

HiFLUX

High Pressure Valves & Fittings



HIGH SERVICE
HIGH QUALITY
HIGH PERFORMANCE
High Pressure equipment



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
Air Operated Valve	27
Wellhead Gauge Valve	30
Bleed Valve	31
Double Block and Bleed Valve	32
High Temperature Valve	33
Control Valve	34
High Pressure Tube	35
High Pressure Nipple	36
Tooling Set	37
Tube Support	38
High Pressure Union & Adapter	40
High Pressure Manifold Block	46
Regulator	48
Air Operating BPR	50
Pressure Gauge / Thermocouples	51
Lok Fitting & Valve	52
Piping Materials	53
Port Type	56
Technical Information	60



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 

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



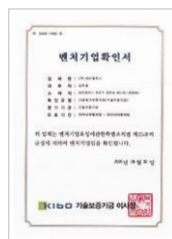
Certificate of Corporate Research Institute



Certificate of Small and Medium Enterprise



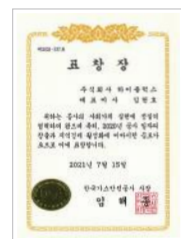
Certificate of Materials/Parts/Equipment Specialist Enterprise



Certificate of Venture Enterprise



Hydrogen Association Membership Card



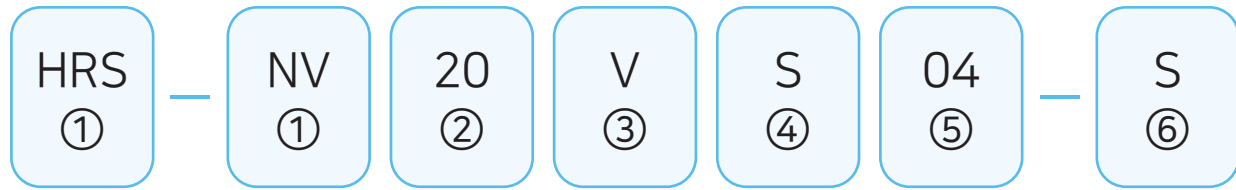
Gas Safety Corporation Award



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	Needle Valve Control Valve
NV : Needle Valve	07 : 7,500 psi	Check Valve - O : O-Ring Type - B : Ball Type	H : Hastelloy	04 : 1/4 inch	Air Operated Valve
CV : Check Valve	15 : 15,000 psi	Ball Valve - 03 : Orifice 4.8mm - 05 : Orifice 8mm	HC : Hastelloy C276 Wetted Part	06 : 3/8 inch	High Temperature Valve
BV : Ball Valve	20 : 20,000 psi	Control Valve - O : Normal-Open Type - C : Normal-Closed Type	IN : Inconel 600	08 : 1/2 inch	- S : Straight Type - A : Angle Type - O : 3way/1on Type - T : 3way/2on Type - D : 3way 2stem Type
ABV : Actuator Ball Valve	30 : 30,000 psi	Relief Valve - FS : Factory Set - FA : Field Adjustable - PP : Proportional Type	IN625 : Inconel 625	09 : 9/16 inch	Ball Valve - 20-90 : 2way - 3-180 : 3way Switching - 3-90 : 3way Diverting
AOV : Air Operated Valve	60 : 60,000 psi	Fitting - E : Elbow Type - T : Tee Type - C : Cross Type	IN825 : Inconel 825	12 : 3/4 inch	Relief Valve Field Adjustable - 1 : 1 Inlet - 2 : 2 Inlet
RV : Relief Valve	100 : 100,000 psi	Fitting Accessory - A : Adapter - S : Sleeve - G : Gland - R : Collar - T : Collet	NI : Nickel 200	16 : 1 inch	Proportional Type - N : NPT Inlet port
SH : Safety Head	150 : 150,000 psi		TI : Titanium	15 : 15A	Fitting Accessory - AV : Anti-Vibration Type
CON : Control Valve	N : NPT			25 : 25A	GPR - N : Normal Type - P : Panel Type
HV : High Temperature Valve	P : PT				
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.

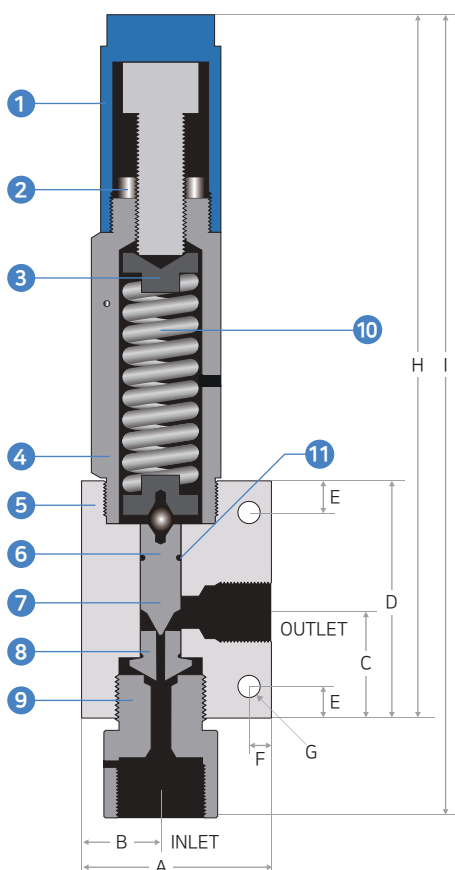
Relief Valve - Factory Set

Safety valve that protects the system by venting the pressure when over pressure occurs

Relief Valve Factory Set products are valves that protect the system and other devices by releasing pressure when the internal pressure of the system rises above the set pressure due to system malfunction, etc. The set pressure (customer-specified) is set to the requested pressure before shipment and is sealed with a pressure tag.

Features

- Pressure Range : 3,000 psi ~ 60,000 psi
- Setting Pressure Range : $\pm 8\%$
- Inlet Port : H6009(Orifice size : $\varnothing 6.4$)
- Outlet Port : 1/2" NPT
- Standard Material : Stainless Steel
- O-ring Material on Piston : Viton
- Max Operating Temperature : 160°C



No	Description
1	Cap
2	Lock Nut
3	Spring Cap
4	Housing
5	Body
6	Spindle
7	Plug
8	Seat
9	Adapter
10	Spring
11	Viton O-ring

(Unit : mm)

Catalog No	Port Type		Orifice inches (mm)	Pressure Range(PSI)		Dimensions (mm)									Block Thickness
	Inlet	Outlet		Minimum	Maximum	A	B	C	D	E	F	G	H	I	
RV11FSS09	H6009 (9/16")	1/2" NPT	6.2	3,000	11,000	60	25	33.5	75	10	7	7	292.5	323.87	44
RV21FSS09			4.5	11,000	21,000										
RV30FSS09			3.9	21,000	30,000										
RV45FSS09			3.2	30,000	45,000										
RV60FSS09			2.6	45,000	60,000										

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

Relief Valve - Field Adjustable

Safety valve that protects the system by venting the pressure when over pressure occurs

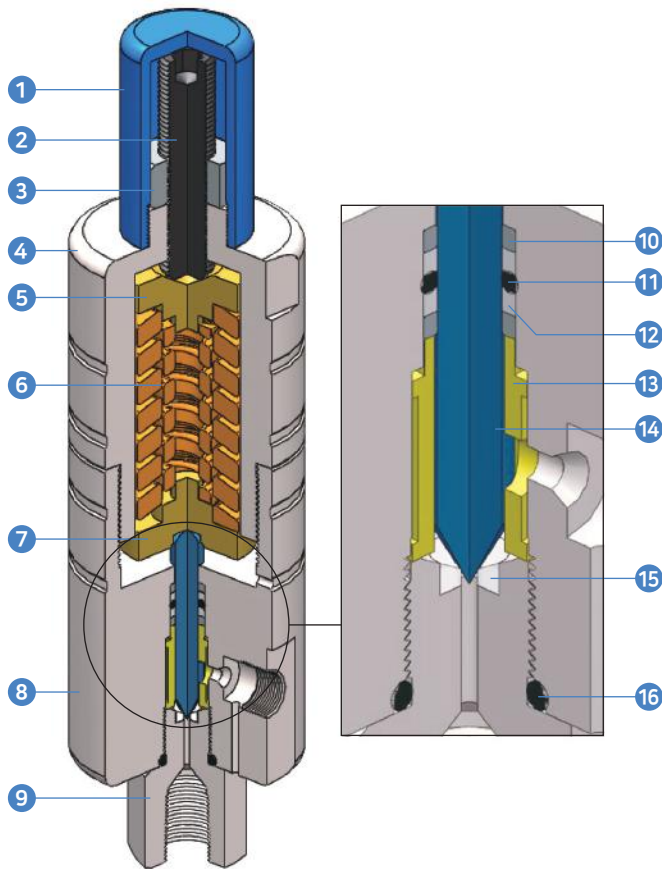
Relief Valve Field Adjustable products protect the system from overpressure by releasing pressure when the internal pressure of the system rises above the set pressure, and the pressure setting can be easily adjusted at the field by the customer directly adjusting socket set screw on the top of the valve.

Features

- Pressure Range : 1,000 psi ~ 10,000 psi, 10,000 psi ~ 20,000 psi
- Setting Pressure Range : $\pm 8\%$
- Max Working Temperature : $-20^{\circ}\text{C} \sim 65^{\circ}\text{C}(\text{NYLON}) / -20^{\circ}\text{C} \sim 160^{\circ}\text{C}$
- Inlet Port : 1/4" NPT, H2004
- Outlet Port : 1/4" NPT
- Orifice Size : $\varnothing 1.8$
- Adapters allow connection of pipes of various pressures and sizes

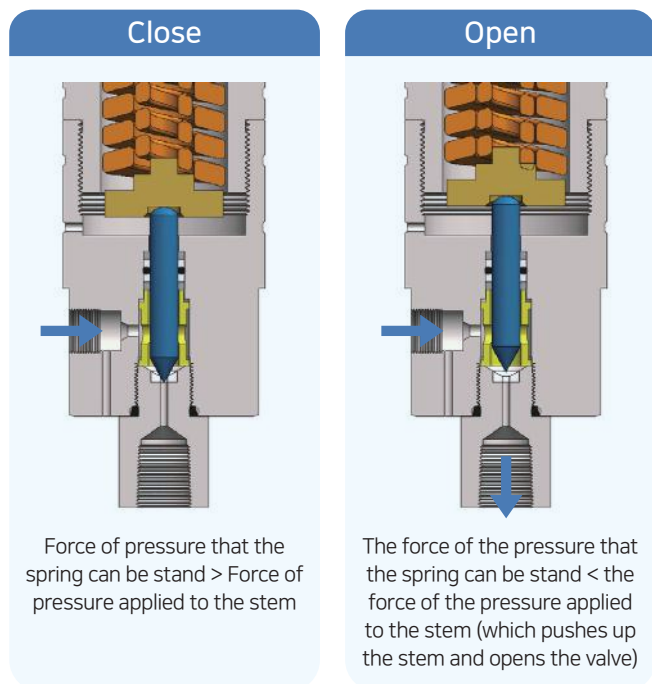


Table Of Material

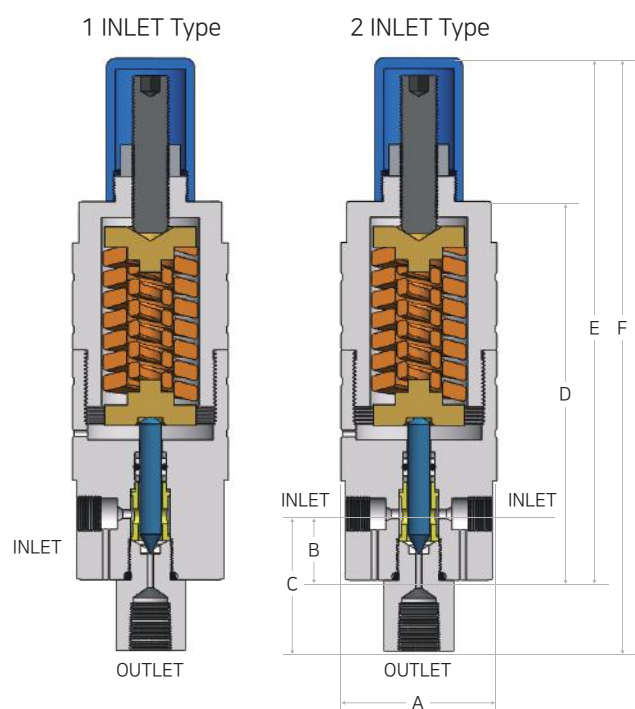


No	DESCRIPTION	MATERIAL
1	CAP	AL6061
2	Socket Set Screw	SCM435
3	NUT	STS304
4	HOUSING 1	STS304
5	SPRING GUIDE 1	STS304
6	SPRING	Carbon Steel
7	SPRING GUIDE 2	STS304
8	HOUSING 2	STS316CW
9	SEAT GLAND	STS316CW
10	STS SEAL	STS316CW
11	O-RING	Vlton
12	SEAL	TEFLON
13	STEM GUIDE	STS316CW
14	STEM	STS630-660
15	SEAT	PEEK
16	O-RING	Viton

➤ HOW & WHERE



➤ Dimension Table



How it works

The relief valve opens when the pressure applied to the stem exceeds the set pressure, and closes when it falls below the set pressure.

WHERE

- Where you want to protect the system from over pressure caused by system malfunction.
- Where you want to control over pressure caused by thermal expansion.
- Where low discharge is not a problem in a system where high pressure is applied.
- Where perfect flow blocking without leakage is required.

WHERE NOT

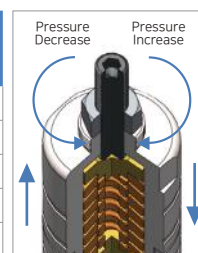
- Pressure ~ 1,000 psi or less.
- Systems where discharge capacity must also increase as pressure increases.
- If the back pressure occurs at the drain port.
- Corrosive liquids or gases that can damage the valve, cryogenic fluids or gases such as liquid nitrogen.

➤ Technical Features

Feature	RV10FAS Type	RV20FAS Type
Pressure Range (PSIG)	1,000 ~ 10,000	10,000 ~ 20,000
Inlet Port	1/4" NPT	H2004
Outlet Port	1/4" NPT	
Orifice Size	1.8mm	
CV	0.12	
Packing Material	PEEK	
O-ring Material	Viton	
Max Working Temperature	-20°C ~65°C (NYLON) / -20°C~160°C	
Hexagon Wrench Tool Size	5mm Use a ranch with six angles	6mm Use a ranch with six angles
Adjust Dimension Tolerance ±%	±8%	
Useable area	Water	

➤ Set Pressure

Catalog No	SET PRESSURE (psi)	Spring Compression Length(mm)
1,000 ~ 10,000 psi RV10FAS04	4,000	1.92
	8,000	3.84
	12,000	5.76
10,000 ~ 20,000 psi RV20FAS04	16,000	7.68
	20,000	9.06



(Unit : mm)

Catalog No	Port Type			Orifice inches (mm)	Pressure Range(Psi)		Dimensions (mm)						
	1 Inlet	2 Inlet	Outlet		Minimum	Maximum	A	B	C	D	E	F	G
RV10FAS04-1	1/4" NPT		1/4" NPT	1.8	1,000	10,000	38	21	43.1	112.5	158	180.1	28
RV10FAS04-2		1/4" NPT											
RV20FAS04-1	H2004 (1/4")		1/4" NPT	1.8	10,000	20,000	49.5	21	43.1	120	165.5	187.6	28
RV20FAS04-2		H2004 (1/4")											

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

Relief Valve - Proportional Type

Safety valve that protects the system by venting the pressure when over pressure occurs

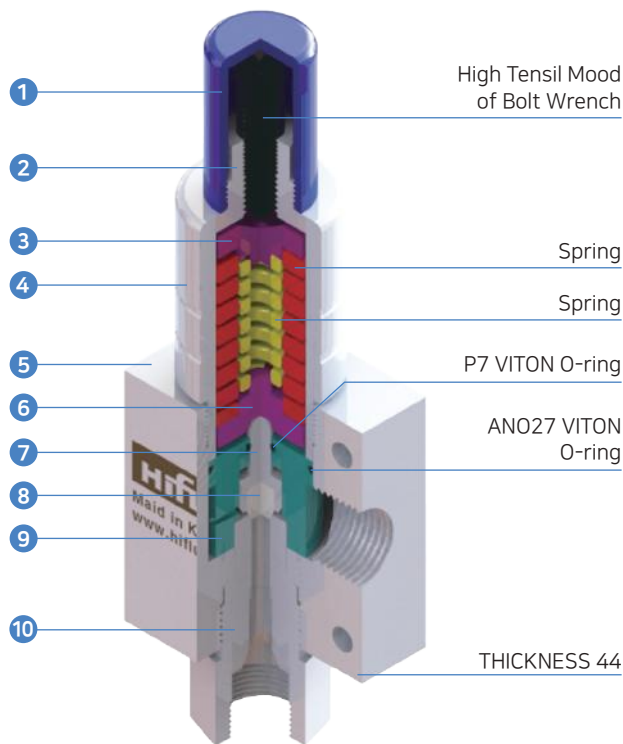
Relief Valve Proportional Type products are valves that open gradually as the internal pressure of the system increases. Since the flow rate increases as the differential pressure increases, they can be used in systems where the flow rate is high or the pressure suddenly increases rapidly.

Features

- Pressure Range : 1,000 psi ~ 15,000 psi, 1,000 psi ~ 20,000 psi
- Setting Pressure Error Range : $\pm 8\%$
- Inlet Port : 1/2" NPT, H2009 (9/16")
- Outlet Port : 1/2" NPT
- Orifice Size : $\varnothing 6.3$
- Standard Material : STS316
- O-ring Material on Piston : Viton
- Max Operating Temperature : 160°C
- Adapters allow connection to pipes of various pressures and sizes
- Stable sealing is possible by using PEEK stem
- Pressure setting can be adjusted by the customer by adjusting socket set screw on the top of the valve



Table Of Material

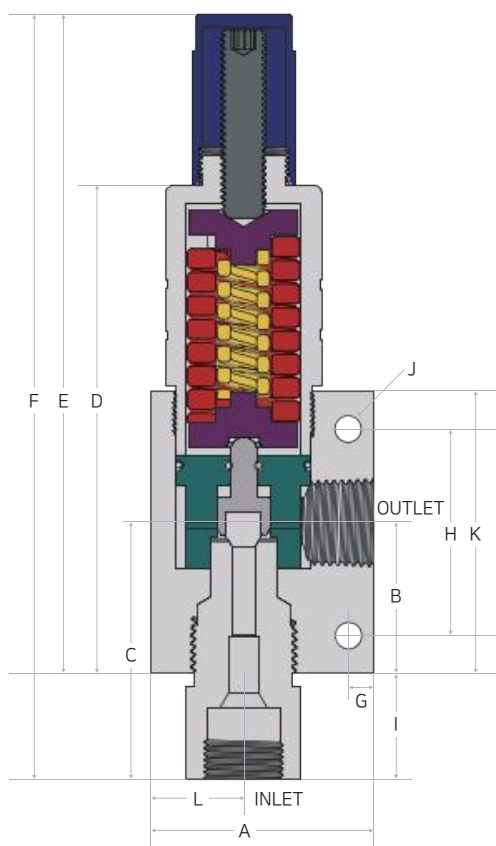


No	DESCRIPTION	MATERIAL
1	CAP	AL6061
2	STS NUT	STS304
3	SPRING GUIDE 1	STS304
4	HOUSING	STS304
5	BODY	STS316CW
6	SPRING GUIDE 2	STS304
7	STEM	STS630
8	SEAT	PEEK
9	STEM GUIDE	STS316CW
10	BOTTOM CONNECTOR	STS316CW

➤ Technical Features

Feature	RV15PPS08N	RV20PPS09
Pressure Range (PSIG)	1,000 ~ 15,000	1,000 ~ 20,000
Inlet Port	1/2" NPT	H2009 (9/16")
Outlet Port	1/2" NPT	
Orifice Size	Ø 6.3	
Packing Material	PEEK	
O-ring Material	Viton	
Max working temperature	-20°C ~ 160°C	
Hexagon Wrench Tool Size	6mm Use a ranch with six angles	
Adjust Dimension Tolerance ±%	±8%	
Useable area	Water, Gas	

➤ Specification



➤ HOW & WHERE

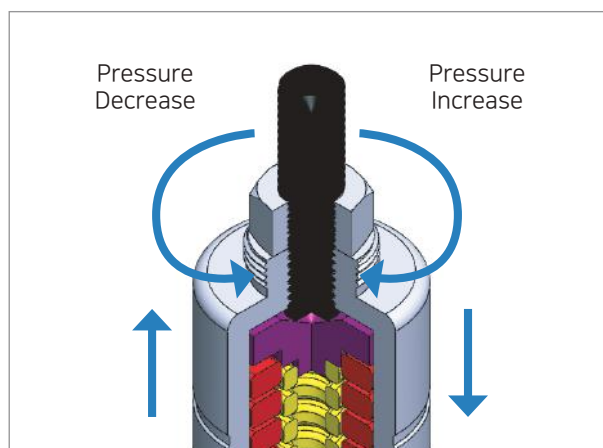
WHERE

- Where you want to protect the system from over pressure caused by system malfunction.
 - Where you want to control over pressure caused by thermal expansion.
 - Where low discharge is not a problem in a system where high pressure is applied.
- Where perfect flow blocking without leakage is required.

WHERE NOT

- Pressure ~ 1,000 psi or less.
- Systems where discharge capacity must also increase as pressure increases.
- If the back pressure occurs at the drain port.
- Corrosive liquids or gases that can damage the valve, cryogenic fluids or gases such as liquid nitrogen.

➤ Set Pressure



The pressure on the Inlet side where the fluid flow starts determines the Set Pressure.
Turning to the right increases the Set Pressure.
Turning to the left decreases the Set Pressure

(Unit : mm)

Catalog No	Port Type		Orifice inches (mm)	Pressure Range(Psi)		Dimensions (mm)											
	1 Inlet	Outlet		Minimum	Maximum	A	B	C	D	E	F	G	H	I	J	K	L
RV15PPS08N	1/2" NPT	1/2" NPT	6.3	1,000	15,000	60	40	68.2	130	175.5	203.7	7	55	28	7	75	25
RV20PPS09	H2009 (9/16")	1/2" NPT	6.3	1,000	20,000	60	40	68.2	130	175.5	203.7	7	55	28.2	7	75	25

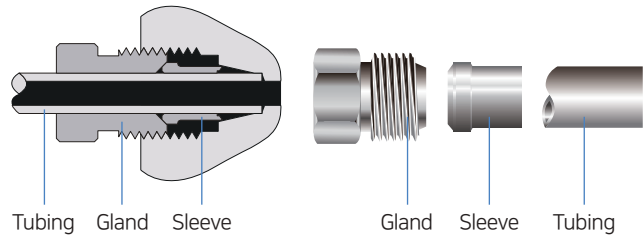
All dimensions are for reference only and may differ from actual size.

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.



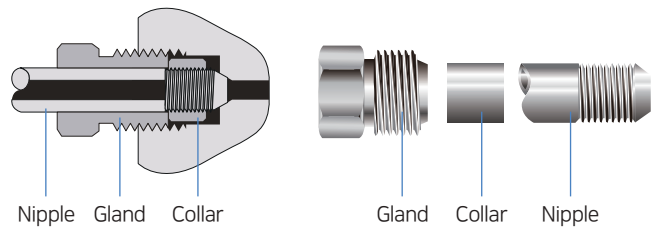
H1008 10,000psi - 1/2"	H1506 15,000psi - 3/8"	H1504 15,000psi - 1/4"	H1502 15,000psi - 1/8"

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.



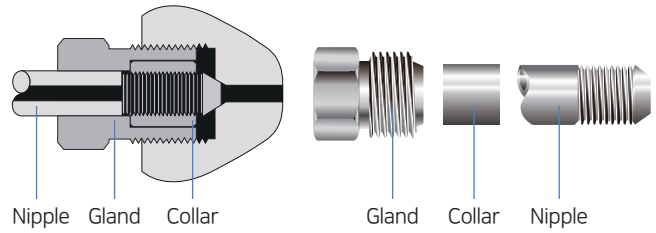
H2004 20,000psi - 1/4"	H2006 20,000psi - 3/8"	H2009 20,000psi - 9/16"	H2012 20,000psi - 3/4"	H2016 20,000psi - 1"

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.



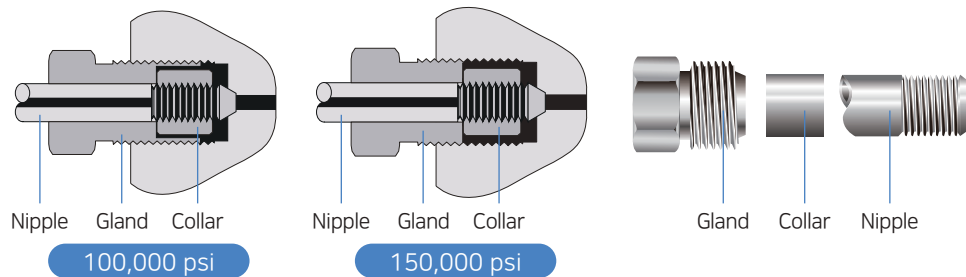
H3002 30,000psi - 1/8"	H3016 30,000psi - 1"	H6004 60,000psi - 1/4" (M : Metric)	H6006 60,000psi - 3/8" (M : Metric)	H6009 60,000psi - 9/16" (M : Metric)

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"
9/16"-18 17.5 60° Ø4.8 Ø2.4 16 HEX 28 Ø6.3 36 Ø9.37 Ø3.2 1/4"-28 LH 14.3 Ø3.18 Ø1.6 Ø9.5 9.5 1/4"-28 LH	5/8"-18 27 60° Ø4.8 Ø2.4 20.6 HEX 30 Ø9.6 47 Ø12.7 Ø3.4 3/8"-28 LH 20 Ø3.18 Ø1.6 Ø12.7 11.1 3/8"-24 LH	1-1/8"12 19 60° Ø9.7 Ø4.8 30 HEX 38 Ø14.4 47 Ø20.7 Ø7.3 9/16"-18 LH 24 Ø7 Ø4.8 Ø20.7 15.9 9/16"-18 LH	3/4"-16 28.6 60° Ø4.8 Ø2.4 20 HEX 30 Ø9.5 51.5 Ø12.56 Ø5.56 3/8"-24 LH 18.5 Ø3.18 Ø1.6 Ø16 12.7 3/8"-24 LH

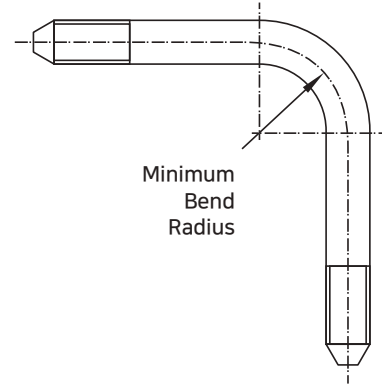
Technical Information

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 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
Web. www.hiflux.net
Shopping Mall. www.hifluxshop.com

