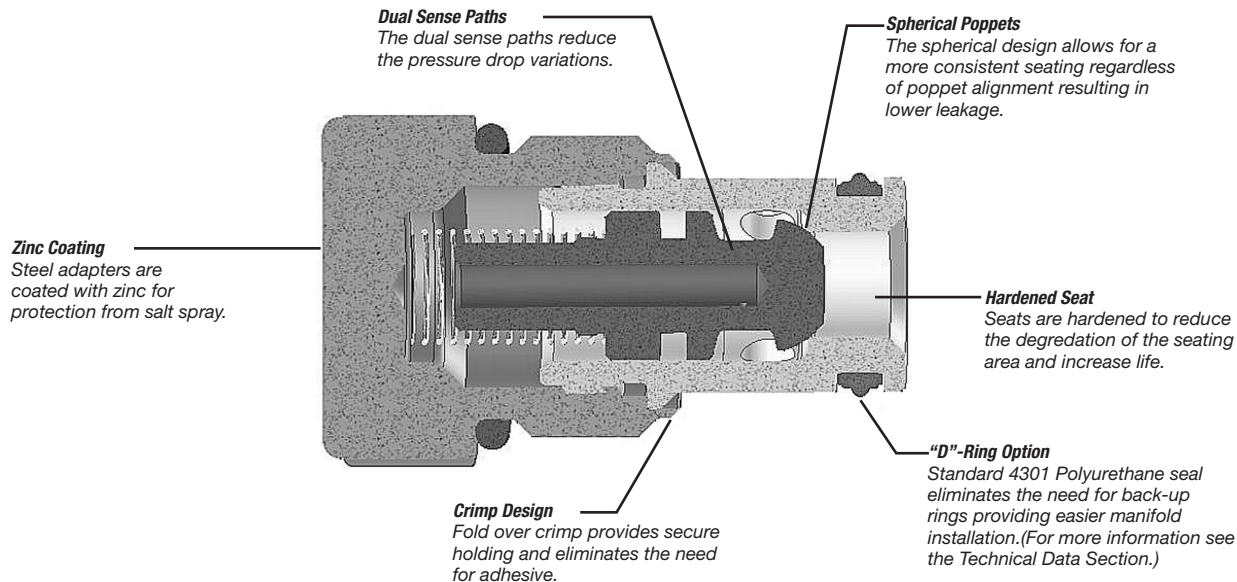


INTRODUCTION:

This technical tips section is designed to help familiarize you with the Parker line of Check Valves. In this section we present the products that are new to this catalog as well as some design features of our checks valves. In addition, we present common options available to help you in selecting products for your application. Finally we give a brief synopsis of the operation and applications of the various product offered in this section.

NEW PRODUCTS:

There are several new additions and product improvements to our Check Valve product line.



COMMON OPTIONS:

Since check valves and shuttles are fairly simple components, there are very few options. Here are the standard options you will find.

Seals: Valves feature a 4301 Polyurethane “D”-Ring. The “D”-Ring eliminates the need for back-up rings. The majority of the products are also available in Nitrile or Fluorocarbon seals. Contact factory for availability. You should match the seal compatibility to the temperature and fluid being used in your application.

Crack Pressure: Parker offers a number of standard crack pressure options for each valve. Check the model code pages for these options. The crack pressure is defined as the minimum amount of pressure that is needed to unseat the poppet. In pilot operated check applications, you may want to go with a slightly higher cracking pressure to keep the piston weight, friction, and drag from accidentally unseating the poppet.

Pilot Piston Seal: On the pilot piston style pilot operated check valves, Parker offers the option to place a seal on the piston to reduce the leakage across the piston. **Note:** Sealing the pilot piston does not decrease the leakage across the poppet. In other words, if you are trying to reduce the leakage from the actuator port, sealing the piston will not help. While most applications do not require a seal on the piston, it can be advantageous in applications with very small pump flows where the lost fluid would have a high impact on actuator speed.

CV
Check Valves
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Shuttle Valves
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FC
Flow Controls
PC
Pressure Controls
LE
Logic Elements
DC
Directional Controls
SV
Solenoid Valves
PV
Proportional Valves
CE
Coils & Electronics
BC
Bodies & Cavities
TD
Technical Data

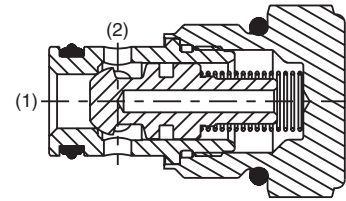
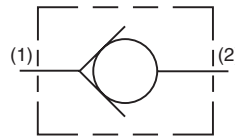
PRODUCT TYPES / APPLICATIONS

Check Valve - Poppet Type

Check valves are poppet style elements that allow free flow in one direction while preventing flow in the reverse direction.

They can be used to isolate portions of a hydraulic circuit or to provide a free flow path around a restrictive valve.

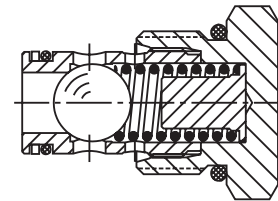
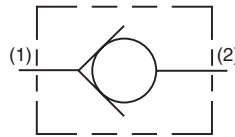
OPERATION - Pressure on the inlet (port 1) of the check valve creates a force against the poppet, pushing it off its seat and permitting free flow to port 2. Reverse flow through the check is blocked by the poppet.



Check Valve - Ball Type

Ball type check valves are check valves that use a hardened steel ball to seal against the valve seat as opposed to a poppet. They are simple in their design and provide low leakage over the life of the system.

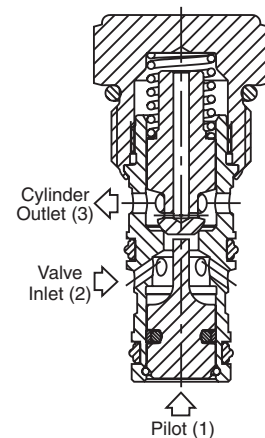
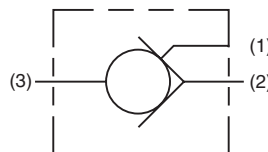
OPERATION - Pressure on the inlet (port 1) of the check valve creates a force on the steel ball pushing it off of its seat and permitting free flow to port 2. Reverse flow through the check is blocked by the steel ball on the seat.



Pilot Operated Check Valve

Parker's reliable pilot piston style P.O. check valves are designed for critical applications where safety and load holding is required and flows from 19 to 150 lpm (5 to 40 gpm) and pressures up to 420 bar (6,000 psi) are needed. These valves are available with pilot supply to either the 1st port or 3rd port depending on circuit need, and are generally used in conjunction with linear actuators across several markets within mobile or industrial hydraulics, such as aerials, material handling, and construction where durable and low leak valves are necessary to keep the machinery and operators safe.

OPERATION - Pilot operated check valves, also known as P.O. checks, are used to lock a cylinder in a holding position with minimal leakage or drift. P.O. check valves that can be opened to allow flow in the reverse direction with an external signal to the pilot port. The valves work best when used in conjunction with a control valve that vents the valve ports to tank when centered. Pilot pressure to open the checks for reverse flow is a ratio of the holding pressure, and are typically 3:1 or 4:1. A 3:1 ratio with a 3000psi load requires a 1000psi signal to the pilot port.



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