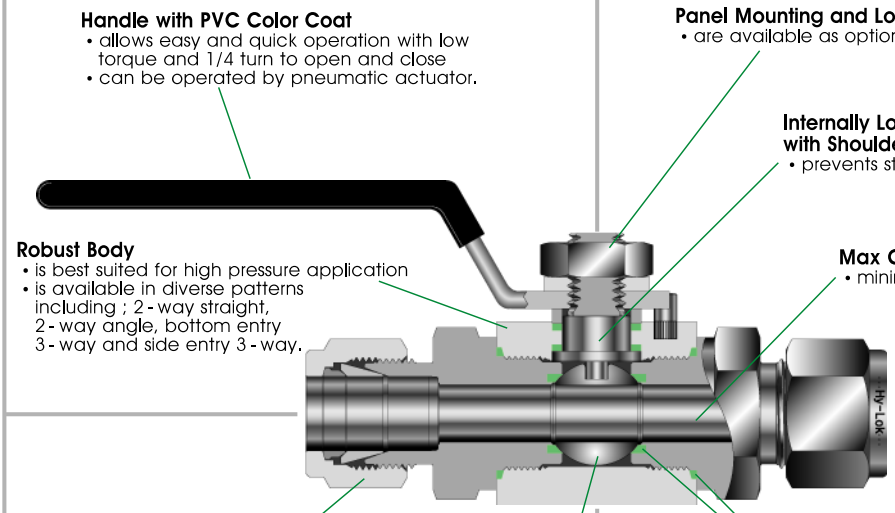
Hy-Lok 105 Series

High Pressure Ball Valves for General Service

Catalog No. H-105BV
Mar. 2019

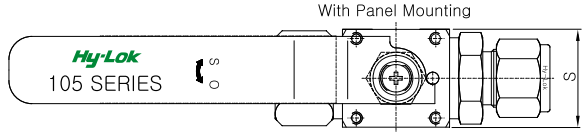


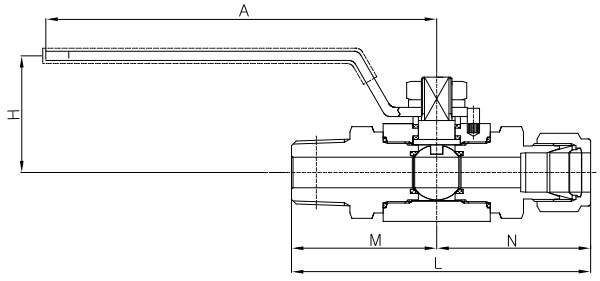
Features

- **Pressure rating** up to 10,000 psig (690bar) @ 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





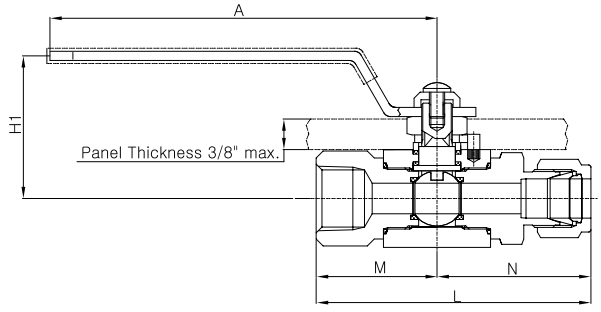
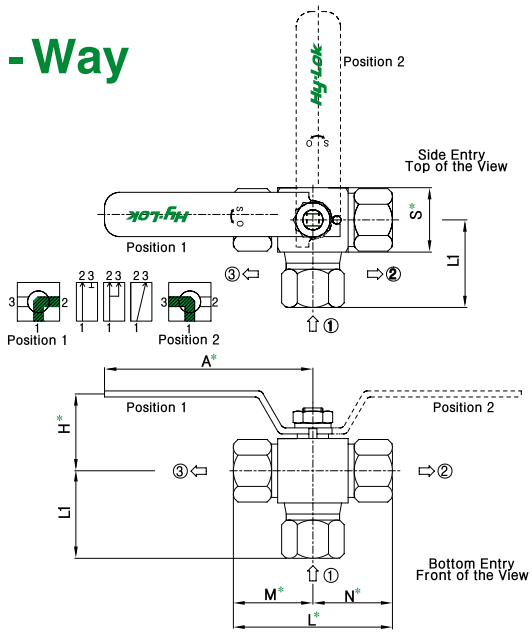


Table of Dimensions

Basic Part No.		Orifice	Cv	End Connections	Dimensions						
				Inlet & Outlet	M	N	L	H	A	H1	S
H1B	-H-4T	4.8	1.2	1/4″ Hy-Lok	45.8	45.8	91.6	38.0	126.5	46.7	32.0
	-H-6T	7.11	3.7	3/8″ Hy-Lok	47.3	47.3	94.6				
	-H-8T	10.0	7.5	1/2″ Hy-Lok	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	7.11	3.7	1/4″ Male NPT	42.7	42.7	85.4				
	-M-6N	9.65	7.2	3/8″ Male NPT	42.7	42.7	85.4				
	-M-8N	10.0	7.5	1/2″ Male NPT	47.6	47.6	95.2				
H2B	-F-8N	12.7	10.0	1/2″ Female NPT	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	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	15.74	19.0	3/4″ Hy-Lok	58.3	58.3	116.6				
	-H-16T	19.0	30.0	1″ Hy-Lok	64.9	64.9	129.8				
	-M-12N	15.74	19.0	3/4″ Male NPT	57.6	57.6	115.2				
	-M-16N	19.0	30.0	1″ Male NPT	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.

Table of Dimensions

Basic Part No.		Orifice	End Connections Inlet & Outlet	L1
H1B	3*H - 4T	4.8	1/4" Hy-Lok	53.3
	3*H - 6T	7.11	3/8" Hy-Lok	54.8
	3*H - 8T	10.0	1/2" Hy-Lok	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	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	15.74	3/4" Hy-Lok	69.8
	3*H - 16T	19.0	1" Hy-Lok	69.8
	3*F - 12N		3/4" Female NPT	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 ordering information on page4

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

Note : "*" marked are wetted parts.
Lubricant is silicone based.

Handle

- Handle is made of stainless steel with PVC coat in yellow.
- 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 @ 1000psig(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.

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 @ -65°F ~ 70°F (-54°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)

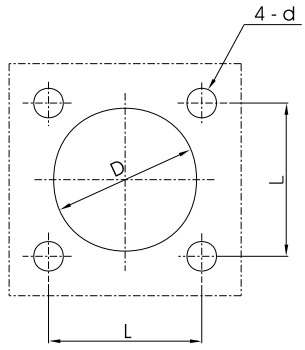
Note

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×L
H1B	10.0	5.0	30.0	26×26
H2B	12.7	5.0	38.0	34×34
H3B	19.0	5.0	38.0	44×44

All dimensions in millimeters.



Screw Holes in valves are M4 x 6mm 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
H1B	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 : 10.0mm Orifice
- H2B : 12.7mm Orifice
- H3B : 19.0mm 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 Fitting.
- F : All Ends Female Thread.
- M : All Ends Male 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	20M	25M

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

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

Handle Option*
- Nil : Lever(Standard)
- O : Oval Aluminum (Applicable only for H1B)

Locking Device Option*
- Nil : Without
- L : 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 CNG System.

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.