

INSTRUMENTATION GAUGE ROOT VALVES

Pressure Gauge & Primary Isolation Valves

V10-VGR-00, JAN, 2016



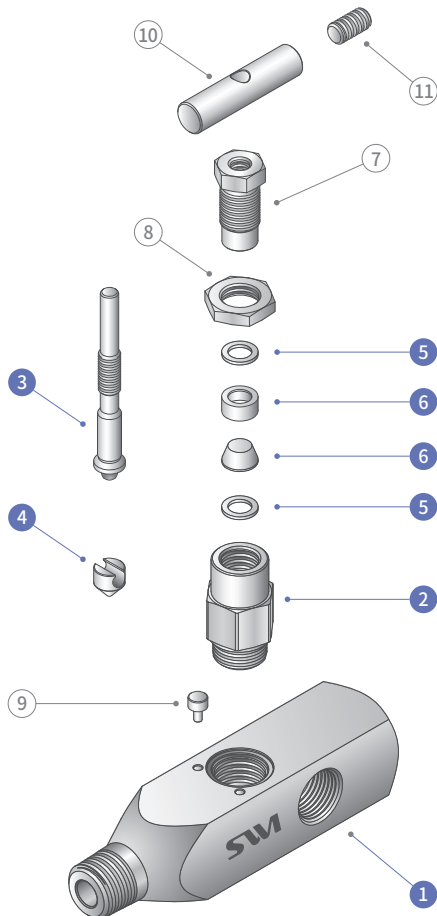
VGR Series

- Multi-port designs
- Pressure rating up to 6,000 psig (414 barg) @ 100°F (38°C)
- Temperature rating from -65°F to 450°F (-54°C to 232°C) with standard PTFE packing and from -65°F to 1,200°F (-54°C to 649°C) with optional Grafoil packing
- Body materials available in 316 stainless steel, carbon steel, duplex and alloy 400
- 100% factory tested

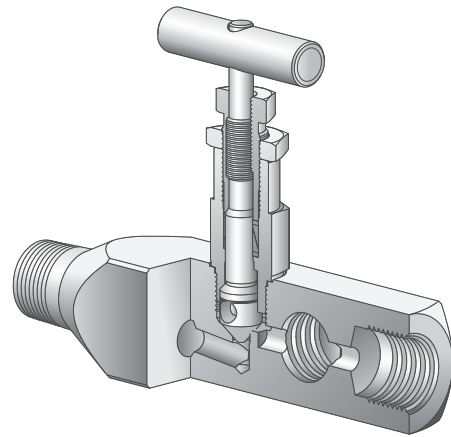
INSTRUMENTATION GAUGE ROOT VALVES

■ Features

- **Interchangeable Disks** are non-rotating and self-centering, providing bubble tight shut-off. The tip is Stellite 6 hard faced.
- **Metal to Metal Body to Bonnet Contact** coupled with a secondary seal offers leak-free sealing.
- **Polished Stem** in packing area enables smooth stem operation and extends packing life.
- **Bonnet Stop Pin** prevents accidental separation of the bonnet from the body.
- **Cone Type Packing** gives low handle operating torque and increases cycle life.
- **Packing below Stem Thread** prevents removal of lubricant and thread corrosion, and keeps solids from entering the thread area, which can cause galling.
- **Safety Back Seating** prevents stem blowout or accidental removal while on operation and provides a metal to metal secondary stem seal while in the fully open position.
- **Lagging Extension Body** available for insulation clearance.
- **End Connections**
1/2 and 3/4 inch male to 1/2 inch female NPT end connections.
- **Gauge Ports**
1/2 inch female gauge ports standard.



VGRA-MF Series



■ Specifications

Pressure Rating	6,000 psig (414 barg) @ 100°F (38°C)
Temperature Rating	-65 to 450°F (-54 to 232°C) with PTFE packing up to 1200°F (649°C) with Grafoil packing
Body Material	316 stainless steel and carbon steel
Port Connections	1/2" to 3/4"
Orifice	3.2 mm to 5.0 mm

■ Materials of Construction

Component	Material	
	Carbon Steel	Stainless Steel
1 Body	Carbon Steel	A276 / 479 Type 316/L
2 Bonnet	Carbon Steel	A276 / 479 Type 316/L
3 Stem	A276 / 479 Type 316/L	
4 Disk (Tip)	A276 / 479 Type 316/L + Stellite No.6	
5 Packing Washer	A276 / 479 Type 316	
6 Packing	Standard : PTFE / Optional : PEEK, Graphite	
7 Packing Bolt	A276 / 479 Type 316	
8 Locking Nut	A276 / 479 Type 316	
9 Locking Pin	316 stainless steel	
10 Handle		
11 Handle Bolt	A193 B8	

• Wetted parts are listed in Navy
• Carbon steel is galvanized to prevent corrosion

■ Testing

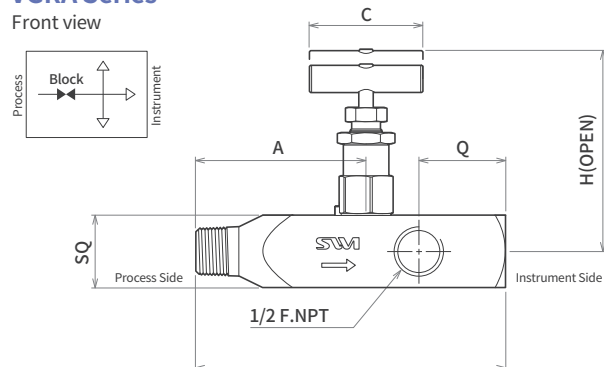
- Every gauge valve is factory tested with GN₂ at 1,000 psig. Seats have a maximum allowable leak rate of 0.1 std cm³/min.
- Shell testing is performed to a requirement of no detectable leakage with a liquid leak detector.

■ Dimensions

• VGRA / VGRLA / VGR2A Series

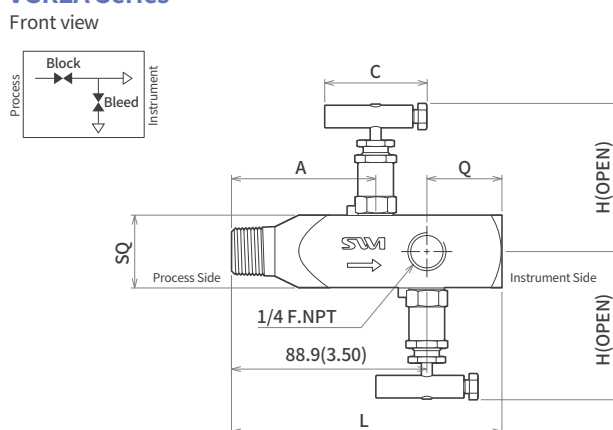
VGRA Series

Front view



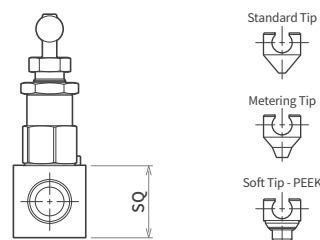
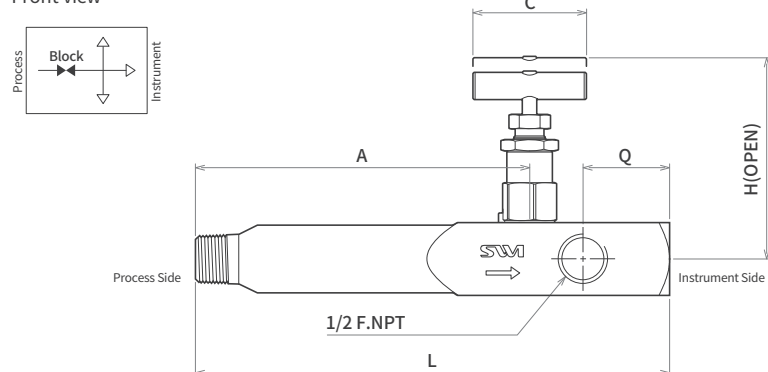
VGR2A Series

Front view



VGRLA Series

Front view



Valve Series	End Connection		Orifice in. (mm)	Cv	Dimension in. (mm)					
	Process	Instrument			L	A	Q	C	H	SQ
VGRA-MF8N	1/2 M NPT	1/2 F NPT	0.2 (5.0)	0.5	5.35 (136.0)	2.95 (75.0)	1.50 (38.1)	1.97 (50.0)	3.50 (89.0)	1.26 (32.0)
VGRA-MF12N8N	3/4 M NPT	1/2 F NPT			5.35 (136.0)	2.95 (75.0)				
VGRLA-MF8N	1/2 M NPT	1/2 F NPT			7.24 (184.0)	4.84 (123.0)				
VGRLA-MF12N8N	3/4 M NPT	1/2 F NPT			7.24 (184.0)	4.84 (123.0)				
VGR2A-MF8N	1/2 M NPT	1/2 F NPT	0.126 (3.2)	0.31	4.68 (119.0)	2.50 (63.5)	1.50 (38.1)	1.77 (45.0)	2.76 (70.0)	1.26 (32.0)

* All dimensions are for reference only and are subject to change.

■ Pressure-Temperature Ratings

Valve Series	Body Material	Packing Material	Temperature Range	Pressure Rating @ 100°F	Pressure Rating @ Max. Temperature
VGR	Stainless Steel	PTFE	-65°F to 450°F (-54°C to 232°C)	6,000 psig (414 barg)	4,130 psig @ 450°F (285 barg @ 232°C)
		Graphite	-65°F to 1200°F (-54°C to 648°C)		1,715 psig @ 1200°F (118 barg @ 648°C)
	Carbon Steel	PTFE / Graphite	-20°F to 350°F (-29°C to 176°C)		5,230 psig @ 350°F (360 barg @ 176°C)

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Ordering Information

Code Table: **VGR** **1** **2** **3** **4** **5** **6** **7**

Sample Valve Code: **R** **A** **MF** **8N** **GP** **S** **FS**

Example: INSTRUMENTATION GAUGE ROOT VALVE, VEE DISK TIP, MALE NPT 1/2 " x FEMALE NPT 1/2 ", GRAPHITE PACKING, 316/L STAINLESS STEEL BODY, TRIM, FIRE SAFETY DESIGN

1. Valve Pattern

Nil	Gauge Root Valve
L	Extended Root Valve
2	Gauge 2-Valve

2. Disk (Tip)

A	Standard
M	Metering
S	Soft-PEEK

3. End Connection

	Inlet	Outlet
MF	Male	Female

4. Inlet and Outlet Connection Size & Type

	Thread (NPS)	1/8	1/4	3/8	1/2	3/4	1
NPT (ISO / BSP)	Designator	2N(R)	4N(R)	6N(R)	8N(R)	12N(R)	16N(R)
	O.D. (in.)	1/8	1/4	3/8	1/2	3/4	1
Fractional Tube	Designator	2	4	6	8	12	16
	O.D. (mm)	3	6	10	12	20	25
Metric Tube	Designator	3M	6M	10M	12M	20M	25M

5. Packing

Nil	PTFE-Cone
PK	PEEK-Chevron
GP	Graphite

6. Material

S	Stainless Steel 316 / 316L
C	Carbon Steel
M	Monel UNS N04400
276	Hastelloy UNS N10276
D51	Duplex Stainless Steel UNS S31803
625	Inconel UNS N06625
825	Inconel UNS N08825

7. Option

N	NACE MR 0175
Q	BS EN 10204 Type 3.2
FS	Fire safety design
AT	Anti Tamper

Selecting Valve

When selecting a product, the system design in its entirety must be considered to ensure safe performance. Proper installation, operation and maintenance, as well as material compatibility, adequate ratings and function are the responsibilities of the system designer and user.

