D & T Series

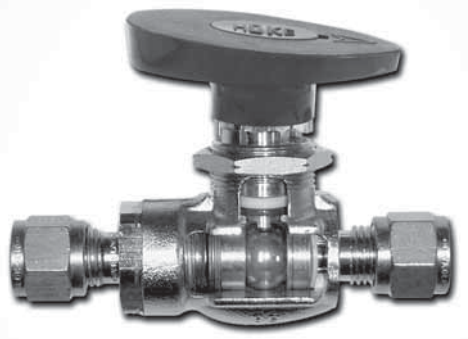
Bi-directional, High Cycle, Zero Leak Ball Valves

DL & TL Series

Uni-directional, High Cycle, Zero Leak Ball Valves

Hoke's DL/TL ball valves are uni-directional, high cycle valves that exceed 100,000 cycles with zero seat leakage.** In applications where bi-directional flow is required, Hoke D and T series valves exceed 50,000 cycles. Hoke ball valves can be ordered in brass, 316 stainless steel or Monel® materials with a manual handle as standard.

For remote actuation , factory-assembled Hoke Space Saver™ Actuators are available. D, DL, T and TL series valves can be ordered with welded end fittings to prevent accidental disassembly or with gasketed end fittings, if valve rebuild becomes necessary.



Technical Data

BODY MATERIAL*	316 stainless steel, brass, Monel®
CYCLE LIFE	D, T = 50,000; DL, TL = 100,000
MAXIMUM OPERATING PRESSURE	• *316 stainless steel and Monel®* D & DL: 6000 psig @ 70° C (414 bar @ 21° C) T & TL: 3000 psig @ 70° C (207 bar @ 21° C) • *Brass* D, DL, T, & TL: 3000 psig @ 70° C (207 bar @ 21° C)
PROOF PRESSURE SAFETY FACTOR	2:1
BURST PRESSURE SAFETY FACTOR	4:1
TEMPERATURE RANGE	–40° F to +350° F (–40° C to +177° C)**
ORIFICE SIZES	0.093″ to 0.250″ (2.36mm to 6.35mm)
Cv FACTORS	0.023 to 1.44

* *Consult factory for other materials*

** *Depending on seat, seal, and washer material selected. See page 11 for ordering details*

Features & Benefits

Delta stem seal (D & DL)

- Improved cycle life
- No packing adjustment required
- Rated to 6000 psig (414 bar)
- Low operating torque for ease of operation

Spring-loaded Teflon® seal (T & TL)

- Compensates for wear and thermal cycling with zero leakage, providing excellent durability and reliability.

Choice of end-fittings for versatility

- 70 Series – welded
- 71 Series – gasketed

Live-loaded seats (DL & TL)

- Compensates for wear and thermal cycling with zero leakage, providing excellent durability and reliability.
- Ensures leak-tight performance over entire pressure range simplifying ball valve specification and installation, saving time and expense.

Static –grounded stem

- Prevents static discharge for added safety

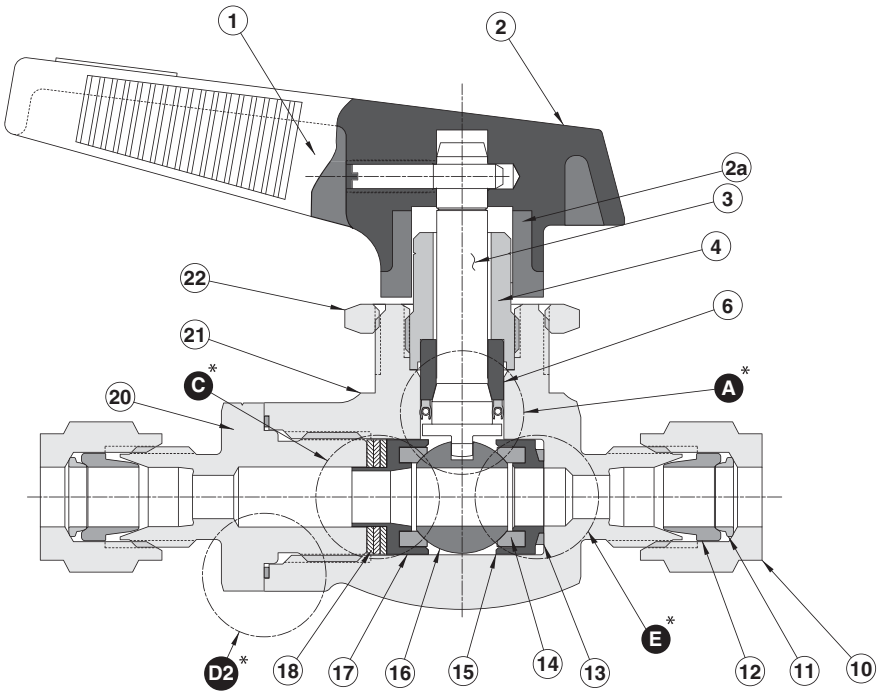
Quarter-turn handle

- Quick on/off simplifies operation and saves time.
- Directional handle provides quick visual indication of orifice, improves operator efficiency and safety.
- Special High Tolerance NPT Thread

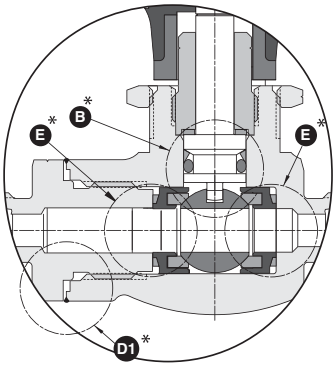
HOKE Incorporated
405 Centura Court • PO Box 4866 (29305) • Spartanburg, SC 29303
Phone (864) 574-7966 Fax (864) 587-5608
www.hoke.com • sales@hoke.com

D, DL, T, TL Series

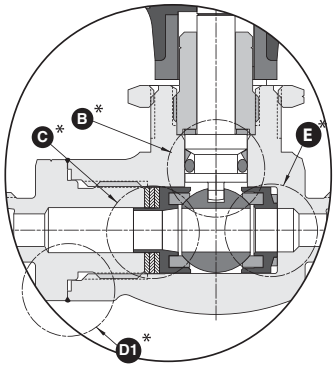
Materials of Construction



TL Series (Teflon® stem seal)
uni-directional flow



D Series (T Series-change B to A)
bi-directional flow



DL Series (Delta stem seal)
uni-directional flow

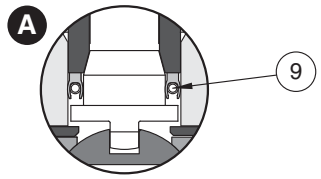
** Refer to page 7 for details*

		D, DL VALVES			T, TL VALVES		
		BASIC VALVE MATERIAL			BASIC VALVE MATERIAL		
	DESCRIPTION	316 STAINLESS STEEL	MONEL®	BRASS	316 STAINLESS STEEL	MONEL®	BRASS
1	Handle pin		316 stainless steel			316 stainless steel	
2	Handle		Nylon			Nylon	
2a	Handle insert		316L stainless steel			316L stainless steel	
3	Stem	316 SS	Monel® R-405	316 SS	316 SS	Monel® R-405	316 SS
4	Stem retainer	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
5	Thrust washer (D & DL)		PEEK™			—	
6	Stem guide (T & TL)		—			15% Graphite-filled Teflon®	
7	Delta backup ring (D & DL)		Teflon®			—	
8	O-ring (D & DL)		FKM (Viton®)			—	
9	Energized Teflon® seal (T & TL)		—			Graphite-filled Teflon® / Elgiloy®	
10	Gyrolok® Nut (both ends)	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
11	Rear ferrule	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
12	Front ferrule	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
13	Washer		Teflon®			Teflon®	
14	Seat		PCTFE			15% Graphite-filled Teflon®	
15	Downstream seat retainer	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
16	Ball	316 SS	Monel® R-405	316 SS	316 SS	Monel® R-405	316 SS
17	Upstream seat retainer	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
18	Spring washers (3)	316 SS	Inconel®	316 SS	316 SS	Inconel®	316 SS
19	Gasket (71 Series)		Teflon®			Teflon®	
20	End fitting	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass
21	Body	316 SS	Monel® 400	Brass	316 SS	Monel® 400	Brass
22	Mounting nut	316 SS	Monel® R-405	Brass	316 SS	Monel® R-405	Brass

D, DL, T, TL Series

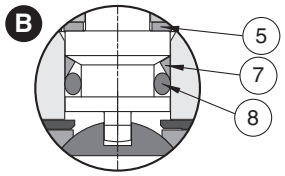
Distinctions

T & TL Series valves come with…



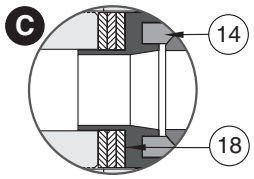
Energized Teflon® Seal

D & DL Series valves come with…



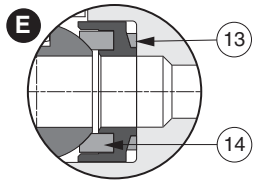
Delta Stem Seal

TL & DL Series valves come with…



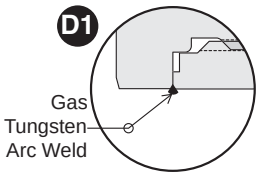
Spring-loaded Seats-Inlet TL & DL have "E" Outlet (uni-directional flow)

D & T Series valves come with…

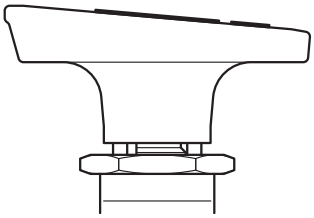


PCTFE Seats-Inlet and Outlet (bi-directional flow)

70 Series valves come with…

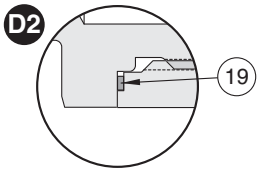


Welded End Fittings
(prevents accidental disassembly)

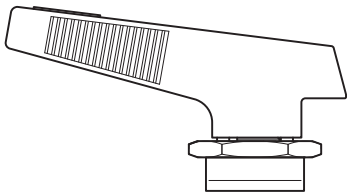


Nylon Oval Handle
(prevents accidental cycling of valve)

71 Series valves come with…



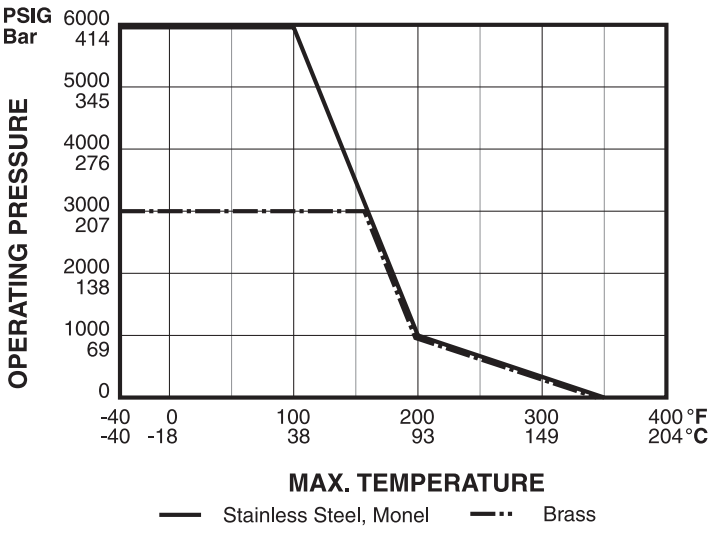
Gasketed End Fittings
(allows for rebuilding)



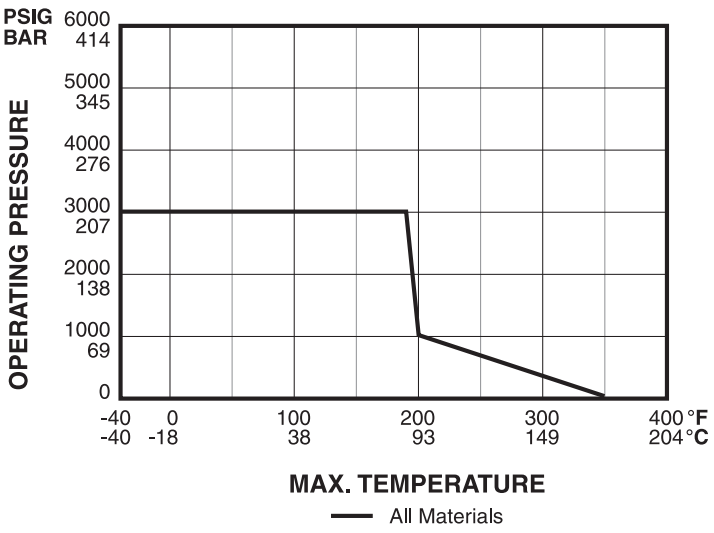
Nylon Lever Handle
(maximum visual indication of valve position)

Pressure vs. Temperature Charts

D & DL Valves



T & TL Valves

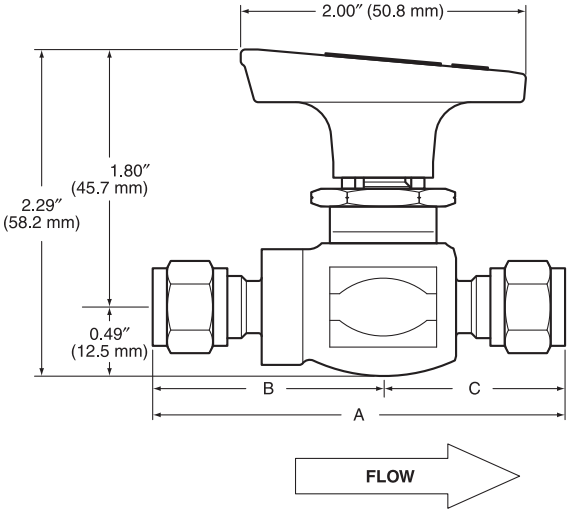


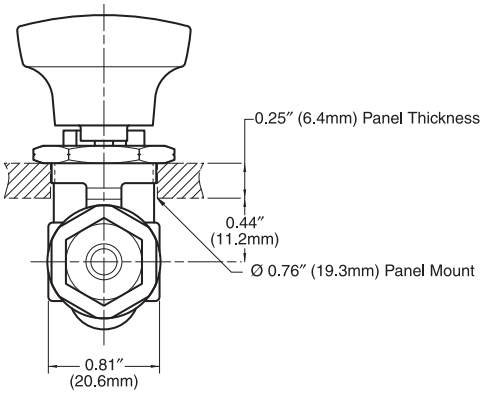
D, DL, T, TL Series

Dimensions

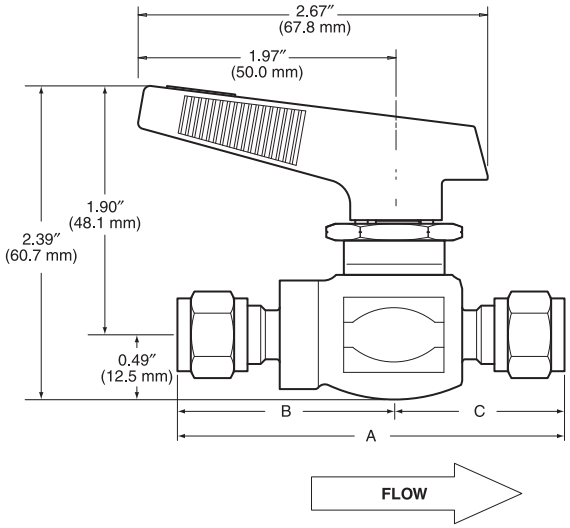
PART NUMBER	END CONNECTIONS		ORIFICE	Cv	A	B	C
G2	⅛″ Gyrolok® × ⅛″ Gyrolok®	inch	0.093	0.23	2.96	1.72	1.24
		mm	2.36		75.2	43.7	31.5
G4	¼″ Gyrolok® × ¼″ Gyrolok®	inch	0.187	0.8	3.11	1.82	1.29
		mm	4.75		79.0	46.2	32.8
G6	⅜″ Gyrolok® × ⅜″ Gyrolok®	inch	0.250	1.44	3.08	1.78	1.30
		mm	6.35		78.2	45.2	33.0
H4	¼″ male NPT × ¼″ Gyrolok®	inch	0.187	0.8	2.84	1.56	1.28
		mm	4.75		72.1	39.6	32.5
F4	¼″ female NPT × ¼″ female NPT	inch	0.250	1.44	2.40	1.46	0.94
		mm	6.35		61.0	37.1	23.9
L4	¼″ male NPT × ¼″ female NPT	inch	0.250	1.44	2.52	1.58	0.94
		mm	6.35		64.0	40.1	23.9
Z6	6mm Gyrolok® × 6mm Gyrolok®	inch	0.156	0.56	3.06	1.78	1.28
		mm	3.96		77.7	45.2	32.5
Z8	8mm Gyrolok® × 8mm Gyrolok®	inch	0.234	1.14	3.12	1.84	1.28
		mm	5.94		79.3	46.7	32.5
Z10	10mm Gyrolok® × 10mm Gyrolok®	inch	0.250	1.44	3.19	1.89	1.30
		mm	6.35		81.0	48.0	33.0

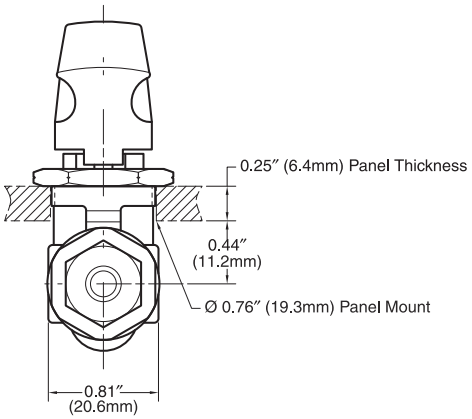
70 Series (Welded End Fittings)





71 Series (Gasketed End Fittings)





HOKE Space Saver™ Pneumatic Actuators

For remote control of HOKE D/DL/T/TL ball valves, order a pneumatic actuator. Pneumatically-actuated ball valves incorporating HOKE's Space Saver™ actuators can be used for both double acting and spring return applications. D/DL/T/TL ball valves may be ordered from the factory pre-assembled with HOKE Space Saver™ actuators. See page 12 for basic ordering information. Electric actuators are also available. Electric actuators are supplied in either 115 VAC or 24 VDC with weatherproof or explosion-proof housings. Refer to HOKE's *Actuator Catalog* (79005) or contact your local factory-authorized distributor for more details.

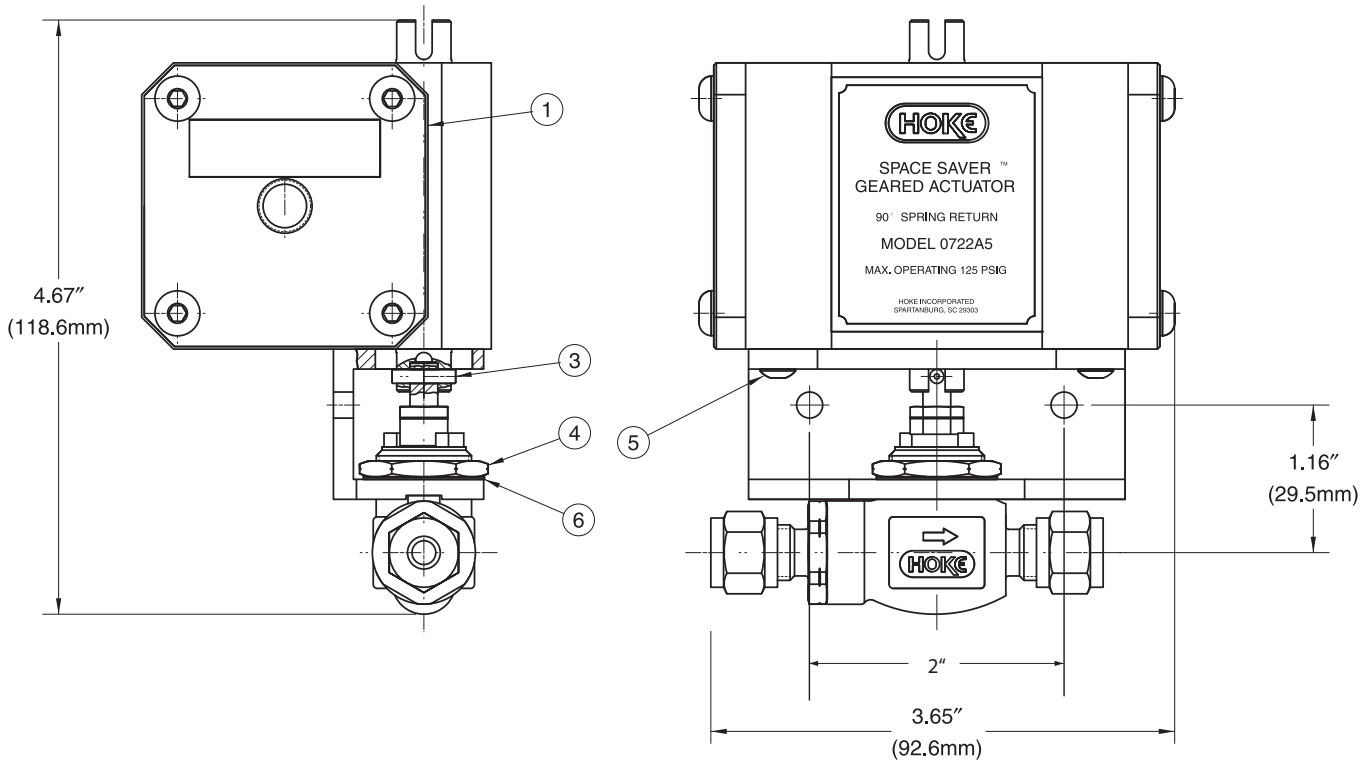
Pneumatic Actuator Specifications

MAXIMUM OPERATING AIR PRESSURE	125 psig (9 bar)
MINIMUM OPERATING AIR PRESSURE	40 psig (3 bar)
TEMPERATURE RANGE*	0° F to +400° F (–18° C to +204° C)

* *Maximum valve temperature is 350° F, depending on seat, seal, and washer material selected. See page 11 for details.*

Materials of Construction

	DESCRIPTION	QUANTITY	MATERIAL
1	Actuator	1	Aluminum
2	Mounting bracket (not shown)	1	Aluminum
3	Groove pin	1	18-8 stainless steel
4	Lock nut	1	316 stainless steel
5	Button head cap screw	4	316 stainless steel
6	Lock washer	1	300 stainless steel



To Order for Field Assembly:

Part No.	Description
0700K3	Mounting Kit for 70 & 71 Series

Actuators

0722A5	Spring Return 0° F to +400° F (-18° C to +204° C) standard
0760A5	Double Acting 0° F to +400° F (-18° C to +204° C) standard
0722A4	Spring Return 0° F to +250° F (-18° C to +121° C) optional
0760A4	Double Acting 0° F to +250° F (-18° C to +121° C) optional

Note: Actuator and mounting kit are included when ordering the factory-assembled option. Use the part numbers listed above when ordering actuator or mounting kit separately. "A5" actuators are standard when a factory-assembled valve and actuator are ordered. For "A4" actuators ordered as factory-assembled on Hoke ball valves, please consult the factory.

D, DL, T, TL Series

How to Order: Standard Valves

Use the following list to order standard valves that are readily available from the factory. If your application requires a customized valve, use the "Build to Order" matrix on page 11.

Refer to page 6 for a complete list of Materials of Construction.

END CONNECTIONS ALL PORTS	ACTUATION METHOD	PACKING MATERIAL	MAXIMUM PRESSURE	END FITTING TO BODY CONNECTION	END CONNECTION SIZE	BODY MATERIAL	PART NUMBER*
Gyrolok®	Lever handle	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Gasketed 71 Series, D/DL Series	⅛″	stainless steel	7115G2YDL(D)
					¼″	stainless steel	7115G4YDL(D)
					¼″	Monel®	7115G4MDL(D)
					⅜″	stainless steel	7115G6YDL(D)
					½″	stainless steel	7115G8YDL(D)
					6mm	stainless steel	7115Z6YDL(D)
					8mm	stainless steel	7115Z8YDL(D)
					10mm	stainless steel	7115Z10YDL(D)
					10mm	Monel®	7115Z10MDL(D)
Gyrolok®	Lever Handle	Teflon® Graphite Filled Teflon®	3000 psig (207 bar)	Gasketed 71 Series, T/TL Series	1/8″	stainless steel	7122G2YTL(T)
					1/4″	stainless steel	7122G4YTL(T)
					1/4″	Monel	7122G4MTL(T)
					3/8″	stainless steel	7122G6YTL(T)
					1/2″	stainless steel	7122G8YTL(T)
					6mm	stainless steel	7122Z6YTL(T)
					8mm	stainless steel	7122Z8YTL(T)
					10mm	stainless steel	7122Z10YTL(T)
					10mm	Monel	7122Z10MTL(T)
Gyrolok®	Normally Closed Spring Return	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Gasketed 71 Series, D/DL Series	⅛″	stainless steel	7115G2YDLC(D)
					¼″	stainless steel	7115G4YDLC(D)
					¼″	Monel®	7115G4MDLC(D)
					⅜″	stainless steel	7115G6YDLC(D)
					½″	stainless steel	7115G8DLC(D)
					6mm	stainless steel	7115Z6YDLC(D)
					8mm	stainless steel	7115Z8YDLC(D)
					10mm	stainless steel	7115Z10YDLC(D)
					10mm	Monel®	7115Z10MDLC(D)
Gyrolok®	Normally Closed Spring Return	Teflon® Graphite Filled Teflon®	3000 psig (207 bar)	Gasketed 71 Series, T/TL Series	1/8″	stainless steel	7122G2YTLC(T)
					1/4″	stainless steel	7122G4YTLC(T)
					1/4″	Monel	7122G4MTLC(T)
					3/8″	stainless steel	7122G6YTLC(T)
					1/2″	stainless steel	7122G8YTLC(T)
					6mm	stainless steel	7122Z6YTLC(T)
					8mm	stainless steel	7122Z8YTLC(T)
					10mm	stainless steel	7122Z10YTLC(T)
					10mm	Monel	7122Z10MTLC(T)
Gyrolok®	Oval Handle	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Welded 70 Series, D/DL Series	1/8″	stainless steel	7015G2YDL(D)
					1/4″	stainless steel	7015G4YDL(D)
					1/4″	Monel	7015G4MDL(D)
					3/8″	stainless steel	7015G6YDL(D)
					1/2″	stainless steel	7015G8YDL(D)
					6mm	stainless steel	7015Z6YDL(D)
					8mm	stainless steel	7015Z8YDL(D)
					10mm	stainless steel	7115Z10YDL(D)
					10mm	Monel	7015Z10MDL(D)
Gyrolok®	Oval handle	Teflon®	3000 psig (207 bar)	Welded 70 Series, T/TL Series	⅛″	stainless steel	7022G2YTL(T)
					¼″	stainless steel	7022G4YTL(T)
					¼″	Monel®	7022G4MTL(T)
					⅜″	stainless steel	7022G6YTL(T)
					½″	stainless steel	7022G8TL(T)
					6mm	stainless steel	7022Z6YTL(T)
					8mm	stainless steel	7022Z8YTL(T)
					10mm	stainless steel	7022Z10YTL(T)
					10mm	Monel®	7022Z10MTL(T)

** For D (or T) Series bidirectional valves, delete "L" in part number*

D, DL, T, TL Series

How to Order: Standard Valves

END CONNECTIONS ALL PORTS	ACTUATION METHOD	PACKING MATERIAL	MAXIMUM PRESSURE	END FITTING TO BODY CONNECTION	END CONNECTION SIZE	BODY MATERIAL	PART NUMBER*
Gyrolok®	Normally Closed Spring Return	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Welded 70 Series, D/DL series	1/8″	stainless steel	7015G2YDLC(D)
					1/4″	stainless steel	7015G4YDLC(D)
					1/4″	Monel	7015G4MDLC(D)
					3/8″	stainless steel	7015G6YDLC(D)
					1/2″	stainless steel	7015G8YDLC(D)
					6mm	stainless steel	7015Z6YDLC(D)
					8mm	stainless steel	7015Z8DLC(D)
					10mm	stainless steel	7015Z10YDLC(D)
					10mm	Monel	7015Z10MDLC(D)
Gyrolok®	Normally Closed Spring Return	Teflon®	3000 psig (207 bar)	Welded 70 Series, T/TL Series	⅛″	stainless steel	7022G2YTLC(T)
					¼″	stainless steel	7022G4YTLC(T)
					¼″	Monel®	7022G4MTLC(T)
					⅜″	stainless steel	7022G6YTLC(T)
					½″	stainless steel	7022G8TLCC(T)
					6mm	stainless steel	7022Z6YTLC(T)
					8mm	stainless steel	7022Z8YTLC(T)
					10mm	stainless steel	7022Z10YTLC(T)
					10mm	Monel®	7022Z10MTLC(T)
Female NPT	Lever handle	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Gasketed 71 Series, D/DL Series	¼″	stainless steel	7115F4YDL(D)
					¼″	Monel®	7115F4MDL(D)
	Lever Handle	Teflon® Graphite Filled Teflon®	3000 psig (207 bar)	Gasketed 71 Series, T/TL Series	¼″	stainless steel	7122F4YTL(T)
					¼″	Monel	7122F4MTL(T)
	Normally Closed Spring Return	Teflon® Graphite Filled Teflon®	3000 psig (207 bar)	Gasketed 71 Series, T/TL Series	¼″	stainless steel	7122F4YTLC(T)
	Normally Closed Spring Return	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Gasketed 71 Series, D/DL Series	¼″	stainless steel	7115F4YDLC(D)
	Oval Handle	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Welded 70 Series, D/DL Series	¼″	stainless steel	7015F4YDL(D)
	Oval handle	Teflon®	3000 psig (207 bar)	Welded 70 Series, T/TL Series	¼″	stainless steel	7022F4YTL(T)
	Normally Closed Spring Return	Teflon® & FKM (Viton®)	6000 psig (414 bar)	Welded 70 Series, D/DL Series	¼″	stainless steel	7015F4YDLC(D)
					¼″	Monel	7015F4MDLC(D)
	Normally Closed Spring Return	Teflon®	3000 psig (207 bar)	Welded 70 Series, T/TL Series	¼″	stainless steel	7022F4YTLC(T)
					¼″	Monel	7022F4MTLC(T)

** For D (or T) Series bidirectional valves, delete "L" in part number*

Repair Kits

71 Series – DL

Kit includes delta backup ring, stem, PEEK® seat & washer, O-ring, and instructions

SP71DL21

Seals	
21	Buna-N
50	Viton®
64	Kalrez®

71 Series – TL

Kit includes stem guide, seat, packing material, and instructions.

SP71TL

D, DL, T, TL Series

How to Order: Build-to-Order

Use the matrix below to customize your D, DL, T, TL ball valves. Use the chart on page 9 to order standard, readily available valves. **Standard items in bold.**

71 15 G4 Y D L _

VALVE SERIES
71 Gasketed-end fitting
70 Welded-end fitting

SEATS, SEALS & WASHERS
14 D and DL valves only –40° F to +500° F
Seats: PCTFE (–40° C to +260° C)
Washers: Teflon®
Delta back-up ring: Teflon®
O-ring: Kalrez®

15 D and DL valves only –40° F to +350° F
Seats: PCTFE (–40° C to +177° C)
Washers: Teflon®
Delta back-up ring: Teflon®
O-ring: FKM (Viton®)

16 D and DL valves only –40° F to +250° F
Seats: PCTFE (–40° C to +121° C)
Washers: Teflon®
Delta back-up ring: Teflon®
O-ring: Buna N

22 T and TL valves only –40° F to +350° F
Seats: Teflon® (–40° C to +177° C)
Washers: Teflon®
Back-up ring: Teflon®
Energized Teflon® seal: Graphite-filled Teflon®/Elgiloy®

FACTORY ASSEMBLED ACTUATOR OPTION**
Blank-Manual Nylon Handle
- **70 Series: Oval**
- **71 Series: Lever**

C Normally closed actuator (0722A5)
O Normally open actuator (0722A5)
D Double acting (0760A5)

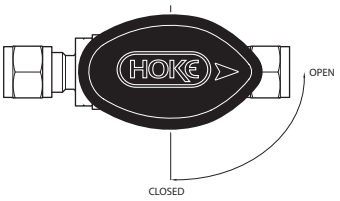
DENOTES "LIVE-LOADED SEATS"
L Live loaded seat (uni-directional flow)
(Leave blank for D or T series bi-directional flow)

STEM SEAL TYPE
D Delta stem seal (D or DL valve only)
T Energized Teflon® seal (T or TL valve only)

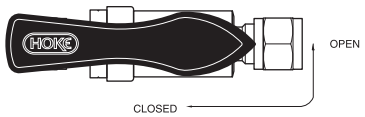
BASIC MATERIAL*
Y 316 stainless steel
B Brass
M Monel®

CONNECTION TYPE & SIZE
G2 ⅛″ Gyrolok® inlet, ⅛″ Gyrolok® outlet
G4 ¼″ Gyrolok® inlet, ¼″ Gyrolok® outlet
G6 ⅜″ Gyrolok® inlet, ⅜″ Gyrolok® outlet
G8 ½″ Gyrolok® inlet, ½″ Gyrolok® outlet
H4 ¼″ male NPT inlet, ¼″ Gyrolok® outlet
F4 ¼″ female NPT inlet, ¼″ female NPT outlet
F6 ⅜″ female NPT inlet, ⅜″ Gyrolok® outlet
F8 ½″ female NPT inlet, ½″ Gyrolok® outlet
L4 ¼″ male NPT inlet, ¼″ female NPT outlet
Z6 6mm Gyrolok® inlet, 6mm Gyrolok® outlet
Z8 8mm Gyrolok® inlet, 8mm Gyrolok® outlet
Z10 10mm Gyrolok® inlet, 10mm Gyrolok® outlet

** Consult factory for other materials*
*** To order "A4" actuators, please contact the factory*

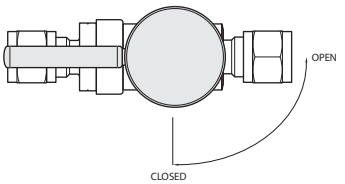


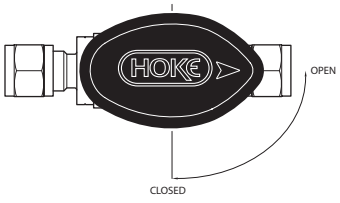
70 Series handle (black nylon)



71 Series handle (red nylon)

Optional Handles

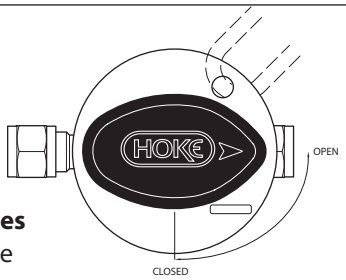




Metal Handles
316 stainless steel handles are available for 70 & 71 Series. To order, specify kit 7100K13.

Color-coded Oval Nylon Handles
Color-coded handles are available for 70 Series Valves. Order by the part number listed below.

Red 95683–030
Blue 95683–031
Black 95683–032
Green 95683–033
Orange 95683–034



Handle Locking Kit
Safety lockout kits are available for applications which must conform to Code of Federal Regulations 29CFR Part 1910, OSHA Safety and Health Act and other international regulations. Valves can be locked in either an opened or closed position with the stainless steel upper and lower locking plates. Lock with readily available padlocks or commercially available multiple lockout devices. Locking kits include the locking plates and assembly instructions. To order a safety lockout kit, specify kit 7100K18.

For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.

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