



Product Shown:
VR10 Series

Features

VR10 Series

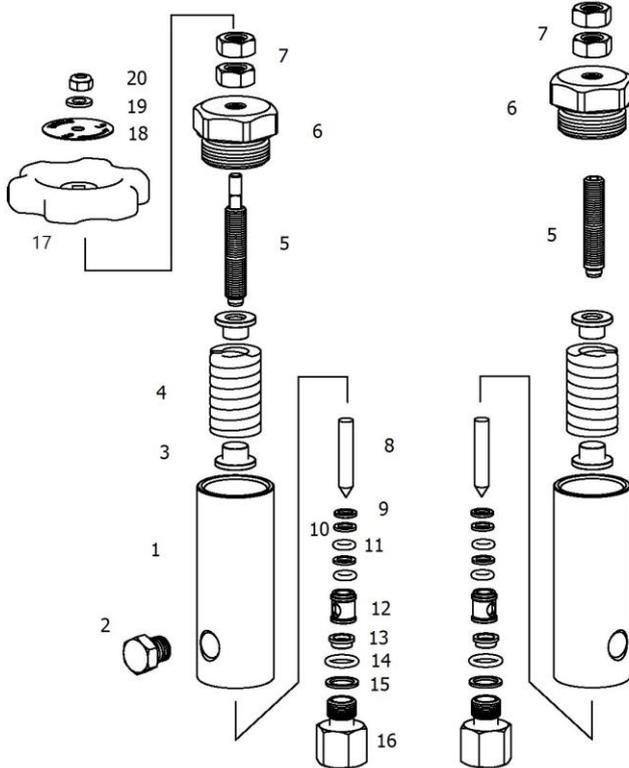
- Provides cracking pressure 1000 to 11 000 psig with one designated spring.
- Valves are supplied with a round nylon handle.
- Induction hardened Stainless Steel "Valve Plunger" provides extensive service life.

VR20 Series

- Valve with a standard spring provides cracking pressure 10 000 to 21 000 psig.
- Valve with an optional spring serves cracking 20 000 to 30 000 psig.
- Valves are supplied with no nylon handle but with 5mm hollow hex. This prevents unauthorized actuation of the valve by equiring an operator to obtain the actuation device from authority.
- Induction hardened Stainless Steel "Valve Plunger" provides extensive service life.

VR10 Series

VR20 Series



Materials of Construction

Sr. No	VR10 Series		VR20 Series	Material Grade
	Components			
1	Valve Body			SS316/ASTM A276, A479
2	Hex Plug			
3	Spring Guide (2)			Color coded SWOSC-V
4	Spring	Spring (2)		
5	Stem			SS316/ASTM A276, A479
6	Bonnet			
7	Locking Nut (2)			JIS SUS420J2
8	Valve plunger			
9	Gland			SS316/ASTM A276, A479
10	Backup Ring (2)			
11	O-Ring (2)			FKM
12	Valve Bush			SS316/ASTM A276, A479
13	Packing			PCTFE
14	End Connector O-Ring			FKM
15	Backup Ring			PTFE
16	Outlet Connector			SS316/ASTM A276, A479
17	Nylon Handle	-		Nylon
18	Name Plate	-		Aluminium
19	Washer	-		Stainless
20	Handle Nut	-		Stainless

Table 1. Working & Cracking Pressure

Valve Series	Working Pressure, psig	Spring Designator	Cracking Pressure, psig	Color Code
VR10	11 000 psig	Standard RS10	1000 to 11 000	Brown
VR20	30 000 psig	Standard RS20	10 000 to 21 000	Brown
		Optional RS30	20 000 to 30 000	Black

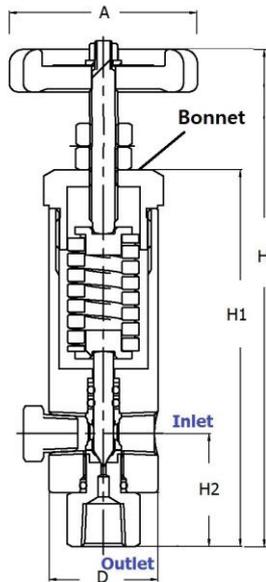
Temperature Rating

Valve with standard FKM O-ring
-20 to 180 °C (-4 to 356 °F)

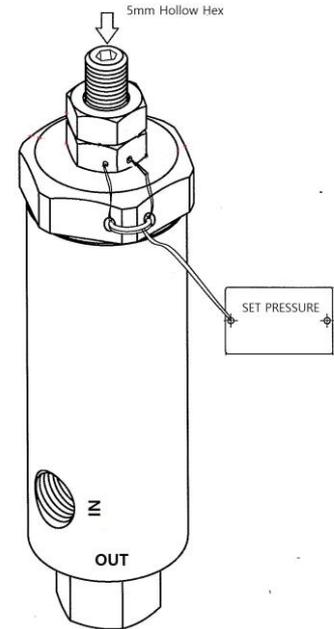
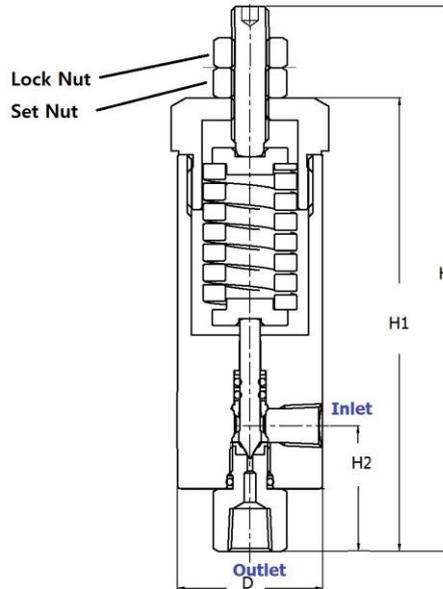
Valve Orifice

1.78 mm (0.07 in.)

VR10 Series



VR20 Series



Ordering information and dimensions

Complete Ordering Number		End Connections		Dimensions, mm				
		Inlet	Outlet	H	H1	H2	D	A
VR10-	F4N-SS	1/4 in. Female NPT		178	132.6	39.7	38.1	70.0
VR20-	F6U4N-SS	9/16-18 Female UNF	1/4 in. Female NPT	191.8	159.6	44.2	50.8	-

Dimensions are reference only and subject to change.

To order, select an applicable complete ordering number. Example: VR20-F6U4N-SS

To order valve for cracking pressure range 20 000 to 30 000 psig, insert the spring designator " **RS30**" in the ordering number. Example: VR20-F6U4N-**RS30**-SS

Maintenacne Springs

To order extra springs for maintenance, refer to Table 1 spring designator. Example: RS30.

Valve Preset Procedure

Refer Sr.No. to Materials of Construction on page 1.

1. Move 2 x locking nuts (Sr. No. 7) backwards enough from bonnet face (Sr.No. 6) by turning them individually counter clockwise.
2. Compress spring several turns by turning handle (17 for VR10), (5 for VR20) clockwise and position the valve in the inside of test bench where burst proof glass is arranged.
3. Pressurize the valve into inlet port until the valve opens, indicating flow into outlet port and read the cracking pressure on pump pressure gauge to make sure the cracking pressure is the preset pressure required.
4. Depressurize the valve pressure thoroughly. **Warning:** Do not compress spring while the valve is under pressure.
5. Futher compression of spring increases the set-pressure. Repeat Step 2 & 3, until the valve is preset to the required set-pressure.
6. Once the valve is preset to set-pressure, de-pressurize the valve pressure thoroughly and finger-tighten 2 x locking nuts (Sr. No. 7) until they sit on bonnet.
7. Spanner-tighten the locking nuts to a maximum torque and apply a label over the valve that visually indicates the preset pressure..

Reseal Performance Test

1. Once the valve is preset to the required set-pressure, slowly decrease the pump pressure until the valve reseals, indicating no more flow in outlet port and read the reseal pressure on pump pressure gauge.
 - Within 5% less than cracking pressure is an ideal reseal pressure for over 3000 psig cracking pressure valves.
 - Practically within 10% less than cracking pressure is widely used for those lower than 3000 psig cracking pressure valves. .
2. De-pressurize the valve pressure thoroughly.

Safe Valve Selection

The selection of a valve for any application or system must be considered to ensure safe performance. Valve rating, valve function, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. HSME Corporation accepts no liability for any improper selection, compatibility, installation, operation or maintenance.