Hy-Lok 105 Series

High Pressure Ball Valves for General Service

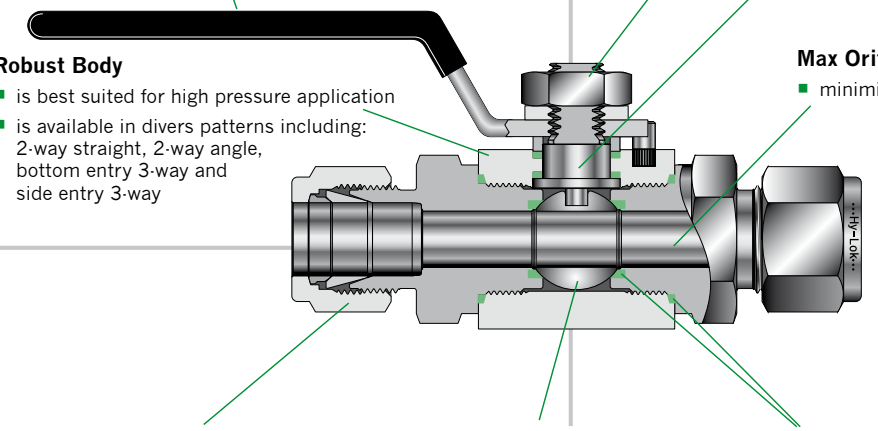
Catalog No. H-105BV
March 2019

Handle with PVC Color Coat
- allows easy and quick operation with low torque and 1/4 turn to open and close
- can be operated by pneumatic actuator

Panel Mounting and Locking Devices
- are available as options

Internally Loaded Stem with Shoulder
- prevents stem blow-out

Max Orifice
- minimizes the pressure drop



Robust Body
- is best suited for high pressure application
- is available in divers patterns including: 2-way straight, 2-way angle, bottom entry 3-way and side entry 3-way

Variety of End Connections
- Include fractional / metric Hy - Lok tube fittings, male / female NPT, male / female ISO / BSP threads

Floating Ball Design
- ensures leak proof shut-off at high pressure

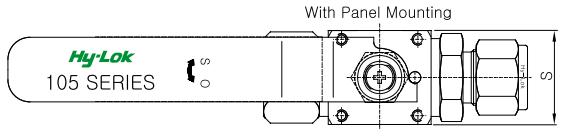
Seats and Packings
- are replaceable

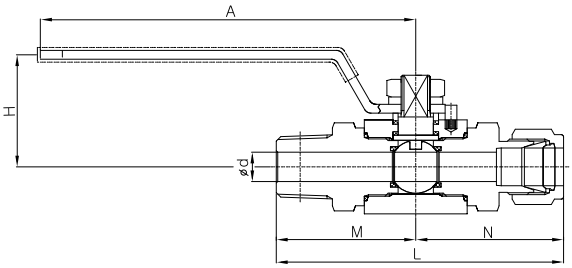
Features

- **Pressure rating** up to 10,000 psig (690 bar) @ 70 °F (21 °C)
- **Temperature rating** from -22 °F to 265 °F (-30 °C to 130 °C) with PVDF seat or from -65 °F to 500 °F (-54 °C to 260 °C) with PEEK seat
- **Small and compact design**
- **Materials available** in 316 stainless steel and alloy 400
- **100% factory tested**

HY-LOK CORPORATION

2 - Way





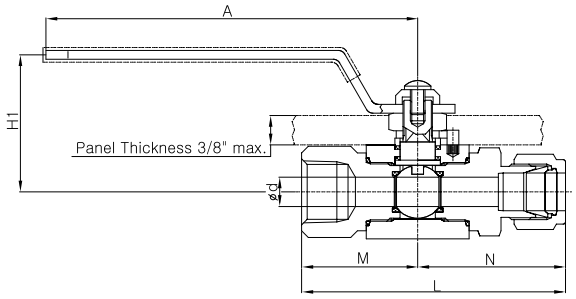
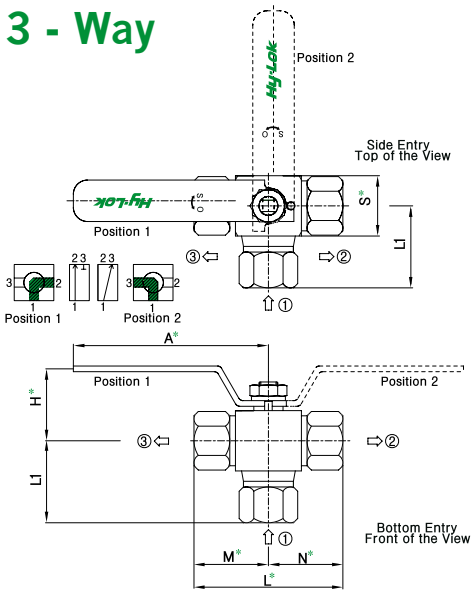


Table of Dimensions

Basic Part No.		Orifice	Cv	End Connections	d Min.	Dimensions						
				Inlet & Outlet		M	N	L	H	A	H1	S
H1B	-H - 4T	10.0	1.2	1/4" Hy-Lok	4.8	45.8	45.8	91.6	38.0	126.5	46.7	32.0
	-H - 6T		3.7	3/8" Hy-Lok	7.11	47.3	47.3	94.6				
	-H - 8T		7.5	1/2" Hy-Lok	10.0	49.8	49.8	99.6				
	-F - 4N			1/4" Female NPT		32.0	32.0	64.0				
	-F - 6N			3/8" Female NPT		35.5	35.5	71.0				
	-F - 8N			1/2" Female NPT		39.5	39.5	79.0				
	-M - 4N		3.7	1/4" Male NPT	7.11	42.7	42.7	85.4				
	-M - 6N		7.2	3/8" Male NPT	9.65	42.7	42.7	85.4				
	-M - 8N		7.5	1/2" Male NPT	10.0	47.6	47.6	95.2				
H2B	-F - 8N	12.7	10.0	1/2" Female NPT	12.7	45.0	45.0	90.0	50.8	162.0	60.6	40.0
	-F - 12N			3/4" Female NPT		45.0	45.0	90.0				
	-M - 12N			3/4" Male NPT		52.6	52.6	105.2				
	-H - 10T			5/8" Hy-Lok		55.3	55.3	110.6				
	-H - 12T			3/4" Hy-Lok		55.3	55.3	110.6				
H3B	-F - 12N	19.0	30.0	3/4" Female NPT	20.0	45.0	45.0	90.0	55.6	162.0	65.6	50.0
	-F - 16N			1" Female NPT		49.1	49.1	98.2				
	-H - 12T		19.0	3/4" Hy-Lok	15.74	58.3	58.3	116.6				
	-H - 16T		30.0	1" Hy-Lok	20.0	64.9	64.9	129.8				
	-M - 12N		19.0	3/4" Male NPT	15.74	57.6	57.6	115.2				
	-M - 16N		30.0	1" Male NPT	20.0	62.4	62.4	124.8				

All dimensions in millimeters. Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

3 - Way



* marked dimensions are the same as of 2-way valve.

Technical Data

Materials of Construction

Description	Grade/ASTM Specification	
	Valve Body Material	
	316 Stainless Steel	Alloy 400
Handle	Stainless Steel with PVC Coating	
Lock Nut	Stainless Steel with Washer	
Pin	Stainless Steel	
Stem	TP316/A479	N04400/B164
Stem Packing*	PTFE	
Ball*	TP316/A479	N04400/B164
Seats*	PVDF (standard)	
End Connector	TP316/A479	N04400/B164
End Seals*	PTFE/FKM	
Body	TP316/A479	N04400/B164

* marked are wetted parts. Lubricant is silicone based.

Handle

- Handle is made of stainless steel with PVC coat in blue.
- Other colors are available upon request.

Sour Gas Service

- is provided to meet NACE Standard MR-01-75.

Testing

- Each valve is tested with nitrogen @ 1000 psig (69bar) to max leak rate of 0.1SCCM.
- Hydrostatic shell test Is performed at 1.5 times the working pressure.
- Optional tests are available upon request.

Table of Dimensions

Basic Part No.		Orifice	End Connections Inlet & Outlet	d ↑ Min.	L1
H1B	3 * H - 4T	10.0	1/4" Hy-Lok	4.8	53.3
	3 * H - 6T		3/8" Hy-Lok	7.11	54.8
	3 * H - 8T		1/2" Hy-Lok	10.0	54.0
	3 * F - 4N		1/4" Female NPT		36.5
	3 * F - 6N		3/8" Female NPT		40.0
	3 * F - 8N		1/2" Female NPT		44.0
H2B	3 * H - 10T	12.7	5/8" Hy-Lok	12.7	65.3
	3 * H - 12T		3/4" Hy-Lok		65.3
	3 * F - 8N		1/2" Female NPT		49.5
	3 * F - 12N		3/4" Female NPT		55.0
H3B	3 * H - 12T	19.0	3/4" Hy-Lok	15.74	69.8
	3 * H - 16T		1" Hy-Lok	20.0	69.8
	3 * F - 12N		3/4" Female NPT	20.0	56.5
	3 * F - 16N		1" Female NPT		60.6

All dimensions in millimeters. Dimensions shown with Hy-Lok nuts in finger tight position, where applicale.
"↑"See dimension table on page 2
"*" See ordering information on page 4

Pressure and Temperature Rating

H1B Types

Materials			Pressure Rating @ -65 °F ~ 70 °F (-54 °C ~ 21 °C)	Temperature Rating
Seat	Stem Packing	End Seal		
PVDF (standard)	PTFE		6,000 psig (410 bar)	-22 °F ~ 265 °F (-30 °C ~ 130 °C)
PCTFE				-22 °F ~ 355 °F (-30 °C ~ 180 °C)
PEEK			10,000 psig (690 bar)	-65 °F ~ 500 °F (-54 °C ~ 260 °C)

H2B, H3B Types

Materials			Pressure Rating @ -10 °F ~ 70 °F (-23 °C ~ 21 °C)	Temperature Rating
Seat	Stem Packing	End Seal		
PVDF (standard)	PTFE	FKM	5,000 psig (340 bar)	-10 °F ~ 265 °F (-23 °C ~ 130 °C)
PCTFE				-10 °F ~ 355 °F (-23 °C ~ 180 °C)
PEEK			6,000 psig (410 bar)	-10 °F ~ 375 °F (-23 °C ~ 191 °C)

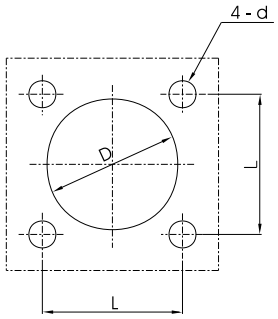
Note

1. The above pressure rating is for 2-way straight pattern valves. 80% of the above rating shall be applicable to 2 - way angle pattern valves and 3-way valves.
2. The rated pressure shown above is the maximum allowable pressure to the seat. If the system requires higher pressure to test, the valve must be in open position before and during test so as not to damage the seat.
3. When valves with Hy-Lok Fitting end connections are connected to tubing, the working pressure of tubing must be considered in the calculation of total system working pressure.

Panel Mounting

Valve Type	Orifice	d	D	L x L
HI B	10.0	5.0	30.0	26 x 26
H2B	12.7	5.0	38.0	34 x 34
H3B	19.0	5.0	38.0	44 x 44

All dimensions in millimeters.



Screw Holes in valves are M4 x 6 mm Depth

Torque for Turning Handle (N · m)

Valve Type	Orifice	Working Pressure - psig										
		0	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000
HI B	10.0	1.6	1.4	1.4	1.6	2.1	2.3	2.7	2.9	3.3	3.7	4.0
H2B	12.7	3.3	2.9	3.8	4.3	5.0	5.2	5.6	·	·	·	·
H3B	19.0	3.2	3.1	4.2	6.5	8.0	8.6	9.6	·	·	·	·

Ordering Information

H1B | 3 | MH | 8N8T | PC | M | O | L | SOG | S316

Valve Type Designator
- H1B : 10.0 mm Orifice
- H2B : 12.7 mm Orifice
- H2B : 19.0 mm Orifice

Pattern Designator *
- Nil : 2 · way Straight
- A : 2 · way Angle
- 3S : 3 · way Side Entry
- 3B : 3 · way Bottom Entry

End Connection Designator
- H : All Ends Hy-Lok Tube Fittings
- F : All Ends Female Pipe Thread
- M : All Ends Male Pipe Thread

Size Designator
- NPT (ISO / BSP)

Thread (In.)	1/4	3/8	1/2	3/4	1
Designator	4N(R)	6N(R)	8N(R)	12N(R)	16N(R)

- Tube

Fractional Tube	O.D (in.)	1/4	3/8	1/2	3/4	1
	Designator	4T	6T	8T	12T	16T
Metric Tube	O.D (mm)	6	10	12	20	25
	Designator	6M	10M	12M	20 M	25 M

Seat Material Designator *
- Nil : PTFE (Standard)
- PC : PCTFE
- PK : PEEK

Panel Mounting Option *
- Nil : Without
- M : With

Handle Option *
- Nil : Lever (Standard)
- O : Oval Aluminium (Aplicable only for H1B)

Locking Device Option *
- Nil : Without
- SOG : With

Sour Gas Designator *
- Nil : Without (Standard)
- SOG : NACE MR-01-75

Material Designator
- S316 : 316 Stainless Steel
- MONE : Alloy 400 (Monel)

Note* : No designator is required for standard items, e.g. H1B-F-6N-S316.

⚠ CAUTION

105 Series Ball Valve shall not be used for natural gas vehicles

SAFETY in VALVE SELECTION

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

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