

**FITTINGS  
VALVES  
TUBE**

**BESTOK**  
— WE ARE YOUR BETTER CHOICE —

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DEDICATED TO THE FLUID FLOW CONTROL SOLUTIONS

# SINCE 2004



# BESTOK

## ABOUT US

During the past years, BESTOK has learned, adapted and grown in an established name in the design, manufacturer and sales of General instrumentation Valves and Fittings, Medium & High-Pressure Valves and Fittings, ultra-high purity products, Closed-Loop sampling systems ... etc.

Founded in 2004, BESTOK has R&D centers, manufacturing facilities, warehousing and service locations in different countries such as USA, Germany, UAE, Saudi Arabia, South Africa, South Korea, Canada, Egypt and China.

Through our professional R&D team, also the full attention to the after-sales services. BESTOK has become one of the leading manufacture for the fluid system industry.

It is our eternal philosophy to continuously pursue technological innovation and product performance improvement, and to provide better products and services worldwide.

BESTOK focus on serving the industries of petroleum, chemical, semiconductor, marine, electric power, bio-pharmaceutical, natural gas, scientific research, ...etc.

BESTOK has gained a lot of honors, rewards and quality certificates in different industries.

| WE ARE YOUR BETTER CHOICE |

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## TUBING

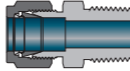
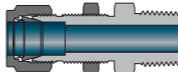
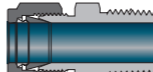
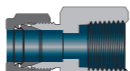
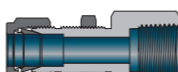
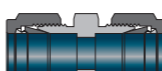
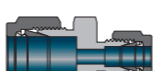




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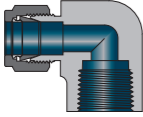
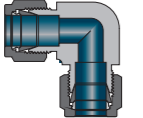
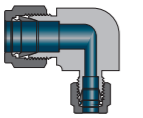
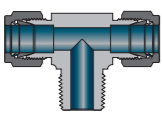
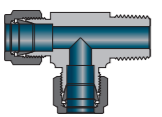
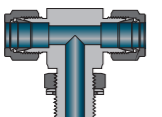
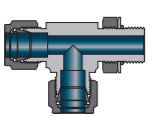
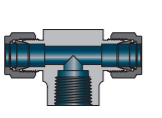
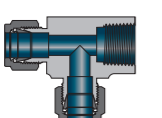
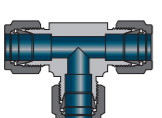
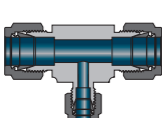
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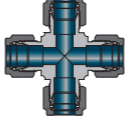
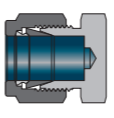
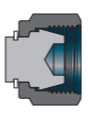
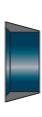
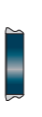

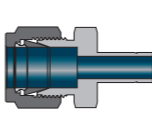
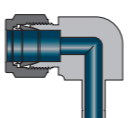
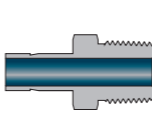
# TUBE FITTINGS



- ◆ Sizes range from to 1/16" to 2"
- ◆ Thread forms : NPT, ISO/BSP, SAE/MS which are comply with different standards and certificates such as ASME/ANSI and others to reduce thread tolerance and improve connection.
- ◆ Pressure ranges from vacuum to 10,000 psig.
- ◆ Diverse materials and configurations are available. Eg: all kinds of stainless steel, alloy and other materials.
- ◆ Hardened threads with smooth surface finish avoid galling and help to extend the fitting service life.
- ◆ Female nut threads are silver-plated to reduce the friction against the body threads.
- ◆ Radius junction design for elbows provides smooth flow path.
- ◆ Every fitting is marked with size, material and heat number.

Configuration	Fitting Type	Example
	Male Connectors - KM	SS-6F-KM-6N
	Bulkhead Male Connectors - BM	SS-6F-BM-8N
	Thermocouple Connectors - TM	SS-6F-TM-6N
	Female Connectors - KF	SS-8F-KF-6N
	Bulkhead Female Connectors - BF	SS-6M-BF-12N
	Unions - KU	SS-8F-KU
	Reducing Unions - KU	SS-8M-KU-6M
	Bulkhead Unions - B	SS-8M-B
	Bulkhead Reducing Unions - B	SS-8F-B-4F
	Male Elbows - ME	SS-6F-ME-8RT
	Positionable Male Elbows - LP	SS-8M-LZ-4PP

Configuration	Fitting Type	Example
	Female Elbows - FE	SS-10M-FE-6N
	Union Elbows - L	SS-10M-L
	Union Reducing Elbows - L	SS-10F-L-8F
	Male Branch Tees - MAT	SS-10M-MAT-6N
	Male Run Tees - MBT	SS-8F-MBT-6N
	Positionable Male Branch Tees - MAP	SS-8F-MAP-10ST
	Positionable Male Run Tees - MBP	SS-6M-MBP-4PP
	Female Branch Tees - FAT	SS-8M-FAT-4N
	Female Run Tees - FBT	SS-8F-FBT-8N
	Union Tees - MT	SS-10F-MT
	Reducing Union Tees - MT	SS-10F-MT-8F-6F

Configuration	Fitting Type	Example
	Union Crosses - O	SS-12M-O
	Caps - CC	SS-8F-CC
	Plugs - DZ	SS-4F-DZ
	Nuts - KN	SS-8F-KN
	Front Ferrules - FC	SS-8F-FC
	Rear Ferrules - KR	SS-6F-KR
	Nuts + Ferrules - KNFR	SS-8M-KNFR
	Reducers - D	SS-6M-D-3TM
	Reducer Elbows - LD	SS-6M-LD-3TM
	Insert for Soft Plastic Tubings - IN	SS-12-IN-10
	Male Adapters - EM	SS-10TM-EM-8RT

Configuration	Fitting Type	Example
	Female Adapters -EF	SS-8TM-EF-6RG
	Weld Connectors - KW	SS-12M-KW-8PWB
	Weld Elbows - LW	SS-16F-LW-16TWS
	Gaskets - RG	CU-8-RG
	Reducing Port Connectors - Z	SS-8F-Z
	Sanitary Flange Fittings - SG	SS-8F-SG-8C
	Flange Adapters - FZ	SS-8F-FZ-RF8-150
	Dielectric Fittings - KD	SS-10M-KD
	Calibration Fittings - MP	SS-8-MP-12M
	Fusible plugs-GFT	SS-6N-GFT
	KF Series Vacuum Adapter Fittings	SS-8F-VK-16KF

## Ordering Number Description

**A B C D E F G H**

**SS-8 F-KM-8 N - S - W**

A	Material
B=Brass	
CU=Red copper	
C20=Alloy20	
HC=Alloy C-276	
INC=Alloy 600	
M=Alloy 400	
NY=Nylon	
CS=Carbon Steel	
SS=316 SS	
4S=304 SS	
21S=304 SS	
904L=904L SS	
6L=316L SS	
T=PTFE	
Ti=Titanium	
625=Alloy 625	
825=Alloy 825	
D5=Duplex 2205	
D7=Duplex 2507	
6MO=6Mo	
(S31254)	

B	P1 Size	
	Fractional in.	Metric mm
1=1/16"	2=2	
2=1/8"	3=3	
3=3/16"	4=4	
4=1/4"	6=6	
5=5/16"	8=8	
6=3/8"	10=10	
8=1/2"	12=12	
10=5/8"	14=14	
12=3/4"	15=15	
14=7/8"	16=16	
16=1"	18=18	
18=1 1/8"	20=20	
20=1 1/4"	22=22	
24=1 1/2"	25=25	
32=2"	28=28	
	32=32	
	38=38	
	50=50	

C	P1 Type
M=Metric Ferrule	
F=Fractional Ferrule	
TM=Metric Tube	
TF=Fractional Tube	

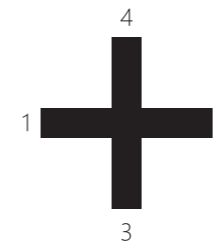
H	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W= degreasing and oxygen-rich cleaning	

D	Fitting Type
KU=Union	
B=Bulkhead Union	
ME=Male Elbow	
KM=Male Connector	
BM=BulkheadMaleConnector	
TM=ThermocoupleConnector	
KF=Female Connector	
BF=Bulkhead Female Connector	
VM=45°Male Elbow	
VP=45°Adjustable Male Elbow	
LZ=Positionable Male Elbow	
FE=Female Elbow	
L=Union Elbow	
MBT=Male Run Tee	
MAT=Male Branch Tee	
MBP=Positionable Male Run Tee	
MAP=Positionable Male Branch Tee	
FAT=Female Branch Tee	
FBT=Female Run Tee	
MT=Union Tee	
O=Union Cross	
CC=Cap	
DZ=Plug	
D=Reducer	
Z=Port Connector	
EM=Male Adapter	
EF=Female Adapter	
KW=Weld Connector	
LW=Weld Elbow	
TKU=Unified Reducing Union	
FZ=Flange Adapters	
SG=Sanitary Flange Fittings	
KD=Dielectric Fitting	
MP=Calibration Fittings	
HC=Hose Coupling	
IN=Hose plug	
VPST = emission sprotector	

E	P2 Size
Except the same as the P1,the other size follows:	
6=M6x1 or 3/8-24	
7=7/16-20	
8=M8x1 or 1/2-20	
9=9/16-18	
10=M10x1	
12=M12x1.5 or 3/4-16	
14=M14x1.5 or 7/8-14	
16=M16x1.5	
17=11/16-12	
18=M18x1.5	
20=M20x1.5	
22=M22x1.5	
24=M24x1.5	
26=15/8-12	
27=M27x2	

F	P2 Type
Except the same as the P1 the other type follows:	
N=NPT male tapered threadst	
RT=ISO tapered male threads	
FRT=ISO tapered female threads	
RS=ISO parallel threads(suitable for RS gasket)	
RP=ISO parallel threads(suitable for RP gasket)	
RG=ISO parallel threads(suitable for RG gasket)	
BP=ISO parallel male threads (suitable for RG gasket)	
PP=position adjustable, ISO parallel threads	
ST=SAE/MS parallel threads	
MS=Metric male threads (suitable for RG-M gasket)	
TWB=Inch tube butt weld	
PWS=Pipe socket weld	
TWS=Inch tube socket weld	

G	Special Application
Default = None	
S=NACE MR 0175	
HL= Sulfur Passivation	



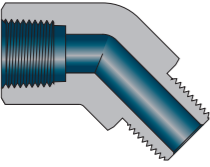
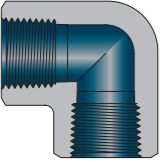
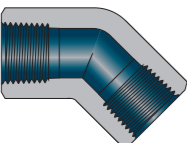
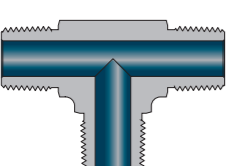
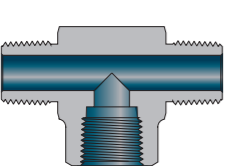
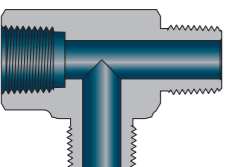
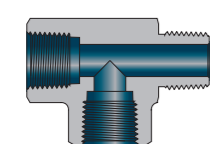
The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

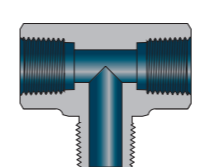
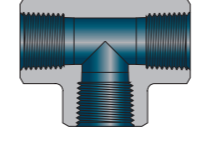
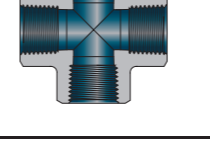
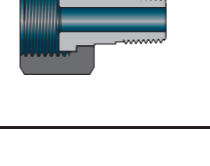
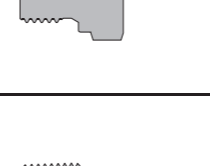
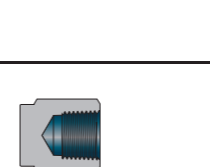
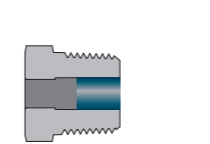

# P PIPE FITTINGS



- ◆ Sizes range from 1/16" to 2"
  - ◆ End connections with NPT, ISO/BSP, SAE, and metric threads are available
  - ◆ Rolled thread enhance mechanical properties
  - ◆ Diverse materials and configurations are available.
- Eg: all kinds of stainless steel, alloy and other materials.
- ◆ Radius junction design within elbows provides smooth flow path.

Configuration	Fitting Type	Example
	Hex Nipples - LC	SS-6N-LC-4N
	Hex Long Nipples - LS	SS-8RT-LS-63.5MM
	Close Nipples - C	SS-6N-C
	Special Pipe Nipples - S	SS-6N-S-50.8MM
	Adapters - DS1	SS-8N-DS1-4N
	Reducing Bushings - DS	SS-12RT-DS-8N
	Hex Couplings - LC1	SS-6N-LC1-4N
	Union Ball Joints - UJ	SS-8RT-UJ
	Male Elbows - ML	SS-8RT-ML
	Street Elbows - MFL	SS-6N-MFL-8N

Configuration	Fitting Type	Example
	45° Street Elbows - MFV	SS-4RT-MFV-6RT
	Female Elbows - FL	SS-6RT-FL
	45° Female Elbows - FV	SS-4N-FV-2N
	Male Tees - MT	SS-12N-MT
	Female Branch Tees - DFT	SS-16N-DFT
	Female Run Tees - BFT	SS-8RT-BFT
	Male Street Tees - BMT	SS-8N-BMT

Configuration	Fitting Type	Example
	Male Branch Tees - DMT	SS-6N-DMT
	Female Tees - FT	SS-20RT-FT
	Female Crosses - CS	SS-12N-CS
	Pipe to Pipe Unions - WP	SS-20MS-PU-2RT
	Pipe Plugs - PST	SS-18MRS-PST
	Hollow Hex Plugs - HP	SS-9ST-HP
	Pipe Caps - X	SS-6RT-X
	Fusible plugs-GFA	SS-8N-GFA



**Ordering Number Description**

**A B C D E F G H**

**SS-8 N - LC - 6 N - S-W**

A	Material
B=	Brass
HC=	Alloy C-276
INC=	Alloy 600
M=	Alloy 400
CS=	Carbon Steel
SS=	316 SS
4S=	304 SS
21S=	321 SS
904L=	904L SS
6L=	316L SS
TI=	Titanium
625=	Alloy 625
825=	Alloy 825
D5=	Duplex 2205
D7=	Duplex 2507

B P1 Size	
Fractional in.	Metric mm
1=1/16"	8=8
2=1/8"	10=10
3=3/16"	12=12
4=1/4"	14=14
5=5/16"	16=16
6=3/8"	18=18
8=1/2"	20=20
10=5/8"	22=22
12=3/4"	24=24
14=7/8"	27=27
16=1"	30=30
18=1 1/8"	33=33
20=1 1/4"	
24=1 1/2"	
32=2"	

C	P1 Type
N=	NPT male tapered threads
RT=	ISO tapered male threads
RS=	ISO parallel threads(suitable for RS gasket)
RP=	ISO parallel threads(suitable for RP gasket)
RG=	ISO parallel threads(suitable for RG gasket)
ST=	SAE/MS parallel threads
MS=	Metric male threads(suitable or RG-M gasket)

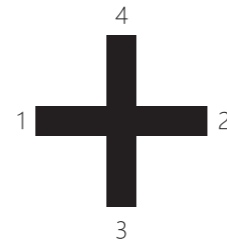
D	Fitting Type
PST=	Pipe Plug
HP=	Hollow Hex Plug
C=	Close Nipple
S=	Special Pipe Nipple
LC=	Hex Nipple
LS=	Hex Long Nipple
DS=	Reducing Bushing
X=	Pipe Cap
LC1=	Hex Coupling
UJ=	Union Ball Joints
DS1=	Adapter
ML=	Male Elbow
MFL=	Street Elbow
MFV=	45° Street Elbow
FL=	Female Elbow
FV=	45° Female Elbow
MT=	Male Tee
DFT=	Female Branch Tee
BFT=	Female Run Tee
BMT=	Male Street Tee
DMT=	Male Branch Tee
FT=	Female Tee
CS=	Female Cross
PU=	Pipe to Pipe Union

E	P2 Size
Except the same as the P1 the other size follows:	
6=	M6x1 or 3/8-24
7=	7/16-20
8=	M8x1 or 1/2-20
9=	9/16-18
10=	M10x1
12=	M12x1.5 or 3/4-16
14=	M14x15 or 7/8-14
16=	M16x1.5
17=	11/16-12
18=	M18x1.5
20=	M20x1.5
22=	M22x1.5
24=	M24x1.5
26=	15/8-12
27=	M27x2
30=	17/8-12 or M30x2
32=	2"

F	P2 Type
Specify in the same way as the P1	

G	Special Application
Default = None	
S=	NACE MR 0175
LH=	Sulfur passivation

H	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W=	Degreasing
W2=	Oxygen-rich cleaning



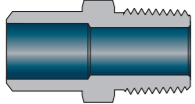
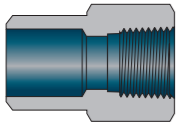
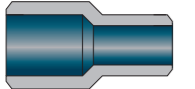
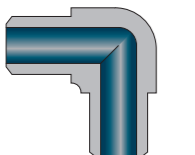
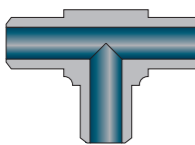
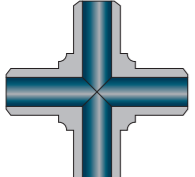
The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

**WELD FITTINGS**

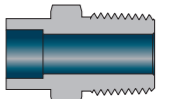
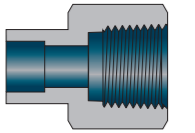


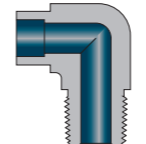
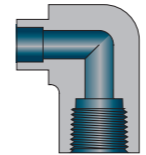
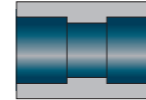
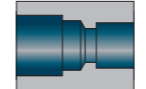
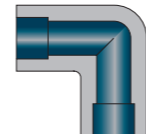
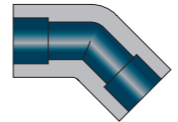
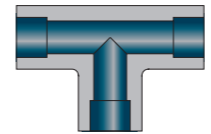
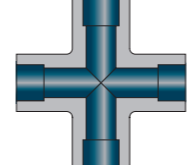
- ◆ Sizes range from 1/18" to 2" and 6mm to 38mm
- ◆ Maximum working temperature up to 1000°F(538°C)
- ◆ Variety of materials and configurations to choose

### Tube butt weld fittings series

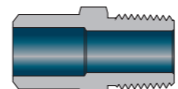
Configuration	Fitting Type	Example
	Male Connectors - M	SS-6TWB-M-8N
	Female Connectors - F	SS-14TMB-F-4N
	Reducing Unions - U	SS-16TWB-U-12TWB
	Union Elbows - L	SS-8TWB-L
	Union Tees - T	SS-10TWB-T
	Union Crosses - O	SS-8TMB-O

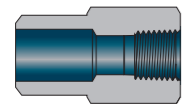
### Tube socket weld fittings series

Configuration	Fitting Type	Example
	Male Connectors - M	SS-6TWS-M-6N
	Female Connectors - F	SS-8TWS-F-4N

	Male Elbows - LM	SS-6TWS-LM-4N
	Female Elbows - LF	SS-6TWS-LF-4N
	Unions - U	SS-20TMS-U
	Reducing Unions - U	SS-28TWS-U-12TMS
	Union Elbows - L	SS-2TMS-L
	Union 45 Elbows - V	SS-25TMS-V
	Union Tees - T	SS-12TMS-T
	Union Crosses - O	SS-20TMS-O

### Pipe butt weld fittings series

Configuration	Fitting Type	Example
	Male Connectors - M	SS-12PWB-M-8N

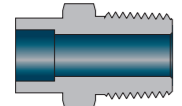


Female Connectors - F

SS-6PWB-F-8N

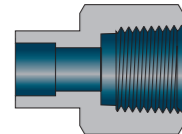
**Pipe socket weld fittings series**

Configuration	Fitting Type	Example
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Male Connectors - M

SS-4PWS-M-4N



Female Connectors - F

SS-12PWS-F-16N

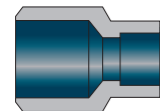


Unions - U

SS-6PWS-U

**Weld adapters**

Configuration	Fitting Type	Example
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Tube Butt Weld to Tube Socket Weld - U

SS-12TWB-U-8TWS

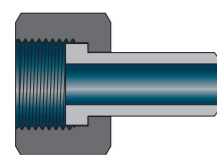


Pipe Butt Weld to Tube Socket Weld - U

SS-8PWB-U-8TWS

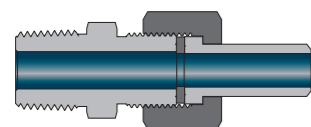
**Pipe to weld fittings**

Configuration	Fitting Type	Example
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Pipe to Tube Butt Weld - PU

SS-20MS-PU-14TMB



Male Pipe to Tube Butt Weld - MU

SS-6N-MU-14TMB

**Ordering Number Description**

**A B C D E F G H**

**SS - 12 TWB - M - 8 N -S-W**

A	Material
HC	Alloy C-276
SS	316 SS
4S	304 SS
21S	321 SS
904L	904L SS
6L	316L SS

B		P1 Size
Fractional in.		Metric mm
1=1/16"		2=2
2=1/8"		3=3
3=3/16"		4=4
4=1/4"		6=6
5=5/16"		8=8
6=3/8"		10=10
8=1/2"		12=12
10=5/8"		14=14
12=3/4"		15=15
14=7/8"		16=16
16=1"		18=18
18=1 1/8"		20=20
20=1 1/4"		22=22
24=1 1/2"		25=25
32=2"		28=28
		32=32
		38=38

C	P1 Type
TMB	Metric tube butt weld
TMS	Metric tube socket weld
TWB	Inch tube butt weld
TWS	Inch tube socket weld
PWB	Pipe butt weld
PWS	Pipe socket weld
RT	ISO tapered male threads
RS	ISO parallel threads(suitable for RS gasket)
BP	ISO parallel male threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)

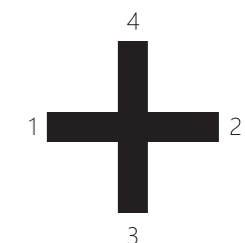
D	Fitting Type
M	Male Connector
F	Female Connector
U	Reducing Union
L	Union Elbow
T	Union Tee
O	Union Cross
LM	Male Elbow
LF	Female Elbow
V	45° Union Elbow
PU	Pipe To Weld
MU	Male Pipe To Weld
U2	Pipe Welding Straight Joint
L2	Pipe Welding Elbow
T2	Pipe Welded Tee

H	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	Degreasing
W2	Oxygen-rich cleaning

E	P2 Size
	Except the same as the P1 the other size follows:
6	M6x1 or 3/8-24
7	7/16-20
8	M8x1 or 1/2-20
9	9/16-18
10	M10x1
12	M12x1.5 or 3/4-16
14	M14x1.5 or 7/8-14
16	M16x1.5
17	1 1/16-12
18	M18x1.5
20	M20x1.5
22	M22x1.5
24	M24x1.5
26	1 5/8-12
27	M27x2
30	1 7/8-12 or M30x2
32	2"

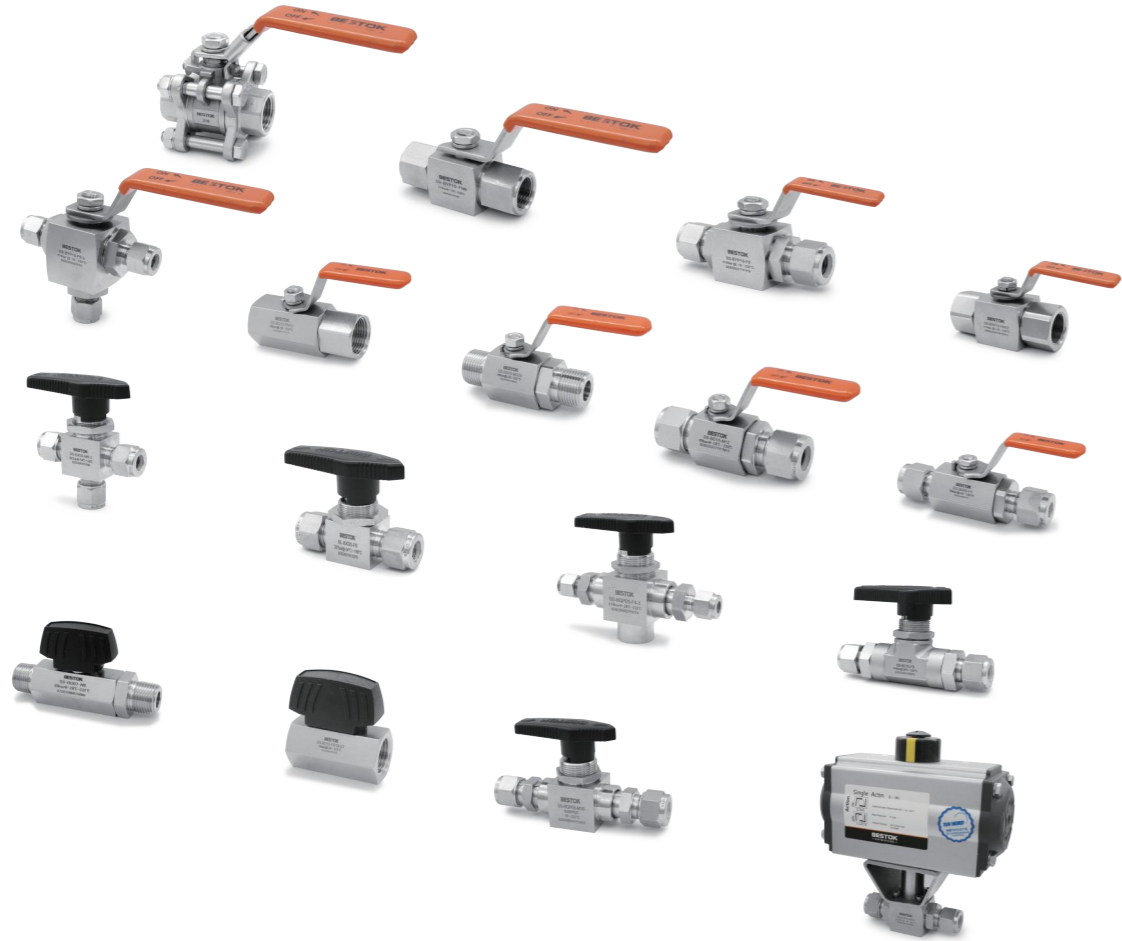
F	P2 Type
	Specify in the same way as the P1

G	Special Application
	Default = None
S	NACE MR 0175
LH	Sulfur passivation



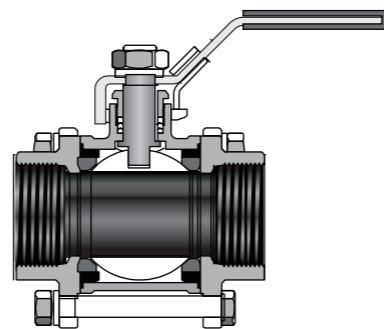
The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

# B ALL VALVES



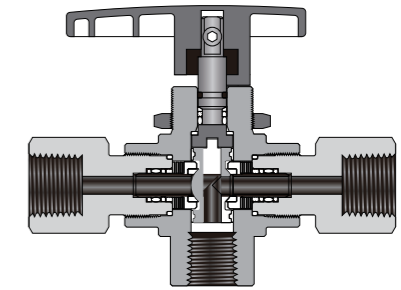
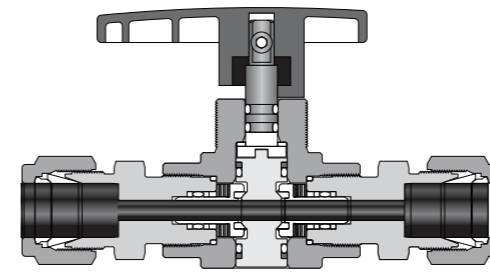
## Three-piece ball Valves BE/BEH Series

- ◆ Working pressure up to: BE:1000 psig (69.0 bar)  
BEH:2000 psig (138.0 bar)
- ◆ Working temperature: -20°F to 450°F (-28°C to 232°C)
- ◆ End connections: 1/8" to 2" thread  
1/8" to 2" pipe butt or socket weld  
1/4" to 2" and 6 mm to 50 mm tube fitting
- ◆ Orifice sizes: 8mm to 50mm
- ◆ Pneumatic and electric actuator available



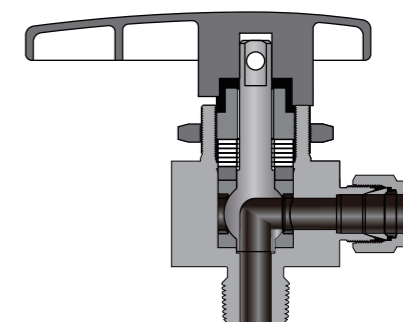
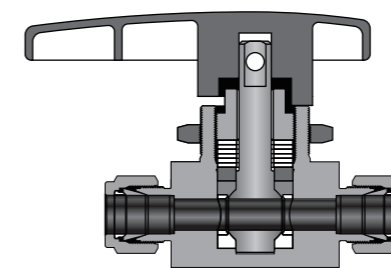
## Trunnion ball Valves BQ/BQH Series

- ◆ Working pressure up to: BQ: 6000 psig (414 bar)  
BQH: 10000 psig (690 bar)
- ◆ Working temperature: Standard service: 0°F to 450°F (-18°C to 232°C)  
Low temperature service: -40°F to 200°F (-40°C to 93°C)
- ◆ End connections: 1/8" to 1/2" thread  
1/4" to 1/2" Tube Fitting , 6mm to 12mm Tube Fitting
- ◆ Straight-through and tee optional
- ◆ Seat materials: PTFE, PCTFE and PEEK
- ◆ Variety of end connections
- ◆ Panel mountable



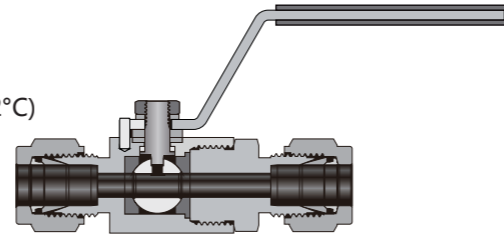
## One-piece instrumentation ball Valves BX Series

- ◆ Working pressure up to: BQ: 3000 psig (207 bar)
- ◆ End connections: 1/8" to 3/4" thread  
1/8" to 1" Tube Fitting  
3mm to 25mm Tube Fitting
- ◆ Flow patterns: 2-way, 3-way, 4-way, 5-way, 6-way and 7-way



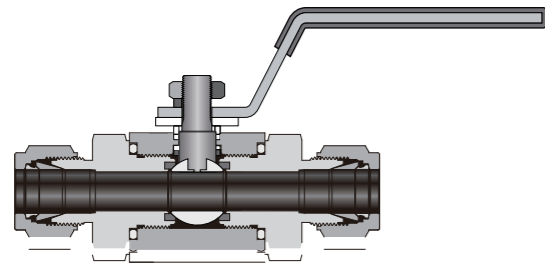
## Hex bar stock ball Valves BD Series

- ◆ Working pressure up to: BD: 1000 psig (69.0 bar)  
BDA: 2000 psig (138.0 bar)
- ◆ Working temperature: Standard service: -20°F to 450°F (-28°C to 232°C)  
Low temperature service: -65°F to 400°F (-54°C to 204°C)
- ◆ End connections: 1/8" to 1" thread  
1/8" to 1" Tube Fitting  
3mm to 25mm Tube Fitting
- ◆ Compact and economical design
- ◆ Seat wear compensation by free floating ball

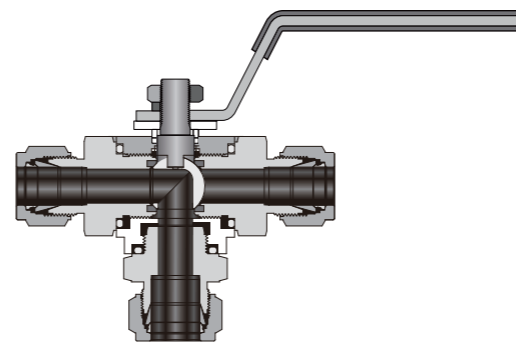


## Bar stock ball Valves BY Series

- ◆ Working pressure up to: 10000 psig (690 bar)
- ◆ Working temperature: -40°F to 450°F (-40°C to 232°C)
- ◆ End connections: 1/4" to 1" thread  
1/4" to 1" Tube Fitting  
6mm to 25mm Tube Fitting

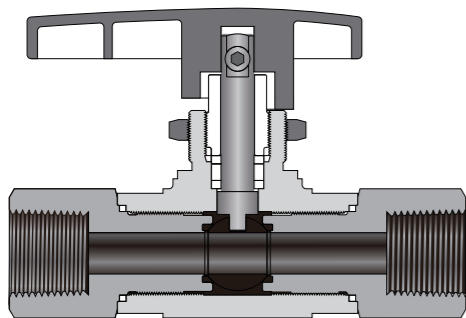


- ◆ Straight and three-way channel form are available.
- ◆ Variety of end connections
- ◆ Optional pneumatic and electric actuator
- ◆ Seat materials: PTFE, PCTFE and PEEK

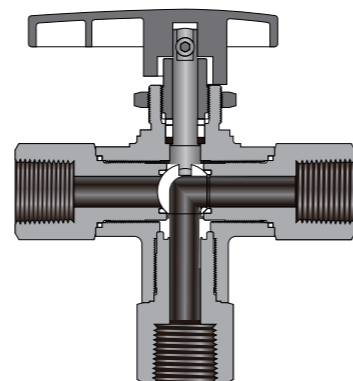


## High performance ball Valves BC Series

- ◆ Working pressure up to: 6000 psig (414 bar)
- ◆ Working temperature: -65°F to 450°F (-54°C to 232°C)
- ◆ End connections: 1/8" to 1" thread  
1/4" to 1" Tube Fitting  
3mm to 22mm Tube Fitting



- ◆ precision cast body construction
- ◆ Straight through valve can flow in both directions
- ◆ straight through Angle and three-way channel form are available
- ◆ Optional pneumatic and electric actuator
- ◆ Seat materials: PTFE, PCTFE and PEEK, PFA



## Ordering Number Description

**A B C D E F G H I J K L**

**SS - BC P 10 - F 12 - N 8 - 41 - A - S - W**

A	Body Material
SS	316 SS
4S	304 SS
21S	321 SS
904L	904L SS
6L	316L SS
M	Alloy 400
D5	Duplex 2205
D7	Duplex 2507

B	Series
BX	BX Series
BC	BC Series
BQ/BQH	BQ/BQH Series
BE	BE Series
BY	BY Series
BD	BD Series

C	Seat Material
	Default = PTFE
K	PFA
K	PCTFE
P	PEEK

D	Orifice size
01	0.06" (1.6mm)
02	0.09" (2.4mm)
03	0.13" (3.2mm)
04	0.17" (4.2mm)
05	0.19" (4.8mm)
06	0.25" (6.4mm)
07	0.28" (7.1mm)
10	0.35" (8.9mm)
	or 0.41" (10.3mm)
11	0.42" (10.6mm)
13	0.5" (12.7mm)
15	0.59" (15.0mm)
20	0.79" (20mm)
22	0.88" (22.2mm)
25	0.98" (25mm)
29	1.13" (28.6mm)
32	1.25" (31.8mm)
38	1.50" (38.1mm)

E	P1 Type
M	Metric Ferrule
F	Fractional Ferrule
FN	NPT female tapered threads
N	NPT male tapered threads
FRT	ISO tapered female threads
RT	ISO tapered male threads
FRP	Inch parallel female threads (suitable for RP gasket)
BP	ISO parallel male threads (suitable for RG gasket)
FMS	Metric female threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)
TMS	Metric tube socket weld
TWS	Inch tube socket weld
TMB	Metric tube butt weld
TWB	Inch tube butt weld
PWS	Pipe socket weld
PWB	Pipe butt weld
UTB	nut + gasket + metric tube union butt weld
UPB	nut + gasket + Pipe Loose butt welding

F	P1 Size	
	Fractional in.	Metric mm
2	1/8"	2=2
3	3/16"	3=3
4	1/4"	4=4
5	5/16"	6=6
6	3/8"	8=8
8	1/2"	10=10
10	5/8"	12=12
12	3/4"	14=14
14	7/8"	15=15
16	1"	16=16
18	1 1/8"	18=18
20	1 1/4"	20=20
24	1 1/2"	22=22
32	2"	25=25
		28=28
		32=32
		38=38
		50=50

G	H	P2 Size
No		Specify in the same way as the P1
		Except the same as the P1 the other size follows:
6		M6x1 or 3/8-24
7		7/16-20
8		M8x1 or 1/2-20
9		9/16-18
10		M10x1
12		M12x1.5 or 3/4-16
14		M14x15 or 7/8-14
16		M16x1.5
17		1 1/16-12
18		M18x1.5
20		M20x1.5
22		M22x1.5
24		M24x1.5
26		1 5/8-12
27		M27x2
30		1 7/8-12 or M30x2
32		2"

I	Handle mode
	Default = Black nylon handle
C	Vinyl handle cover
41	90° normally closed spring-return
42	90° Normally open spring-return pneumatic actuator
43	90° double acting pneumatic actuator
47	90° electric actuator

J	Circulation mode
	Default = Pass through
A	angle
3	tee
4	four passes
5	five passes
6	six passes
7	seven passes

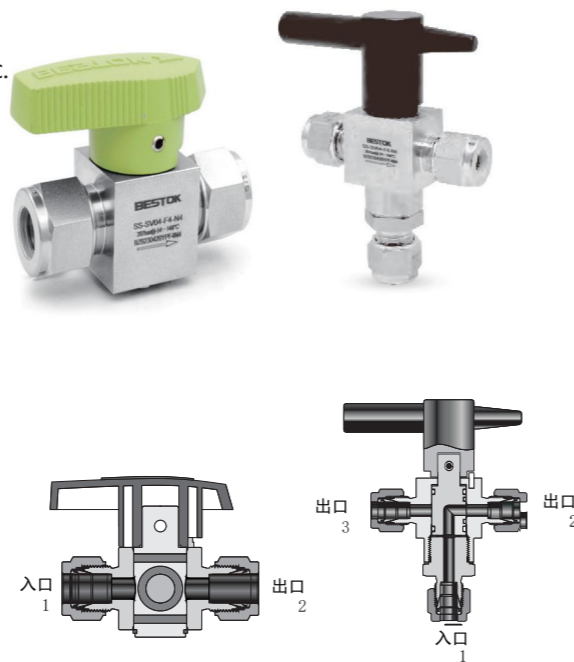
K	Special Application
	Default = None
S	NACE MR 0175
LH	Sulfur passivation

L	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	Degreasing
W2	Oxygen-rich cleaning

# P LUG VALVES

## SV Series

- ◆Body materials: 316 SS, 316L SS, 304 SS and brass, etc.
- ◆O-ring materials: fluorocarbon FKM, NBR, EPDM, Neoprene and FFKM
- ◆Working pressure up to: 3000 psig (207 bar)
- ◆Working temperature: -10°F to 400°F (-23°C to 204°C)
- ◆Flow patterns: 2-way straight, 3-way
- ◆Orifice sizes: 2.4 mm, 4.4 mm, 7.2 mm
- ◆End connections:  
1/8" to 3/4", 3 mm to 12 mm tube fitting  
1/8" to 1/2" pipe thread



### Ordering Number Description

**A B C D E F**

**SS- SVB04 - FN4**

A	Body Material
SS	316 SS
4S	304 SS
21S	321 SS
B	Brass
6L	316L SS

B	Series
SV	SV Series

C	O-ring Material
	Default=PTFE
B	NBR
E	EPDM
Z	FFKM

D	Orifice
02	0.09"(2.4mm)
04	0.17"(4.2mm)
07	0.28"(7.1mm)

E	Inlet 1 Type
M	Metric Ferrule
F	Fractional Ferrule
FN	NPT female tapered threads
N	NPT male tapered threads
FRT	ISO tapered female threads
RT	ISO tapered male threads
FRP	Inch parallel female threads (suitable for RP gasket)
BP	ISO parallel male threads (suitable for RG gasket)
FMS	Metric female threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)

F	Inlet 1 Size	
	Fractional in.	Metric mm
2	1/8"	3=3
4	1/4"	6=6
6	3/8"	8=8
8	1/2"	10=10
12	3/4"	12=12

G H	Outlet 2/3 Type
NO	Same as Inlet 1

I	Handle
	Default=Black/ Green Nylon

J	Flow Pattern
	Default=2-Way
3	3-Way

K	Special Application
	Default=No
S	NACE MR 0175
LH	Sulfur passivation

L	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	Degreasing
W2	Oxygen-rich cleaning

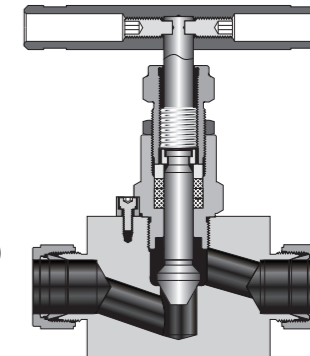
# N EEDLE VALVES



## Screwed Bonnet Needle Valves

### TN1 Series

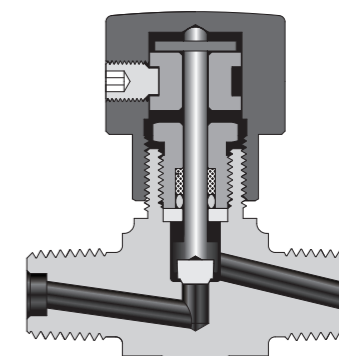
- ◆Working pressure up to: TN1:6000 psig (414bar)  
TNH1:10000 psig (690bar)
- ◆Two piece stem design Upper stem thread lubricant isolated from system media Preventing polluting medium.
- ◆Cold drawn bar as body
- ◆Panel mounting available
- ◆A variety of materials are available.
- ◆Every valve leak tested with Nitrogen or compressed air at the maximum allowable working pressure (Not more than 6000 psig)
- ◆Working temperature: PTFE packing: -65°F to 450°F (-54°C to 232°C)  
PEEK packing: -65°F to 500°F (-54°C to 260°C)  
Graphite packing: -65°F to 1200°F (-54°C to 649°C)
- ◆End connections: 1/8" to 1" threaded or welded, etc.  
1/4" to 1" Tube Fitting  
6mm to 28mm Tube Fitting



## Nonrotating-stem Needle Valves

### TN2 Series

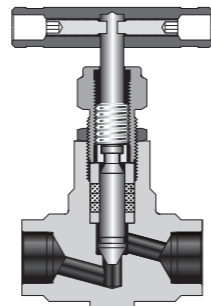
- ◆Working pressure up to: 3000 psig (207 bar)
- ◆One-piece forged body
- ◆Compact design
- ◆Non-rotating stem
- ◆A variety of materials are available.
- ◆Every valve leak tested with Nitrogen or compressed air at the maximum allowable working pressure
- ◆End connections: 1/8" to 1/2" threaded or welded, etc.  
1/8" to 1/2" Tube Fitting  
3mm to 12mm Tube Fitting



**Forged Needle Valves**

**TN3, TNH3 Series**

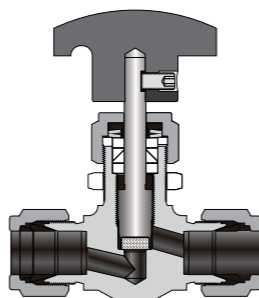
- ◆Working pressure up to:TN3 Series: 6000 psig ( 414 bar )  
TNH3 Series: 10000 psig (690 bar)
- ◆Panel mounting available
- ◆A variety of materials are available.
- ◆Every valve leak tested with Nitrogen or compressed air at the maximum allowable working pressure(Not more than 6000 psig)
- ◆Working temperature:PTFE packing:-65°F to 450°F (-54°C to 232°C)  
Graphite packing:-65°F to 1200°F (-54°C to 649°C)
- ◆End connections:1/8"to 1" threaded or welded, etc.  
1/4"to 1" Tube Fitting  
6mm to 25 mm Tube Fitting



**Integral Bonnet Needle Valves**

**TN4, TNH4 Series**

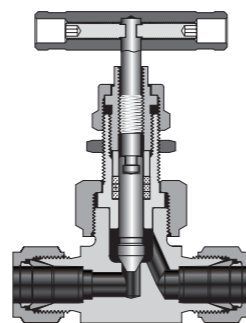
- ◆Working pressure up to:TN4 Series:3000 psig (207 bar)  
TNH4 Series:5000 psig (345 bar)
- ◆One stem design, compact structure, dynamic load packing reliable sealing, can compensate for wear.
- ◆One-piece forged body
- ◆Panel mounting available
- ◆A variety of materials are available.
- ◆Working temperature: PTFE packing:-65°F to 450°F (-54°C to 232°C)  
PEEK packing:-65°F to 500°F (-54°C to 260°C)
- ◆End connections:1/8" to 3/4" threaded or welded, etc.  
1/8" to 3/4" Tube Fitting  
6mm to 18 mm Tube Fitting



**Union Bonnet Needle Valves**

**TN5, TNH5 Series**

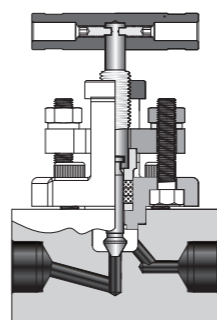
- ◆Working pressure up to:TN5 Series:6000 psig (414 bar)  
TNH5Series:10000 psig (690 bar)
- ◆Combined valve cap structure design
- ◆Panel mounting available
- ◆A variety of materials are available.
- ◆Every valve leak tested with Nitrogen or compressed air at the maximum allowable working pressure(Not more than 6000 psig)
- ◆Working temperature:PTFE packing:-65°F to 450°F (-54°C to 232°C)  
Graphite packing:-65°F to 1200°F (-54°C to 649°C)
- ◆End connections:1/8"to 1"threaded or welded, etc.  
1/4" to 1" Tube Fitting  
6mm to 25mm Tube Fitting



**OS&Y Needle Valves**

**TN6 Series**

- ◆Cold drawn bar
- ◆Body materials: 316 SS, 316L SS, 304 SS, 304L SS, Duplex 2205, Alloy 400, Alloy C- 276 and brass, etc.
- ◆Orifice (mm):4
- ◆Working pressure up to: 6000 psig (414 bar)
- ◆Working temperature: -65°F to 1200°F (-54°C to 649°C )
- ◆Sealing face materials: same as body and tip materials, Stellite available
- ◆Externally adjustable gland independent of spindle thread
- ◆End connections:  
1/4" to 1/2", M10 to M20 thread  
1/4" to 1/2", 6 mm to 12 mm tube fitting  
3/8" to 1/2", 10 mm to 20 mm weld



**Ordering Number Description**

**A B C D E F G H I J K L M N**  
**SS - TN3 - M 12 - N 8 - 9 - G Y - A - O -P-S-W**

A	Body Material
SS	316 SS
4S	304 SS
21S	321 SS
904L	904L SS
6L	316L SS
M	Alloy 400
D5	Duplex 2205
D7	Duplex 2507
B	Brass
HC	Alloy C-276

B	
TN1 Series	
TN2 Series	
TN3/TNH3 Series	
TN4/TNH4 Series	
TN5/TNH5 Series	
TN6 Series	

C	Connection 1 Type
M	Metric Ferrule
F	Fractional Ferrule
FN	NPT female tapered threads
N	NPT male tapered threads
FRT	ISO tapered female threads
RT	ISO tapered male threads
FRP	Inch parallel female threads (suitable for RP gasket)
BP	ISO parallel male threads(suitable for RG gasket)
FMS	Metric female threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)
TMS	Metric tube socket weld
TWS	Inch tube socket weld
TMB	Metric tube butt weld
TWB	Inch tube butt weld
PWS	Pipe socket weld
PWB	Pipe butt weld
UPB	nut + gasket +Pipe

D	Connection 1 Size	
	Fractional in.	Metric mm
2	1/8"	3=3
3	3/16"	4=4
4	1/4"	6=6
5	5/16"	8=8
6	3/8"	10=10
8	1/2"	12=12
10	5/8"	14=14
12	3/4"	15=15
14	7/8"	16=16
16	1"	18=18
		20=20
		22=22
		25=25

E F	P2 Type/Size
Specify in the same way as the P1	
Except the same as the P1 the other size follows:	
6	M6x1 or 3/8-24
7	7/16-20
8	M8x1 or 1/2-20
9	9/16-18
10	M10x1
12	M12x1.5 or 3/4-16
14	M14x1.5 or 7/8-14
16	M16x1.5
17	1 1/16-12
18	M18x1.5
20	M20x1.5
22	M22x1.5
24	M24x1.5
26	1 5/8-12
27	M27x2

G	Orifice size
5	0.08"(2.0mm)
7	0.16"(4.0 mm)
8	0.25"(6.4 mm)
9	0.39"(10 mm)
6	0.59"(15 mm)
0	0.71"(18 mm)

H	Fillers and reinforcements
	Default =PTFE
G	Graphite
P	PEEK
F	FKM
B	Butyl rubber

I	Panel mounting
	Default = None
Y	Yes

J	Circulation mode
	Default =straight in
A	Angle
3	Three way

K	Handle mode
	Default = Black alumina bar handle
C	stainless steel bar handle
O	Black round handle

L	Valve tip type
	Default =Conical valve tip
R	regulating tip
K	soft valve tip -PCTFE
P	soft valve tip -PEEK
O	spherical valve tip

M	Special Application
	Default = None
S	NACE MR 0175
LH	Sulfur passivation

N	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	Degreasing
W2	Oxygen-rich cleaning

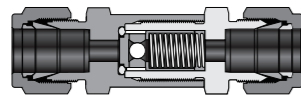
# CHECK VALVES



## C1 Series

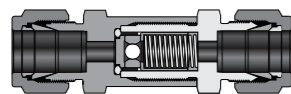
- ◆ Working pressure up to: 3000 psig (207 bar)
- ◆ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ◆ Opening pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ◆ Variety of end connections and materials available
- ◆ End connections: 1/8" to 1" thread

- 1/8" to 1" Tube Fitting
- 3mm to 25mm Tube Fitting
- 1/4" to 1" VCR Fitting



## C2 Series

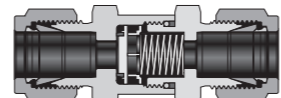
- ◆ Working pressure up to: 3000 psig (207 bar)
- ◆ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ◆ Opening pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ◆ Variety of end connections and materials available
- ◆ Compact design, one piece body
- ◆ End connections: 1/4" to 1/2" thread



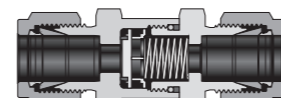
## C3/CH Series

- ◆ Working pressure up to: 6000 psig (414 bar)
- ◆ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ◆ Opening pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ◆ Variety of end connections and materials available
- ◆ Apply to liquids or gases
- ◆ End connections: 1/8" to 1" thread

- 1/4" to 1" Tube Fitting
- 6mm to 25mm Tube Fitting
- 1/4" to 1" VCR Fitting



C3 Series

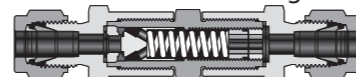


CH Series

## C4 Series

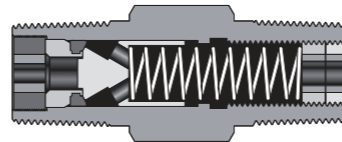
- ◆ Working pressure up to: 3000 psig (207 bar)
- ◆ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ◆ Opening pressure: 3 to 600 psig (0.2 to 41.4 bar)
- ◆ Variety of end connections and materials available
- ◆ End connections: 1/4" to 3/8" thread

- 1/4" to 1" Tube Fitting
- 6mm to 12mm Tube Fitting
- 1/4"至 1" VCR Fitting



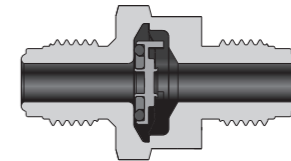
## C5 Series

- ◆ Working pressure up to: 3000 psig (207 bar)
- ◆ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ◆ Opening pressure: 3 to 600 psig (0.2 to 41.4 bar)
- ◆ Variety of end connections and materials available
- ◆ Compact design, one piece body
- ◆ End connections: 1/4" to 1/2" NPT thread



## C6 Series

- ◆ Internally threadless and all-welded design
- ◆ Forward flow starts at less than 2 psig (0.14 bar) pressure differential
- ◆ Standard surface roughness finished to an average of Ra 20 yin. (0.51 ym) or electropolished to Ra 10 pin. (0.25 ym) optional
- ◆ Variety of end connections available
- ◆ Working temperature: -10~400°F (-23~204°C)
- ◆ Flow coefficient: 0.55 or 0.70
- ◆ Connections: 1/4" to 1/2" or 6 mm to 12 mm



## Ordering Number Description

**A B C D E F G H I J**  
SS - C1 - 1 - F 8 - N 8 - Z -S-W

A	Body Material
SS	316 SS
4S	304 SS
21S	321 SS
904L	904L SS
6L	316L SS
M	Alloy 400
B	Brass

B	Series
C1	C1 Series
C2	C2 Series
C3/CH	C3/CH Series
C4	C4 Series
C5	C5 Series
C6	C6 Series

C	Opening pressure
C1, C2, C3 Series application:	Default=3psig
	1/3=1/3psig
	1=1psig
	10=10psig
	25=25psig
C4, C5 Series application:	Default=3-50psig
	60=50-150psig
	160=150-350psig
	360=350-600psig

D	P1 Type
M	Metric Ferrule
F	Fractional Ferrule
FN	NPT female tapered threads
N	NPT male tapered threads
FRT	ISO tapered female threads
RT	ISO tapered male threads
FRP	Inch parallel female threads (suitable for RP gasket)
BP	ISO parallel male threads (suitable for RG gasket)
FMS	Metric female threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)
TMS	Metric tube socket weld
TWS	Inch tube socket weld
TMB	Metric tube butt weld
TWB	Inch tube butt weld
PWS	Pipe socket weld
PWB	Pipe butt weld
UTB	nut + gasket + metric tube union butt weld

E	P1 Size
2	1/8"
4	1/4"
6	3/8" (6mm)
8	1/2" (8mm)
10	5/8" (10mm)
12	3/4" (12mm)
M12x	1.5
14	7/8" (14mm)
M14x	1.5
16	1" (16mm)
M16x	1.5
20	1 1/4" (20mm)
M20x	1.5
22	22mm (M22x1.5)
25	25mm

F	G	P2 Size
		Specify in the same way as the P1

H	Sealing Material
Default=fluororubber (FKM)	
B	Butyl rubber (NBR)
Z	Perfluorinated rubber (Kalrez)
E	Ethylene-propylene rubber (EPDM)

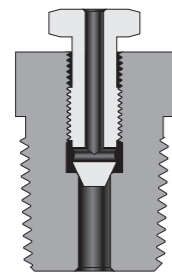
I	Special Application
Default = None	
S	NACE MR 0175

J	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W	Degreasing
W2	Oxygen-rich cleaning

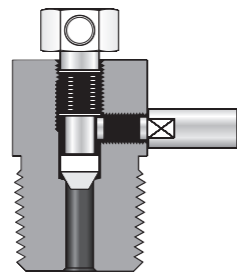


# BLEED VALVES

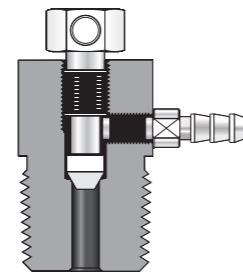
- ◆ Working pressure up to 10,000 psig (690 bar)
- ◆ Working temperature: -65°F to 850°F (-54 °C to 454 °C)
- ◆ Compact design for convenient installation
- ◆ End connection: 1/8" to 1/2" pipe thread



Type 1



Type 2



Type 3

## 订购型号说明

**A B C D E F G H**  
**SS - DV - N4 -L-C -S -W**

A	阀体材料
SS	316 SS
4S	304 SS
21S	321 SS
904L	904L SS
6L	316L SS
B	Brass

B	Series
DV	DV Series

C	Inlet Type
N	Male NPT
RT	Male BSPT

D	Inlet Size
2	1/8"
4	1/4"
6	3/8"
8	1/2"

E	Vent
	Default=Type1
L	Type2
T	Type3

F	Handle
NO	Type1
C	StainlessSteel Handle (for Type 2.and Type 3)

G	Special Application
	Default=NO
S	NACE MR 0175

H	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	Degreasing
W2	Oxygen-rich cleaning

# RELIEF VALVES



## UV Series

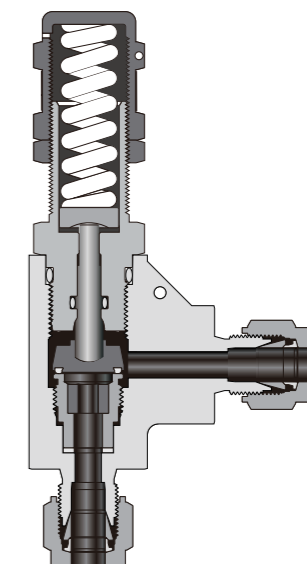
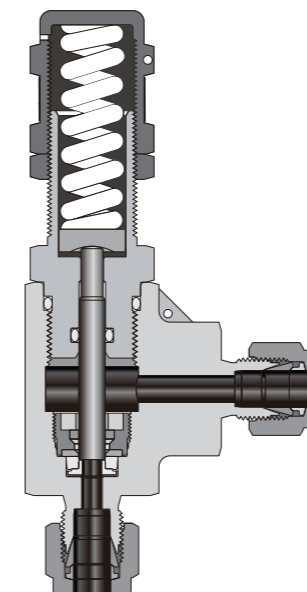
- ◆ Set Pressure 7 color-coded springs available for wide range of set pressure, 50 to 6000 psig @ 70°F (3.4 to 414 bar @ 20°C)
- ◆ Orifice size: 0.14" (3.6mm)
- ◆ Working temperature: -40°F to 300°F (-40°C to 148°C)
- ◆ Maximum outlet pressures: 1500 psig (103 bar)
- ◆ Variety of end connections available
- ◆ Liquid or gas service
- ◆ End connections: 1/4" to 3/4" thread

1/4" to 3/4" Tube Fitting  
 6mm to 18mm Tube Fitting

## UW Series

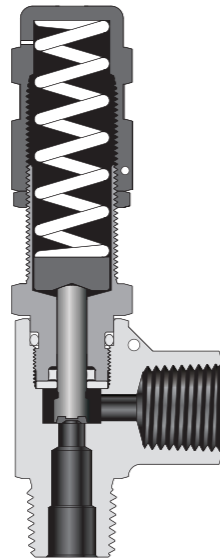
- ◆ Set Pressure 10 to 150 psig @ 70°F (0.68 to 10.3 bar @ 20°C)
- ◆ Maximum outlet pressure: 150 psig (10.3 bar)
- ◆ Orifice size: 0.19" (4.8mm), 0.25" (6.4 mm)
- ◆ Working temperature: -40°F to 300°F (-40°C to 148°C)
- ◆ Maximum outlet pressures: 150psig(10.3bar)
- ◆ Variety of end connections available
- ◆ Liquid or gas service
- ◆ End connections: 1/4" to 3/4" thread

1/4" to 3/4" Tube Fitting  
 6mm to 18mm Tube Fitting



## UM Series

- ◆Set Pressure 3 color-coded springs available for a wide range of set pressure, 50 to 1500 psig @ 70°F (3.4 to 103 bar @ 20°C)
- ◆Maximum outlet pressure 1500 psig (103 bar)
- ◆Orifice size: 0.25" (6.4mm)
- ◆Working temperature: -40°F to 300°F (-40°C to 148°C)
- ◆Multiple termination options are available
- ◆Liquid or gas service
- ◆End connections: 1/4" to 1/2" thread or 6mm to 12mm Tube Fitting



### Set Pressure and Resealing Pressure

**Set pressure:** The set pressure is the upstream pressure at which the first indication of flow occurs. The repeatability of set pressure of each valve after initial relief is  $\pm 5\%$  at room temperature.

**Resealing pressure:** The resealing pressure is the upstream pressure at which there is no indication of flow. Resealing pressure is always lower than set pressure.

**Note:** For valves not acutated for a period of time, the initial relief pressure may be higher than the set pressure.

## Ordering Number Description

**A B C D E F G H I J K**  
**SS - UV 4 - F 6 - M 8 - Z - B - S - W**

A	Body Material
SS	316 SS
4S	304 SS
21S	321 SS
904L	904L SS
6L	316L SS
M	Alloy 400
B	Brass

B	Series
UV	UV Series
UW	UW Series
UM	UM Series

C	Orifice size
4	0.14" (3.6mm) for UV series
5	0.19" (4.8mm) for UW series
6	0.25" (6.4mm) for UW and UM series

D	P1 Type
M	Metric Ferrule
F	Fractional Ferrule
FN	NPT female tapered threads
N	NPT male tapered threads
FRT	ISO tapered female threads
RT	ISO tapered male threads
FRP	Inch parallel female threads (suitable for RP gasket)
BP	ISO parallel male threads (suitable for RG gasket)
FMS	Metric female threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)

E	P1 Size
2	1/8"
4	1/4"
6	3/8" (6mm)
8	1/2" (8mm)
10	5/8" (10mm)
12	3/4" (12mm)

F G	P2 Type/Size
Specify in the same way as the P1	

H	Sealing material
Default = Fluorine rubber (FKM)	
B1	Nitrile rubber (NBR)
Z	Fluorinated rubber (Kalrez)
E	Ethylene propylene rubber (EPDM)

I	Spring Color	
A	Blue (50-350)psig	for UV series
B	yellow (350-750)psig	
C	purple (750-1500)psig	
D	orange (1500-2250)psig	
E	brown (2250-3000)psig	
F	white (3000-4000)psig	
G	red (4000-5000)psig	for UW series
H	green (5000-6000)psig	
A	lake blue (10-70)psig	
B	pink (70-150)psig	

J	Special Application
Default = None	
S	NACE MR 0175

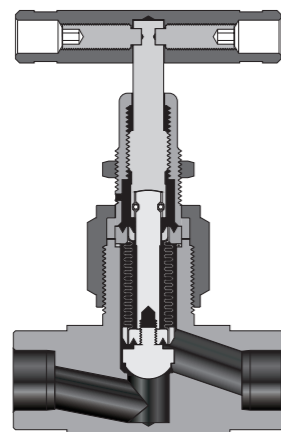
K	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W	Degreasing
W2	Oxygen-rich cleaning

# B ELLOWS-SEALED VALVES



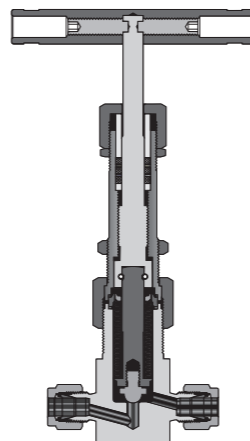
## BS Series

- ◆ Working pressure up to: 1000 psig (69.0 bar)
- ◆ Working temperature: -20°F to 842°F (-28°C to 45°C)
- ◆ Variety of end connections available
- ◆ Hydraulic-formed multilayer bellows enhance cycle life.
- ◆ Nonrotating stem tip eliminates galling within the seat area
- ◆ Externally pressurized bellows design for maximum strength
- ◆ Panel and bottom mounting available.
- ◆ Before leaving the factory, each valve seat, casing and all seals have to require a leak test, with helium not less than 87 psig(6bar) at maximum leakage rate  $4 \times 10^{-9}$  std cm<sup>3</sup>/s.
- ◆ Body material: 316 SS, Brass
- ◆ End connections:  
1/4" to 1" and 6 mm to 25 mm tube fitting  
1/4" to 1/2" and 6 mm to 12 mm tube socket weld  
1/4" to 1/2" and 6 mm to 12 mm tube butt weld  
1/4 to 1/2 VCR fitting



## BM Series

- ◆ Working pressure up to: 2500 psig (172 bar)
- ◆ Working temperature: -20°F to 842°F (-28°C to 450°C)
- ◆ Variety of end connections available
- ◆ Upper packing provides secondary containment system above the bellows
- ◆ Strictly controlled bellows stroke to improve safety and cycle life.
- ◆ Replaceable bellows and stem assembly.
- ◆ Regulating, conical and spherical stem tips available.
- ◆ Panel and bottom mounting available.
- ◆ Before leaving the factory, each valve seat, casing and all seals have to require a leak test, with helium not less than 87 psig(6bar) at maximum leakage rate  $4 \times 10^{-9}$  std cm<sup>3</sup>/s.
- ◆ End connections:  
1/4" to " and 6 mm to 25 mm tube fitting 1/2  
1/4" to 1" and 6 mm to 25 mm tube socket weld  
3/8" to 1" and 6 mm to 25 mm tube butt weld  
1/4 to 1/2 VCR fitting



## Ordering Number Description

**A B C D E F G H I J K**  
SS - BS 5 - F 8 - M 10 - R - 0 -S-W

A	Body Material
SS	=316 SS
4S	=304 SS
21S	=321 SS
904L	=904L SS
6L	=316L SS
B	=Brass

B	Series
BS	Series
BM	Series

C	Orifice size
2	=0.16"(4.1 mm)
3	=0.26"(6.6mm)
4	=0.28"(7.1 mm)
5	=0.31"(7.6 mm)

D	P1 Type
M	=Metric Ferrule
F	=Fractional Ferrule
TWS	=Fractional Tube Socket Weld
TMS	=Metric Tube Socket Weld
TWB	=Fractional Tube Butt Weld
TMB	=Metric Tube Butt Weld
PWS	=Pipe Socket Weld
PWB	=Pipe Butt Weld
UTWB	=Fractional Tube Fitting
UTB	=Metric Tube Fitting
FVC	=Female VCR Fitting
VC	=Male VCR Fitting

E	P1 Size
2	=1/8"
3	=3mm
4	=1/4"
6	=3/8"(6mm)
8	=1/2"(8mm)
10	=5/8"(10mm)
12	=3/4"(12mm)
16	=1"(16mm)
20	=1 1/4(20 mm)

F G	P2 Type/Size
Specify in the same way as the P1	

H	Valve head type
Default = Spherical	
R	= Adjustable form
N	=Taper form

I	Handle
Default = Black alumina bar handle	
C	= stainless steel bar handle
O	= Black round handle

J	Special Application
Default = None	
S	=NACE MR 0175

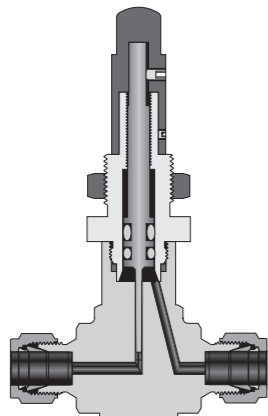
K	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W	=Degreasing
W2	=Oxygen-rich cleaning

# METERING VALVES



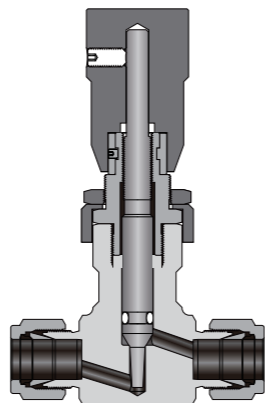
## SC Series

- ♦ Working pressure up to: 2000 psig (138 bar)
- ♦ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ♦ Orifice size: 0.032" (0.81mm)
- ♦ Max flow coefficient (Cv): 0.004
- ♦ Stem taper: 1°
- ♦ Turns to open: 9 to 12
- ♦ Truncation function: No
- ♦ Variety of end connections available
- ♦ Panel mountable
- ♦ Flow patterns: straight, angle, cross and double
- ♦ Handle types: round, vernier, slotted and adjustable-torque
- ♦ Variety of materials available for valve body
- ♦ End connections: 1/8" to 1/4" thread  
1/8" to 1/4" Tube Fitting  
3mm to 6mm Tube Fitting  
1/4" VCR Fitting



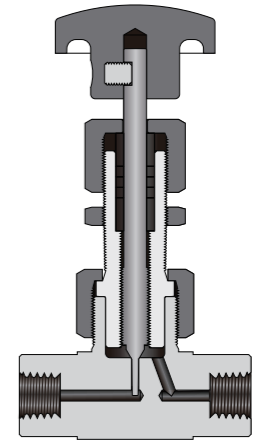
## SD1/SD Series

- ♦ Working pressure up to: 1000 psig (69.0 bar)
- ♦ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ♦ Flow coefficients (Cv): SD1 series: 0.03  
SD series: 0.15
- ♦ Orifice sizes: SD1 series: 0.056" (1.42 mm)  
SD series: 0.128" (3.25 mm)
- ♦ Stem taper: SD1 series: 3°  
SD series: 6.5°
- ♦ Turns to open: SD1 series: 8 to 10  
SD series: 10 to 11
- ♦ Shutoff service: SD1 series: not available  
SD series: available
- ♦ Panel mounting
- ♦ Flow patterns: straight, angle, cross (SD1 Series)  
double (SD1 Series)
- ♦ Handle types: SD1 series: vernier, knurled, slotted  
SD Series: round, vernier
- ♦ Variety of materials available for valve body
- ♦ End connections:  
1/8" to 1/4" and 3 mm to 8 mm tube fitting  
1/4 male VCR Fitting  
1/8 to 1/4 NPT



## SE Series

- ♦ Compact structure, saving space
- ♦ Working pressure up to: 5000 psig (345 bar)
- ♦ Working temperature: -65°F to 850°F (-54°C to 454°C)
- ♦ Orifice size: 0.062" (1.6mm)
- ♦ Max flow coefficient (Cv): 0.04
- ♦ Stem taper: 2°
- ♦ Turns to open: 9 to 10
- ♦ Shutoff service: available
- ♦ Variety of end connections
- ♦ Panel mountable
- ♦ Flow patterns: straight, angle
- ♦ Handle type: circular and vernier
- ♦ Variety of materials available for valve body
- ♦ End connections: 1/8" to 1/4" thread  
1/8" to 1/4" Tube Fitting  
3mm to 8mm Tube Fitting  
1/4 male VCR Fitting



## Ordering Number Description

**A B C D E F G H I J K**  
**SS - SC - F 4 - M 6 - Z B - A -S-W**

A	Body Material	C	P1 Type	G	Ring Material	I	Circulation mode
SS=	316 SS	M=	Metric Ferrule		Default = Fluorine rubber(FKM)		Default = Right Angle
4S=	304 SS	F=	Fractional Ferrule		B=Nitrile rubber (NBR)		A= angular type
21S=	321 SS	FN=	Female NPT		Z=Fluorinated rubber (Kalrez)		B= double stem type
904L=	904L SS	N=	Male NPT		E=Ethylene propylene rubber (EPDM)		C= cross type
6L=	316L SS	FRT=	ISO tapered female threads		G= graphite		
M=	Alloy 400	RT=	ISO tapered male threads				<b>J</b> Special Application
B=	Brass	FRP=	Inch parallel female threads (suitable for RP gasket)				Default = None
		BP=	ISO parallel male t hreads(suitable for RG gasket)				S=NACE MR 0175
<b>B</b>	<b>Series</b>	FMS=	Metric female threads (suitable for RG gasket)	<b>H</b>	<b>Handle type</b>		<b>K</b> Cleaning and Packaging
	SC Series	MS=	Metric male threads (suitable for RG-M gasket)		Default = Knurled type (metallic color)		Default = Standard cleaning and packaging for general industrial use
	SD1/SD Series	VC=	Male VCR Fitting		SC\SD series Round type (black) SE series		W=Degreasing
	SE Series				L=Knurled groove type (metallic color)		W2=Oxygen-rich cleaning
					T=Adjusting torque type (metallic color)		
		<b>D</b>	<b>P1 Size</b>		V=Cursor type		
			2=1/8"				
			3=3mm				
			4=1/4"				
			6=3/8"(6mm)				
			8=1/2"(8mm)				
		<b>E F</b>	<b>P2 Type/Size</b>				
			Specify in the same way as the P1				

# G AUGE VALVES



## Main Features

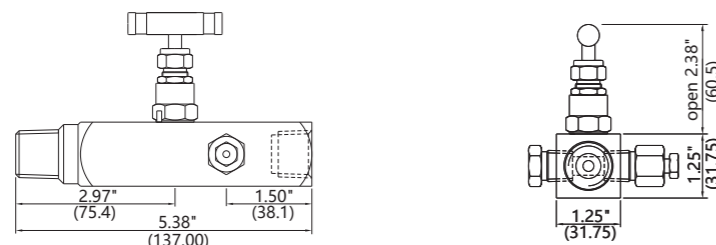
- Working pressure up to:
  - Stainless steel: BV up to 6000 psig (414 bar)
  - BVH up to 10000 psig (690 bar)
- BV series working temperature:
  - PTFE packing: -65°F to 450°F (-54°C to 232°C)
  - Graphite packing: -65°F to 1200°F (-54°C to 649°C)

- Non-rotating lower stem
- Variety of materials for seat and packing
- Safety back seating seals in fully open position
- Rolled spindle operating threads
- Lubricant for stem thread isolated from the media
- Externally adjustable gland
- Bonnet locking pin fitted as standard
- Low torque operating T bar handle
- Option for different colored handles
- Steady and durable fastening of the handle by double lock-pins

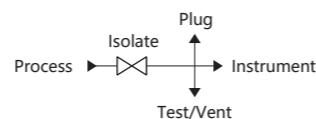
## Types and Dimensions

### Standard Type

Basic Ordering Number	Design	Inlet/Process	Outlet/Instrument	Test/Vent/Plug
SS-BV-N8-FN8	Ball Tip	1/2 Male NPT	1/2 Female NPT	1/2 Female NPT
SS-BVH-N8-FN8	Plug Tip			
SS-BV-N8-FN8	Ball Tip	3/4 Male NPT	1/2 Female NPT	1/2 Female NPT
SS-BVH-N8-FN8	Plug Tip			

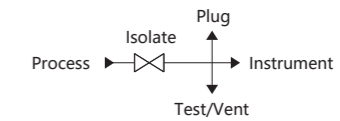
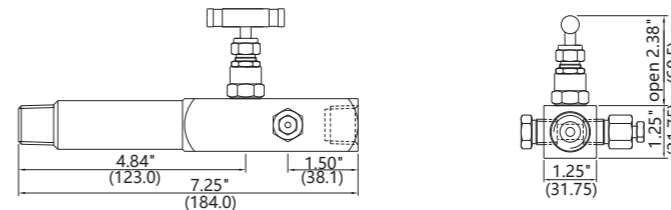


The dimensions shown are for BC series gauge valves. If you need the dimensions of BVH series, please contact BESTOK Group.



## Lagging Extension Body Type

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent/Plug
SS-BV-N8-FN8-E	1/2 Male NPT	1/2 Female NPT	1/2 Female NPT
SS-BVH-N8-FN8-E			

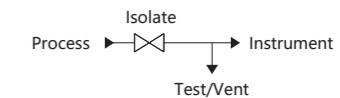
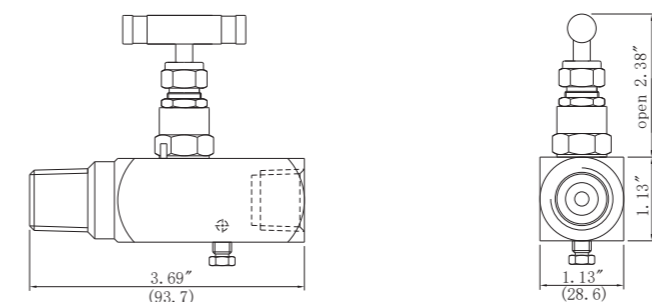


Lagging extension body is inserted through pipe insulation.

The dimensions shown are for BV series gauge valves. If you need the dimensions of BVH series, please contact BESTOK Group.

## Compact valve body type

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent/Plug
SS-BV-N8-FN8-ST	1/2 Male NPT	1/2 Female NPT	1/2 Female NPT
SS-BVH-N8-FN8-ST			



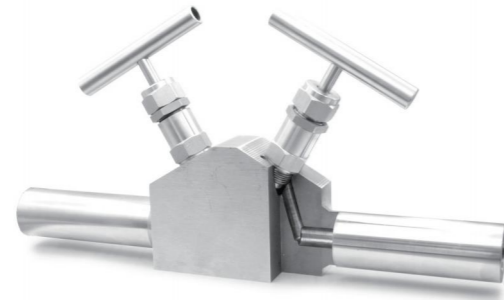
## Ordering Number Description

**A B C D E F**

**SS- BV- N8 - FN8**

<b>A Body Material</b> SS=316 SS 4S=304 SS 6L=316L SS B=Brass	<b>C Inlet Type</b> FN=Female NPT N=Male NPT FRT=Female BSPT RT=Male BSPT FMS=Female Metric Thread MS=Male Metric Thread FRP=Female BSPP	<b>E F Outlet Type and Size</b> Same as Inlet	<b>I Handle</b> Default=Black Aluminum Bar C=StainlessSteel Bar
<b>B Series</b> BV BVH	<b>D Inlet Size</b> 8=1/2" 12=3/4" 20=M20*1.5	<b>G Body Style</b> NO=Standard Type E=Extended Type ST=MiniatureType	<b>H Packing Material</b> Default =PTFE G=Graphite

# D 双芯阀 DOUBLE BLOCKNEEDLE VALVES



## Characteristic

- ◆ One-piece forged body
- ◆ Non-rotating stem design permits ease of operation and less packing wear
- ◆ Intermittent packing system requires lower operating torque and achieves a more reliable seal
- ◆ A wide selection of body materials and structures, a variety of handle colors and forms
- ◆ Each valve leak tested with nitrogen or compressed air at the maximum working pressure or with water at 1.1 times the maximum working pressure
- ◆ Working pressures up to:  
Stainless steel 316/304/321: class 2500 (6000 psig)  
Alloy C-276: 2500 class(6000 psig)  
Alloy 40Q 2084 class(5000 psig)  
Carbon steel A105/F11/F22/F91/F92:  
2500 class(6000 psig)
- ◆ Working temperature:  
graphite packing: -65°F to 1200°F (-54°C to 649°C)

## Ordering Number Description

**A** **B** **C D** **E F G H I**  
SS - TN1-D2-PWS8-PWB12 -9G -100

A	Body Material
SS	=316 SS
4S	=304 SS
21S	=321 SS
6L	=316L SS
HC	=Alloy C-276
M	=Alloy 400
CS	=Carbon Steel

B	Series
TN1	-D2
TO1	-D2

C	Inlet Type
TMS	=Metric Tube
Socket Weld	
TWS	=Fractional Socket
Weld Tube	
TMB	=Metric Tube
Butt Weld	
TWB	=Fractional
Butt Weld Tube	
PWB	=Pipe Butt Weld
PWS	=Pipe Socket
Weld	

D	Inlet Size	
	Fractional in.	Metric mm
4	=1/4"	12=12
8	=1/2"	14=14
12	=3/4"	16=16
16	=1"	18=18
20	=1 1/4"	20=20
24	=1 1/2"	22=22
		25=25
		28=28
		32=32

E F	Outlet Type and Size
	Same as Inlet

G	Orifice Size
7	=0.16"(4.0 mm)
8	=0.25"(6.4 mm)
9	=0.39"(10 mm)
6	=0.59"(15 mm)
0	=0.71" (18 mm)

H	Packing Material
	Default =PTFE
G	=Graphite

I	Port length
60	=60mm
80	=80mm
100	=100mm
120	=120mm

J	FlowPattern
	Default=Straight

K	Handle
	Default=Black Aluminum Bar
C	=StainlessSteel Bar

L	Special Application
	Default = None
S	=NACE MR 0175

M	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	=Degreasing
W2	=Oxygen-rich cleaning

# MANIFOLDS



## 2,3,5 Valve Manifolds Series

- ◆ Working pressure up to: V2, VE2 V3, VE3, V5, VE5 series up to 6000 psig (414 bar)  
VH2, VEH2, VH3, VEH3, VH5, VEH5 up to 10000 psig (690 bar)
- ◆ Working temperature:  
PTFE packing: -65° to 450°F (-54°C to 232°C)  
Graphite packing: -65°F to 1200°F (-54°C to 649°C)

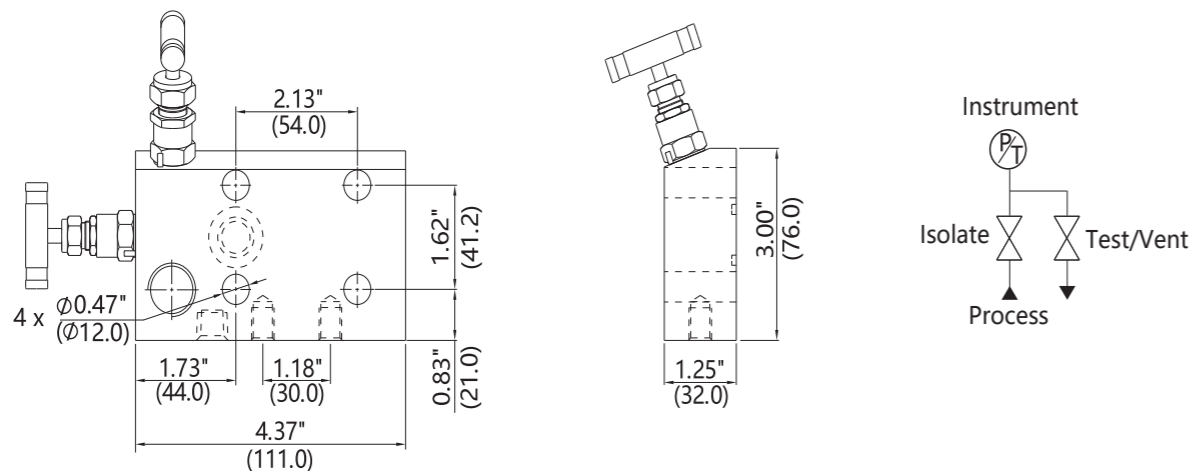
- ◆ Packing bolt thread extrusion formed, high strength, improving cycle life.
- ◆ Non-rotating spool avoids scratches caused by squeezing rotation with the seat during valve closing.
- ◆ Valve head surfacing stellite alloy, good wear resistance, long service life.
- ◆ Each manifold leak tested at rated working pressure
- ◆ Steady and durable fastening of the handle by handle set screw

## 2-valve Manifolds

Consist of one block valve and one bleed valve

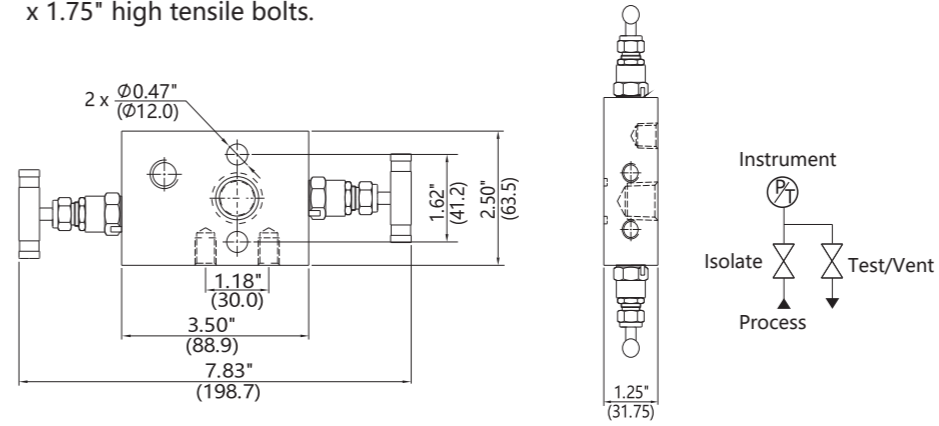
Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-VE2-FN8-A	1/2 Female NPT	Flange	1/4 Female NPT

Every manifold is supplied with PTFE sealing ring and 7/16 x 1.75" high tensile bolts.

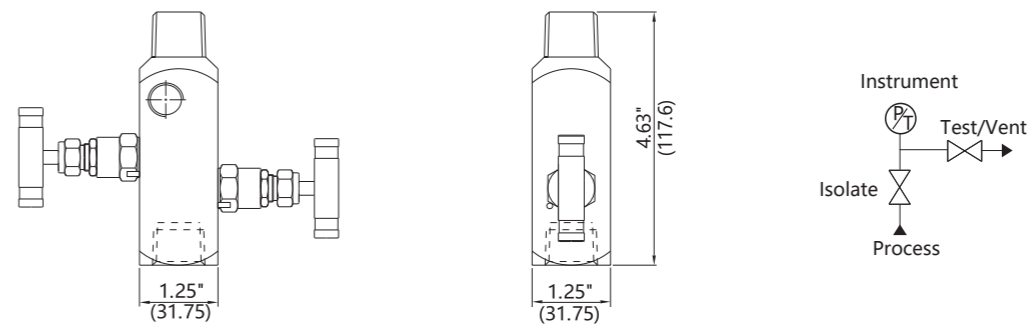


Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-VE2-FN8-E	1/2 Female NPT	Flange	1/4 Female NPT

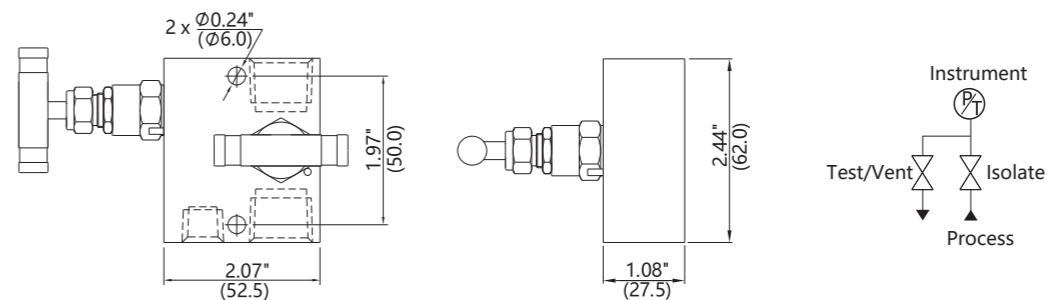
Every manifold is supplied with PTFE sealing ring and 7/16 x 1.75" high tensile bolts.



Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-V2-FN8-N8-E	1/2 Female NPT	1/2 Male NPT	1/4 Female NPT
-V2-N8-E	1/2 Male NPT	1/2 Male NPT	1/4 Female NPT



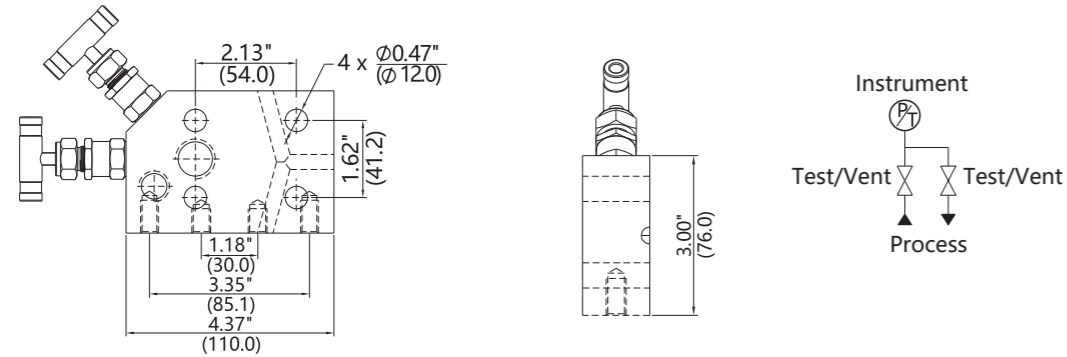
Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-V2-FN8-F	1/2 Female NPT	1/2 Female NPT	1/4 Female NPT



## 2-valve Manifolds

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-V3-FN8-F	1/2 Female NPT	Flange	1/4 Female NPT

Every manifold is supplied with PTFE sealing ring and 7/16 x 2" high tensile bolts.

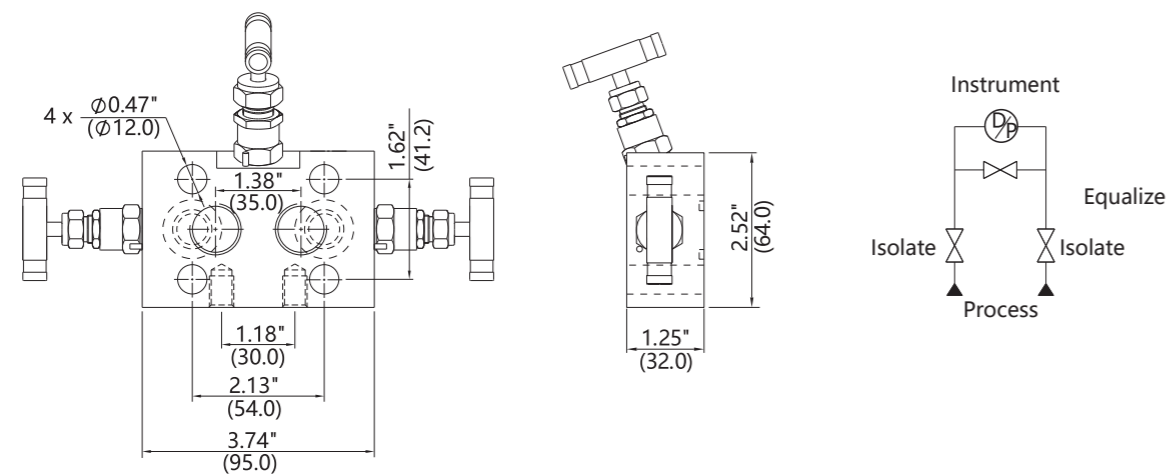


## 3-valve Manifolds

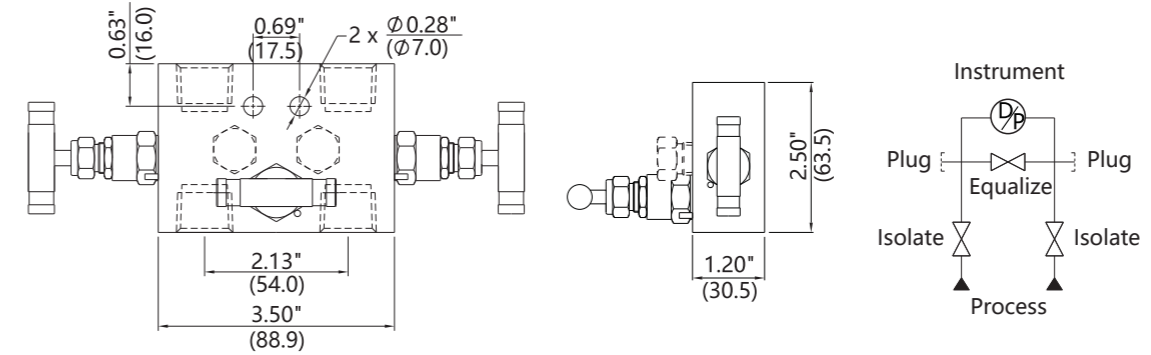
Consist of two block valves and one equalizer valve

Basic Ordering Number	Inlet/Process	Outlet/Instrument
-VE3-FN8-A	1/2 Female NPT	Flange

Every manifold is supplied with PTFE sealing ring and 7/16 x 1.75" high tensile bolts.

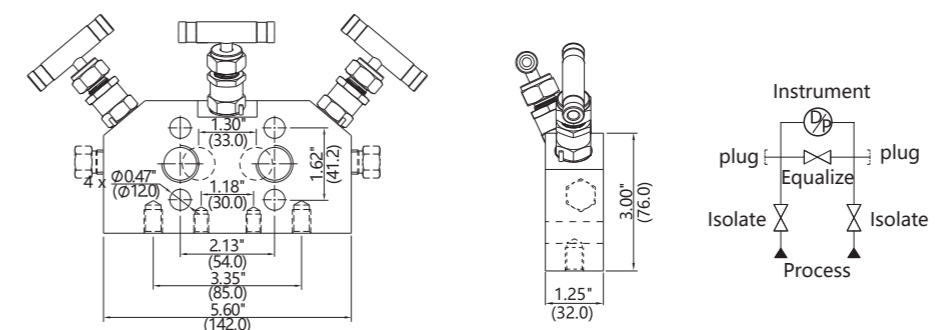


Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-V3-FN8-F	1/2 Female NPT	1/2 Female NPT	Optional



Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-VE3-FN8-C	1/2 Female NPT	Flange	Optional

Every manifold is supplied with PTFE sealing ring and 7/16 x 2" high tensile bolts.



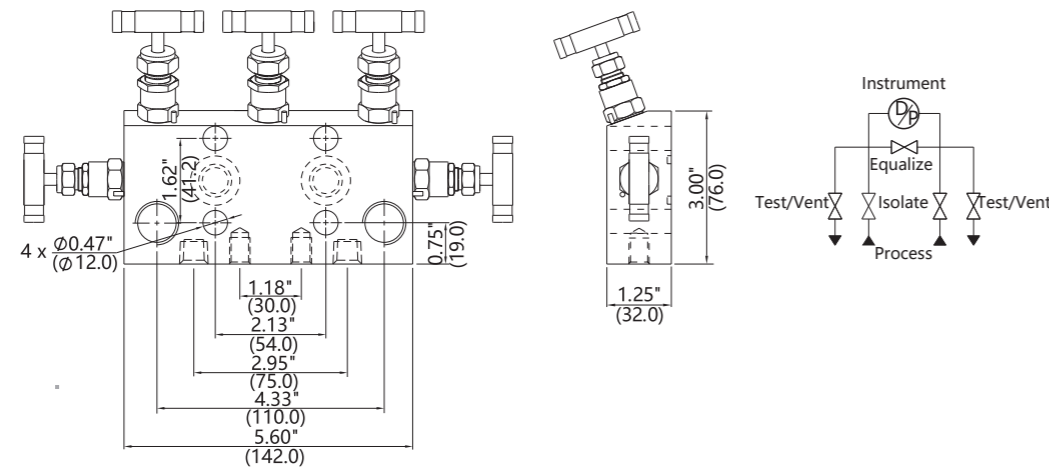


### 5-valve Manifolds

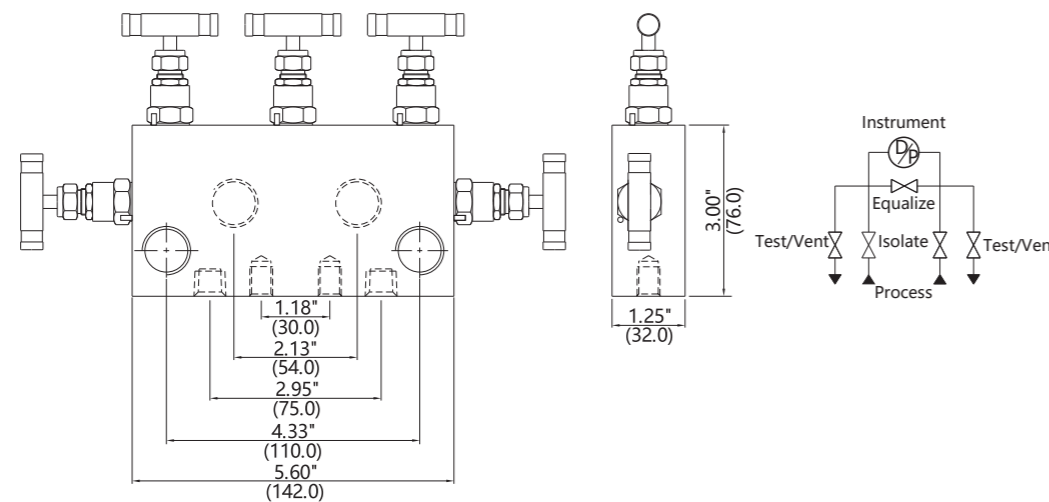
5-valve Manifold of Double-bleed Function:  
consist of two block valves, two bleed valves and one equalizer valve

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-VE5-FN8-A	1/2 Female NPT	Flange	1/4 Female NPT

Every manifold is supplied with PTFE sealing ring and 7/16 - 20 x 1.75" high tensile bolts.



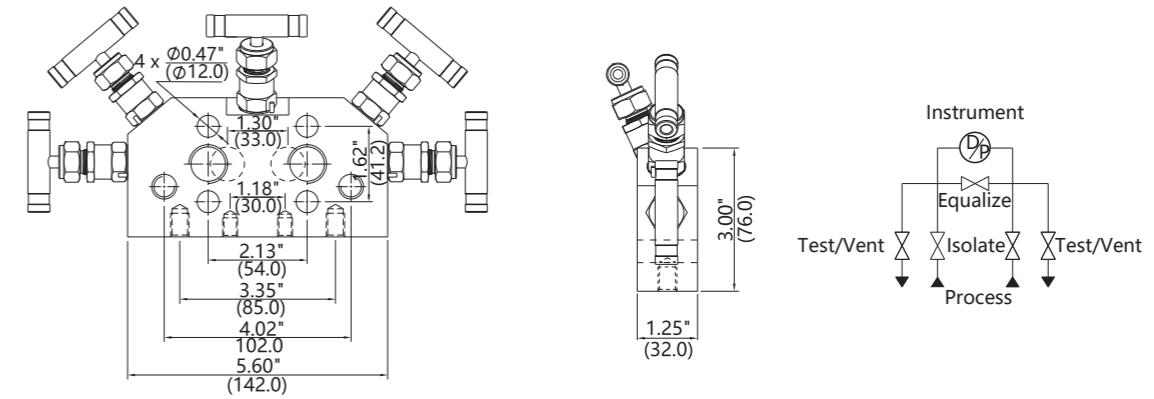
Basic Ordering Number	Inlet/Process	Outlet/Instrument	Vent	Test
-V5-FN8-D	1/2 Female NPT	1/2 Female NPT	1/4 Female NPT	Optional



### 5-valve Manifolds

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent
-VE-FN8-C	1/2 Female NPT	Flange	1/4 Female NPT

Every manifold is supplied with PTFE sealing ring and 7/16x 2" high tensile bolts.



### Ordering Number Description

**A B C D E F G H I**  
SS - VE 3 - FN 8 - D - G -S-W

<b>A Body Material</b>	<b>D P1 Type</b>	<b>F Body Type</b>
SS=316 SS	FN=NPT female tapered threads	A= Angular type
4S=304 SS	N=NPT male tapered threads	B= Double balance function
21S=321 SS	FRT=ISO tapered female threads	C= Compact structure
904L=904L SS	RT=ISO tapered male threads	D= Valve installed in line
6L=316L SS	FRP= Inch parallel female threads (suitable for RP gasket)	E= Horizontal valve installation
M=Alloy 400	BP=ISO parallel male threads(suitable for RG gasket)	F= Valve installed vertically
B=Brass	FMS=Metric female threads (suitable for RG gasket)	<b>G Sealing Material</b>
<b>B Installation Way</b>	MS=Metric male threads (suitable for RG-M gasket)	Default =PTFE
VE=Coplanar installation		G= Graphite filler
V=Remote installation		<b>H Special Application</b>
<b>C Series</b>		Default = None
2=2- Valve Manifolds	<b>E P1 Size</b>	S=NACE MR 0175
3=3- Valve Manifolds	4=1/4"	<b>I Cleaning and Packaging</b>
5=5- Valve Manifolds	6=3/8"(6mm)	Default = Standard cleaning and packaging for general industrial use
	8=1/2"(8mm)	W=Degreasing
	10=5/8"(10mm)	W2=Oxygen-rich cleaning
	12=3/4"(12mm)	
	16=1"(16mm)	
	20=1 1/4(20 mm)	

# BLOCK AND BLEED VALVES



## Features

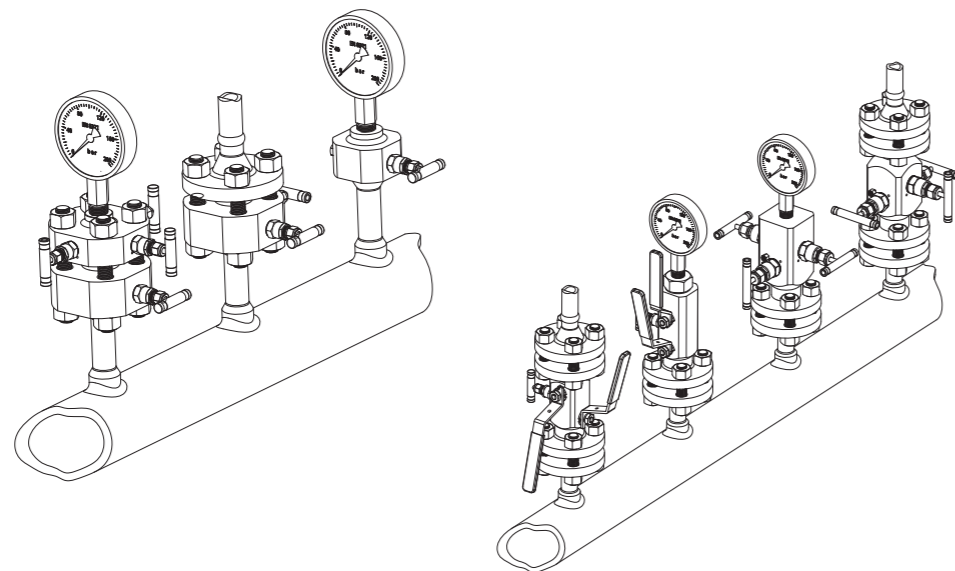
- ◆ Working pressure up to: 2500 Class
- ◆ Working temperature: PTFE packing: -65°F to 450°F (-54°C to 232°C)  
Graphite packing: -65°F to 1200°F (-54°C to 649°C)

## Needle Type Valve Model

- ◆ Two-piece stem design: Upper stem threads cold rolled and hardened lower stem for high strength and smooth operation
- ◆ Upper stem thread lubricant is isolated from system fluid
- ◆ Linear instead of rotary motion of the rising, non-rotating stem minimizes packing abrasion and reduces the friction between the seat and the tip
- ◆ Stem back seating seals in fully open position

## Ball Valve Model

- ◆ Bottom-loaded stem prevents stem blowout and enhances system safety
- ◆ High-strength stem bearing provides smooth actuation and eliminates galling between valve stem and body



## Flange Single Block and Bleed Valves

SS-VB-MM16900-FN8-V4-OT	SS-VB-MM16900-FN8-V4-TT	SS-VB-MM16900-FN8-2V4-OT	SS-VB-MM16900-FN8-2V4-TT

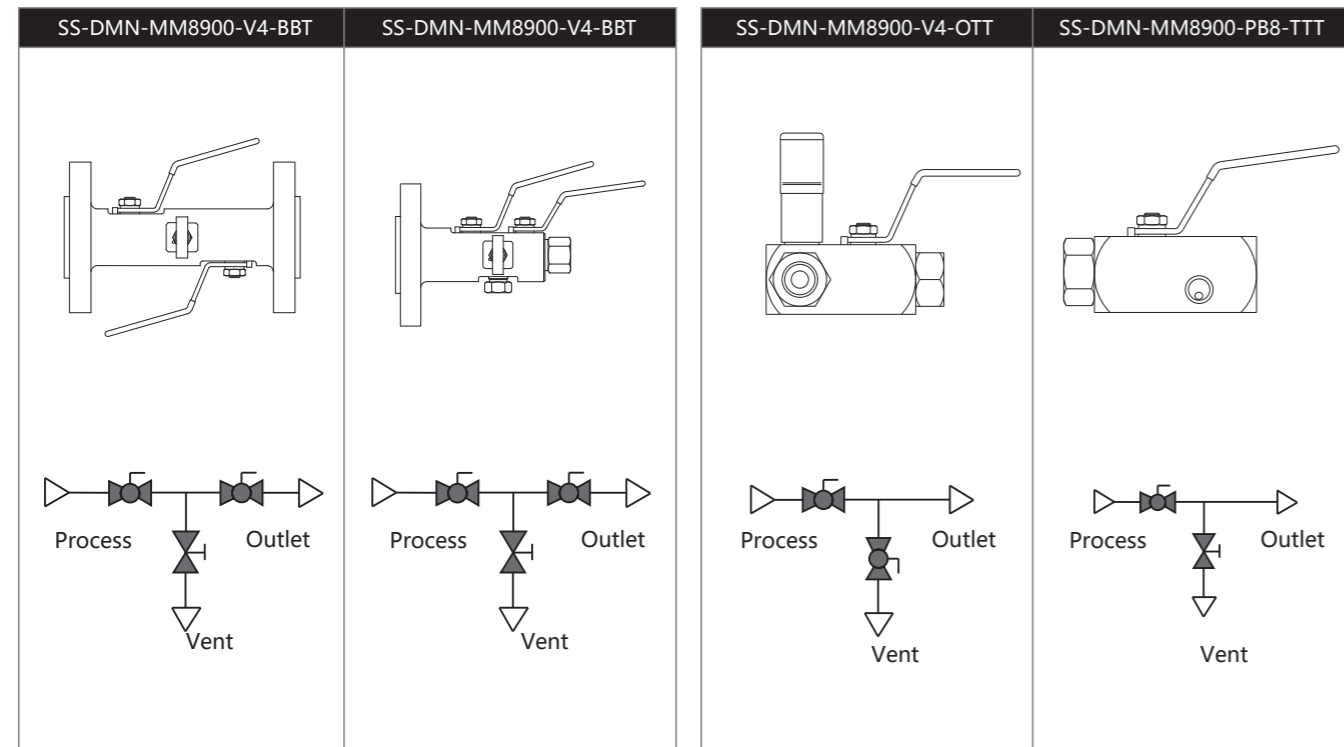
## Monoflange Double Block Valves

SS-DVB-MM8600-FN8-OT	SS-DVB-MM8600-FN8-TT

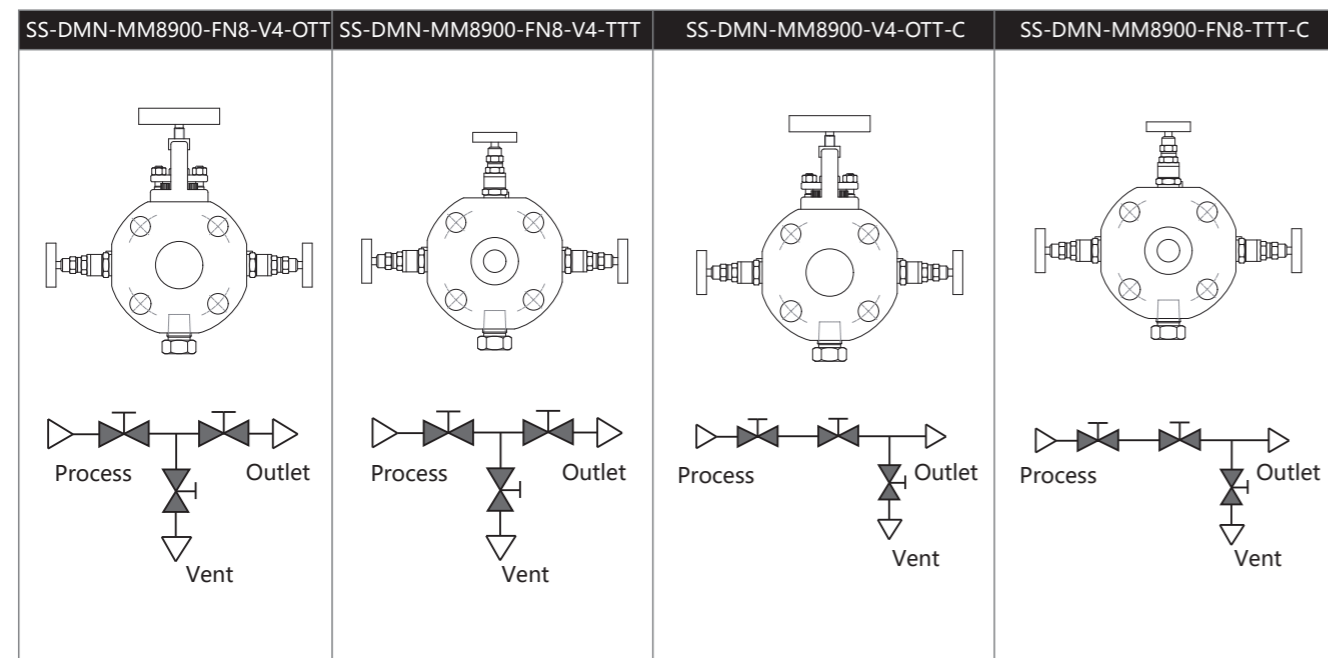
## Monoflange Single Block Valves

SS-MN-PWB12-MM8600-V4-T-G	SS-MN-MM8600-FN8-T

**Instrument Double Block and Bleed Valves**



**Monoflange Double Block & Bleed Valves**



**Ordering Number Description**

**A B C D E F G H I J K L M N**  
**SS - DMN - FE 16 300 - FN 8 - 2 V8 - BBT - P - M -S-W**

A	Body Material
SS=316 SS	
4S=304 SS	
21S=321 SS	
904L=904L SS	
6L=316L SS	
M=Alloy 400	
B=Brass	

B	Installation Way
VB= Single isolation relief valve manifold	
DVB= double isolation valve manifold	
MN= single isolation valve manifold	
DMN= double isolation relief valve manifold	

C	P1 Type
FN=NPT female tapered threads	
N=NPT male tapered threads	
FRT=ISO tapered female threads	
RT=ISO tapered male threads	
FM=RF sealing surface flange	
FJ=RTJ flange sealing surface	
PWB=Piple butt weld	
FE=RF ripple line flange sealing surface	
MM=RF single flange sealing surface	
ME=FR ripple line single flange sealing surface	
MJ=RTJ single flange sealing surface	

D	P1 Size
4=1/4"	
6=3/8"(6mm)	
8=1/2"(8mm)	
10=5/8"(10mm)	
12=3/4"(12mm)	
16=1"(16mm)	
20=1 1/4"(20mm)	
24=1 1/2"	
32=2"	

E	Inlet pressure rating
150=Class150	
300=Class300	
600=Class600	
900=Class900	
1500=Class1500	
2500=Class2500	

F G	P2 Type/Size
Special in the same way as the P1	

H	Number of discharge ports
Default = a discharge port	
2= 2 discharge ports	

I	Discharge port type and size
V4=1/4" NPT female thread with plug	
V8=1/2" NPT female thread with plug	

J	Sealing Material
TTT=1st isolation, 2nd isolation and discharge are all needle valves.	
TBT= 1st isolation and relief valves are needle valves, and 2nd isolation is ball valve.	
BBT= 1st isolation & 2nd isolation are ball valves,the discharge is needle valve.	
BBB= 1st isolation,2nd isolation and discharge are all ball valves.	
BB= 1st isolation and discharge are ball valve no 2nd isolation.	
TT= 1st isolation and discharge are needle valvesno 2nd isolation. (1st isolation and 2nd isolation are needle valves no discharge valve.)	
T= 1st isolation is needle valve.	

K	Padding
Default=PTFE	
P=PEEK	
G=Graphite	

L	Path
Default = Normal path	
M= full path	

M	Special Application
Default = None	
S=NACE MR 0175	

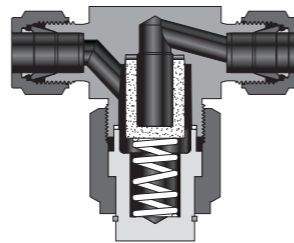
N	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W=Degreasing	
W2=Oxygen-rich cleaning	

# FILTERS



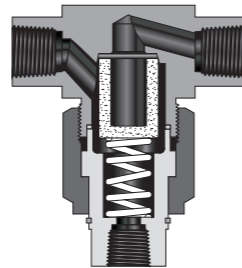
## FA Series

- ◆ Filter element replaceable without removing body from system
- ◆ Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 90 μm
- ◆ Nominal pore sizes for strainer element: 100, 150, 250 and 450 μm
- ◆ Working pressure up to:6000 psig (414 bar)
- ◆ Working temperature:-20F° to 900°F(-28°C to 482°C)
- ◆ Variety of end connections available



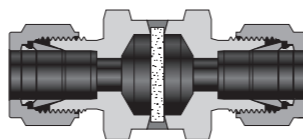
## FB Series

- ◆ Bypass port at filter bottom for the ease of sampling or purging
- ◆ Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 90 μm
- ◆ Nominal pore sizes for strainer element:100, 150, 250 and 450 μm
- ◆ Working pressure up to:6000 psig (414 bar)
- ◆ Working temperature:-20F° to 900°F (-28°C to 482°C)
- ◆ Variety of end connections available



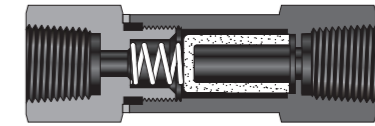
## FW Series

- ◆ Large filtration area and high flow coefficient
- ◆ All-welded construction for elimination of leakage
- ◆ Easy cleaning of filters by backflushing
- ◆ Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 90 μm
- ◆ Working pressure up to: 6000 psig (414 bar)
- ◆ Working temperature: -20°F to 900°F(-28°C to 482°C)
- ◆ Variety of end connections available



## F Series

- ◆ Compact and space-saving design
- ◆ Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 90 μm
- ◆ Nominal pore sizes for strainer element: 100, 150, 250 and 450 μm
- ◆ Working pressure up to:207 bar (3000 psig)
- ◆ Working temperature:-20°F to 900°F (-28°C to 482°C)
- ◆ Variety of end connections available



### Ordering Number Description

**A B C D E F G H I J K**  
**SS - FB - F 8 - M 10 - L - 7 - F2 -S-W**

A	Body Material
SS	=316 SS
4S	=304 SS
21S	=321 SS
904L	=904L SSS
6L	=316L SS
M	=Alloy 400
B	=Brass

B	Series
FA Series	
FB Series	
F Series	
FW Series	

C	P1 Type
M	=Metric Ferrule
F	=Fractional Ferrule
FN	=NPT female tapered threads
N	=NPT male tapered threads
FRT	=ISO tapered female threads
RT	=ISO tapered male threads
FRP	= Inch parallel female threads (suitable for RP gasket)
BP	=ISO parallel male threads(suitable for RG gasket)
FMS	=Metric female threads(suitable for RG gasket)
MS	=Metric male threads (suitable for RG-M gasket)

D	P1 Size
2	=1/8"
3	=3mm
4	=1/4"
6	=3/8"(6mm)
8	=1/2"(8mm)
10	=5/8(10mm)
12	=3/4"(12mm)
16	=1"(16mm)
20	=1 1/4(20mm)
M20x1.5	
25	=25 mm

E F	P2 Type/Size
Specify in the same way as the P1	

G	Cartridge form
	Default = Sintered type
L	= Filter screen type

H	Filter element accuracy
0,5	=0.5μm
2	=2μm
7	=7μm
15	=15μm
40	=40μm
60	=60μm
80	=80μm
100	=100μm
150	=150μm
250	=250μm
450	=450μm

I	Bypass port form and size
	Default =1/8" NPT female thread
F2	=1/8" sleeve connector
F4	=1/4" sleeve connector
F8	=1/2" sleeve connector

J	Special Application
	Default = None
S	=NACE MR 0175

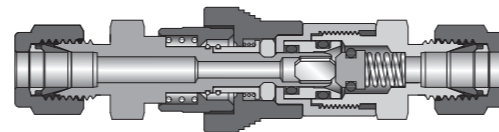
K	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	=Degreasing
W2	=Oxygen-rich cleaning

# QUICK-CONNECTS



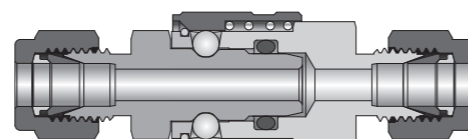
## QC Series

- ◆ Working pressure up to: 3000 psig (207 bar)
- ◆ Working pressure up to:
- ◆ Simple push-to-connect coupling for quick and easy operation
- ◆ Sturdy locking mechanism with large contact area to ensure reliable stem retainment
- ◆ Reliable, leak-tight O-ring seals for vacuum or pressure systems
- ◆ Mix-interchangeable with other main brands
- ◆ Single-end shutoff, double-end shutoff and full-flow quick-connects available
- ◆ Large area contacted bead locking tube/pipe diameter.
- ◆ End connections: 1/8" to 1/2" NPT, 1/8" to 1/2" and 6 mm to 12 mm tube fitting and 1/4" to 1/2" hose connector



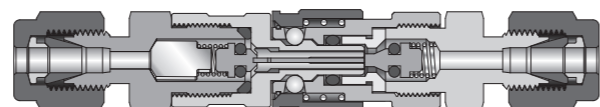
## QF Series

- ◆ Full path, large flow
- ◆ Quick, easy operation
- ◆ Working pressure up to: 6000 psig (414 bar)
- ◆ Materials: stainless steel or brass
- ◆ A smooth, open chamber with no valves at either end minimizes pressure drop and is easy to clean.
- ◆ End connections: 1/4" to 1" NPT, 1/4" to 1" and 6 mm to 25 mm tube fitting



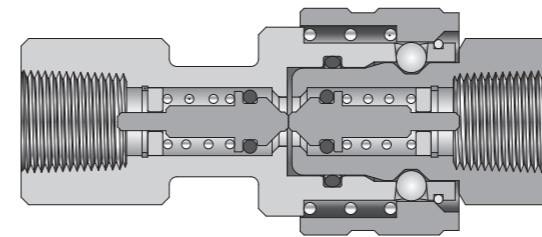
## QM Series

- ◆ Maximum working pressure up to 4000 psig (276 bar)
- ◆ Materials: stainless steel or brass
- ◆ Single-end shutoff, double-end shutoff and full-flow available
- ◆ Quick, easy operation
- ◆ Micro quick connector



## QV Series

- ◆ Working pressure up to: 2000 psig (137 bar)
- ◆ Double-end shutoff available
- ◆ Durable ball-locking mechanism assures reliable connection
- ◆ Simple push-to-connect coupling for quick and easy operation
- ◆ End connections: 1/8 to 1 NPT and BSPT



← two-way flow →

### Ordering Number Description

**A B C D E F G H**  
SS - QC 4 - S - F 4 -S-W

A	Body Material
SS	316 SS
B	Brass

B	Series
QC	QC Series
QF	QF Series
QM	QM Series
QV	QV Series

C	Orifice size
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"

D	Pipe diameter and body
S	pipe diameter without valve
D	pipe diameter with valve
B	body with valve (QC series)
	Body without valve (QF series)
F	QC series full flow body

E	Process Interface Form
M	Metric Ferrule
F	Fractional Ferrule
FN	NPT female tapered threads
N	NPT male tapered threads
FRT	ISO tapered female threads
RT	ISO tapered male threads
FRP	Inch parallel female threads (suitable for RP gasket)
BP	ISO parallel male threads (suitable for RG gasket)
FMS	Metric female threads (suitable for RG gasket)
MS	Metric male threads (suitable for RG-M gasket)

F	Process interface size
4	1/4"
6	3/8" (6mm)
8	1/2" (8mm)
10	5/8" (10mm)
12	3/4" (12mm)
16	1" (16mm)

G	O-ring Material
	Default=FKM
B	NBR
Z	FFKM
E	EPDM

H	Key Number and Color
for QC Series	Default=No
	K1=Black
	K2=Orange
	K3=Green
	K4=Yellow
	K5=Blue
	K6=White
	K7=Purple
K8=Brown	

G	Special Application
	Default = None
S	NACE MR 0175

H	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	Degreasing
W2	Oxygen-rich cleaning

# AIR HEADERS AND DISTRIBUTION MANIFOLDS

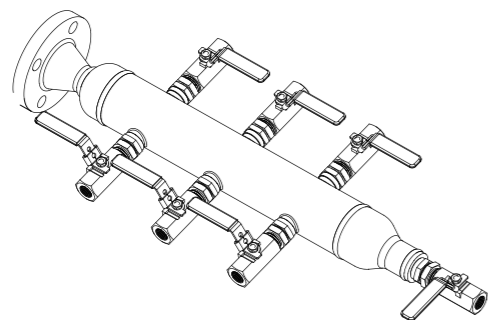


## Features

- ◆ Distribution lines available upon request
- ◆ Ball valve, plug valve, needle valve available for distribution lines and drain port
- ◆ Color coded handles available
- ◆ Leak-tight performance testing for every valve under nitrogen condition at the maximum working pressure

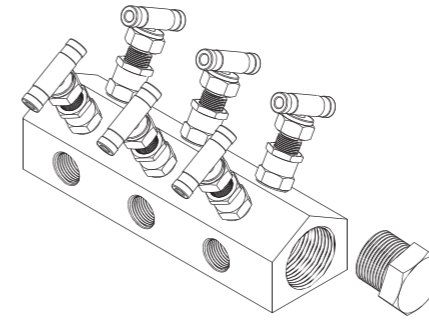
## EB Series

- ◆ Working pressure up to 1000 psig
- ◆ Working temperature: 0 to 250°F (-18 to 121°C)
- ◆ Modular design, easy installation and maintenance
- ◆ Standard modules are available separately, with a choice of 4 or 6 export quantities
- ◆ A variety of inlet and outlet types are available separately and can be replaced online
- ◆ All products are tested for tightness at rated working pressure of air or nitrogen before leaving the factory



## CB Series

- ◆ Working pressure up to 6000 psig
- ◆ Working temperature:  
PTFE: -15 to 450°F (-26 to 232°C)  
Graphite: -15 to 1200°F (-26 to 649°C)
- ◆ One-piece forged body
- ◆ Non-rotating stem design permits ease of operation and less packing wear
- ◆ Intermittent packing system requires lower operating torque and achieves a more reliable seal



## Ordering Number Description

**A B C D E F G H I J K**

**SS - EB - AM 32 - 8 BD FN 8 - V FN 8**

A	Body Material
SS	316 SS
4S	304 SS

B	Series
EB	EB Series
CB	CB Series

C	P1 Type
FN	NPT female tapered threads
FRT	ISO tapered female threads
AM	Class 150 RF flange
AE	Class 300 RF flange

D	P1 Size
8	1/2"
12	3/4"
16	1"
24	1 1/2"
32	2"

E	Exit quantity
4	4
6	6
8	8
10	10
12	12

F	Exit Valve
None	None
BD	BD series Ball Valve
BX	BX series Ball Valve

G	P2 Type
FN	NPT female tapered threads
N	NPT male tapered threads
M	Metric Ferrule
F	Fractional Ferrule

H	P2 Size
6	3/8" (6mm)
8	1/2" (8mm)
12	3/4" (12mm)

I	Outlet valve/plug
Default	= with plug
V	Valve
VP	Valve with plug

J	Special application
FN	NPT female tapered threads
N	NPT male tapered threads
M	Metric Ferrule
F	Fractional Ferrule

K	Outlet size
6	3/8" (6mm)
8	1/2" (8mm)
12	3/4" (12mm)

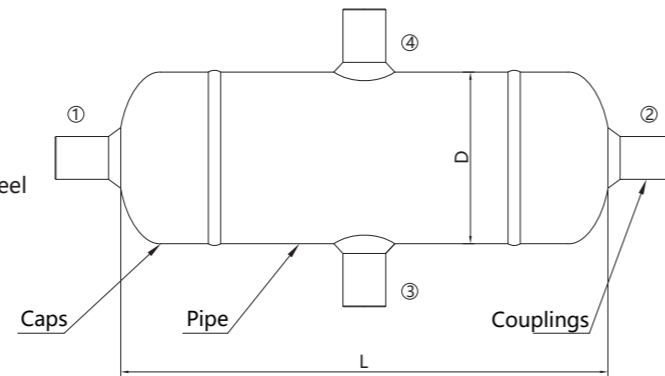
# CONDENSATE POTE and Vessels



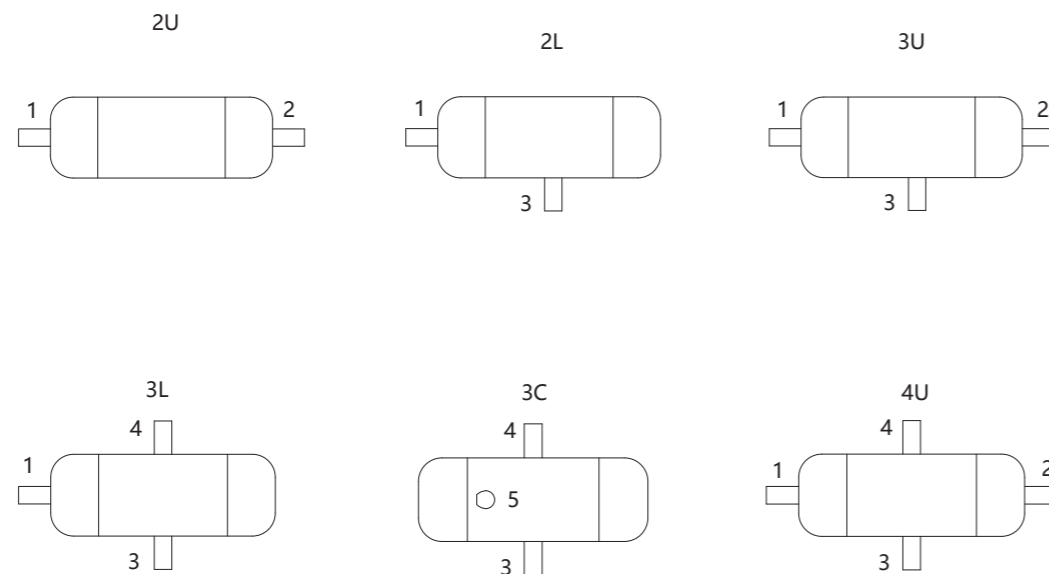
## Features

- Working pressure up to: Class 2500 as per ASME B16.34
- Socket weld connection as per ASME B16.11
- Butt weld connection as per ASME B16.9
- NPT taper pipe thread as per ASME B1.20.1
- All chambers are factory tested fully prior to shipment
- Standard materials of construction: 316 SS, 304 SS, carbon steel
- Pipe : 40, 80, 160, XXS seamless stainless steel tubing
- Variety of end connections available

## Materials of Construction



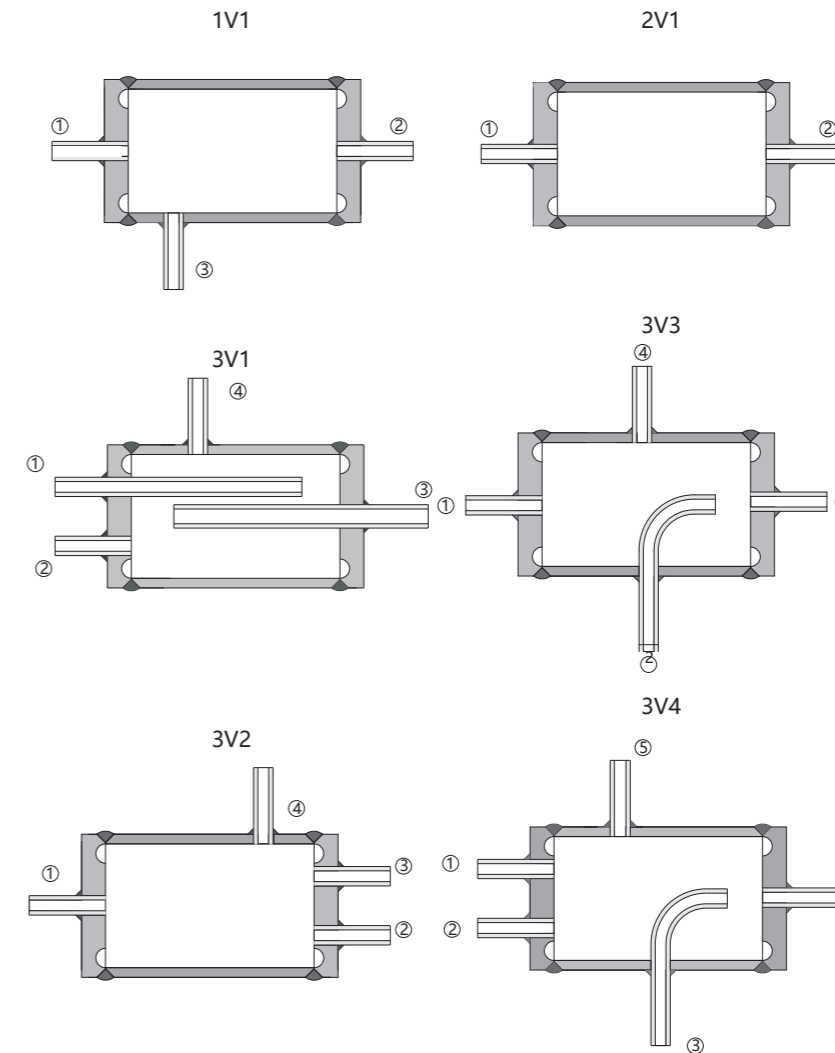
## Configuration



## Technical Data

- Working pressure up to: Class 2500 as per ASME B16.34
- Socket weld connection as per ASME B16.11
- Butt welding ends as per ASME B16.9
- NPT as per ASME taper pipe thread
- All chambers are factory tested fully prior to shipment
- Standard material of construction: 316 SS, 304 SS, carbon steel
- Pipe schedule: 40, 80, 160, XXS seamless steel
- Variety of end connections available

## Configuration



**订购型号说明**

**A B CD EF GHI**  
SS - CO - F 2 - M2 - 2U- S- W

A	Body Material
SS=316 SS	
4S=304 SS	
6L=316L SS	
4L=304L SS	
21S=321 SS	
CS=Carbon Steel	

B	Series
CO=CONDENSATE POTE	
VE=Vessels	

C	Inlet Type
TMS=Metric Tube	
Socket Weld	
TWS=Fractional Socket	
Weld Tube	
TMB=Metric Tube	
Butt Weld	
TWB=Fractional	
Butt Weld Tube	
PWB=Pipe Butt Weld	
PWS=Pipe Socket	
Weld	
TM=Fractional Tube Fitting	
TF=Metric Tube Fitting	

D	Inlet Size	
	Fractional in.	Metric mm
2=1/8"	8=8	
4=1/4"	10=10	
8=1/2"	12=12	
12=3/4"	14=14	
16=1/4"	16=16	

E	F	Outlet Type and Size
NO		Same as Inlet

G	Configuration	
C o n d e n s a t e	2U	
	2L	
	3U	
	3L	
V e s s e l s	3C	
	4U	
	1V1	
	2V1	
	3V1	
	3V2	
	3V3	
	3V4	

H	Special Application
Default = None	
S=NACE MR 0175	
LH=Sulfur passivation	

I	Cleaning and Packaging
Default = Standard cleaning and packaging for general industrial use	
W=Degreasing	
W2=Oxygen-rich cleaning	

**SAMPLE CYLINDERS**



**Features**

- Volume varies from 40<sup>3</sup> to 3785<sup>3</sup> cm (1 gal)
- Seamless tubing body provides consistent wall thickness, size and capacity
- Cold-formed female NPT thread to provide high strength
- 1/8", 1/4" and 1/2" female NPT connections
- Full-penetration gas tungsten arc-weld construction to ensure no leak for sampling (single-ended cylinder only)
- Accessories, such as valves, relief devices, outage tubes, carrying handles, caps and plugs available

**Ordering Number Description**

**A B C D E F G**  
6L - SY18 - DN4 - H2 - 300

A	Body Material
6L=316L SS	
4S=304 SS	
SS=316 SS	
4L=304L SS	

B	Series
SY	

C	Working Pressure
18=1800 Psig	
20=2000 Psig	
50=5000 Psig	

D	Cylinder type
S=Single end	
D=Double end	

E	Fitting Type
N2=1/8 NPT female tapered threads	
N4=1/4 NPT female tapered threads	
N8=1/2 NPT female tapered threads	

F	Moving handle
None	
H2= Cylinder OD 1.9" to 3.5"	
H4= Cylinder OD 4"	

G	Inner volume
150=150 cm <sup>3</sup>	
300=300 cm <sup>3</sup>	
500=500 cm <sup>3</sup>	
40=40 cm <sup>3</sup>	
50=50cm <sup>3</sup>	
75=75cm <sup>3</sup>	
290=290 cm <sup>3</sup>	
400=400cm <sup>3</sup>	
1000=1000 cm <sup>3</sup>	
2250=2250cm <sup>3</sup>	
3785=3785 cm <sup>3</sup>	

Only supply double ends sampling cylinder.

H	Special Application
Default = None	
LH=Sulfur passivation	



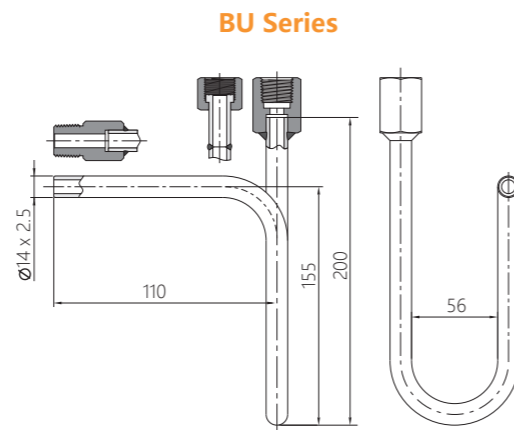
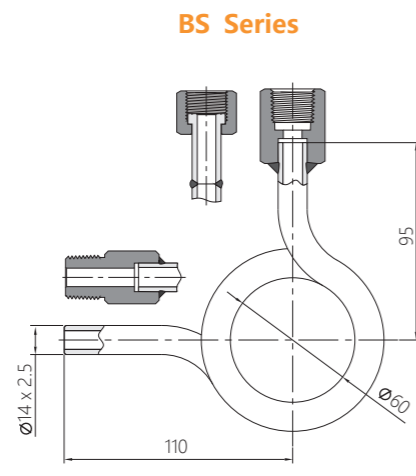
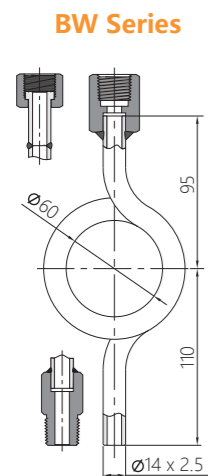
# SYPHONS

## Features

- Working temperatures up to:850°F (454°C)
- Working pressure up to: 6000 psig (414 bar). Multiply the working pressure by the elevated temperature factors to get the working pressure at elevated temperature.
- Standard materials are 316 SS and 304 SS, other materials are available upon request.



Component	Material Specifications
Tube	316 304 321
Connector	316 304 321



## Ordering Information

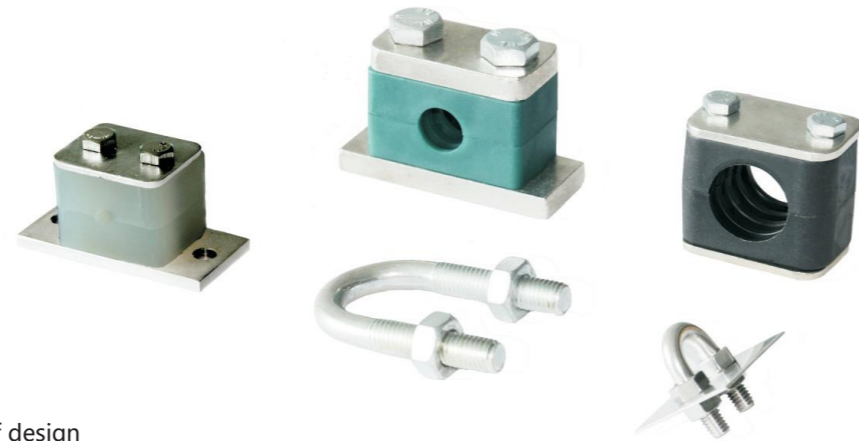
Add the material designator as prefix to the basic ordering number (SS for 316 SS, 21S for 321SS).

End Types and Size		Basic Ordering Number		
Cock End	Process End	BW Series	BS Series	BU Series
1/2 Female NPT	1/2 Female NPT	-BS-FN8	-BS-FN8	-BS-FN8
1/2 Female NPT	1/4 Female NPT	-BS-FN8-FN4	-BS-FN8-FN4	-BS-FN8-FN4
1/2 Female NPT	1/2 Female ISO Parallel Thread	-BS-FN8-RG8	-BS-FN8-RG8	-BS-FN8-RG8
1/2 Female NPT	1/4 Female ISO Parallel Thread	-BS-FN8-RG4	-BS-FN8-RG4	-BS-FN8-RG4
1/2 Female NPT	M20 x 1.5 Female ISO	-BS-FN8-MS20	-BS-FN8-MS20	-BS-FN8-MS20
1/2 Female NPT	M14 x 1.5 Female ISO	-BS-FN8-MS14	-BS-FN8-MS14	-BS-FN8-MS14
1/2 Female NPT	1/2 Tube Socket Weld	-BW-FN8-TBW8	-BW-FN8-TBW8	-BW-FN8-TBW8
1/2 Female NPT	14 mm Tube Socket Weld	-BW-FN8-TMS14	-BW-FN8-TMS14	-BW-FN8-TMS14
M20 x 1.5 Female ISO	M20 x 1.5 Female ISO	-BW-MS20	-BW-MS20	-BW-MS20
M20 x 1.5 Female ISO	M14 x 1.5 Female ISO	-BW-MS20-MS14	-BW-MS20-MS14	-BW-MS20-MS14
M20 x 1.5 Female ISO	Φ14x2.5	-BW-MS20-TMB14	-BW-MS20-TMB14	-BW-MS20-TMB14
1/2 Female ISO Parallel Thread	M20 x 1.5 Female ISO	-BW-RG8-MS20	-BW-RG8-MS20	-BW-RG8-MS20
1/2 Female ISO Parallel Thread	M14 x 1.5 Female ISO	-BW-RG8-MS14	-BW-RG8-MS14	-BW-RG8-MS14
1/2 Female ISO Parallel Thread	Φ14x2.5	-BW-RG8-TMB14	-BW-RG8-TMB14	-BW-RG8-TMB14
Φ14x1.5	Φ14x2.5	-BW-TMB14	-BW-TMB14	-BW-TMB14
1/2 Male NPT	1/2 Male NPT	-BW-N8	-BW-N8	-BW-N8
1/2 Male ISO Parallel Thread	1/2 Male NPT	-BW-N8-FN4	-BW-N8-FN4	-BW-N8-FN4

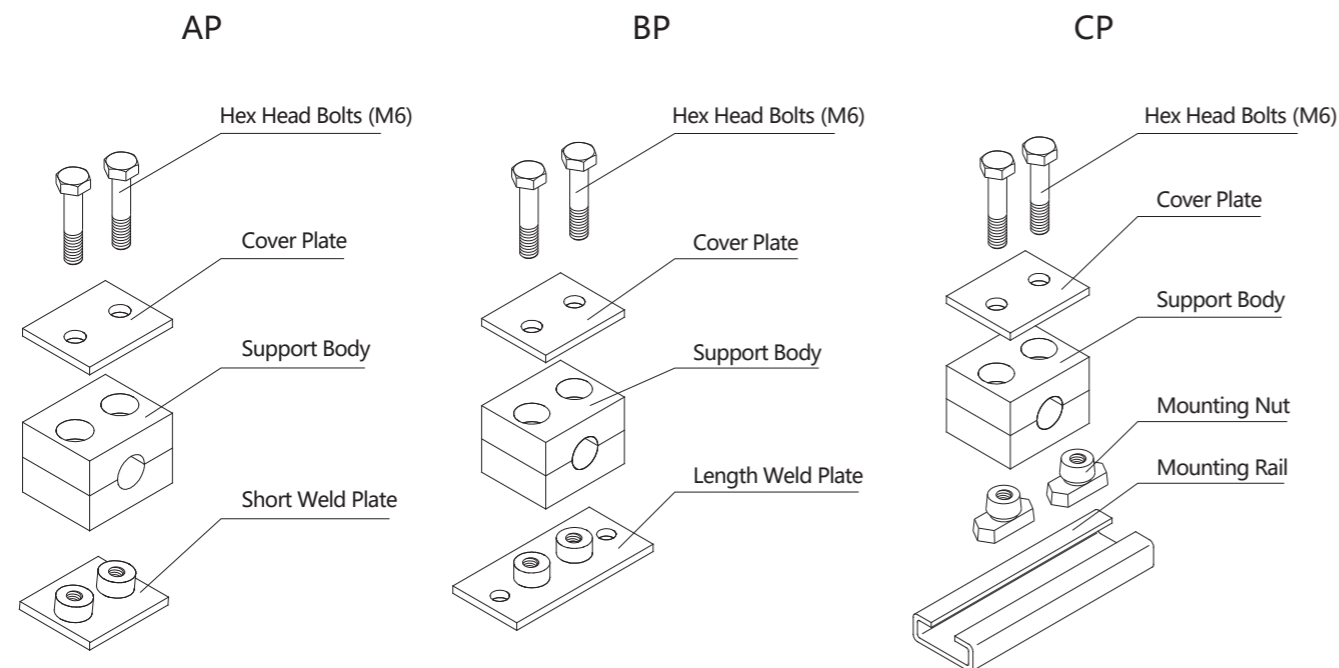
# TUBE CLAMPS

## Features

- Resist chemical corrosion
- Resist ultraviolet radiation
- Enhance system reliability
- Vibration-proof and noise-proof design



## Types



## Materials

Component	Material	Designator	Temperature Range
Support Body	polypropylene	PP	-30°C to 90°C
	polypropylene	PA	-40C to 120°C
Others (Metal Parts)	304 stainless steel	S4	—
	316 stainless steel	SS	
	Carbon steel, galvanized	CSG	
	Carbon steel, phosphating	CSP	

## Ordering Number Description

**A B C D E F**

**4S-TC-PP-AP-6-2**

A	Body Material
4S	304 SS
SS	316 SS
CSG	Carbon steel (galvanized)
CSP	Carbon steel (phosphating)

C	Support material
PP	Polypropylene
PA	polyamide

D	Series
AP	
BP	
CP	

E	Tube size
6	6mm
6.3	6.35mm(1/4)
8	8mm
9.5	9.5mm(3/8)
10	10mm
12	12mm
12.7	12.7mm(1/2)
14	14mm
15	15mm
16	16mm(5/8)
18	18mm
19	19mm(3/4)
20	20mm
22	22mm
25	25mm
25.4	25.4mm(1")
28	28mm
30	30mm
32	32mm(1 1/4)
35	35mm
38	38mm(1 1/2)
40	40mm
42	42mm
44.5	44.5mm(1 3/4)
50.8	50.8mm(2")

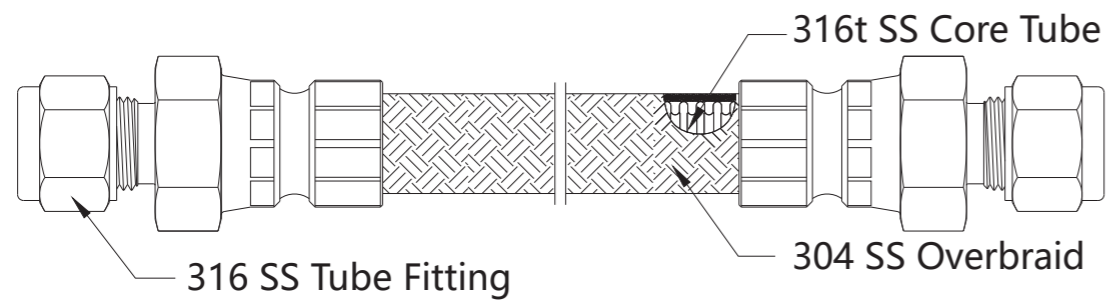
F	Orifice quantity
	Default =1 orifice
2	2 orifices

# S TAINLESS STEEL BRAIDED HOSES

## Metal Flexible Hose

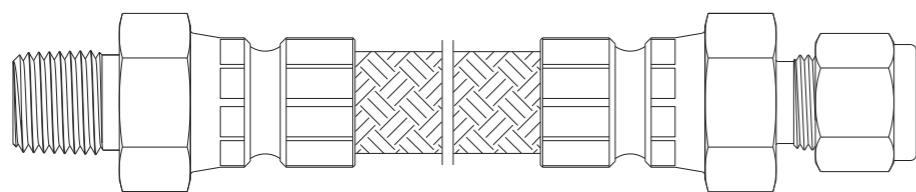
### MEH Series

- Core tube and fitting material: 316 stainless steel
- Overbraid material: 304 stainless steel
- Vacuum and positive pressure applications
- Working pressure up to: 3100 psig (213 bar)
- Hose size: 1/4" to 2"
- End connections:
  - 1/4 to 2 thread
  - 1/4 to 2 and 6 mm to 25 mm tube fitting
- Working temperature: -325°F to 800°F (-200°C to 426°C)
- Welded fitting-to-hose construction to ensure reliable seal
- Standard and custom length available

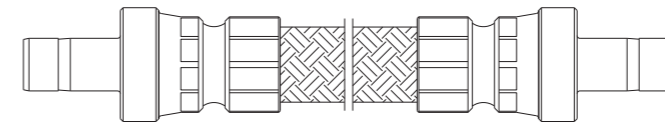


### Standard Assemblies

#### Tube Fitting to Male NPT End



### Standard Assemblies

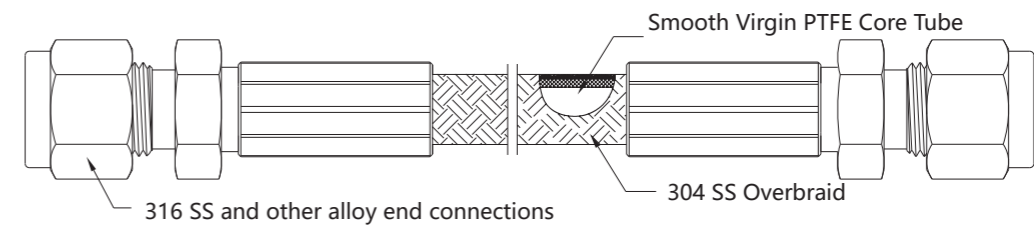


### PTFE-lined, Stainless Steel Braided Hoses

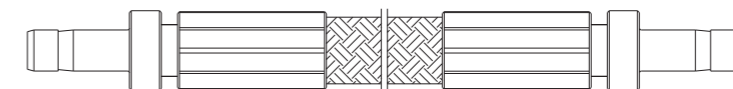
#### RP Series



- Lightweight construction for easy handling and installation
- Core tube material: smooth virgin PTFE
- Overbraid material: 304 stainless steel
- Working pressure up to: 3000 psig (207 bar)
- Hose size: 1/4" to 1"
- Working temperature: -65°F to 400°F (-53°C to 204°C)
- Standard and custom length available



### Tube Adapter End



**Ordering Number Description**

**A B C D E F**

**MEH 6 - TF 8 -M1000- SS**

A	Series
MEH	
RP	

B	Hoses Size
4=1/4"	
6=3/8"(6mm)	
8=1/2"(8mm)	
12=3/4"(12mm)	
15=15mm	
16=1"(16mm)	

C	P1 Type
KM=Male Connector	
KF= Female Connector	
M=Metric Ferrule	
F=Fractional Ferrule	
TM=Metric Tube	
TF=Fractional Tube	
N=NPT male tapered threads	
RT=ISO tapered male threads	
MS=Metric male threads (suitable for RG-M gasket)	

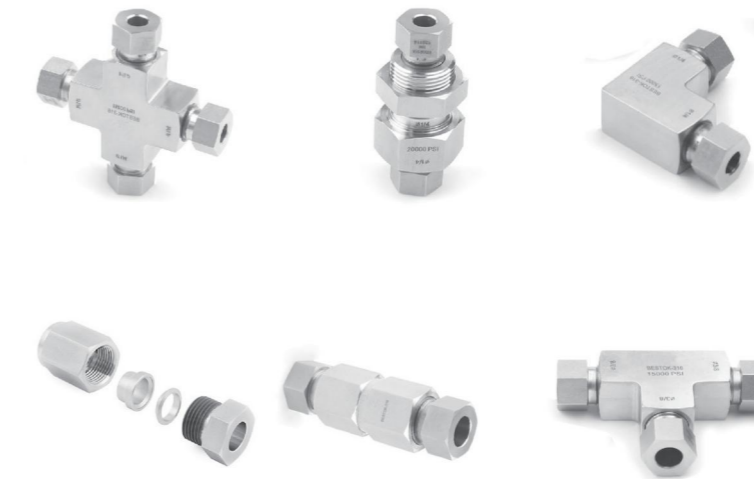
D	P1 Size
4=1/4"	
6=3/8"(6mm)	
8=1/2"(8mm)	
10=5/8"(10mm)	
12=3/4"(12mm)	
16=1"(16mm)	

E	Total length
M=mm.	






F	End connection Material
SS=316 SS	
4S=304 SS	
6L=316L SS	
904L=904L SS	
6L=316L SS	

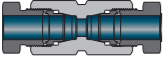
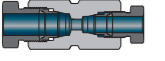
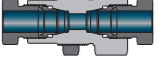
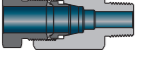
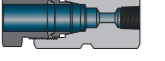
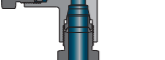
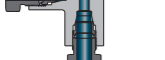







# MEDIUM & HIGH PRESSURE FITTINGS

## DFF Series Tube Fittings



- Pressures up to 15,000 psig (1379 bar)
- Double ferrule clamping pipe
- Convenient and quick connecting with medium pressure tubing
- Available with 1/8", 1/4", 3/8", 1/2", 9/16" and 3/4" bushing interfaces
- High tensile 316 stainless steel material
- Male nut threads are molybdenum disulfide-based lubricant to minimize the friction
- Every fitting is stamped with size, material and heat code
- The supporting surface of the pipe is longer, which greatly improves the load capacity and vibration resistance of the tube
- 4 times the safety factor design

Configuration	Fitting Type	Example
	<b>Nuts - KN</b>	<b>SS-4DFF-KN</b>
	<b>Front Ferrules - KF</b>	<b>SS-2DFF-KF</b>
	<b>Rear Ferrules - KR</b>	<b>SS-4DFF-KR</b>
	<b>Plugs - DZ</b>	<b>SS-4DFF-DZ</b>
	<b>Caps - CC</b>	<b>SS-4DFF-CC</b>

Configuration	Fitting Type	Example
	Unions - KU	SS-4DFF-KU
	Reducing Unions - KU	SS-8DFF-KU-6DFF
	Bulkhead Unions - DFF	SS-4DFF-B
	Male Connectors - KM	SS-4DFF-KM-8N
	Female Connectors - KF	SS-4DFF-KF-4N
	Union Elbows - L	SS-6DFF-L
	Union Reducing Elbows - L	SS-6DFF-L-4DFF
	Male Elbows - ME	SS-6DFF-ME-6N
	Union Tees - MT	SS-6DFF-MT
	Male Branch Tees - MAT	SS-8DFF-MAT-8N
	Union Crosses - O	SS-4DFF-O
	Reducers - D	SS-6DFF-D-8DFT
	Port Connectors - Z	SS-8DFF-Z
	Adapters - EM	SS-8DFT-EM-4N

## Ordering Number Description

**A B C D E F**

**SS-8DFF-KU-6DFF**

A	Material
SS=316 SS	

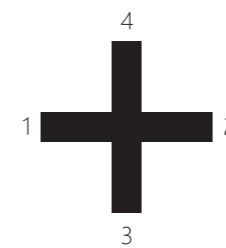
B	P1 Size
2=1/8"	
4=1/4"	
6=3/8"	
8=1/2"	
9=9/16"	
12=3/4"	

C	P1 Type
DFF= Ferrules	
DFT=Tube Stub with Ferrules andNut	

D	Fitting Type
KN=Nuts	
KF=Female Connectors	
KR=Rear ferrules	
DZ=Plug	
CC=Caps	
KU=Union	
B=Bulkhead Union	
KM=Male Connector	
KF=Female Connectors	
L=Union Elbows	
ME=Male Elbow	
MT=Union Tee	
MAT=Male Branch Tee	
O=Union Cross	
D=Reducer	
Z=Port Connector	
EM=Male Adapter	

E	P2,P3 Size
Specify in the same way as the P1	
7=7/16-20	
9=9/16-18	

F	P2 Type
Except the same as the P1 the other size follows:	
N=NPT male tapered threads	



The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

## FH Series Medium Pressure Tube Fittings

- Pressures up to 20,000 psig (1379 bar)
- Working temperature: -423°F to 1200°F (-252°C to 649°C)
- Medium pressure tubing sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- High tensile 316 stainless steel material
- Every fitting is stamped with size, material and heat code
- Available to NACE MR0175



Configuration	Fitting Type	Example
	Glands	SS-4FH-KN
	Collars	SS-6FH-HO
	Plugs	SS-9FH-DZ
	Caps	SS-6FH-CC
	Unions	SS-12FH-KU
	Reducing Unions	SS-6FH-KU-4FH
	Unions (Slip Type)	SS-16FH-SU
	Bulkhead Unions	SS-6FH-B
	Union Elbows	SS-9FH-L
	Union Tees	SS-12FH-MT
	Union Crosses	SS-4FH-HX
	Anti-vibration Gland Assemblies	SS-9FH-AV

## Ordering Number Description

**A B C D E**

**SS-12FH-KU-XX**

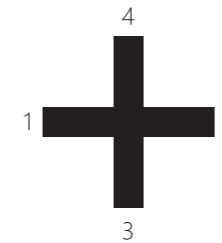
A	Material
SS	316 SS

B	P1 Size
4	1/4"
6	3/8"
9	9/16"
12	3/4"
16	1"

C	P1 Size
FH	Medium and high pressure female thread

D	Fitting Type
KN	Glands
HO	Collars
DZ	Plugs
CC	Caps
SU	Unions (slip type)
KU	(Reducing) Unions
B	Bulkhead Union
L	Union Elbow
ME	Male Elbow
MT	Union Tee
MAT	Male Branch Tee
HX	Union Crosses
AV	Anti-vibration Gland Assemblies

E	P2,P3,P4
	Specify in the same way as the P1



The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

## HH High Pressure Tube Fittings

- Pressures up to:60000psig(4137bar)
- Working temperature:-423° F to 1200°F(-252°C to 649°C)
- Connected to T60 series steel pipe, High pressure tubing sizes available in 1/4", 3/8" and 9/16"
- High tensile 316 stainless steel material
- Every fitting is stamped with size, material and heat code
- Available to NACE MR0175



## Ordering Number Description

**A B C D E**

**SS-9HH-KU-XX**

A	Material
SS	=316SS

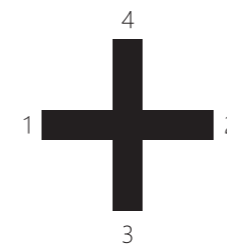
B	P1 Size
4	=1/4"
6	=3/8"
9	=9/16"

C	P1 Size
HH	= Medium and high pressure female thread

D	Fitting Type
KN	=Glands
HO	=Collars
DZ	=Plugs
CC	=Caps
SU	=Unions (slip type)
KU	=(Reducing) Unions
B	=Bulkhead Union
L	=Union Elbow
ME	=Male Elbow
MT	=Union Tee
MAT	=Male Branch Tee
HX	=Union Crosses
AV	=Anti-vibration Gland Assemblies

E	P2,P3,P4
	Specify in the same way as the P1

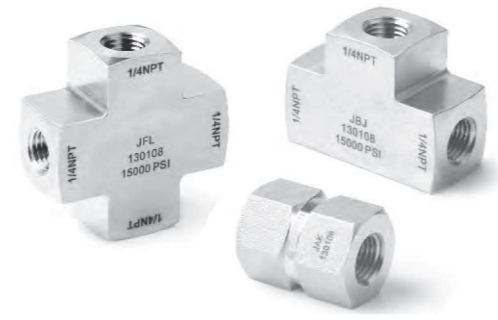
Configuration	Fitting Type	Example
	Glands	SS-4HH-KN
	Collars	SS-6HH-HO
	Plugs	SS-9HH-DZ
	Caps	SS-6HH-CC
	Unions	SS-12HH-KU
	Reducing Unions	SS-6HH-KU-4HH
	Unions (Slip Type)	SS-16HH-SU
	Bulkhead Unions	SS-6HH-B
	Union Elbows	SS-9HH-L
	Union Tees	SS-12HH-MT
	Union Crosses	SS-4HH-HX
	Anti-vibration Gland Assemblies	SS-9HH-AV



The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

## MPA Series Pipe Fittings

- High tensile 316 stainless steel as standard material, other materials available upon request
- The hardened threads with smooth surface finishing avoid galling and help to extend the fitting service life
- Radius junction design for elbows provides smooth flow path
- Every fitting marked with size, material and heat number
- Available to NACE MR0175



Configuration	Fitting Type	Example
	Pipe Plugs	SS-8N-HPST
	Hex Nipples	SS-8N-HLC-9TM
	Hex Long Nipples	SS-4N-HLS-3
	Pipe Caps	SS-4FN-HX
	Pipe Cap Assemblies (Moveable Insert)	SS-12JIC-HUX
	Hex Couplings	SS-8FRT-HLC1
	Zero-Clearance Unions	SS-6FN-HOU
	Adapters	SS-12FN-HDS-8N
	Male Elbows	SS-6N-HL
	Street Elbows	SS-8FN-HL-4N
	Female Elbows	SS-12FN-HL
	Male Tees	SS-8N-HT
	Male Street Tees	SS-6FN-HT-6N-6FN
	Male Branch Tees	SS-8FN-HT-8FN-8N
	Female Tees	SS-12FN-HT
	Female Crosses	SS-4FN-HO

## Ordering Number Description

**A B C D E F**  
SS-6 N-HLC-4 N

A	Material
SS=316 SS	

B	P1 Size
N, FN, RT and FRT Sizes	
2=1/8"	
4=1/4"	
6=3/8"	
8=1/2"	
12=3/4"	
16=1"	
ST, US and TM Thread Sizes	
7=7/16-20	
9=9/19-18	
12=3/4-16	
14=7/8-14	
16=1-12	
21=1 5/16-12	
JIC and JF Sizes	
4=1/4"	
6=3/8"	
8=1/2"	
10=5/8"	
12=3/4"	
16=1"	

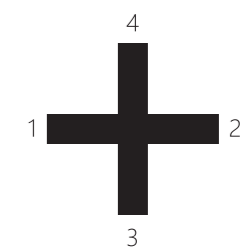
C	P1 Type
N=Male NPT	
FN=Female NPT	
RT=Male ISO Tapered Thread	
FRT=Female ISO Tapered Thread	
ST=Male SAE O-ring	
US=Female SAE O-ring	
JIC=Male JIC	
FJIC=Female JIC	
TM=Male Type "M"	

D	Fitting type
HPST=Pipe Plug	
HLC=Hex Nipple	
HLS=Hex Long Nipple	
HX=Pipe Cap	
HUX=Pipe Cap Assemblies (Movable Insert)	
HLC1=Hex coupling	
HOU=Zero-Clearance Union	
HDS=Adapter	
HL=Elbow	
HT=Tee	
HO=Cross	

E	P2 Size
	Specified in the same way as P1

F	P2 Type
	Specified in the same way as P1

G	P3 and P4
	Specified in the same way as P1



The order sequence for tee and cross should firstly follow the number of 1,2,3,4.



## MMA Series Adapter Fittings

- High tensile 316 stainless steel material Other materials are also available.
- Every fitting is marked with size, material and heat number.
- Available to NACE MR0175



### Female to Male-BFF

Configuration	Fitting Type	Example
	Female High Pressure to Female Medium Pressure	SS-6HH-KU-4FH
	Female High Pressure to Female DFF Series	SS-4HH-KU-8DFF
	Female High Pressure to Female NPT	SS-6HH-KF-4FN
	Female Medium Pressure to Female DFF Series	SS-6FH-KU-4DFF
	Female Medium Pressure to Female NPT	SS-6FH-KF-4FN

### Female to Male-BFM

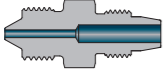
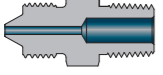
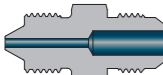


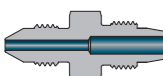
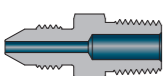
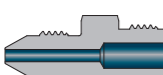
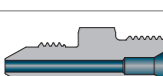




Configuration	Fitting Type	Example
	Female High Pressure to Male High Pressure	SS-6HH-KM-6HM
	Female High Pressure to T60H Series Coned and Threaded Nipples	SS-6HH-KM-9HCT
	Female High Pressure to Male Medium Pressure	SS-9HH-KM-6MH
	Female High Pressure to Male DFF Series	SS-6HH-KM-4DM
	Female High Pressure to Male NPT	SS-6HH-KM-4N
	Female High Pressure to Male Type "M"	SS-6HH-KM-9TM
	Female Medium Pressure to Male high Pressure	SS-9FH-KM-4HM

Configuration	Fitting Type	Example
	Female Medium Pressure to Male Medium Pressure	SS-6FH-KM-9MH
	Female Medium Pressure to Medium Pressure Coned and Threaded Nipples	SS-9FH-KM-16CT
	Female Medium Pressure to Male DFF Series	SS-9FH-KM-6DM
	Female Medium Pressure to Male NPT	SS-9FH-KM-4N
	Female Medium Pressure to Male Type "M"	SS-9FH-KM-9TM
	Female DFF Series to Male High Pressure	SS-6DFF-KM-4HM
	Female DFF Series to Male Medium Pressure	SS-4DFF-KM-4MH
	Female DFF Series to Male DFF Series	SS-4DFF-KM-6DF
	Female DFF Series to Male type "M"	SS-6DFF-KM-9TM
	Female NPT to Male High Pressure	SS-4HM-DS-6FN
	Female NPT to T60H Series Coned and Threaded Nipples	SS-6HCT-DS-6FN
	Female NPT to Male Medium Pressure	SS-4MH-DS-6FN
	Female NPT to Medium Pressure Coned and Threaded Nipples	SS-6CT-DS-4FN
	Female NPT to Male DFF Series	SS-6DM-DS-4FN

### Male to Male-BMM

Configuration	Fitting Type	Example
	Male High Pressure to Male High Pressure	SS-9HM-HLC-6HM
	Male High Pressure to Male Medium Pressure	SS-4HM-HLC-4MH

## Male to Male - MMA

Configuration	Fitting Type	Example
	Male High Pressure to Male DFF Series	SS-4HM-HLC-4DM
	Male High Pressure to Male NPT	SS-9HM-HLC-6N
	Male High Pressure to Male JIC	SS-9HM-HLC-6JIC
	Male High Pressure to Male Type "M"	SS-6HM-HLC-9TM
	Male Medium Pressure to Male Medium Pressure	SS-12MH-HLC-9MH
	Male Medium Pressure to Male DFF Series	SS-16MH-HLC-6DM
	Male Medium Pressure to Male NPT	SS-9MH-HLC-4N
	Male Medium Pressure to Male JIC	SS-12MH-HLC-16JIC
	Male Medium Pressure to Male Type "M"	SS-12MH-HLC-12TM
	Male DFF Series to Male DFF Series	SS-9DM-HLC-6DM
	Male DFF Series to Male NPT	SS-9DM-HLC-6N
	Male DFF Series to Male JIC	SS-9DM-HLC-6JIC
	Male DFF Series to Male Type "M"	SS-4DM-HLC-9TM

## Ordering Number Description

**A B C D E F**

**SS- 6 FH-BFF-4 DFF**

A	Material
SS	316SS

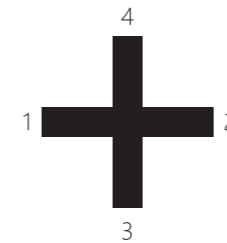
B	P1 Size
TM	Thread size
9	9/16-18
12	3/4-16
14	7/8-14
16	1-12
21	1 5/16-12
	Other sizes
2	1/8"
4	1/4"
6	3/8"
8	1/2"
9	9/16"
10	5/8"
12	3/4"
16	1"

C	P1 Type
FH	Female medium pressure
MH	Male medium pressure
HH	Female high pressure
HM	Male high pressure
FN	NPT female tapered threads
N	NPT male tapered threadst
HCT	T6H series coned and threaded nipple
CT	Medium presssure coned and threaded nipples
TM	Male type M
DFF	Female DFF series
DM	Male DFF series

D	Connector Type
BFF	Female to Female
BFM	Female to Male
BMM	Male to Male

E	P2 Size
	Specify in the same way as the P1

F	P2 Type
	Specify in the same way as the P1



The order sequence for tee and cross should firstly follow the number of 1,2,3,4.

# MEDIUM & HIGH PRESSURE BALL VALVES



- One-piece, trunnion mounted stem design
- Full-port flow path to minimize pressure drop
- 2-way and 3-way valve configurations
- PEEK seats offer excellent resistance to chemicals heat and abrasion
- O-ring materials available
- Wide selection of tube and pipe end fittings available
- Pneumatic actuator optional with air pressure from 80 psig to 116 psig (5.5 bar to 8 bar)

## B1 Series

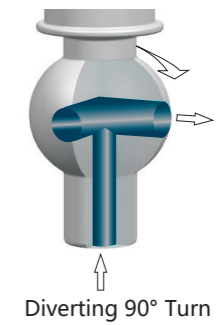
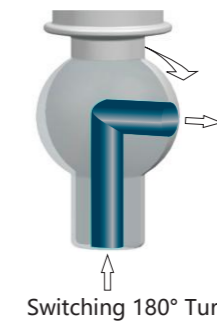
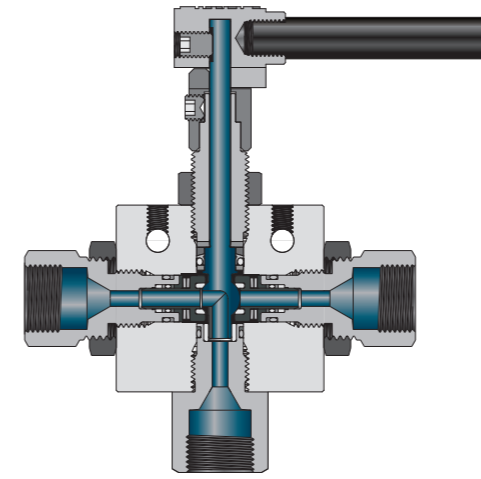
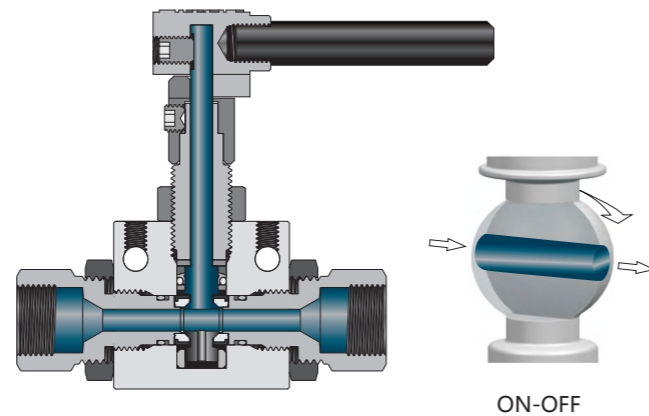
- End connections:  
3/4" and 1" tube fittings  
3/4" and 1" NPT threads
- Body material: 316 SS
- Orifice size:  
2-way: 0.5"(12.7mm)  
3-way: 0.5"(12.7mm)
- Working pressure up to:10,000 psig (690 bar)
- Fluororubber O-ring working temperature:  
0°F to 400°F (-17.8°C to 204°C)

## B15 Series

- End connections:  
1/8", 1/4", 3/8", 1/2", 9/16" and 3/4" tube fittings  
1/8", 1/4", 3/8" and 1/2" NPT threads
- Body material: 316 SS
- Orifice size:  
2-way: 0.094"(2.39mm) to 0.375"(9.53mm)  
3-way: 0.094"(2.39mm) to 0.328"(8.33mm)
- Working pressure up to:15,000 psig (1034 bar)
- Fluororubber O-ring working temperature:  
0°F to 400°F (-17.8°C to 204°C)

## B20 Series

- End connections: 1/4", 3/8", 9/16" and 3/4" tube fittings
- Body material: 316 SS
- Orifice size:  
2-way: 0.094" (2.39mm) to 0.375" (9.53mm)  
3-way: 0.094" (2.39mm) to 0.188" (4.77mm)
- Working pressure up to:20,000 psig (1379 bar)
- Fluororubber O-ring working temperature:  
0°F to 400°F (-17.8°C to 204°C)



## Ordering Number Description

**A B C D E F G**

**SS-B1-FH6 -6-2-N**

A	Material
SS=316 SS	

B	Series
B1 Series	
B15 Series	
B20 Series	

C	P1 Type
DFF= Medium and High Pressure Ferrules	
FH=Medium and High Pressure female thread	
FN=NPT female tapered threads	
HH=High Pressure female thread	

D	P1 Size
2=1/8"	
4=1/4"	
6=3/8"	
8=1/2"	
9=9/16"	
12=3/4"	
16=1"	

E	Orifice size
Two-way	
0=1/4"	
6=3/8"	
8=1/2"	
Three-way	
0=3/16"	
6=3/8"	
8=1/2"	

F	Body Structure
1=2-way Straight Valves	
2=3-way Valves 180° Turn	
3=3-way Valves 90° Turn	

G	O-ring Material
Default=Fluorocarbon FKM	
N= NBR	
F= FFKM	
E= EPDM rubber	

# MEDIUM & HIGH PRESSURE NEEDLE VALVES

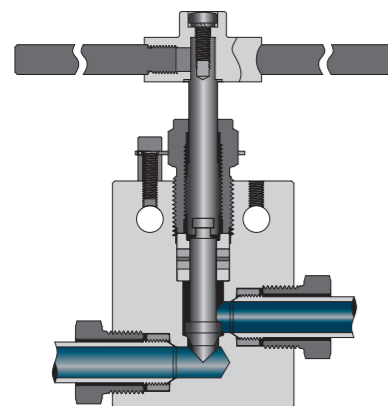


- Easy to assemble and replace packing
- Packing located under stem threads
- Reliable packing gland locking device
- Options for Vee or Regulating stem tips
- Five flow patterns available
- Available to NACE MR0175

- High tensile 316 stainless steel for the valve body and S17400 Stainless Steel for lower stem
- Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- Metal-to-metal seating to achieve ideal shutoff longer stem/seat service lifetime for abrasive flow excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design.
- The standard packing material for 60N Series is Nylon, the other Series is PTFE. RPTFE glass, Graphite and extended stuffing box with Graphite are also available
- Extended stuffing box with Graphite can be operated to 1200°F (649°C)

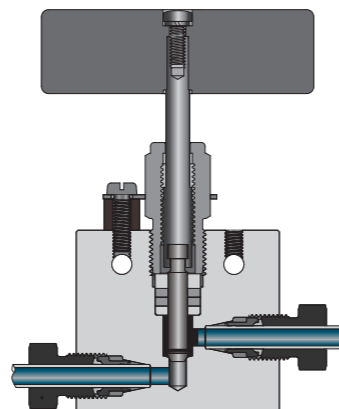
## T10 Series

- Working pressure up to:10,000 psig (690 bar)
- Working temperature:-100°F to 1200°F (-73°C to 649°C)
- End connections: 9/16", 3/4", 1" Female MP and 3/4" Female NPT, 3/4" Female ISO/BSP Tapered, 1" Female NPT, 1" Female ISO/BSP Tapered
- Orifice size:0.359"(9.12mm), 0.516"(13.10mm), 0.688"(17.48mm), 0.437"(11.10mm) and 0.562"(14.27mm)



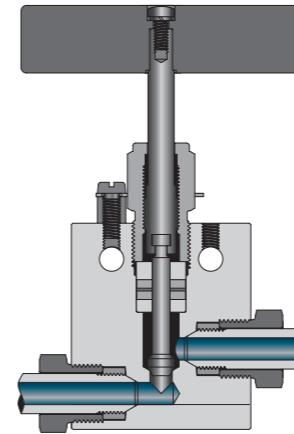
## T15 Series

- Working pressure up to:15,000 psig (1034 bar)
- Working temperature:-100°F to 800°F (-73°C to 427°C)
- End connections: 1/8", 1/4", 3/8", 1/2" Female DHL Series and 1/8" Female NPT, 1/8" Female ISO/BSP Tapered, 1/4" Female NPT, 1/4" Female ISO/BSP Tapered, 3/8" Female NPT, 3/8" Female ISO/BSP Tapered, 1/2" Female NPT, 1/2" Female ISO/BSP Tapered
- Orifice size:0.094"(2.39mm), 0.188"(4.78mm), 0.250"(6.35mm), 0.375"(9.53mm), 0.078"(1.98mm), 0.203"(5.16mm), 0.219"(5.56mm) and 0.312"(7.92mm)



## T20 Series

- Working pressure up to:20,000 psig (1379 bar)
- Working temperature:-100°F to 1200°F(-73°C to 649°C)
- End connections:1/4", 3/8", 9/16", 3/4" and 1" Female MP
- Orifice size:0.125"(3.18mm), 0.204"(5.18mm), 0.312"(7.92mm), 0.438"(11.13mm) and 0.562"(14.27mm)

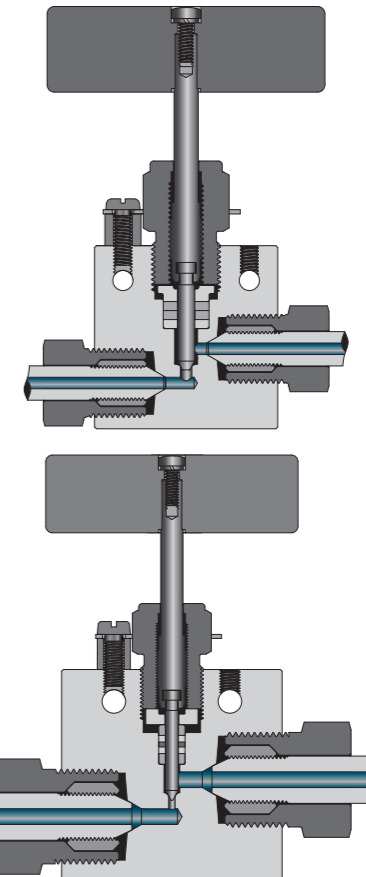


## T60 Series

- Working pressure up to:60,000 psig (4137 bar)
- Working temperature:-100°F to 600°F (-73°C to 316°C)
- End connections: 1/4", 3/8", 9/16" Female HP
- Orifice size:0.063"(1.59mm) and 0.078"(1.98mm)

## T30 Series

- Working pressure up to:30,000 psig (2068 bar)
- Working temperature:-100°F to 600°F (-73°C to 316°C)
- End connections:1/4",3/8" and 9/16"Female HP
- Orifice size:0.094"(2.39mm) and 0.125"(3.18mm)



## Ordering Number Description

**A B C D E F G**  
**SS-T15-4FH-X -X-A**

A	Material
SS=316 SS	

B	Series
T10	
T15	
T20	
T30	
T60	

C	Fitting Type
DFF=Medium and high pressure ferrules	
FH=Medium and high pressure female thread	
FN=NPT female tapered threads	
FRT=ISO tapered female threads	

D	Fitting Size
2=1/8"	
4=1/4"	
6=3/8"	
8=1/2"	
9=9/16"	
12=3/4"	
16=1"	

E	Stem Type
Default=V type	
R=Regulating	

F	Padding
Default= PTFE	
TG=RPTFE Glass	
G=Graphite	

G	Flow Pattern
Default=Straight	
A=Angle	

H	Pneumatic Actuator Type
41=Normally Closed Pneumatic Actuator	
42=Normally Open Pneumatic Actuator	

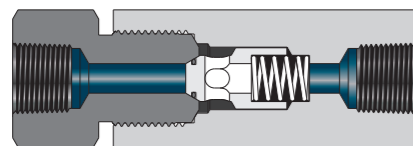
# MEDIUM & HIGH PRESSURE CHECK VALVES

- O-ring Check Valves provide unidirectional flow and tight shut-off for liquids and gases with high reliability. Ball Check Valves prevent reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve).
- Body material: High tensile 316 SS
- Resilient O-ring seat design for noise-free closing leakage-free
- O-ring materials available
- Cracking pressure:  
C10, C15, C20 and C60 Series Check Valves: 14 psig~26 psig (0.966 bar~1.794 bar)
- Available to NACE MR0175

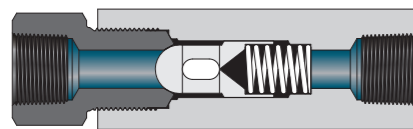


## C10, CA10 Series

- End connections: 3/4" Female NPT and 1" Female NPT
- Orifice sizes: 0.52" (13.21 mm) and 0.69" (17.53mm)
- Working pressure up to: 10,000 psig (690 bar)
- Working temperature:  
C10 Series (Pipe O-ring Check Valves):  
-50°F to 400°F (-45°C to 204°C)  
CA10 Series (Ball Check Valves):  
-110°F to 400°F (-79°C to 204°C)



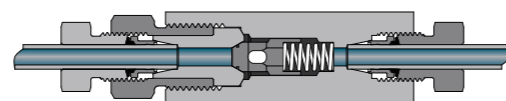
C10 Series (NPT O-ring Check Valves)



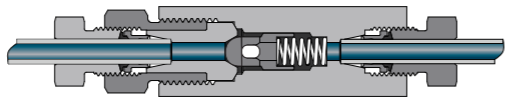
CA10 Series (NPT Ball Check Valves)

## C15, CA15 Series

- End connections:  
O-ring Check Valves and Ball Check Valves:  
1/4", 3/8" and 1/2".  
NPT O-ring Check Valves and NPT Ball Check Valves:  
1/4" Female NPT, 3/8" Female NPT and 1/2" Female NPT
- Orifice size:  
O-ring Check Valves and Ball Check Valves:  
0.188" (4.78mm) 0.25" (6.35mm) and 0.375" (9.53mm)  
NPT O-ring Check Valves and NPT Ball Check Valves:  
0.12" (3.05mm) 0.22" (5.59mm) and 0.36" (9.12mm)  
Working pressure up to:15,000 psig(1034 bar)
- Working temperature:  
C15 Series (O-ring Check Valves): -50°F to 550°F (-45°C to 288°C)  
C15 Series (NPT O-ring Check Valves): -50°F to 400°F (-45°C to 204°C)  
CA15 Series (Ball Check Valves):-110°F to 800°F (-79°C to 427°C)  
CA15 Series (NPT Ball Check Valves):-110°F to 400°F (-79°C to 204°C)



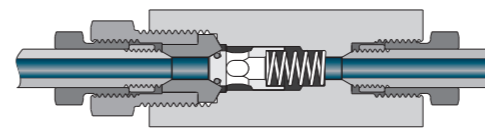
C15 Series (O-ring Check Valves)



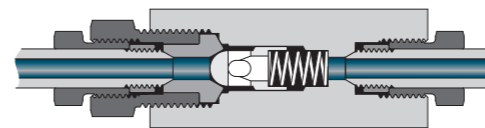
CA15 Series (Ball Check Valves)

## C20, CA20 Series

- End connections:1/4" , 3/8" , 9/16 , 3/4" and 1" Female MP
- Orifice size:0.125"(3.18mm) , 0.218"(5.54mm) 0.359"(9.12mm) , 0.516"(13.11mm) and 17.48mm(0.688")
- Working pressure up to: 20,000psig (1379bar)
- Working temperature:  
C20 Series Check Valves (O-ring Check Valves):  
-50°F to 550°F (-45°C to 288°C)  
CA20 Series Check Valves (Ball Check Valves):  
-110°F to 1200°F (-79°C to 649°C)



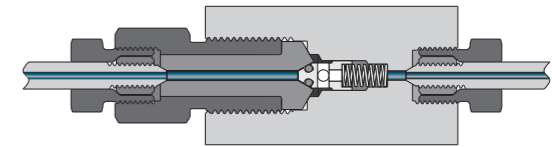
C20 Series (O-ring Check Valves)



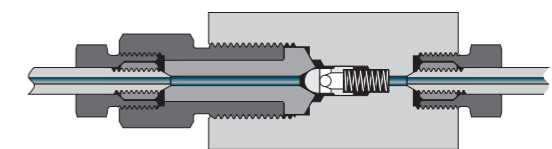
CA20 Series (Ball Check Valves)

## C60, CA60 Series

- End connections:1/4" , 3/8"和9/16"Female HP
- Orifice size:0.094"(2.39mm) , 0.125"(3.18mm) and 0.187"(4.75mm)
- Working pressure up to:60,000 psig (4137 bar)
- Working temperature:  
C60 Series Check Valves (O-ring Check Valves):  
50°F to 550°F (-45°C to 288°C)  
CA60 Series Check Valves (Ball Check Valves):  
-110°F to 1200°F (-79°C to 649°C)



C60 Series (O-ring Check Valves)



CA60 Series (Ball Check Valves)

## Ordering Number Description

**A B C D E**

**SS-C15-4FH-X**

A	Material
SS	316 SS

B	Series
C10 Series	
CA10 Series	
C15 Series	
CA15 Series	
C20 Series	
CA20 Series	
C60 Series	
CA60 Series	

C	Fitting Type
DFF	MP/HP ferrules
FH	MP/HP female thread
FN	NPT female tapered threads
FRT	ISO tapered female threads

D	Fitting Size
2	1/8"
4	1/4"
6	3/8"
8	1/2"
9	9/16"
12	3/4"
16	1"

E	O-ring Material
	Default= FKM
N	NBR
F	FFKM
E	EPDM

# MEDIUM & HIGH PRESSURE RELIEF VALVES

- Maximum back pressure: 500 psig (34.5 bar)
- Liquid or gas service
- Pressure settings of UH Series and UE Series valves are made at the factory and valves are tagged accordingly. State the required set pressure with the order please
- Pressure settings of UA Series valves are adjusted on user's own
- Lock wired secure cap to maintain set pressure
- Easily exchangeable replaceable seat
- Free assembly positions



## UH Series

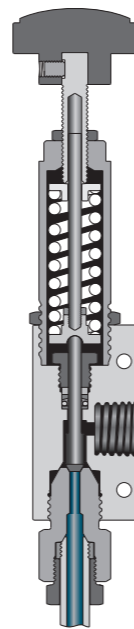
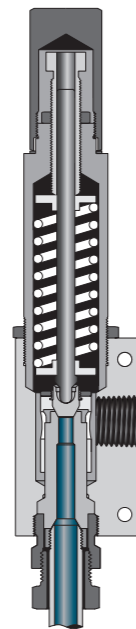
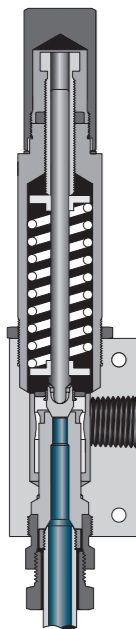
- Inlet connection: 9/16" tube fittings
- Outlet connection: 3/4" NPT thread
- Body material: 316 SS
- Orifice size: 0.156" (3.96mm) to 0.312" (7.92mm)
- Soft seat relief valves
- Set pressure: 1,500 to 20,000 psig (103 to 1379 bar)
- Working temperature: 32°F to 400°F (0°C to 204°C)

## UE Series

- Inlet connection: 9/16" tube fittings 3/8" tube fittings
- Outlet connection: 3/4" NPT thread
- Body material: 316 SS
- Orifice sizes: 0.078" (1.98mm) to 0.312" (7.92mm)
- Metal seat relief valves
- Set pressure: 3,000 to 60,000 psig (207 to 4137 bar)
- Working temperature: -110°F to 400°F (-79°C to 204°C)

## UA Series

- Inlet connection: 9/16" tube fittings
- Outlet connection: 3/4" NPT thread
- Body material: 316 SS
- Orifice sizes: 0.093" (2.36mm) to 0.197" (5.00mm)
- Field adjustable and soft seat relief valves
- Set pressure: 3,000 to 20,000 psig (207 to 1379 bar)
- Working temperature: 32°F to 400°F (0°C to 204°C)



## Ordering Number Description

**A B C D E F**

**SS-UH-9 FH-FN12-3**

A	Material
SS	316 SS

D	Inlet size
6	3/8"
9	9/16"

E	P2 Size and Type
FN12	3/4" NPT Female

B	Series
UH	UH Series
UE	UE Series
UA	UA Series

C	Inlet Connection
HH	Female High Pressure
FH	Female Medium Pressure

F	Grade	
1	1,500~5,000 psig (103~345 bar)	UH
1	3,000~5,000 psig (207~345 bar)	UE
1	3,000~10,000 psig (207~690 bar)	UA
2	5,000~10,000 psig (345~690 bar)	UH/UE
2	10,000~20,000 psig (690~1379 bar)	UA
3	10,000~15,000 psig (690~1034 bar)	UE
3	10,000~20,000 psig (690~1379 bar)	UH
4	15,000~20,000 psig (1034~1379 bar)	UE
5	20,000~30,000 psig (1379~2068 bar)	UE
6	25,000~45,000 psig (1724~3103 bar)	UE
7	30,000~60,000 psig (2068~4137 bar)	UE

# MEDIUM & HIGH PRESSURE VALVES



## Bleed Valves

- Working pressure up to: 30000 psig (2068 bar)
- One piece hex construction compact design allows easy installation
- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C), other O-ring materials available
- High tensile 316 stainless steel as body material
- Easy to assemble and replace O-ring
- Positive locking screw design prevents accidental removal of the stem
- Tee handle for easy operation
- Orifice size: 0.094" (2.4 mm)
- Inlet connections:
  - 3/8, 1/2", 9/16" tube stub with ferrules and nut
  - 3/8, 9/16" male medium pressure or medium pressure coned and threaded nipples
  - 3/8, 9/16" male high pressure or high pressure coned and threaded nipples
- Outlet connection: 1/8 female NPT

## Ordering Number Description

**A B C D**

**SS-D20-CT6-FN2**

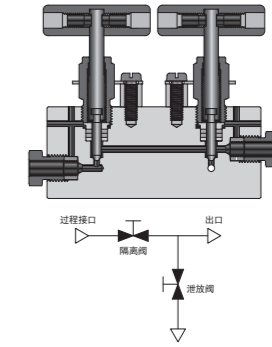
A	Material
SS	316 SS
B	Series
D15	
D20	
D30	

C	P1 Type
DTF6	3/8" Tube Stub with Double Ferrules and Nut
DTF8	1/2" Tube Stub with Double Ferrules and Nut
DTF9	9/16" Tube Stub with Double Ferrules and Nut
MH6	3/8" Male Medium Pressure
MH9	9/16" Male Medium Pressure
CT6	3/8" Medium Pressure Coned and Threaded Nipple
	9/16" Medium Pressure Coned and Threaded Nipple
HM6	3/8" Male High Pressure
HM9	9/16" Male High Pressure
HCT6	3/8" High Pressure Coned and Threaded Nipple
HCT9	9/16" High Pressure Coned and Threaded Nipple

D	P2 Type
FN2	1/8"NPT female

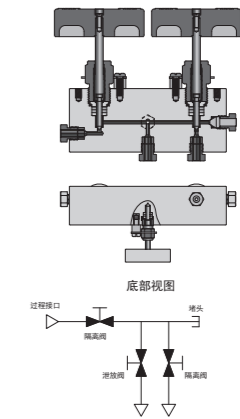
## Block & Bleed Needle Valves

- Working pressure up to: 20000 psig (1379 bar)
- Standard PTFE packing for operation from -100°F to 450°F (73°C to 232°C); RPTFE glass also available as packing
- High tensile 316 stainless steel as body material S17400 stainless steel for lower stem
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Minimal space needed for installation and operation
- Orifice size: 0.094" (2.4 mm)
- End connections: 1/4", 3/8" female NPT and 1/4", 3/8" female medium pressure



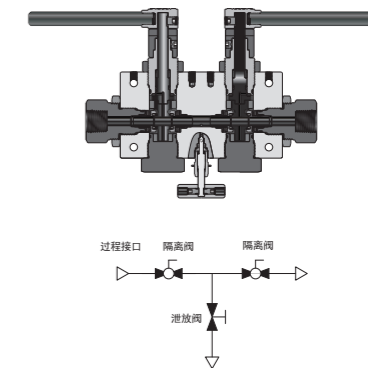
## Double Block & Bleed Needle Valves

- Working pressure: 20000 psig (2068 bar)
- Standard PTFE packing for operation from -100°F to 450°F (73°C to 232°C); RPTFE glass also available as packing
- High tensile 316 stainless steel as body material S17400 stainless steel for lower stem
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Compact design provides large valve performance in a small package
- Orifice size: 0.094" (2.4 mm)
- End connections: 1/4", 3/8", 9/16" female medium pressure and 9/16" female high pressure
- Vent connection: 1/4" female medium pressure



## Double Block & Bleed Ball Valves

- Working pressure: 15000 psig (1034 bar)
- Fluorocarbon FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other materials of O-rings available
- High tensile 316 stainless steel as body material
- PEEK seats to offer excellent resistance to chemicals, heat and abrasion
- Trunnion-style ball to prevent ball blowout
- Full-port flow path to minimize pressure drop
- Orifice sizes: 0.20" to 0.33" (5.2 mm to 8.3 mm)
- End connections: 1/4", 3/8", 1/2", 9/16", 3/4", 1" female medium pressure 1/4", 3/8", 1/2" female NPT
- Vent connection: 1/4" female medium pressure or 1/4" female NPT



## Ordering Number Description

**A B C D E**

**SS-DNB15-FH9-V4 - 8**

A	Material
SS	316 SS
B	Series
VB15	
VB20	
DNB15	
DNT20	

C	Type
FN4	1/4" NPT female
FN6	3/8" NPT female
FH4	1/4" Female Medium Pressure
FH6	3/8" Female Medium Pressure
FH9	9/16" Female Medium Pressure
FH12	3/4" Female Medium Pressure

D	Vent Connection
V4	1/4" Female NPT

E	Vent Connection (for DNB15)
8	

# MEDIUM & HIGH PRESSURE FILTERS

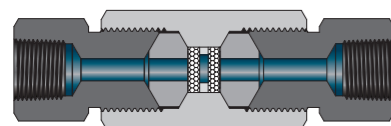


## Dual-Disc Line Filters

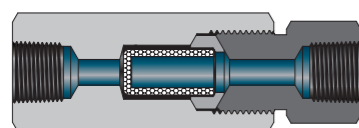
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants and the downstream/upstream element to trap the small particulate contaminants
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 μm; other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

## F10, FM10 Series

- Pressures up to 10,000 psig (690 bar)
- Working temperature range: -60°F to 400°F (-50°C to 204°C)
- End connections: 3/4" NPT or 1" female NPT
- Body material: 316 SS
- Orifice size:  
F10 Series: 0.36"(9.1mm) and 0.56"(14.3mm)  
FM10 Series: 0.52"(13.1mm) and 0.69"(17.5mm)



F10 Series (Dual-disc)



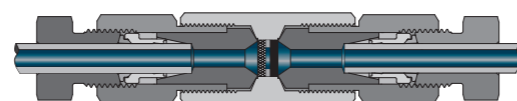
FM10 Series (Cup-type)

## Cup-Type Line Filters

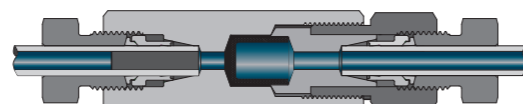
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 μm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

## F15, FM15 Series

- Pressures up to 15,000 psig (1034 bar)
- Working temperature range:  
Tubing connection: -60°F to 660°F (-50°C to 350°C)  
Pipe connection: -60°F to 400°F (-50°C to 204°C)
- Connection types and sizes:  
1/8", 1/4", 3/8" and 1/2" O.D. tubing  
1/8", 1/4", 3/8" and 1/2" Female NPT
- Body material: 316 SS
- Orifice size:  
F15 Series: 0.09"(2.4mm), 0.13"(3.2mm), 0.19"(4.8mm) and 0.31"(7.9mm)  
FM15 Series: 0.13"(3.2mm), 0.19"(4.8mm), 0.31"(7.9mm) and 0.44"(11.1mm)



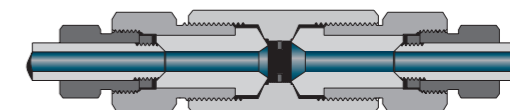
F15 Series (Dual-disc)



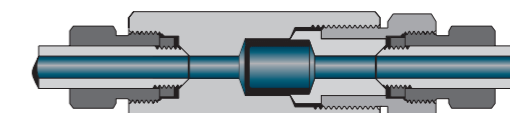
FM15 Series (Cup-type)

## F20, FM20 Series

- Working pressure up to: 20,000 psig (1379 bar)
- Working temperature: -60°F to 660°F (-50°C to 350°C)
- End connections:  
F20 Series: 9/16" Female MP  
FM20 Series: 1/4", 3/8", 9/16", 3/4" and 1" Female MP
- Body material: 316 SS
- Orifice size:  
F20 Series: 0.31"(7.9mm)  
FM20 Series: 0.13"(3.2mm), 0.22"(5.5mm), 0.36"(9.1mm), 0.52"(13.1mm) and 0.69"(17.5mm)



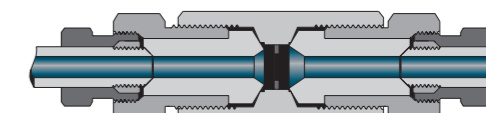
F20 Series (Dual-disc)



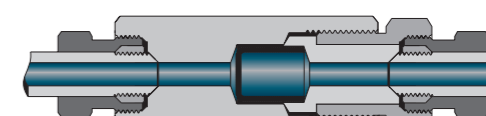
FM20 Series (Cup-type)

## F60, FM60 Series

- Working pressure up to: 60,000 psig (4137 bar)
- Working temperature: -60°F to 660°F (-50°C to 350°C)
- End connections: 1/4", 3/8" and 9/16" Female HP
- Body material: 316 SS
- Orifice size:  
F60 Series: 0.09"(2.4mm), 0.13"(3.2mm) and 0.19"(4.8mm)  
FM60 Series: 0.09"(2.4mm), 0.13"(3.2mm) and 0.19"(4.8mm)



F60 Series (Dual-disc)



FM60 Series (Cup-type)

## Ordering Number Description

**A B C D E**

**SS-F15-4FH-1035**

A	Material
SS	316 SS

B	Series
F10	
FM10	
F15	
FM15	
F20	
FM20	
F60	
FM60	

C	Fitting Type
DF	MP/HP Ferrules
FH	MP/HP Female thread
FN	NPT female tapered threads
FRT	ISO tapered female threads

D	Fitting Size
2	1/8"
4	1/4"
6	3/8"
8	1/2"
9	9/16"
12	3/4"
16	1"

E	Nominal Pore Size
F10/F15/F20/F60	
0510	5/10 μm
1035	10/35 μm
3565	35/65 μm
<b>FM10/FM15/FM20/FM60 Series</b>	
5	5 μm
35	35 μm
65	65 μm



# SEMICONDUCTOR & SPECIALITY GAS APPLICATIONS FITTINGS

## Butt Weld Fittings

### V Series

- Sizes range from 1/8" to 1/2" and 6 mm to 12 mm
- 316, 316L, 316L VAR and 316L VIM/VAR stainless steel materials are available
- Butt weld connection allows for a smooth transition
- Radius junction design with elbows provides smooth flow path
- Maximum working temperature is 850°F(454°C)
- Standard wetted surface finish is average 10µ in. (0.25 µm) Ra
- Every fitting is stamped with size, material, and heat code



Configuration	Fitting Type	Example
	Tube Reducing Union- VU	6L-8TWB-VU-4TWB
	Tube 90° Union Elbow- VL	6L-10TMB-VL
	Tube Reducing Elbow- VL	6L-12TMB-VL-6TMB
	Tube 45° Union Elbow- W	6L-4TWB-W
	Tube Tribow- VW	6L-4TWB-VW
	Tube Union Tee- VT	6L-12TWB-VT
	Tube Reducing Tee- VT	6L-8TWB-VT-8TWB-4TWB
	Tube Union Cross- VO	6L-6TWB-VO

### W1 Series

- Sizes range from 1/4" to 1" and 6 mm to 18 mm
- Butt weld connection allows for a smooth transition
- Radius junction design with elbows provides smooth flow path
- Maximum working temperature is 850°F (454°C)
- Standard wetted surface finish is average 10µ in. (0.25 µm) Ra
- Every fitting is stamped with size, material, and heat code



Configuration	Fitting Type	Example
	Tube Reducing Union- TB8	6L-WU2-TB8-TB4
	Tube Union Elbow- MTB10	6L-WL2-MTB10
	Tube Union Tee- MTB10	6L-WT2-MTB10
	Tube Reducing Tee- TB8	6L-WT2-TB8-TB8-TB4
	Tube Union Cross- TB8	6L-WC2-TB8

### Ordering Number Description

**A B C D E F**  
6L-8TWB-U1-4TWB

A	Material
SS	=316 SS
6L	=316L SS
6LV	=316LVAR SS
6LW	=316LVIM/VAR SS

B	P2 Size
2	=1/8"
4	=1/4"
6	=3/8" or 6mm
8	=1/2" or 8mm
10	=10mm
12	=3/4" or 12mm
16	=1" or 16mm

C	P1 Type
TWB	=Inch tube butt weld
TMB	=Metric tube butt weld

D	Fitting Type
V Series	VU=Butt weld reducing union
	VL=Butt weld union elbow
	VV=Butt weld 45° union elbow
	VW=Butt weld tribow
	VT=Butt weld tees
W1 Series	VO=Butt weld union cross
	U1=Butt weld reducing union
	L1=Butt weld union elbow
	T1=Butt weld tees
	O1=Butt weld union cross

E	P2, P3, P4
	Specify in the same way as the P1

## Metal Gasket Face Seal Fittings


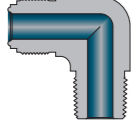
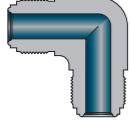
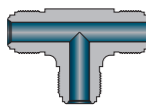

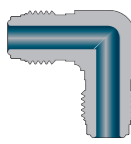
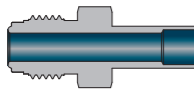
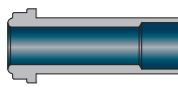


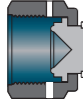

### VCR Series





- Sizes range from 1/16" to 1" and 6 mm to 18 mm
- 316, 316L, and 316L VAR stainless steel materials are available
- Metal-to-metal seal provides perfect leak-tight service from vacuum to high pressure
- Standard wetted surface finish is average 10 µin. (0.25µm) Ra
- Glands and bodies are stamped with size, material, and heat code
- All seal faces and male threads are protected with plastic caps



Configuration	Fitting Type	Example
	FR Gland to Short Tube Butt Weld- V	6LV-8VC-V-8TB-6S
	FR Gland to long Butt Weld- V	6LV-8VC-V-8TB-6
	FR Gland to Male Weld- V	6L-8VC-V-4TB
	FR Gland to Tube Socket Weld- V	SS-8VC-V-6TS
	R Gland to Short Tube Socket Weld- V	SS-4VC-V-4TS-0.75
	FR Gland to Tube Port- V	SS-8VC-V-6TF
	Short Fractional Automatic Tube Butt Weld	SS-4VC-AV-4TB-12S
	Long Fractional Automatic Tube Butt Weld- AV	SS-4VC-AV-4TB-12
	Blind Gland- V	SS-8VC-V-B
	FR Welded Gland to Male NPT-WV	SS-8VC-WV-6N
	FR Welded Gland to Female NPT- WV	SS-8VC-WV-6FN
	FR Welded Gland to Tube Fitting- WV	SS-8VC-WV-8F

Configuration	Fitting Type	Example
	FR Welded Gland Union- WV	SS-4VC-WV
	Female Nut- CN	SS-4VC-CN
	Male Nut- CM	SS-8VC-CM
	FR Body to Male NPT- KM	SS-8VC-KM-4N
	FR Body to Female NPT- KF	SS-8VC-KF-4N
	FR Body to Tube Fitting- KU	SS-8VC-KU-6F
	FR Body to Bulkhead Tube Fitting Union- KB	SS-8VC-KB-8F
	FR Body to Bulkhead Male Connector- BM	SS-8VC-BM-4N
	Union Body- KU	SS-8VC-KU
	Bulkhead Union Body- B	SS-8VC-B
	FR Bulkhead Body to Tube Butt Weld- BW	SS-4VC-BW-4TB
	Coupling- CB	SS-8VC-CB
	Female Reducing Union- CU	SS-8VC-CU-4VC
	Reducing Adapter- CA	SS-8VC-CA-4VC

Configuration	Fitting Type	Example
	Reducing Bushing- CB	SS-8VC-CB-4VC
	FR Body to Male NPT Elbow- 6N	SS-8VC-ME-6N
	FR Body Union Elbow- L	SS-8VC-L
	FR Body Union Tee- MT	SS-8VC-MT
	FR Body Union Cross- O	SS-8VC-O
	"H" Type Union Elbow- L	SS-4HVC-L
	"H" Type Tube Butt Weld- 6TB	SS-4HVC-AW-6TB
	"H" Type Tube Butt Weld- V	SS-4HVC-V-6TB-30.2
	Flow Restrictors- C020	6LV-4VC-C020
	Plug- DZ	SS-4VC-DZ
	Cap- CC	SS-4VC-CC
	Gasket- G	6L-8VC-G-UP

Configuration	Fitting Type	Example
	Snubber Gasket	6L-4VC-G-UP-5M
	Knurled Gasket	6L-4VC-G-KN-A-UP
	Gasket Retainer Assembly	6L-8VC-G-A-UP
	Side-load Retainer Gasket	6L-4VC-AS-UP

**Ordering Number Description**

**A B C D E F**  
**6L-8VC-KM-4N-X**

A	Material
SS	=316 SS
6L	=316L SS
6LV	=316LVAR SS

B	P1 Size
2	=1/8"
4	=1/4"
8	=1/2"
12	=3/4"
16	=1"

C	P1 Type
VC	=Metal Gasket Face Seal
N	=NPT male tapered threads
FN	=NPT female tapered threads

D	Fitting Type
V	=Gland
WV	=Weld gland
CN	=Female nut
CM	=Male nut
KM	=Male connector body
KF	=Female connector body
KU	=Union body
KB	=Body to Bulkhead
Tube Fitting Union	
BM	=Body to Bulkhead Male Connector
B	=Bulkhead Union body
BW	=Bulkhead Body to Tube Butt Weld
CB	=Female connector body
AW	=Body to Tube Socket Weld
CU	=Female Reducing Union
CA	=Reducing Adapter
CB	=Reducing Bushing
L	=Union Elbow
ME	=Male Union Elbow
MT	=Union Tee
DZ	=Plug
O	=Union Cross
CC	=Cap
G	=Gasket

E	P2,P3,P4
	Specify in the same way as the P1

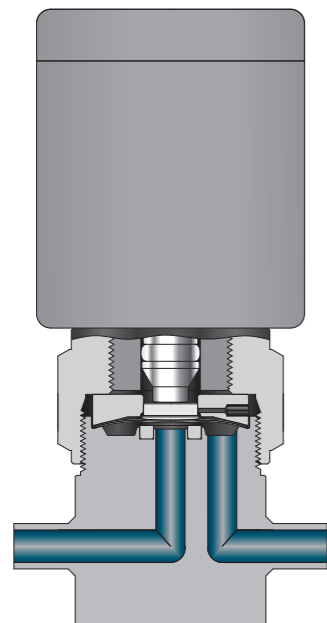
F	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
	W= degreasing and oxygen-rich cleaning
	W1=Ultra high-purity Process Specification

# SEMICONDUCTOR & SPECIALTY GAS APPLICATIONS DIAPHRAGM VALVES



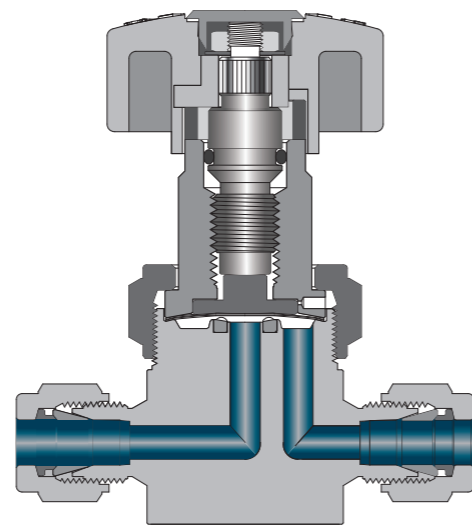
## GM Series

- Suitable for ultrahigh-purity applications
- Low internal volume, fully swept flow path
- Contained seat to provide excellent resistance to swelling and contamination
- Elgiloy material for strength and corrosion resistance for long cycle life
- Pneumatic actuator: Long cycle life with high speed actuation
- Working pressure up to:250 psig (17.2 bar)
- Pneumatic actuator operating pressure:60~90psig (4.2~6.2bar)
- Working temperature:PCTFE:-23°C~65°C (-10°F~150°F)  
PFA:-23°C~150°C (-10°F~302°F)
- Leak rate:Internal:≤1.0x10<sup>-9</sup> mbar l/s  
External:≤1.0x10<sup>-9</sup> mbar l/s
- Orifice size:4.1 mm(0.16 in.)
- Flow coefficient (Cv):0.27
- End connections:1/4" to 3/8", 6mm to 8mm
- Flow patterns: straight type, branch type, 2-valve 3-way block type, 3-valve 4-way block type



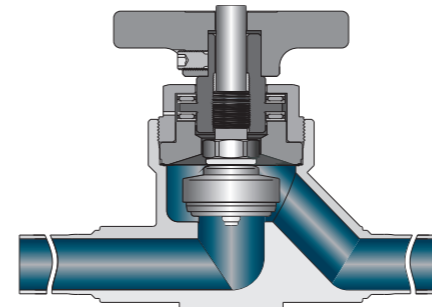
## GH Series

- Fully contained PCTFE seat design provides excellent resistance to swelling and contamination
- Elgiloy material for strength and corrosion resistance for long cycle life
- Manual or pneumatic actuation
- Working pressure up to:3000 psig (206 bar)
- Pneumatic actuator operating pressure: 60 to 90 psig (4.2 to 6.2 bar)
- Working temperature:PCTFE:-10°F~150°F(-23°C~65°C)  
Vespel:-10~250°F(-23~120°C)
- Leak rate:Internal:≤1.0x10<sup>-9</sup> mbar l/s  
External:≤1.0x10<sup>-9</sup> mbar l/s
- Orifice size:4.1mm(0.16in.)
- Flow coefficient (Cv):0.2
- End connections:1/4 to 3/8",6mm to 8mm
- Flow patterns: straight type, branch type



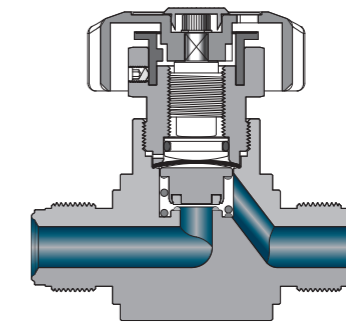
## GL Series

- Contoured flow passages allow high flow
- Metal-to-metal diaphragm seal
- No springs or threads in wetted areas enable cleaner operation
- Repetitive shutoff with fully contained soft-seat stem tip
- Position indicator ring for lever handle
- Working pressure up to: 300 psig (20.6 bar)
- Working temperature:PCTFE: -10°F~150°F (-23°C~65°C)  
Vespel: -10°F~250°F (-23°C~121°C)
- Leak rate:Internal:≤1.0x10<sup>-9</sup>mbar l/s  
External:≤1.0x10<sup>-9</sup>mbar l/s
- Orifice size:28.6 mm (1.125 in.)
- Flow coefficient (Cv):13
- End connections:3/4" to 1", 23mm to 25mm
- Flow patterns: straight type, straight type with purge port



## GF Series

- Can be used in vacuum applications
- Repetitive shutoff with fully contained soft-seat stem tip
- Manual (with position indicator ring) and pneumatic actuators available
- Working pressure up to: manual :3500 psig (241 bar)  
pneumatic:3000 psig (206 bar)
- Pneumatic actuator operating pressure:60~90psig (4.2~6.2bar)
- Working temperature:PCTFE:-10°F~150°F (-23°C~65°C)  
Vespel:-10°F~250°F (-23°C~121°C)
- Leak rate:Internal:≤4.0x10<sup>-9</sup> mbar l/s  
External:≤4.0x10<sup>-9</sup> mbar l/s
- Orifice size:8.0 mm (0.31 in.)
- Flow coefficient (Cv):0.8
- End connections:3/8" to 1/2",8mm to 12mm
- Flow pattern: straight type



## Ordering Number Description

**A B C D E F G H**  
**SS-GM-VC4-XX-XX-XX-XX**

A	Material
SS	316 SS
6L	316L SS
6LV	316LVAR SS
6LW	316LVIM/VAR SS

B	Series
GM	
GH	
GL	
GF	

C	P1 Type
VC	VCR male fitting
FVC	VCR female fitting
FN	NPT female tapered threads
N	NPT male tapered threads
TWB	Inch tube butt weld
TMB	Metric tube butt weld
M	Metric Ferrule
F	Fractional Ferrule

D	P1 Size
4	1/4"
6	6mm or 3/8"
8	8mm or 1/2"
10	10mm
12	12mm or 3/4"
16	16mm or 1"

E	P2,P3,P4 Type/Size
	Specify in the same way as the P1

H	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	degreasing and oxygen-rich cleaning
W1	Normally open actuator

F	Flow Pattern
	Default= Straight
A	Angle
3	3-way

G	Actuator Type
	None
41	Normally closed actuator
42	Normally open actuator

# SEMICONDUCTOR & SPECIALTY GAS APPLICATIONS- PRESSURE REDUCING REGULATOR

## FR1S Series Compact Piston Line Pressure Regulator

### Feature

- Compact design, small size
- Inner small volume
- 40 µm filter element installed at the inlet

### Technical Data

- Media contacting material  
316,316L SS or Brass (nickel plated)for body  
Seat: PCTFE,PEEK or Vespel  
Piston:316L  
O-ring:Viton,Kalrez or Buna-N  
Filter: 316L
- Function  
Test pressure: 150% of max rated pressure  
Burst pressure: 300% of the max rated pressure  
Leak rate:  
Internal:Bubble-tight  
External:Bubble-tight
- Flow coefficient (Cv):0.06
- Weight(only regulator):0.93lbs(0.4kg)
- Body port: inlet, outlet - 1/4" NPT female thread
- Working condition:  
Maximum inlet pressure: 6000 psig  
Controlled pressure ranges:0~8,0~500,0~1500 psig  
Working temperature:-15°F~+165°F (-26°C~+74°C)



## FR2 Series Normal Diaphragm Line Pressure Regulator Max.Inlet Pressure: 1500 psig.

### Feature

- Excellent sensitivity and set point pressure stability
- Inner small volume
- 40 µm filter element installed at the inlet

### Technical Data

- Single-stage regulator
- Maximum control pressure:3000 or 4500 psig
- Material of the internal components:  
Seat: PEEK,PCTFE,PEEK  
Diaphragm:Alloy  
Filter: 316L
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rate: (helium):  
Internal:≤1x10<sup>-7</sup> mbar-l/s  
External:≤1x10<sup>-9</sup> mbar-l/s
- Flow coefficient (Cv):0.06
- Weight(only regulator):≈0.86 kg
- Body port: inlet, outlet, pressure gauge port - 1/4" NPT female thread



## FR2 Series Normal Diaphragm Line Pressure Regulator Max.Inlet Pressure: 1500 psig.

### Feature

- Piston sensing design with greater outlet pressure adjustment range
- Inner small volume
- 40 µm filter element installed at the inlet
- Special cleaning and packaging processes for oxygen-rich environments

### Technical Data

- Single-stage regulator
- Maximum control pressure:6000 psig
- Controlled pressure ranges:0~3000 psig
- Material of the internal components:  
Main seat: PEEK,PCTFE,PEEK  
Diaphragm: 316L  
Filter: 316L
- Working temperature:-15°F~+165°F(-26°C~+74°C)
- Leak rate:  
Internal:Bubble-tight  
External: Bubble-tight
- Flow coefficient (Cv):  
Without vent: 0.06、0.2、0.5
- Weight(only regulator):≈1 kg  
Body port: inlet, outlet, pressure gauge port - 1/4" NPT female thread



## FR4 Series Medium Flow Line Pressure Regulator

### Feature

- High flow rate (Cv 1.1) and high sensitivity
- Large diameter convoluted diaphragm to increase pressure sensitivity
- Balanced spool design reduces pressure supply effect
- Special cleaning and packaging processes for oxygen-rich environments

### Technical Data

- Single-stage regulator
- Maximum control pressure:500 and 3000 psig
- Controlled pressure ranges:0~500psig
- Material of the internal components:  
Seat: PTFE、PCTFE、PEEK  
Diaphragm:316L
- Working temperature: -40°F~+140°F (-40°C~+60°C)
- Leak rate: Helium:  
Internal:Bubble-tight  
External:≤1x10<sup>-9</sup>mbar-l/s
- Flow coefficient (Cv):1.1
- Weight(only regulator):≈1.45kg
- Body port: inlet, outlet -1/2" NPT female thread  
Pressure gauge port -1/4"NPT female thread



**FRH Series High Pressure Piston Line Pressure Regulator**  
Max.Inlet Pressure: 10000 psig.

**Feature**

- Maximum control pressure: 10000 psig
- Piston sensing design with greater outlet pressure adjustment range

**Technical Data**

- Maximum control pressure:  
Stainless Steel :10000 psig  
Brass:6000 psig
- Material of the internal components:  
Seat: PEEK  
Piston: 316  
Filter: 316L
- Working temperature:-15°F~+165°F (-26°C~+74°C)
- Leak rate:  
Internal: Bubble-tight  
External: Bubble-tight
- Flow coefficient (Cv):0.05,0.2
- Weight:≈ 2.0 kg
- Body ports: inlet, outlet and pressure gauge ports -1/4"NPT female thread



**Ordering Number Description**

**A B C D E F G H I**

**SS - FR1 - 3 - 50 - FN4 - B - B - FN4 - W**

A	Body Material
SS	316 SS
HC	AlloyC-276

B	Series
FR1S	
FR2	
FR3	
FR4	
FRH	

C	Inlet Pressure Range
3	3000 psig
36	3600 psig
6	6000 psig
10	10000 psig

D	Outlet Pressure Range
25	0-25PSI
50	0-50PSI
100	0-100PSI
250	0-250PSI
500	0-500PSI
750	0-750PSI
1500	0-1500PSI
2500	30-2500PSI
4000	50-4000PSI
6000	60-6000PSI
10000	200-10000PSI

E	Inlet Size
FN4	1/4NPT Female NPT
FN8	1/2NPT Female NPT
F4	1/4" inch double ferrule fitting
F8	1/2" inch double ferrule fitting

F	Inlet pressure gauge port
B	Leave port with pressure gauge
0	No watch, no mouth
K	No gauge, no gauge port
PST	Leave the mouth open with a plug

G	Outlet pressure gauge port
	Specify in the same way as the P1

H	Outlet Size
FN4	1/4NPT Female NPT
FN8	1/2NPT Female NPT
F4	1/4" inch double ferrule fitting
F8	1/2" inch double ferrule fitting

I	Way to install
	Default=No special requirements
Y	Panel mounting
U	Bottom with bolt mounting

J	Circulation mode
	Default=Right in, left out
Fl	Left in, right out

K	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	degreasing and oxygen-rich cleaning
W1	Normally open actuator

Non-standard products or customized product models are indicated separately by our technician for the model.

**SEMICONDUCTOR & SPECIALTY GAS APPLICATIONS PRESSURE BACK PRESSURE REGULATOR**

**BPY Series Diaphragm Back Pressure Regulator**  
Maximum control pressure: 250 psig

**Feature**

- Excellent sensitivity and set point pressure stability
- Inner small volume
- Special cleaning and packaging processes for oxygen-rich environments

**Technical Data**

- Maximum control pressure:500 psig
- Material of the main components:  
Seat: PCTFE,PTFE,PEEK  
Diaphragm: 316L
- Working temperature:-40°F~+140°F (-40°C~+60°C)
- Leak rate( Helium):  
Internal: Bubble-tight  
External:≤1x10<sup>-9</sup> mbar-l/s
- Flow coefficient (Cv): 0.06,0.2
- Weight:≈0.86kg
- Body ports: inlet, outlet and pressure gauge ports - 1/4" Female NPT



**BPM Series Piston Back Pressure Regulator**  
Maximum control pressure: 1000 psig

**Feature**

- Excellent sensitivity and set point pressure stability
- Inner small volume
- Special cleaning and packaging processes for oxygen-rich environments

**Technical Data**

- Maximum control pressure:500 psig
- Material of the main components:  
Seat: PCTFE,PTFE,PEEK  
Diaphragm: 316L
- Work Tmperature:-40°F~+140°F (-40°C~+60°C)
- Leak rate: (Helium):  
Internal: Bubble-tight  
External:≤1x10<sup>-9</sup> mbar-l/s
- Flow coefficient (Cv):1.1
- Body ports: inlet, outlet and pressure gauge ports - 1/4" and 1/2" Female NPT



**BPM Series Piston Back Pressure Regulator**  
Maximum control pressure: 1000 psig

Feature

- Piston sensing design with greater pressure control range
- Inner small volume
- Special cleaning and packaging processes for oxygen-rich environments

Technical Data

- Maximum control pressure:3000 psig
- Material of the main components:  
Seat: PCTFE,PTFE,PEEK  
Diaphragm: 316L
- Working temperature:-15°F~+165°F (-26°C~+74°C)
- Leak rate:  
Internal: Bubble-tight  
External:Bubble-tight
- Flow coefficient (Cv):0.06, 0.2
- Weight:≈1.0kg
- Body ports: inlet, outlet and pressure gauge ports - 1/4" Female NPT



**BPM Series Piston Back Pressure Regulator**  
Maximum control pressure: 1000 psig

Feature

- Piston sensing design with greater pressure control range
- Thrust ball bearings make handling easier

Technical Data

- Maximum control pressure:  
Stainless steel: 10000psig
- Material of the main components:  
Body:316 SS or brass  
Seat: PEEK  
Piston: 316L
- Working temperature:-15°F~+165°F (-26°C~+74°C)
- Leak rate:  
Internal:Bubble-tight  
External:Bubble-tight
- Flow coefficient (Cv):0.01,0.04,0.12
- Weight(Regulator):≈2kg
- Body ports: inlet, outlet and pressure gauge ports - 1/4" Female NPT



Ordering Number Description

**A B C D E F G**  
**SS - BPY -25 - FN4 - B -FN4 -W**

A	Material
SS	=316 SS
HC	=Alloy C-276

B	Series
BPY	
BPO	
BPH	
BPM	

C	Inlet Pressure Range
10	=0-10PSI
25	=0-25PSI
50	=0-50PSI
100	=0-100PSI
250	=0-250PSI
500	=0-500PSI
1000	=0-1000PSI
2000	=0-2000PSI
2500	=0-2500PSI
6000	=0-6000PSI
10000	=0-10000PSI

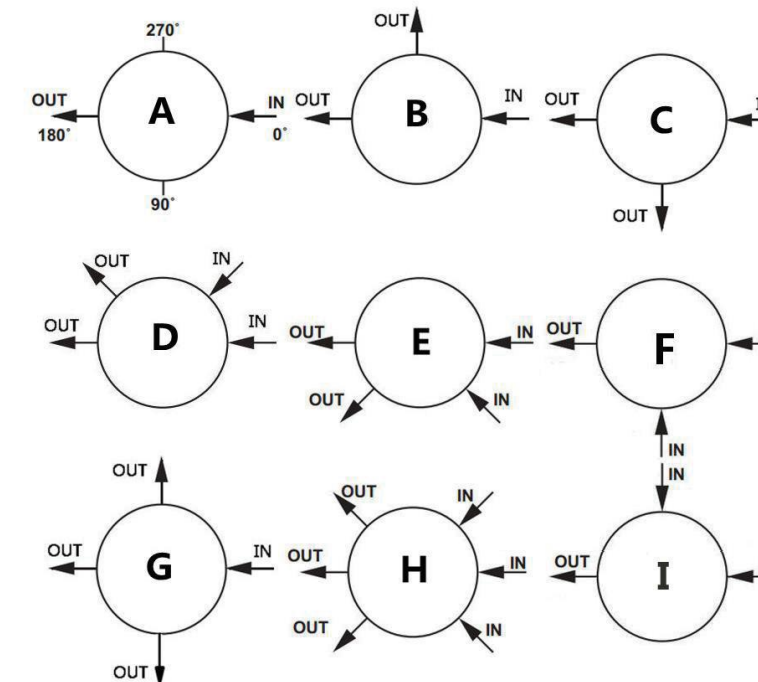
D	Inlet Size
FN4	=1/4NPT Female NPT
FN8	=1/2NPT Female NPT
F4	=1/4" inch double ferrule fitting
F8	=1/2" inch double ferrule fitting

E	Inlet pressure gauge port
B	=Leave port with pressure gauge
0	=No watch, no mouth
K	=No gauge, no gauge port
PST	=Leave the mouth open with a plug

F	Outlet Size
FN4	=1/4NPT Female NPT
FN8	=1/2NPT Female NPT
F4	=1/4" inch double ferrule fitting
F8	=1/2" inch double ferrule fitting

G	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	= degreasing and oxygen-rich cleaning
W1	=Normally open actuator

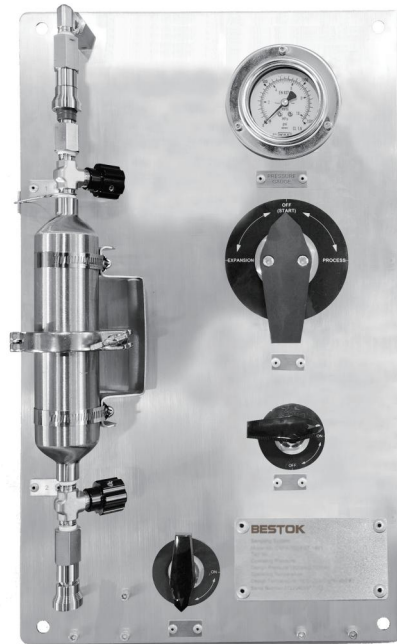
Non-standard products or customized product models are indicated separately by our technician for the model.



**Orifice configuration (Note: If there are special requirements of orifice configuration, customization is available.)**

# CLOSED-LOOP SAMPLING SYSTEM

- Two kinds of optional sampling containers: Bottles and Cylinders.
- System main body material: 316 SS, 316L SS, 304L SS etc (Can be customized)
- Connection: 1/4" Tube fitting, 1/2" NPT Thread or NPS 1/2" Flange (Can be customized)
- Working temperature and pressure range: can be customized according to customer requirements
- Applicable working conditions: High temperature, high pressure, high viscosity, strong corrosive, strong toxicity and hazardous liquid bane to the environment
- Various mounting way

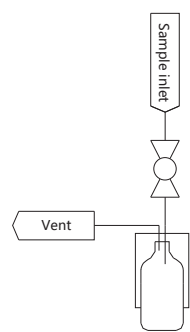


## SL- Bottle Configuration Sampling Systems for Liquids

### A Series

#### SLA1-On-off Configuration

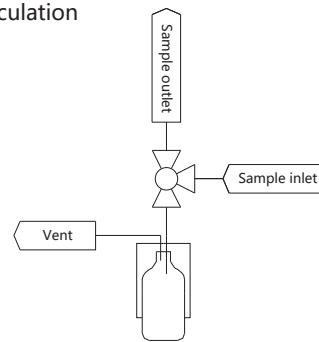
- Sampling directly from process or system, low pressure application



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#### SLA2-Circulation Configuration

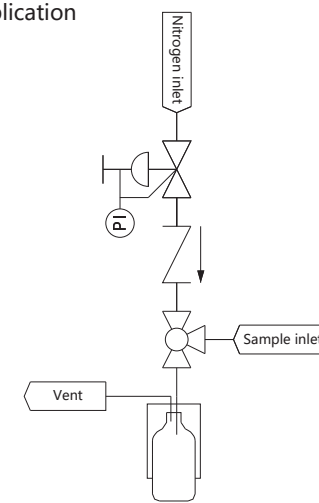
- Sampling directly from process or system, low pressure application
- Sample circulation



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#### SLA3-Back Flow Configuration

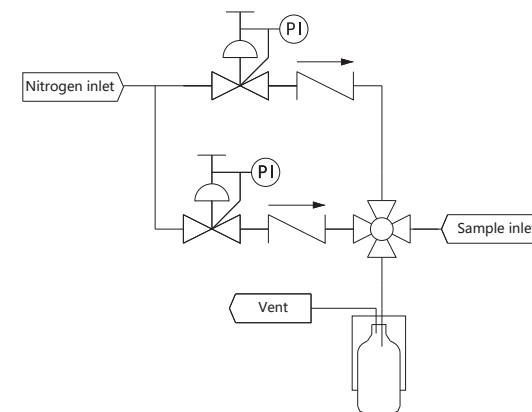
- Sampling directly from process or system, low pressure application
- Back flow



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#### SLA5-Back Flow, Air Replaced and System Purge Configuration

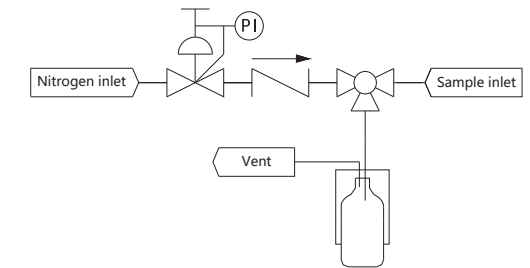
- Sampling directly from process or system, low pressure application
- System purge
- Back flow and bottle air replaced



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#### SLA4-Air Replaced and System Purge Configuration

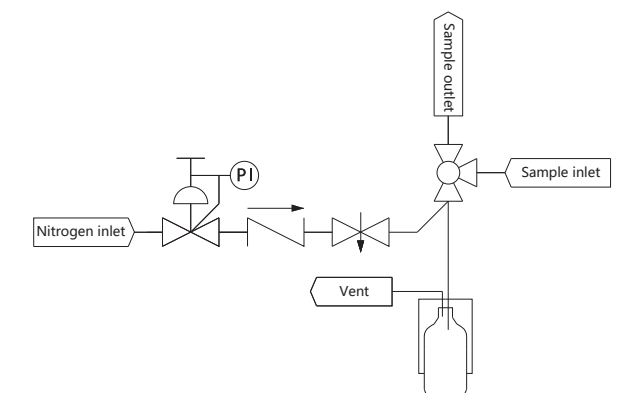
- Sampling directly from process or system, low pressure application
- System purge
- Bottle air replaced



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#### SLA6-Air Replaced, Circulation and Needle Purge Configuration

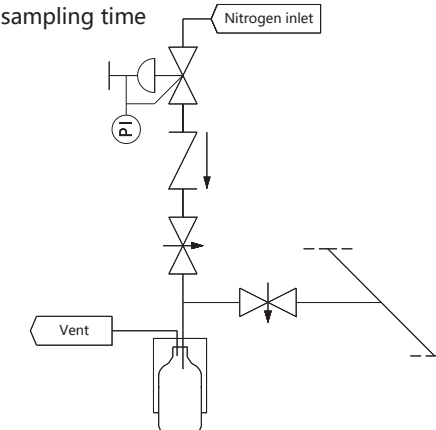
- Sampling directly from process or system, low pressure application
- Needle purge
- Sample circulation and bottle air replaced



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#### SLA7 - In-line and Needle Purge Type

- Sampling from low pressure devices or process lines: 0-145 psig(0-10 bar)
- In-line sampling valve to save sampling time
- Needle purge



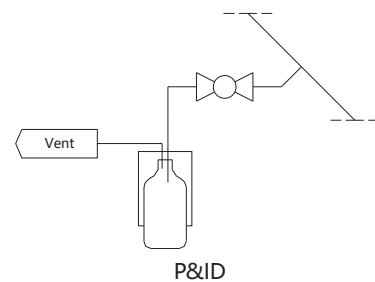
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## B Series

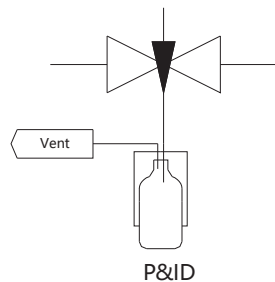
### SLB1-Sample circulation and bottle air replaced

- Applicable for sampling from process and container
- Sampling directly from process and container



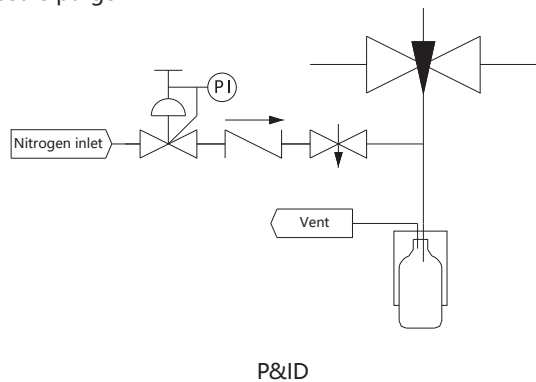
### SLB2--In Line and Circulation Configuration

- In line sampling
- Sample circulation
- Suitable for viscous liquid or liquid with few solid particles



### SLB3--Purge Configuration In Line, Air Replaced and Needle

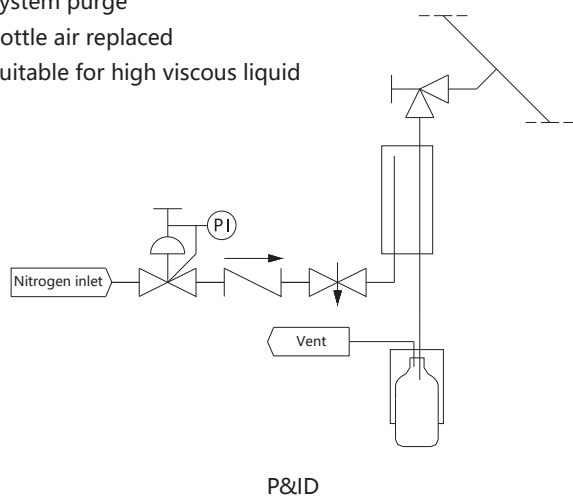
- In line sampling
- Bottle air replaced
- Suitable for viscous liquid or liquid with few solid particles
- Needle purge



## C Series

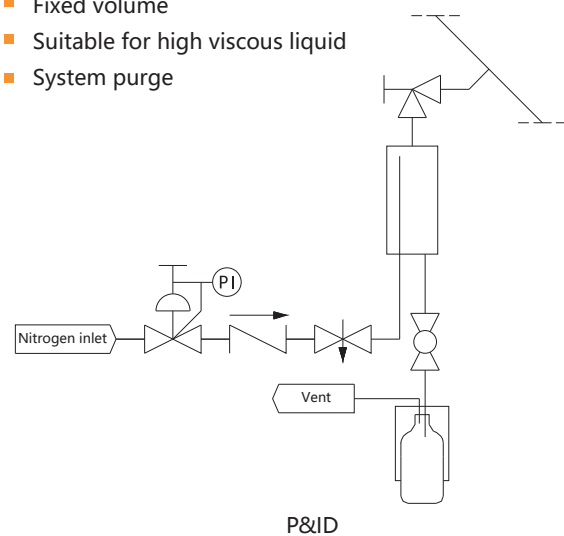
### SLC1-Air Replaced and System Purge Configuration

- Sampling directly from process or system
- System purge
- Bottle air replaced
- Suitable for high viscous liquid



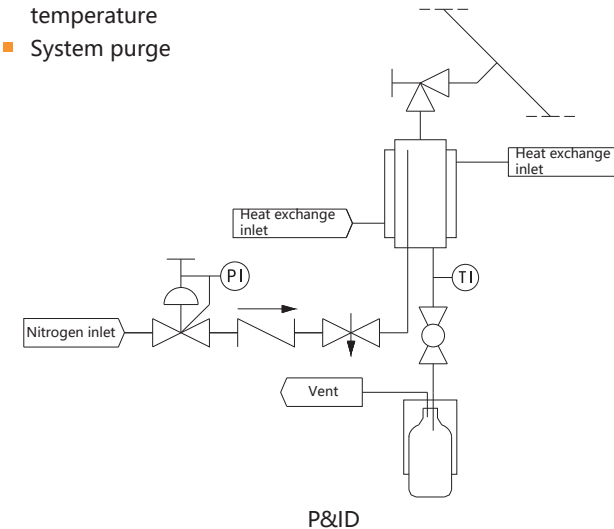
### SLC2--Fixed Volume, Air Replaced and System Purge Configuration

- Sampling directly from process or system
- Bottle air replaced
- Fixed volume
- Suitable for high viscous liquid
- System purge



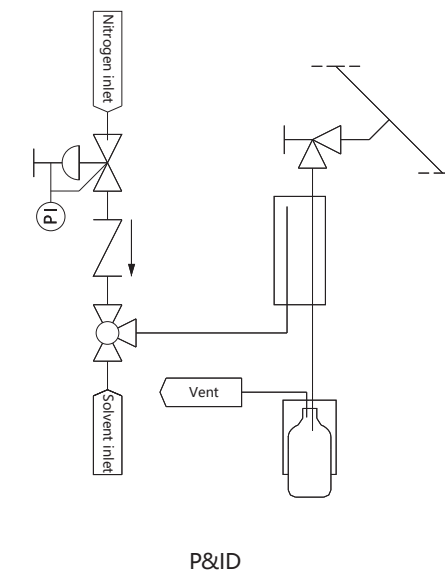
### SLC3-Heating/cooling, Fixed Volume, Air Replaced and System Purge Configuration

- Sampling directly from process or system
- Bottle air replaced
- Fixed volume
- Suitable for high viscous liquid
- Heating/Cooling jacket ensures sampling at the required temperature
- System purge



### SLC4-Solvent Purge, Air Replaced and System Purge Configuration

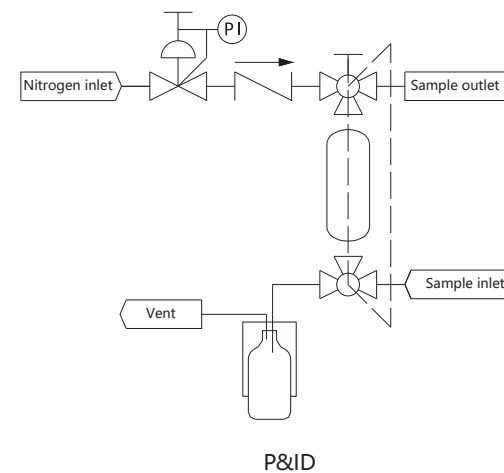
- Sampling directly from process or system
- Bottle air replaced and solvent purge
- Suitable for high viscous liquid
- Solvent purge and system purge function



## D Series

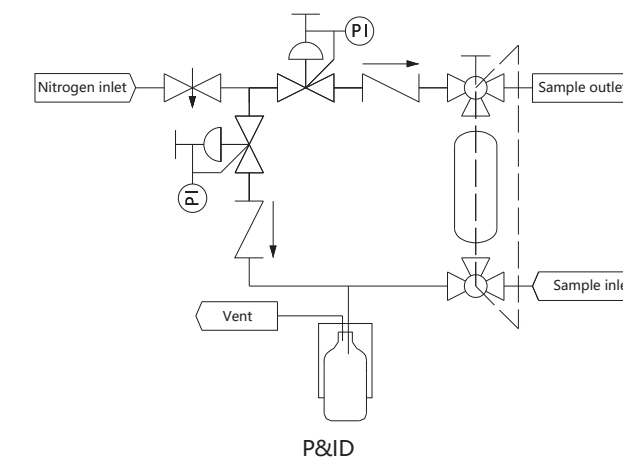
### SLD1-Fixed Volume, Circulation and System Purge Configuration

- Sampling directly from process or system
- Fixed volume
- Sample circulation
- System purge
- Linkage ball valve design, easy operation



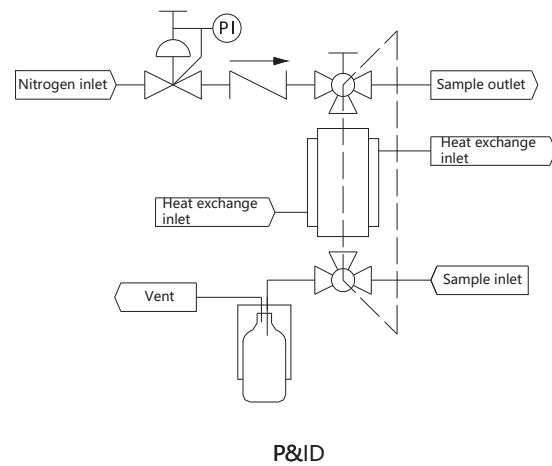
### SLD2-Fixed Volume, Circulation, Air Replaced and System Purge Configuration

- Sampling directly from process or system
- Fixed volume
- Bottle air replaced
- System purge
- Linkage ball valve design, easy operation
- Sample circulation



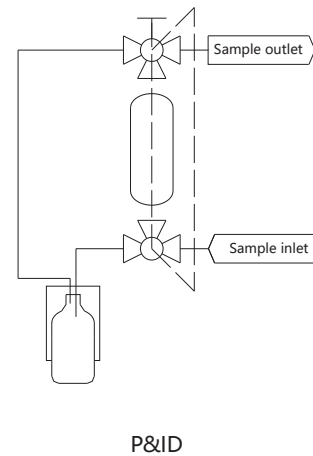
### SLD3-Heating/Cooling, Circulation, Fixed Heating/Cooling, Circulation, Fixed

- Sampling directly from process or system
- Fixed volume
- Sample circulation
- System purge
- Heating/Cooling jacket ensures sampling at the required temperature
- Linkage ball valve design, easy operation



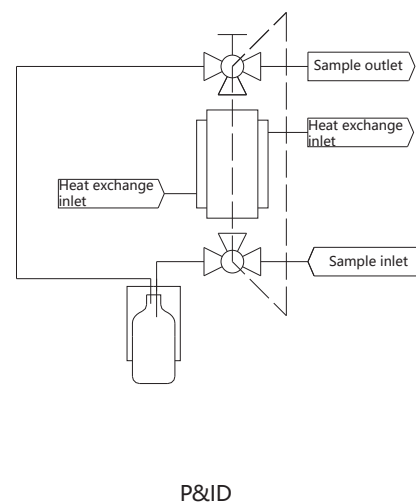
### SLD4 - Sampling by Gravity Type

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge
- Sampling by gravity without Nitrogen purge
- Easy operation with a single handle by linkage valve



### SLD5- Sampling by Gravity Type with Heating/Cooling Jacket

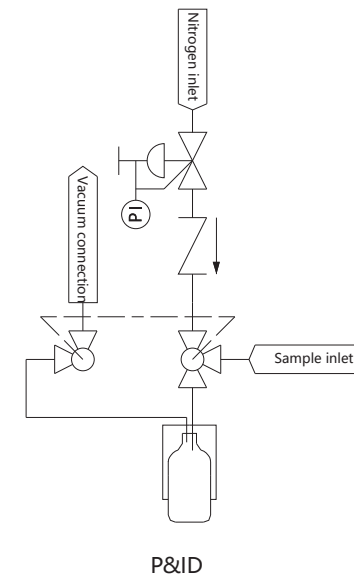
- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge
- Sampling by gravity without Nitrogen purge
- Heating/cooling jacket to ensure sampling within a certain range of temperature
- Easy operation with a single handle by linkage valve



### E Series

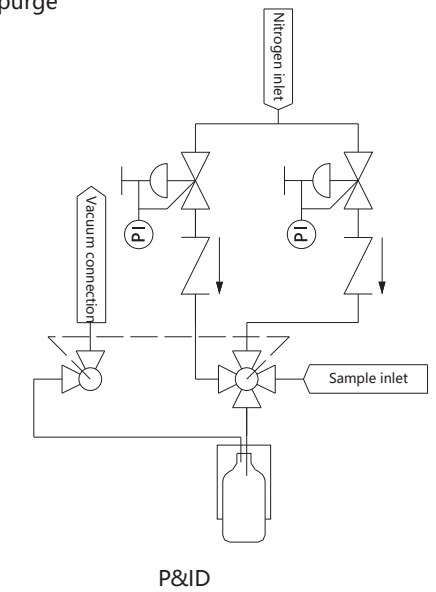
#### SLE1-Back Flow and Vacuum Configuration

- Sampling directly from process or system
- Applicable for zero-pressure or vacuum process
- Back flow
- Linkage ball valve design, easy operation



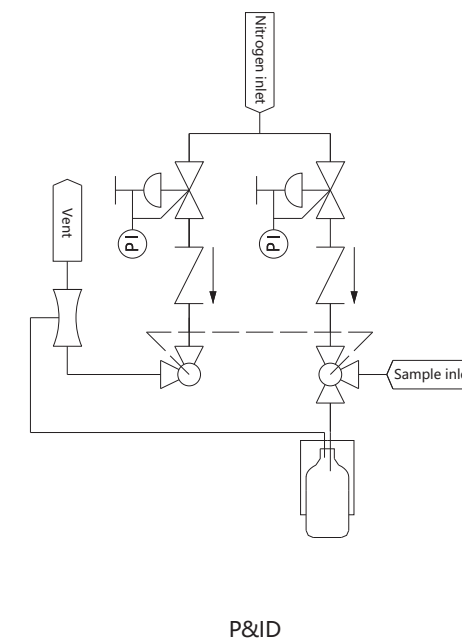
#### SLE2-Back Flow, Air Replaced, Vacuum and System Purge Configuration

- Sampling directly from process or system
- Applicable for zero-pressure or vacuum process
- Back flow and bottle air replaced
- Linkage ball valve design, easy operation
- System purge



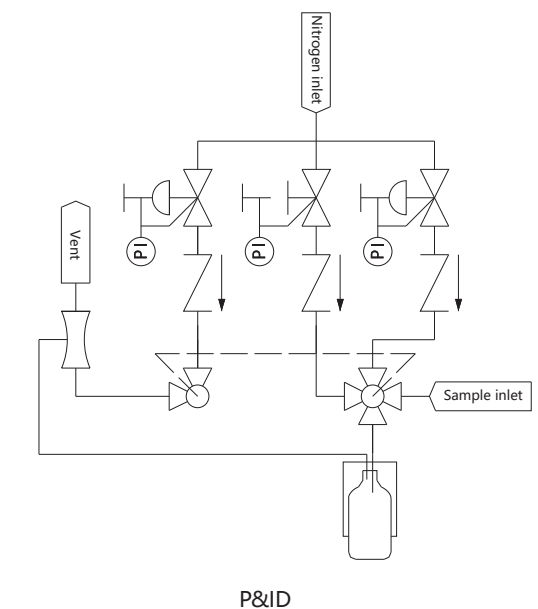
#### SLE3-Back Flow and Venturi Configuration

- Sampling directly from process or system
- Applicable for zero-pressure or vacuum process
- Back flow
- Linkage ball valve design, easy operation



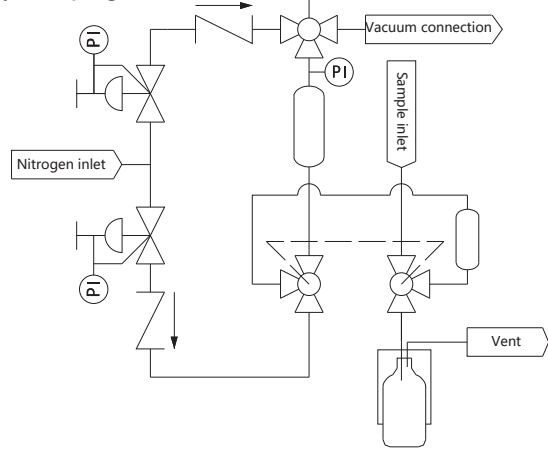
#### SLE4-Back Flow, Air Replaced, Venturi and System Purge Configuration

- Sampling directly from process or system
- Applicable for zero-pressure or vacuum process
- Back flow and bottle air replaced
- Linkage ball valve design, easy operation
- System purge



### SL5E-Vacuum, Overflow, Fixed Volume, Back Flow and System Purge Configuration

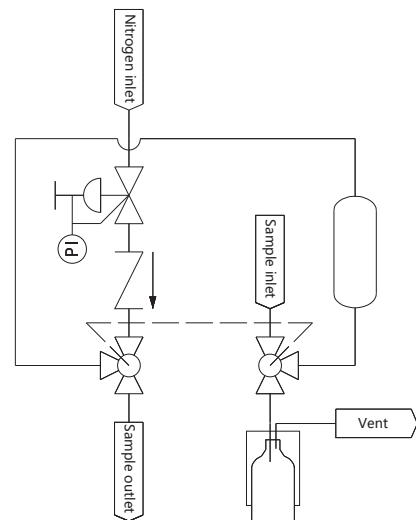
- Sampling directly from process or system
- Applicable for zero-pressure or vacuum process
- Fixed volume
- Back flow and overflow
- Linkage ball valve design, easy operation
- System purge



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### SLE6 - Fixed Volume Type

- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge and needle purge
- Easy operation with a single handle by linkage valve



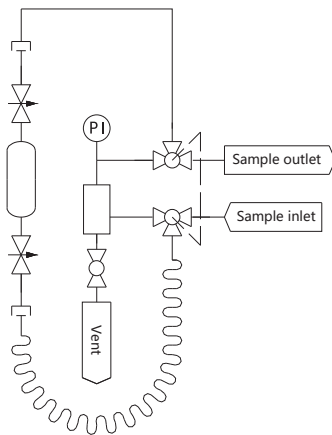
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## CL- Configuration Sampling System

### F Series

#### CLF1-Expansion Chamber Configuration

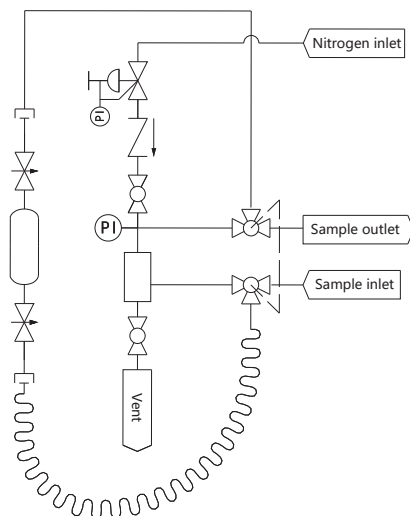
- Sampling directly from process or system
- Sample circularion
- Equipped with pressure relief system,safer for sampling
- Linkage ball valve design, easy operation



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#### CLF2-Expansion Chamber Purge

- Sampling directly from process or system
- Sample circularion and expansion chamber purge
- Equipped with pressure relief system, safer for sampling
- Linkage ball valve design, easy operation

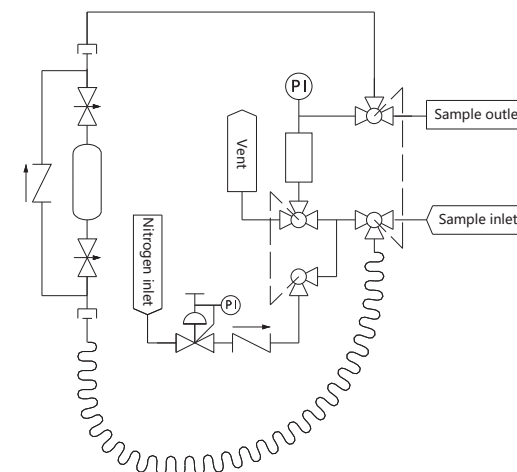


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### E Series

#### CLF3-Expansion Chamber, Bypass and System Purge Configuration

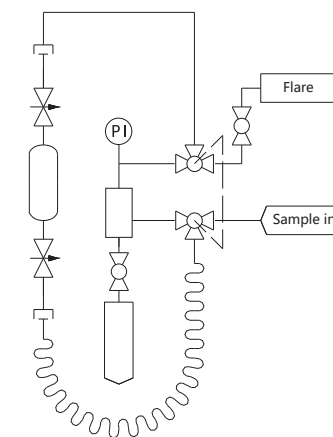
- Sampling directly from process or system
- Sample circulation and system purge
- Equipped with pressure relief system, safer for sampling
- Linkage ball valve design, easy operation



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#### CLF4-Expansion Chamber and Outlet to Flare Configuration

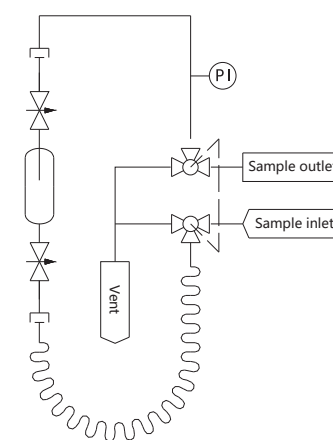
- Sampling directly from process or system
- Applicable for sampling from process or system without process out connection
- Equipped with pressure relief system, safer for sampling
- Linkage ball valve design, easy operation



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#### CLF5-Outage Tube Configuration

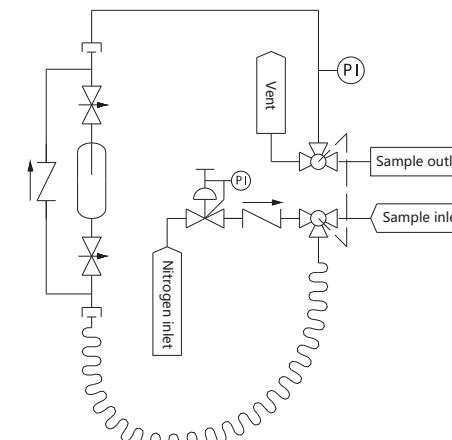
- Sampling directly from process or system
- Sample circularion
- Outage tube within cylinder keep the cylinder safe
- Linkage ball valve design, easy operation



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#### CLF6-Outage Tube, Bypass and System Purge Configuration

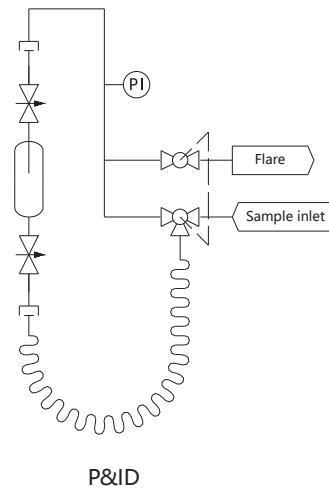
- Sampling directly from process or system
- Sample circularion and system purge
- Outage tube within cylinder keep the cylinder safe
- Linkage ball valve design, easy operation



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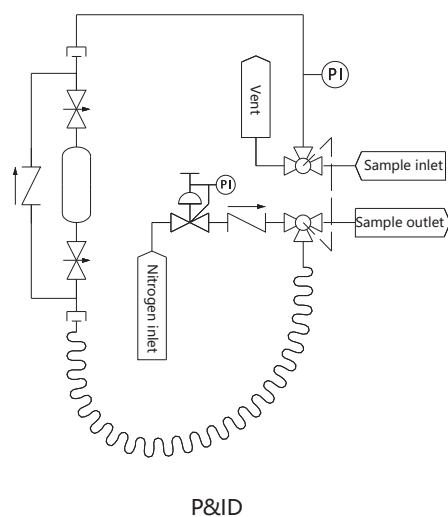
### CLF7-Outage Tube and Outlet to Flare Configuration

- Sampling directly from process or system
- Applicable for sampling from process or system without process out connection
- Outage tube within cylinder keep the cylinder safe
- Linkage ball valve design, easy operation



### CGG9-Bypass and System Purge Configuration

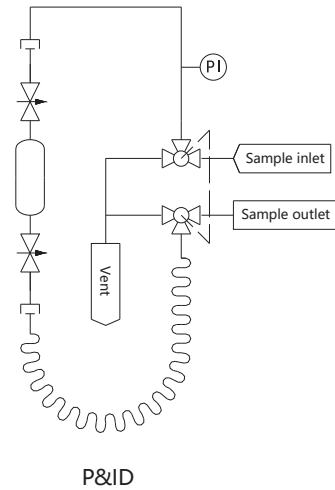
- Sampling directly from process or system
- Sample circulation and system purge
- Linkage ball valve design, easy operation



### CG-Gas Sampling

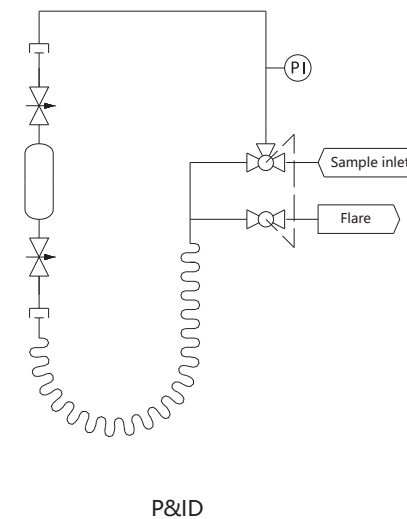
#### CGG8-Circulation Configuration

- Sampling directly from process or system
- Sample circulation
- Linkage ball valve design, easy operation



#### CGG7-Outlet to Flare Configuration

- Sampling directly from process or system
- Applicable for sampling from process or system without process out connection
- Linkage ball valve design, easy operation



## TUBE AND PIPES



### MP Series

- ◆ Materials: stainless steel, duplex stainless steel or nickel-based alloy
- ◆ Sizes: 1/16" to 2" and 2 mm to 50 mm
- ◆ Working temperature: -325°F to 1000°F (-198°C to 537°C)
- ◆ Pickled, or bright annealed or precision cold worked followed by bright annealing, machined finished external surface
- ◆ Marked with brand, material grade, standard, specification and heat number
- ◆ Standard length: 40, 80, 10 ft, 20 ft, 1 m, 2 m, 3 m and 6 m  
Customized length as per customer requirement is also available

### BA Series

- ◆ Material: 316L
- ◆ Sizes: 1/4" to 2 1/2" and 6A to 50A
- ◆ Specially rolled and bright annealed, metallic inner surface finish of Ra 20 µin. (0.51 µm) max.
- ◆ Tubing ends are capped and tubing is packed individually in a single polyethylene bag
- ◆ Tubing body is marked with brand, material grade, standard, specification, and heat number
- ◆ Standard length: 20 ft, 4 m and 6 m

### EP Series

- ◆ EP tube is electrolytically polished, internal surface roughness Ra ≤ 0.25 µm.
- ◆ Material: 316L
- ◆ Ultrasonically cleaned, washed, rinsed, purged with filtered hot Nitrogen and dried in clean room
- ◆ Tubing ends are capped, and tubing is packed individually in double polyethylene bags
- ◆ Packing bags are marked with brand, material grade and specification
- ◆ EP tube is electrolytically polished, internal surface roughness Ra ≤ 0.25 µm.

### TC Series

- ◆ Materials: 316/316L, enhanced-316/316L or 304/304L
- ◆ Sizes: 1/16" to 1/2" and 0.8 mm to 12 mm
- ◆ Working temperature: -325°F to 1000°F (-198°C to 537°C)
- ◆ Bright annealed with machined finished external surface
- ◆ Marked with brand, material grade, standard, specification and heat number

### Ordering Number Description

**A B C D E F G**  
T 8 - 049 - 3 M - MP - A269 - 6L

A	Series
MP	
BA	
EP	
TC	

B	Tube O.D.	
	Fractional	Metric
1	1/16"	2M 2 mm
2	1/8"	3M 3 mm
3	3/16"	6M 6 mm
4	1/4"	8M 8 mm
5	5/16"	10M 10mm
6	3/8"	12M 12mm
8	1/2"	14M 14mm
10	5/8"	15M 15 mm
12	3/4"	16M 16 mm
14	7/8"	18M 18 mm
16	1"	20M 20 mm
20	1 1/4"	22M 22 mm
24	1 1/2"	25M 25 mm
		28M 28 mm
		30M 30mm
		32M 32 mm
		38M 38 mm

C	Wall Thickness	
	Fractional	Metric
028	0.028"	0.8 0.8 mm
035	0.035"	1.0 1.0 mm
049	0.049"	1.2 1.2 mm
065	0.065"	1.5 1.5 mm
083	0.083"	1.8 1.8 mm
095	0.095"	2.0 2.0 mm
109	0.109"	2.2 2.2 mm
120	0.120"	2.5 2.5 mm
134	0.134"	2.8 2.8 mm
156	0.156"	3.0 3.0 mm
188	0.188"	3.5 3.5 mm
		4.0 4.0 mm
		4.5 4.5 mm

D	Length
0.1M	100 mm
0.5M	500 mm
1M	1000 mm
2M	2000 mm
3M	3000 mm
6M	6000 mm

E	Surface Condition
MP	Pickling
BA	Bright Annealing
EP	Cold Working Followed by Bright Annealing

F	Executive Standard
A269	ASTM A269
A312	ASTM A312
A789	ASTM A789
B165	ASTM B165
B622	ASTM B622

G	Material
6L	316L SS
4L	304L SS
21S	321 SS
904L	904L SS
M	Alloy 400
D7	2507 Duplex
HC	Alloy C-276

### Medium and High Pressure Tubing



#### T2M Series

- ◆ Materials: 316/316L, enhanced-316/316L
- ◆ Working pressure up to 20000 psig (1379 bar)
- ◆ Working temperature: -423°F to 1200°F (-252°C to 649°C)
- ◆ Cold-drawn seamless tubing
- ◆ Marked with brand, material grade, specification, pressure, and heat number
- ◆ Standard length: 10 ft, 20 ft, 40 in, 80 in, 1 m, 2 m, 3 m and 6 m, straight-length tubing and coned and threaded nipples in custom length are also available

#### T6H Series

- ◆ Materials: 316/316L, enhanced-316/316L
- ◆ Working pressure up to 60000 psig (4137 bar)
- ◆ Working temperature: -423°F to 1200°F (-252°C to 649°C)
- ◆ Cold-drawn seamless tubing
- ◆ Marked with brand, material grade, specification, pressure, and heat number
- ◆ Standard length: 10 ft, 20 ft, 40 in, 80 in, 1 m, 2 m, 3 m and 6 m, straight-length tubing and coned and threaded nipples in custom length are also available

### Ordering Number Description

**A B C D**  
T2M -4-6M - SS

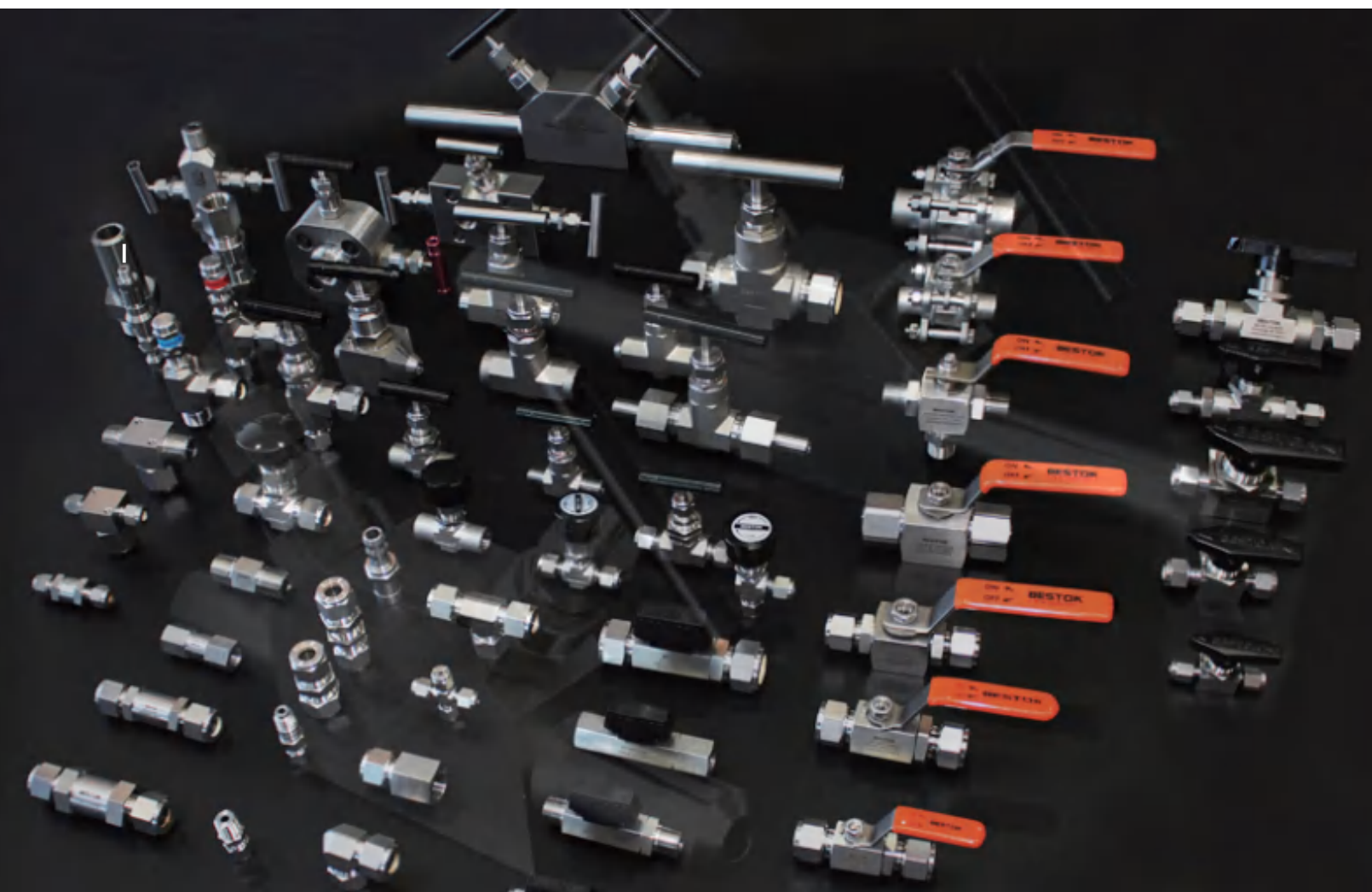
A	Series
T2M	
T6H	

B	Tube O.D.
4	1 1/4"
6	3/8"
9	9/16"
12	3/4"
16	1"

C	Wall Thickness
1M	1000mm
3M	3000mm
6M	6000mm

D	Material
SS	316 SS

**BESTOK**  
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