

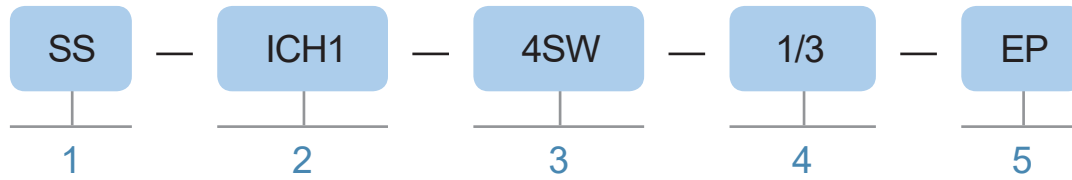
Check Valves



ICH / ICL SERIES

- Maximum Working Pressure
 - ICH Series : 6,000 psig (413 bar) @ 100°F (37°C)
 - ICL Series : 3,000 psig (206 bar) @ 100°F (37°C)
- Cracking Pressure : 1/3 psig (0.03 bar) to @ 25 psig (1.80 bar)
- Working Temperature Range : -10°F(-23°C) to 375°F(190°C)

ICH SERIES ORDERING INFORMATION



1. BODY MATERIAL

Material	Designator
316 SS	SS

2. VALVE SERIES

Orifice Size	Designator
4.8mm	ICH1
7.9mm	ICH2
15mm	ICH3

* The Orifice Size is determined using valves with TKF tube fitting end connections.
* For more details, See the Dimensions Table.

3. INLET/OUTLET CONNECTION SIZE & TYPE

Inlet/Outlet Connection Size	Designator
1/4"	4
1/8"	2
3/8"	6
1/2"	8
6mm	6M
8mm	8M
10mm	10M
12mm	12M

Inlet/Outlet Connection Type	Designator
Lok	SW
Male NPT	NM
Female NPT	NF
Male ISO [®] Tapered	PTM
Female ISO [®] Tapered	PTF
MFS Male	VM

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.

4. CRACKING PRESSURE

Cracking Pressure	Designator
1/3 psi	1/3
1 psi	1
5 psi	5
10 psi	10
25 psi	25

5. O-RING MATERIAL

O-Ring Material	Designator
Fluorocarbon FKM (Standard)	Blank
Buna N	BN
Ethylene Propylene	EP
Neoprene	NE

FEATURES

- Stainless Steel Construction
- Poppet design
- In-line pattern
- Variety of end connection

TECHNICAL DATA

TEMPERATURE - WORKING PRESSURE RATING

Series	ICH1	ICH2	ICH3
Temperature, °F (°C)	Working Pressure, psig (bar)		
-10 (-23) to 100 (37)	6,000 (413)		5,000 (344)
-10 (-23) to 200 (93)	5,160 (355)		4,290 (295)
-10 (-23) to 250 (121)	4,910 (338)		4,080 (281)
-10 (-23) to 300 (148)	4,660 (321)		3,875 (266)
-10 (-23) to 375 (190)	4,280 (294)		3,560 (245)

CRACKING AND RESEAL PRESSURES AT 70°F (20°C)

	Nominal Cracking Pressure psi (bar)	Cracking Pressure Range psi (bar)	Reseal Pressure psi (bar)
Cracking Pressure psi (bar)	1/3 (0.03)	Up to 3 (0.21)	Up to 6 (0.42) back pressure
	1 (0.07)	Up to 4 (0.28)	Up to 5 (0.35) back pressure
	5 (0.35)	3 to 9 (0.21 to 0.63)	Up to 2 (0.14) back pressure
	10 (0.69)	7 to 15 (0.49 to 1.1)	3 (0.21) or more upstream pressure
	25 (1.80)	20 to 30 (1.4 to 2.1)	17 (1.2) or more upstream pressure
Seal Material	Fluorocarbon FKM		

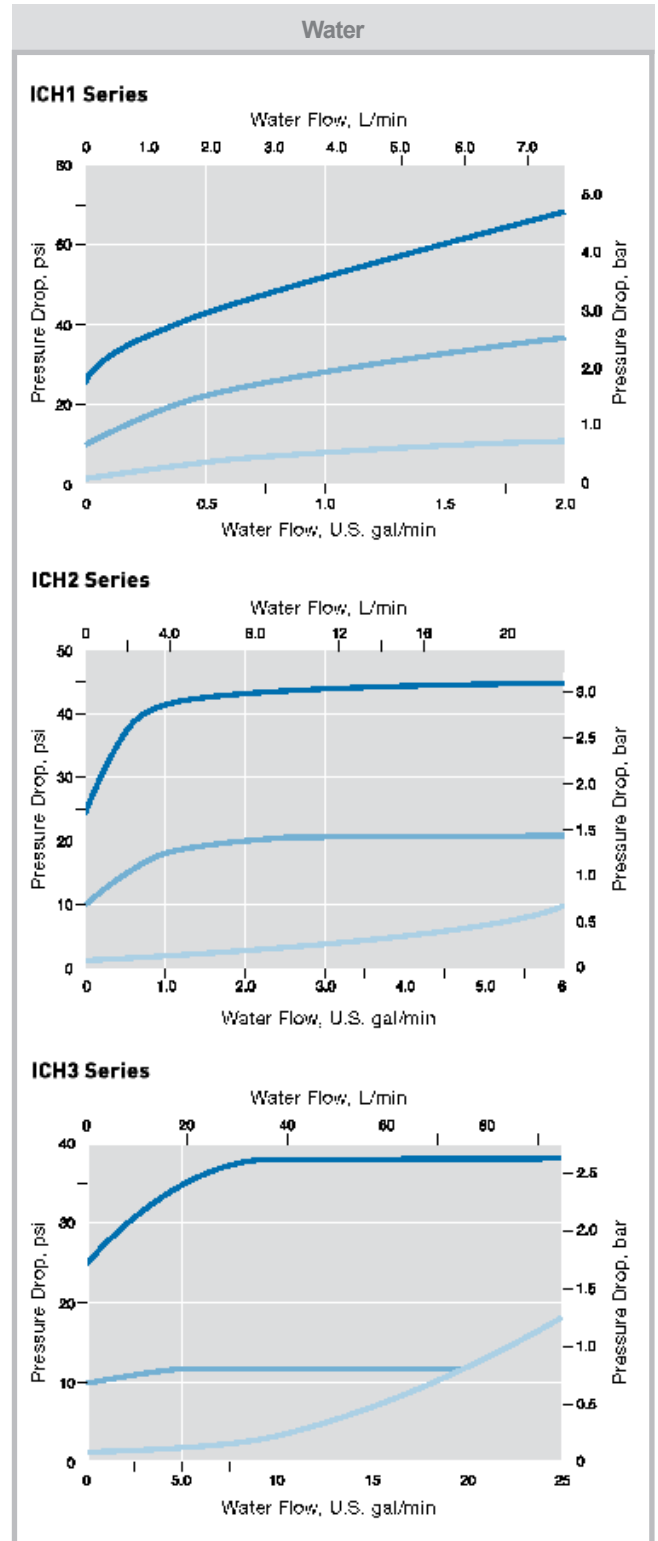
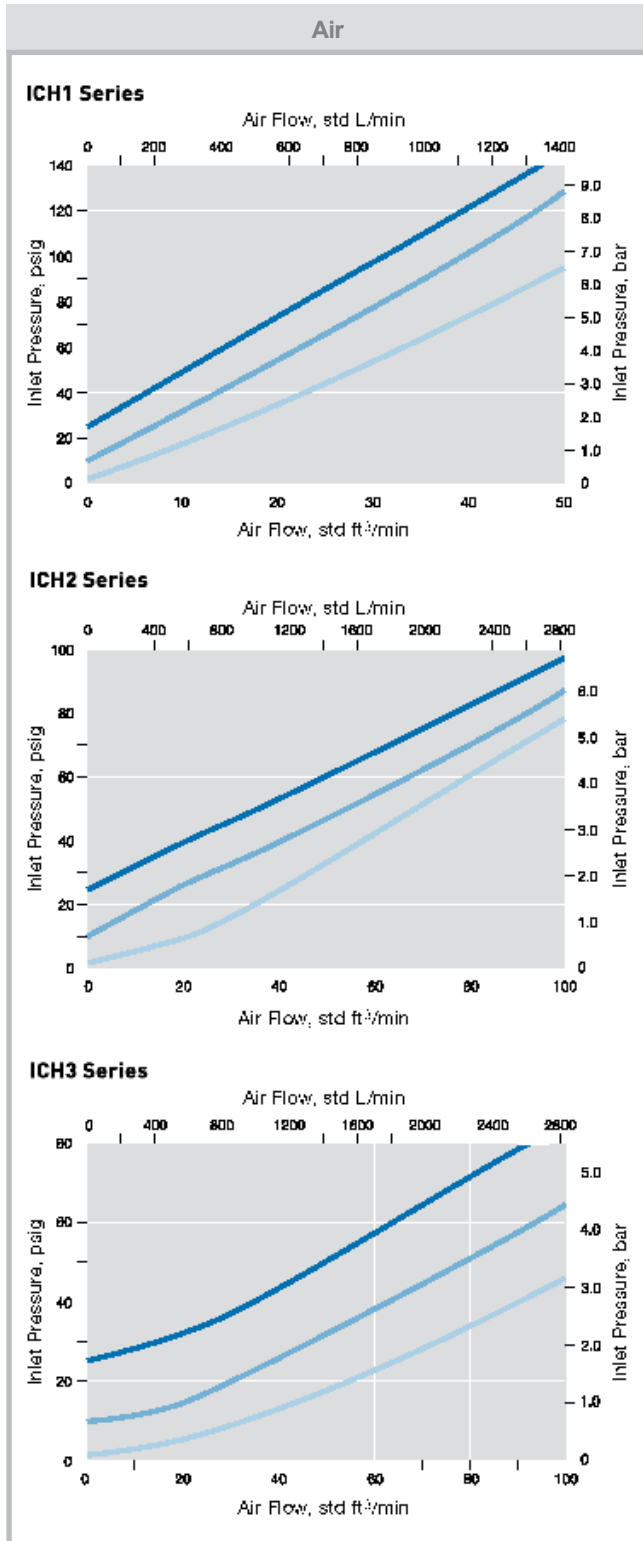
Caution :

- For valves not actuated for a period of time, initial cracking pressure may be higher than the set cracking pressure.
- When using a Check Valve under the low pressure, Noise can be generated due to chattering of the spring.

FLOW DATA AT 70°F (20°C)

ICH SERIES

Nominal Cracking Pressures — 1 psi (0.07 bar) — 10 psi (0.69 bar) — 25 psi (1.8 bar)



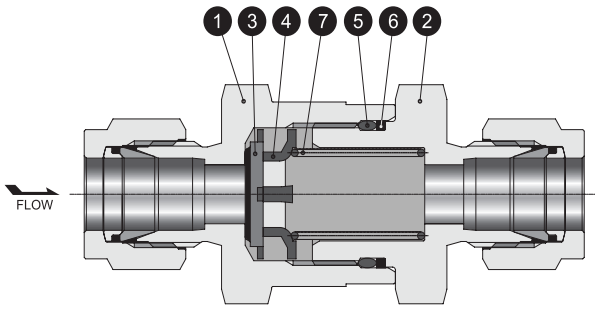
Testing

- Every valve is factory tested for cracking and reseal performance.

Cleaning and Packaging

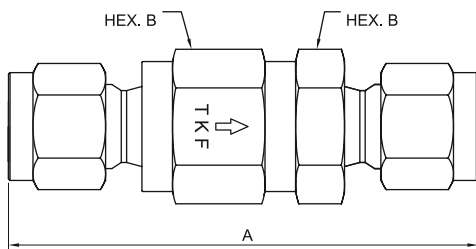
- Every valve is cleaned and packaged in accordance with the standard specification of cleaning and packaging.

MATERIALS OF CONSTRUCTION

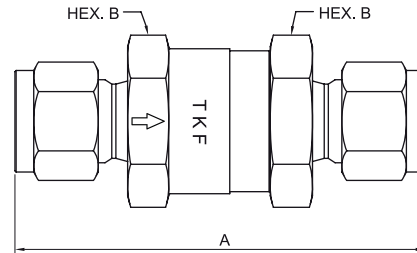


No.	Description	Material
		Material Grade / ASTM Specification
1	Inlet Body	316 SS / A479
2	Outlet Body	316 SS / A479
3	Poppet Assembly	FKM-bonded 316 SS / A479
4	Poppet Stoper	316 SS / A276
5	O-Ring	Fluorocarbon FKM
6	Backup Ring	PTFE
7	Spring	316 SS

DIMENSIONS



ICH1 SERIES

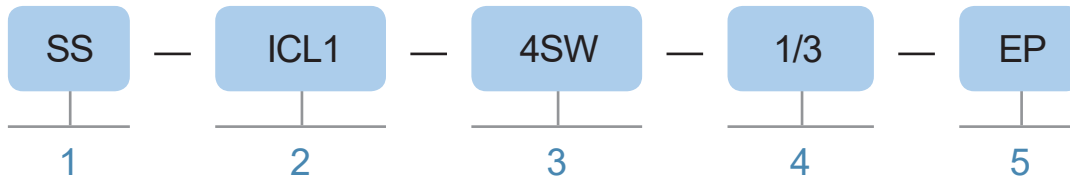


ICH2 / ICH3 SERIES

Order Number		Orifice in. (mm)	Cv	End Connections		Pressure Rating psig (bar)	Dimensions in. (mm)	
Series	Part No.			Inlet	Outlet		A	B
ICH1	2SW	0.189 (4.8)	0.67	1/8" Lok		6,000 (413)	2.27 (57.7)	11/16 (17.5)
	4SW			1/4" Lok			2.43 (61.7)	
	6MSW			6mm Lok			2.43 (61.7)	
	4NF			1/4" Female NPT			2.13 (54.1)	
	2NM			1/8" Male NPT			1.79 (45.5)	
	4NM			1/4" Male NPT			2.17 (55.1)	
	4PTF			1/4" Female ISO [®] Tapered			2.28 (57.9)	
	4PTM			1/4" Male ISO [®] Tapered			2.17 (55.1)	
	4VM			1/4" MFS [®] Male			2.28 (57.9)	
ICH2	6SW	0.307 (7.8)	1.8	3/8" Lok		6,000 (413)	2.75 (69.9)	1 (25.4)
	8SW			1/2" Lok			2.96 (75.2)	
	8MSW			8mm Lok			2.7 (68.6)	
	10MSW			10mm Lok			2.8 (71.1)	
	12MSW			12mm Lok			2.96 (75.2)	
	6NF			3/8" Female NPT			2.55 (64.8)	
	8NF			1/2" Female NPT		4,600 (316)	3.03 (77.0)	1 1/16 (27)
	6NM			3/8" Male NPT		6,000 (413)	2.36 (59.9)	1 (25.4)
	8NM			1/2" Male NPT		4,600 (316)	2.73 (69.3)	1 1/16 (27)
	8PTF			1/2" Female ISO [®] Tapered		6,000 (413)	3.29 (83.6)	1 1/16 (27)
	8PTM			1/2" Male ISO [®] Tapered		3,500 (241)	2.73 (69.3)	1 (25.4)
	8VM			1/2" MFS Male		5,000 (344)	2.73 (69.3)	1 (25.4)
ICH3	12SW	0.591 (15.0)	4.7	3/4" Lok		5,000 (344)	3.52 (89.4)	1 5/8 (41.3)
	16SW			1" Lok			3.88 (98.6)	
	22MSW			22mm Lok		5,000 (344)	3.48 (88.4)	
	25MSW			25mm Lok			3.88 (98.6)	
	12NF			3/4" Female NPT		4,300 (296)	3.23 (82.0)	
	16NF			1" Female NPT		4,100 (282)	3.83 (97.3)	
	12NM			3/4" Male NPT		5,000 (344)	3.29 (83.6)	
	16NM			1" Male NPT			3.67 (93.2)	
	12PTF			3/4" Female ISO [®] Tapered		4,300 (296)	3.55 (90.2)	
	16PTF			1" Female ISO [®] Tapered		4,100 (282)	3.83 (97.3)	
	12PTM			3/4" Male ISO [®] Tapered		5,000 (344)	3.35 (85.1)	
	16PTM			1" Male ISO [®] Tapered			3.67 (93.2)	
	12VM			3/4" MFS Male		3,000 (206)	3.78 (96.0)	

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.

ICL SERIES ORDERING INFORMATION



1. BODY MATERIAL

Material	Designator
316 SS	SS

2. VALVE SERIES

Orifice Size	Designator
4.8mm	ICL1
7.1mm	ICL2
10.0mm	ICL3
13.5mm	ICL4
16.0mm	ICL5
18.0mm	ICL6

3. INLET/OUTLET CONNECTION SIZE & TYPE

Inlet/Outlet Connection Size	Designator
1/4"	4
1/8"	2
3/8"	6
1/2"	8
3/4"	12
1"	16
6mm	6M
8mm	8M
10mm	10M
12mm	12M

Inlet/Outlet Connection Type	Designator
Lok	SW
Male NPT	NM
Female NPT	NF
Male ISO [®] Tapered	PTM
Female ISO [®] Tapered	PTF
MFS Male	VM

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.

* The Orifice Size is determined using valves with TKF tube fitting end connections.
* For more details, See the Dimensions Table.

4. CRACKING PRESSURE

Cracking Pressure	Designator
1/3 psi	1/3
1 psi	1
10 psi	10
25 psi	25

5. O-RING MATERIAL

O-Ring Material	Designator
Fluorocarbon FKM (Standard)	Blank
Buna N	BN
Ethylene Propylene	EP
Neoprene	NE

FEATURES

- Stainless Steel Construction
- Poppet design
- In-line pattern
- Variety of end connection

TECHNICAL DATA

- Cracking pressure-the upstream pressure at which the first indication of flow occurs.
- Reseal pressure-the pressure at which there is no indication of flow.

Size	Maximum Flow Coefficient(Cv)	Nominal Cracking Pressure psi(bar)	Downstream Pressure at 70°F (20°C) psig(bar)
1/8"	0.1	1/3, 1, 10, 25 (0.03, 0.07, 0.69, 1.8)	1,000(68.9)
1/4"	0.47		
3/8"	1.47		
1/2"	1.68		200(13.7)
3/4", 1"	4.48		

TEMPERATURE - WORKING PRESSURE RATING

Series	ICL1	ICL2	ICL3	ICL4	ICL5	ICL6
Temperature, °F (°C)	Working Pressure, psig (bar)					
-10 (-23) to 100 (37)		3,000 (206)			2,000 (137)	
-10 (-23) to 200 (93)		2,575 (177)			1,715 (118)	
-10 (-23) to 250 (121)		2,450 (168)			1,630 (112)	
-10 (-23) to 300 (148)		2,325 (160)			1,545 (106)	
-10 (-23) to 375 (190)		2,185 (150)			1,450 (99.9)	

CRACKING AND RESEAL PRESSURES AT 70°F (20°C)

	Nominal Cracking Pressure psi (bar)	Cracking Pressure Range psi (bar)	Reseal Pressure psi (bar)
Cracking Pressure psi (bar)	1/3 (0.03)	Up to 3 (0.21)	Up to 6 (0.42) back pressure
	1 (0.07)	Up to 4 (0.28)	Up to 5 (0.35) back pressure
	10 (0.69)	7 to 15 (0.74 to 1.1)	3 (0.21) or more upstream pressure
	25 (1.80)	20 to 30 (1.4 to 2.1)	17 (1.2) or more upstream pressure
Seal Material	Fluorocarbon FKM		

Caution :

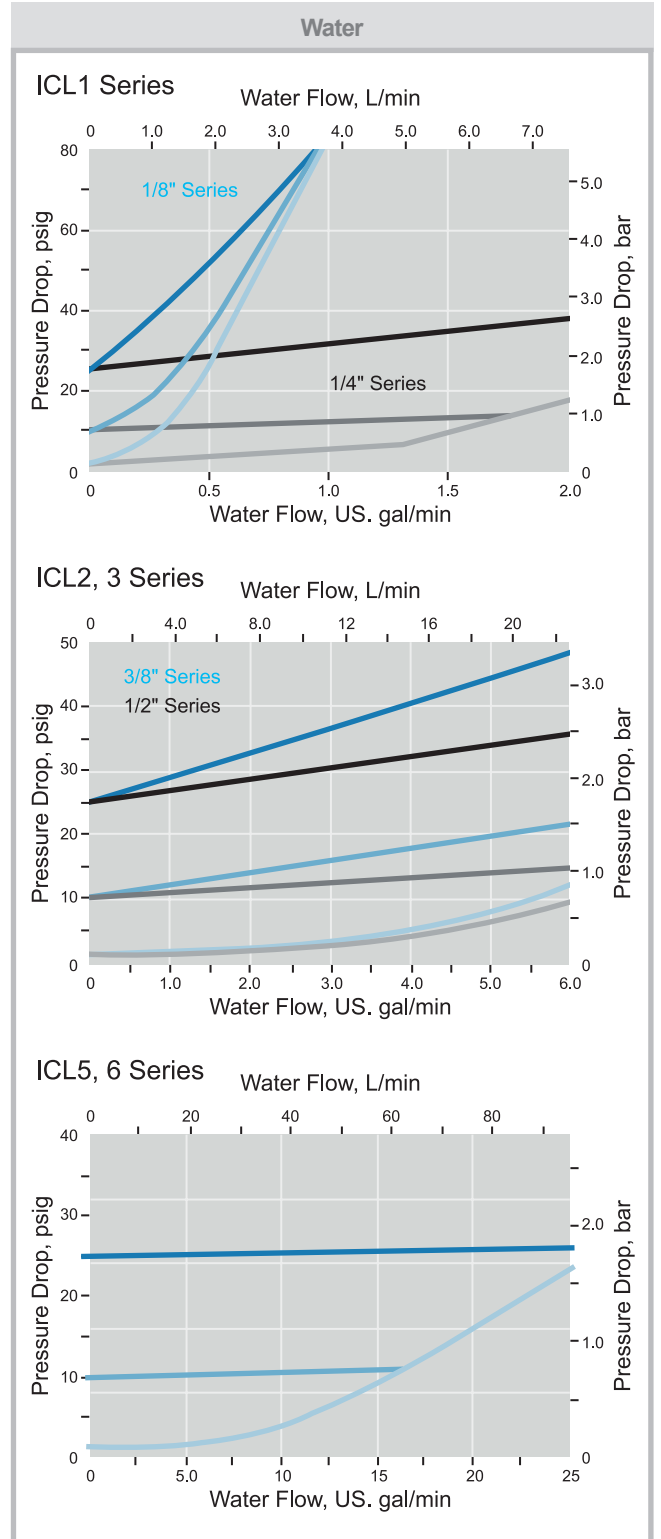
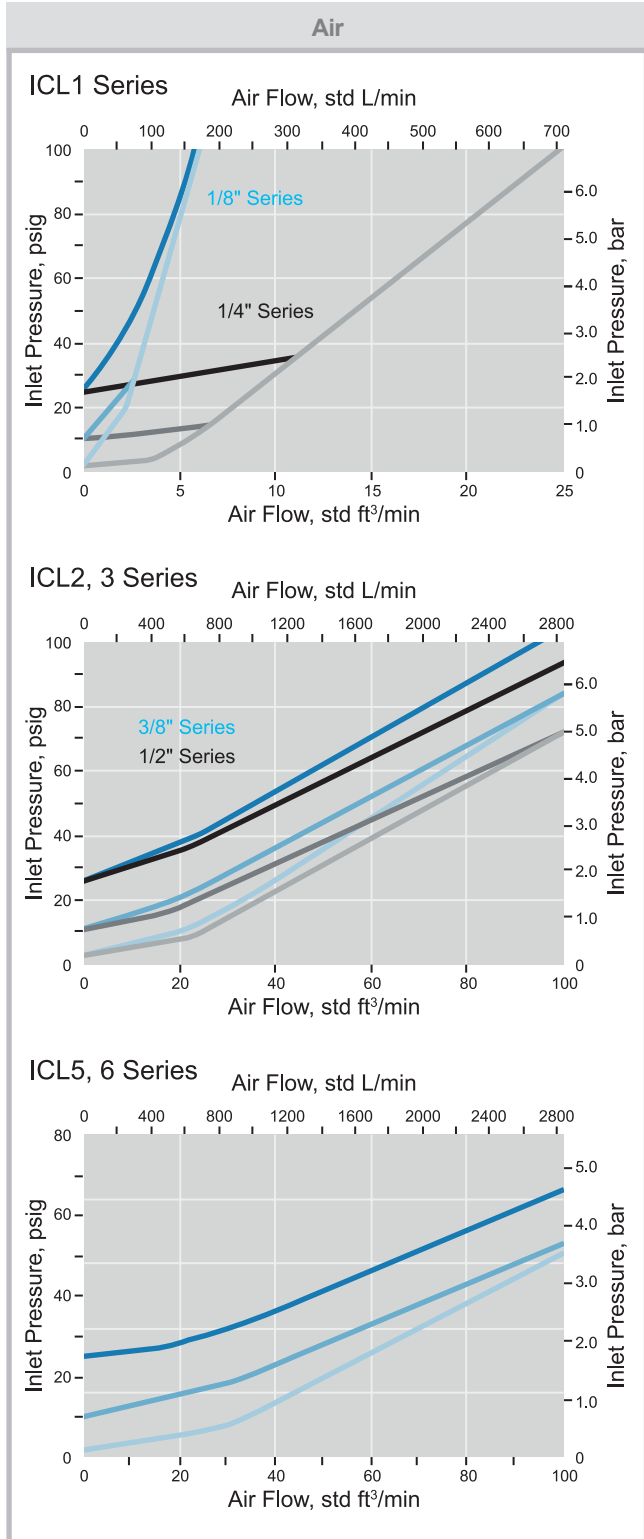
- For valves not actuated for a period of time, initial cracking pressure may be higher than set cracking pressure.
- When using a Check Valve under the low pressure, Noise can be generated due to chattering of the spring.

FLOW DATA AT 70°F (20°C)

ICL SERIES

Nominal Cracking Pressures

1/8", 3/8", 3/4", 1" Series — 1 psi (0.007 bar) — 10 psi (0.069 bar) — 25 psi (1.8 bar)
 1/4", 1/2", Series — 1 psi (0.007 bar) — 10 psi (0.069 bar) — 25 psi (1.8 bar)



CHECK VALVES

GI PRODUCTS / VALVE SERIES

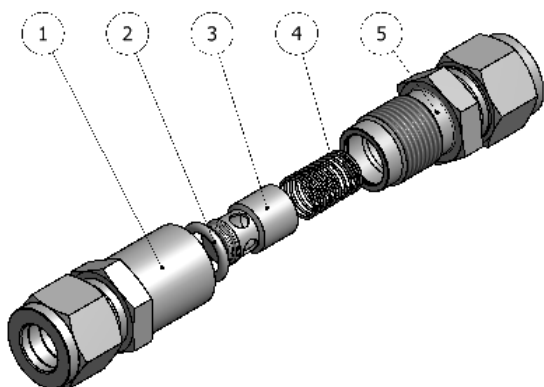
Testing

- Every valve is factory tested for cracking and reseal performance.

Cleaning and Packaging

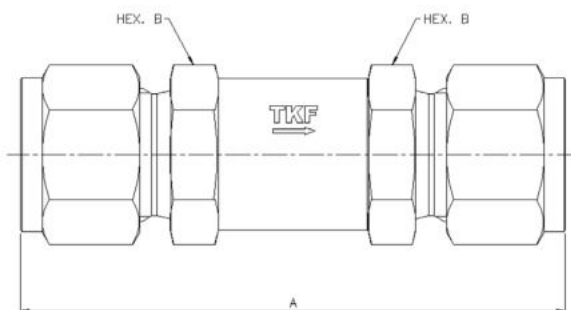
- Every valve is cleaned and packaged in accordance with the standard specification of cleaning and packaging.

MATERIALS OF CONSTRUCTION



No.	Description	Material
		Material Grade / ASTM Specification
1	Inlet Body	316 SS / A276
2	O-Ring	FKM
3	Poppet	316 SS / A276
4	Spring	304 SS
5	Outlet Body	316 SS / A276

DIMENSIONS



Order Number		Orifice in. (mm)	Cv	End Connections		Pressure Rating psig (bar)	Dimensions in. (mm)	
Series	Part No.			Inlet	Outlet		A	B
ICL1	2SW	0.189 (4.8)	0.16	1/8" Lok		3,000 (206)	2.19 (55.6)	5/8 (15.9)
	2NF			1/8" Female NPT			1.75 (44.4)	
	2NM			1/8" Male NPT			1.83 (46.6)	
	6MSW			6mm Lok			2.36 (60.0)	
	4SW			1/4" Lok			2.10 (53.4)	
	4NM			1/4" male NPT			2.15 (54.6)	
	4NF			1/4" Female NPT			2.15 (54.6)	
ICL2	6SW	0.279 (7.1)	1.48	3/8" Lok		3,000 (206)	2.94 (74.8)	7/8 (22.2)
	10MSW			10mm Lok			2.54 (64.6)	
	6NM			3/8" Male NPT			2.51 (63.8)	
ICL3	6NF	0.393 (10.0)	1.70	3/4" Female NPT		2,000 (137)	3.15 (80.2)	1 1/8 (28.6)
	8SW			1/2" Lok			2.92 (74.4)	
	12MSW			12mm Lok			3.33 (84.7)	
	8NM			1/2" Male NPT			3.61 (91.8)	
ICL4	8NF	0.531 (13.5)	2.60	1/2" Female NPT		2,000 (137)	4.36 (110.7)	1 1/4 (31.8)
	10SW			5/8" Lok			4.14 (105.3)	
ICL5	12SW	0.630 (16.0)	5.20	3/4" Lok		2,000 (137)	4.05 (103.0)	1 3/8 (34.9)
	12NM			3/4" Male NPT			4.77 (121.2)	
	12NF			3/4" Female NPT			4.57 (116.2)	
ICL6	16SW	0.708 (18.0)	8.00	1" Lok		2,000 (137)	4.38 (111.4)	1 5/8 (41.3)
	16NM			1" Male NPT			4.77 (121.2)	
	16NF			1" Female NPT			4.57 (116.2)	

① Refer to specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.