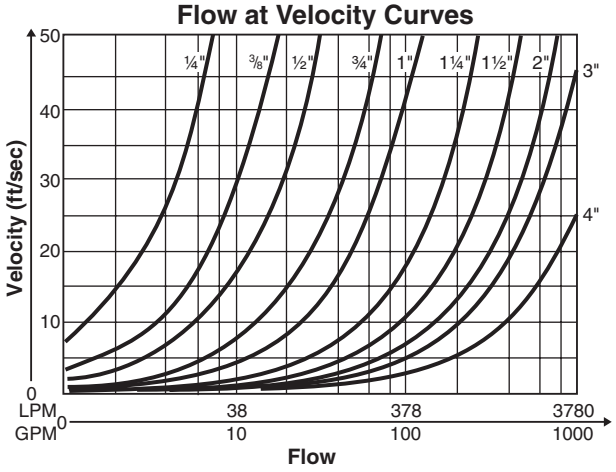
Ball Valve Sizing Chart (2-Way)

Parker's unrestricted bore ball valves provide a fluid path which, in most cases, imposes no discernable pressure drop in standard hydraulic circuits. As a result, you can treat our valves as just like a length of fluid line, unless you are working with closed loop or other circuits where a tiny pressure drop carries a price tag in heat generation, etc.

The selection chart at the right may be used as a guide for confirming your choice of ball valve fluid line size relative to the expected flow in LPM (GPM) at a given velocity.

Flow at Velocity Curves



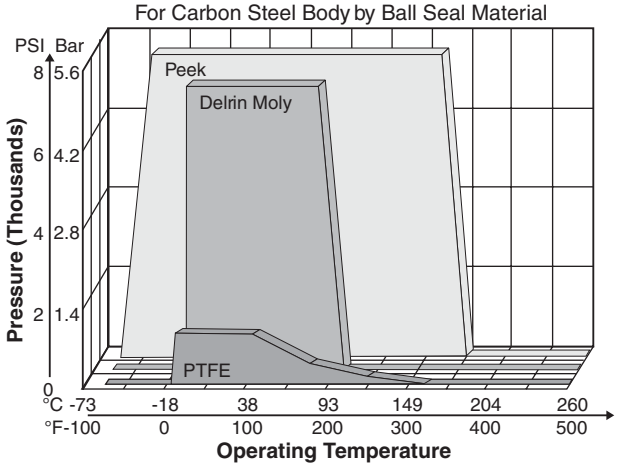
Ball Seals and Internal O-Rings

Standard Ball Seal Materials: Most application needs can be met by specifying one of the following ball seal materials:

- **Delrin™ Moly:** Standard with most ball valves. High pressure, moderate temperature range.
- **PTFE:** Excellent for suction and low pressure use. Inert to most substances and safe for food/water use.
- **Peek Hi-Temp:** Cost effective, provides additional temperature range up to 176.7°C (350°F). Best results with fluorocarbon sealing.

Ball Seal Temperature Ranges

For Carbon Steel Body by Ball Seal Material

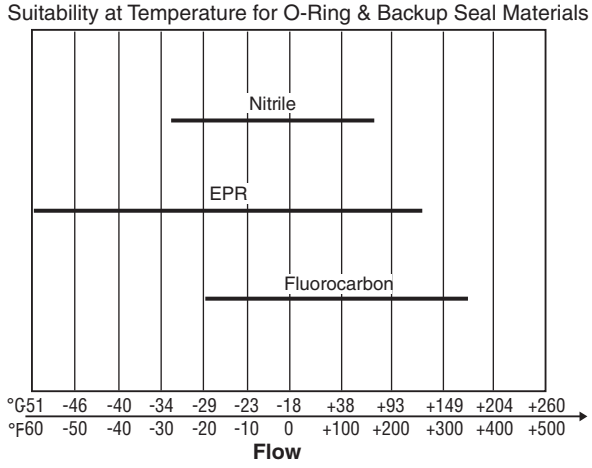


O-Ring and Backup Ring Material

- **Nitrile:** The industry standard for hydraulics using petroleum based fluids. Not suitable above 100°C (212°F).
- **EPR:** For use with Phosphate Esters (“Skydrol”), strong acids and bases, and other hostile media. Not compatible with petroleum based fluids. Good temperature range.
- **Fluorocarbon:** Extends temperature range to 350°F (176.7°C) with most Nitrile compatible media. Somewhat resistant to hostile media.

Elastomer Temperature Ranges

Suitability at Temperature for O-Ring & Backup Seal Materials



Sealing Materials Technical Data

Never operate Parker Ball Valves outside the temperature range published below for your selected thermoplastic and elastomer materials, even if the combination is approved in the Media Acceptability Table. You may experience valve leakage or failure.

	Ball Seal Materials			O-Ring & Backup Seal Materials		
Order Code	**1**	**2**	**4**	**N**	**E**	**V**
Description	**Delrin™ Moly**	**PTFE**	**PEEK Hi-Temp**	**Nitrile**	**EPR**	**Fluorocarbon**
Temperature Range	-30°C to +100°C (-22°F to +212°F)	-60°C to +180°C (-76°F to +356°F)	-40°C to +250°C (-40°F to +482°F)	-30°C to +100°C (-22°F to +212°F)	-50°C to +150°C (-58°F to +302°F)	-25°C to +250°C (-13°F to +482°F)
Seal Compound Identification	Delrin+MoS_2 Polyoxymethylene impregnated with Molybdenum Disulphide	Polytetra-fluoroethylene	Polyether-ether-ketone	Nitrile Butadiene rubber	Ethylene-polypropylene-diene rubber	Fluoropropylene methylene
Acronym	DM	PTFE	PEEK	NBR	EPR EPDM	FPM
Classification Synthesis	**Thermoplast** Saturated heteropolymer of heterogeneous polymer chains compounded with sulphide of molyb-denum metal for lubrication	**Thermoplast** Homogeneous, pure polymer chains, contain-ing fluorine	**Thermoplast** Aromatic linear polymer	**Elastomer** Unsaturated heteropolymer compounded from acrylonitrate and butadiene	**Elastomer** Saturated heteropolymer utilizing double valence bands outside the primary chain	**Elastomer** Multiple monomers & fluorine com-pounded into saturated hetero-polymer
Commercial Trade Names	Made to Parker's specifications	PTFE Hostaflon Fluon	Victrex	Nitrile Perbunan Chemigum Elaprim Krynac	Buna AP Dutral Epcar Keltran Nordel	Viton Fluorel Technoflon
Chemical Resistance Examples						
Suitable	Hydraulic fluids Water Inert Gases Air Alcohols Glycols Petroleum based fluids	Foodstuffs Acids & Alkalis Organic & inorganic solvents	Most fluids acceptable with Delrin Moly	Hydraulic fluids (except Skydrol) Water Air Petroleum based fluids	Phosphate esters Brake fluid Acids & Alkalis	NBR compatible fluids Acids & Alkalis
Not suitable	High molar acids & alkalis Fluorines Liquids for human consumption	Fluorines Liquid alkali metals	High molar acids & alkalis	Phosphate esters	Petroleum based oil & grease Chlorinated hydrocarbons	Phosphate esters