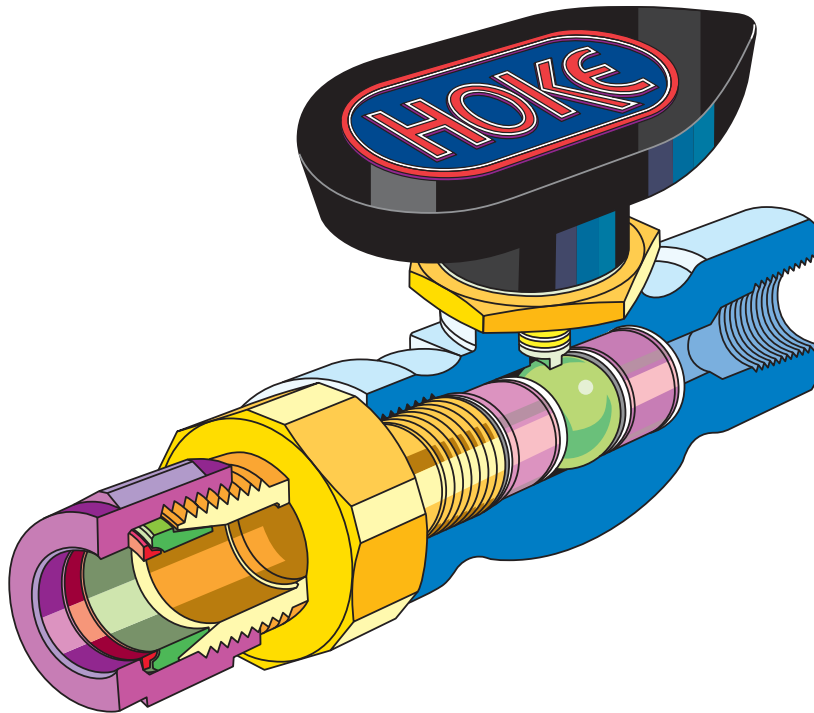




High Cycle Ball Valves at a Glance



Hoke High Cycle ball valves are designed for repeatable, zero leakage sealing when control conditions demand valve actuation exceeding 50,000 cycles. Their unique stem- and seat designs provide packless-free operation and ease of maintenance.





Hoke High Cycle ball valves provide a wide range of capabilities for demanding applications. Temperature limits range from -65° F (-54° C) to 500° (260° C). Operating pressure limits run as high as 6000 psig (414 bar) for the D/DL Series valves. Choose a 2-way ball valve for fast, quarter-turn on-off operation. Alternatively, a 3-way ball valve such as the Hoke 7 Series employs 180° operation for diverting flow from one line to another. In situations where fire propagation is an issue, Hoke offers the 7 Series Fire Safe ball valve.

Before making your high cycle ball valve selection, be sure to consider the system pressure, operating temperature, required flow and materials of construction. If your application requires a ball valve not listed in this catalog, contact your local Hoke stocking distributor, or the factory.

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ball valves

High Cycle Ball Valves at a Glance

	SERIES	DESCRIPTION/APPLICATIONS	FEATURES	STANDARD BODY MATERIAL
	D, DL, T & TL Series High Cycle, Zero Leak Ball Valves 2-way Ball Valves (page 5)	<ul style="list-style-type: none"> DL/TL Series - 100K cycles D/T Series - 50K cycles D/DL Series - High pressure 	<ul style="list-style-type: none"> Live-loaded seats (DL & TL) Bi-directional (D & T) Uni-directional (DL & TL) 	316 stainless steel Brass Monel®
	7223D Series High Performance Rotoball® 2-way Ball Valves (page 13)	<ul style="list-style-type: none"> CNG fuel stations CNG vehicles Hydrogen fuel cells Pilot plants 	<ul style="list-style-type: none"> Bi-directional Blow-out proof stem Extended life cycle 	316 stainless steel Monel® R-405
	7 Series 2- and 3-way 3-piece Bolted Ball Valves (page 17)	<ul style="list-style-type: none"> On-off service High cycle life High flow 	<ul style="list-style-type: none"> Removable valve center Live-loaded stem and seat seals compensate for thermal cycling and wear with zero leakage Blow-out proof stem 	316L stainless steel
	7 Series – Fire Safe 2-way, 3-piece Bolted Ball Valve (page 32)	<ul style="list-style-type: none"> High flow, high safety Chemical processing Petroleum refining Gas distribution Hydraulic fluids 	<ul style="list-style-type: none"> Design retards propagation of downstream fire Meets API 607 4th edition requirements Bottom-loaded, blow-out proof stem Fully encapsulated bolts 	316 stainless steel, grade CF8M

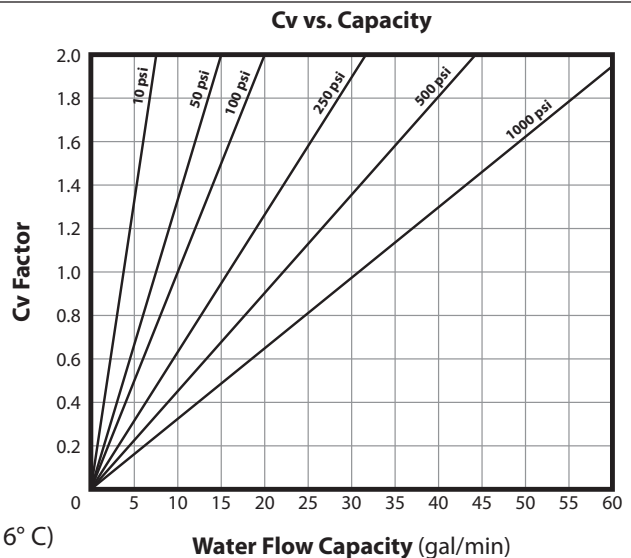
Liquid Flow capacity of HOKE Ball Valves

To determine the Cv or flow of a **liquid** @ 60° F (16° C):

$$Cv = \frac{GPM}{\sqrt{\frac{\Delta p}{S.G.}}} \quad \text{or} \quad GPM = Cv \sqrt{\frac{\Delta p}{S.G.}}$$

where:

- $\Delta p = p_1 - p_2$
- p_1 = inlet pressure in psia
- p_2 = outlet pressure in psia
- GPM = flow in gallons per minute
- S.G. = specific gravity of liquid where water = 1.0 @ 60° F (16° C)



High Cycle Ball Valves at a Glance

MAX. OPERATING PRESSURE @70° F (21° C)	OPERATING TEMPERATURE RANGE	Cv FLOW RANGE (VARIES W/ END CONNECTION)	ORIFICE SIZES	STANDARD END CONNECTIONS
316 SS and Monel® D & DL: 6000 psig (414 bar) T & TL: 3000 psig (207 bar)	-40° F to +350° F (-40° C to +177° C)	0.023 to 1.44	0.093" to 0.250" (2.36 mm to 6.35 mm)	1/8", 1/4", 3/8", 1/2" Gyrolok® 1/4" male NPT × 1/4" Gyrolok® 1/4" female NPT 6 mm, 8 mm, 10 mm Gyrolok®
Brass D, DL, T & TL: 3000 psig (207 bar)				
5000 psig (345 bar)	-65° F to +400° F (-54° C to +204° C)	3.4	0.375" (9.35 mm)	3/8", 1/2" Gyrolok® 3/8", 1/2" female NPT 3/8", 1/2" SAE 12 mm Gyrolok®
2500 psig (172 bar)	FKM (Viton®) -20° F to +450° F (-29° C to +232° C) Curved Disc Springs -65° F to +500° F (-54° C to +260° C)	1.0 to 0.38	0.19" to 0.81" (4.8 mm to 20.6 mm)	1/8", 1/4", 3/8", 1/2", 3/4", 1" Gyrolok® 1/4", 3/8", 1/2", 3/4", 1" female NPT 6, 8, 10, 12, 18, 20, 22, 25mm Gyrolok® 1/4", 3/8", 1/2", 3/4", 1" tube socket weld 1/4", 3/8", 1/2", 3/4", 1" pipe socket weld 1/4", 3/8", 1/2", 3/4", 1" pipe butt weld
vacuum to 1500 psig (103 bar)	-40° F to +500° F (-40° C to +260° C)	4.5 to 38	0.28" to 0.88" (7.1 mm to 22.3 mm)	3/8", 1/2", 3/4", 1" Gyrolok® 3/8", 1/2", 3/4", 1" female NPT 3/8", 1/2", 3/4", 1" tube socket weld 3/8", 1/2", 3/4", 1" pipe socket weld 3/8", 1/2", 3/4", 1" pipe butt weld 12 mm, 18 mm, 25 mm Gyrolok®

Gas Flow capacity of HOKE Ball Valves

To determine the Cv or flow of a **gas** @ 70° F (21° C):

$$Cv = \frac{SCFH}{1360 \sqrt{\frac{(\Delta p) (p_1)}{(460 + T) (S.G.)}}} \quad \text{or} \quad SCFH = 1360 Cv \sqrt{\frac{(\Delta p) (p_1)}{(460 + T) (S.G.)}}$$

where:

$$\Delta p = p_1 - p_2$$

p_1 = inlet pressure in psia

p_2 = outlet pressure in psia

SCFH = flow in standard cubic feet per hour

S.G. = specific gravity of gas where air = 1.0 @ 70° F (21° C) and 14.7 psia

T = temperature in ° F

