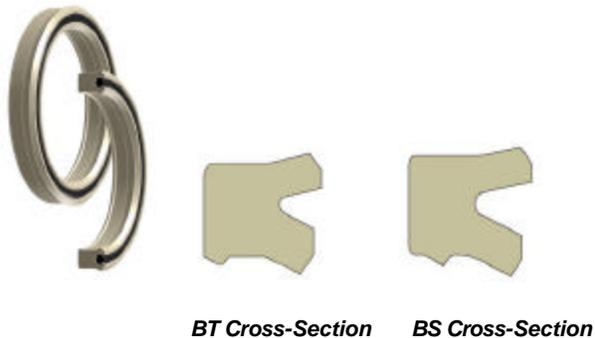


Industrial Seal Inc. offers a wide range of hydraulic and pneumatic rod seal profiles to meet the broad demands of the fluid power industry. These rod seals are offered in a variety of compounds and lip geometries for the best possible solution for a given application.

## BT/BS BT/BS, Premium U-cup with Secondary Stabilizing Lip

The BT and BS profiles are non-symmetrical hydraulic rod seals incorporating a knife-trimmed sealing lip and a secondary lip to provide improved sealing performance and a tight, stable fit in the gland. The BT and BS profiles provide long life, extrusion resistance, low compression set, shock load resistance and increased sealing performance at zero pressure. They are designed for use as a stand-alone rod seal or for use with the BR or OD profile buffer seals for more critical sealing applications.



### Technical Data

Standard Materials*	Temperature Range	Pressure Range	Surface Speed
P4300A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4301A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4700A90	-65°F to 200°F (-54°C to 93°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P5065A88	-70°F to 200°F (-57°C to 93°C)	3500 psi (241 bar)	< 1.6 ft/s (0.5 m/s)

**\*Alternate Materials:** For applications that may require an alternate material, please consult Industrial Seal Inc.

†**Pressure Range** without wear rings

**Pressure Range** with positively-activated back-up to 10,000 psi (688 bar).

**Options:** A back-up ring located in the heel of the BD profile can be provided for enhanced extrusion protection.

## BD Profile, Premium O-ring Energized Lip Seal

The BD profile is a non-symmetrical profile rod seal with a knife-trimmed primary seal lip, and a secondary lip to provide enhanced sealing performance and ensures a tight, stable fit in the gland. The o-ring energizer functions as a spring to maintain sealing contact under low pressure or vacuum applications. Also available with a positively-activated back-up.



*BD Cross-Section*

### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
P4300A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4301A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4700A90	-65°F to 200°F (-54°C to 93°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P5065A88	-70°F to 200°F (-57°C to 93°C)	3500 psi (241 bar)	< 1.6 ft/s (0.5 m/s)

**\*Alternate Materials:** For applications that may require an alternate material, please consult Industrial Seal Inc.

†**Pressure Range** without wear rings (see Table 2-4, page 2-5).

**Pressure Range** with positively-activated back-up to 10,000 psi (688 bar).

**Options:** A back-up ring located in the heel of the BD profile can be provided for enhanced extrusion protection.

## B3 Profile, U-cup Rod Seal

The B3 profile is a non-symmetrical design for use in hydraulic rod sealing applications. The diameter of the B3 profile is designed to ensure a tight static side seal when installed. The knife trimmed, beveled lip does an excellent job wiping fluid film. The B3 profile is available in Parker proprietary compounds offering extrusion resistance, long wear, and low compression set. The B3 profile is designed for use as a stand alone rod seal and can be used with Parker's BR or OD profile buffer seals for more critical sealing applications. The B3 profile does not utilize a secondary sealing lip and can be used with a double lip wiper seal, such as the AY profile, to provide a multiple lip, rod sealing system without trapping pressure.



### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
P4300A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4301A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4700A90	-65°F to 200°F (-54°C to 93°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P5065A88	-70°F to 200°F (-57°C to 93°C)	3500 psi (241 bar)	< 1.6 ft/s (0.5 m/s)

**\*Alternate Materials:** For applications that may require an alternate material, please contact Industrial Seal Inc.

†**Pressure Range** without wear rings

## UR Profile, Industrial U-cup Rod Seal

The UR profile is a non-symmetrical, hydraulic cylinder rod seal. The knife trimmed, beveled lip faces the rod to provide enhanced low to high pressure sealing and wiping action. The UR profile is an economical choice, available in Parker's wear and extrusion resistant Molythane compound.



### Technical Data

Standard Materials*	Temperature Range	Pressure Range	Surface Speed
P4615A90	-65°F to 200°F (-54°C to 93°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)

\***Alternate Materials:** For applications that may require an alternate material, please contact Industrial Seal Inc.

†**Pressure Range** without wear rings

## E5 Profile, Premium Rounded Lip U-cup Rod Seal

The E5 profile is a non-symmetrical rod seal designed to seal both lubricated and non-lubricated air. To ensure that critical surfaces retain lubrication, the radius edge of the lip is designed to hydroplane over pre-lubricated surfaces. The standard compound for the E5 profile is Parker's proprietary Nitroxile ELF compound N4274A85. This compound is formulated with proprietary internal lubricants to provide "Extreme Low Friction" and excellent wear resistance. This compound provides extended cycle life over standard nitrile and carboxylated nitrile compounds.



### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
N4274A85	-10°F to 250°F (-23°C to 121°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)
N4180A80	-40°F to 250°F (-40°C to 121°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)
V4208A90	-5°F to 400°F (-21°C to 204°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)
P5065A88	-70°F to 200°F (-57°C to 93°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)

**\*Alternate Materials:** For applications that may require an alternate material, please contact Industrial Seal Inc.

**†Pressure Range** without wear rings

## TR Profile (Rod T-seal) Compact Seal with Anti-Extrusion Technology

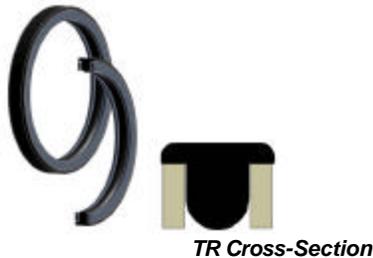
Parker's rod T-seal is designed to retrofit o-rings in no back-up, single back-up and two back-up standard industrial reciprocating glands. Its compact design provides improved stability and extrusion resistance in dynamic fluid sealing applications. The flange or base of the T-seal forms a tight seal in the gland and supports the anti-extrusion backup rings. When energized, the back-up rings bridge the extrusion gap to protect the rubber sealing element from extrusion and system contamination. The rod T-seal eliminates the spiral or twisting failure that can occur when o-rings are used against a dynamic surface. Parker offers the rod T-seal in a variety of elastomer and back-up ring compounds to cover a wide range of fluid compatibility, pressure and temperature requirements.

Profile **TR0** for **no** back-up o-ring gland (standard offering)

Profile **TRS** for **single** back-up o-ring gland

Profile **TRT** for **two** back-up o-ring gland

The TR profile is sold only as an assembly (elastomer and back-ups).



### Technical Data

#### Standard Materials

Base Elastomer*	Temperature Range	Surface Speed
N4115A75	-40°F to 225°F (-40°C to 107°C)	< 1.6 ft/s (0.5 m/s)
N4274A85	-10°F to 250°F (-23°C to 121°C)	< 1.6 ft/s (0.5 m/s)
V4205A75	-20°F to 400°F (-29°C to 204°C)	< 1.6 ft/s (0.5 m/s)
E4259A80	-65°F to 300°F (-54°C to 149°C)	< 1.6 ft/s (0.5 m/s)

**\*Alternate Materials:** For applications that may require an alternate material, please contact Industrial Seal Inc.

## ON Profile, PTFE Rod Cap Seal

The Parker ON profile is a bi-directional PTFE rod seal for use in low to medium duty hydraulic systems. 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 will retrofit non-Parker seals of similar design.

The ON profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.



*ON Cross-Section*

### Technical Data

Standard Materials* Cap	Temperature Range	Pressure Range†	Surface Speed
0401 40% bronze- filled PTFE	-200°F to 575°F (-129°C to 302°C)	5000 psi (344 bar)	< 13 ft/s (4 m/sec)
<b>Energizer</b> A	70A Nitrile -30°F to 250°F (-34°C to 121°C)		

**\*Alternate Materials:** For applications that may require an alternate material, please contact Industrial Seal Inc. for alternate PTFE and energizer materials.

†**Pressure Range** without wear rings

### 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 Industrial Seal Inc. for the availability and cost to add side notches to the ON profile.

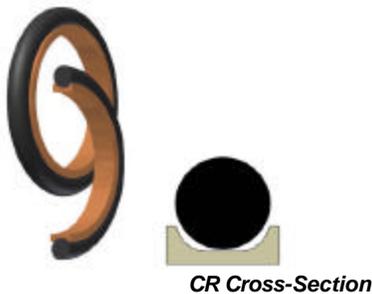
N = Notched walls

## CR Profile, PTFE Rod Cap Seal to Retrofit O-ring Glands

The Parker CR profile is a cap seal with anti-extrusion, low friction and low wear features. The seal is a bi-directional rod seal for use in pneumatic and low to medium duty applications. Because of its short assembly length, it requires minimal space in the rod housing. The three CR profiles will fit into standard o-ring grooves without modification. Parker's CR profiles will 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

The CR profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.



### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
<b>Cap</b> 0401 40% bronze filled PTFE	-200°F to 575°F (-129°C to 302°C)	5000 psi (344 bar)	< 13 ft/s (4 m/sec)

### Energizer

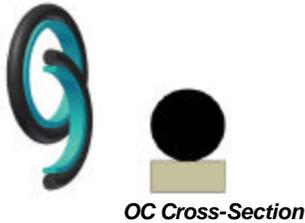
A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)
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**\*Alternate Materials:** For pneumatic applications, compound 0102 is recommended. For applications that may require an alternate material, please consult Industrial Seal Inc. for alternate PTFE and energizer materials.

†Pressure Range without wear rings

## OC Profile, Compact PTFE Rod Cap Seal

The Parker OC profile is a bi-directional rod seal for use in pneumatic and low to medium duty hydraulic systems. 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 will retrofit non-Parker seals of similar design. The OC profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.



### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
<b>Cap</b> 0102 Modified PTFE	-320°F to 450°F (-195°C to 282°C)	1,500 psi (103 bar)	< 13 ft/s (4 m/sec)
<b>Energizer</b> A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)		

\***Alternate Materials:** For applications that may require an alternate material, please consult Industrial Seal Inc. for alternate PTFE and energizer materials.

†**Pressure Range** without wear rings

### Options

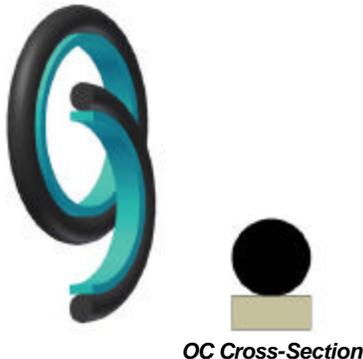
**Notched side walls:** Notches can be added to the side walls of the PTFE cap. This can help to optimize the seal's response to fluid pressure. Notched side walls help ensure that fluid pressure fills the cavity between the side face of the seal and the side face of the seal gland. Consult Industrial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

N= Notched walls

## OC Profile, Compact PTFE Rod Cap Seal

The Parker OC profile is a bi-directional rod seal for use in pneumatic and low to medium duty hydraulic systems. 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 will retrofit non-Parker seals of similar design.

The OC profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.



### Technical Data

Standard Materials* Cap	Temperature Range	Pressure Range†	Surface Speed
0102 Modified PTFE	-320°F to 450°F (-195°C to 282°C)	1,500 psi (103 bar)	< 13 ft/s (4 m/sec)

### Energizer

A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)
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**\*Alternate Materials:** For applications that may require an alternate material, please consult Industrial Seal Inc. alternate PTFE and energizer materials.

†**Pressure Range** without wear rings

### 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 Industrial Seal Inc. for the availability and cost to add side notches to the OC profile.

## BR Profile, Premium Buffer Seal

The BR profile is a compact rod seal designed to act as a buffer seal for the primary rod seal. As a buffer seal, the BR profile provides the majority of the rod sealing performance while allowing fluid to pass onto and energize the primary rod seal. Fluid located between the BR profile and the rod seal will relieve back into the cylinder by flowing past the BR profile's flexible static side lip and slotted pedestals. This relieving or check valve function allows the BR profile and primary rod seal to work as a sealing system without the danger of developing a pressure trap. As a sealing system, the BR profile and primary rod seal provide optimal performance in the most difficult applications.

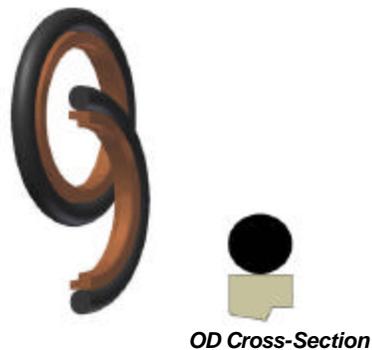


## Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
P4300A90	-65°F to 275°F (-54°C to 135°C)	5000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)

\***Alternate Materials:** For applications that may require an alternate material, please contact Industrial Seal Inc.

†**Pressure Range** without wear rings



## OD Profile, PTFE Buffer Seal

The Parker OD profile is a rod seal that can be used as a buffer seal in conjunction with a primary rod seal or in tandem with itself to form a sealing system for higher performance. The OD profile is a unidirectional seal, with a unique design that allows trapped fluid pressure back into the cylinder. When the rod extends from the cylinder the OD profile is riding on a sealing point, creating a high compression point to limit leakage. As the rod goes through its return stroke this seal rocks forward, creating a larger sealing surface on the rod. The compression force is spread out over a larger area allowing trapped fluid to pass under the seal and return to the system. This pressure relief feature allows the OD profile to be used in tandem or multiple seal arrangements. The OD features low friction, long life, and versatility. The OD profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.

### Technical Data

Standard Materials* Cap	Temperature Range	Pressure Range†	Surface Speed
0401 40% bronze- filled PTFE	-200°F to 575°F (-129°C to 302°C)	5000 psi (344 bar)	< 13 ft/s (4 m/sec)
<b>Energizer</b> A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)		

**\*Alternate Materials:** For applications that may require an alternate material, please Industrial Seal Inc. alternate PTFE and energizer materials.

†**Pressure Range** without wear rings

**Metric:** To configure metric part numbering, contact Industrial Seal Inc.



## V6 Profile, Cushion Seal

The V6 profile provides a check valve type action for use in cushioning pneumatic cylinders. The V6 profile seals against the cushioning piston or spud, allowing pneumatic pressure to build and cushion the cylinder's end stroke. Through a series of slots and pedestals the intake flow is then able to easily blow past the cushion seal to fill the cylinder. The installation of the cushion seal is very simple as it manually snaps into the groove recess. The V6 profile is available in proprietary Parker compounds formulated for low friction, extrusion resistance, and high temperature. The V6 profile can be used in a wide variety of NFPA cylinders and will provide excellent performance and long life.

### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
P4622A90	-65°F to 225°F (-54°C to 107°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)
N4180A80	-40°F to 250°F (-40°C to 121°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)
N4181A80	-40°F to 250°F (-40°C to 121°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)
V4208A90	-5°F to 400°F (-21°C to 204°C)	250 psi (17 bar)	< 3 ft/s (1 m/s)

**\*Alternate Materials:** For applications that may require an alternate material, please contact Industrial seal Inc.

†**Pressure Range** without wear rings



**OR Cross-Section**



## OR Profile, Rotary PTFE Cap Seal

The Parker OR profile is a bi-directional rod seal for use in pneumatic and low to medium duty rotary or oscillating applications. The OR profile is a two piece design comprised of a standard size o-ring energizing a wear resistant PTFE cap. The OR profile offers long wear and low friction without stick-slip. 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 swivel joints, hose reels, and machine applications. Parker's OR profile will retrofit non-Parker seals of similar design. The OR profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.

### Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
<b>Cap</b> 0205 15% fiberglass-, 5% MoS <sub>2</sub> -filled PTFE	-200°F to 575°F (-129°C to 302°C)	3000 psi (206 bar)	< 3.3 ft/s (1.0 m/sec)
<b>Energizer</b> A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)		

**\*Alternate Materials:** For applications that may require an alternate material, please consult Industrial Seal Inc. alternate PTFE and energizer materials.

†**Pressure Range** without wear rings

**Minimum rotary shaft hardness = 60 Rc.**

**Note:** Small size cross sections feature single outer diameter grooves. Cross sections 305 and greater feature dual grooves.