

# HiFLUX

High Pressure Valves & Fittings



HIGH SERVICE  
HIGH QUALITY  
HIGH PERFORMANCE  
High Pressure equipment

**HIFLUX**

## CONTENTS

Hydrogen Fuel Station Needle Valve	05
High Pressure Needle Valve	06
3way/2stem Needle Valve	11
High Pressure Check Valve & Line Filter	12
High Pressure Fitting	14
High Pressure Fitting Accessory	16
Tube Cap / Oil Based Thread Lubricant	17
Safety Head & Rupture Disc	18
High Pressure Ball Valve	19
Relief Valve - Factory Set	22
Relief Valve - Field Adjustable	23
Relief Valve - Proportional Type	25
Relief Valve - Proportional GAS	27
Air Operated Valve	29
Wellhead Gauge Valve	32
Bleed Valve	33
Double Block and Bleed Valve	34
High Temperature Valve	35
Control Valve	36
High Pressure Tube	37
High Pressure Nipple	38
Tooling Set	39
Tube Support	40
High Pressure Union & Adapter	42
High Pressure Manifold Block	48
Regulator	50
Air Operating BPR	52
Pressure Gauge / Thermocouples	53
Lok Fitting & Valve	54
Piping Materials	55
Port Type	58
Technical Information	62

HIFLUX



### Passion for a high-pressure future, constant challenge and innovation

HIFLUX Co., Ltd. has been recognized for its technological prowess by successfully producing various of high-pressure piping materials that are difficult to manufacture domestically through continuous R&D and facility investment to open up new markets in the ultra-high pressure piping materials sector.

Based on differentiated technological prowess and price competitiveness compared to overseas manufacturers in Europe and the United States, it is growing into a global brand by concluding OEM supply contracts with domestic OEM suppliers and overseas global waterjet manufacturers.

In addition, in order to open up new markets, we have developed air-operated valves, high-pressured pressure regulators, back pressure regulators, and other fittings for various purposes and pressure-specific accessories, and now our products are being applied to mass production facilities in various industries.

### Expanding R&D investment to achieve carbon neutrality

In order to contribute to carbon neutrality, HIFLUX has researched and developed manual valves for hydrogen refueling stations with pure domestic capital and technology, obtained KS certification, and is currently being supplied to hydrogen refueling station plant sites. It is also developing check valves and pneumatic valves (AOV) KS propulsion and valves for liquefied hydrogen.

In addition, based on its technology related to high-pressure piping for hydrogen refueling stations, it was selected as a hydrogen specialized company by the Ministry of Trade, Industry and Energy in 2024. We will continue to do our best to contribute to the development of the hydrogen industry through steady investment and marketing.

We will always listen to our customers' voices and contribute to productivity and quality improvement through continuous product improvement and service provision, and strive to become HIFLUX that can grow and develop together with our customers.

Thank you.

HIFLUX Co., Ltd. | CEO *Kim Hyeon Hyo*

## Overview

Company name	HIFLUX Co., Ltd.	CEO	Kim Hyeon Hyo
Date of Establishment	May 26, 2010	Business Area	Various valves, hydraulic equipment, pumps, etc
Address	(34037) Da Dong, 361-33, Gapcheon-ro, Yuseong-gu, Daejeon, Republic of Korea	Telephone	+82 042-933-5670 (Extension number 1.Technical Sales Department 2.Design Department 3.Public Relations Department 4.Purchasing Department 5.Production Department)
E-mail	Technical Sales Dept : sales@hiflux.com Promotion Dept : min@hiflux.com	Main Product	Needle Valve, Check Valve, Ball Valve, Relief Valve, Air Operated Valve, High-Temp Valve, Control Valve, Fitting, Fitting Accessory, Tube, Nipple, Regulator, Union, Adapter, Tube Support, Radiating Pipe, Pressure Gauge, Tooling Set, Lok Type Products

# HIFLUX HISTORY

- 2024.05. Selected as a 'Hydrogen Specialist Company' by Government
- 2023.10. Acquired 'KS certification for manual valve for hydrogen refueling station' by KGS
- 2023.05. KS Q ISO 45001 certification
- 2023.05. Selected as a 2023 HIFLUX Small Giant Company
- 2021.08. Patent (Double-sealed check valve) acquired
- 2021.07. Received a commendation from KGS
- 2021.03. Patent (High-pressure valve) acquired
- 2020.07. 'Material/Component/Equipment Specialist Company Confirmation' acquired
- 2020.07. Patent (High-temperature/high-pressure valve) acquired
- 2020.06. R&D (Valve and fittings for H70 hydrogen refueling stations)
- 2020.04. Patent (Valves including stem carriers) acquired
- 2020.02. 2 types of valve patents acquired
- 2019.01. Joined the Korea Hydrogen Industry Association
- 2018.09. Moved to new headquarters and factory in Daedeok Techno Valley
- 2018.08. Acquired 'Venture Business Certification' from the Technology Guarantee Fund
- 2018.02. HIFLUX acquired European Standard Certification (CE)
- 2016.09. Self-developed 3 types of high-pressure valves
- 2016.04. Self-developed high-pressure Trunnion Ball Valve
- 2015.11. Self-developed high-pressure relief valve
- 2015.11. Factory expansion
- 2015.10. High pressure manifold block, high pressure ball valve self-development
- 2015.08. High pressure relief valve, high pressure needle valve self-development
- 2014.07. Corporate research institute certification
- 2013.10. KS Q ISO 9001 certification, KS I ISO 14001 certification
- 2010.05. Establishment of HIFLUX

# Certification Patents



Certificate of Hydrogen Specialist Company



KS Certificate of Needle valve for Hydrogen Station



ISO 9001, 14001, 45001 (Quality, Environment, Health)



CE Certifications



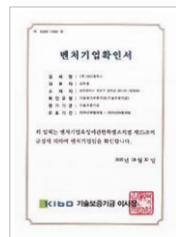
Certificate of Corporate Research Institute



Certificate of Small and Medium Enterprise



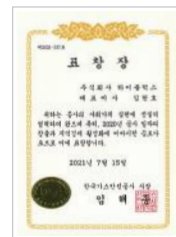
Certificate of Materials/Parts/Equipment Specialist Enterprise



Certificate of Venture Enterprise



Hydrogen Association Membership Card



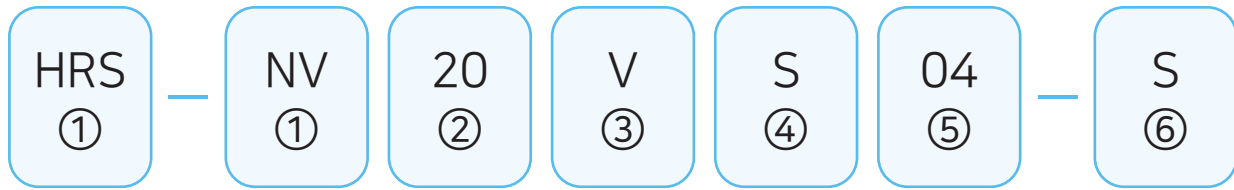
Gas Safety Corporation Award



Patent Certificate / Trademark Registration Certificate

# Catalog Numbering System

simply indicate catalog number and specify option or special requirement



① Products	② Pressure	③ Type of Components	④ Material	⑤ Tube Size	⑥ Options
HRS-NV : Hydrogen Refueling System Needle Valve	03 : 3,000 psi	Needle Valve - V : Vee Stem - R : Regulating Stem	S : Stainless Steel 316	02 : 1/8 inch 04 : 1/4 inch	Needle Valve Control Valve Air Operated Valve High Temperature Valve
NV : Needle Valve	07 : 7,500 psi	Check Valve - O : O-Ring Type - B : Ball Type	H : Hastelloy	06 : 3/8 inch	- S : Straight Type - A : Angle Type
CV : Check Valve	15 : 15,000 psi	Ball Valve	HC : Hastelloy C276 Wetted Part	08 : 1/2 inch	- O : 3way/1on Type - T : 3way/2on Type
BV : Ball Valve	20 : 20,000 psi	- 03 : Orifice 4.8mm - 05 : Orifice 8mm	IN : Inconel 600	09 : 9/16 inch 12 : 3/4 inch	- D : 3way 2stem Type Ball Valve - 20-90 : 2way
ABV : Actuator Ball Valve	30 : 30,000 psi	Control Valve Air Operated Valve - O : Normal-Open Type - C : Normal-Closed Type	IN625 : Inconel 625	16 : 1 inch	- 3-180 : 3way Switching - 3-90 : 3way Diverting
AOV : Air Operated Valve	60 : 60,000 psi	Relief Valve - FS : Factory Set - FA : Field Adjustable - PP : Proportional Type	IN825 : Inconel 825	15 : 15A 25 : 25A	Relief Valve Field Adjustable - 1 : 1 Inlet - 2 : 2 Inlet
RV : Relief Valve	100 : 100,000 psi	Fitting - E : Elbow Type - T : Tee Type - C : Cross Type	NI : Nickel 200		Proportional Type - N : NPT Inlet port
KGC-RV : Gsa Relief Valve	150 : 150,000 psi	Fitting Accessory - A : Adapter - S : Sleeve - G : Gland - R : Collar - T : Collet	TI : Titanium		Fitting Accessory - AV : Anti-Vibration Type
SH : Safety Head	N : NPT				GPR - N : Normal Type - P : Panel Type
CON : Control Valve	P : PT				
HV : High Temperature Valve					
GV : Wellhead Gauge Valve					
BLV : Bleed Valve					
DBBV : Double Block and Bleed Valve					
FT : Fitting					
FA : Fitting Accessory					
MF : Manifold Block					
FATC : Tube Cap					
T : Tube					
N : Nipple					
A : Adapter					
BPR : Back Pressure Regulator					
HPR : High Pressure Regulator					
GPR : General Pressure Regulator					
ABPR : Air Operating Back Pressure Regulator					

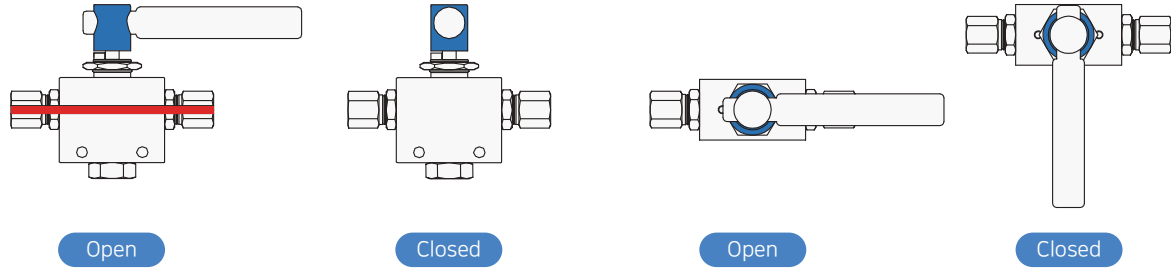
## ➤ Example

- NV60VS06-A : Needle Valve, 60,000 psi, Vee Stem, 3/8", Angle Type.
- NV15VS04-O : Needle Valve, 15,000 psi, Vee Stem, 1/4", 3Way/1on Pressure Type.
- AOV60CS04-A : Air Operated Valve, 60,000 psi, Normal-Closed, 1/4", Angle Type.
- FT60ES06 : Fitting, 60,000 psi, Elbow Type, 3/8".
- FA60GS04-AV : Fitting Accessory, 60,000 psi, Gland, 1/4", Anti-Vibration Type.



## 2way Type

### 90° 2-Way Trunnion



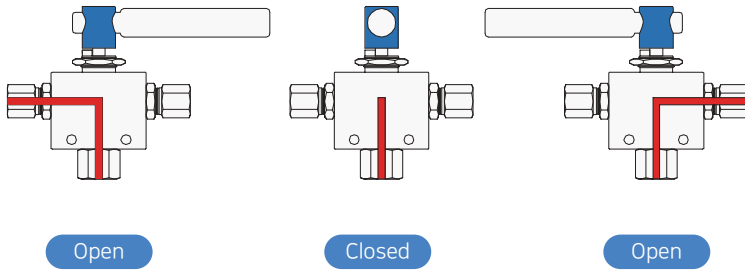
(Unit : mm)

Catalog No	Pressure Rating (psi)	Orifice Size	Port Type	Tube Size	Minimum Orifice	Dimensions											Panel	
						A	B	C	D	E	F	G	H	I	J	Block Thickness	Diameter	Max Thickness
BV1503S02-2-90	15,000	4.8	H1502	1/8"	1.4	128	10	66.5	54	20.5	100	14.2	6.5	7	120	38	25.4	6.4
BV1503S04-2-90			H1504	1/4"	3.2	128												
BV1503S06-2-90			H1506	3/8"	4.8	128												
BV2003S04-2-90	20,000		H2004	1/4"	2.8	128												
BV2003S06-2-90			H2006	3/8"	4.8	128												
BV2003S09-2-90			H2009	9/16"	4.8	138												
BV6003S04-2-90	15,000		H6004	1/4"	2.4	128												
BV6003S06-2-90			H6006	3/8"	3.2	128												
BV6003S09-2-90			H6009	9/16"	4.8	138												
BVN03S02-2-90	15,000		1/8" NPT	1/8"	2.4	128												
BVN03S04-2-90			1/4" NPT	1/4"	4.8	128												
BVN03S06-2-90			3/8" NPT	3/8"	4.8	128												
BVN03S08-2-90	15,000	1/2" NPT	1/2"	4.8	138.6													
BVP03S02-2-90	15,000	1/8" PT	1/8"	2.4	128													
BVP03S04-2-90		1/4" PT	1/4"	4.8	128													
BVP03S06-2-90		3/8" PT	3/8"	4.8	128													
BVP03S08-2-90		1/2" PT	1/2"	4.8	138.6													
BV1505S02-2-90	15,000	8	H1502	1/8"	1.4	147	15	85	65	30	110	17.1	10.3	7	120	35	32	6.4
BV1505S04-2-90			H1504	1/4"	3.2	147												
BV1505S06-2-90			H1506	3/8"	5	147												
BV1005S08-2-90	10,000		H1008	1/2"	7.9	147												
BV2005S04-2-90	20,000		H2004	1/4"	2.8	147												
BV2005S06-2-90			H2006	3/8"	5.2	147												
BV2005S09-2-90			H2009	9/16"	7.9	147												
BV2005S12-2-90	20,000		H2012	3/4"	7.9	163												
BV6005S04-2-90	15,000		H6004	1/4"	2.4	147												
BV6005S06-2-90			H6006	3/8"	3.2	147												
BV6005S09-2-90			H6009	9/16"	4.8	154												
BVN05S02-2-90	15,000		1/8" NPT	1/8"	2.4	147												
BVN05S04-2-90		1/4" NPT	1/4"	4.8	147													
BVN05S06-2-90		3/8" NPT	3/8"	7.1	147													
BVN05S08-2-90	15,000	1/2" NPT	1/2"	7.9	147													
BVP05S02-2-90	15,000	1/8" PT	1/8"	2.4	147													
BVP05S04-2-90		1/4" PT	1/4"	4.8	147													
BVP05S06-2-90		3/8" PT	3/8"	7.1	147													
BVP05S08-2-90		1/2" PT	1/2"	7.9	147													

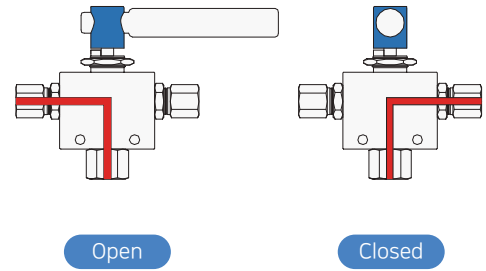
All dimensions are for reference only and may differ from actual size.

## 3way Type

### 180° 3-Way Switching



### 90° 3-Way Diverter



(Unit : mm)

Catalog No		Pressure Rating (psi)	Orifice Size	Port Type	Tube Size	Minimum Orifice	Dimensions													Panel	
3-way 180° Switching	3-way 90° Diverting						A	B	C	D	E	F	G	H	I	J	Block Thickness	Diameter	Max Thickness		
BV1503S02-3-180	BV1503S02-3-90	15,000	4.8	H1502	1/8"	1.4	128	13	66.5	54	20.5	100	14.2	6.5	7	120	38	25.4	6.4		
BV1503S04-3-180	BV1503S04-3-90			H1504	1/4"	3.2	128	17													
BV1503S06-3-180	BV1503S06-3-90			H1506	3/8"	4.8	128	21													
BV2003S04-3-180	BV2003S04-3-90	20,000		H2004	1/4"	2.8	128	17													
BV2003S06-3-180	BV2003S06-3-90			H2006	3/8"	4.8	128	21													
BV2003S09-3-180	BV2003S09-3-90			H2009	9/16"	4.8	138	25													
BV6003S04-3-180	BV6003S04-3-90	15,000		H6004	1/4"	2.4	128	17													
BV6003S06-3-180	BV6003S06-3-90			H6006	3/8"	3.2	128	21													
BV6003S09-3-180	BV6003S09-3-90			H6009	9/16"	4.8	138	25													
BVN03S02-3-180	BVN03S02-3-90	15,000		1/8" NPT	1/8"	2.4	128	13													
BVN03S04-3-180	BVN03S04-3-90			1/4" NPT	1/4"	4.8	128	21													
BVN03S06-3-180	BVN03S06-3-90			3/8" NPT	3/8"	4.8	128	21													
BVP03S02-3-180	BVP03S02-3-90		1/8" PT	1/8"	2.4	128	13														
BVP03S04-3-180	BVP03S04-3-90		1/4" PT	1/4"	4.8	128	21														
BVP03S06-3-180	BVP03S06-3-90		3/8" PT	3/8"	4.8	128	21														
BV1505S02-3-180	BV1505S02-3-90	15,000	8	H1502	1/8"	1.4	147	23	85	65	30	110	17.1	10.3	7	120	35	32	6.4		
BV1505S04-3-180	BV1505S04-3-90			H1504	1/4"	3.2	147	23													
BV1505S06-3-180	BV1505S06-3-90			H1506	3/8"	5	147	23													
BV1005S08-3-180	BV1005S08-3-90	10,000		H1008	1/2"	7.9	147	23													
BV2005S04-3-180	BV2005S04-3-90	20,000		H2004	1/4"	2.8	147	23													
BV2005S06-3-180	BV2005S06-3-90			H2006	3/8"	5.2	147	23													
BV2005S09-3-180	BV2005S09-3-90			H2009	9/16"	7.9	147	23													
BV2005S12-3-180	BV2005S12-3-90	15,000		H2012	3/4"	7.9	163	28													
BV6005S04-3-180	BV6005S04-3-90			H6004	1/4"	2.4	147	23													
BV6005S06-3-180	BV6005S06-3-90			H6006	3/8"	3.2	147	23													
BV6005S09-3-180	BV6005S09-3-90	15,000		H6009	9/16"	4.8	154	23.5													
BVN05S02-3-180	BVN05S02-3-90			1/8" NPT	1/8"	2.4	147	23													
BVN05S04-3-180	BVN05S04-3-90		1/4" NPT	1/4"	4.8	147	23														
BVN05S06-3-180	BVN05S06-3-90		3/8" NPT	3/8"	7.1	147	23														
BVN05S08-3-180	BVN05S08-3-90		1/2" NPT	1/2"	7.9	147	23														
BVP05S02-3-180	BVP05S02-3-90		1/8" PT	1/8"	2.4	147	23														
BVP05S04-3-180	BVP05S04-3-90	1/4" PT	1/4"	4.8	147	23															
BVP05S06-3-180	BVP05S06-3-90	3/8" PT	3/8"	7.1	147	23															
BVP05S08-3-180	BVP05S08-3-90	1/2" PT	1/2"	7.9	147	23															

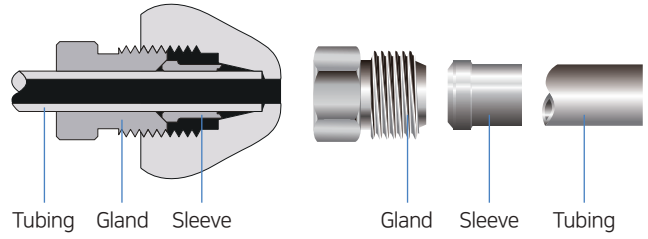
All dimensions are for reference only and may differ from actual size.

# Port Type

Low Pressure Port Type

## ▶ Sleeve Type Connections - 10,000 psi / 15,000 psi

Sleeve Type is a method of attaching a sleeve inside a gland and can be used on 1/8", 1/4", 3/8", and 1/2" pipes. The tubes used for connecting products can be ordered from HIFLUX Mall and are made of stainless steel to ensure optimal performance in high-pressure environments.



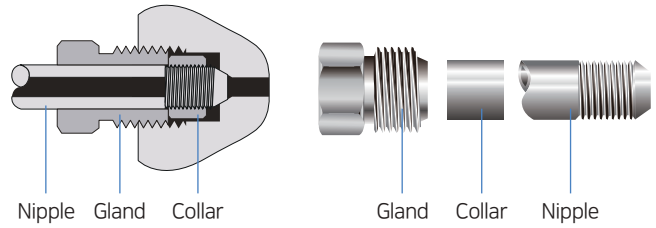
<b>H1502</b> 15,000psi - 1/8"	<b>H1504</b> 15,000psi - 1/4"	<b>H1506</b> 15,000psi - 3/8"	<b>H1008</b> 10,000psi - 1/2"

# Port Type

## Medium Pressure Port Type

### Medium Pressure Connections - 20,000 psi

Products are connected using Collar and Nipple within the Gland, and the Nipple required for connecting products can be ordered in the desired length by the user, and can also be processed directly using our tooling set.



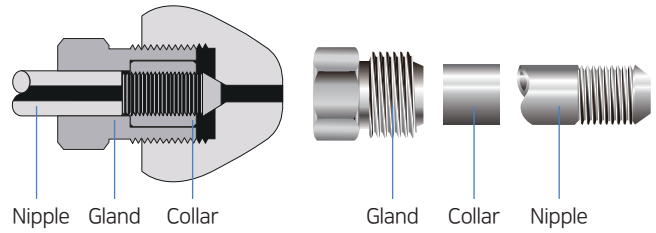
H2004 20,000psi - 1/4"	H2006 20,000psi - 3/8"	H2009 20,000psi - 9/16"	H2012 20,000psi - 3/4"	H2016 20,000psi - 1"
<p>7/16"-20 UNF 12.7 60° Ø4.8 Ø2.8</p>	<p>9/16"-18 UNF 15.8 60° Ø7.9 Ø5.2</p>	<p>13/16"-16 N 19 60° Ø12.8 Ø7.9</p>	<p>3/4"-14 NPSM 23.9 60° Ø15.8 Ø11.1</p>	<p>1-3/8"-12 UNF 33.3 60° Ø22.4 Ø17.5</p>
<p>12 HEX 16</p>	<p>16 HEX 20</p>	<p>22 HEX 25</p>	<p>30 HEX 29</p>	<p>36 HEX 38</p>
<p>Ø9.5 5.5 1/4"-28 LH</p>	<p>Ø11.9 6.4 3/8"-24 LH</p>	<p>Ø18.3 8 9/16"-18 LH</p>	<p>Ø23.8 9.5 3/4"-16 LH</p>	<p>Ø31 12.5 1"-14 LH</p>
<p>Ø6.3 26.5 Ø9.3 Ø3.8</p>	<p>Ø9.5 32 Ø11.7 Ø6.5</p>	<p>Ø14.3 42 Ø18.1 Ø10.3</p>	<p>Ø19 45.5 Ø23.6 Ø13.6</p>	<p>Ø25.4 60 Ø30.7 Ø18.4</p>
<p>1/4"-28 LH 9 Ø3.57 Ø2.8</p>	<p>3/8"-24 LH 11 Ø6.35 Ø5.2</p>	<p>9/16"-18 LH 13 Ø10 Ø7.9</p>	<p>3/4"-16 LH 16 Ø13.7 Ø11.1</p>	<p>1"-14 LH 20 Ø18.26 Ø14.3</p>

# Port Type

## High Pressure Port Type

### High Pressure Connections - 30,000 psi / 60,000 psi

The Nipple required for connection between the products by using collar and Nipple in the Gland can be ordered by user's desired length. you can also process directly using our Tooling Set tool. this cone and threaded connection is the standard for easy and fast high-pressure equipment configuration with optimum sealing and reliable performance for both liquid and gas at high pressure and temperature.



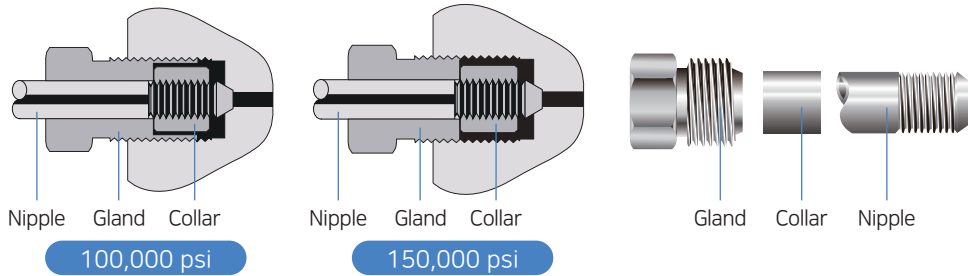
H3002 30,000psi - 1/8"	H3016 30,000psi - 1"	H6004 60,000psi - 1/4" (M : Metric)	H6006 60,000psi - 3/8" (M : Metric)	H6009 60,000psi - 9/16" (M : Metric)

# Port Type

## Ultra High Pressure Port Type

### Ultra High Pressure Connections - 100,000 psi / 150,000 psi

The product is connected using a collar and nipple within the gland, and the corresponding pipe sizes are as follows. This Cone and Thread method connection is the optimal sealing method, and it provides reliable performance for both liquids and gases at high pressures and temperatures, and is the standard for easy and quick high-pressure equipment configuration.



H10004 100,000psi - 1/4"	H10006 100,000psi - 3/8"	H10009 100,000psi - 9/16"	H15006 150,000psi - 3/8"

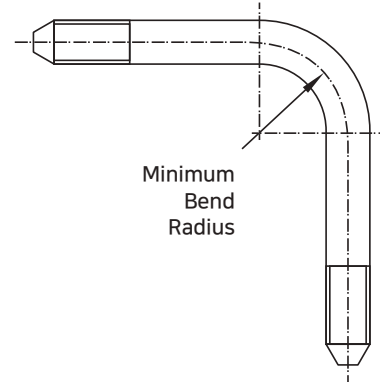
# Technical Information

## Recommended Torque

### Recommended Minimum Bend Radius

Tubing Size O.D. x I.D. in. (mm)	Tubing Pressure psi (bar) @ R.T.	Recommended Minimum Bend Radius in. (mm)
1/4 inch (6.35 x 2.77)	20,000 (1,370)	1.25 (31.8)
3/8 inch (9.53 x 5.16)	20,000 (1,370)	1.75 (44.5)
9/16 inch (14.29 x 7.92)	20,000 (1,370)	2.63 (66.8)
3/4 inch (19.05 x 11.13)	20,000 (1,370)	3.50 (88.9)
1 inch (25.4 x 14.27)	20,000 (1,370)	4.63 (117.6)
1 inch (25.4 x 11.13)	30,000 (2,060)	4.63 (117.6)
1/4 inch (6.35 x 2.11)	60,000 (4,130)	1.25 (31.8)
3/8 inch (9.53 x 3.18)	60,000 (4,130)	1.75 (44.5)
9/16 inch (14.29 x 4.78)	60,000 (4,130)	2.63 (66.8)

All dimensions are for reference only and may differ from actual size.



### HIFLUX Needle Valve Assembly Torque Chart

Valve Pressure Series	Port Type	Tube Size (PSI)	Stem Gland HEX (mm)	Minimum Torque (kg.f-cm)
10,000 PSI 15,000 PSI	H1502	1/8 Inch (15,000)	13	170
	H1504	1/4 Inch (15,000)	17	550
	H1506	3/8 Inch (15,000)	17	550
	H1008	1/2 Inch (15,000)	24	800
20,000 PSI	H2004	1/4 Inch (20,000)	17	550
	H2006	3/8 Inch (20,000)	17	550
	H2009	9/16 Inch (20,000)	22	1100
	H2010	3/4 Inch (20,000)	30	3,500
	H2012	1 Inch (20,000)	41	5,000
30,000 PSI	H3002	1/8 Inch (30,000)	13	500
	H6004	1/4 Inch (30,000)	20	550
	H6006	3/8 Inch (30,000)	20	550
	H6009	9/16 Inch (30,000)	20	550
60,000 PSI	H6004	1/4 Inch (60,000)	20	670
	H6006	3/8 Inch (60,000)	20	670
	H6009	9/16 Inch (60,000)	20	670
100,000 PSI	H10004	1/4 Inch (100,000)	24	1250
	H10006	3/8 Inch (100,000)	24	1250
	H10009	9/16 Inch (100,000)	24	1250
150,000 PSI	H15006	3/8 Inch (150,000)	24	1870
10,000 & 15,000 PSI NPT TYPE	HFN02	1/8 Inch (15,000)	13	500
	HFN04	1/4 Inch (15,000)	17	550
	HFN06	3/8 Inch (15,000)	17	550
	HFN08	1/2 Inch (15,000)	22	1100
	HFN10	3/4 Inch (10,000)	41	-
	HFN12	1 Inch (10,000)	41	-

Torque values apply to glass-impregnated Teflon packaging and may vary by ±10%



# HIFLUX<sup>®</sup>

## HIFLUX Co., LTD



361-23, Gapcheon-ro, Yuseong-gu, Daejeon,  
34037, Republic of Korea

## Phone & Fax



TEL. +82-42-933-5670  
FAX. +82-0303-0799-1241

## E-mail & Online



E-mail. [sales@hiflux.com](mailto:sales@hiflux.com)  
Web. [www.hiflux.net](http://www.hiflux.net)  
Shopping Mall. [www.hifluxshop.com](http://www.hifluxshop.com)

