

## General Description

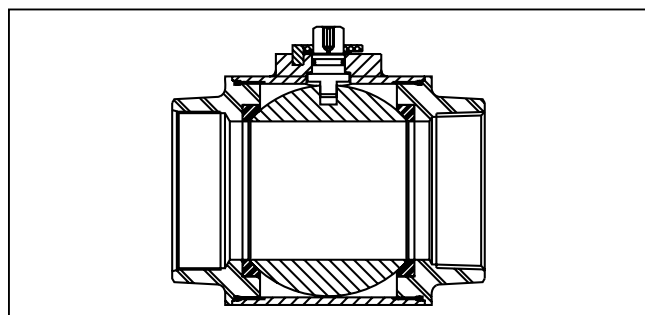
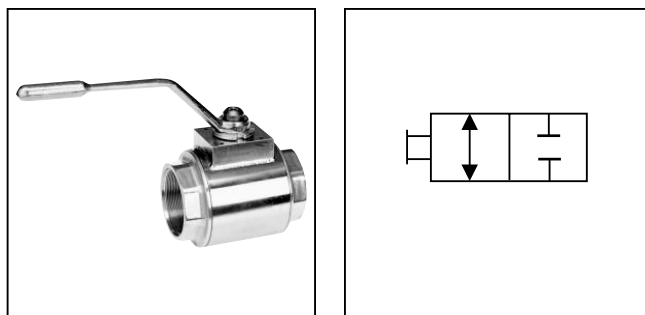
Series BVAL ball valves are designed to meet the needs of suction line and low pressure applications. This series is available from 1/4" to 4" ports NPT, SAE and BSPP, and is designed to assure leak free hydraulic suction and return line durability.

## Operation

Parker's 2-way ball valves operate to either off or full flow by rotating the handle 90°. Ball valves are not designed to be a metering or flow control device.

## Specifications

<b>Maximum Pressure</b>	28 Bar (400 PSI)
<b>Body Material</b>	Aluminum
<b>Ball Material</b>	Brass, Chrome Plated
<b>Stem Material</b>	Brass, Oversize Bearing Area
<b>Standard Handle</b>	Steel Offset, Nickel Plated
<b>Ball Seals</b>	PTFE standard
<b>Spindle Seals</b>	O-Ring & Backup, Nitrile
<b>Operating Temperature</b>	-30°C to +100°C (-22°F to +212°F)

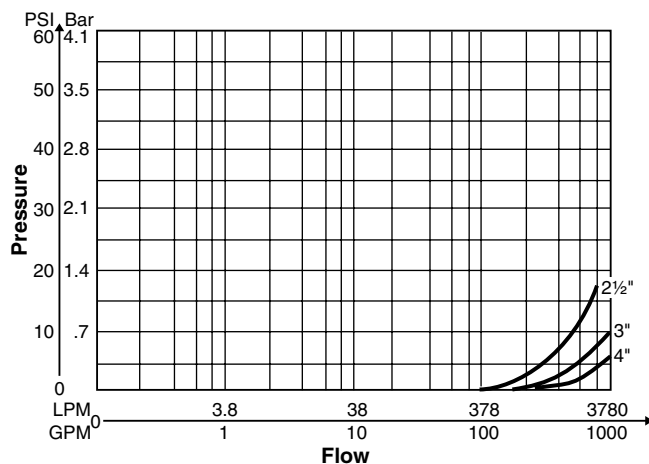


## Features

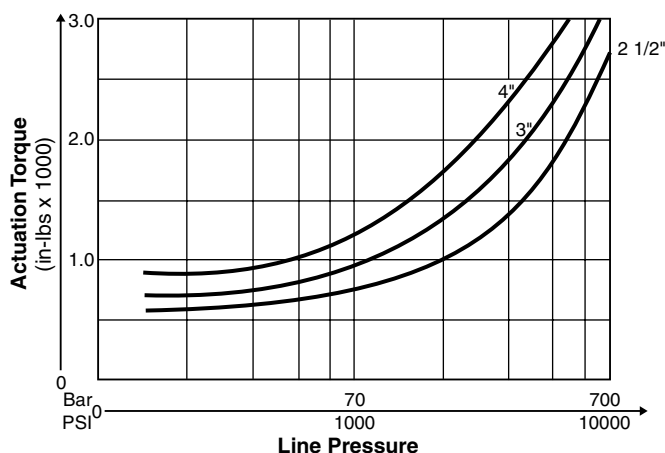
- Unrestricted bore from 1/4" to 4".
- Unrestricted flow and cavitation eliminated.
- Availability of NPT, SAE and BSPP o-ring sealed ports assure leak-free service.
- Choice of optional seal materials allows use with phosphate esters, water glycols and other media.
- Utilizes top grade PTFE ball seats with o-ring seals throughout to assure smooth and leak-free operation.

## Performance Curves

**Pressure Drop**



**Actuation Torque**



<b>BVAL</b>			<b>S</b>	<b>S</b>	<b>2</b>			
Series	Size	Port	Body Material	Ball & Stem Material	Ball Seals	Stem Seals	Options	Design Series
								NOTE: Not required when ordering.

Code	Size
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
20	1 1/4"
24	1 1/2"
32	2"
40	2 1/2"
48	3"
64	4"

Code	Type
N	NPT Thread
S	SAE Thread
B	BSPP Thread
U	ISO 6149 Thread

Code	Type
S	Aluminum

Code	Type
S	Brass

Code	Type
2	PTFE

Code	Type
N	Nitrile
V	Fluorocarbon
E	EPR

Code	Type
A	Locking Handle
B	Security Locking Handle
★C	1 Way Limit Switch
D	2 Way Limit Switch
*E	Panel Mount
G	Flat Non-offset Handle
★**K	1 Way Limit Switch w/Lock
★L	2 Way Limit Switch w/Lock

\* Cannot be combined with other options

\*\* Switch is set to indicate valve open condition

★ When selecting this option, your ball valve will come with limit switch bracket, but does not include the switch. The switch is sold separately (Part #LSB)

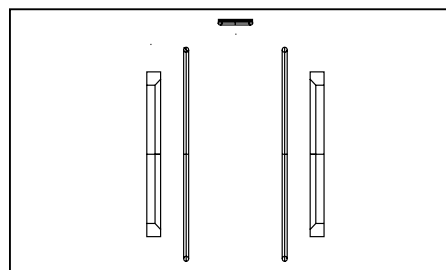
  

Code	Weight kg (lbs.)	Code	Weight kg (lbs.)	Code	Weight kg (lbs.)
4	0.3 (0.6)	16	0.3 (0.6)	40	4.8 (10.5)
6	0.3 (0.6)	20	0.8 (1.8)	48	5.1 (11.2)
8	0.2 (0.4)	24	1.1 (2.4)	64	7.7 (17.0)
12	0.3 (0.6)	32	1.7 (3.8)		

## Seal Kit Accessories

Ball Valve Seal Kits restore a ball valve to factory specifications, providing no erosion or metal-to-metal wear has taken place.

The Seal Kit includes all the o-rings, ball seals and thrust bearings that were originally installed at the factory. A sketch of these parts for most 2-way valves is provided at the right.



## Seal Kit Ordering Information

<b>SK</b>	<b>BVAL</b>			<b>S</b>	<b>S</b>	<b>2</b>		
Accessory	Series	Size	Port	Body Material	Ball & Stem Material	Ball Seals	Stem Seals	Design Series
								NOTE: Not required when ordering.

Code	Type
SK	Seal Kit

Code	Size
40	2 1/2"
48	3"
64	4"

Code	Type
N	NPT Thread
S	SAE Thread
B	BSPP Thread
U	ISO 6149 Thread

Code	Type
S	Aluminum

Code	Type
S	Brass

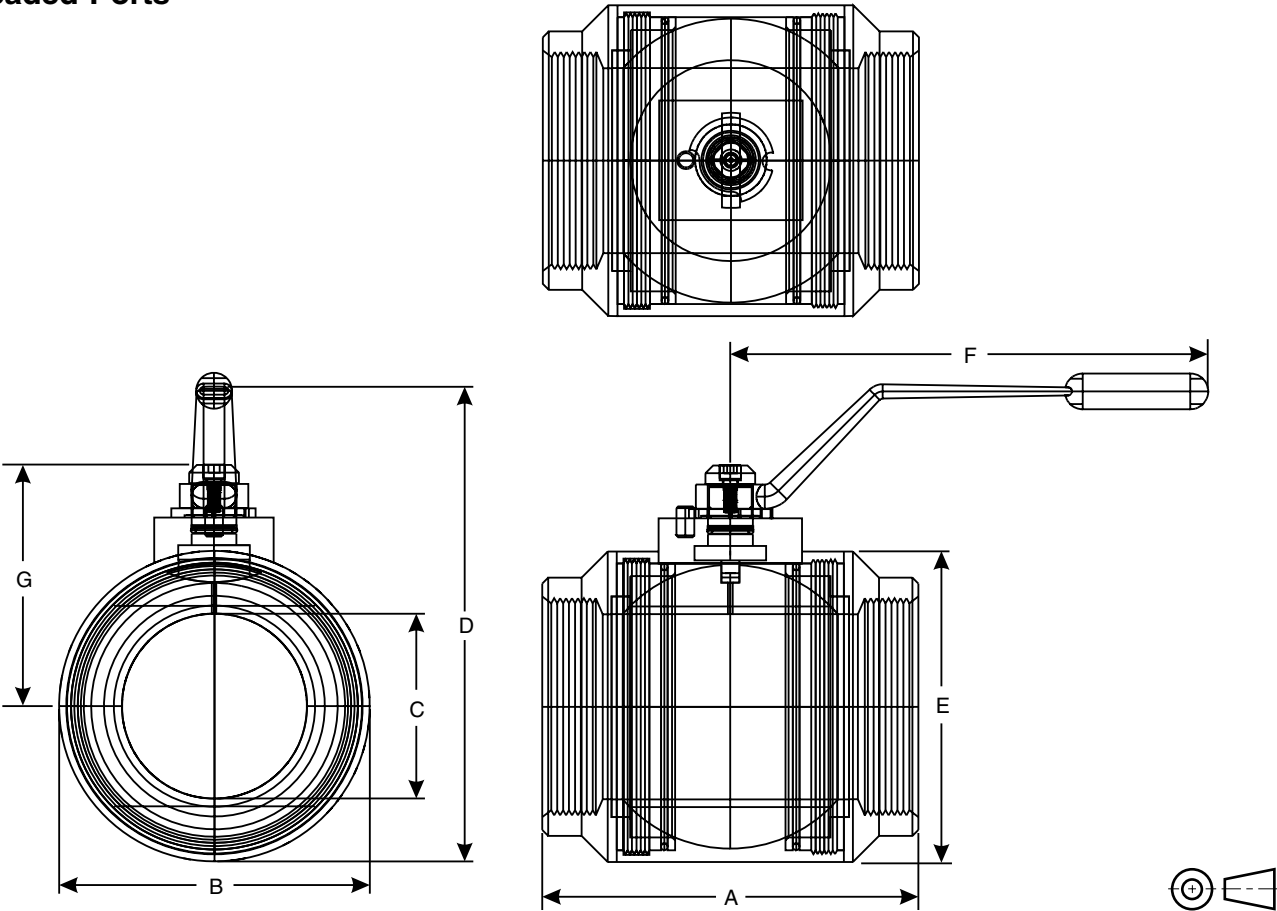
  

Code	Type
2	PTFE

Code	Type
N	Nitrile
V	Fluorocarbon
E	EPR

Threaded Ports

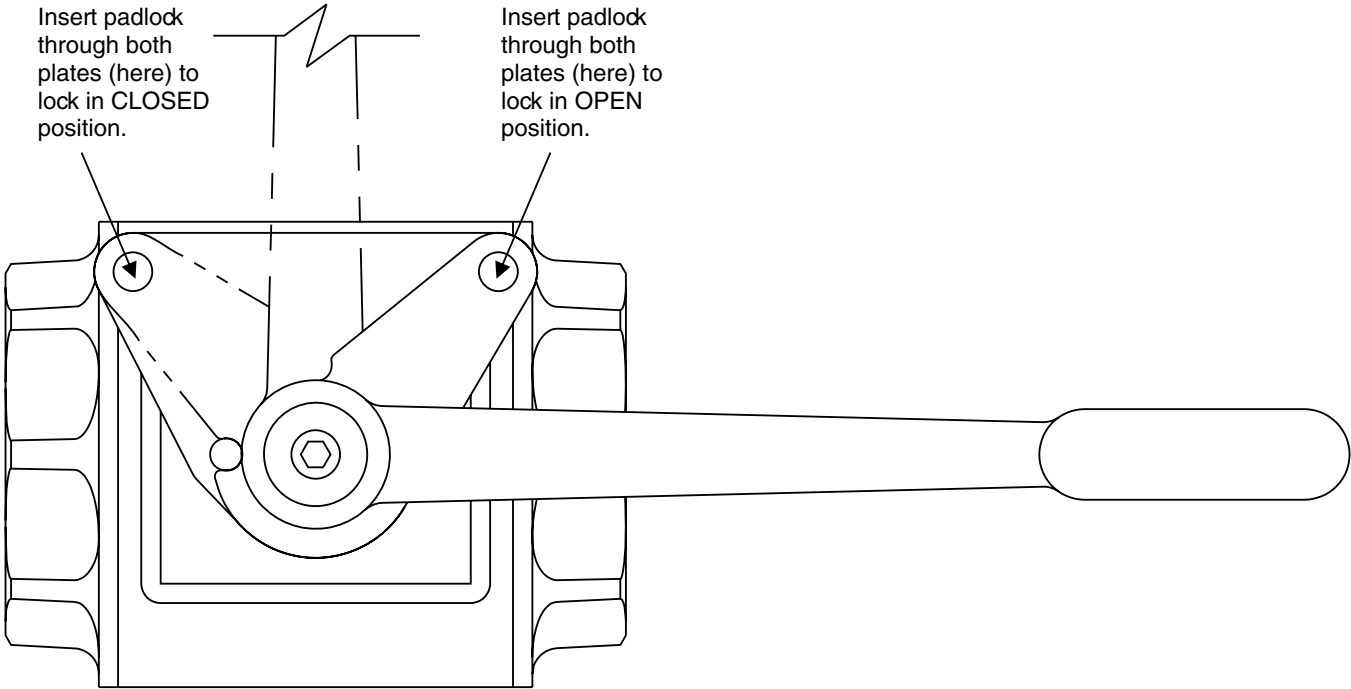


Code	Port Thread Size	Working Pressure	Dimensions mm (in)						
			A	B	C	D	E	F	G
NPT and SAE Thread									
4	1/4"	28 Bar (400 PSI)	66.8 (2.63)	38.1 (1.50)	6.4 (0.25)	65.8 (2.59)	38.1 (1.50)	85.6 (3.37)	33.3 (1.31)
6	3/8"	28 Bar (400 PSI)	66.8 (2.63)	38.1 (1.50)	9.7 (0.38)	65.8 (2.59)	38.1 (1.50)	85.6 (3.37)	33.3 (1.31)
8	1/2"	28 Bar (400 PSI)	66.8 (2.63)	38.1 (1.50)	12.7 (0.50)	65.8 (2.59)	38.1 (1.50)	85.6 (3.37)	33.3 (1.31)
12	3/4"	28 Bar (400 PSI)	83.3 (3.28)	44.5 (1.75)	19.1 (0.75)	95.8 (3.77)	44.5 (1.75)	130.0 (5.12)	36.3 (1.43)
16	1"	28 Bar (400 PSI)	88.4 (3.48)	50.8 (2.00)	25.4 (1.00)	102.1 (4.02)	50.8 (2.00)	130.0 (5.12)	39.6 (1.56)
20	1 1/4"	28 Bar (400 PSI)	99.1 (3.90)	69.9 (2.75)	31.8 (1.25)	129.8 (5.11)	66.3 (2.61)	173.0 (6.81)	53.8 (2.12)
24	1 1/2"	28 Bar (400 PSI)	109.7 (4.32)	82.6 (3.25)	38.1 (1.50)	142.2 (5.60)	78.7 (3.10)	173.0 (6.81)	59.9 (2.36)
32	2"	28 Bar (400 PSI)	124.5 (4.90)	101.6 (4.00)	50.8 (2.00)	160.8 (6.33)	97.3 (3.83)	173.0 (6.81)	67.3 (2.65)
40	2 1/2"	28 Bar (400 PSI)	152.4 (6.00)	127.0 (5.00)	63.5 (2.50)	200.4 (7.89)	135.9 (5.35)	222.3 (8.75)	92.2 (3.63)
48	3"	28 Bar (400 PSI)	185.7 (7.31)	152.4 (6.00)	76.2 (3.00)	224.8 (8.85)	160.3 (6.31)	222.3 (8.75)	103.9 (4.09)
64	4"	28 Bar (400 PSI)	225.8 (8.89)	177.8 (7.00)	101.6 (4.00)	251.5 (9.90)	186.9 (7.36)	222.3 (8.75)	117.6 (4.63)

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**BVHPLK:** Standard Series 'BVHPLK-\*' kit replaces the stopwasher with a stationary and moving plate, as illustrated below. As the handle is actuated, the moving plate aligns with one of the two locking positions in the stationary plate, enabling the valve to be locked in either **fully closed** or **fully open** position.



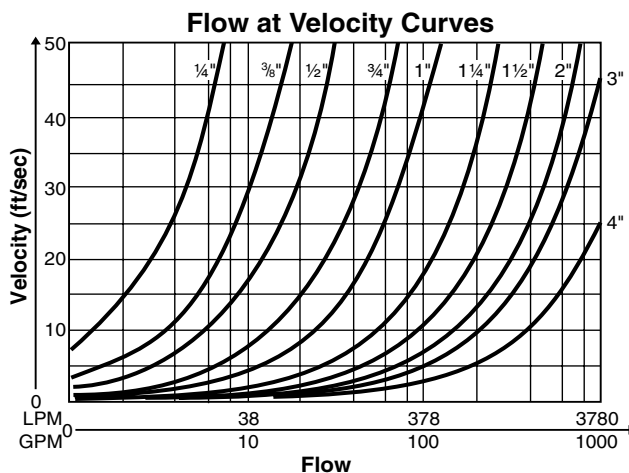
**Ordering Information**

BVAL		Standard Locking
Code	Size	(Part Number)
4	1/4"	BVHPLK-1
6	3/8"	BVHPLK-1
8	1/2"	BVHPLK-1
12	3/4"	BVHPLK-2
16	1"	BVHPLK-2
20	1 1/4"	BVHPLK-3
24	1 1/2"	BVHPLK-3
32	2"	BVHPLK-3
40	2 1/2"	BVHPLK-4
48	3"	BVHPLK-4
64	4"	BVHPLK-4

## 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.

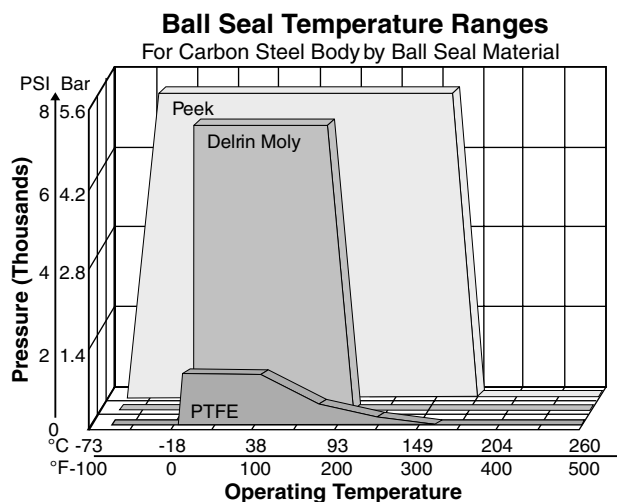
The selection chart at the right may be used as a guide for confirming your choice of ball valve fluid line size relative to the expected flow in LPM (GPM) at a given velocity.



## Ball Seals and Internal O-Rings

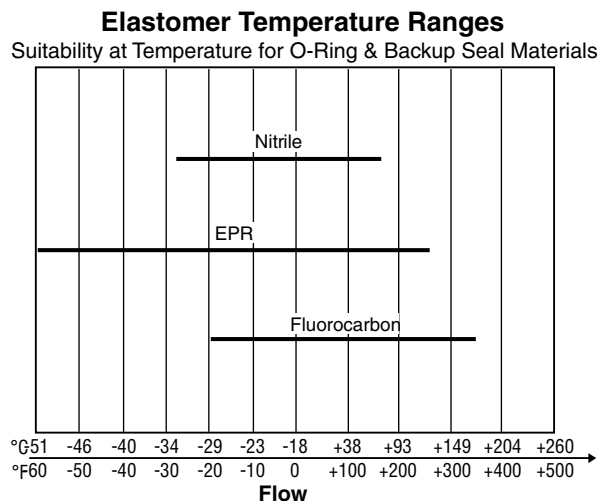
**Standard Ball Seal Materials:** Most application needs can be met by specifying one of the following ball seal materials:

- **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.



## 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.



## 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 (Box 6)			O-Ring & Backup Seal Materials (Digit 4)		
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+MoS2 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	<b>Thermoplast</b> Saturated heteropolymer of heterogeneous polymer chains compounded with sulphide of molyb- denum metal for lubrication	<b>Thermoplast</b> Homogeneous, pure polymer chains, contain- ing fluorine	<b>Thermoplast</b> Aromatic linear polymer	<b>Elastomer</b> Unsaturated heteropolymer compounded from acrylonitrile and butadiene	<b>Elastomer</b> Saturated heteropolymer utilizing double valence bands outside the primary chain	<b>Elastomer</b> Multiple monomers & fluorine com- pounded into saturated hetero- polymer
Commercial Trade Names	Made to Parker's specifications	PTFE Hostafion 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

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**The Parker Low Pressure Ball Valve Product Line serves in applications ranging from 600 to 2,000 PSI.**



## **Features**

- ☐ *Packing Nut Stem*
- ☐ *PTFE Seals*
- ☐ *Full Optimum Flow*
- ☐ *Blow Out Proof Stem*
- ☐ *Brass, Carbon Steel, and Stainless Steel Bodies*

## **Advantages**

- ☐ *Seals leak by tightening*
- ☐ *High resistance to corrosion*
- ☐ *Maximum system efficiency*
- ☐ *Safety and reliability*
- ☐ *One ball valve source*

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