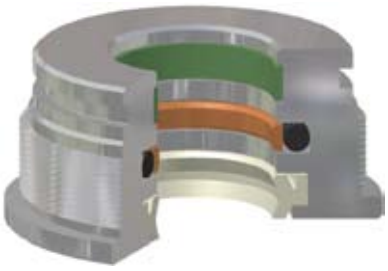
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

ON Profile

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

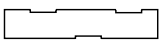
Pressure: 5,000 psi (345 bar) without wear rings
1,000 - 3,000 psi (103 - 206 bar) with wear rings

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

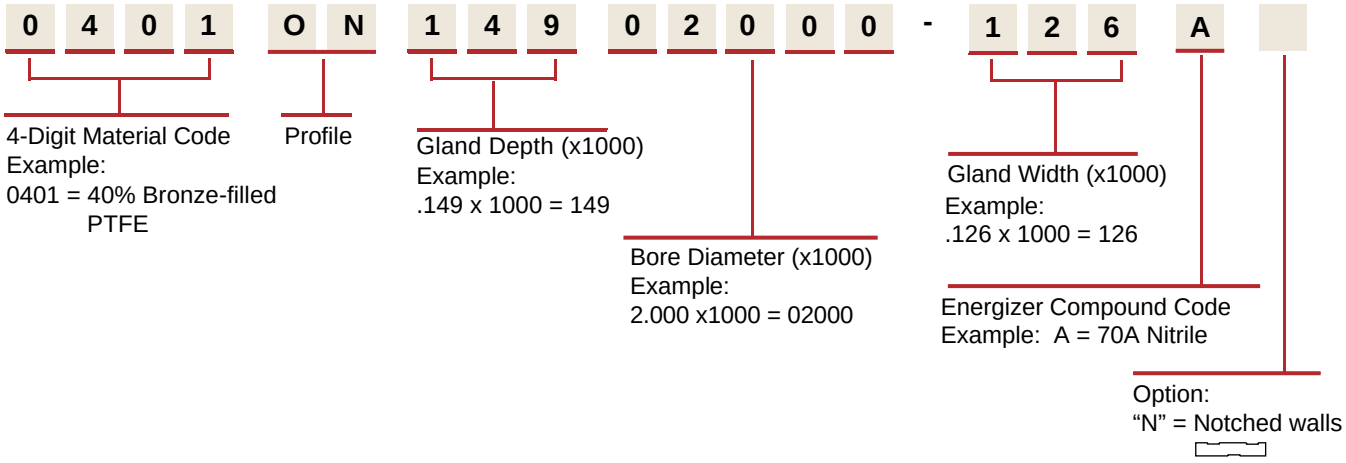
Notched side walls: Notches can be added to the side walls of the PTFE cap. This can help to optimize the seal's response to fluid pressure. Notched side walls help ensure that fluid pressure fills the cavity between the side face of the seal and the side face of the seal gland. Consult EPS Division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

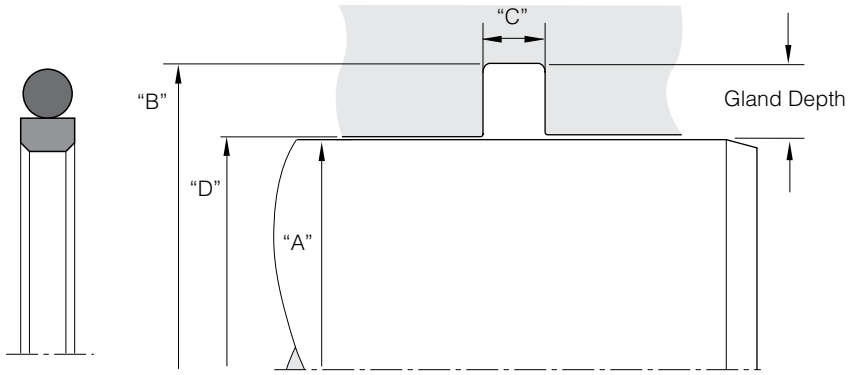
N = Notched walls 

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Part Number Nomenclature — ON Profile

Table 32. ON Profile — Inch





Gland Dimensions — ON Profile

Table 33. ON Profile — Inch

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	ON Part Number
+.000/-.001	+.001/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	ON Part Number
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**
+.000/-.002	+.002/-.000	+.005/-.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**
+.000/-.003	+.003/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	ON Part Number
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**
+.000/-.004	+.004/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	ON Part Number
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**
+.000/-.005	+.005/-.000	+.005/-.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**
+.000/-.005	+.005/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

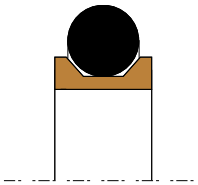
Table 33. ON Gland Dimensions — Inch (cont'd)

			"D" Maximum Diameter Throat				
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width	1500 psi (100 bar)	3000 psi (200 bar)	5000 psi (345 bar)	O-ring Dash Number	ON Part Number
7.750	8.580	0.320	7.800	7.790	7.774	445	**0401ON41507750-320A**
+.000/-.006	+.006/-.000	+.005/-.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**
+.000/-.007	+.007/-.000	+.005/-.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**

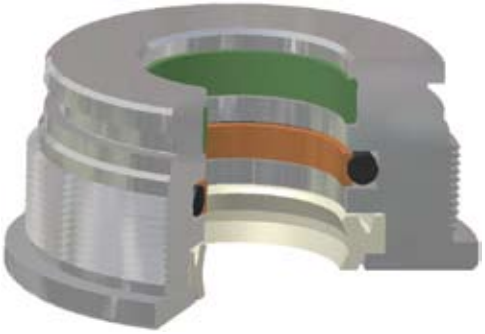
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

CR Profile

CR Profile



CR Cross Section



CR installed in Rod Gland

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

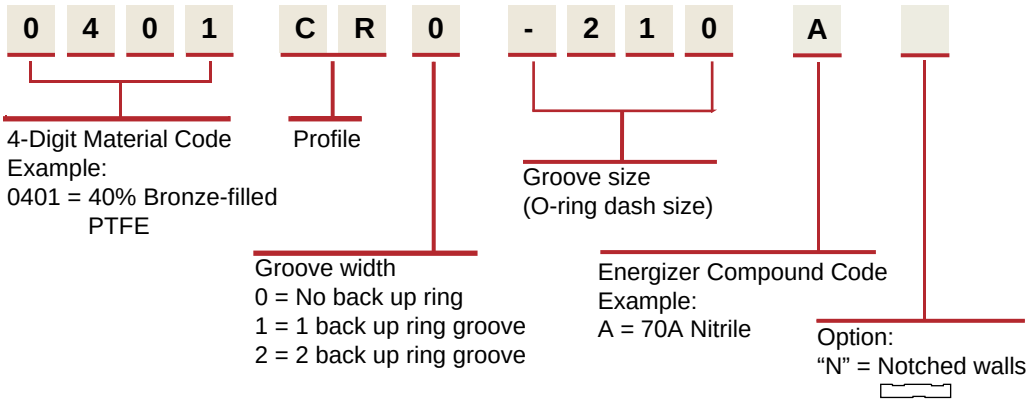
Notched side walls: Notches can be added to the side walls of the PTFE cap. This can help to optimize the seal's response to fluid pressure. Notched side walls help ensure that fluid pressure fills the cavity between the side face of the seal and the side face of the seal gland. Consult EPS Division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

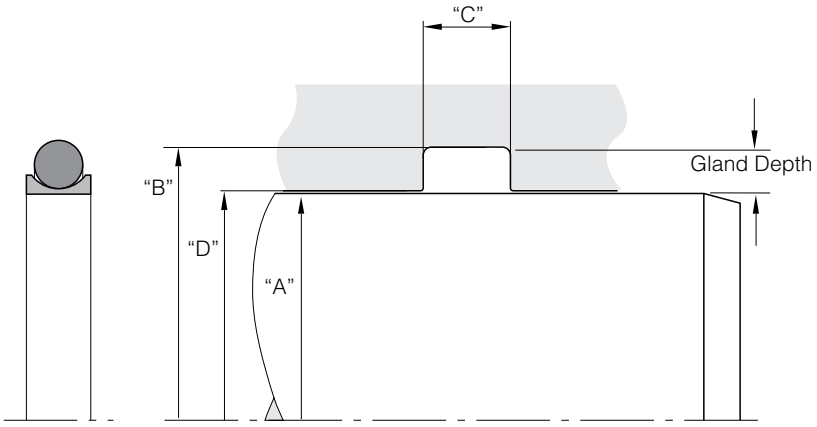
N = Notched walls 

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)
+.000/-.002	+.002/-.000	+.005/-.000	+.005/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.000/-.002	+.002/-.000	+.005/-.000	+.005/-.000	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.000/-.002	+.002/-.000	+.005/-.000	+.005/-.000	+.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**
+.000/-.002	+.004/-.000	+.005/-.000	+.005/-.000	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.000/-.002	+.004/-.000	+.005/-.000	+.005/-.000	+.005/-.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**

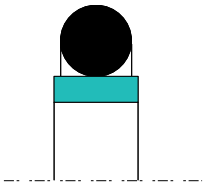
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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

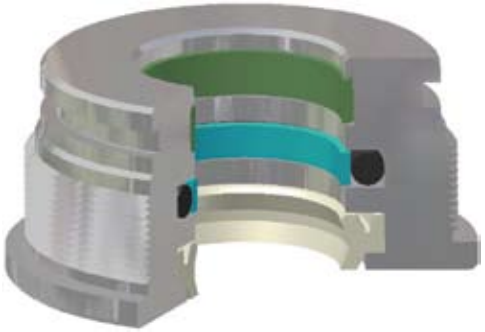
"A" Rod Diameter	"B" Groove Diameter	"C" Groove Width (CR0)	"C" Groove Width (CR1)	"C" Groove Width (CR2)	"D" Maximum Throat Dia. 5000 psi (345 bar)	O-ring Dash Number	CR Part Number (X = Groove Width of 0, 1 or 2)
7.250	7.724	0.375	0.408	0.538	7.260	442	**0401CR X-442A**
7.500	7.974	0.375	0.408	0.538	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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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.

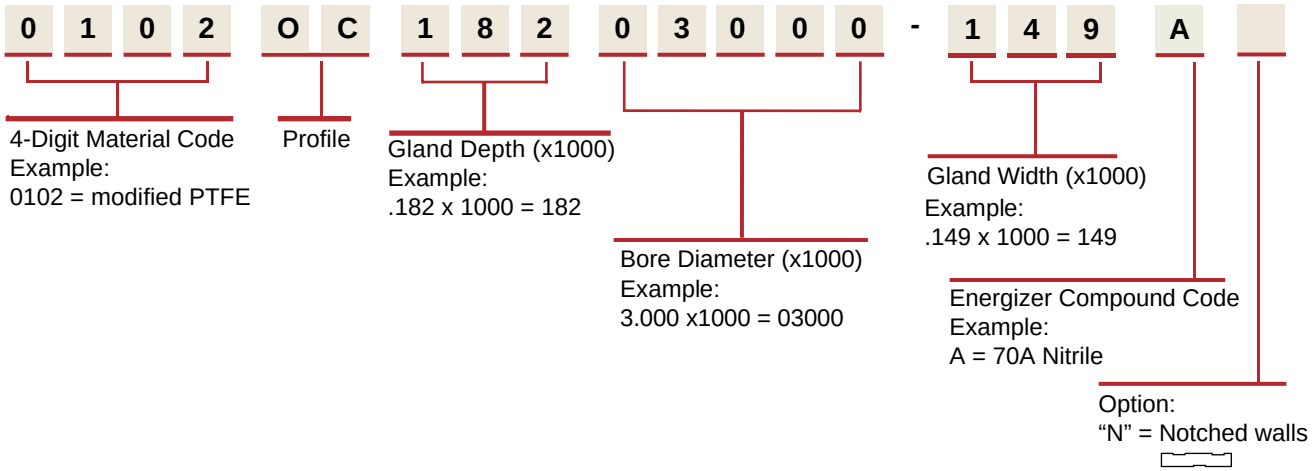
N= Notched walls 

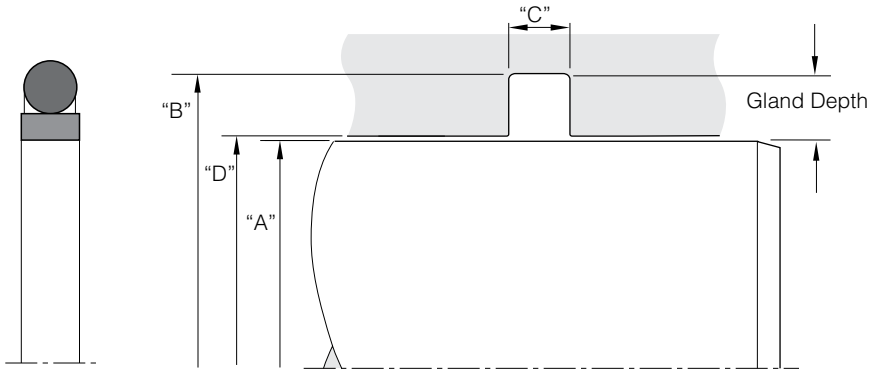
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

www.parkerseals.com

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.003/-.000	+.000/-.003	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
+.005/-.000	+.000/-.005	+.005/-.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**
+.006/-.000	+.000/-.006	+.005/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OC Profile

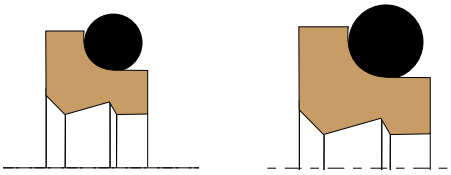
Table 37. OC Gland Dimensions — Inch (cont'd)

"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**

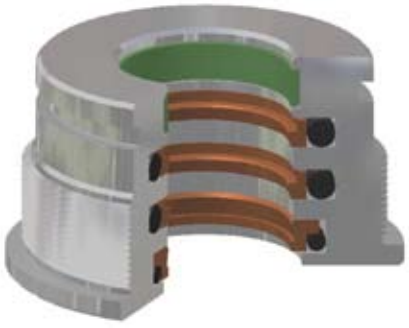
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

AD Profile

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

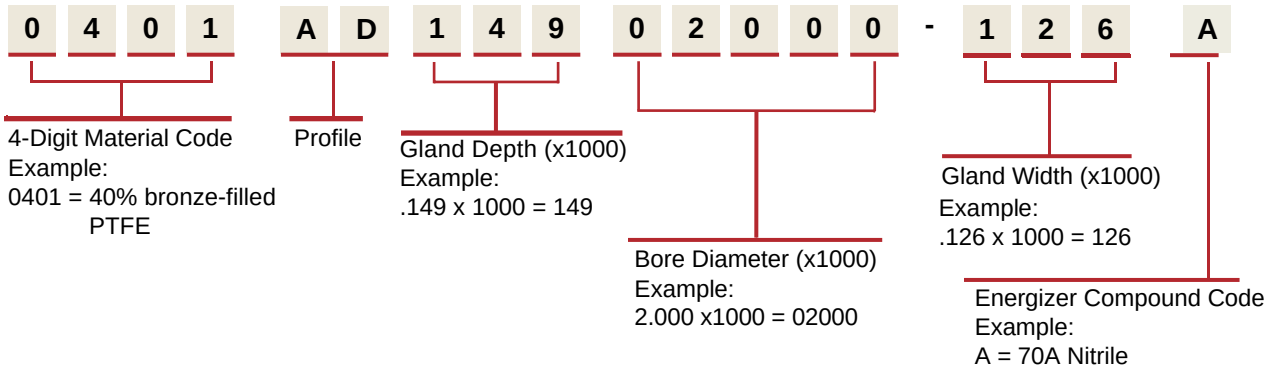
Metric: For metric part numbering, see Tables 40 and 41 on Page 89.

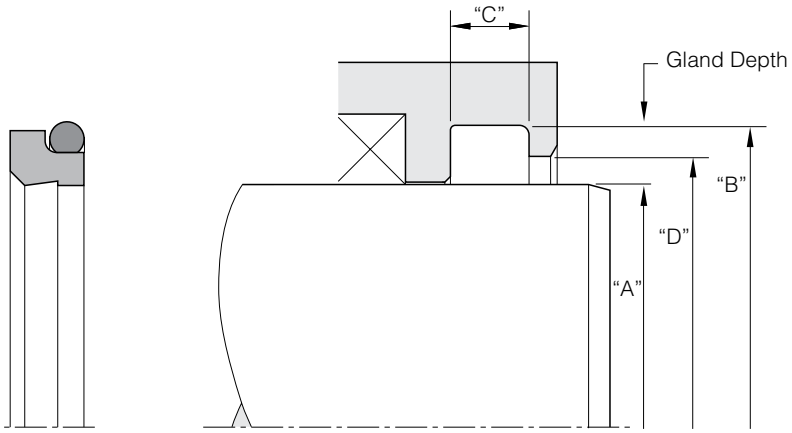
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019
www.parkerseals.com

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)
+.000 / -.002	+.002 / -.000	+.008 / -.000	+.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**
+.000 / -.003	+.003 / -.000	+.008 / -.000	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)**
+.000 / -.002	+.002 / -.000	+.008 / -.000	+.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**
+.000 / -.003	+.003 / -.000	+.008 / -.000	+.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**
+.000 / -.003	+.003 / -.000	+.008 / -.000	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

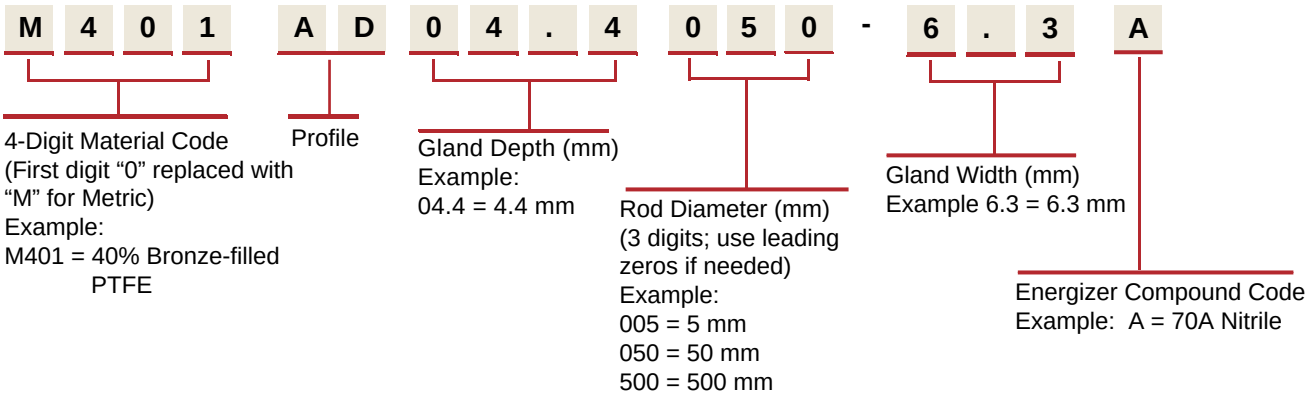
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)
+.00 / -.04	+.04 / -.00	+.40 / -.00	+.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**
+.00 / -.04	+.04 / -.00	+.40 / -.00	+.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**
+.00 / -.05	+.05 / -.00	+.40 / -.00	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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)
+.00 / -.06	+.06 / -.00	+.40 / -.00	+.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**
+.00 / -.07	+.07 / -.00	+.40 / -.00	+.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**
+.00 / -.07	+.07 / -.00	+.40 / -.00	+.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**
+.00 / -.09	+.09 / -.00	+.40 / -.00	+.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**
+.00 / -.10	+.10 / -.00	+.40 / -.00	+.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**
+.00 / -.12	+.12 / -.00	+.40 / -.00	+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.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**
+.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**
+.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)
+.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**
+.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**
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

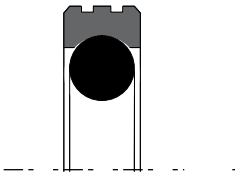
Table 41. AD Gland Dimensions — Metric (cont'd)

"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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OQ Profile

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.

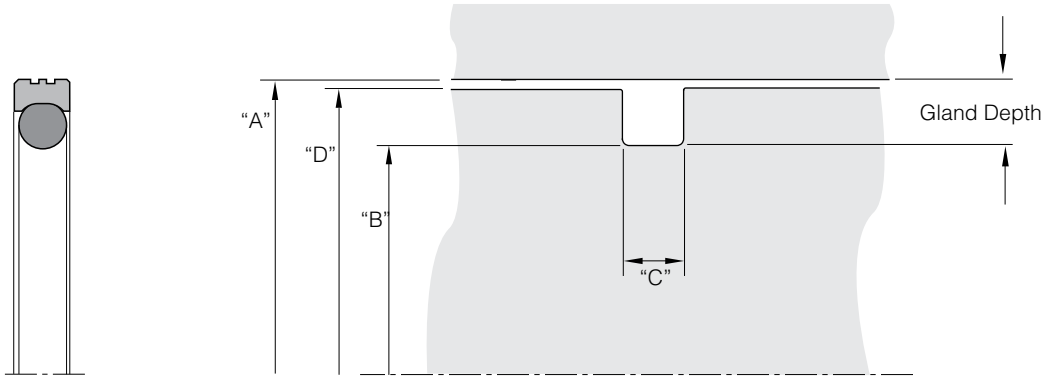
Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OQ Profile

Part Number Nomenclature — OQ Profile

Table 42. OQ Profile — Inch

0 2 0 4	O Q	1 4 7	0 2 0 0 0	-	1 2 6	A
4-Digit Material Code Example: 0204 = 5% Fiberglass, 5% MoS_2 filled PTFE	Profile	Gland Depth (x1000) Example: .147 x 1000 = 147	Bore Diameter (x1000) Example: 2.000 x1000 = 02000		Gland Width (x1000) Example: .126 x 1000 = 126	Energizer Compound Code Example: A = 70A Nitrile



Gland Dimensions — OQ Profile

Table 43. OQ Profile — Inch

			"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
+.001/-.000	+.000/-.001	+.008/-.000				
0.375	0.182	0.087	0.355	0.361	008	**0204OQ09700375-087A**
+.002/-.000	+.000/-.002	+.008/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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
+.002/-.000	+.000/-.002	+.008/-.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**
+.003/-.000	+.000/-.003	+.008/-.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**
+.003/-.000	+.000/-.003	+.008/-.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**
+.004/-.000	+.000/-.004	+.008/-.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**
+.004/-.000	+.000/-.004	+.008/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OQ Profile

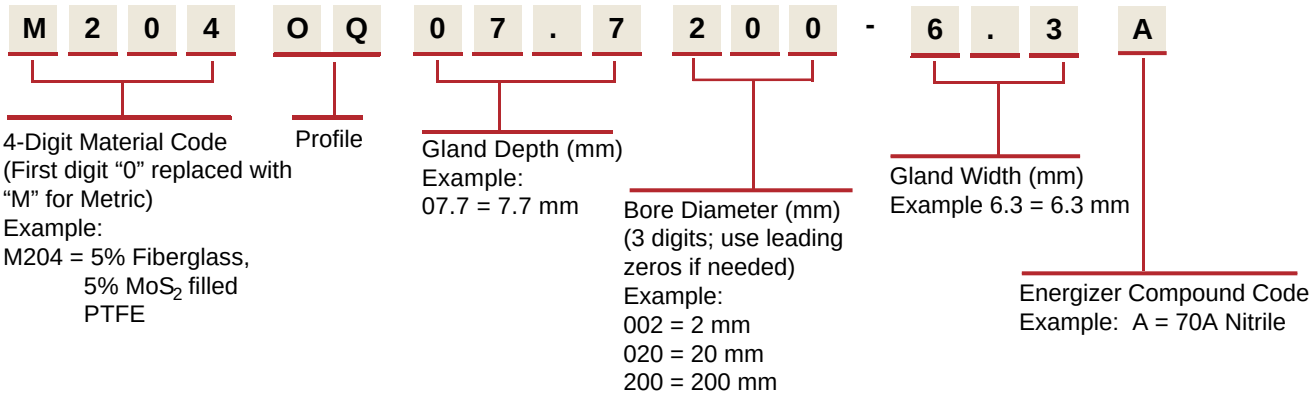
Table 43. OQ Gland Dimensions — Inch (cont'd)

			"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**
+.005/-.000	+.000/-.005	+.008/-.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**
+.006/-.000	+.000/-.006	+.008/-.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**
+.007-.000	+.000/-.007	+.008/-.000				
20.000	19.173	0.319	19.950	19.960	467	**0204OQ41420000-319A**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Part Number Nomenclature —OQ Profile

Table 44. OQ Profile — Metric



Gland Dimensions — OQ Profile

Table 45. OQ Profile — Metric

			"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
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OQ Profile

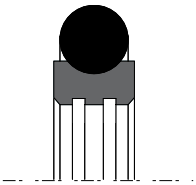
Table 45. OQ Gland Dimensions — Metric (cont'd)

			"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
+.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

OR Profile

OR Profile



OR Cross Section

OR installed on Rotary Shaft Gland

OR Profile, Rotary Shaft Seal

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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

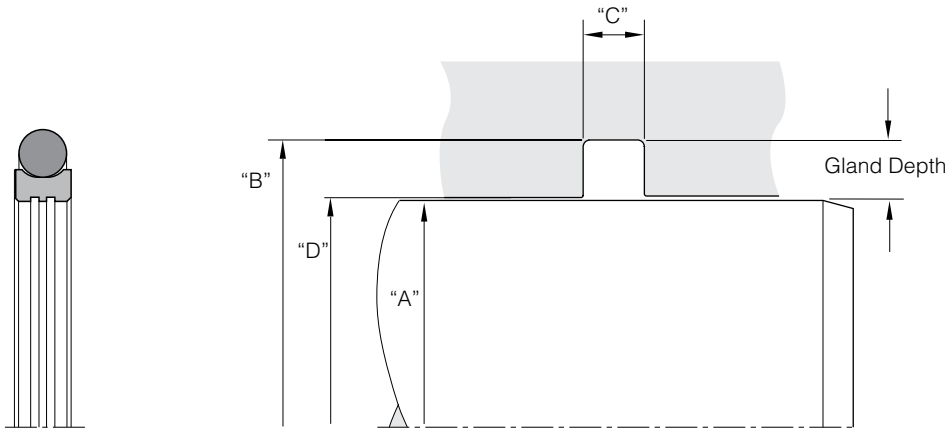
OR Profile

Part Number Nomenclature —OR Profile

Table 46. OR Profile — Inch

0	2	0	4	O	R	1	4	7	0	2	0	0	0	-	1	2	6	A

- 0204 — 4-Digit Material Code. Example: 0204 = 5% Fiberglass, 5% MoS_2 filled PTFE
- OR — Profile
- 147 — Gland Depth (x1000). Example: .147 x 1000 = 147
- 02000 — Bore Diameter (x1000). Example: 2.000 x1000 = 02000
- 126 — Gland Width (x1000). Example: .126 x 1000 = 126
- A — Energizer Compound Code. Example: A = 70A Nitrile



Gland Dimensions — OR Profile

Table 47. OR Profile — Inch

			"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
+.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**

www.parkerseals.com

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**
+.000/-.002	+.003/-.000	+.008/-.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**
+.000/-.003	+.003/-.000	+.008/-.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**
+.000/-.003	+.003/-.000	+.008/-.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**
+.000/-.003	+.004/-.000	+.008/-.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**
+.000/-.004	+.004/-.000	+.008/-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

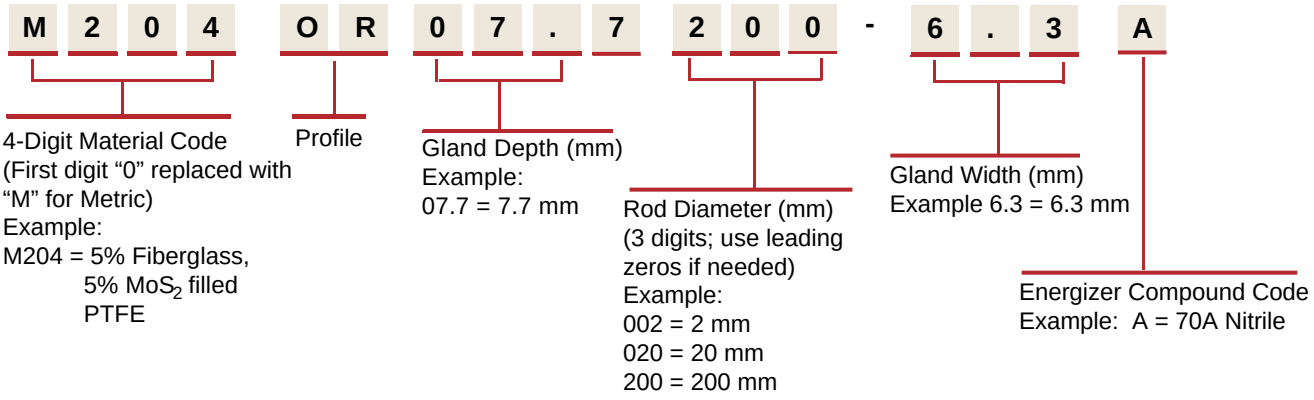
Table 47. OR Gland Dimensions — Inch (cont'd)

			"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**
+.000/-.004	+.004/-.000	+.008/-.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**
+.000/-.005	+.005/-.000	+.008/-.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**
+.000/-.006	+.006/-.000	+.008/-.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**
+.000/-.007	+.007-.000	+.008/-.000				
20.000	20.827	0.319	20.050	20.040	469	**0204OR41420000-319A**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Table 49. OE 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 /-.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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

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**

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Design Action Request Form

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

Referred by _____
Lead # _____

Applications Engineering Use:
Project # _____
Date Entered _____
Date Required _____
Prepared by _____
Territory Mgr. _____
Distributor _____
_____
Dist. Sales _____

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

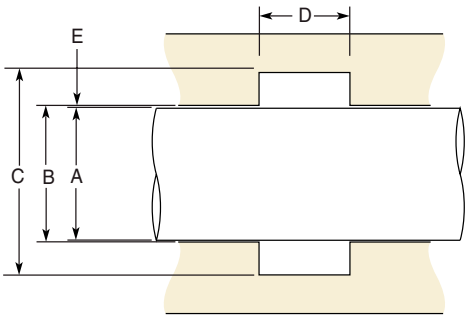
☐ SOLID SEAL ☐ PTFE LIP SEAL
☐ SPLIT SEAL ☐ ELASTOMER LIP SEAL
☐ BEARING ISOLATOR

Design Action Request Form

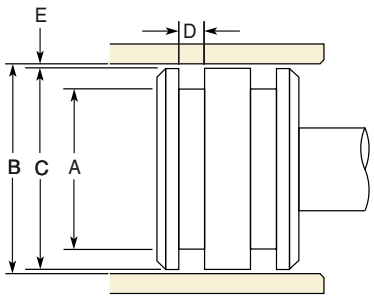
OPERATING PARAMETERS	UNIT (CIRCLE ONE)	MINIMUM	OPERATING	MAXIMUM
TEMPERATURE:	°K °F °C			
PRESSURE:	PSI BAR MPA			
STROKE LENGTH (RECIPROCATING):	INCH MM			
CYCLE RATE:	CYCLES/MIN CYCLES/HR HZ			
DEGREE OF ARC (OSCILLATING):	DEGREES			
VELOCITY:	FT/MIN. MM/MIN.			
VACUUM:	IN HG TORR			
ROTARY SPEED	RPM			

MEDIA TO BE SEALED: _____

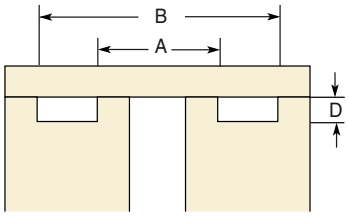
☐ **Rod**



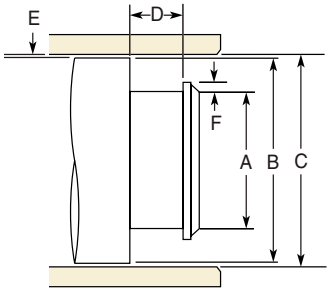
☐ **Piston**



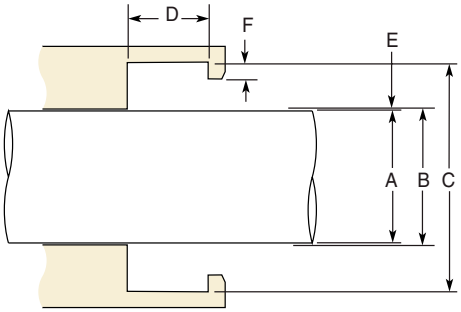
☐ **Face Seal**



☐ **Other Piston**



☐ **Other Rod**



HARDWARE SPECIFICATIONS

HARDWARE DRAWINGS INCLUDED WITH DAR: ☐ YES ☐ NO

A DIAMETER:	MIN. _____	MAX. _____	HARDNESS _____	FINISH _____	MAT'L _____
B DIAMETER:	MIN. _____	MAX. _____	HARDNESS _____	FINISH _____	MAT'L _____
C DIAMETER:	MIN. _____	MAX. _____	HARDNESS _____	FINISH _____	MAT'L _____
D GROOVE WIDTH:	MIN. _____	MAX. _____	CAN HARDWARE BE CHANGED? ☐ YES ☐ NO		
E RADIAL CLEARANCE:	MIN. _____	MAX. _____	HOW? _____		
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 _____

GLAND TYPE

____ SPLIT ____ OPEN

METRIC

☐ YES

PERFORMANCE REQUIREMENTS
(CIRCLE ONE)

FRICTION: LBS OZ GMS BREAKOUT _____ DYNAMIC _____

EXPECTED LIFE: CYC HRS YRS _____

MAX. LEAKAGE: DROPS CC/MIN _____

MOST CRITICAL ASPECT: _____

CONTAMINATION: _____

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019
www.parkerseals.com

Notes

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Other Parker EPS Products

Parker EPS Division

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.

Catalog Services

EPS Division's catalogs and technical bulletins are available through Parker's Catalog Services. To order catalogs and have them shipped directly, call 1-800-C-PARKER, or send your requests via e-mail to: catalogs@parker.com.

Technical Support

Parker product engineers are available to address temperature, pressure, gland design, surface finish and all other seal design considerations, and can often optimize an existing design or propose cost-effective alternatives. Our in-house hydraulic and pneumatic test and R&D laboratories enable us to quickly develop and perform appropriate test protocols for our customers.

Catalogs Online

Parker EPS Division catalogs and bulletins are available for download from our website in electronic format. Log on to www.parkerseals.com and click on the "Literature" links.

Rod Seals

Parker is the premiere manufacturer of quality rod sealing products both in standard inch as well as metric sizes, in a wide range of urethane and traditional elastomer compounds.

See: Catalog EPS 3800 & 5225

Wear Rings and Bearings

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.

See: Catalog EPS 5276

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

See: Catalog PPD 3600

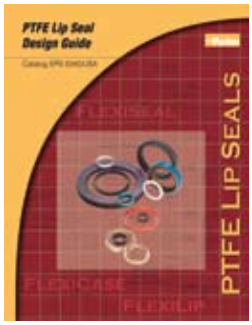
U-Cups Seals

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 sealing, both in hydraulic and pneumatic applications.

See: Catalog PPD 5225

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Other Parker EPS Products



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

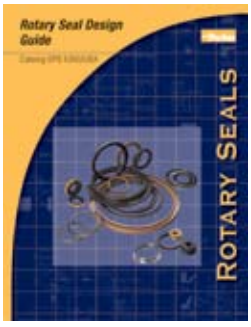
Parker's Integrated Piston combines the piston, bearing and seal into a self-contained package for low, medium and high pressure hydraulic cylinder applications.

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

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

Offer of Sale

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, MERCHANTIBILITY 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.

5. Limitation of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

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.

Parker Hannifin Corporation, EPS Division
Tel: 801-972-3000
Fax: 801-973-4019

anything Parker Possible™

Parker Hannifin Corporation, Seal Group
North America

Engineered Polymer Systems Division
Salt Lake City Operations and Headquarters
2220 South 3600 West
Salt Lake City, UT 84119 USA
Ph: 801-972-3000
Fax: 801-973-4019

Nacogdoches Operations
403 Industrial Drive
Nacogdoches, TX 75963 USA
Ph: 936-560-8900
Fax: 936-560-8998
Toll Free: 1-800-233-3900

Marion Operations
3967 Buffalo Street
Marion, NY 14505 USA
Ph: 315-926-4211
Fax: 315-926-4498

Chicago Operations
2565 Northwest Parkway
Elgin, IL 60123 USA
Ph: 847-783-4300
Fax: 847-783-4301

Asia
Parker Hannifin Motion & Control (Shanghai) Co., Ltd
280 Yun Qiao Road, Jin Qiao Export Processing Zone
Pudong, Shanghai 201206
China
Ph: (+86) 21 2899 5181
Fax: (+86) 21 5834 8975

Parker Hannifin Corporation
Corporate Office
6035 Parkland Blvd.
Cleveland, OH 44124-4141 USA
Ph: 216-896-3000
Fax: 216-896-4000

Europe

Germany
Parker Hannifin GmbH & Co. KG
Prädifa - Packing Division
Postfach 1641
D74321 Bietigheim-Bissingen
Ph: (+49) 7142 351-0
Fax: (+49) 7142 351-293

Czech Republic
Parker Hannifin, Packing Mfg. Operation
Podebradska 1005
Sadska, CZ-28912, Czech Republic
Ph: (+420) 325 555 111
Fax: (+420) 325 555 112

Denmark
Polar Seals ApS
Bjergvangen 2
Espergaerde, 3060 Denmark
Ph: (+45) 49 121700
Fax: (+45) 49 121701

Belgium
Parker Hannifin, Advanced Products, NV
Rupelweg 9
Boom, B-2850 Belgium
Ph: (+32) 3 880 81 50
Fax: (+32) 3 888 48 62

Your Authorized Parker Seal Distributor

1-800-C-PARKER
www.parkerseals.com

4.0M 05/06 AP