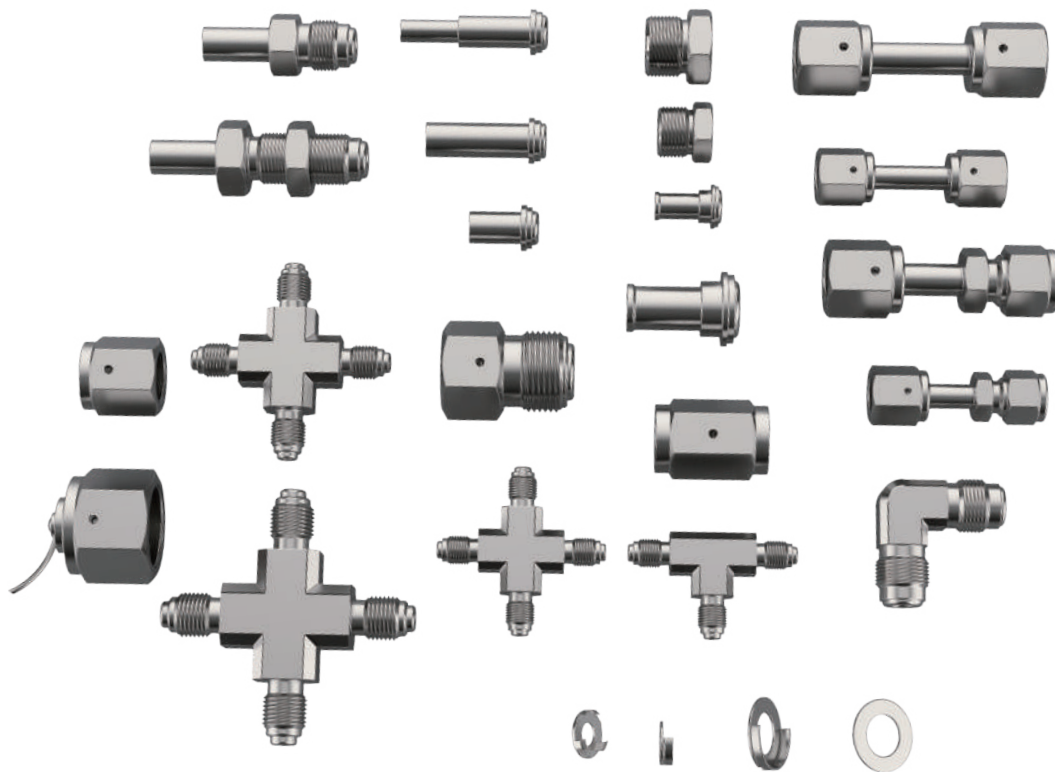











KVA

Metal Gasket Face Seal Fittings VR Series



- Sizes 1/16 to 1 in. and 6 to 18 mm
- High purity stainless steel

Metal Gasket Face Seal Fittings VR Series

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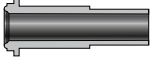

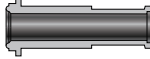

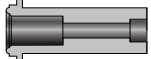




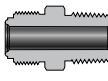
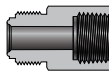
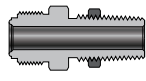
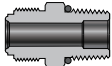
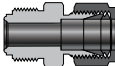
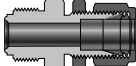
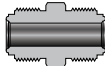
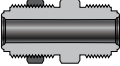
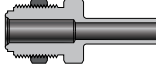





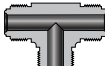
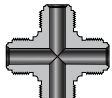
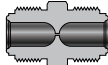
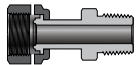

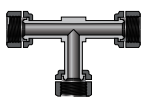




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Options and Accessorie



Flow Restrictors	25
Lock and Tag Devices	25

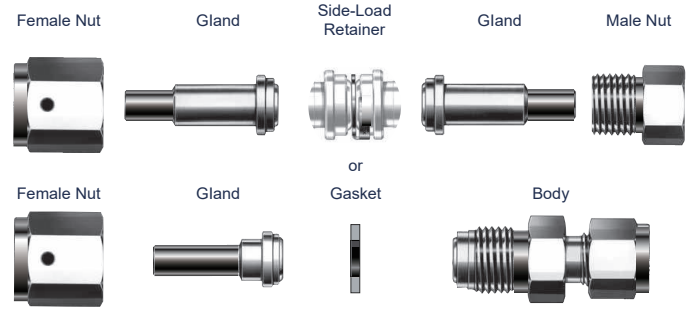
Configuration Designator

<p>Short Gland, Gland, Long Gland</p>  <p>G P5</p>	<p>"H"Type VR Gland</p>  <p>HG P20</p>	<p>Automatic Weld Gland</p>  <p>AG P6</p>	<p>Socket Weld Gland</p>  <p>SG P7</p>
<p>Reducers Socket Weld Gland</p>  <p>RG P8</p>	<p>Blind</p>  <p>GB P8</p>	<p>Female Nut</p>  <p>FN P18</p>	<p>Male Nut</p>  <p>MN P18</p>
<p>Gasket</p>  <p>GA P22</p>	<p>Male Body</p>  <p>CM P9</p>	<p>Female Body</p>  <p>CF P10</p>	<p>Bulkhead male</p>  <p>CMB P9</p>
<p>Straight Thread O-ring</p>  <p>CMO P10</p>	<p>Tube Fitting Connector</p>  <p>CB P11</p>	<p>Bulkhead Tube Fitting</p>  <p>CBB P11</p>	<p>Union</p>  <p>U P12</p>
<p>Bulkhead Union</p>  <p>UB P12</p>	<p>Bulkhead Tube Butt Weld</p>  <p>UBW P13</p>	<p>Female Reducing</p>  <p>UVR P14</p>	<p>Reducing</p>  <p>UM P13</p>
<p>Reducing Bushing</p>  <p>UF P13</p>	<p>Male NPT Elbow</p>  <p>ULT P14</p>	<p>Union Elbow</p>  <p>UL P15</p>	<p>Union Tee</p>  <p>UT P15</p>
<p>Union Cross</p>  <p>UC P16</p>	<p>Flow Restrictors</p>  <p>FL P24</p>	<p>Welded Assemblies</p>  <p>WG P16</p>	<p>Welded Female Elbow</p>  <p>WGL P17</p>
<p>Welded Female Tee</p>  <p>WGT P17</p>	<p>Female</p>  <p>BC P14</p>	<p>Caps</p>  <p>CA P18</p>	<p>Plugs</p>  <p>PL P19</p>
<p>Lock Devices</p>  <p>LK P24</p>			

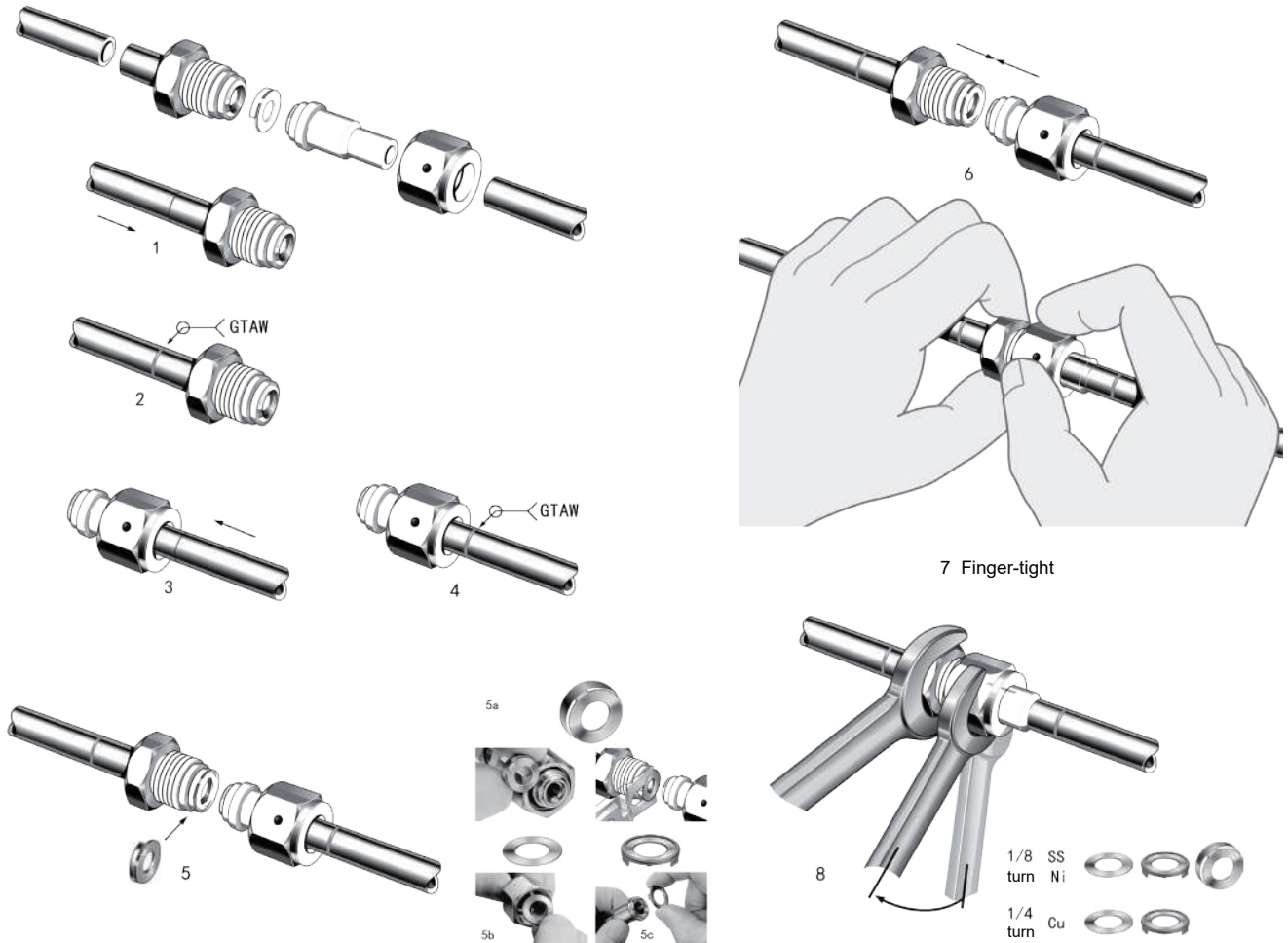
Features

- Metal to metal seal to provide perfect leak-tight service for working conditions from critical vacuum to high pressure
- Test port at nut for easy leak testing
- Silver-plated female threads
- Standard surface roughness finished to an average of Ra 0.25 μm (10 $\mu\text{in.}$) or electropolished to Ra 0.13 μm (5 $\mu\text{in.}$) optional
- All seal faces and male threads protected with plastic caps
- Sizes range from : 1/16" to 1" and 6 mm to 18 mm
- Every gland and body marked with size, material and heat number, Ensured traceability

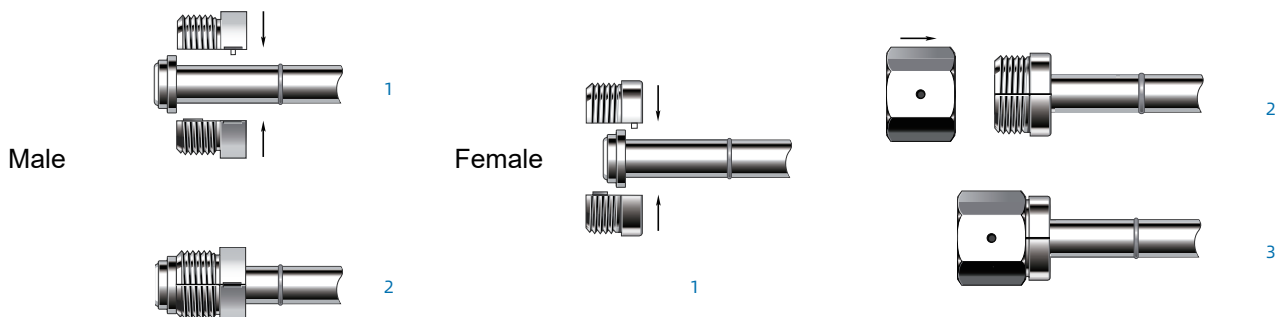
Typical VR Assemblies



VR Fitting Installation Instructions



VR Split-Nut Installation Instructions



Materials of Construction & Temperature Ratings

Material	Designator	Grade	Temperature, °C (°F)
Glands, Bodies and Nuts			
316 SS	6S	Bar stock: ASME SA479 ASTM A276	537 (1000)
		Forged shapes: ASTM A182 ASTM A314	
316L SS	6L	Bar stock: ASME SA479 ASTM A276	
		Forged shapes: ASTM A182	
316L VAR SS	6LV	SEMI F20 High-Purity ^①	
316L VIM-VAR	62V		
Gaskets			
316L	6L	ASTM A240	537 (1000)
Nickel	NI	ASTM F3	315 (600)
Copper	CU	ASTM B152	204 (400)

① 20 % minimum elongation allowed

- All ratings comply with calculations in accordance with ASME Code for Pressure Piping B31.3, Process Piping, and ASME B31.1, Power Piping.
- Working pressure ratings determined at room temperature with gasket materials shown.

Welding End Tube O.D. and Wall Thickness

Testing

Fractional

Tube O.D. in.	Wall Thickness in.
1/8	0.028
1/4	0.035
3/8	0.035
1/2	0.049
3/4	0.049
1	0.065
1-1/2	0.065
2	0.065

Metric

Tube O.D. mm	Wall Thickness mm
6	1.0
8	1.0
10	1.0
12	1.0
18	1.5

The VR fitting design has been helium leak tested to a maximum leak rate of 4×10^{-9} std cm³/s with silver-plated and copper gaskets and to a maximum leak rate of 4×10^{-11} std cm³/s with unplated gaskets.

Process Specification

Process Item	Standard Cleaning and Packaging (CP1) Special Clean and Packaging for oxygen-rich condition (CP2)	Ultrahigh-Purity Processing (CP3)
	Material	316 SS, 316L SS
Wetted Surface Roughness	Ra 0.25 µm (10 µin.)	Ra 0.13 µm (5 µin.)
Process	Machine polished	Electropolished

Ordering Information

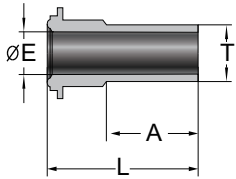
- Each component can be ordered separately.
 - Add the material designator as a prefix, cleaning and packaging designator as a suffix to the basic ordering number to get the complete ordering number .
 - Clean and Packaging
 1. Standard Cleaning and Packaging Process (CP1) , No suffix .
 2. Special Clean and Packaging for oxygen-rich condition (CP2) , to ensure compliance with product cleanliness. requirement as ASTM G93 Level C. Add "-CP2" as a suffix .
 3. Ultra High Purity Process (CP3) , is applied to products with wetted surface roughness finished to an average of Ra 0.13 μm (5 $\mu\text{in.}$). To order, Add "-CP3" as a suffix .
- Example: For 1/2" 316L SS VAR gland with Ultrahigh-Purity Processing (CP3), the complete ordering No. is 6LV-VR8-G-TB8-4-CP3.**

Cautions

- Dimensions are for reference only and are subject to change
- Over-tightening will damage the sealing beads and lead to possible leak
- Utilize a new gasket for each assembly
- Tungsten Inert Gas Welding (TIG) is recommended
- Always apply sealing materials compatible with the fluid on tapered pipe threads
- Do not loosen or tighten fittings when the system is pressurized
- Integral VR fittings must remain stationary during installation. Integral male VR fittings should not be paired with integral female VR fittings. Instead, they should be used in conjunction with rotating nuts and glands.

Glands

Short Tube Butt Weld

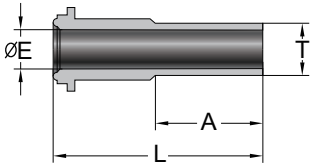


Tube O.D. T	Nominal Wall Thickness	VR Size in.	Basic Ordering Number	Dimensions			Working Pressure		
				L	A	E	6L	NI	CU
Dimensions, mm (in.)				bar (psig)					
1/8	0.028	1/8	-VR2-G-TB2-12S-①	27.4 (1.08)	19.1 (0.75)	1.8 (0.07)	586 (8500)		496 (7200)
		1/4	-VR4-G-TB2-12S-	27.9 (1.10)	19.1 (0.75)		586 (8500)	551 (8000)	440 (6400)
1/4	0.035	1/4	-VR4-G-TB4-4S-	15.2 (0.60)	6.4 (0.25)	4.6 (0.18)	351 (5100)		
			-VR4-G-TB4-6S-	27.9 (1.10)	9.6 (0.38)				
		1/2	-VR4-G-TB4-12S-	27.9 (1.10)	19.1 (0.75)				
3/8	0.035	1/2	-VR8-G-TB4-12S-	27.9 (1.10)	19.1 (0.75)	7.9 (0.31)	296 (4300)	241 (3500)	192 (2800)
			-VR8-G-TB6-4S-	15.7 (0.62)	6.4 (0.25)		227 (3300)		192 (2800)
			-VR8-G-TB6-12S-	28.4 (1.12)	19.1 (0.75)				
1/2	0.049	1/2	-VR8-G-TB8-4S-	15.7 (0.62)	6.4 (0.25)	10.2 (0.40)	254 (3700)	241 (3500)	192 (2800)
			-VR8-G-TB8-6S-	18.8 (0.74)	9.6 (0.38)				
			-VR8-G-TB8-12S-	28.4 (1.12)	19.1 (0.75)				
6	1.0	1/4	-VR4-G-MTB6-12S-	29.5 (1.16)	19.1 (0.75)	4.0 (0.16)	468 (6800)	440 (6400)	
8	1.0		-VR4-G-MTB8-12S-			6.0 (0.24)	337 (4900)	337 (4900)	
10	1.0	1/2	-VR8-G-MTB10-12S-			8.0 (0.31)	241 (3500)	192 (2800)	
12	1.0		-VR8-G-MTB12-12S-			10.0 (0.39)	213 (3100)	192 (2800)	
18	1.5		3/4			-VR12-G-MTB18-12S-	15.0 (0.59)	206 (3000)	165 (2400)

① Not designed for gasket retainer assembly.

Glands

Long Tube Butt Weld

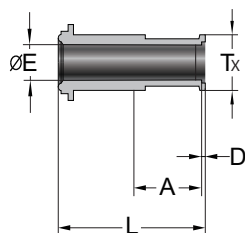


Tube O.D. T	Nominal Wall Thickness	VR Size in.	Basic Ordering Number	Dimensions			Working Pressure		
				L	A	E	6L	NI	CU
Dimensions, mm (in.)							bar (psig)		
1/8	0.028	1/8	-VR2-G-TB2-12-①	36.1 (1.42)	19.1 (0.75)	1.8 (0.07)	586 (8500)		496 (7200)
		1/4	-VR4-G-TB4-4-	30.5 (1.20)	6.4 (0.25)		586 (8500)	551 (8000)	440 (6400)
1/4	0.035	1/4	-VR4-G-TB4-1.31-②	33.3 (1.31)	9.1 (0.36)	4.6 (0.18)	351 (5100)		
			-VR4-G-TB4-6-	33.5 (1.32)	9.6 (0.38)				
		1/2	-VR4-G-TB4-12-	43.2 (1.70)	19.1 (0.75)				
3/8	0.035	1/2	-VR8-G-TB4-12-	45.7 (1.10)	19.1 (0.75)	7.9 (0.31)	296 (4300)	241 (3500)	192 (2800)
			-VR8-G-TB6-4-	32.8 (1.32)	6.4 (0.25)		227 (3300)		192 (2800)
			-VR8-G-TB6-12-	45.5 (1.79)	19.1 (0.75)				
1/2	0.049	1/2	-VR8-G-TB8-4-	32.8 (1.29)	6.4 (0.25)	10.2 (0.40)	254 (3700)	241 (3500)	192 (2800)
			-VR8-G-TB8-6-	35.8 (1.41)	9.6 (0.38)				
			-VR8-G-TB8-12-	45.5 (1.79)	19.1 (0.75)				
3/4	0.049	3/4	-VR12-G-TB12-12-	51.6 (2.03)	19.1 (0.75)	16.5 (0.65)	165 (2400)		
1	0.065	1	-VR16-G-TB16-12-	58.9 (2.32)	19.1 (0.75)	22.1 (0.87)	165 (2400)		130 (1900)
6	1.0	1/4	-VR4-G-MTB6-12-	43.2 (1.70)	19.1 (0.75)	4.0 (0.16)	468 (6800)	440 (6400)	
8	1.0		-VR4-G-MTB8-12-			6.0 (0.24)	337 (4900)		
10	1.0	1/2	-VR8-G-MTB10-12-	45.5 (1.79)	19.1 (0.75)	8.0 (0.31)	241 (3500)	192 (2800)	
12	1.0		-VR8-G-MTB12-12-			10.0 (0.39)	213 (3100)		
18	1.5	3/4	-VR12-G-MTB18-12-	51.6 (2.03)	19.1 (0.75)	15.0 (0.59)	206 (3000)	165 (2400)	

① Not designed for gasket retainer assembly.

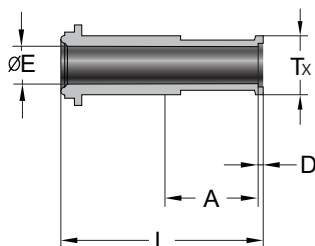
② The suffix "-1.31" refers to the length of Dimension L=1.31" (33.3 mm).

Glands



Automatic Weld Gland Short

Tube O.D. T	Nominal Wall Thickness	VR Size in.	Basic Ordering Number	Dimensions					Working Pressure			
				L	A	D	E	Tx	6L	NI	CU	
Dimensions, mm (in.)				bar (psig)								
1/4	0.035	1/4	-VR4-AG-TB4-12S-	28.4 (1.12)	19.1 (0.75)	0.5 (0.02)	4.6 (0.18)	7.4 (0.29)	351 (5100)			
3/8	0.035	1/2	-VR8-AG-TB6-12S-	29.2 (1.15)		0.8 (0.03)	7.9 (0.31)	10.4 (0.41)	227 (3300)	192 (2800)		
1/2	0.049		-VR8-AG-TB8-12S-	29.5 (1.16)	1.0 (0.04)	10.2 (0.40)	14.0 (0.40)	241 (3500)				
6	1.0	1/4	-VR4-AG-MTB6-12S-	30.0 (1.18)	19.1 (0.75)	0.5 (0.02)	4.0 (0.16)	6.8 (0.27)	468 (6800)	440 (6400)		
8			-VR8-AG-MTB8-12S-	30.2 (1.19)		0.8 (0.03)	6.0 (0.24)	8.9 (0.35)	337 (4900)	337 (4900)		
10		1/2	-VR8-AG-MTB10-12S-	31.0 (1.22)		0.8 (0.03)	8.0 (0.31)	10.9 (0.43)	241 (3500)	192 (2800)		
12			-VR8-AG-MTB12-12S-	30.5 (1.20)		1.0 (0.04)	10.0 (0.39)	13.2 (0.52)	213 (3100)			

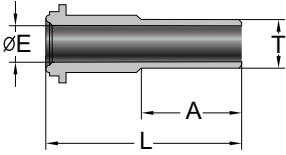


Automatic Weld Gland Long

Tube O.D. T	Nominal Wall Thickness	VR Size in.	Basic Ordering Number	Dimensions					Working Pressure			
				L	A	D	E	Tx	6L	NI	CU	
Dimensions, mm (in.)				bar (psig)								
1/4	0.035	1/4	-VR4-AG-TB4-12-	43.7 (1.72)	19.1 (0.75)	0.5 (0.02)	4.6 (0.18)	7.4 (0.29)	351 (5100)			
		1/2	-VR8-AG-TB4-12-	46.2 (1.82)					241 (3500)	192 (2800)		
3/8	0.035	1/2	-VR8-AG-TB6-12-	46.2 (1.82)	19.1 (0.75)	0.8 (0.03)	7.9 (0.31)	10.4 (0.41)	227 (3300)	192 (2800)		
1/2	0.049	1/2	-VR8-AG-TB8-12-	46.5 (1.83)	19.1 (0.75)	1.0 (0.04)	10.2 (0.40)	14.0 (0.55)	241 (3500)	192 (2800)		
3/4	0.049	1/2	-VR8-AG-TB12-12-	52.6 (2.07)	19.1 (0.75)	1.0 (0.04)	16.5 (0.65)	20.3 (0.80)	165 (2400)	165 (2400)		
1	0.065	1	-VR16-AG-TB16-16-	65.3 (2.57)	24.4 (0.96)	1.0 (0.04)	22.1 (0.87)	26.9 (1.06)	165 (2400)	130 (1900)		
6	1.0	1/4	-VR4-AG-MTB6-12-	43.7 (1.72)	19.1 (0.75)	0.5 (0.02)	4.0 (0.16)	6.8 (0.27)	468 (6800)	440 (6400)		
12		1/2	-VR8-AG-MTB12-12-	46.5 (1.83)		1.0 (0.04)	10.0 (0.39)	13.2 (0.52)	213 (3100)	192 (2800)		
18	1.5	3/4	-VR12-AG-MTB18-12-	52.6 (2.07)		1.0 (0.04)	15.0 (0.59)	19.3 (0.76)	206 (3000)	165 (2400)		

Glands

Butt Weld

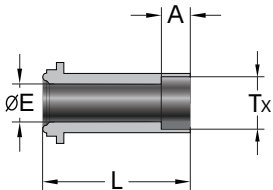


Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions			Working Pressure		
			L	A	E	6L	NI	CU
Dimensions, mm (in.)			bar (psig)					
1/8	1/8	-VR2-GW-TB2-12-①	17.8 (0.70)	7.1 (0.28)	1.5 (0.06)②	771 (11200)	620 (9000)	496 (7200)
	1/4	-VR4-GW-TB4-21-	33.3 (1.31)			689 (10000)	551 (8000)	440 (6400)
1/4	1/4	-VR4-GW-TB4-21-	33.3 (1.31)	10.4 (0.41)	3.0 (0.12)	689 (10000)	551 (8000)	440 (6400)
	1/2	-VR8-GW-TB4-24-	38.1 (1.50)			296 (4300)	241 (3500)	192 (2800)
3/8	1/2	-VR8-GW-TB6-24-	38.1 (1.50)	10.4 (0.41)	7.1 (0.28)	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-GW-TB8-24-	38.1 (1.50)	12.7 (0.50)	10.2 (0.40)	241 (3500)	241 (3500)	192 (2800)
3/4	3/4	-VR12-GW-TB12-32-	50.8 (2.00)	15.7 (0.62)	13.5 (0.53)	254 (3700)	206 (3000)	165 (2400)
1	1	-VR16-GW-TB16-35-	56.4 (2.22)	19.1 (0.75)	20.6 (0.81)	206 (3000)	165 (2400)	130 (1900)

① Not designed for gasket retainer assembly.

② May contain internal diameter transitions.

Socket Weld



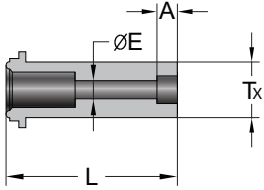
Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	A	E	Tx	6L	NI	CU
Dimensions, mm (in.)			bar (psig)						
1/16	1/8	-VR2-SG-TB1-12-①②	17.8 (0.70)	2.5 (0.10)	1.3 (0.05)	3.3 (0.13)	620 (9000)	496 (7200)	
1/8	1/8	-VR2-SG-TB2-12-②	17.8 (0.70)	2.5 (0.10)	2.3 (0.09)	5.1 (0.20)	489 (7100)		
1/4	1/4	-VR4-SG-TB4-21-	33.3 (1.31)	7.1 (0.28)	4.6 (0.18)	8.9 (0.35)	378 (5500)		
3/8	1/2	-VR8-SG-TB6-24-③	38.1 (1.50)	7.9 (0.31)	7.1 (0.28)	15.2 (0.60)	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-SG-TB8-24-	38.1 (1.50)	9.6 (0.38)	10.2 (0.40)	15.2 (0.60)	206 (3000)	192 (2800)	
5/8	5/8	-VR10-SG-TB10-25-	39.6 (1.56)	10.4 (0.41)	12.7 (0.50)	18.3 (0.72)	192 (2800)	165 (2400)	
3/4	3/4	-VR12-SG-TB12-32-	50.8 (2.00)	11.2 (0.44)	15.7 (0.62)	22.4 (0.88)	192 (2800)	165 (2400)	
1	1	-VR16-SG-TB16-36-	56.4 (2.22)	15.7 (0.62)	22.1 (0.87)	30.2 (1.19)	206 (3000)	165 (2400)	130 (1900)

① Uses 1/8 in. gasket and nut.

② Not designed for gasket retainer assembly.

③ Uses 1/2 in. gasket and nut.

Glands

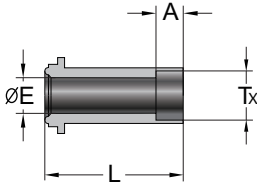


Reducing Socket Weld

Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	A	E	Tx	6L	NI	CU
Dimensions, mm (in.)							bar (psig)		
1/8	1/4	-VR4-RG-TB2-21-	33.3 (1.31)	2.5 (0.10)	2.3 ^① (0.09)	8.9 (0.35)	551 (8000)	440 (6400)	
1/4	1/2	-VR8-RG-TB4-24-	38.1 (1.50)	7.1 (0.28)	4.6 (0.18)	15.2 (0.60)	241 (3500)	192 (2800)	

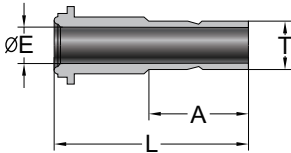
① May contain internal diameter transitions.

Socket Weld Gland



Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	A	E	Tx	6L	NI	CU
Dimensions, mm (in.)							bar (psig)		
1/4	1/4	-VR4-SG-TB4-8S-	12.7 (0.50)	7.1 (0.28)	4.6 (0.18)	8.9 (0.35)	378 (5500)		
		-VR4-SG-TB4-12S-	19.1 (0.75)						

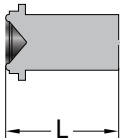
Tube Adapter



Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions			Working Pressure		
			L	A	E	6L	NI	CU
Dimensions, mm (in.)						bar (psig)		
1/4	1/4	-VR4-G-TB4-	41.0 (1.62)	16.2 (0.64)	4.3 (0.17)	689 (10000)	551 (8000)	440 (6400)
3/8	1/2	-VR8-G-TB6-	46.0 (1.81)	17.8 (0.70)	6.8 (0.27) ^①	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-G-TB8-	49.3 (1.94)	24.4 (0.96)	9.4 (0.37)	296 (4300)	241 (3500)	192 (2800)

① May contain internal diameter transitions.

Blind

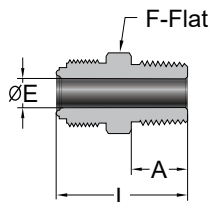


VR Size in.	Basic Ordering Number	L
Dimensions, mm (in.)		
1/8	-VR2-GB- ^①	17.8 (0.70)
1/4	-VR4-GB-	33.3 (1.31)
1/2	-VR8-GB-	38.1 (1.50)
3/4	-VR12-GB-	50.8 (2.00)
1	-VR16-GB-	56.4 (2.22)

① Not designed for gasket retainer assembly.

Bodies

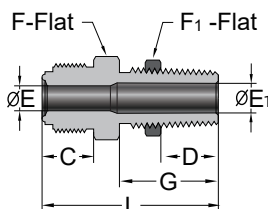
Male NPT Connector ①



NPT Size	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	A	E	F	6L	NI	CU
			Dimensions, mm (in.)				bar (psig)		
1/16	1/8	-VR2-CM-NPT1-②	27.2 (1.07)	9.6 (0.38)	2.3 (0.09)③	3/8	620 (9000)		496 (7200)
1/8	1/8	-VR2-CM-NPT2-②	27.2 (1.07)	9.6 (0.38)	2.3 (0.09)①	7/16	620 (9000)		496 (7200)
	1/4	-VR4-CM-NPT2-	33.3 (1.31)		4.6 (0.18)	5/8	689 (10000)	551 (8000)	440 (6400)
1/4	1/4	-VR4-CM-NPT4-	37.8 (1.49)	14.2 (0.56)	4.6 (0.18)	5/8	689 (10000)	551 (8000)	440 (6400)
	1/2	-VR8-CM-NPT4-	41.9 (1.65)		7.1 (0.28)①	15/16	296 (4300)	241 (3500)	192 (2800)
3/8	1/2	-VR8-CM-NPT6-	41.9 (1.65)	14.2 (0.56)	9.6 (0.38)	15/16	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-CM-NPT8-	46.7 (1.84)	19.1 (0.75)	10.2 (0.40)	15/16	296 (4300)	241 (3500)	192 (2800)
3/4	3/4	-VR12-CM-NPT12-	55.6 (2.19)	19.1 (0.75)	15.7 (0.62)	1-5/16	254 (3700)	206 (3000)	165 (2400)
1	1	-VR16-CM-NPT16-	62.7 (2.47)	23.9 (0.94)	22.1 (0.87)	1-5/8	206 (3000)	165 (2400)	130 (1900)

Select male connectors are available with ISO/BSP tapered thread (RT) ends. Contact your KVA representative.

- ① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.
- ② Not designed for gasket retainer assembly.
- ③ May contain internal diameter transitions.

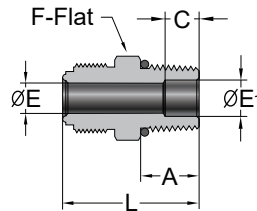


Male NPT Bulkhead Connector ①

NPT Size	VR Size in.	Basic Ordering Number	Dimensions										Working Pressure		
			L	C	D	E	E ₁	F	F ₁	G	Panel Hole Dia.	Max. Panel Thickness	6L	NI	CU
			Dimensions, mm (in.)										bar (psig)		
1/4	1/4	-VR4-CMB-NPT4	33.8 (1.33)	15.7 (0.62)	14.2 (0.56)	4.6 (0.18)	7.1 (0.28)	13/16	13/16	31.5 (1.24)	16.8 (21/32)	9.7 (0.38)	551 (8000)	551 (8000)	440 (6400)
	1/2	-VR8-CMB-NPT4	27.2 (1.07)	19.1 (0.75)		10.2 (0.40)	15/16	296 (4300)					241 (3500)	192 (2800)	

VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

Bodies



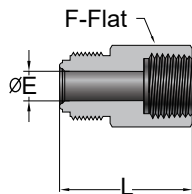
Straight Thread O-Ring Seal Male Connector ①

Straight Thread Size	VR Size in.	Uniform O-Ring ^② Size	Basic Ordering Number	Dimensions						Working Pressure		
				L	A	C	E	E ₁	F	6L	NI	CU
Dimensions, mm (in.)										bar (psig)		
9/16-18	1/4	906	-VR4-CMO-UN9	33.8 (1.33)	9.9 (0.39)	6.4 (0.25)	4.6 (0.18)	7.1 (0.28)	3/4	310 (4500)		
7/8-14	1/2	910	-VR8-CMO-UN14-	42.2 (1.66)	12.7 (0.50)	10.2 (0.40)	7.1 (0.28)	15.0 (0.59)	1	241 (3500)	192 (2800)	
9/16-18	1/2	906	-VR8-CMO-UN9-	37.6 (1.48)	9.9 (0.39)	\	7.1 (0.28)	7.1 (0.28)	15/16	296 (4300)	241 (3500)	192 (2800)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

② Fluorocarbon FKM is standard, other materials are available. O-rings are assembled with a silicone vacuum grease.

Female NPT Connector ①

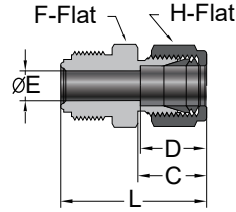


NPT Size	VR Size in.	Basic Ordering Number	Dimensions			Working Pressure		
			L	E	F	6L	NI	CU
Dimensions, mm (in.)						bar (psig)		
1/16	1/8	-VR2-CF-FNPT1-②	27.9 (1.10)	2.3 (0.09)	7/16	461 (6700)		
1/8	1/8	-VR2-CF-FNPT2-②	30.2 (1.19)	2.3 (0.09)	9/16	447 (6500)		
	1/4	-VR4-CF-FNPT2-	35.8 (1.41)	4.6 (0.18)	5/8	551 (8000)	440 (6400)	
1/4	1/4	-VR4-CF-FNPT4-	39.1 (1.54)	4.6 (0.18)	3/4	454 (6600)	440 (6400)	
3/8	1/2	-VR8-CF-FNPT6-	44.7 (1.76)	10.2 (0.40)	15/16	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-CF-FNPT8-	50.5 (1.99)	10.2 (0.40)	1-1/16	296 (4300)	241 (3500)	192 (2800)
3/4	3/4	-VR12-CF-FNPT12-	59.9 (2.36)	15.7 (0.62)	1-5/16	254 (3700)	206 (3000)	165 (2400)
1	1	-VR16-CF-FNPT16-	63.8 (2.51)	22.1 (0.87)	1-5/8	206 (3000)	165 (2400)	130 (1900)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

② Not designed for gasket retainer assembly.

Bodies



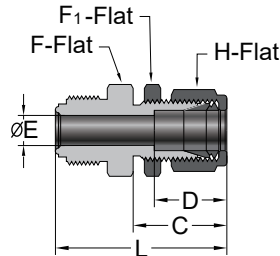
Tube Fitting Connector ①

Tube O.D.	VR Size in.	Basic Ordering Number	Dimensions						Working Pressure		
			L	C	D	E	F	H	6L	NI	CU
Dimensions, mm (in.)									bar (psig)		
1/8	1/4	-VR4-CB-F2-	38.9 (1.53)	15.2 (0.60)	12.7 (0.50)	2.3 (0.09)②	5/8	7/16	689 (10000)	551 (8000)	440 (6400)
1/4	1/4	-VR4-CB-F4-	41.1 (1.62)	17.8 (0.70)	15.2 (0.60)	4.6 (0.18)	5/8	9/16	689 (10000)	551 (8000)	440 (6400)
3/8	1/2	-VR8-CB-F6-	46.7 (1.84)	19.3 (0.76)	16.8 (0.66)	7.1 (0.28)②	15/16	11/16	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-CB-F8-	49.5 (1.95)	21.8 (0.86)	22.9 (0.90)	10.2 (0.40)	15/16	7/8	296 (4300)	241 (3500)	192 (2800)

Dimensions L, C, D are typical finger-tight. Nuts and ferrules are provided assembled, as shown.

For tubing max. pressure ratings for use with tube fittings, see Tubing Data,

- ① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.
- ② May contain internal diameter transitions.



Tube Fitting Bulkhead Connector ①

Tube O.D.	VR Size in.	Basic Ordering Number	Dimensions									Working Pressure		
			L	C	D	E	F	F ₁	H	Panel Hole Dia.	Max. Panel Thickness	6L	NI	CU
Dimensions, mm (in.)												bar (psig)		
1/4	1/4	-VR4-CBB-F4-S-	47.8 (1.88)	26.7 (1.05)	15.2 (0.60)	4.6 (0.18)	5/8	5/8	9/16	11.9 (15/32)	3.3 (0.13)	689 (10000)	551 (8000)	440 (6400)
		-VR4-CBB-F4-	57.2 (2.25)	33.5 (1.32)								689 (10000)	551 (8000)	440 (6400)
3/8	1/2	-VR8-CBB-F6-	64.5 (2.54)	36.8 (1.45)	16.8 (0.66)	7.1 (0.28)	15/16	3/4	11/16	15.0 (19/32)	11.2 (0.44)	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-CBB-F8-	69.6 (2.74)	41.9 (1.65)	22.9 (0.90)	10.2 (0.40)	15/16	15/16	7/8	19.8 (25/32)	12.7 (0.50)	296 (4300)	241 (3500)	192 (2800)

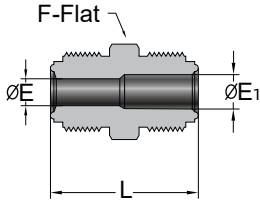
Dimensions L, C, D are typical finger-tight. Nuts and ferrules are provided assembled, as shown.

For tubing max. pressure ratings for use with tube fittings, see Tubing Data,

- ① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

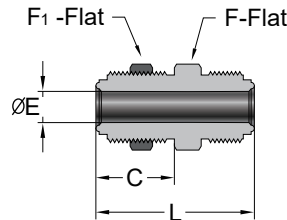
Bodies

Male Union ①



VR Size in.	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	E	E ₁	F	6L	NI	CU
Dimensions, mm (in.)			bar (psig)						
1/8	1/8	-VR2-U-	28.7 (1.13)	2.3 (0.09)	\	3/8	771 (11200)	620 (9000)	496 (7200)
1/4	1/4	-VR4-U-	39.4 (1.55)	4.6 (0.18)	\	5/8	689 (10000)	551 (8000)	440 (6400)
1/2	1/2	-VR8-U-	46.7 (1.84)	10.2 (0.40)	\	15/16	296 (4300)	241 (3500)	192 (2800)
3/4	3/4	-VR12-U-	62.0 (2.44)	15.7 (0.62)	\	1-5/16	254 (3700)	206 (3000)	165 (2400)
1	1	-VR16-U-	65.8 (2.59)	22.1 (0.87)	\	1-5/8	206 (3000)	165 (2400)	130 (1900)
1/8	1/4	-VR2-U-VR4-	34.8 (1.37)	2.3 (0.09)	4.6 (0.18)	5/8	689 (10 000)	551 (8000)	440 (6400)
1/4	1/2	-VR4-U-VR8-	43.4 (1.71)	4.6 (0.18)	10.2 (0.40)	15/16	296 (4300)	241 (3500)	192 (2800)

- ① Integral VR fittings must remain stationary during installation. Integral male VR fittings should not be paired with integral female VR fittings. Instead, they should be used in conjunction with rotating nuts and glands.
- ② Not designed for gasket retainer assembly.



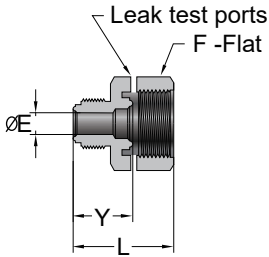
Male Bulkhead Union ①

VR Size in.	Basic Ordering Number	Dimensions							Working Pressure		
		L	C	E	F	F ₁	Panel Hole Dia.	Max. Panel Thickness	6L	NI	CU
Dimensions, mm (in.)		bar (psig)									
1/4	-VR4-UB-S-	46.2 (1.82)	25.1 (0.99)	4.6 (0.18)	3/4	3/4	15.0 (19/32)	3.3 (0.13)	689 (10000)	551 (8000)	440 (6400)
	-VR4-UB-	56.6 (2.23)	33.0 (1.30)								
1/2	-VR8-UB-S-	54.4 (2.14)	28.2 (1.11)	10.2 (0.40)	1-1/16	1-1/16	29/32 (23.1)	3.3 (0.13)	296 (4300)	241 (3500)	192 (2800)
	-VR8-UB-	65.3 (2.57)	37.6 (1.48)								

- ① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

Bodies

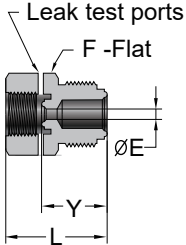
Reducing Adapter ①



VR Size in.	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	E	F	Y	6L	NI	CU
Dimensions, mm (in.)			bar (psig)						
1/8	1/4	-VR2-UM-VR4-	30.2 (1.19)	2.3 (0.09)	3/4	17.5 (0.36)	689 (10000)	551 (8000)	440 (6400)
1/4	1/2	-VR4-UM-VR8-	35.8 (1.41)	4.6 (0.18)	1-1/16	21.6 (0.35)	296 (4300)	241 (3500)	192 (2800)

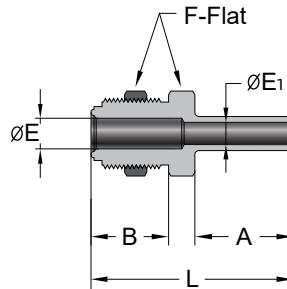
① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

Reducing Bushing ①



VR Size in.	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	E	F	Y	6L	NI	CU
Dimensions, mm (in.)			bar (psig)						
1/8	1/4	-VR4-UF-VR2-	26.9 (1.06)	3.3 (0.13)	5/8	19.3 (0.76)	689 (10000)	551 (8000)	440 (6400)
1/4	1/2	-VR8-UF-VR4-	35.8 (1.41)	6.4 (0.25)	15/16	23.1 (0.91)	296 (4300)	241 (3500)	192 (2800)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.



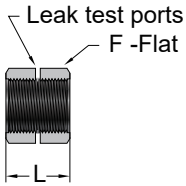
Tube Butt Weld Bulkhead Connector ①

Tube O.D.	VR Size in.	Basic Ordering Number	Dimensions								Working Pressure		
			L	A	B	E	E ₁	F	Panel Hole Dia.	Max. Panel Thickness	6L	NI	CU
Dimensions, mm (in.)			bar (psig)										
1/4	1/4	-VR4-UBW4-S-	59.9 (2.36)	19.1 (0.75)	25.1 (0.99)	4.6 (0.18)	5.6 (0.22)	3/4	15.0 (19/32)	3.3 (0.13)	351 (5100)		
		-VR4-UBW4-	49.5 (1.95)		33.0 (1.30)					11.2 (0.44)			

VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

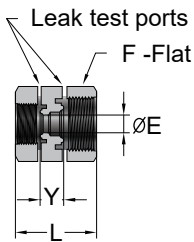
Bodies

Coupling



VR Size in.	Basic Ordering Number	Dimensions	
		L	F
Dimensions, mm (in.)			
1/8	-VR2-BC-	16.4 (0.66)	7/16
1/4	-VR4-BC-	30.2 (1.19)	3/4
1/2	-VR8-BC-	33.3 (1.31)	1-1/16
3/4	-VR12-BC-	42.7 (1.68)	1-1/2
1	-VR16-BC-	51.8 (2.04)	1-3/4

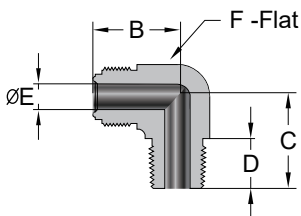
Female Reducing Union ①



VR Size in.	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
			L	E	F	Y	6L	NI	CU
Dimensions, mm (in.)						bar (psig)			
1/8	1/4	-VR2-UVR-VR4-	29.5 (1.16)	3.3 (0.13)	3/4	9.1 (0.36)	689 (10000)	551 (8000)	440 (6400)
1/4	1/2	-VR4-UVR-VR8-	35.8 (1.41)	6.4 (0.25)	1-1/16	8.9 (0.35)	296 (4300)	241 (3500)	192 (2800)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

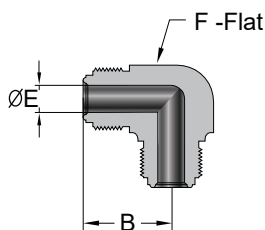
Male NPT Elbow ①



NPT Size	VR Size in.	Basic Ordering Number	Dimensions					Working Pressure		
			B	C	D	E	F	6L	NI	CU
Dimensions, mm (in.)						bar (psig)				
1/8	1/4	-VR4-ULT-NPT2-	27.2 (1.07)	22.1 (0.87)	9.6 (0.38)	4.6 (0.18)	1/2	689 (10000)	551 (8000)	440 (6400)
1/4	1/4	-VR4-ULT-NPT4-	27.2 (1.07)	26.7 (1.05)	14.2 (0.56)	4.6 (0.18)	1/2	551 (8000)		440 (6400)
3/8	1/2	-VR8-ULT-NPT6-	36.8 (1.45)	32.0 (1.26)	14.2 (0.56)	10.2 (0.40)	13/16	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-ULT-NPT8-	36.8 (1.45)	36.8 (1.45)	19.1 (0.75)	10.2 (0.40)	13/16	296 (4300)	241 (3500)	192 (2800)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

Union Elbow ①

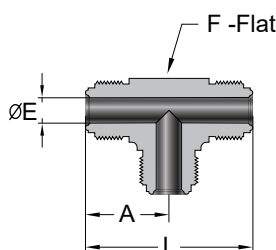


VR Size in.	Basic Ordering Number	Dimensions			Working Pressure		
		B	E	F	6L	NI	CU
		Dimensions, mm (in.)			bar (psig)		
1/8	-VR2-UL-②	22.6 (0.89)	2.3 (0.09)	7/16	771 (11200)	620 (9000)	496 (7200)
1/4	-VR4-UL-	27.2 (1.07)	4.6 (0.18)	1/2	689 (10000)	551 (8000)	440 (6400)
1/2	-VR8-UL-	36.8 (1.45)	10.2 (0.40)	13/16	296 (4300)	241 (3500)	192 (2800)
3/4	-VR12-UL-	48.8 (1.92)	15.7 (0.62)	1-1/4	254 (3700)	206 (3000)	165 (2400)
1	-VR16-UL-	50.8 (2.00)	22.1 (0.87)	1-11/16	206 (3000)	165 (2400)	130 (1900)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

② Not designed for gasket retainer assembly.

Union Tee ①

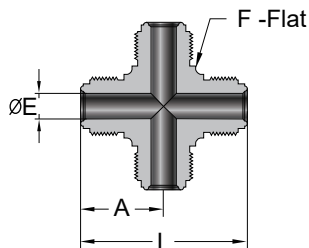


VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
		L	A	E	F	6L	NI	CU
		Dimensions, mm (in.)				bar (psig)		
1/8	-VR2-UT-②	45.2 (1.78)	22.6 (0.89)	2.3 (0.09)	7/16	771 (11200)	620 (9000)	496 (7200)
1/4	-VR4-UT-	54.4 (2.14)	27.2 (1.07)	4.6 (0.18)	1/2	689 (10000)	551 (8000)	440 (6400)
1/2	-VR8-UT-	73.7 (2.90)	36.8 (1.45)	10.2 (0.40)	13/16	296 (4300)	241 (3500)	192 (2800)
3/4	-VR12-UT-	97.5 (3.84)	48.8 (1.92)	15.7 (0.62)	1-1/4	254 (3700)	206 (3000)	165 (2400)
1	-VR16-UT-	102 (4.00)	50.8 (2.00)	22.1 (0.87)	1-11/16	206 (3000)	165 (2400)	130 (1900)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

② Not designed for gasket retainer assembly.

Union Cross ①

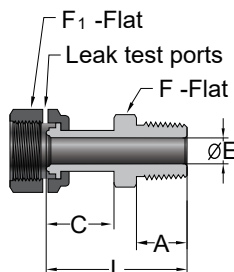


VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
		L	A	E	F	6L	NI	CU
		Dimensions, mm (in.)				bar (psig)		
1/8	-VR2-UC-②	45.2 (1.78)	22.6 (0.89)	2.3 (0.09)	7/16	771 (11200)	620 (9000)	496 (7200)
1/4	-VR4-UC-	54.4 (2.14)	27.2 (1.07)	4.6 (0.18)	1/2	689 (10000)	551 (8000)	440 (6400)
1/2	-VR8-UC-	73.7 (2.90)	36.8 (1.45)	10.2 (0.40)	13/16	296 (4300)	241 (3500)	192 (2800)
3/4	-VR12-UC-	97.5 (3.84)	48.8 (1.92)	15.7 (0.62)	1-1/4	254 (3700)	206 (3000)	165 (2400)
1	-VR16-UC-	102 (4.00)	50.8 (2.00)	22.1 (0.87)	1-11/16	206 (3000)	165 (2400)	130 (1900)

① VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

② Not designed for gasket retainer assembly.

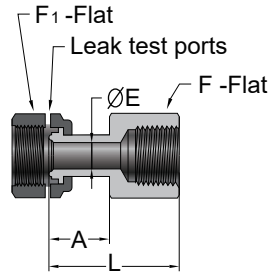
Welded Assemblies



Male NPT

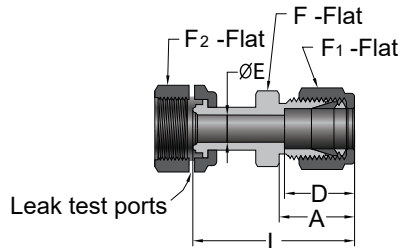
NPT Size	VR Size in.	Basic Ordering Number	Dimensions						Working Pressure		
			L	A	C	E	F	F ₁	6L	NI	CU
			Dimensions, mm (in.)						bar (psig)		
1/8	1/4	-VR4-WG-NPT2-	40.1 (1.58)	9.6 (0.38)	24.1 (0.95)	4.6 (0.18)	7/16	3/4	551 (8000)	440 (6400)	
1/4	1/4	-VR4-WG-NPT4-	45.5 (1.79)	14.2 (0.56)	23.4 (0.92)	4.6 (0.18)	9/16	3/4	551 (8000)	440 (6400)	
3/8	1/2	-VR8-WG-NPT6-	48.0 (1.89)	14.2 (0.56)	25.4 (1.00)	10.2 (0.40)	11/16	1-1/16	296 (4300)	241 (3500)	192 (2800)
1/2	1/2	-VR8-WG-NPT8-	53.1 (2.09)	19.1 (0.75)	25.6 (1.01)	10.2 (0.40)	7/8	1-1/16	296 (4300)	241 (3500)	192 (2800)

Welded Assemblies



Female NPT

NPT Size	VR Size in.	Basic Ordering Number	Dimensions					Working Pressure			
			L	A	E	F	F ₁	6L	NI	CU	
Dimensions, mm (in.)									bar (psig)		
1/4	1/4	-VR4-WG-FNPT4-	45.0 (1.77)	23.4 (0.92)	4.6 (0.18)	3/4	9/16	454 (6600)		440 (6400)	
3/8	1/2	-VR8-WG-FNPT6-	49.5 (1.95)	26.9 (1.06)	10.2 (0.40)	7/8	1-1/16	296 (4300)	241 (3500)	192 (2800)	
1/2	1/2	-VR8-WG-FNPT8-	55.4 (2.18)	26.4 (1.04)	10.2 (0.40)	1-1/16	1-1/16	296 (4300)	241 (3500)	192 (2800)	

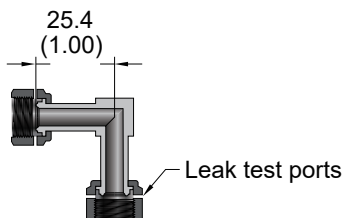


Tube Fitting

Tube O.D.	VR Size in.	Basic Ordering Number	Dimensions							Working Pressure		
			L	A	D	E	F	F ₁	F ₂	6L	NI	CU
Dimensions, mm (in.)										bar (psig)		
1/4	1/4	-VR4-WG-F4-	49.3 (1.94)	17.8 (0.70)	15.2 (0.60)	4.6 (0.18)	1/2	3/4	9/16	689 (10000)	551 (8000)	440 (6400)
3/8	1/4	-VR4-WG-F6-	50.0 (1.97)	19.3 (0.76)	16.8 (0.66)	4.6 (0.18)	5/8	3/4	11/16	517 (7500)	517 (7500)	440 (6400)
1/2	1/2	-VR8-WG-F8-	56.6 (2.23)	21.8 (0.86)	22.9 (0.90)	10.2 (0.40)	13/16	1-1/16	7/8	296 (4300)	241 (3500)	192 (2800)

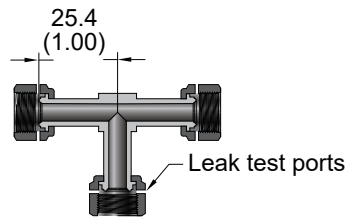
Dimensions L, A, D are typical finger-tight. Nuts and ferrules are provided assembled, as shown. For tubing max. pressure ratings for use with tube fittings, see Tubing Data,

Female Elbow



Basic Ordering Number: -VR4-WGL-

Female Tee

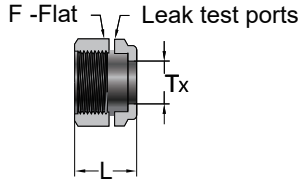


Basic Ordering Number: -VR4-WGT-

Elbows, crosses, Micro weld fittings, and tees are available with welded male and female ends.

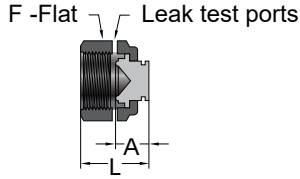
Nuts, Caps and Plugs

Female Nut



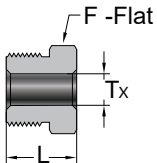
VR Size in.	Basic Ordering Number	Dimensions		
		L	F	Tx
Dimensions, mm (in.)				
1/8	-VR2-FN-	13.5 (0.53)	7/16	5.3 (0.21)
1/4	-VR4-FN-	20.6 (0.81)	3/4	9.1 (0.36)
1/2	-VR8-FN-	22.4 (0.88)	1-1/16	15.5 (0.61)
5/8	-VR10-FN-	22.4 (0.88)	1-3/16	18.8 (0.74)
3/4	-VR12-FN-	28.4 (1.12)	1-1/2	22.6 (0.89)
1	-VR16-FN-	34.0 (1.34)	1-3/4	30.5 (1.20)

Cap



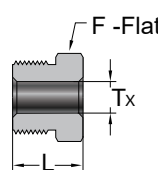
VR Size in.	Basic Ordering Number	Dimensions		
		L	A	F
Dimensions, mm (in.)				
1/8	-VR2-CA-	16.0 (0.63)	7.6 (0.30)	7/16
1/4	-VR4-CA-	23.9 (0.94)	11.2 (0.44)	3/4
1/2	-VR8-CA-	25.6 (1.01)	11.4 (0.45)	1-1/16
3/4	-VR12-CA-	32.8 (1.29)	13.7 (0.54)	1-1/2
1	-VR16-CA-	39.1 (1.00)	16.0 (0.63)	1-3/4

Male Nut



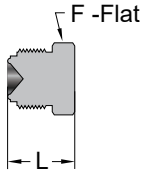
VR Size in.	Basic Ordering Number	Dimensions		
		L	F	Tx
Dimensions, mm (in.)				
1/8	-VR2-MN-	12.7 (0.50)	3/16	5.3 (0.21)
1/4	-VR4-MN-	18.0 (0.71)	5/4	9.1 (0.36)
1/2	-VR8-MN-	20.6 (0.81)	15/16	15.5 (0.61)
5/8	-VR10-MN-	20.6 (0.81)	1-1/16	18.8 (0.74)
3/4	-VR12-MN-	25.4 (1.00)	1-5/16	22.6 (0.89)
1	-VR16-MN-	30.2 (1.19)	1-5/8	30.5 (1.20)

Short Male Nut



VR Size in.	Basic Ordering Number	Dimensions		
		L	F	Tx
Dimensions, mm (in.)				
1/4	-VR2-MN-0.54-	13.7 (0.54)	5/8	9.1 (0.36)
	-VR4-MN-0.65-	16.5 (0.65)		

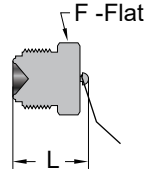
Plug



VR Size in.	Basic Ordering Number	Dimensions	
		L	F
Dimensions, mm (in.)			
1/8	-VR2-PL-①	17.3 (0.68)	3/8
1/4	-VR4-PL-	23.4 (0.92)	5/8
1/2	-VR8-PL-	27.4 (1.08)	15/16
3/4	-VR12-PL-	36.3 (1.43)	1-5/16
1	-VR16-PL-	38.6 (1.52)	1-2/8

① Not designed for gasket retainer assembly.

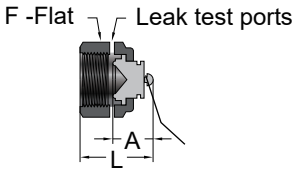
Plug with Lanyard



VR Size in.	Basic Ordering Number	Dimensions		
		L	A	F
Dimensions, mm (in.)				
1/4	-VR4-PLC-	23.9 (0.94)	11.2 (0.44)	3/4
1/2	-VR8-PLC-	25.6 (1.01)	11.4 (0.45)	1-1/16

lanyard length is 15.2 cm, material is 304 SS.

Cap with Lanyard

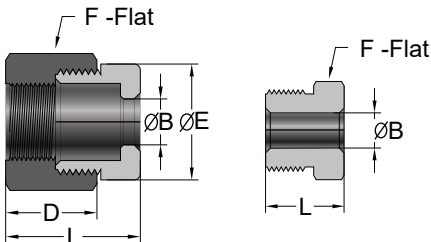


VR Size in.	Basic Ordering Number	Dimensions		
		L	A	F
Dimensions, mm (in.)				
1/4	-VR4-CAC-	23.9 (0.94)	11.2 (0.44)	3/4
1/2	-VR8-CAC-	25.6 (1.01)	11.4 (0.45)	1-1/16

lanyard length is 15.2 cm, material is 304 SS.

Split-Nut Assemblies

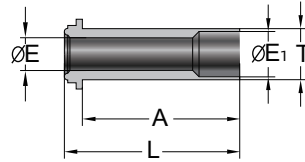
- Convenient and flexible connection
- Connects VR metal gasket face seal fittings with shorter weld sizes
- Allows for seamless interchangeability between female and male threads, even when the gland is pre-welded



VR Size in.	Split Nut Type	Basic Ordering Number	Dimensions				
			L	B	D	E	F
Dimensions, mm (in.)							
1/4	Female	-VR4-WG-TB4-	9.1 (0.36)	20.6 (0.81)	16.0 (0.63)	17.4 (0.68)	3/4
1/4	Male	-VR4-WG-TB6-	9.1 (0.36)	15.2 (0.60)	\	\	5/8

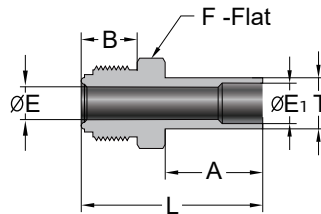
"H" Type (VR High-Flow Connections)

"H" Type VR connections are compatible with 1/4 in. VR connections and are designed for use with high-flow diaphragm valves and gas regulators. For uniform flow, use 1/4 in. side-load retainer style gasket.



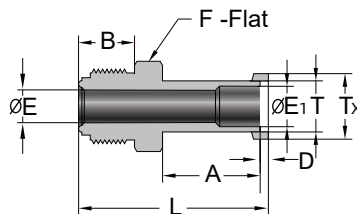
Tube Butt Weld

TUBE O.D. T	Normal Wall Thickness	VR Size in.	Basic Ordering Number	Dimensions				Working Pressure		
				L	A	E	E ₁	6L	NI	CU
Dimensions, mm (in.)				bar (psig)						
3/8	0.035	1/4	-VR4-HG-TB6-0.60-	15.2 (0.60)	10.4 (0.41)	6.4 (0.25)	7.9 (0.31)	227 (3300)		
			-VR4-HG-TB6-1.19-	30.2 (1.19)	25.4 (1.00)					
			-VR4-HG-TB6-1.31-	33.3 (1.31)	28.4 (1.12)					



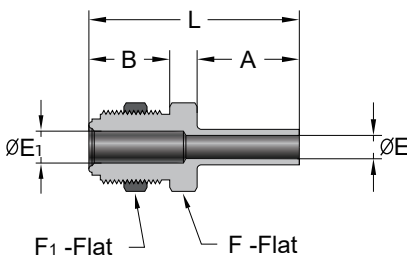
Tube Butt Weld

Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions						Working Pressure		
			L	A	B	E	E ₁	T	6L	NI	CU
Dimensions, mm (in.)			bar (psig)								
3/8	1/4	-VR4-HB-TB6-12-	42.7 (1.68)	19.1 (0.75)	15.7 (0.62)	6.4 (0.25)	7.9 (0.31)	5/8	227 (3300)		



Automatic Tube Weld

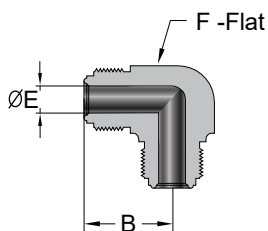
Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions								Working Pressure		
			L	A	B	D	E	E ₁	F	T _x	6L	NI	CU
Dimensions, mm (in.)			bar (psig)										
3/8	1/4	-VR4-HBA-TB6-12-	43.4 (1.71)	19.1 (0.75)	15.7 (0.62)	0.8 (0.03)	6.4 (0.25)	7.9 (0.31)	5/8	10.4 (0.41)	227 (3300)		



Bulkhead

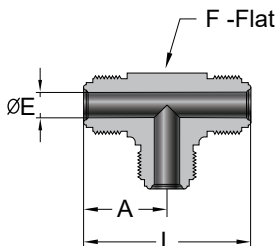
Tube O.D. T	VR Size in.	Basic Ordering Number	Dimensions									Working Pressure			
			L	A	B	E	E ₁	F	F ₁	Panel Hole Dia	Max. Panel Thickness	6L	NI	CU	
Dimensions, mm (in.)													bar (psig)		
3/8	1/4	-VR4-HBN-TB6-12-	59.9 (2.36)	19.1 (0.75)	33.0 (1.30)	7.9 (0.31)	6.4 (0.25)	3/4	3/4	15.0 (19/32)	11.2 (0.44)	227 (3300)			

Union Elbow



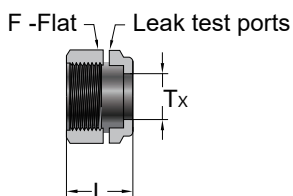
VR Size in.	Basic Ordering Number	Dimensions			Working Pressure				
		B	E	F	6L	NI	CU		
Dimensions, mm (in.)							bar (psig)		
1/4	-VR4-HUL-	27.2 (1.07)	6.4 (0.25)	1/2	689 (10000)	551 (8000)	440 (6400)		

Union Tee



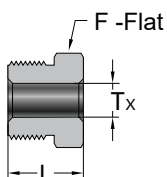
VR Size in.	Basic Ordering Number	Dimensions				Working Pressure				
		L	B	E	F	6L	NI	CU		
Dimensions, mm (in.)								bar (psig)		
1/4	-VR4-HUT-	54.4 (2.14)	27.2 (1.07)	6.4 (0.25)	1/2	689 (10000)	551 (8000)	440 (6400)		

Female Nut



VR Size in.	Basic Ordering Number	Dimensions		
		L	F	T _x
Dimensions, mm (in.)				
1/4	-VR4-HFN-	20.6 (0.81)	3/4	9.9 (0.39)
	-VR4-HFN-H-			11.7 (0.46)

Male Nut

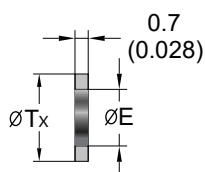


VR Size in.	Basic Ordering Number	Dimensions		
		L	F	T _x
Dimensions, mm (in.)				
1/4	-VR4-HMN-	18.0 (0.71)	5/8	9.9 (0.39)

Gasket

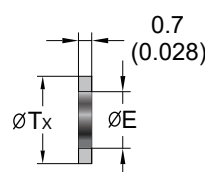
- Unplated 316L SS and nickel gaskets are electropolished and conform to the Ultra High Purity Process (CP3) , with a maximum helium leak rate of 4×10^{-11} std cm³/s
- Silver-plated 316L SS and nickel gaskets conform to the Special Clean and Packaging for oxygen-rich condition (CP2) , maximum helium leak rate of 4×10^{-9} std cm³/s
- Copper gaskets conform to the Special Clean and Packaging for oxygen-rich condition (CP2) , maximum helium leak rate of 4×10^{-9} std cm³/s
- Blind gasket retainer assemblies are available (Only support unplated) , Max. differential pressure rating (ΔP) 6.8 bar (100 psi) , To order, Add "BL"
Example: 6L-VR4-GA-BL

Silver Plated *Nonretained*



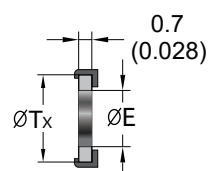
VR Size in.	Basic Ordering Number	Dimensions	
		E	Tx
Dimensions, mm (in.)			
1/8	-VR2-GA-P	2.3 (0.09)	6.6 (0.26)
1/4	-VR4-GA-P	5.6 (0.22)	11.9 (0.47)
1/2	-VR8-GA-P	11.2 (0.44)	19.8 (0.78)
5/8	-VR10-GA-P	14.7 (0.58)	23.1 (0.91)
3/4	-VR12-GA-P	16.8 (0.66)	29.0 (1.14)
1	-VR16-GA-P	22.6 (0.89)	35.6 (1.40)

Unplated *Nonretained*



VR Size in.	Basic Ordering Number	Dimensions	
		E	Tx
Dimensions, mm (in.)			
1/8	-VR2-GA-	2.3 (0.09)	6.6 (0.26)
1/4	-VR4-GA-	5.6 (0.22)	11.9 (0.47)
1/2	-VR8-GA-	11.2 (0.44)	19.8 (0.78)
5/8	-VR10-GA-	14.7 (0.58)	23.1 (0.91)
3/4	-VR12-GA-	16.8 (0.66)	29.0 (1.14)
1	-VR16-GA-	22.6 (0.89)	35.6 (1.40)

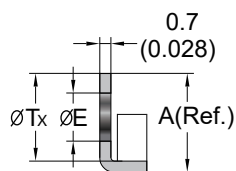
Unplated *Gasket Retainer Assembly*



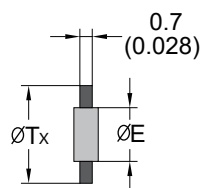
VR Size in.	Basic Ordering Number	Dimensions	
		E	Tx
Dimensions, mm (in.)			
1/4	-VR4-GA-UP	6.1 (0.24)	12.7 (0.50)
1/2	-VR8-GA-UP	11.2 (0.44)	20.1 (0.79)
3/4	-VR12-GA-UP	16.8 (0.66)	29.0 (1.14)
1	-VR16-GA-UP	22.6 (0.89)	35.6 (1.40)

Gaskets are used with retainers Retainers are 316L SS

Unplated *Side-Load Retainer*



VR Size in.	Basic Ordering Number	Dimensions		
		E	Tx	A (Ref.)
Dimensions, mm (in.)				
1/4	-VR4-GA-S	5.6 (0.22)	11.4 (0.45)	12.2 (0.48)
1/2	-VR8-GA-S	11.2 (0.44)	18.8 (0.74)	19.5 (0.77)

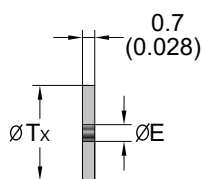


Unplated *Snubber Gaskets*

VR Size in.	Basic Ordering Number	Dimensions
		Tx
Dimensions, mm (in.)		
1/4	-VR4-GA-XXM	11.9 (0.47)
1/2	-VR8-GA-XXM	19.8 (0.78)
3/4	-VR12-GA-XXM	29.0 (1.14)
1	-VR16-GA-XXM	35.6 (1.40)

- ① Snubber gaskets with filtration accuracy of 0.5 to 60 µm.
- ② For 1/4" 316L SS snubber gaskets with filtration accuracy of 0.5 µm
Example: 6L-VR4-GA-05M.

Unplated *Restriction Gaskets*



VR Size in.	Basic Ordering Number	Dimensions	
		Tx	E
Dimensions, mm (in.)			
1/8	-VR2-GA-XXL	6.6 (0.26)	XX
1/4	-VR4-GA-XXL	11.9 (0.47)	XX
1/2	-VR8-GA-XXL	19.8 (0.78)	XX
3/4	-VR12-GA-XXL	29.0 (1.14)	XX
1	-VR16-GA-XXL	35.6 (1.40)	XX

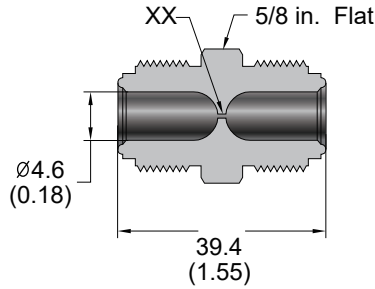
- ① Gaskets are used without retainers
- ② For 0.5 mm 316L SS restriction gasket
Example: 6L-VR4-GA-05L;
For 2 mm 316L SS restriction gasket
Example: 6L-VR4-GA-2L.

Options and Accessories

Flow Restrictors

This product can be used in liquid or gas delivery systems where repeatable flow reduction or limiting is required.

- One piece, compact design saves space
- Standard orifice sizes drilled through a 1/4 in. male VR union
- No dead space for clean operation
- Identification of orifice and heat code marked clearly on the body
- Electropolished, cleaned, and packaged in accordance with Ultra high Purity Process Specification (CP3)



VR components with fixed threads must remain stationary during installation. These fitting connections should be assembled only to glands with rotating male or female threaded nuts.

XX mm (in.)	Basic Ordering Number
0.254 (0.010)	-VR2-U-DM-010
0.305 (0.012)	-VR2-U-DM-012
0.381 (0.015)	-VR2-U-DM-015
0.432 (0.017)	-VR2-U-DM-017
0.508 (0.020)	-VR2-U-DM-020
0.584 (0.023)	-VR2-U-DM-023
0.635 (0.025)	-VR2-U-DM-025
0.660 (0.026)	-VR2-U-DM-026
0.686 (0.027)	-VR2-U-DM-027

XX mm (in.)	Basic Ordering Number
0.762 (0.030)	-VR2-U-DM-030
0.889 (0.035)	-VR2-U-DM-035
1.016 (0.040)	-VR2-U-DM-040
1.143 (0.045)	-VR2-U-DM-045
1.270 (0.050)	-VR2-U-DM-050
1.397 (0.055)	-VR2-U-DM-055
1.529 (0.060)	-VR2-U-DM-060
1.651 (0.065)	-VR2-U-DM-065
1.778 (0.070)	-VR2-U-DM-070

XX mm (in.)	Basic Ordering Number
1.905 (0.075)	-VR2-U-DM-075
2.032 (0.080)	-VR2-U-DM-080
2.159 (0.085)	-VR2-U-DM-085
2.286 (0.090)	-VR2-U-DM-090
2.362 (0.093)	-VR2-U-DM-093
2.413 (0.095)	-VR2-U-DM-095
2.540 (0.100)	-VR2-U-DM-100

Lock and Tag Devices

These devices help prevent unintentional disassembly of VR connections. Additionally, both devices include a wire hole to allow for a tag to support identification and quality verification programs. material is 304 SS.



VR Size in.	Ordering Number
1/4	4S-VR4-LK
1/2	4S-VR8-LK