TVI

Texas Valve & Instruments, LLC

Samples Cylinders & Accessories

SULFINERT COATING AVAILABLE

DOT 3E Sample Cylinders

Rupture Discs and
Rupture Disc Valves

Relief Valves and
Relief Valve/Mini Valve
Combo

Premium Mini Valves with PEEK© Seats

Constant Pressure
Cylinders

240723-2

Contents

DOT-3E SAMPLE CYLINDERS

CYLINDER VALVES
- MINI VALVES
- NON ROTATING STEM VALVES

OUTAGE TUBES

PRESSURE RELIEF DEVICES

CONSTANT PRESSURE CYLINDERS

QUICK CONNECTS

ACCESSORIES

For more information about the complete line of products and services by TVI, visit our web site or contact the sales representative nearest you.

www.TVI-I.com

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SULFINERT COATING AVAILABLE

Characteristics

- Internal neck formed for easy cleaning
- Heavy wall neck to prevent splitting and flaring

Features

- Body made of seamless stainless steel tubing
- Aircraft quality NPT threads
- Sizes range from 40 to 500 cc
- Working pressures to 1,800 psig
- 316L stainless steel-standard
- Monel 400, Hastelloy C-276 available

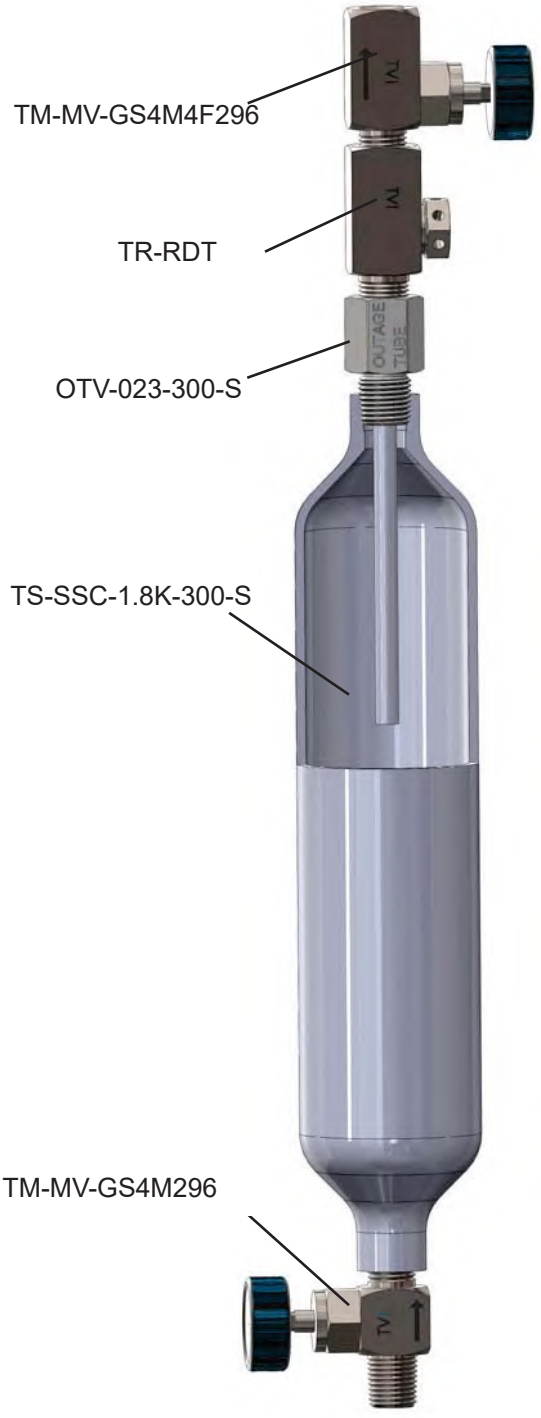
Specifications

- Manufactured to DOT requirements 49 CFR Part 178
- All DOT-3E cylinders are hydrostatically test to 5/3x working pressure. Certificates of testing data are available for a nominal fee.
- One cylinder of each lot or one of every 500 cylinders is burst tested, which ever is the smaller number.
- DOT-3E

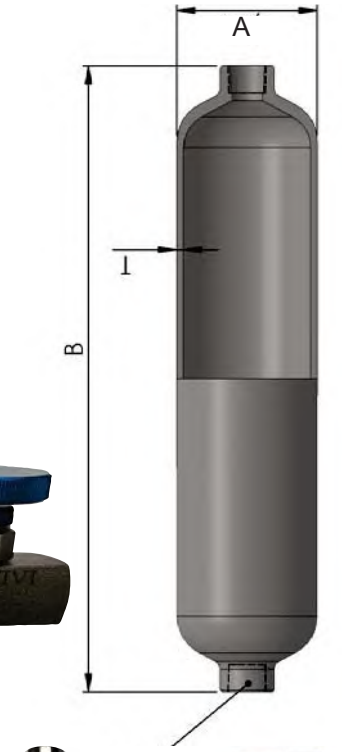
Pressure & Temperature Ratings

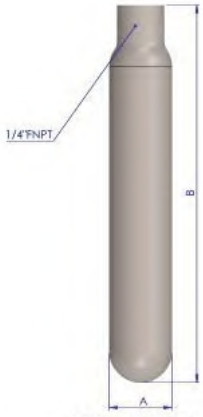
Temperature (°F)	Working Pressure
-65 to 100	1800
200	1360
300	1230
400	1130
500	1050
600	1000
700	970
800	930

Cylinder Assembly with Outage Tube, Rupture Disc Assembly and Sample Valves



Sample Cylinders





SINGLE ENDED
50CC ONLY
P/N: TS-SSCA-1.8K-50-S

SULFINERT COATING AVAILABLE

Cylinder Dimensions

Part No.	Specification	Internal Volume (cc ± 5%	Dimensions (Inches)			NPT Thread P	Pressure Rating	Weight (lb)
			A	B	T			
TS-SSC-1.8K-40-S-S	DOT-3E	50	1.50	3.75	0.070	1/8	1,800 PSI	0.4
TS-SSC-1.8K-50-S-S	DOT-3E	50	1.50	3.75	0.093	1/4		0.4
TS-SSC-1.8K-75-S-S	DOT-3E	75	1.50	4.94	0.093	1/4		0.5
TS-SSC-1.8K-150-S-S	DOT-3E	150	1.98	5.75	0.093	1/4		0.9
TS-SSC-1.8K-300-S-S	DOT-3E	300	1.98	9.50	0.093	1/4		1.8
TS-SSC-1.8K-400-S-S	DOT-3E	400	1.98	12.00	0.093	1/4		2.3
TS-SSC-1.8K-500-S-S	DOT-3E	500	1.98	15.00	0.093	1/4		2.8
TS-SSC-1.8K-1000-S-S	DOT-SP-16195	1000	3.56	10.80	0.206	1/4		6.5
TS-SSC-1.8K-2250-S-S		2250	4.00	16.00	0.093	1/4		11.3
TS-SSC-1.8K-3785-S-S		1 Gal (3785cc)	4.00	25.50	0.209	1/4		18.6

**Replace the S with an M for Monel 400*

Sulfinert® Sample Cylinders

TVI stocks 300, 500, & 1000 cc Sizes

Refinery and natural gas samples often contain trace amounts of sulfur-containing compounds which can interfere with reactions or poison catalysts in petrochemical processes. Because sulfur compounds quickly react with stainless steel surfaces, accurate determination of these compounds is impossible when samples are collected and stored in untreated sample cylinders. Sulfinert® passivation technique bonds an inert silica layer into the surface of stainless steel, preventing active compounds from reacting with or adsorbing to the steel. These high pressure sample cylinders are Sulfinert® treated for greater stability of sulfur compounds and mercury. DOT 3E & SP cylinders allow sampling at gas wellheads as well as in the refinery.

Cylinder Dimensions:

Part No.	Specification	Internal Volume (cc ± 5%	Dimensions (Inches)			NPT Thread P	Pressure Rating	Weight (lb)
			A	B	T			
TS-SSC-1.8K-40-S-S	DOT-3E	50	1.50	3.75	0.070	1/8	1,800 PSI	0.4
TS-SSC-1.8K-50-S-S	DOT-3E	50	1.50	3.75	0.093	1/4		0.4
TS-SSC-1.8K-75-S-S	DOT-3E	75	1.50	4.94	0.093	1/4		0.5
TS-SSC-1.8K-150-S-S	DOT-3E	150	1.98	5.75	0.093	1/4		0.9
TS-SSC-1.8K-300-S-S	DOT-3E	300	1.98	9.50	0.093	1/4		1.8
TS-SSC-1.8K-400-S-S	DOT-3E	400	1.98	12.00	0.093	1/4		2.3
TS-SSC-1.8K-500-S-S	DOT-3E	500	1.98	15.00	0.093	1/4		2.8
TS-SSC-1.8K-1000-S-S	DOT-SP-16195	1000	3.56	10.80	0.206	1/4		6.5
TS-SSC-1.8K-2250-S-S		2250	4.00	16.00	0.093	1/4		11.3
TS-SSC-1.8K-3785-S-S		1 Gal (3785cc)	4.00	25.50	0.209	1/4		18.6

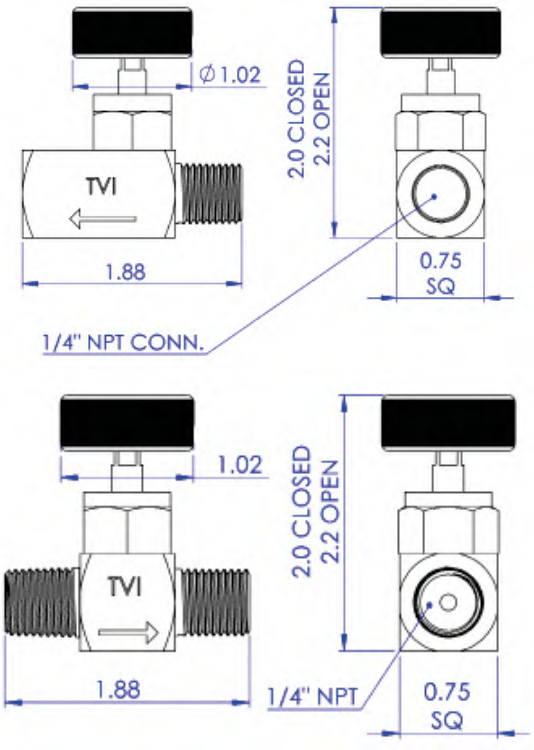
Sulfinert® Mini Sampling Valves

TVI stocks all configurations

Refinery and natural gas samples often contain trace amounts of sulfur-containing compounds which can interfere with reactions or poison catalysts in petrochemical processes. Because sulfur compounds quickly react with stainless steel surfaces, accurate determination of these compounds is impossible when samples are collected and stored in untreated sample cylinders. Sulfinert® passivation technique bonds an inert silica layer into the surface of stainless steel, preventing active compounds from reacting with or adsorbing to the steel.

1/4” MALE X FEMALE

1/4” MALE X MALE



Part Number	316 SS	C.S.	Configuration
TV-MV-GS4M4F296-S	X		1/4" Male x 1/4" Female
TV-MV-GS4M296-S	X		1/4" Male x 1/4" Male

STAINLESS STEEL MINI VALVES FOR LIQUID PROPANE SERVICE

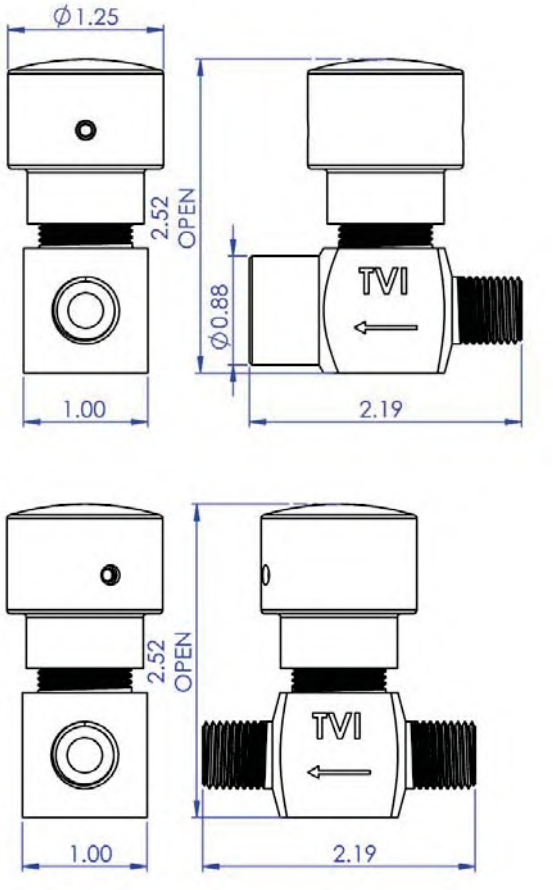
Specifications:

Materials of Construction:

WETTED PARTS: 316 SS
Handle: Anodized Aluminum
Orings: Low Temp Viton
Seat: PCTFE
Pressure Rating:
316SS - 3000 psi @ 200 F
Temp Range:
Low Temp: -65 F to 275 F
High Temp: -15F to 450F

Features

- Stem lifting threads are isolated from process. This prevents contamination and galling
- Non-Rotating Stem provide longer lasting and more positive shut off
- Stem sealing tip is easily replacble
- Designed to be used in 100 C oven
- Designed for severe field service
- Low Temperature Orings

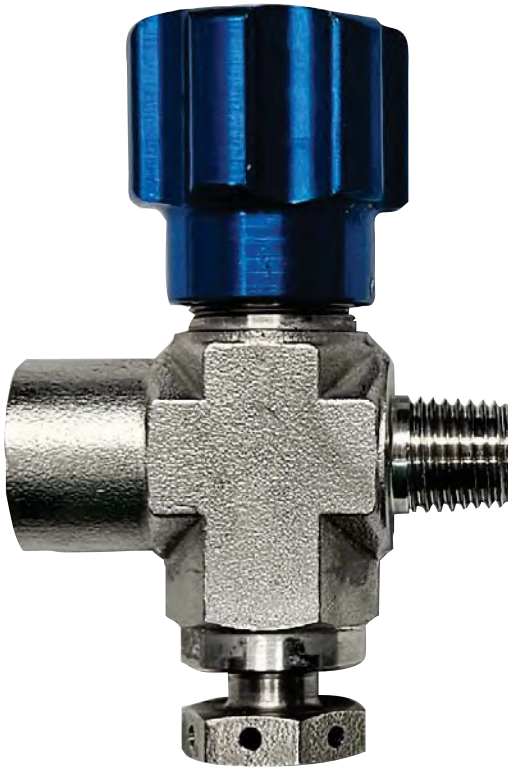


Part Number	316 SS	C.S.	Configuration
TV-NRS-GS4M4F286	X		1/4" Male x 1/4" Female
TV-NRS-GS4M286	X		1/4" Female x 1/4" Female

Cylinder Valve-Rupture Disc Combo

Characteristics

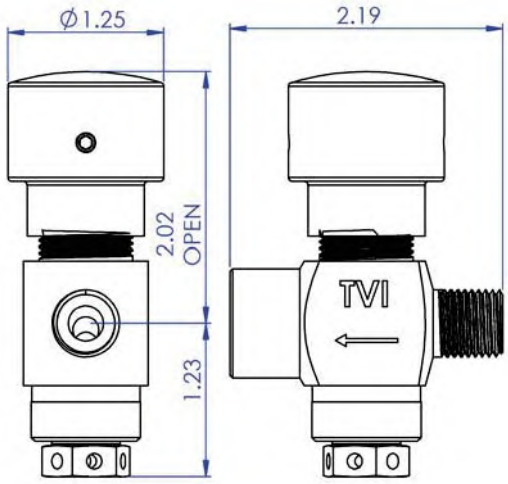
- Compact Construction
- Incorporated the cylinder valve and rupture disc in a single housing
- Designed to retrofit to most rupture disc bodies
- Features
- Wetted Material: 316L
- O-rings: Viton 75; others available
- Seat: PEEK std.
- Seat: PCTFE available to 3000 psi
- Burst Pressure: See Disc Selection
- 1/4" FNPT Outlet



SULFINERT COATING AVAILABLE

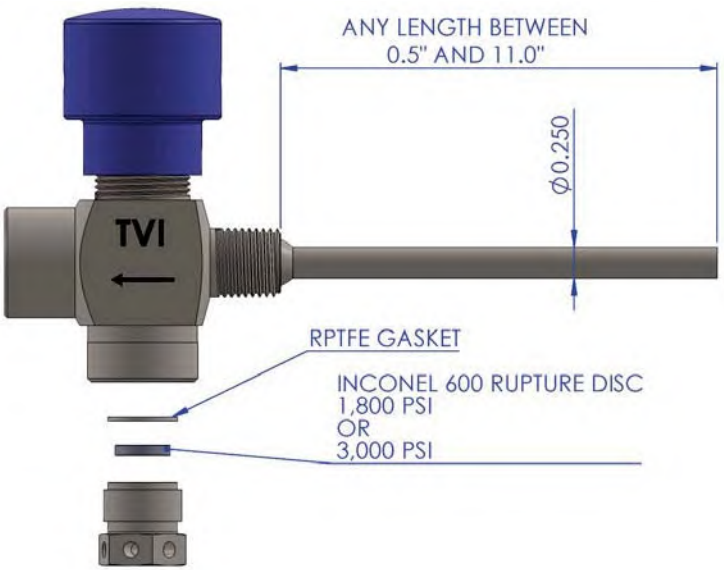
NOTES:

- Do not use a rupture disc in a location where the sudden release of the material would pose a hazard.
- The burst pressure is identified by a color coated dot on the top of the disc retainer. Do not subsitute any other burst disc. A DeTec -TVI disc must be used.
- Make certain there is an isolation valve between the system being sampled and the rupture disc assembly. This is necessary so the system can be closed if the disc bursts.
- Expansion of liquified gases due to small temperature changes may cause a rupture disc to release the cylinder contents. Appropriate regulations and guidelines should be followed to establish safe filling limits.



Part Number	RUPTURE DISC
TR-DVS-AMF-1800	1800 PSI
TR-DVS-AMF-3000	3000 PSI

STAINLESS STEEL MINI VALVES FOR LIQUID PROPANE SERVICE WITH BUILT-IN RUPTURE DISC & OUTAGE TUBE



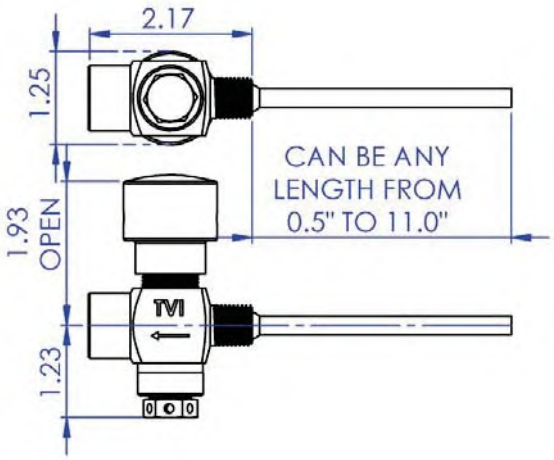
Specifications:

Materials of Construction:

WETTED PARTS: 316 SS
Handle: Anodized Aluminum
Orings: Low Temp Viton
Seat: PCTFE
Pressure Rating:
316SS - 3000 psi @ 200 F
Temp Range:
Low Temp: -65 F to 275 F
High Temp: -15F to 450F

Features

- Stem lifting threads are isolated from process. This prevents contamination and galling
- Non-Rotating Stem provide longer lasting and more positive shut off
- Stem sealing tip is easily replacble
- Designed to be used in 100 C oven
- Designed for severe field service
- Low Temperature Orings
- Low Temperature Lubricants
- 0.218 Orifice
- Built-in Inconel 600 rupture disc



Part Number	RUPTURE DISC	OUTAGE TUBE LENGTH
TR-DVS-MF-OT-1800-X	1800 PSI	X=LENGTH IN INCHES
TR-DVS-MF-OT-3000-X	3000 PSI	X=LENGTH IN INCHES

STAINLESS STEEL MINI VALVES FOR LIQUID PROPANE SERVICE WITH RELIEF VALVE

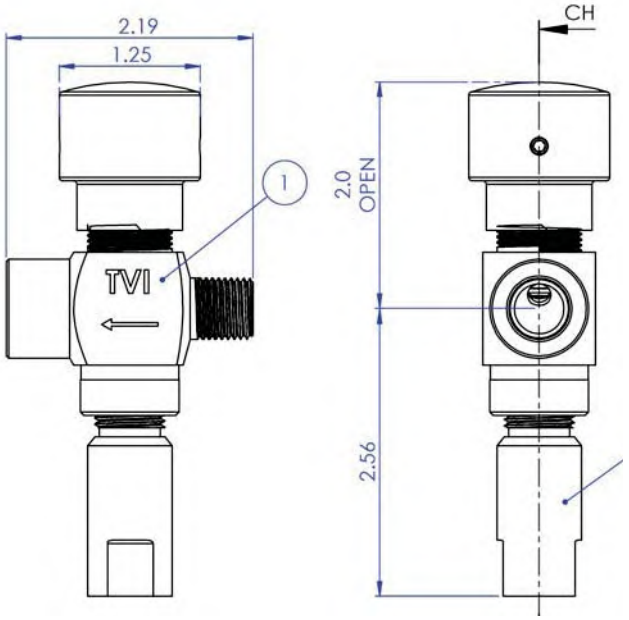
Specifications:

Materials of Construction:

WETTED PARTS: 316 SS
Handle: Anodized Aluminum
Orings: Low Temp Viton
Seat: PCTFE
Pressure Rating:
316SS - 3000 psi @ 200 F
Temp Range:
Low Temp: -65 F to 275 F
High Temp: -15F to 450F

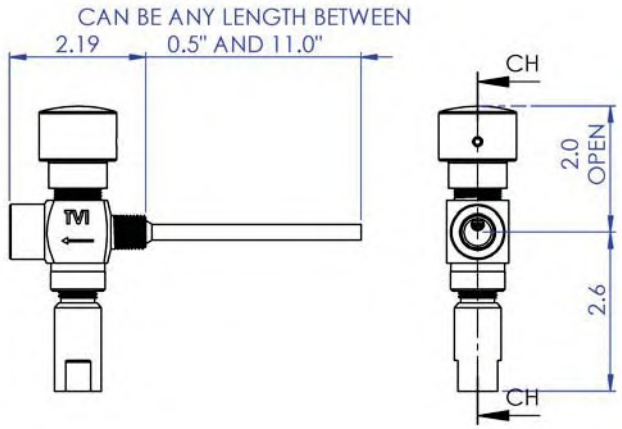
Features

- Stem lifting threads are isolated from process. This prevents contamination and galling
- Non-Rotating Stem provide longer lasting and more positive shut off
- Stem sealing tip is easily replacble
- Designed to be used in 100 C oven
- Designed for severe field service
- Low Temperature Orings
- Low Temperature Lubricants
- 0.218 Orifice
- Built-in Inconel 600 rupture disc
- Relief valve set at 1,800 psi



Part Number	SET PRESSURE
TR-RVM-AMF-1800	1800 PSI

STAINLESS STEEL MINI VALVES FOR LIQUID PROPANE SERVICE WITH RELIEF VALVE & OUTAGE TUBE



Features

- Stem lifting threads are isolated from process. This prevents contamination and galling
- Non-Rotating Stem provide longer lasting and more positive shut off
- Stem sealing tip is easily replacble
- Designed to be used in 100 C oven
- Designed for severe field service
- Low Temperature Orings
- Low Temperature Lubricants
- 0.218 Orifice
- Built-in Inconel 600 rupture disc
- Relief valve set at 1,800 psi

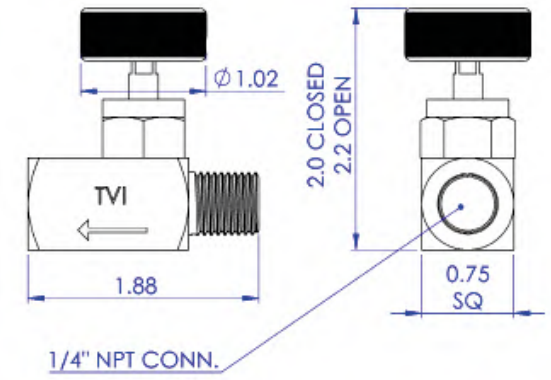
Specifications:

Materials of Construction:

WETTED PARTS: 316 SS
Handle: Anodized Aluminum
Orings: Low Temp Viton
Seat: PCTFE
Pressure Rating:
316SS - 3000 psi @ 200 F
Temp Range:
Low Temp: -65 F to 275 F
High Temp: -15F to 450F

Part Number	SET PRESSURE	OUTAGE TUBE LENGTH
TR-RVM-AMF-OT-1800-X	1800 PSI	X=LENGTH IN INCHES

STAINLESS STEEL MINI VALVES WITH PEEK™ SEATS



Specifications:

Materials of Construction:

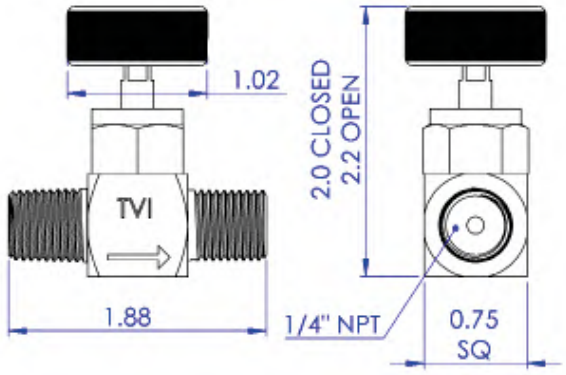
Metal: See Chart Below

Orings: Viton 75 std.
Others available

Seat: PEEK std. Others available

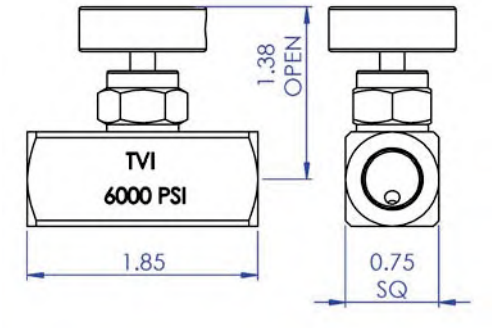
Pressure Rating:

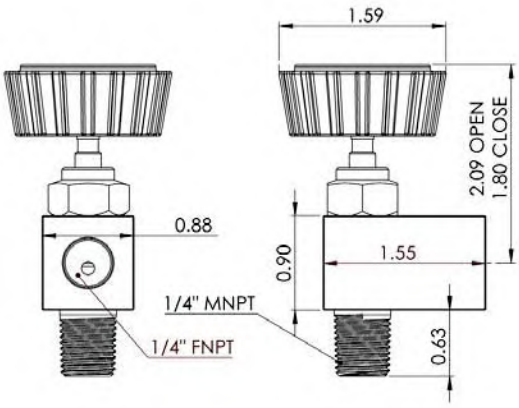
316SS - 6000 psi @ 300 F
C.S. - 6000 psi @ 300 F
Brass - 3000 psi @ 300 F



Part Number	316 SS	C.S.	Brass	Monel 400	Configuration
TV-MV-GS4M4F296	X				1/4" Male x 1/4" Female
TV-MV-GS4F296	X				1/4" Female x 1/4" Female
TV-MV-GS4M296	X				1/4" Male x 1/4" Male
TV-MV-GS4M4FA296	X				1/4" Mxf ANGLE
TV-MV-GC4M4F296		X			1/4" Male x 1/4" Female
TV-MV-GC4M296		X			1/4" Male x 1/4" Male
TV-MV-GB4M4F296			X		1/4" Male x 1/4" Female
TV-MV-GB4M296			X		1/4" Male x 1/4" Male
TV-MV-GM4M4F296				X	1/4" Male x 1/4" Female
TV-MV-GM4M296				X	1/4" Male x 1/4" Male

STAINLESS STEEL MINI VALVES WITH PEEK™ SEATS





Specifications:

Materials of Construction:

Metal: See Chart Below

Orings: Viton 75 std. Others available

Seat: PEEK std. Others available

Pressure Rating:

316SS - 6000 psi @ 300 F
C.S. - 6000 psi @ 300 F
Brass - 3000 psi @ 300 F

Part Number	316 SS	C.S.	Brass	Monel 400	Configuration
TV-MV-GS4M4F296	X				1/4" Male x 1/4" Female
TV-MV-GS4F296	X				1/4" Female x 1/4" Female
TV-MV-GS4M296	X				1/4" Male x 1/4" Male
TV-MV-GS4M4FA296	X				1/4" Mxf ANGLE
TV-MV-GC4M4F296		X			1/4" Male x 1/4" Female
TV-MV-GC4M296		X			1/4" Male x 1/4" Male
TV-MV-GB4M4F296			X		1/4" Male x 1/4" Female
TV-MV-GB4M296			X		1/4" Male x 1/4" Male
TV-MV-GM4M4F296				X	1/4" Male x 1/4" Female
TV-MV-GM4M296				X	1/4" Male x 1/4" Male

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Rupture Disc Assy With Outage Tube

Part No. xxx= Outage Code	Minimum Outage (%)				
	10%	20%	30%	40%	50%
OTRD-xxx-150-S	011	015	018	021	025
OTRD-xxx-300-S	017	023	030	037	043
OTRD-xxx-500-S	027	034	045	056	067
OTRD-xxx-1000-S	029	046	060	075	091

Outage Tubes For TVI Cylinders

Part No. xxx= Outage Code	Minimum Outage (%)				
	10%	20%	30%	40%	50%
OT-xxx-150-S	011	015	018	021	025
OT-xxx-300-S	017	023	030	037	043
OT-xxx-500-S	027	034	045	056	067
OT-xxx-1000-S	029	046	060	075	091

All Outage Tubes are 316 SS Construction

Rupture Discs

Characteristics

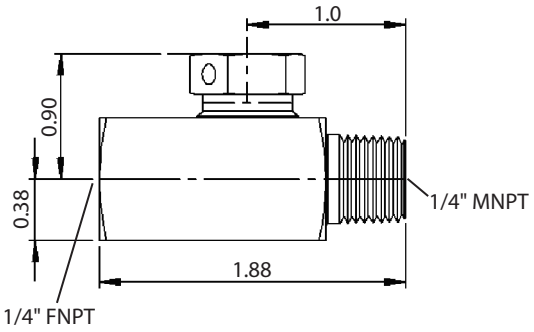
- Compact Construction
- Designed to be mounted in line between a cylinder and a mini valve

Features

- Body Material: 316L
- Retainer Material: 316L
- Designed for a Metal to Metal Seal
- Rupture Disc Material: Alloy 600

Dimensions:

Rupture Disc Assembly
Part No. TR-RDT-A



Burst Disc Configurations*

RD-1750-44-A600 RD-1750-56-A600

Part No.	Burst Pressure	Diameter
TR-RD-1750-44-A600	1800 psi	0.44
TR-RD-1750-56-A600	1800 psi	0.56
TR-RD-2950-44-A600	3000 psi	0.44
TR-RD-2950-56-A600	3000 psi	0.56
TR-RD-5000-44-A600	5000 psi	0.44
TR-RD-5000-56-A600	5000 psi	0.56

NOTES:

- Do not use a rupture disc in a location where the sudden release of the material would pose a hazard.
- The burst pressure is identified by a color coded dot on the top of the disc retainer. Do not subsitute any other burst disc. A DeTec disc must be used.
- Make certain there is an isolation valve between the system being sampled and the rupture disc assembly. This is necessary so the system can be closed if the disc bursts.
- Expansion of liquified gases due to small temperature changes may cause a rupture disc to release the cylinder contents. Appropriate regulations and guidelines should be followed to

* FLAT RETAINER RING IS STANDARD

FITS MOST RUPTURE DISC HOLDER OF THE SAME DIAMETER

Can be used with a Teflon Gasket

SULFINERT COATING AVAILABLE

DOT 3E Cylinder - Relief Valves

Characteristics

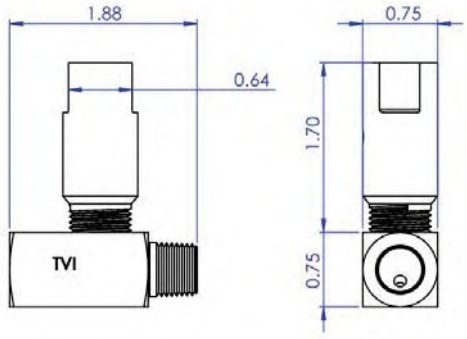
- Compact Construction
- Designed to be mounted in line between a cylinder and a mini valve
- Designed to retrofit to most rupture disc bodies
- Features
- Body Material: 316L
- Retainer Material: 316L
- Seat: Viton 75
- Spring : S.S.
- Set Point: Adjustible - 1500 psi to 2500 psi
- 1/4" FNPT Outlet

Inline Mounting

Part Numbers:

TR-RVA-A-MXF

1/4" FNPT Male x Female



NOTES:

- Do not use a relief valve in a location where the sudden release of the material would pose a hazard.
- Make certain there is an isolation valve between the system being sampled and the relief valve assembly. This is necessary so the system can be closed if the disc bursts.
- Expansion of liquified gases due to small temperature changes may cause a pressure relief valve to release the partial cylinder contents. Appropriate regulations and guidelines should be followed to establish safe filling limits.

Part No. TR-RV-A

5/8"-18 UNF-2A

Connection

Fits Most Holders

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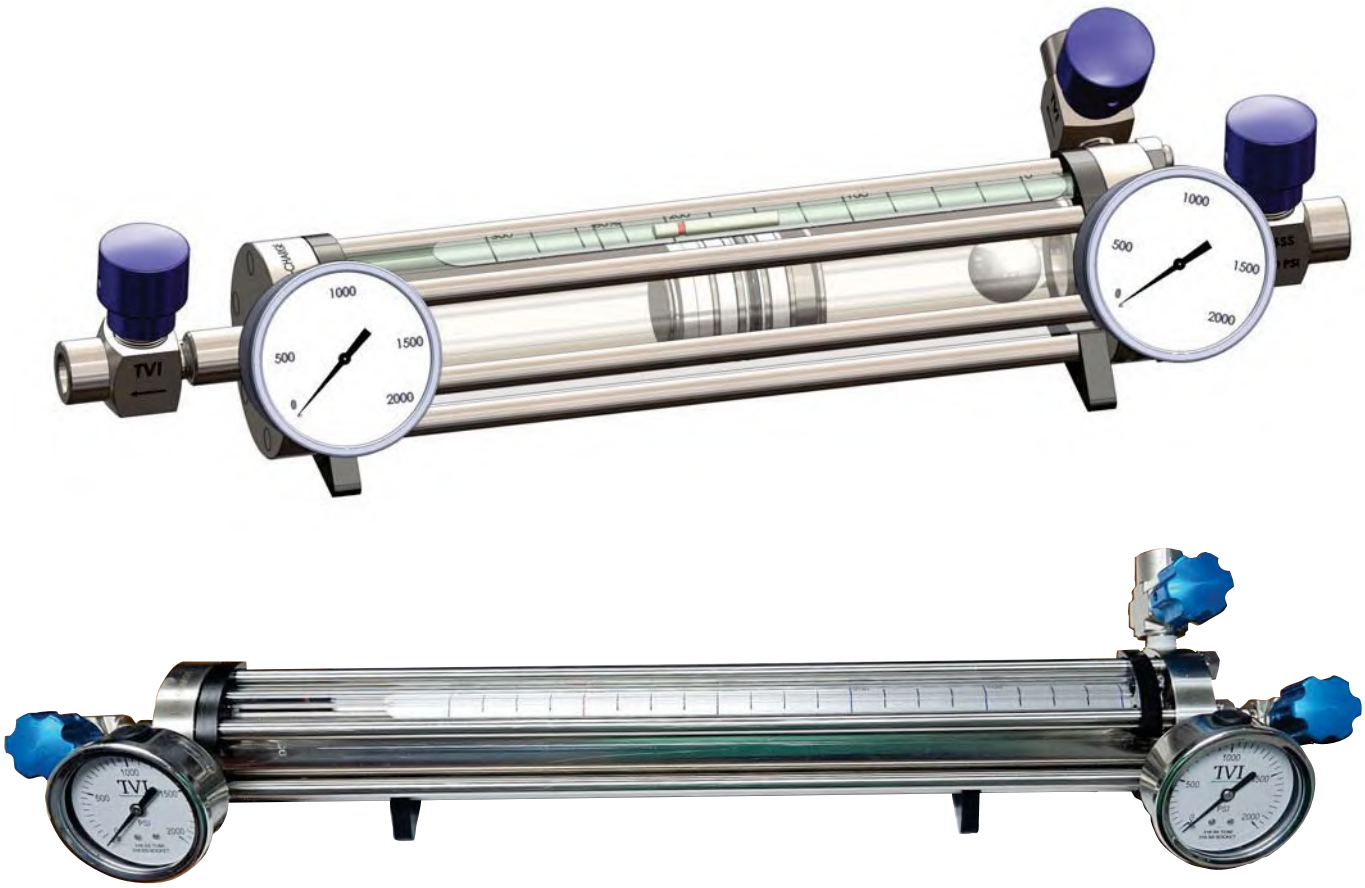
CONSTANT PRESSURE SAMPLE CYLINDER

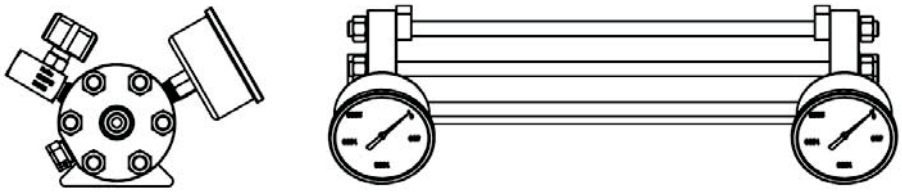


Designed as DOT 3E with Special Permit # SP-20245

FEATURES

- ELECTRO POLISHED CYLINDER BORE
- NON-HYDRO CARBON LUBRICANT
- VERY LOW FRICTION FOR LOW PRESSURE APPLICATIONS
- PEEK© SEATS ON NEEDLE VALVES FOR LONG LIFE
- EASY CLEAN UP
- GAUGES CAN BE SIZED TO THE APPLICATION
- CYLINDER RATED FOR 1800 PSI
- EASY TO READ MAGNETIC SCALE
- TEFLON MIXING BALL MEANS NO DENTS OR SCRATCHES TO CYLINDER BORE
- SPECIAL VORTEX MIXER AVAILABLE FOR HIGH GRAVITY FLUIDS
- RATED FOR 300 F
- SULFINERT™ WETTED PARTS ARE AVAILABLE

300 cc Size
SHOWN



Specifications	
Wetted Metal	316 SS
Elastomers	Viton; 90A Molythane
Tie Rods & Nuts	304 SS
Mixing Ball	PTFE
RUPTURE DISC	INCONEL 600
Pressure Rating of Cylinder	1800 PSi @ 200F
Valve Seats	Delrin
Valve Seals	Viton 75
Temperature Rating	300F

Dimensions & Weights		
Size	Overall Length	Weight
300 cc	13.6”	12.3 lbs
500 cc	20.5”	13.0 lbs
1000 cc	34.9”	19.0 lbs

TC-CP ☐ ☐ ☐ ☐ ☐

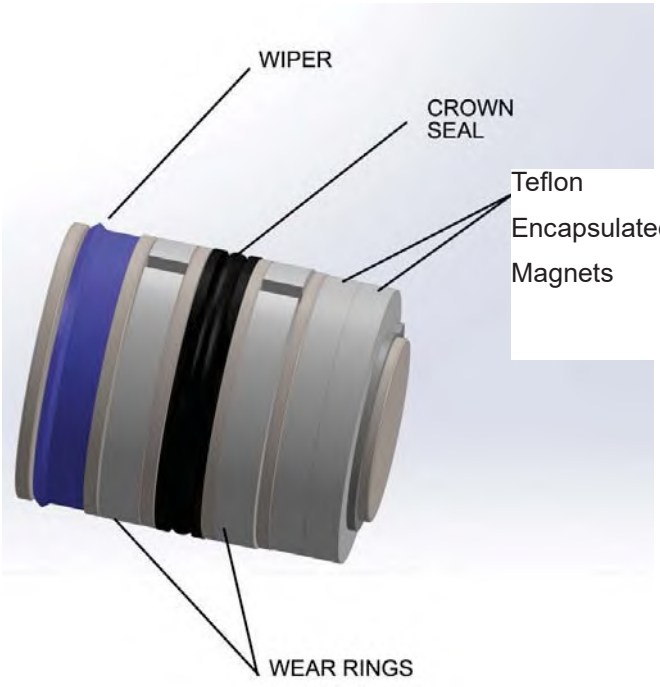
Size
3 = 300cc
5 = 500cc
10 = 1000cc

Cylinder Gauges
1 = 300 psi
2 = 600 psi
3 = 1000 psi
4 = 2000 psi

Metal Wetted Parts
1 = 316 SS
S = Sulfinerted™ 316 SS

Elastomers
V = Viton/Peek
K = Kalrez/PCTFE
E = EPDM/Peek
B = Buna/Peek

Mixer
S = PTFE Ball
V = Vortex Mixer

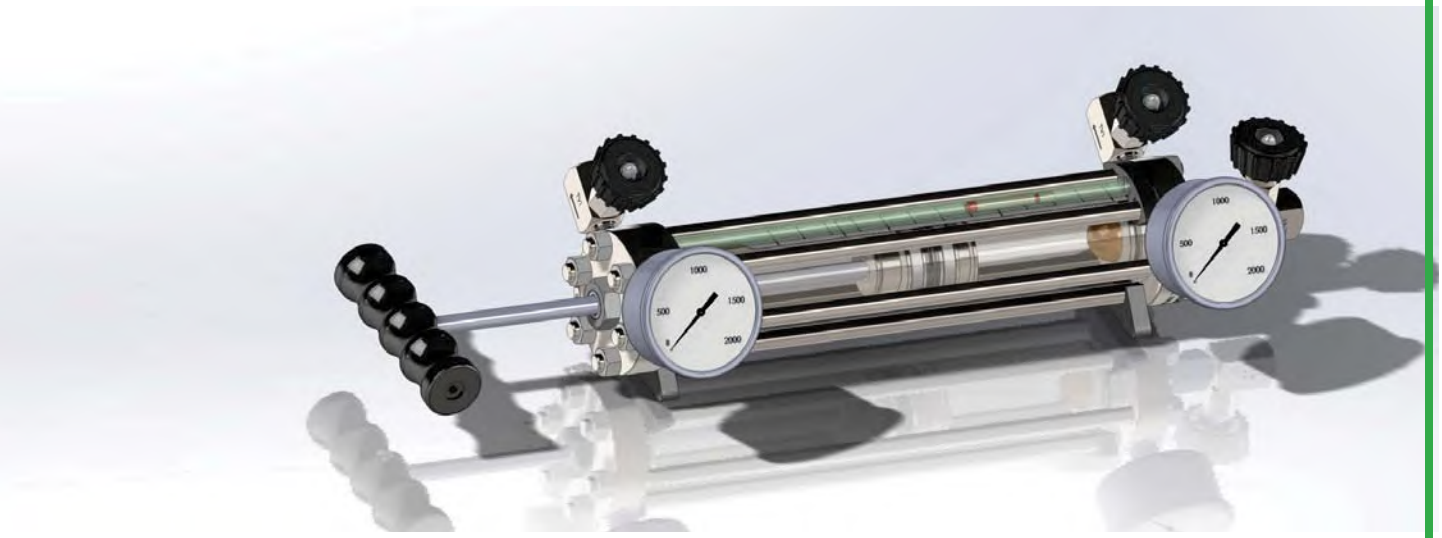


Piston Features

- Wear Rings - Prevent metal to metal contact between the piston and cylinder
- Teflon Encapulated Magnets - Prevent rust and corrosion from building up on the magnets

CP CYLINDER WITH ASSIST MECHANISM

Designed as DOT 3E with Special Permit #
SP-20245



Purpose:

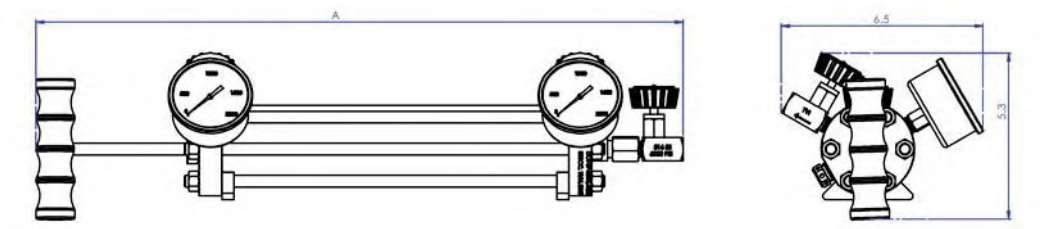
The assist handle model is designed for low pressure application where the process pressure is not sufficient to drive the piston rearward while collecting a sample. Our piston will typically move with at least 25 psi of differently pressure. If the application involves a lower pressure or the process characterisitcs are such that they can foul the piston, then the assist handle can be used to overcome the forces of “stickation”.

The assist handle is not recommended for high pressure applications.

FEATURES

- ELECTRO POLISHED CYLINDER BORE
- NON-HYDRO CARBON LUBRICANT
- VERY LOW FRICTION FOR LOW PRESSURE APPLICATIONS
- PEEK© SEATS ON NEEDLE VALVES FOR LONG LIFE
- EASY CLEAN UP
- GAUGES CAN BE SIZED TO THE APPLICATION
- CYLINDER RATED FOR 1800 PSI
- EASY TO READ MAGNETIC SCALE
- TEFLON MIXING BALL MEANS NO DENTS OR SCRATCHES TO CYLINDER BORE
- SPECIAL VORTEX MIXER AVAILABLE FOR HIGH GRAVITY FLUIDS
- RATED FOR 300 F
- SULFINERT™ WETTED PARTS ARE AVAILABLE
- CAN BE USED TO DRAW PROCESS SAMPLES FROM VACUUM TO 25 PSI.
- SAMPLE PRESSURES ABOVE 25 PSI SHOULD RELY ON PRE CHARGE GAS PRESSURE

500 cc Size
SHOWN



Specifications	
Wetted Metal	316 SS
Elastomers	Viton; 90A Molythane
Tie Rods & Nuts	304 SS
Mixing Ball	PTFE
RUPTURE DISC	INCONEL 600
Pressure Rating of Cylinder	1800 PSi @ 200F
Valve Seats	Delrin
Valve Seals	Viton 75
Temperature Rating	300F

Dimensions & Weight			
Size	Overall Lenght -Closed-inches	Overall Lenght - Open- inches	Weight-Pounds
300 cc	17.3	25.3	12.3
500 cc	21.8	29.8	13.0
1000 cc	38.3	46.3	19.0

TC-CPA [ ] [ ] [ ] [ ] [ ]

Size
3 = 300cc
5 = 500cc
10 = 1000cc

Cylinder Gauges
1 = 300 psi
2 = 600 psi
3 = 1000 psi
4 = 2000 psi

Metal Wetted Parts
1 = 316 SS
S = Sulfinerted™ 316 SS

Elastomers
V = Viton/Peek
K = Kalrez/PCTFE
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Mixer
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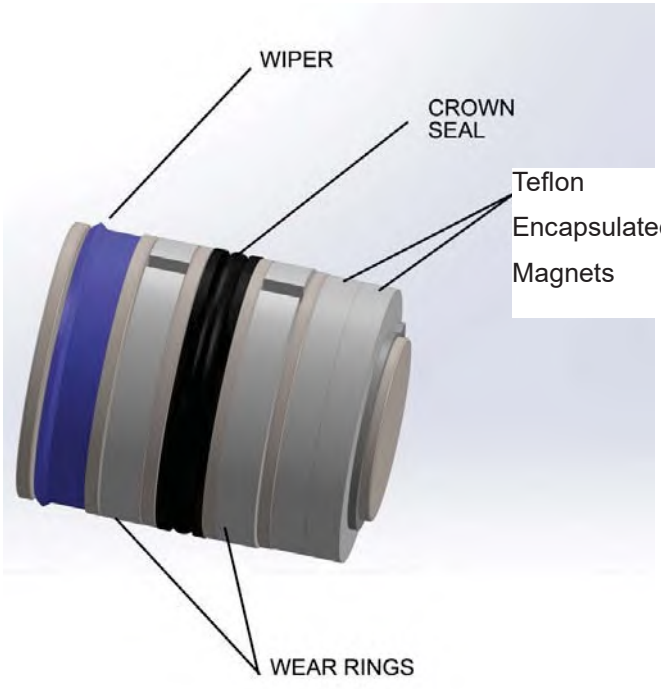
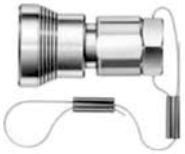


Piston Features

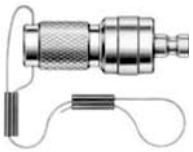
- Wear Rings - Prevent metal to metal contact between the piston and cylinder
- Teflon Encapulated Magnets - Prevent rust and corrosion from building up on the magnets

SAMPLE CYLINDER QUICK CONNECTS

MALE STEM



STEM PROTECTOR



BODY PROTECTOR

MALE BODY

FEMALE STEM

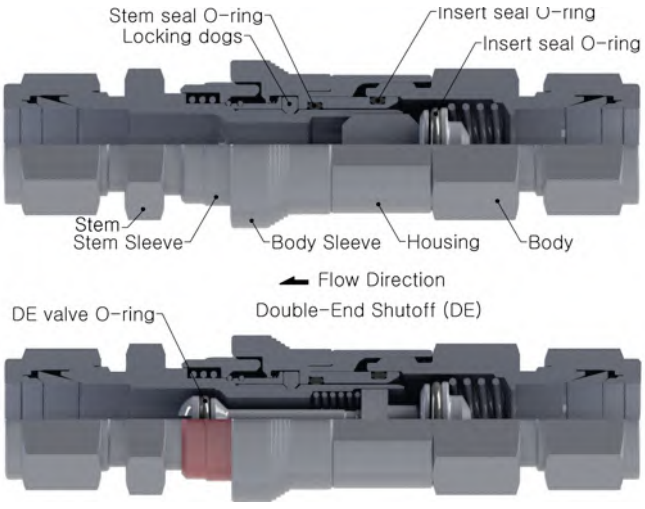
FEMALE BODY

FEATURES:

- Quick and easy operation
- Couples without tools
- When coupled the valve opens automatically
- When uncoupled the valve closes automatically
- Single end (SE) stems are open while separated from the body
- Double-end (DE) stems are shut off while separated from the body

OPERATION:

- Coupling: After aligning the stem and body, push the stem into the body
- Uncoupling: Pull the body sleeve toward the stem and remove the stem from the body
- Coupling and uncoupling should be done at room temperature
- Periodically relube stem seal orings.



SAMPLE CYLINDER QUICK CONNECTS

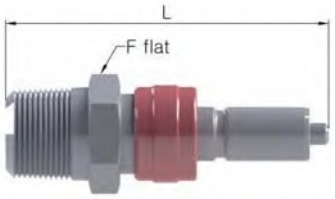
Materials of Construction	
Component	Material
Body, Body Insert, Body Sleeve Housing, Stem, and Valve	316L
DE Stem	316L-Urethane coated
SE Stem	316L
O-rings	FKM, FFKM, EPDM, NBR
Locking Dogs	Stainless Steel
Springs	Stainless Steel
Snap Rings	Stainless Steel

Pressure - Temperature Chart		
Material	316L	
Series	TVIQC4	TVIQC6
Temperature F (C)	Pressure Psig (Bar)	
Quick Connects - Coupled		
70 (20)	3000 (206)	1800 (103)
250 (121)	1850 (127)	970 (96.8)
300 (148)	1400 (96.4)	750 (51.6)
400 (204)	500 (34.4)	400 (27.5)
500 (34.4)	150 (10.3)	150 (10.3)
Quick Connects - Uncoupled or Open		
70 (20)	250 (17.2)	

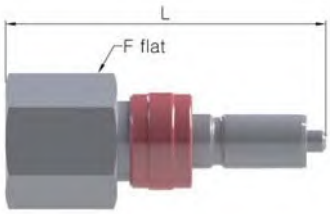
O-ring Materials & Temperature Range		
Designator	Material	Temperature Range
VT	FKM	10F(-23C) to 400F (204C)
KA	FFKM	60F (15C) to 500F (260C)
EP	EPDM	-50F (-45C) to 300F (148C)
NBR	NBR	0 F (-17C) to 250 F (121C)

Spillage, Air Inclusion & Maximum Flow Rate @ 70F (20C)			
Series	Spillage cm^3	Air Inclusion cm^3	Flow -H_2O- L/Min
TVIQC4	0.3	0.3	15
TVIQC6	1.0	1.0	22

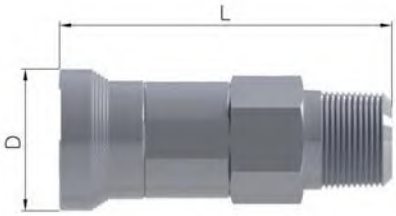
SAMPLE CYLINDER QUICK CONNECTS



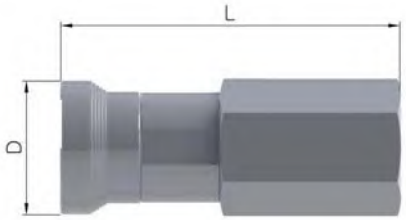
Fitting Size	Part Number		SERIES	Flow Coefficient (Cv)			Dimensions		
	SE	DE		SE	DE	Full Flow	"L" in inches		""F" in inches
							SE	DE	
1/4"	TVIQC4-S-4PM	TVIQC4-D-4PM	4	0.3	.02	.04	2.22	2.28	5/8
1/4"	TVIQC-S-4PM	TVIQC6-D-4PM	6	0.9	0.5	1.5	2.32	2.44	3/4



Fitting Size	Part Number		SERIES	Flow Coefficient (Cv)			Dimensions		
	SE	DE		SE	DE	Full Flow	"L" in inches		""F" in inches
							SE	DE	
1/4"	TVIQC4-S-4PF	TVIQC4-D-4PF	4	0.3	.02	.04	2.26	2.32	3/4
1/4"	TVIQC-S-4PF	TVIQC6-D-4PF	6	0.9	0.5	1.5	2.35	2.47	3/4

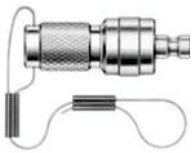


Fitting Size	PART NUMBER	Series	Dimensions	
			"L" in inches	""D" in inches
1/4"	TVIQC4-B-4PM	4	2.16	0.91
1/4"	TVIQC-S-4PM	6	2.38	0.91



Fitting Size	PART NUMBER	Series	Dimensions	
			"L" in inches	""D" in inches
1/4"	TVIQC4-B-4PF	4	2.42	0.91
1/4"	TVIQC-S-4PF	6	2..54	1.03

STEM PROTECTOR



BODY PROTECTOR

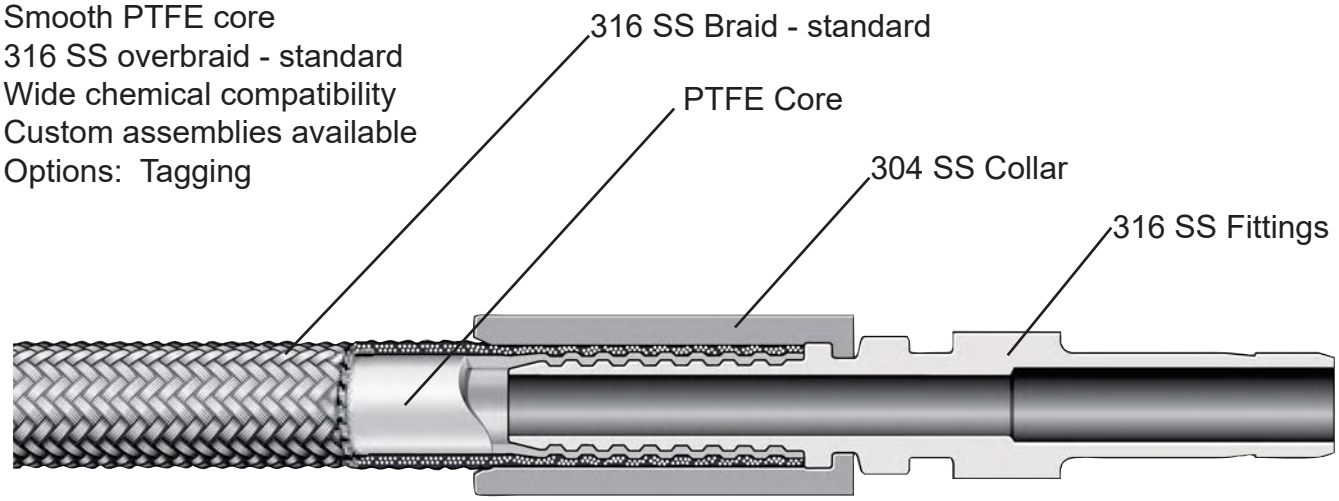
PROTECTORS		
Series	Stem protector	Body Protector
4	TVIQC4-SP	TVIQC4-BP
6	TVIQC6-SP	TVIQC6-BP

TVI Sampling Systems

SS BRAIDED PTFE HOSE

Features:

- Permeation resistant PTFE hose
- Smooth PTFE core
- 316 SS overbraid - standard
- Wide chemical compatibility
- Custom assemblies available
- Options: Tagging



Working Parameters

Hose Size in(mm)	Inside Diameter in(mm)	Outside Diameter in(mm)	Min. Bend Radius in (cm)		Temp Range F (C)	Vacuum (28.5"Hg) Temp Rate F (C)	Working Press. @ 70 F(C)	Min. Burst Press. @ 70 F(C)	Hose Weight lb/ft(kg/m)
			Static	Dynamic					
1/4(6.4)	0.19(4.8)	0.31(7.9)	1.5(3.81)	2.00(5.08)	-65 to 450 (-53 to 230)	450(230)	3000(206)	12000(826)	0.08(0.12)
3/8(9.5)	0.31(7.9)	0.44(11.1)	3.50(8.89)	5.00(12.7)		450(230)	2500(172)	10000(689)	0.12(0.17)
1/2(12.7)	0.41(10.3)	0.56(14.3)	4.50(11.4)	6.00(15.2)		450(230)	2000(137)	8000(551)	0.15(0.22)

Temperature - Pressure Constraints

Hose Size	1/4"	3/8"	1/2"
Temperature F (C(	Working Pressure Limit - psig(bar)		
-65(-53)	2250(155)	2250(155)	2000(137)
09(17) to 100(37)	3000(206)	2500(172)	2000(137)
200(93) to 450(230)	2250(155)	1875(129)	1500(103)

Testing

All hose assemblies are tested to 1.5x working pressure for 60 seconds. No pressure drop allowed.

Packaging

All hose assemblies are cleaned and individually bagged and boxed.

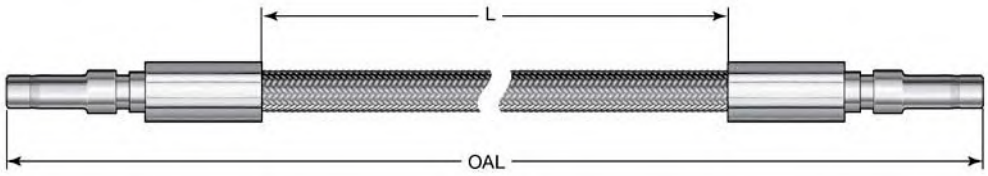
Texas Valve & Instrument, LLC
8221 Lockheed Ave
Houston, TX 77061

T 713.645.2100
F 713.645.2102
E sales@tvi-i.com
website www.tvi-i.com

TVI Sampling Systems

SS BRAIDED PTFE HOSE

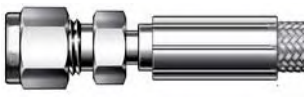
Tube Stubb End Assemblies



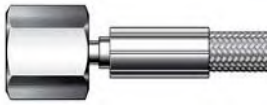
Hose Size	Tube Stub Size	Overall Length OAL	Part Number	Dimensions		
				Live Length L	End connection Inside Diameter	Major Diameter
Inches		in (mm)		in (mm)	in (mm)	in (mm)
1/4”	1/4”	8.00 (203)	TH-__-__-4-6-__	3.92 (100)	0.13 (3.3)	0.49 (12.4)
		14.0 (356)	TH-__-__-4-12-__	9.92 (252)		
		20.0 (508)	TH-__-__-4-18-__	15.9(404)		
		26.0 (660)	TH-__-__-4-24-__	21.9 (556)		
		38.0 (965)	TH-__-__-4-36-__	33.9 (861)		
		50.0 (1270)	TH-__-__-4-48-__	45.9 (1170)		
		62.0 (1570)	TH-__-__-4-60-__	57.9 (1470)		
		74.0 (1880)	TH-__-__-4-72-__	69.9 (1780		
		122 (3100)	TH-__-__-4-120-__	118 (3000)		
3/8”	3/8”	14.0 (356)	TH-__-__-6-12-__	9.64 (245)	0.23 (5.8)	0.59 (15.0)
		20.0 (508)	TH-__-__-6-18-__	15.6 (396)		
		26.0 (660)	TH-__-__-6-24-__	21.6 (549)		
		38.0 (965)	TH-__-__-6-36-__	33.6 (853)		
		50.0 (1270)	TH-__-__-6-48-__	45.6 (1160)		
		62.0 (1570)	TH-__-__-6-60-__	57.6 (1460)		
		74.0 (1880)	TH-__-__-6-72-__	69.6 (1770)		
1/2”	1/2”	14.5 (36.8)	TH-__-__-8-12-__	9.04 (230)	0.34 (8.6)	0.78 (19.8)
		20.5 (521)	TH-__-__-8-18-__	15.0 (381)		
		26.5 (673)	TH-__-__-8-24-__	21.0 (53.3)		
		38.5 (97.8)	TH-__-__-8-36-__	33.0 (838)		
		50.5 (1280)	TH-__-__-8-48-__	45.0 (1140)		
		62.5 (1590)	TH-__-__-8-60-__	57.0 (1450)		
		74.5 (1890)	TH-__-__-8-72-__	69.0 (1750)		
		122.5 (3110)	TH-__-__-8-120-__	117 (2970)		

TUBE STUB END

Tube Fitting End



Female Pipe End



Male Pipe End

Texas Valve & Instrument, LLC
8221 Lockheed Ave
Houston, TX 77061

T 713.645.2100
F 713.645.2102
E sales@tvi-i.com
website www.tvi-i.com

Ordering Tree

TH-S44-S44-6-24-X-X

TH = Teflon Hose

First Tube End Connections
S44 = 1/4” Tube Stub End - Size 4 Hose
S66 = 3/8” Tube Stub End - Size 6 Hose
S88 = 1/2” Tube Stub End - Size 8 Hose
S68 = 3/8” Tube Stub End - Size 8 Hose
T24 = 1/8” Tube Fitting- Size 4 Hose Only
T44 = 1/4” Tube Fitting- Size 4 Hose Only
T66 = 3/8” Tube Fitting- Size 6 Hose Only
T88 = 1/2” Tube Fitting- Size 8 Hose Only
M44 = 1/4”mnpt Fitting - Size 4 Hose
M46 = 1/4”mnpt Fitting - Size 6 Hose
M48 = 1/4”mnpt Fitting - Size 8 Hose
F44 = 1/4” fnpt Fitting - Size 4 Hose
F46 = 1/4” fnpt Fitting - Size 6 Hose
M66 = 3/8”mnpt Fitting - Size 6 Hose
M68 = 3/8”mnpt Fitting - Size 8 Hose
F66 = 3/8” fnpt Fitting - Size 6 Hose Only
M88 = 1/2” mnpt Fitting- Size 8 Only
F88 = 1/2” fnpt Fitting - Size 8 Only

First Tube End Connections
S44 = 1/4” Tube Stub End - Size 4 Hose
S66 = 3/8” Tube Stub End - Size 6 Hose
S88 = 1/2” Tube Stub End - Size 8 Hose
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T44 = 1/4” Tube Fitting- Size 4 Hose Only
T66 = 3/8” Tube Fitting- Size 6 Hose Only
T88 = 1/2” Tube Fitting- Size 8 Hose Only
M44 = 1/4”mnpt Fitting - Size 4 Hose
M46 = 1/4”mnpt Fitting - Size 6 Hose
M48 = 1/4”mnpt Fitting - Size 8 Hose
F44 = 1/4” fnpt Fitting - Size 4 Hose
F46 = 1/4” fnpt Fitting - Size 6 Hose
M66 = 3/8”mnpt Fitting - Size 6 Hose
M68 = 3/8”mnpt Fitting - Size 8 Hose
F66 = 3/8” fnpt Fitting - Size 6 Hose Only
M88 = 1/2” mnpt Fitting- Size 8 Only
F88 = 1/2” fnpt Fitting - Size 8 Only

Hose Size
4 = Nominal 1/4”
6 = Nominal 3/8”
8 = Nominal 1/2”

Nominal Over All Length in Inches
8
12
18
24
36
48
60
72
120
Call for any other length

Options:
X = None
N = Nitrogen Purge
L = lanyard Tag
L2 = Two Lanyard Tags
C = Clamp Tag

Specials:
X = None

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Proportional Relief Valves

RV, RL, AND RM SERIES

Relief valves open when system pressure and set pressure of the valve matches. This allows the pressurized meduim to flow out until the PRV reaches it's reset point. The opening height of the stem and the system pressure are directly proportional. However, the actual amount in units per second that the valve can pass is limitied by the size of the valve orifice. Therefore, attention should paid to sizing the valve to the system

Features:

- Set Pressure
  - RV series: 7 color coded springs for a wide range of set pressures
    50 to 6,000 psig @ 70 F (3.4 to 414 bar @ 20 C)
  - RL series: 10 to 225 psig @ 70 F (0.68 to 15.5 bar @ 20 C)
  - RM series: 3 color coded springs for a wide range of set pressures
    50 to 1500 psig @ 70 F (3.4 to 103 bar @ 20 C

- Maximum outlet pressure:
  - RV series: 1500 psig (103 bar)
  - RL series: 225 psig (15.5 bar)
  - RM series: 50 to 1500 psig (103 bar)

- Orifice Size:
  - RV series: 0.14" (3.8mm)
  - RL series: 0.19" (4.8mm) and 0.25" (6.4mm)
  - RM series: 0.25" (6.4mm)

- Back pressure and Pre-set pressure
  - RV and RM series: Balanced stem design eliminates back pressure issue
  - RL series: Pre-set pressure = Desired pressure - 0.8 x back pressure

- Working temperature: -10 F to 300 F (-23 C to 148 C)
- Multiple end connections
- Liquid, vapor, or gas service
- Easily adjustible set pressure
- Holes drilled for lock wire
- Multiple seal materials available
- Manual pressure test handle available

Temperature Range of Soft Goods

O-ring Material	Temp Range F (C)
Flurocarbon FKM	25 to 250 (-4 to 121)
Buna-N	0 to 250 (-17 to 121)
Neoprene	-10 to 300 (-23 to 148)
EPD	30 to 250 (-1 to 121)
Perflourocarbon FFKM	-6 to 482 (-21 to 250)

Proportional Relief Valves

Ordering Tree

TRV - 4 - MXF - SS - 6 - V - P - Y - N

Series
TRV TRM TRL

Inlet Size
2 = 1/8" 8 = 1/2"
4 = 1/4" 12 = 3/4"
6 = 3/8"

Inlet/Outlet Type
MXF = Male Pipe Inlet x Female Pipe Outlet
FT = Fractional Tubing Inlet X Fraction Tubing Outlet
FTF= Fractional Tubing Inlet X Female Pipe Outlet

Body Material
SS = 316SS
XX = other materials

Orifice Size
6 = 0.14" (3.6mm) RV only
7 = 0.19" (4.8mm)
8 = 0.25" (6.4mm) RL & RM

Seal Material
B = Buna N
V = Viton FKM
E = Ethylene Propylene
N = Neoprene
K = Kalrez FFKM

Spring Kit
G = Green - 50 - 300 psig (for RV & RM)
O = Orange - 300-700 psig (for RV & RM)
Y = Yellow - 300-700 psig (for RL only)
- 700-1500 psig (RV & RM)
P = Purple - 1500-2500 psig (RV only)
W = White - 2500-3500 psig (RV only)
B = Blue - 3500-4500 psig (RV only)
R = Red - 4500-6000 psig (RV only)

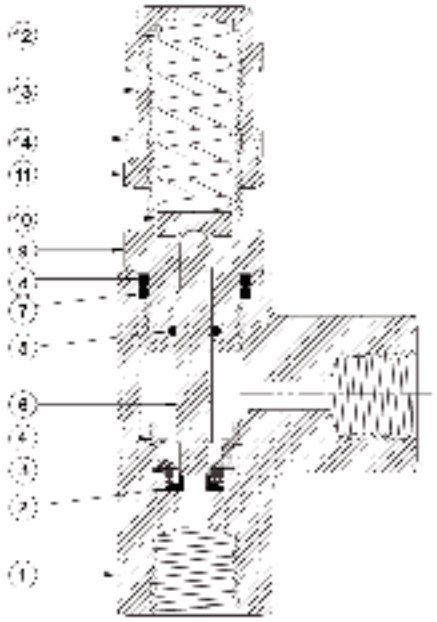
Locking Wire & Seal
N = No Y = Yes

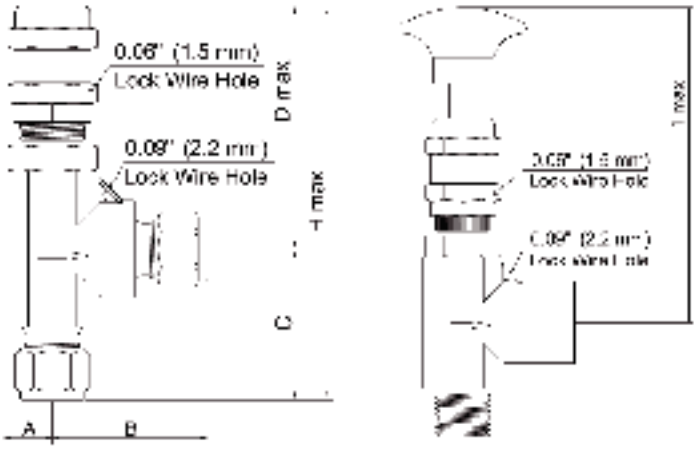
Manual Overide Handle
N = No Y = Yes

Proportional Relief Valves

RV Series Dimensions

Item #	Part Name	Material Type
1	Body	316SS/A182
2	Insert	316SS/A179
3	O-ring	FKM
4	Seat Retainer	316SS/A479
5	O-ring	FKM
6	Stem	316SS/A479
7	O-ring	FKM
8	Seat Retainer	PTFE
9	Bonnet	316SS/A479
10	Spring Support	316SS/A276
11	Lock Nut	17-4PH -PM
12	Spring	S17700SS/AMS 5678
13	Label	Polyester
14	Bonnect Cap	316SS/A479



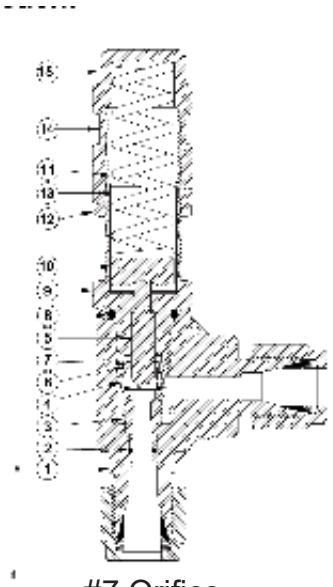


Pattern #	Connection		Orifice in(mm)	Dimensions - in(mm)					
	Inlet	Outlet		A	B	C	Dmax	Hmax	H1max
TRV-4-FXP	1/4" MNPT	1/4" FNPT	0.14" (3.6)	0.43 (10.9)	1.17 (29.7)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.28 (108.7)
TRV-4-FT	1/4" Tube	1/4" Tube		0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (103.9)
TRV-8-FT	1/2" Tube	1/2" Tube		0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.92 (150)	5.37 (136.4)
TRV-4-FTF	1/4" Tube	1/4" FNPT		0.43 (10.9)	1.60 (40.6)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)

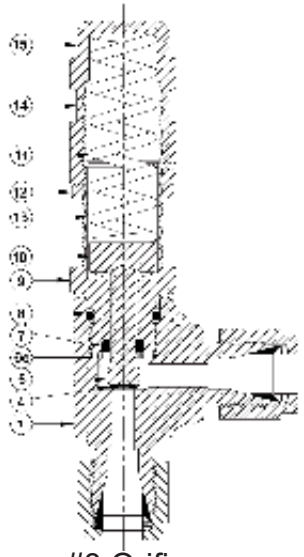
Proportional Relief Valves

RL Series Dimensions

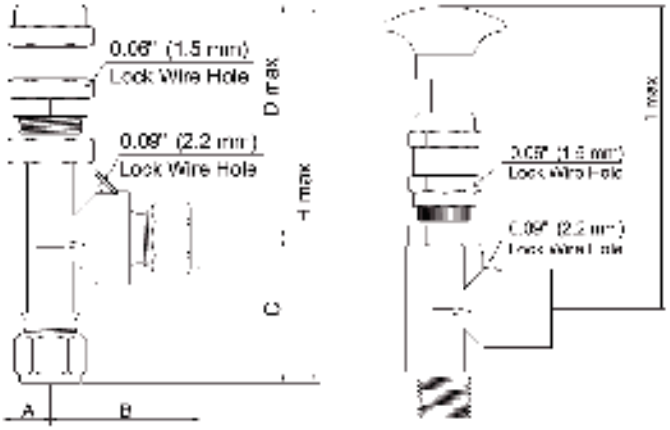
Item #	Part Name	Material Type
1	Body	316SS/A182
2	Gasket (#7 only)	316SS/A479
3	Seat	316SS/A479
4	Bonded Disc	316SS/A479-FKM coated
5	Stem	316SS/A479
6	Retainer (#7 Only)	316SS/A479
6a	Ring (#8 only)	316SS/S479
7	Quad Seat	FKKM
8	O-ring	FKM
9	Bonnet	316SS/A279
10	Spring Support	316SS/A576
11	Spring	S17700SS/AMS 5678
12	Lock Nut	17-4 PH-PM
13	Sleeve	304SS/A240
14	Label	Polyester
15	Bonnet Cap	316SS/A479



#7 Orifice
in (mm)
0.19(4.8)



#8 Orifice
in (mm)
0.25(6.4)

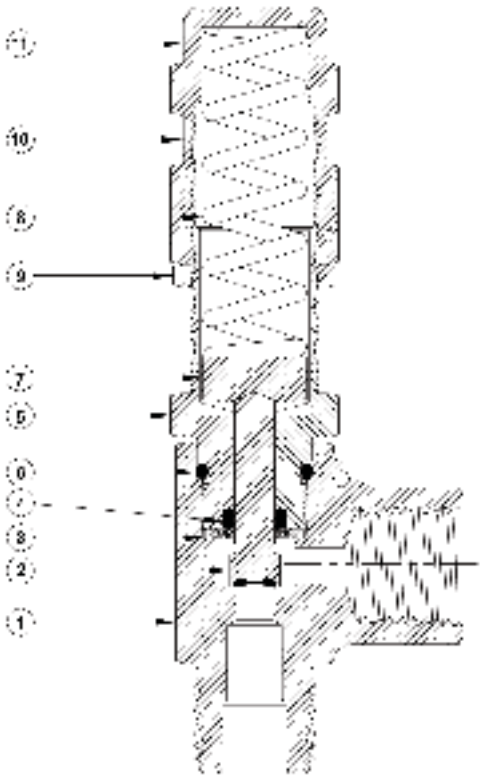


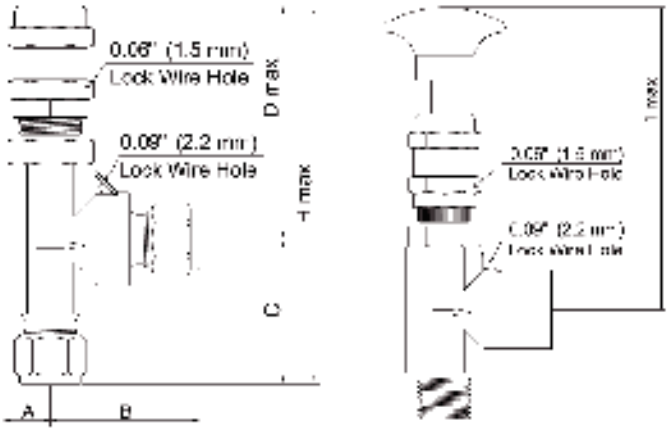
Pattern #	Connection		Orifice in(mm)	Dimensions - in(mm)					
	Inlet	Outlet		A	B	C	Dmax	Hmax	H1max
TRL-4-FXP	1/4" MNPT	1/4" FNPT	0.19 (4.8)	0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.28 (108.7)
TRL-8-FXP	1/2" MNPT	1/2" FNPT	0.25 (6.4)	0.5 (12.7)	1.44 (36.6)	1.44 (36.6)	4.09 (104)	5.52 (140)	5.37 (136)
TRL-4-FT	1/4" Tube	1/4" Tube	0.19 (4.8)	0.43 (10.9)	1.60 (40.6)	1.55 (36.6)	2.70 (68.6)	4.14 (105)	4.09 (103.9)
TRL-8-FT	1/2" Tube	1/2" Tube	0.25 (6.4)	0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.92 (150)	5.37 (136.4)
TRL-4-FTF	1/4" Tube	1/4" FNPT	0.19 (4.8)	0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)

Proportional Relief Valves

RM Series Dimensions

Item #	Part Name	Material Type
1	Body	316SS/A182
2	Stem	316SS/A479-FKM coated
3	Retainer	316SS/A479
4	Seal	FKM
5	Bonnet	316SS/A479
6	O-ring	FKM
7	Spring Support	316SS/A276
8	Spring	S17700SS/AMS 5678
9	Lock Nut	17-4PH-PM
10	Label	Polyester
11	Bonnet Cap	316SS/A576

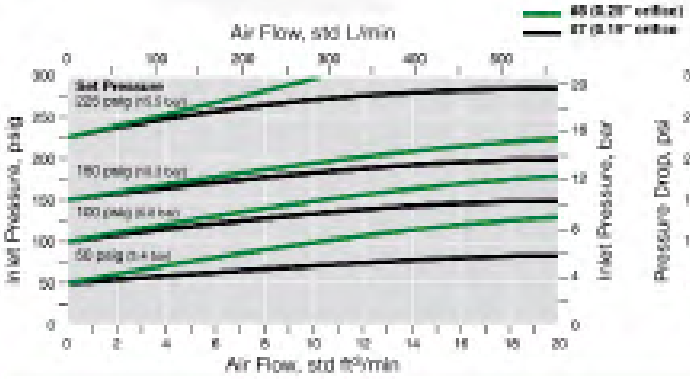




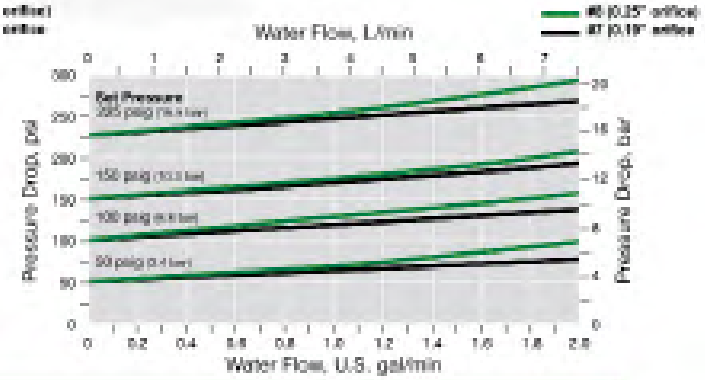
Pattern #	Connection		Orifice in(mm)	Dimensions - in(mm)					
	Inlet	Outlet		A	B	C	Dmax	Hmax	H1max
TRM-8-FXP	1/2" MNPT	1/2" FNPT	0.25 (6.4)	0.5 (12.7)	1.17 (29.7)	1.19 (30.2)	4.09 (104)	3.89 (98.8)	5.37 (136)
TRM-8-FT	1/2" Tube	1/2" Tube	0.25 (6.4)	0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.52 (140)	5.37 (136.4)

TRL Flow Data @ 70 F (20 C)

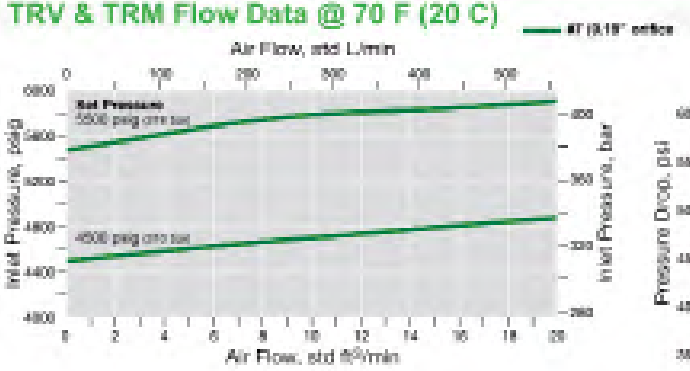
Air

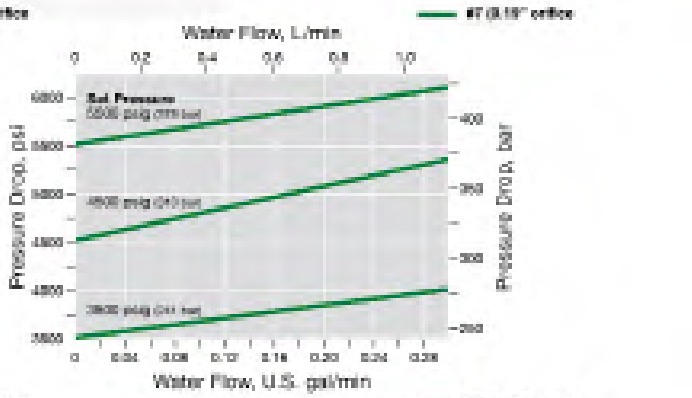


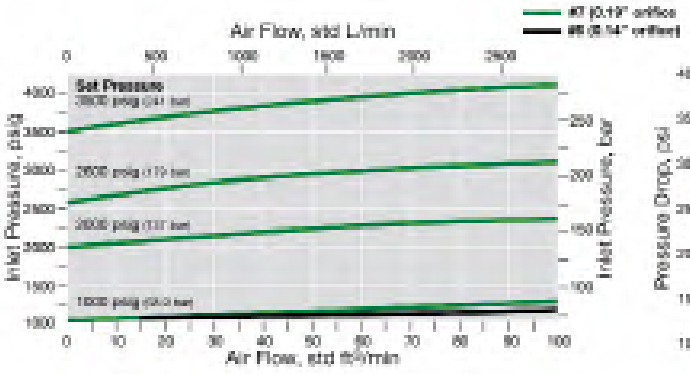
Water

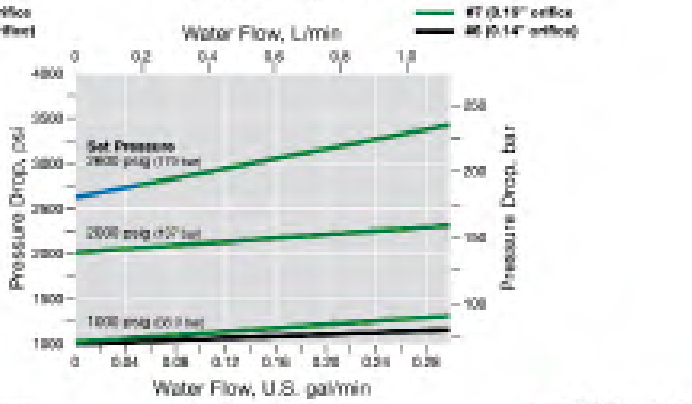


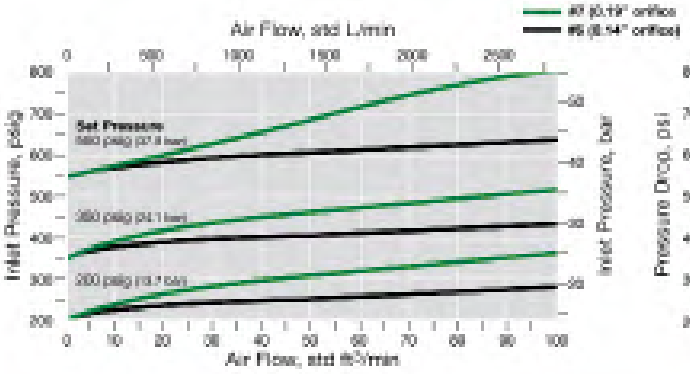
TRV & TRM Flow Data @ 70 F (20 C)

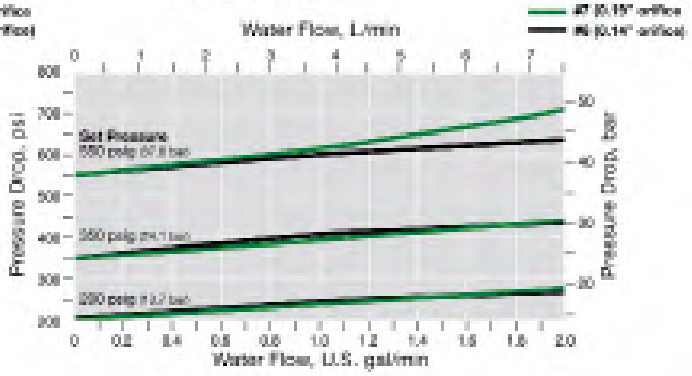












Shown with 300cc Cylinder

Includes handle and two clamps
Material: 304SS

Part Number	Configuration
TS-SSC-CY-2	FITS ALL 2" CYLINDERS: 150, 300, 400, AND 500CC
TS-SSC-CY-4	FITS ALL 3.50-4.00" CYLINDERS: 1000CC, 2250CC, AND 1 GALLON