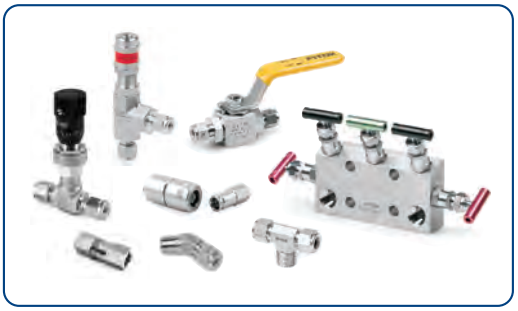
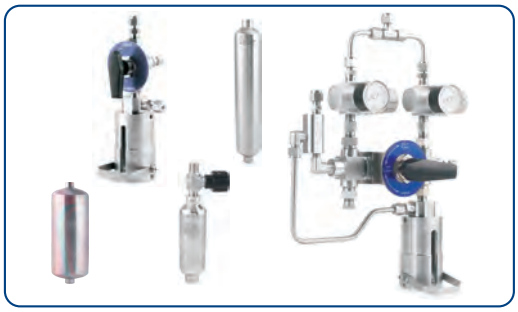
FITOK





Concise Catalog

◎ General Instrumentation Valves and Fittings

◎ Medium & High Pressure Valves and Fittings

◎ High Purity & Ultra High Purity Products

◎ Sampling Systems

FITOK Concise Catalog

www.fitokgroup.com

Contents

General Instrumentation Valves and Fittings

Medium & High Pressure Valves and Fittings

Semiconductor & Specialty Gas Applications

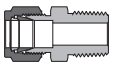
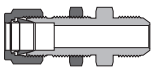
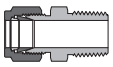
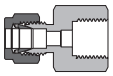
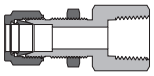
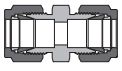
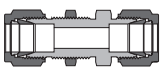
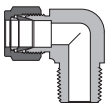
Sampling Systems

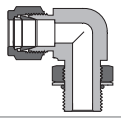
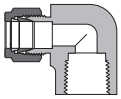
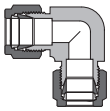
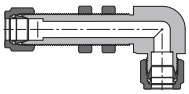
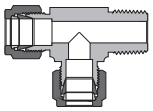
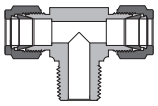
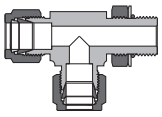
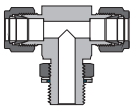
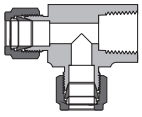
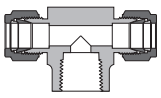
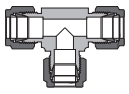
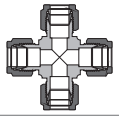
General Instrumentation Valves and Fittings

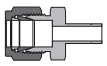
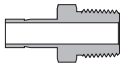
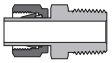
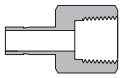
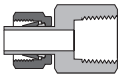
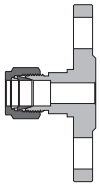
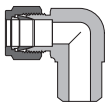
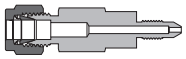
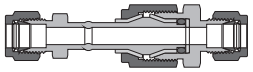
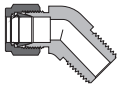
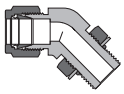
Fittings

6 Series Tube Fittings

- Sizes range from 1/16" to 2" and 2 mm to 50 mm
- Diverse materials and configurations are available
- Precision machined components ensure perfect deformation of the ferrules and tubing
- Hardened threads and smoothed surface finishes extend fitting life and prevent sticking of the matching threads
- Female nut threads are silver-plated to minimize the friction with body threads
- Radius junction design for elbows provides smooth flow path
- Every fitting is marked with size, material and heat number
- Fittings are easy to disconnect and retighten

Configuration	Fitting Type	Example
	Male Connector	SS-CM-ML12-NS8
	Bulkhead Male Connector	S4-BCM-FL8-AN8
	Thermocouple Connector	S1-TCM-FL8-NS8
	Female Connector	B-CF-FL8-RG6
	Bulkhead Female Connector	CS-BCF-ML12-NS8
	Union	M-U-FL12
	Bulkhead Union	HC-BU-ML10
	Male Elbow	T-LM-FL8-NS8

Configuration	Fitting Type	Example
	Positionable Male Elbow	TI-LP-ML14-ST14
	Female Elbow	PA-LF-FL8-NS8
	Union Elbow	INC-LU-FL8
	Bulkhead Union Elbows	SS-BBLU-FL4
	Male Run Tee	A20-TMT-FL8-NS8
	Male Branch Tee	D5-TTM-ML16-NS8
	Positionable Male Run Tee	SS-TPT-FL8-ST14
	Positionable Male Branch Tee	A65-TTP-FL8-PP8
	Female Run Tee	SS-TFT-FL8-NS8
	Female Branch Tee	SS-TTF-ML12-NS8
	Union Tee	SS-TTT-FL6
	Union Cross	SS-C-FL8
	Cap	SS-TC-FL8
	Plug	SS-TP-ML12
	Nut+Ferrules	SS-NFR-FL8

Configuration	Fitting Type	Example
	Reducer	SS-R-FL8-MT12
	Insert for Soft Plastic Tubing	SS-IN-8-6
  over 25 mm	Port Connector	SS-P-FL4
  over 25 mm	Male Adapter	SS-AM-FT8-RT8
  over 25 mm	Female Adapter	SS-AF-MT12-NS8
	Flange Adapter	SS-FA-FL6-F8-300
	Weld Connector	SS-CW-FL8-TS8
	Weld Elbow	SS-LW-FL8-PB8
	Lapped Flange Connector	SS-LFC-FL6A
	Calibration Fitting	SS-FC-FL4-1428
	Dielectric Fitting	SS-DF-FL6
	Nut-Ferrule Set	SS-NFS-FL6
	Ferrule Set	SS-FRS-FL6
	45° Male Elbow	SS-VM-FL5-NS2
	45° Adjustable Male Elbow	SS-VP-FL16-ST21
	Vent Protector	SS-VPF-NS12

Ordering Number Description

SS - CM - ML12 - NS8 - □ - □ - □

Material	
SS	316 SS
S4	304 SS
S1	321 SS
904L	904L SS
TI	Titanium
D5	Duplex 2205
D7	Duplex 2507
A20	Alloy 20
M	Alloy 400
INC	Alloy 600
A65	Alloy 625
HC	Alloy C-276
CS	Carbon Steel
B	Brass
PA	Nylon
T	PTFE

Fitting Type	
CM	Male Connector
BCM	Bulkhead Male Connector
TCM	Thermocouple Connector
CF	Female Connector
BCF	Bulkhead Female Connector
U	Union
BU	Bulkhead Union
LM	Male Elbow
VM	45° Male Elbow
VP	45° Adjustable Male Elbow
LP	Positionable Male Elbow
LF	Female Elbow
LU	Union Elbow
BBLU	Bulkhead Union Elbows
TMT	Male Run Tee
TTM	Male Branch Tee
TPT	Positionable Male Run Tee
TTP	Positionable Male Branch Tee
TFT	Female Run Tee
TTF	Female Branch Tee
TTT	Union Tee
C	Union Cross
TC	Cap
TP	Plug
R	Reducer
P	Port Connector
AM	Male Adapter
AF	Female Adapter
CW	Weld Connector
LW	Weld Elbow
DF	Dielectric Fitting

P1 Type	
ML	Metric Ferrule
FL	Fractional Ferrule
MT	Metric Tube
FT	Fractional Tube

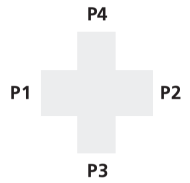
P1 Size	
1	1/16"
2	1/8" or 2 mm
3	3/16" or 3 mm
4	1/4" or 4 mm
5	5/16"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	5/8" or 10 mm
12	3/4" or 12 mm
14	7/8" or 14 mm
15	15 mm
16	1" or 16 mm
18	1 1/8" or 18 mm
20	1 1/4" or 20 mm
22	22 mm
24	1 1/2" or 24 mm
25	25 mm
28	28 mm
30	30 mm
32	2" or 32 mm
38	38 mm
50	50 mm

P2 Type	
In addition to those specified for P1, other types are as follows:	
NS	NPT Thread
ONS	O-ring with NPT Thread
RT	ISO Tapered Thread
RS	ISO Parallel Thread
RP	ISO Parallel Thread
RG	ISO Parallel Thread (Gauge)
RJ	ISO Parallel Thread (Japanese Gauge)
PP	Positionable, ISO Parallel Thread
ST	SAE/MS Straight Thread
OST	O-ring with SAE/MS Straight Thread
AN	37° Flare
MS	Male Metric Thread
TS	Fractional Tube Socket Weld
PB	Pipe Butt Weld

P2 Size	
In addition to those specified for P1, other sizes are as follows:	
5	M5 x 0.8 or 5/16-24
6	M6 x 1 or 3/8-24
7	7/16-20
8	M8 x 1 or 1/2-20
9	9/16-18
10	M10 x 1
12	M12 x 1.5 or 3/4-16
14	M14 x 1.5 or 7/8-14
16	M16 x 1.5
17	1 1/16-12
18	M18 x 1.5
19	1 3/16-12
20	M20 x 1.5
21	1 5/16-12
22	M22 x 1.5
24	M24 x 1.5
26	1 5/8-12
27	M27 x 2
30	1 7/8-12

P3 and P4
Specify in the same way as the P2

Cleaning and Packaging	
	FC-01
F2	FC-02



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

P1, P2, P3 and P4 shall be described in the following orders:

- Ferrule - Tube - NPT Thread - ISO Tapered Thread - ISO Parallel Thread - SAE/MS Straight Thread - 37° Flare - Pipe Butt Weld - Fractional Tube Socket Weld - Others
- Describe in descending order as per size if the end connection types are the same
- Describe the end of P1 if all end connections are the same

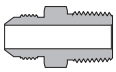
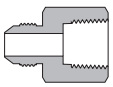
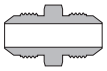
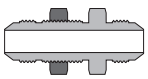
Cleaning and Packaging:

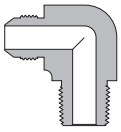
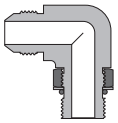
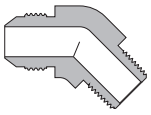
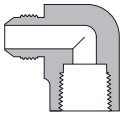
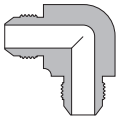
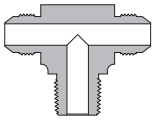
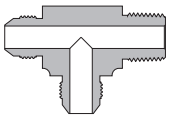
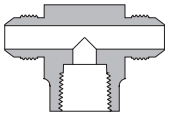
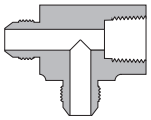
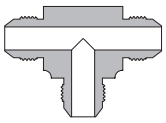
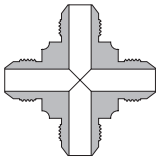
FC-01: Standard cleaning and packaging for general industrial procedures

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C

37° Flared Tube Fittings

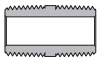
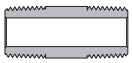
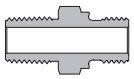
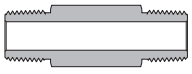
- Fittings are designed and manufactured in compliance with SAE J514
- Sizes range from 1/8" to 2" and 3 mm to 50 mm
- 316 stainless steel, aluminum, brass, and carbon steel materials are available
- Hardened threads and smoothed surface finishes extend fitting life and prevent sticking of the matching threads
- Radius junction design for elbows provides smooth flow path
- Every fitting is marked with size, material and heat number
- Female nut threads are silver-plated to minimize the friction with body threads
- Fittings are easy to disconnect and retighten

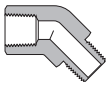
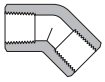
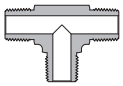
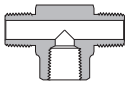
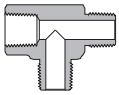
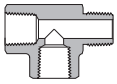
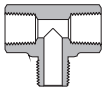
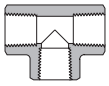
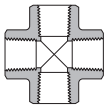
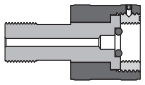
Configuration	Fitting Type	Example
	Sleeve	SS-SL-AN8
	Nut	AL-N-AN8
	Male Connector	B-CM-AN8-NS8
	Female Connector	CS-CF-AN8-RT6
	Union	SS-U-AN8
	Reducing Adapter	SS-RA-AN8-AN4
	Bulkhead Union	SS-BU-AN6
	Tube Plug	SS-TP-AN6
	Tube Cap	SS-TC-AN6

Configuration	Fitting Type	Example
	Male Elbow	SS-LM-AN8-NS4
	Positionable Male Elbow	SS-LP-AN10-ST14
	45° Male Elbow	SS-VM-AN8-NS6
	Female Elbow	SS-LF-AN8-NS6
	Union Elbow	SS-LU-AN4
	Male Branch Tee	SS-TTM-AN8-NS4
	Male Run Tee	SS-TMT-AN8-RT4
	Female Branch Tee	SS-TTF-AN8-RT4
	Female Run Tee	SS-TFT-AN8-NS4
	Union Tee	SS-TTT-AN8
	Union Cross	SS-C-AN12

6 Series Pipe Fittings

- Sizes range from 1/16" to 2"
- Materials include stainless steel, alloy 400, alloy 600, brass, and carbon steel
- End connections with NPT, ISO/BSP, SAE, and metric threads are available
- Hardened threads and smoothed surface finishes extend fitting life and prevent sticking of the matching threads
- Radius junction design for elbows provides smooth flow path
- Every fitting is marked with size, material and heat number

Configuration	Fitting Type	Example
	Pipe Plug	SS-PP-MRS14
	Hollow Hex Plug	S4-PI-NS4
	Close Nipple	S1-PCN-RT6
	Special Pipe Nipple	M-PSN-NS6-2
	Hex Nipple	INC-PHN-NS8-RP8
	Hex Long Nipple	B-PLN-NS6-3
	Reducing Bushing	CS-PRB-NS8-RT4
	Pipe Cap	SS-PC-NS4
	Hex Coupling	SS-PCG-NS12-NS8
	Union Ball Joint	SS-UBJ-NS4

Configuration	Fitting Type	Example
	Adapter	SS-PA-NS8-ST12
	Male Elbow	SS-PME-NS6
	Street Elbow	SS-PSE-RT6-RT4
	45° Street Elbow	SS-PSV-NS6-NS4
	Female Elbow	SS-PE-NS6
	45° Female Elbow	SS-PVE-NS6
	Male Tee	SS-PMT-NS4
	Female Branch Tee	SS-PTB-NS6
	Female Run Tee	SS-PTR-RT6
	Male Street Tee	SS-PST-NS6
	Male Branch Tee	SS-PBT-NS6
	Female Tee	SS-PT-RT8
	Female Cross	SS-PCR-NS6
	Pipe to Pipe Union	SS-PUP-MS20-NS4
	Hand Tight Adapter Fitting	SS-HF-MS20

Ordering Number Description

SS - PSE - NS6 - NS4 - □ - □ - S - □

Material	
SS	316 SS
S4	304 SS
S1	321 SS
M	Alloy 400
INC	Alloy 600
HC	Alloy C-276
B	Brass
CS	Carbon Steel
904L	904L SS

Fitting Type	
PP	Pipe Plug
PI	Hollow Hex Plug
PCN	Close Nipple
PSN	Special Pipe Nipple
PHN	Hex Nipple
PLN	Hex Long Nipple
PRB	Reducing Bushing
PC	Pipe Cap
PCG	Hex Coupling
UBJ	Union Ball Joints
PA	Adapter
PME	Male Elbow
PSE	Street Elbow
PSV	45° Street Elbow
PE	Female Elbow
PVE	45° Female Elbow
PMT	Male Tee
PTB	Female Branch Tee
PTR	Female Run Tee
PST	Male Street Tee
PBT	Male Branch Tee
PT	Female Tee
PCR	Female Cross
PUP	Pipe to Pipe Union
HF	Hand Tight Adapter Fitting

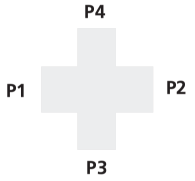
P1 Type	
NS	NPT Thread
RT	ISO Tapered Thread
RG	ISO Parallel Thread (Gauge)
BP	ISO Parallel Thread
RS	ISO Parallel Thread
MRS	Male Metric Thread
MS	Male Metric Thread
ST	Male SAE/MS Straight Thread
US	Female SAE/MS Straight Thread

P1 Size	
2	1/8"
4	1/4"
5	5/16-24
6	3/8" or 3/8-24
7	7/16-20
8	1/2" or M8 x 1
9	9/16-18
10	M10 x 1
12	3/4" or M12 x 1.5 or 3/4-16
14	M14 x 1.5 or 7/8-14
16	1" or M16 x 1.5
17	1 1/16-12
18	M18 x 1.5
19	1 3/16-12
20	1 1/4" or M20 x 1.5
21	1 5/16-12
22	M22 x 1.5
24	1 1/2" or M24 X 1.5
26	1 5/8-12
27	M27 x 2
30	1 7/8-12 or M30 x 2
32	2"

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

Special Application	
	NO
S	NACE MR0175
Classification for Nuclear Facility Application	
N2	Class 2
N3	Class 3

Cleaning and Packaging	
	FC-01
F2	FC-02



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available

P1, P2, P3 and P4 shall be described in the following orders:

- NPT Thread - ISO Tapered Thread - ISO Parallel Thread - SAE/MS Straight Thread - Metric Thread - Others
- Male after female but the "PRB" and the "HF" types are not included
- Describe in descending order as per size if the end connection types are the same
- Describe the end of P1 if all end connections are the same

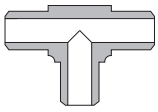
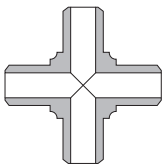
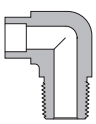
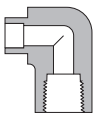
Cleaning and Packaging:

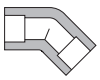
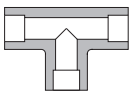
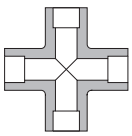
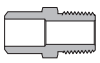
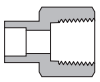
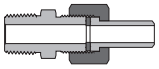
FC-01: Standard cleaning and packaging for general industrial procedures

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C

6 Series Weld Fittings

- Sizes range from 1/8" to 2" and 6 mm to 38 mm
- 316 stainless steel material is standard; other materials are available on request
- Radius junction design for elbows provides smooth flow path
- Maximum working temperature up to 1000°F (538°C)
- Every fitting is marked with size, material and heat number

Configuration	Fitting Type	Example
	Tube Butt Weld Male Connector	SS-WM-TB12-NS8
	Tube Butt Weld Female Connector	SS-WF-MTB14-NS8
	Tube Butt Weld Reducing Union	SS-WU-MTB20-MTB14
	Tube Butt Weld Union Elbow	SS-WLU-TB8
	Tube Butt Weld Union Tee	SS-WT-MTB14
	Tube Butt Weld Union Cross	SS-WC-MTB12
	Tube Socket Weld Male Connector	SS-WM-TS8-NS8
	Tube Socket Weld Female Connector	SS-WF-MTS14-NS4
	Tube Socket Weld Male Elbow	SS-WLM-TS6-NS6
	Tube Socket Weld Female Elbow	SS-WLF-TS8-NS8

Configuration	Fitting Type	Example
	Tube Socket Weld Union	SS-WU-TS8
	Tube Socket Weld Reducing Union	SS-WU-TS12-TS8
	Tube Socket Weld Union Elbow	SS-WLU-MTS14
	Tube Socket Weld Union 45° Elbow	SS-WV-TS8
	Tube Socket Weld Union Tee	SS-WT-MTS14
	Tube Socket Weld Union Cross	SS-WC-TS8
	Pipe Butt Weld Male Connector	SS-WM-PB6-NS6
	Pipe Butt Weld Female Connector	SS-WF-PB8-NS8
	Pipe Socket Weld Male Connector	SS-WM-PS6-NS6
	Pipe Socket Weld Female Connector	SS-WF-PS8-NS8
	Pipe Socket Weld Union	SS-WU-PS8
	Tube to Tube Weld Adapter	SS-WA-TB8-TS6
	Pipe to Tube Weld Adapter	SS-WA-PB8-TS8
	Pipe to Weld End Union	SS-PUW-MS20-MTB14
	Male Pipe to Weld End Union	SS-MUW-NS8-MTB14

Ordering Number Description

SS - WLM - TS6 - NS6 - □ - □ - S - □

Material	
SS	316 SS
6L	316L SS
904L	904L SS

Fitting Type	
WM	Male Connector
WF	Female Connector
WU	Reducing Union
WLU	Union Elbow
WT	Union Tee
WC	Union Cross
WLM	Male Elbow
WLF	Female Elbow
WV	45° Union Elbow
WA	Adapter
PUW	Pipe To Weld
MUW	Male Pipe To Weld

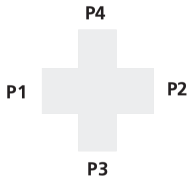
P1 Type	
TB	Fractional Tube Butt Weld
TS	Fractional Tube Socket Weld
MTB	Metric Tube Butt Weld
MTS	Metric Tube Socket Weld
PB	Pipe Butt Weld
PS	Pipe Socket Weld
NS	NPT Thread
RT	ISO Tapered Thread
BP	ISO Parallel Thread
MS	Metric Thread

P1 Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	5/8" or 10 mm
12	3/4" or 12 mm or M12 x 1.5
14	7/8" or 14 mm or M14 x 1.5
16	1" or 16 mm or M16 x 1.5
18	18 mm or M18 x 1.5
20	1 1/4" or 20 mm or M20 x 1.5
22	22 mm or M22 x 1.5
24	1 1/2" or M24 x 1.5
25	25 mm
27	M27 x 2
28	28 mm
30	30 mm or M30 x 2
32	2" or 32 mm
38	38 mm

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

Special Application	
	NO
S	NACE MR0175
Classification for Nuclear Facility Application	
N2	Class 2
N3	Class 3

Cleaning and Packaging	
	FC-01
F2	FC-02



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

P1, P2, P3 and P4 shall be described in the following orders:

- Pipe thread connection type after weld connection type ("PUW" and "MUW" excluded)
- Pipe Butt Weld - Tube Butt Weld - Pipe Socket Weld - Tube Socket Weld - Others
- Describe in descending order as per size if the end connection types are the same
- Describe the end of P1 if all end connections are the same

Cleaning and Packaging:

FC-01: Standard cleaning and packaging for general industrial procedures

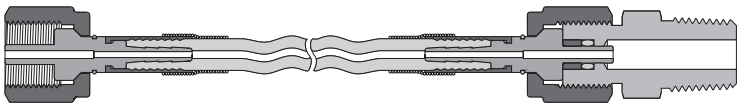
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C

Calibration Hoses and Fittings

- Assembly and disassembly without requirement for a wrench or thread sealant
- Flexible hoses with small inside diameter and low internal volume
- Variety of adapters to connect with wide range of calibration devices
- Mix-interchangeable with other main brands
- Every assembly is factory tested with pure water at 1.5 times the maximum working pressure

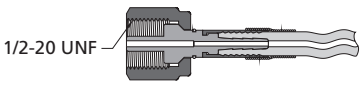
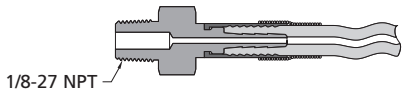
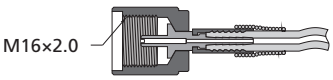
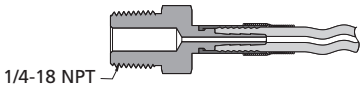
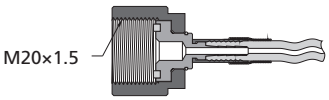
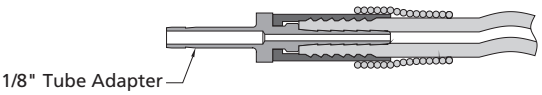
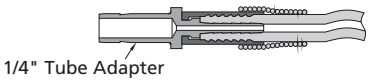
Quick-test Hoses

QH Series



- Working pressure up to: 6900 psig (475 bar)
- Working temperature: -10°F to 140°F (-23°C to 60°C)
- Hose outside diameter: 0.2" (5 mm)
- Hose inside diameter: 0.08" (2 mm)
- End connection materials: 316 SS, 304 SS

Hose Ends

FST End		NS2 End	
SMS16×2 End		NS4 End	
SMS20 End		FT2 End	
FT4 End			

Types and sizes listed are standard. Other types and sizes are available upon request.

Ordering Number Description

SS - QH - SMS20 - FST - F36

End Connection Material	
SS	316 SS
S4	304 SS

Series
QH

Connection 1 Type and Size	
FST	1/2" Female UNF Swivel
NS2	1/8 Male NPT
NS4	1/4 Male NPT
FT2	1/8" Tube Adapter
FT4	1/4" Tube Adapter
SMS16×2	M16 x 2.0 Female Swivel
SMS20	M20 x 1.5 Female Swivel

Connection 2 Type and Size	
	Same as connection 1
Specify in the same way as the connection 1 type and size	

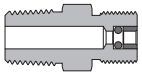
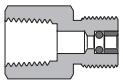
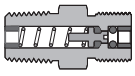
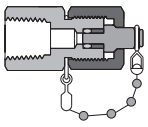
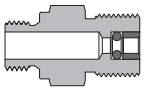
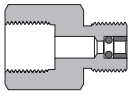
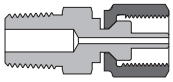
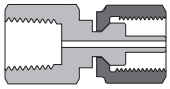
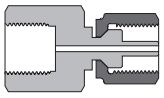
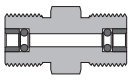
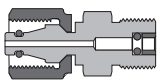
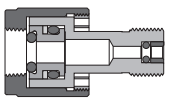
Overall Length	
FXX	XX in.
MXX	XX mm

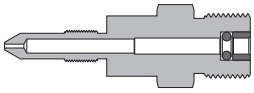
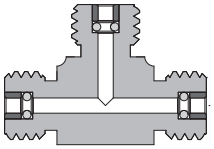
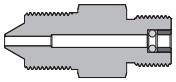
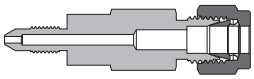
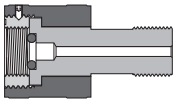
Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Quick-test Adapters and Fittings

QT Series

- Working pressure up to:
  Without valve: 5000 psig (345 bar)
  With valve: 3000 psig (207 bar)
- Working temperature:
  Fluorocarbon FKM seal: -10°F to 400°F (-23°C to 204°C)
  Buna N seal: -10°F to 250°F (-23°C to 121°C)
- Materials: 316 SS, 304 SS
- Optional check valves and protective caps available

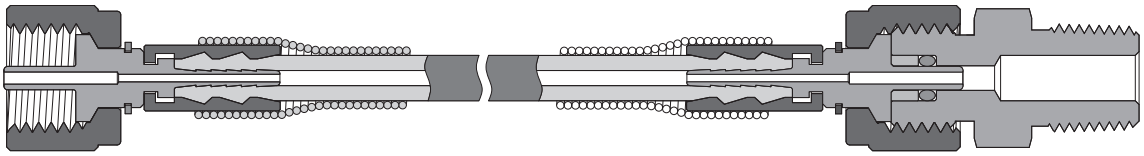
Configuration	Fitting Type	Example
	Male NPT Adapters	SS-QT-NS4-ST
	Female NPT Adapters	SS-QT-FNS4-ST
	Male BSPT Adapters, with valve	SS-QT-RT4-ST-V
	Female BSPT Adapters, with cap	SS-QT-FRT4-ST-PC
	Male BSPP Adapters	SS-QT-RS2-ST
	Female BSPP Adapters	SS-QT-RG4-ST
	Male NPT Quick-test Gauge Adapters	SS-QT-NS4-FST
	Female NPT Quick-test Gauge Adapters	SS-QT-FNS4-FST
	Female BSPP Quick-test Gauge Adapters	SS-QT-RG4-FST
	Quick-test Hose Unions	SS-QT-ST-ST
	Quick-test Tube Adapters	SS-QT-QL4-ST
	Hand Tight Female NPT Quick-test Gauge Adapters	SS-QT-QNS8-ST

Configuration	Fitting Type	Example
	DP Transmitter Calibration Adapters	SS-QT-CH-ST
	Quick-test Tees	SS-QT-ST-ST-ST
	Male High Pressure Adapters	SS-QT-60HP-ST
	DP Transmitter Calibration Adapters	SS-QT-CH-FL4
	Hand Tight Adapters	SS-QT-MS20-MS14

High Pressure Quick-test Hose Assemblies

HQH Series

- Working pressure up to: 10000 psig (690 bar)
- Working temperature: -40°F to 140°F (-40°C to 60°C)
- Outer diameter of hose: 0.24" (6 mm)
- Inner diameter of hose: 0.08" (2 mm)
- Hose end materials: 316 SS, 304 SS
- Fluid media: water, petroleum based oils, air, inert gas



Ordering Number Description

SS - HQH - FXT - FXT - M1000

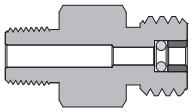
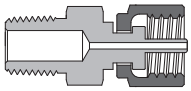
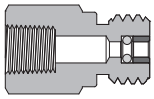
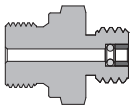
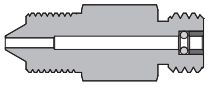
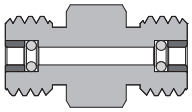
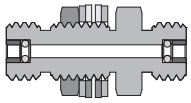
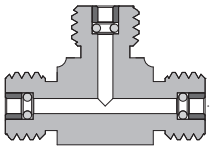
End connection Material		Series	Connection 1 Type and Size		Connection 2 Type and Size	Overall Length	
SS	316 SS	HQH	FXT	Female Swivel	Same as connection 1	FXX	XX in.
S4	304 SS		XT	Male Swivel		MXX	XX mm

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

High Pressure Quick-test Fittings

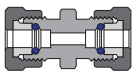
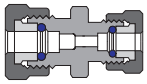
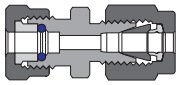
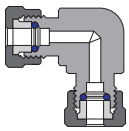
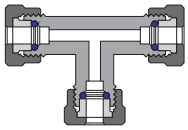
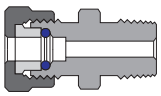
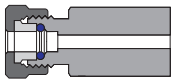
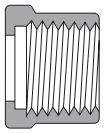
HQT Series

- Working pressure up to: 690 bar (10000 psig)
- Working temperature:
  FKM Seal: -10°F to 400°F (-23°C to 204°C)
  NBR Seal: -10°F to 250°F (-23°C to 121°C)
- Materials: 316 SS, 304 SS
- Convenient connection: No wrench or thread sealant required for assembly or disassembly
- This kind of fitting is not applicable to use with FITOK QH series Quick-test Hose, please use with FITOK HQH series Quick-test Hose

Configuration	Fitting Type	Example
	Male NPT Adapter	SS-HQT-NS4-XT
	Male NPT Quick-test Gauge Adapters	SS-HQT-NS4-FXT
	Female NPT Adapters	SS-HQT-FNS4-XT
	Male BSPP Adapters	SS-HQT-RS4-XT
	High Pressure Male Adapters	SS-HQT-60HP-XT
	Quick-test Unions	SS-HQT-XT-XT
	Quick-test Bulkhead Unions	SS-HQT-XT-TXT
	Quick-test Tees	SS-HQT-XT-XT-XT

VL Series Vacuum Tube Fittings

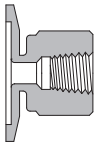
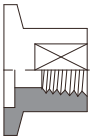
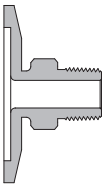
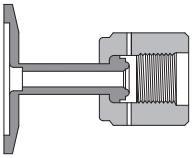
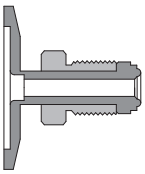
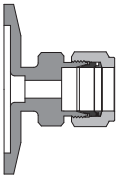
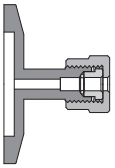
◎ Stainless steel construction, fluorocarbon FKM O-ring
◎ Available in tube sizes from 1/16" to 1 1/2"
◎ Working temperature: -25°F to 400°F (-31°C to 204°C)
◎ Knurled nut for easy, finger-tight assembly
◎ Reliable, repeatable sealing performance

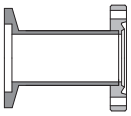
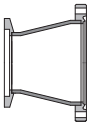
Configuration	Fitting Type	Example
	Union	SS-U-VL8
	Reducing Union	SS-U-VL6-VL4
	Tube Fitting Union	SS-U-VL4-FL4
	Union Elbow	SS-LU-VL8
	Union Tee	SS-TTT-VL8
	Male Connector	SS-CM-VL8-NS6
	Adapter	SS-CW-VL4-A4
	Nut	SS-N-VL10
	O-ring	VI7-014

VA Series Vacuum Adapter Fittings

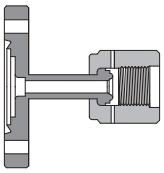
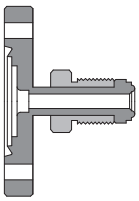
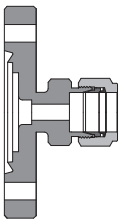
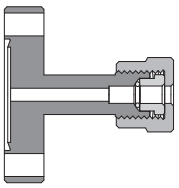
◎ Vacuum Range:
Copper Seal: ⩾10^{-12} Torr
Elastomeric Seal: ⩾10^{-8} Torr
◎ Working temperature:
Copper Seal: -325°F to 842°F (-200°C to 450°C)
Elastomeric Seal: -4°F to 302°F (-20°C to 150°C)
◎ Standard materials are in stainless steel 304, 304L, 316, 316L and Aluminum

KF Adapter Fittings

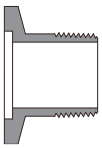
Configuration	Fitting Type	Example
 A Type (Default)	KF to Female NPT	S4-VA-KF10-FNS2
 B Type	KF to Female NPT	S4-VA-KF16-FNS2-N
	KF to Male NPT	S4-VA-KF10-NS2
	KF to Female FR Metal Gasket Face Seal Fitting	S4-VA-KF10-FFR4
	KF to Rotatable Male FR Metal Gasket Face Seal Fitting	S4-VA-KF10-RFR4
	KF to Tube Fitting	S4-VA-KF10-FL4
	KF to Vacuum Tube Fitting	S4-VA-KF25-VL4

Configuration	Fitting Type	Example
	KF to CF Flange Straight Reducing	S4-VA-KF10-CF133-SR
	KF to CF Flange Conical Reducing	S4-VA-KF16-CF212-NCR

CF Adapter Fittings

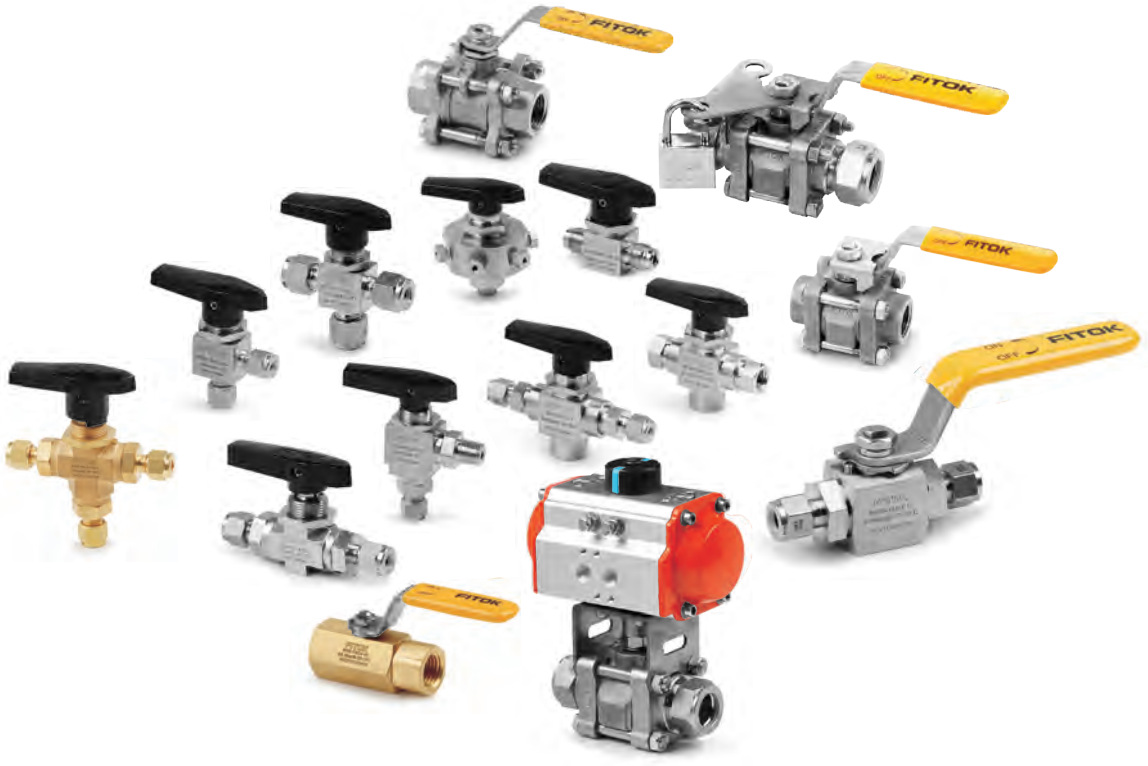
Configuration	Fitting Type	Example
	CF to Female FR Metal Gasket Face Seal Fitting	S4-VA-CF133-FFR4
	CF to Rotatable Male FR Metal Gasket Face Seal Fitting	S4-VA-CF133-RFR4
	CF to Tube Fitting	S4-VA-CF133-FL4
	CF to Vacuum Tube Fitting	S4-VA-CF212-VL4

Other Adapter Fittings

Configuration	Fitting Type	Example
	Male ISO Tapered Thread	S4-VA-KF10-RT4

Valves

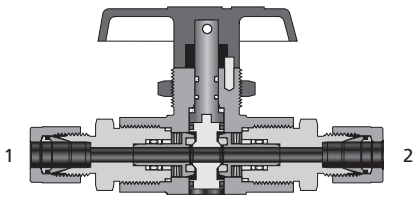
Ball Valves



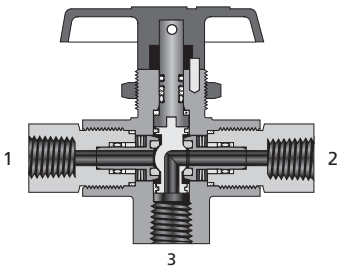
- Strong flowing capacity with quick opening and closing
- 2-way ball valves available for bidirectional flow
- Consistent and low operating torque, easy to operate
- Pneumatic or electric actuators available
- Options for handle colors
- Every valve is factory tested with nitrogen or compressed air at rated pressure; If rated pressure is greater than 6000 psig, tested at 6000 psig accordingly

BF and BFH Series

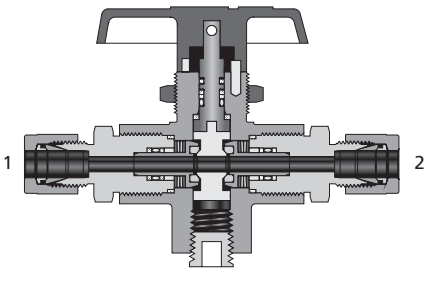
- 3-piece forged body
- Body materials: 316 SS, 316L SS, 904L SS, and alloy 400
- Seat materials: PTFE, PCTFE and PEEK
- Packing materials: fluorocarbon FKM and PTFE
- End connections:
  1/8 to 1/2 thread
  1/4" to 1/2" and 6 mm to 12 mm tube fitting
- Orifice size: 0.19" (4.8 mm)
- Working pressure up to:
  BF Series: 6000 psig (414 bar)
  BFH Series: 10 000 psig (690 bar)
- Working temperature: 0°F to 450°F (-18°C to 232°C)



BF Series



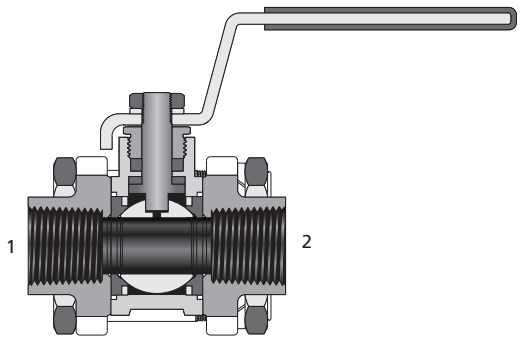
BF Series



BFH Series

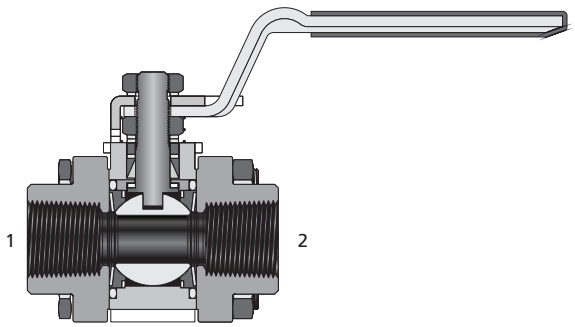
BG Series

- 3-piece precision cast body construction
- Body materials: CF8M (316), CF8 (304) and 904L
- Seat material: PTFE
- Packing material: PTFE
- End connections:
  1/8 to 1 thread
  1/8" to 1" pipe butt or socket weld
  1/4" to 1" and 6 mm to 25 mm tube butt or socket weld
  1/4" to 1" and 6 mm to 25 mm tube fitting
- Orifice sizes: 0.19" (4.8 mm) to 1" (25 mm)
- Working pressure up to: 1000 psig (69.0 bar)
- Working temperature: -20°F to 450°F (-28°C to 232°C)



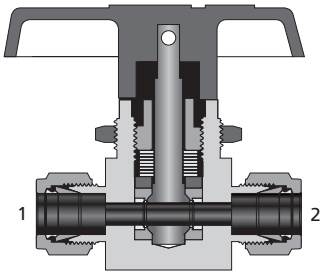
BH Series

- 3-piece precision cast body construction
- Body materials: CF8M (316), CF8 (304) and 904L
- Seat materials: PTFE, RPTFE and PEEK
- Packing materials: RPTFE and Graphite
- 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 butt or socket weld
  1/4" to 2" and 6 mm to 38 mm tube fitting
- Orifice sizes: 0.19" (4.8 mm) to 1.5" (38.1 mm)
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -20°F to 450°F (-28°C to 232°C)



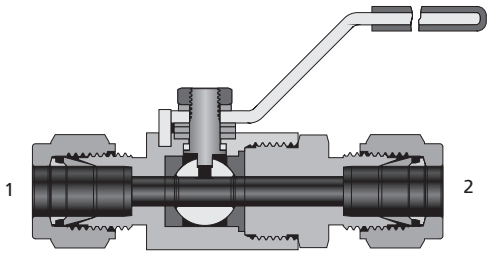
BO Series

- 1-piece forged body, top entry
- Body materials: 316 SS, 316L SS, 304 SS, 321 SS, 304L SS, 904L SS, alloy 400, and brass
- Seat materials: PTFE, UHMWPE and PFA
- Flow patterns: 2-way, 3-way, 4-way, 5-way, 6-way and 7-way
- End Connections:
  1/8 to 1/2 female thread
  1/16" to 3/4" and 3 mm to 18 mm tube fitting
- Orifice sizes: 0.05" (1.3 mm) to 0.41" (10.3 mm)
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -65°F to 300°F (-54°C to 148°C)



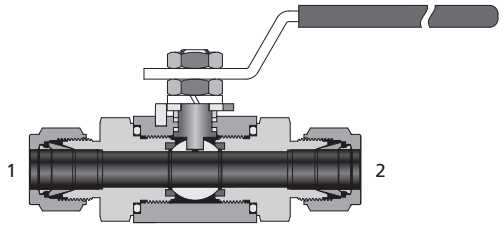
BR Series

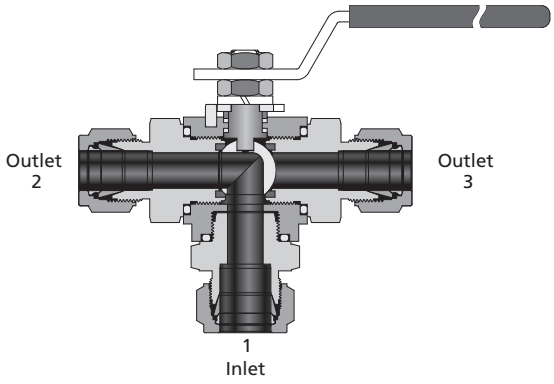
- 2-piece design, cold drawn hex bar
- Body materials: 316 SS, 304 SS, 316L SS, 904L SS and brass
- Seat material: PTFE
- Packing material: PTFE
- End connections:
  1/8 to 1 thread
  1/4" to 1" and 6 mm to 25 mm tube fitting
- Orifice sizes: 0.19" (4.8 mm) to 0.63" (16 mm)
- Working pressure up to: 1000 psig (69.0 bar)
- Working temperature: -20°F to 450°F (-28°C to 232°C)



BP Series

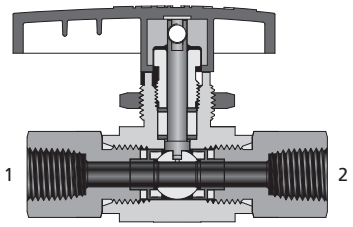
- Cold drawn bar
- Body materials: 316 SS, 304 SS, 321 SS, and 904L SS
- Seat materials: PVDF, PCTFE and PEEK
- Packing material: PTFE
- Flow patterns: 2-way and 3-way
- End connections:
  1/4 to 1 thread
  1/4" to 1" and 6 mm to 25 mm tube fitting
- Orifice sizes: 0.39" (10 mm), 0.5" (12.7 mm) and 0.71" (18 mm)
- Working pressure up to: 10 000 psig (690 bar)
- Working temperature: -40°F to 450°F (-40°C to 232°C)

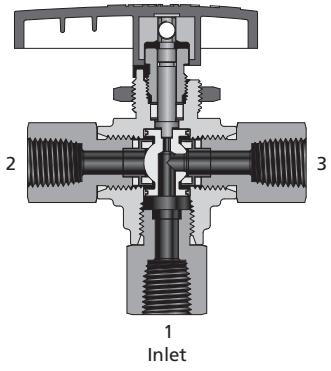


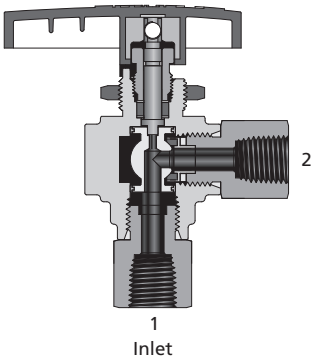


BV Series

- 3-piece precision cast body
- Body materials: CF8M (316), CF3M (316L), CF8 (304), 904L SS and brass
- Seat materials: PTFE, PCTFE and PEEK
- Packing material: PTFE
- Flow patterns: 2-way straight, 2-way angle, and 3-way
- End connections:
  1/8 to 3/4 thread
  1/8" to 3/4" and 3 mm to 22 mm tube fitting
- Orifice sizes: 0.09" (2.4 mm) to 0.41" (10.3 mm)
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -65°F to 450°F (-54°C to 232°C)

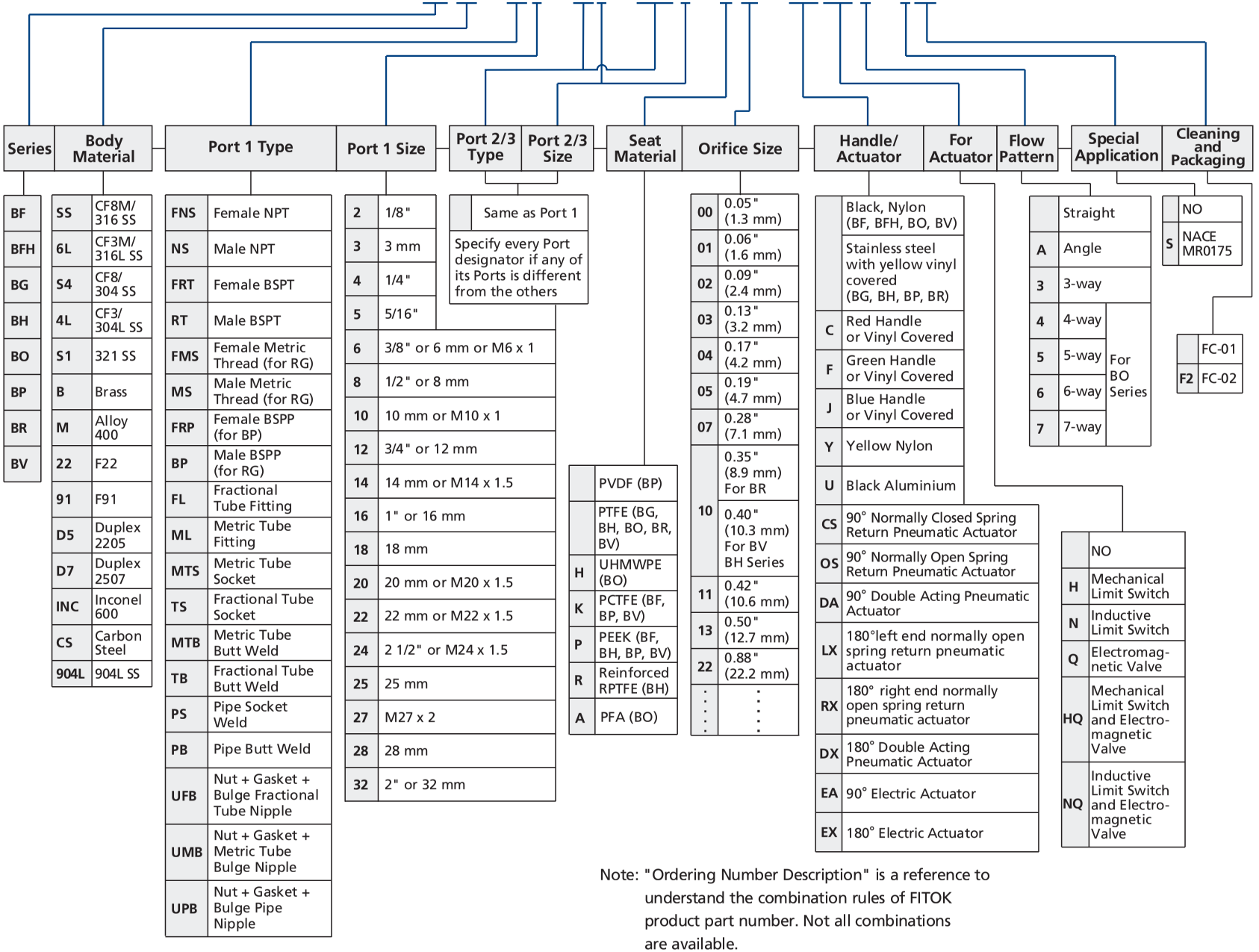






Ordering Number Description

BVSS - FL8 - FL8 - FNS8 - P10 - RXHQ3 - SF2



Series
BF
BFH
BG
BH
BO
BP
BR
BV

Body Material	
SS	CF8M/ 316 SS
6L	CF3M/ 316L SS
S4	CF8/ 304 SS
4L	CF3/ 304L SS
S1	321 SS
B	Brass
M	Alloy 400
22	F22
91	F91
D5	Duplex 2205
D7	Duplex 2507
INC	Inconel 600
CS	Carbon Steel
904L	904L SS

Port 1 Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RG)
MS	Male Metric Thread (for RG)
FRP	Female BSPP (for BP)
BP	Male BSPP (for RG)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
MTS	Metric Tube Socket
TS	Fractional Tube Socket
MTB	Metric Tube Butt Weld
TB	Fractional Tube Butt Weld
PS	Pipe Socket Weld
PB	Pipe Butt Weld
UFB	Nut + Gasket + Bulge Fractional Tube Nipple
UMB	Nut + Gasket + Metric Tube Bulge Nipple
UPB	Nut + Gasket + Bulge Pipe Nipple

Port 1 Size	
2	1/8"
3	3 mm
4	1/4"
5	5/16"
6	3/8" or 6 mm or M6 x 1
8	1/2" or 8 mm
10	10 mm or M10 x 1
12	3/4" or 12 mm
14	14 mm or M14 x 1.5
16	1" or 16 mm
18	18 mm
20	20 mm or M20 x 1.5
22	22 mm or M22 x 1.5
24	2 1/2" or M24 x 1.5
25	25 mm
27	M27 x 2
28	28 mm
32	2" or 32 mm

Port 2/3 Type / Port 2/3 Size	
	Same as Port 1

Specify every Port designator if any of its Ports is different from the others

Seat Material	
	PVDF (BP)
	PTFE (BG, BH, BO, BR, BV)
H	UHMWPE (BO)
K	PCTFE (BF, BP, BV)
P	PEEK (BF, BH, BP, BV)
R	Reinforced RPTFE (BH)
A	PFA (BO)

Orifice Size	
00	0.05" (1.3 mm)
01	0.06" (1.6 mm)
02	0.09" (2.4 mm)
03	0.13" (3.2 mm)
04	0.17" (4.2 mm)
05	0.19" (4.7 mm)
07	0.28" (7.1 mm)
10	0.35" (8.9 mm) For BR 0.40" (10.3 mm) For BV BH Series
11	0.42" (10.6 mm)
13	0.50" (12.7 mm)
22	0.88" (22.2 mm)
⋮	⋮

Handle/ Actuator	
	Black, Nylon (BF, BFH, BO, BV) Stainless steel with yellow vinyl covered (BG, BH, BP, BR)
C	Red Handle or Vinyl Covered
F	Green Handle or Vinyl Covered
J	Blue Handle or Vinyl Covered
Y	Yellow Nylon
U	Black Aluminium

For Actuator	
CS	90° Normally Closed Spring Return Pneumatic Actuator
OS	90° Normally Open Spring Return Pneumatic Actuator
DA	90° Double Acting Pneumatic Actuator
LX	180°left end normally open spring return pneumatic actuator
RX	180° right end normally open spring return pneumatic actuator
DX	180° Double Acting Pneumatic Actuator
EA	90° Electric Actuator
EX	180° Electric Actuator

Flow Pattern	
	Straight
A	Angle
3	3-way
4	4-way
5	5-way
6	6-way
7	7-way

For BO Series

Special Application	
	NO
H	Mechanical Limit Switch
N	Inductive Limit Switch
Q	Electromag-netic Valve
HQ	Mechanical Limit Switch and Electro-magnetic Valve
NQ	Inductive Limit Switch and Electro-magnetic Valve

Cleaning and Packaging	
	NO
S	NACE MR0175

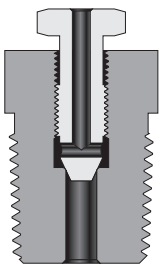
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

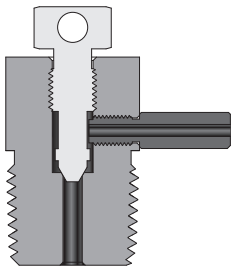
Bleed Valves

RB Series

- Compact design for convenient installation
- Chrome-plated stem and tip extend cycle life
- Working pressure up to 10 000 psig (690 bar)
- Working temperature: -65°F to 850°F (-54°C to 454°C)
- Stainless steel, carbon steel, and alloy 400 body materials
- End connections:
  1/8 to 1/2 male NPT
  1/4 to 1/2 male BSPT



Type 1



Type 2

Ordering Number Description

RBSS - NS4 - L - SH - SF2

Series	Body Material	Inlet Type	Inlet Size	Outlet	Handle	Special Application	Cleaning and Packaging
RB	SS 316 SS 6L 316L SS S4 304 SS 4L 304L SS S1 321 SS B Brass M Alloy 400 CS Carbon Steel	NS Male NPT RT Male BSPT	2 1/8" 4 1/4" 6 3/8" 8 1/2"	Type 1 L Type 2	NO SH Stainless Steel Handle (Only For Type 2)	NO S NACE MR 0175	FC-01 F2 FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

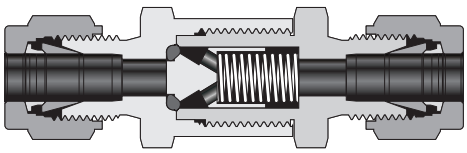
Check Valves

CV, CH and CO Series

Fixed cracking pressure
Installation in any direction

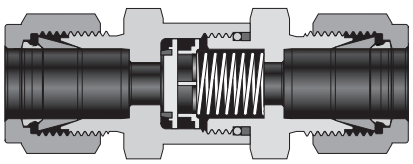
CV Series

- The resilient O-ring seat design provides cushioned and noise-free closing, and resists seat flow-out
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Body materials: stainless steel, brass, and alloy
- End connections:
  1/8" to 1" and 6 mm to 12 mm tube fitting
  1/8 to 1 female NPT
  1/8 to 1 male NPT
  1/4 to 1 male FR fitting



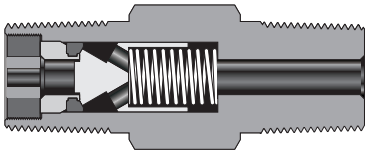
CH Series

- The seat ring is continuously cleaned by media, avoiding secondary pollution
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Body materials: stainless steel and alloy
- End connections:
  1/8" to 1" and 6 mm to 25 mm tube fitting
  1/8 to 1 female NPT, 1/8 to 1 male NPT
  1/4 to 1 female BSPT, 1/4 to 1 male BSPT
  1/4 to 3/4 male FO fitting, 1/4 to 1 male FR fitting



CO Series

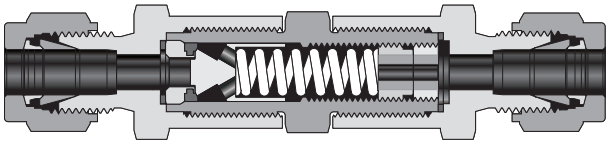
- Compact, one piece body
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Body materials: stainless steel, brass, and alloy
- End connections:
  1/4 to 1/2 NPT
  1/4 to 1/2 BSPT



CA and COA Series

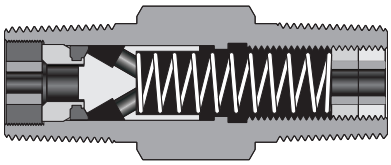
Adjustable cracking pressure
Variety of springs available
Installation in any direction

CA Series



- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 3 to 600 psig (0.2 to 41.4 bar)
- Body materials: stainless steel, brass, and alloy
- End connections:
  - 1/4" to 3/8" and 8 mm tube fitting
  - 1/4 male FR fitting

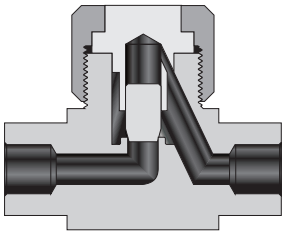
COA Series



- Compact, one piece body
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 3 to 600 psig (0.2 to 41.4 bar)
- Body materials: stainless steel, brass, and alloy
- End connections:
  - 1/4 female NPT
  - 1/4 to 1/2 male NPT
  - 1/4 to 1/2 male BSPT

CL Series

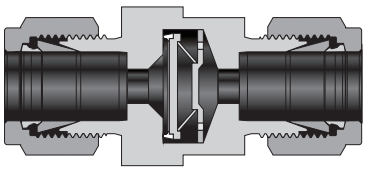
Union bonnet design
All stainless steel construction
Horizontal installation with bonnet nut on top



- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -65°F to 900°F (-53°C to 482°C)
- Body materials: stainless steel
- End connections:
  - 1/4" to 3/4" and 6 mm tube fitting
  - 1/8 to 1/2 female NPT
  - 1/4" to 1/2" tube socket weld
  - 1/4" to 1/2" pipe butt weld

CW Series

All-welded design for enhanced safety
Installation in any direction



- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Cracking pressure: less than 2 psig (0.14 bar)
- Body materials: stainless steel
- End connections:
  - 1/4" and 6 mm tube fitting
  - 1/4" to 1/2" male and female FR fitting
  - 1/4" to 1/2" and 6 mm tube butt weld

Ordering Number Description

CVSS - FL8 - ML10 - B - 2SF2

Series
CV
CH
CO
CA
COA
CL
CW

Body Material	
SS	316 SS
6L	316L SS
M	Alloy 400
B	Brass

Inlet Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP-M)
MS	Male Metric Thread (for RG-M)
FRP	Female BSPP (for RP)
BP	Male BSPP (for RG)
TS	Fractional Tube Socket Weld
MTS	Metric Tube Socket Weld
TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld
PS	Pipe Socket Weld
PB	Pipe Butt Weld
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
UFB	Nut+Gasket+ Fractional Bulge Nipple
UMB	Nut + Gasket + Metric Bulge Nipple
FO	Male FO Fitting
FFR	Female FR Fitting
FR	Male FR Fitting
RFR	Rotatable Male FR Fitting

Inlet Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm or M14 x 1.5
16	1" or 16 mm
18	18 mm
20	1 1/4" or 20 mm or M20 x 1.5
22	22 mm or M22 x 1.5
25	25 mm

Outlet Type	Outlet Size
	Same as Inlet

Specified in the same way as the inlet type and size

Seal Material	
	Fluorocarbon FKM
B	Buna N
N	Neoprene
E	Ethylene propylene
Z	Kalrez

Cracking Pressure		
	3 psig	For CV CH CO Series
1	1/3 psig	
2	1 psig	
3	10 psig	
4	25 psig	
	3 to 50 psig	For CA COA Series
5	50 to 150 psig	
6	150 to 350 psig	
7	350 to 600 psig	

Special Application	
	NO
S	NACE MR0175

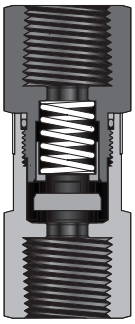
Cleaning and Packaging	
	FC-01
F2	FC-02

1. Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. The materials, connection types and sizes listed in the "Ordering Number Description" are standard. For other materials and end connections, please contact FITOK Group or our authorized distributors.

Excess Flow Valves

EV Series

- Compact design for convenient installation
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -10℉ to 400°F (-23°C to 204°C)
- Variety of end connections
- Stainless steel construction
- Leak-tight performance testing for every valve with nitrogen or compressed air at the maximum working pressure
- End connections:
  1/8" to 1/2" and 6 mm to 12 mm tube fitting
  1/4 to 1/2 male FR Fitting
  1/4 to 1/2 NPT



Ordering Number Description

EVSS - FL6 - ML8 - 6Z - SF2

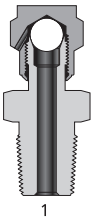
Series	Body Material	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Series	Seal Material	Special Application	Cleaning and Packaging
EV	SS 316 SS S4 304 SS S1 321 SS 6L 316L SS 4L 304L SS 904L 904L SS	FNS Female NPT NS Male NPT FRT Female BSPT RT Male BSPT FMS Female Metric Thread (for RP-M) MS Male Metric Thread (for RG-M) FRP Female BSPP (for RP) BP Male BSPP (for RG) FL Fractional Tube Fitting ML Metric Tube Fitting	2 1/8" 4 1/4" 6 3/8" or 6 mm 8 1/2" or 8 mm 10 10 mm 12 3/4" or 12 mm	Same as Inlet Specified in the same way as the inlet type and size		4 6 8	Fluorocarbon FKM B Buna N N Neoprene E EPDM Z Kalrez	NO S NACE MR0175	FC-01 F2 FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Purge Valves

RP Series

- ◎ Compact design for convenient installation
- ◎ Bonnet crimped to valve body to prevent accidental disassembly
- ◎ Straight, tee and cross body constructions
- ◎ Working pressure up to: 4000 psig (276 bar)
- ◎ Working temperature: -65°F to 600°F (-54°C to 315°C)
- ◎ Stainless steel, brass, and carbon steel body materials
- ◎ End connections:
  1/8" to 1" and 3 mm to 16 mm tube fitting
  1/8 to 1 female NPT
  1/8 to 1 male NPT



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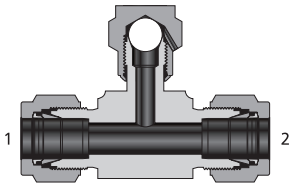

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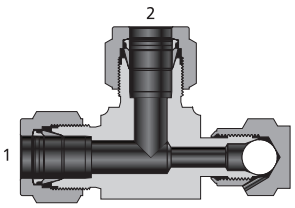

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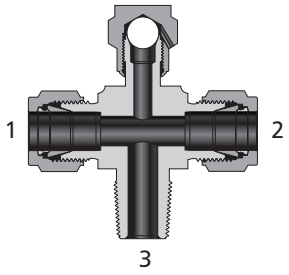


(C)

Ordering Number Description

RPSS - C - FL8 - ML10 - FL8 - SF2

Series	Body Material	Type	End Connection 1 Type	End Connection 1 Size	End Connection 2 Type	End Connection 2 Size	End Connection 3 Type	End Connection 3 Size	Special Application	Cleaning and Packaging

Series
RP

Body Material	
SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
S1	321 SS
B	Brass
CS	Carbon Steel
904L	904L SS

Type	
L	Straight
TL	In-line Tee
TA	Angle Tee
C	Cross

End Connection 1 Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP-M)
MS	Male Metric Thread (for RG-M)
FRP	Female BSPP (for RP)
BP	Male BSPP (for RG)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
FT	Fractional Tube
FR	Male FR Fitting

End Connection 1 Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm or M14 x 1.5
16	1" or 16 mm

End Connection 2 Type / End Connection 2 Size
Same as connection 1
Specified in the same way as the end connection 1 type and size

End Connection 3 Type / End Connection 3 Size
Same as connection 1
Specified in the same way as the end connection 1 type and size

Special Application	
	NO
S	NACE MR0175

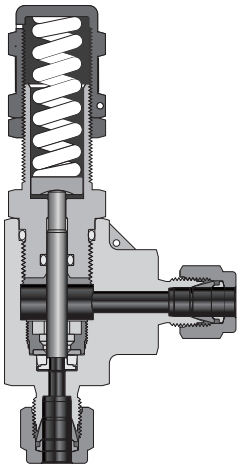
Cleaning and Packaging	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Proportional Relief Valves

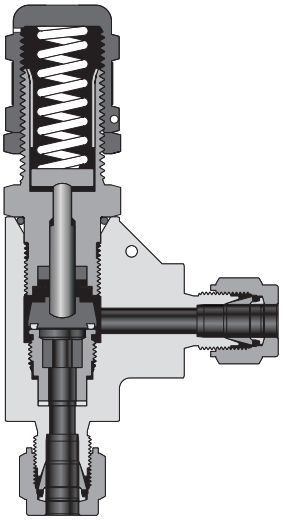
RV Series

- Set Pressure: 7 color-coded springs available for a wide range of set pressure, 50 to 6000 psig @ 70°F (3.4 to 414 bar @ 20°C)
- Maximum outlet pressure: 1500 psig (103 bar)
- Orifice size: 0.14" (3.6 mm)
- Balance stem design to eliminate the effect of system back pressure
- Working temperature: -10°F to 300°F (-23°C to 148°C)
- Liquid or gas service
- Adjustable bonnet cap and adjustable set pressure
- Lock wired secure cap to maintain the set pressure
- Variety of seal materials
- Label identifies the set pressure range.
- Manual override handle available to open the valve without changing the set pressure which is lower than 1500 psig
- End connections:
  1/4" and 6 mm to 8 mm tube fitting
  1/4 NPT



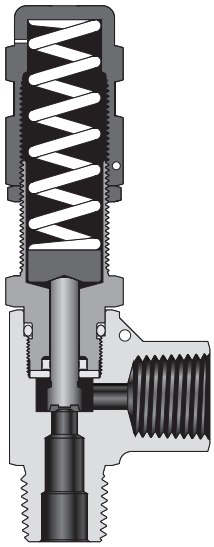
RL Series

- Set Pressure: 10 to 225 psig @ 70°F (0.68 to 15.5 bar @ 20°C)
- Maximum outlet pressure: 225 psig (15.5 bar)
- Orifice size: 0.19" (4.8 mm) and 0.25" (6.4 mm)
- Pre-set pressure = Desired pressure - 0.8 × Back pressure
- Working temperature: -10°F to 300°F (-23°C to 148°C)
- Liquid or gas service
- Adjustable bonnet cap and adjustable set pressure
- Lock wired secure cap to maintain the set pressure
- Variety of seal materials
- Label identifies the set pressure range
- Manual override handle available to open the valve without changing the set pressure
- End connections:
  1/4" to 1/2" and 6 mm to 12 mm tube fitting
  1/4 to 1/2 NPT



RM 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" (6.4 mm)
- Balance stem design to eliminate the effect of system back pressure
- Working temperature: -10°F to 300°F (-23°C to 148°C)
- Liquid or gas service
- Adjustable bonnet cap and adjustable set pressure
- Lock wired secure cap to maintain the set pressure
- Variety of seal materials
- Label identifies the set pressure range
- Manual override handle available to open the valve without changing the set pressure which is lower than 300 psig
- End connections:
  3/8" to 1/2" and 8 mm to 12 mm tube fitting
  1/4 to 1/2 NPT



Spring Kit Ordering Number Description

7PRV - SP6 - Y - B - L

Material	Valve Series	Part Name	Valve Orifice Size	Spring Kit Color	Label	Lock Wire With Seal

Material

7P	S17700

Valve Series

RV
RM
RL

Part Name

SP	Spring

Valve Orifice Size

6	0.14"(3.6 mm) RV Series Valves Only
7	0.19"(4.8 mm) RL Series Valves Only
8	0.25"(6.4 mm) RL and RM Series Valves

Spring Kit Color

F	Green 50 ~ 300 psig (For RV and RM Series Valves)
O	Orange 300 ~ 700 psig (For RV and RM Series Valves)
Y	Yellow 10 ~ 225 psig (For RL Series Valves Only)
	Yellow 700 ~ 1500 psig (For RV and RM Series Valves)
P	Purple 1500 ~ 2500 psig (For RV Series Valves Only)
W	White 2500 ~ 3500 psig (For RV Series Valves Only)
J	Blue 3500 ~ 4500 psig (For RV Series Valves Only)
C	Red 4500 ~ 6000 psig (For RV Series Valves Only)

Label

B	Corresponding color label, required to be selected

Lock Wire With Seal

	NO
L	YES

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

- Every spring kit includes a spring, a label and a lead seal (optional).

Valve Ordering Number Description

RVSS - FL6 - ML8 - 6Z - WM - TSF2

Series	Body Material	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Seal Material	Spring Kit Color	Handle	Set Pressure	Special Application	Cleaning and Packaging
RV	SS 316 SS	FNS Female NPT	2 1/8"		Same as inlet	6 0.14" (3.6 mm) RV Only		Yellow 10 ~ 225 psig (RL Only)			No	FC-01
RM	S4 304 SS	NS Male NPT	4 1/4"	Specified in the same way as the inlet type and size		7 0.19" (4.8 mm) RL Only	B Buna N	F Green 50 ~ 300 psig (RV and RM)		None	S NACE MR0175	F2 FC-02
RL	S1 321 SS	FRT Female BSPT	6 3/8" or 6 mm			8 0.25" (6.4 mm) RL and RM	N Neoprene	O Orange 300 ~ 700 psig (RV and RM)	M Manual Override Handle	L Set and test the valves with the minimum value of the spring pressure range		
	6L 316L SS	RT Male BSPT	8 1/2" or 8 mm				E EPDM	Y Yellow 700 ~ 1500 psig (RV and RM)		T Set, test and lock the valves with a specified set pressure. Hang a nameplate with the specified set pressure on it		
	4L 304L SS	FMS Female Metric Thread (for RG)	10 10 mm				Z Kalrez RV Only	P Purple 1500 ~ 2500 psig (RV Only)				
	904L 904L SS	MS Male Metric Thread (for RG)	12 3/4" or 12 mm					W White 2500 ~ 3500 psig (RV Only)				
		FRP Female BSPP (for RP)						J Blue 3500 ~ 4500 psig (RV Only)				
		BP Male BSPP (for RG)						C Red 4500 ~ 6000 psig (RV Only)				
		FL Fractional Tube Fitting						N No spring				
		ML Metric Tube Fitting										

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Bellows-sealed Valves

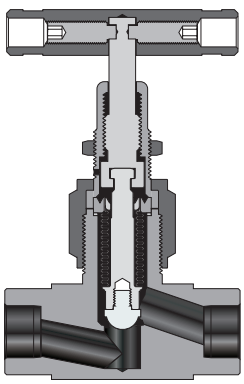
- Hydraulic-formed multilayer bellows for longer cycle life
- Nonrotating stem tip eliminates galling within the seat area
- Externally pressurized bellows design for maximum working pressure
- Strictly controlled bellows stroke to improve safety and cycle life
- Replaceable bellows and stem tip assembly
- Regulating, conical and spherical stem tips available
- Panel and bottom mounting
- Manual and pneumatic actuation options available

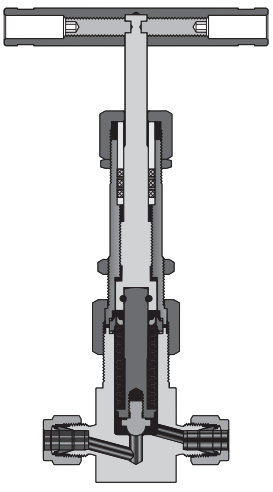
SW Series

- Working pressure up to: 1000 psig (69.0 bar)
- Working temperature: -20°F to 842°F (-28°C to 450°C)
- Stainless steel, brass body materials
- 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 FR fitting

SU Series

- Working pressure up to: 2500 psig (172 bar)
- Working temperature: -20°F to 842°F (-28°C to 450°C)
- Stainless steel body materials
- End connections:
  1/4" to 1/2" and 6 mm to 25 mm tube fitting
  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 FR fitting





Ordering Number Description

SWSS - FL8 - ML10 - 5 - WR - B - BW - SF2

Series	Body Material	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size	Stem Tip Material and Type	Actuator	Body-to-Bellows Seal	Special Application	Cleaning and Packaging

Series	
SW	
SU	

Body Material	
SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
S1	321 SS
B	Brass

Inlet Type	
TS	Fractional Tube Socket Weld
MTS	Metric Tube Socket Weld
TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld
PS	Pipe Socket Weld
PB	Pipe Butt Weld
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
UFB	Nut + Gasket + Fractional Bulge Nipple
UMB	Nut + Gasket + Metric Bulge Nipple
FFR	Female FR Fitting
FR	Male FR Fitting

Inlet Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm or M14
16	1" or 16 mm
18	18 mm
20	20 mm

Outlet Type / Outlet Size	
	Same as Inlet
Specified in the same way as Inlet type and size	

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

Stem Tip Material and Type	
	Stellite Spherical
R	Stainless Steel Regulating
WR	Stellite Regulating
N	Stainless Steel Conical
KN	PCTFE Conical
WN	Stellite Conical

Actuator		
	Green Aluminum Bar	
B	Black Aluminum Bar	
C	Red Aluminum Bar	
J	Blue Aluminum Bar	
M	Stainless Steel Bar	
O	Black nylon Knob	Only applicable to SW Series valves with orifice size of 0.16"(4.1mm)
T	Toggle handle	Only applicable to SW Series valves with orifice size of 0.16" (4.1mm), PCTFE conical tip and max. working pressure up to 100 psig (6.9 bar).
LC	Normally Closed Pneumatic Actuator	
LO	Normally Open Pneumatic Actuator	

Body-to-Bellows Seal	
	Gasket Seal
BW	Welded Seal

Special Application	
	NO
S	NACE MR0175

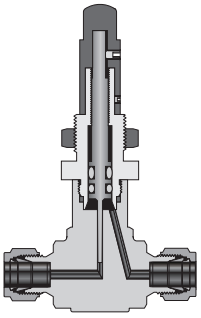
Cleaning and Packaging	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Metering Valves

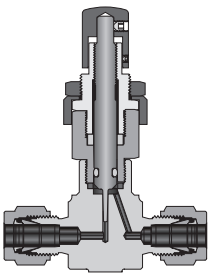
MS Series

- Working pressure up to: 2000 psig (138 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Orifice size: 0.032" (0.81 mm)
- Flow coefficient (Cv): 0.004
- Stem taper: 1°
- Turns to open: 9 to 12
- Shutoff service: not available
- Panel mounting
- Flow patterns: straight, angle, cross and double
- Handle types: knurled, vernier
- Variety of materials available for valve body
- End connections:
  1/16" to 1/4" and 3 mm to 6 mm tube fitting
  1/4 male FR Fitting
  1/8 to 1/4 NPT

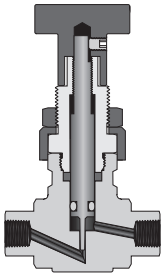


MV and ML Series

- Working pressure up to: 1000 psig (69.0 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Flow coefficients (Cv): MV series: 0.03
  ML series: 0.15
- Orifice sizes: MV series: 0.056" (1.42 mm)
  ML series: 0.128" (3.25 mm)
- Stem taper: MV series: 3°
  ML series: 6.5°
- Turns to open: MV series: 8 to 10
  ML series: 10 to 11
- Shutoff service: MV series: not available
  ML series: available
- Panel mounting
- Flow patterns: straight, angle, cross (MV Series)
  and double (MV Series)
- Handle types:
  MV series: vernier, knurled, slotted
  ML 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 FR Fitting
  1/8 to 1/4 NPT



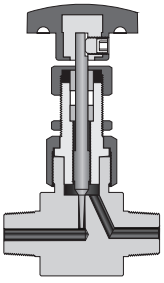
MV Series



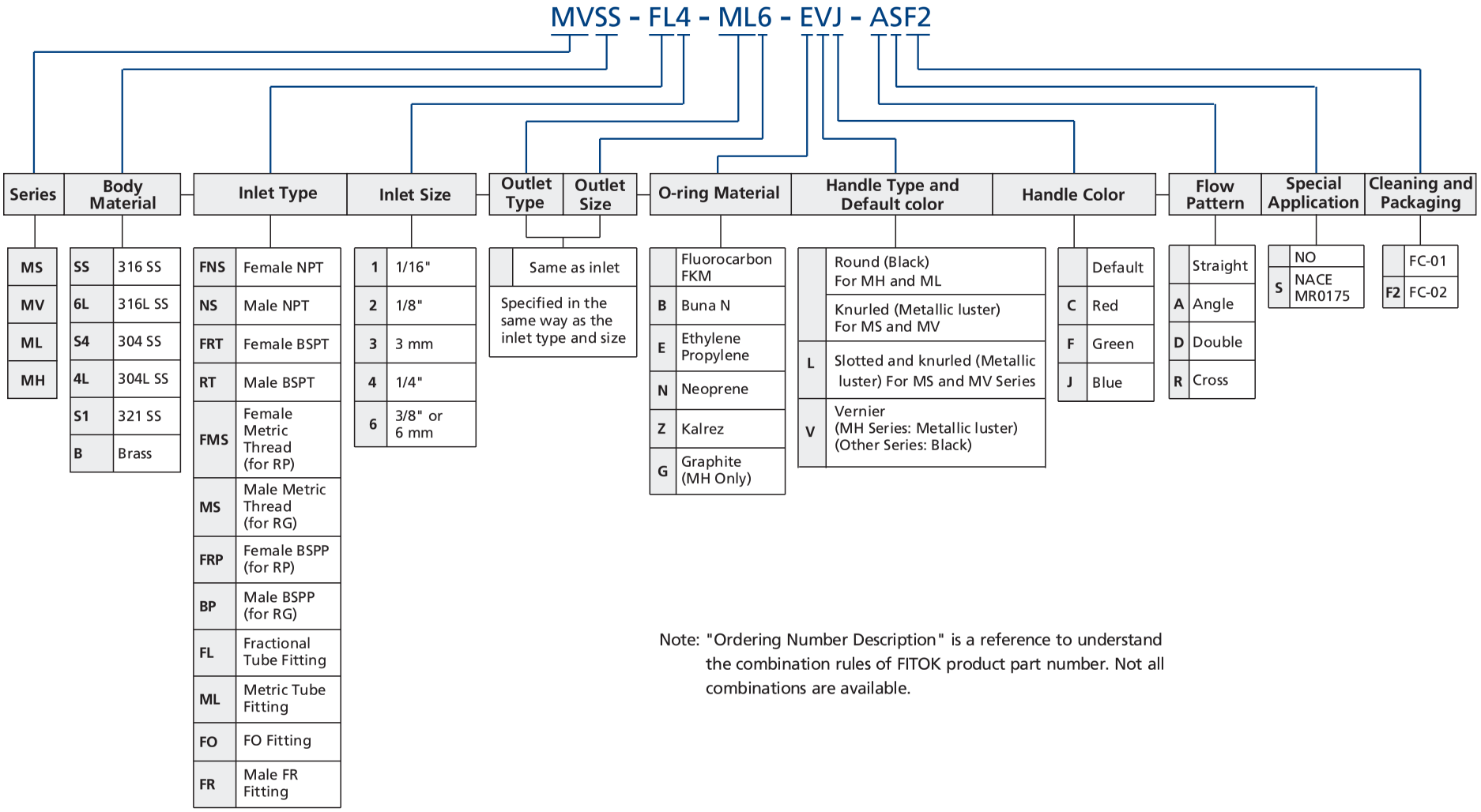
ML Series

MH Series

- Working pressure up to: 5000 psig (345 bar)
- Working temperature: -65°F to 850°F (-54°C to 454°C)
- Orifice size: 0.062" (1.6 mm)
- Flow coefficient (Cv): 0.04
- Stem taper: 2°
- Turns to open: 9 to10
- Shutoff service: available
- Panel mounting
- Flow patterns: straight and angle
- Handle type: round phenolic, 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 FR Fitting
  1/8 to 1/4 NPT



Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Needle Valves

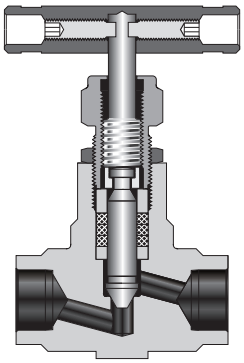
Features

◎ 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
◎ Packing below stem threads isolates the system media from thread lubricant and avoids process contamination
◎ Rolled stem threads for improved thread strength and more stable operations
◎ A wide selection of body materials and structure, a variety of handle colors and forms, optional panel mountings structures, and multiple applications
◎ 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

Forged Needle Valves

NF, NFH Series

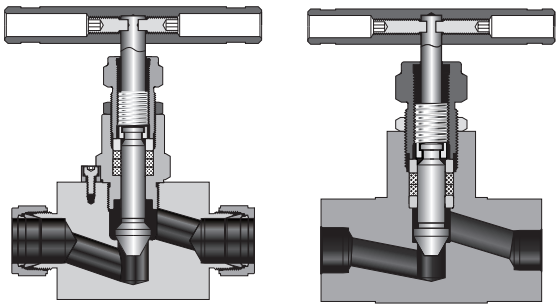
◎ One-piece forged body
◎ Body materials: Carbon steel/A105, 316 SS, 316L SS, 304 SS, 304L SS, 321 SS, Duplex 2205, Alloy 400, Alloy C- 276, and brass, other material please contact FITOK Group
◎ Orifice (mm): 4, 6.4, 10, 15 and 18 (15 and 18 suitable for NF series only)
◎ Working pressure up to: NF Series—6000 psig (41.4 MPa);
NFH Series—10000 psig (69.0 MPa)
◎ Working temperature: -65°F to 1200°F (-54°C to 649°C)
◎ Sealing face materials: Same as body and tip material, Stellite available
◎ Stem tips type: blunt, ball, regulating, and soft tips (suitable for NF series only)
◎ End connections type and size:
1/8" to 1", M10 to M36 thread;
1/4" to 1", 6 mm to 28 mm tube fitting;
3/8" to 1", 10 mm to 25 mm weld



Bar Stock Needle Valves

NB, NBH Series

◎ Cold drawn bar or one-piece forged body
◎ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, Duplex 2205, Alloy 400, Alloy C- 276, and brass, other material please contact FITOK Group
◎ Orifice (mm): 4, 6.4, 10, 15 and 18 (15 and 18 suitable for NB series only)
◎ Working pressure up to: NB Series—6000 psig (41.4 MPa); NBH Series—10000 psig (69.0 MPa)
◎ Working temperature: -65°F to 1200°F (-54°C to 649°C)
◎ Sealing face materials: Same as body and tip material, Stellite available
◎ Stem tips type: blunt, ball, regulating, and soft tips (suitable for NB series only)
◎ End connections type and size:
1/8" to 1", M14 to M27 thread;
1/4" to 1", 6 mm to 25 mm tube fitting;
3/8" to 1", 10 mm to 28 mm weld

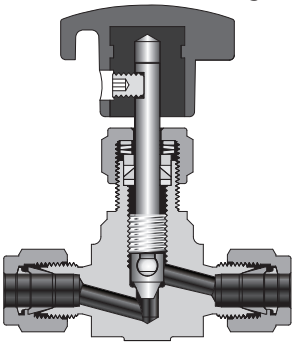


NB Series NBH Series

General Purpose Needle Valves

NG, NGH Series

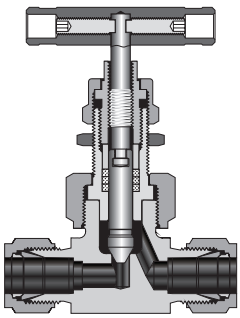
◎ One-piece forged body
◎ Body materials: Carbon steel/A105, 316 SS, 316L SS, 304 SS, 304L SS, Duplex 2205, Alloy 400, Alloy C- 276, and brass, other material please contact FITOK Group
◎ Orifice (mm): 2, 4, 6.4, 10
◎ Working pressure up to: NG Series—3000 psig (20.7 Mpa); NGH Series—5000 psig (34.5 Mpa)
◎ Working temperature: -65°F to 500°F (-54°C to 260°C)
◎ Sealing face materials: Same as body and tip material
◎ Stem tips type: blunt, ball, regulating, and soft tips
◎ End connections type and size:
1/8" to 3/4", M14 to M27 thread;
1/4" to 3/4", 6 mm to 25 mm tube fitting



Union Bonnet Needle Valves

NU, NUH Series

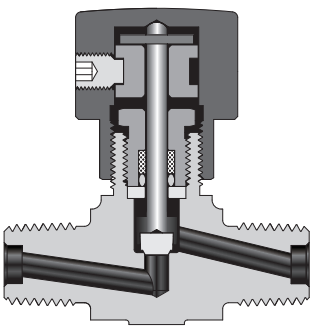
◎ One-piece forged body
◎ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, Duplex 2205, Alloy 400, Alloy C- 276, and brass, other material please contact FITOK Group
◎ Orifice (mm): 4, 6.4, 10
◎ Working pressure up to:
NU Series—6000 psig (41.4 MPa);
NUH Series—10000 psig (69.0 MPa)
◎ Working temperature: -65°F to 1200°F (-54°C to 649°C)
◎ Sealing face materials: Same as body and tip material, Stellite available
◎ Stem tips type: blunt, ball, regulating, and soft tips (suitable for NU series only)
◎ End connections type and size:
1/8" to 1", M14 to M27 thread;
1/4" to 1", 6 mm to 25 mm tube fitting;
3/8" to 1", 10 mm to 28 mm weld



Nonrotating-stem Needle Valves

ND, NDH Series

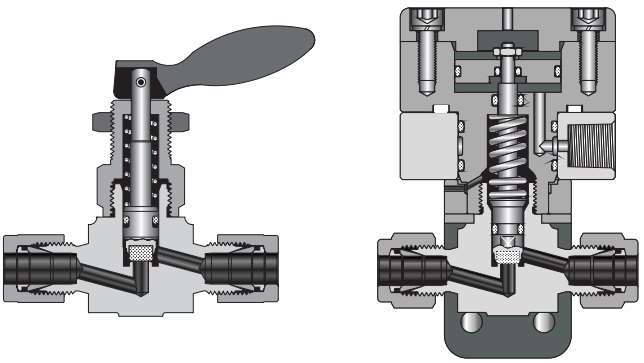
◎ One-piece forged body
◎ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, Alloy 400 and brass, other material please contact FITOK Group
◎ Orifice (mm): 2, 4, 5.6
◎ Working pressure up to: ND Series—3000 psig (20.7 MPa); NDH Series—5000 psig (34.5 MPa)
◎ Working temperature: -20°F to 400°F (-28°C to 204°C)
◎ Designed handle to prevent contaminants from entering into the valve
◎ Non-rotating stem, soft stem tip
◎ End connections type and size:
1/8" to 1/2", M10 to M14 thread;
1/4" to 1/2", 3 mm to 12 mm tube fitting



Toggle Valves

NT Series

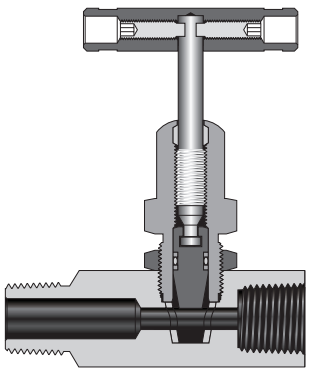
- One-piece forged body
- Body materials: 316 SS, 316L SS, 304 SS,304L SS, and brass, other material please contact FITOK Group
- Orifice (mm): 2, 4, 6.4
- Working pressure up to: 300 psig (2.07 Mpa)
- Working temperature: -20°F to 400°F (-28°C to 204°C)
- Manual or pneumatic actuators available
- Sealing face materials: Same as body and tip material
- End connections type and size:
  1/8" to 1/2", M10 to M20 thread;
  1/4" to 1/2", 3 mm to 12 mm tube fitting



Rising Plug Valves

NR, NRG Series

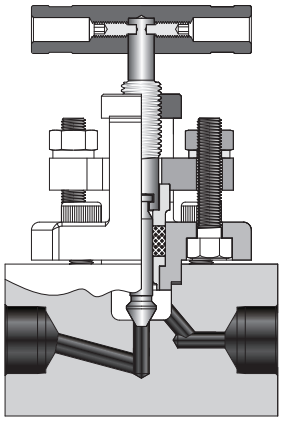
- Cold drawn square bar
- Body materials: 316 SS, 316L SS, 304 SS, 304L SS, Duplex, Alloy 400, Alloy C-276, and brass, other material please contact FITOK Group
- Orifice (mm): 4, 6.4
- Working pressure up to: 6000 psig (41.4 Mpa)
- Working temperature: -20°F to 400°F (-28°C to 204°C)
- Sealing face materials: soft seat design, seat material: Acetal, PEEK
- End connections type and size:
  1/8" to 1/2", M14 to M20 thread;
  1/4" to 1/2", 6 mm to 12 mm tube fitting



Outside Screw and Yoke (OS&Y) Needle Valves

NY Series

- Cold drawn bar
- Body materials: Carbon steel/A105, 316 SS, 316L SS, 304 SS, 304L SS, Duplex2205, Alloy 400, Alloy C-276, and brass, other material please FITOK Group
- Orifice (mm): 4
- Working pressure up to:
  NY Series—6000 psig (41.4 Mpa);
- Working temperature: -65°F to 1200°F (-54°C to 649°C)
- Sealing face materials: Same as body and tip material, Stellite available
- Externally adjustable gland independent of spindle thread
- End connections type and size:
  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

NBSS - PB8 - ML12 - 18WR - GYM - ASF2

Series
NF/NFH
NB/NBH
NG/NGH
NU/NUH
ND/NDH
NT
NR/NRG
NY

Body Material	
SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
S1	321 SS
91	F91
92	F92
D5	Duplex 2205
TI	Titanium
C20	Alloy 20
M	Alloy 400
INC	Alloy 600
HC	Alloy C -276
B	Brass
CS	Carbon Steel

Inlet Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP/RG)
MS	Male Metric Thread (for RP/RG)
FRP	Female BSPP (for RP)
BP	Male BSPP (for RP/RG)
TS	Fractional Tube Socket Weld
MTS	Metric Tube Socket Weld
TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld
PS	Pipe Socket Weld
PB	Pipe Butt Weld
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
UMB	Nut + Gasket + Metric Bulge Nipple

Inlet Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm or M14 x 1.5
16	1" or 16 mm
18	18 mm
20	1 1/4" or 20 mm or M20 x 1.5
22	22 mm or M22 x 1.5
24	M24 x 1.5
25	25 mm
27	M27 x 2
28	28 mm

Outlet Type	Outlet Size
	Same as Inlet

If different specify in the same way as Inlet type and Inlet size

Seat Material		
	Same as Body	NF/NFH NB/NBH NU/NUH NY Series
	Acetal	NR/NRG Series
P	PEEK	

Orifice Size	
5	0.08" (2.0 mm)
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)

Tip Material		
	Same as Body	NF/NFH NB/NBH NU/NUH NY Series
W	Stellite	
D5	Duplex 2205	
TI	Titanium	
C20	Alloy 20	
M	Alloy 400	
INC	Alloy 600	
HC	Alloy C-276	

Tip Type		
	Blunt	NF/NFH NB/NBH NG/NGH NU/NUH NY Series
R	Regula-ting	
B	Ball	
T	Soft Tip-PTFE	NF, NB NG/NGH NU Series
K	Soft Tip-PCTFE	
P	Soft Tip-PEEK	
	Soft Tip-PCTFE	ND/NDH Series
P	Soft Tip-PEEK	

Packing Material		
	PTFE	NF/NFH NB/NBH NG/NGH NU/NUH NY Series
P	PEEK	
G	Graphite	
	FKM	ND/NDH NR/NRG NT Series
B	Buna N	
E	EPDM	

Panel Mounting	
	No
Y	Yes

Handle		
	Black Aluminum Bar	NF/NFH NB/NBH NG/NGH NU/NUH NY Series
C	Red Aluminum Bar	
F	Green Aluminum Bar	
J	Blue Aluminum Bar	
M	Stainless Steel Bar	
O	Black Knob	
	Black Knob	ND/NDH Series
	Stainless Steel Handle	NT Series

Flow Pattern	
	Straight
A	Angle

Special Application	
	NO
S	NACE MR0175

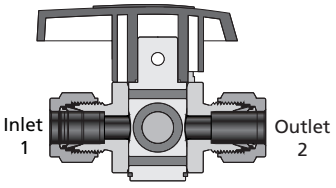
Cleaning and Packaging	
	FC-01
F2	FC-02

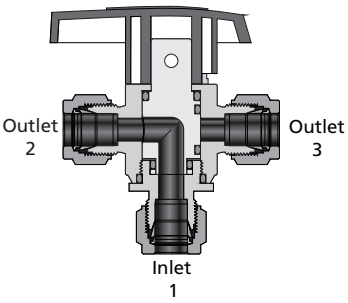
Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Plug Valves

PV Series

- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Size from 1/8" to 3/4" and 6 to 12 mm
- Orifice sizes: 2.4 mm, 4.4 mm, 7.2 mm
- Body materials: 316 SS, 316L SS, 304 SS, 904L SS, and brass
- O-ring materials: Fluorocarbon FKM, Buna N, EPDM, Neoprene, and Kalrez
- Easy to maintain and clean
- Low operating torque
- Replaceable plug assembly
- Handle as indicator of flow direction
- Handle of different colors available
- Positive handle shutoff
- Leak-tight performance testing for every valve with nitrogen or compressed air at the maximum working pressure





Ordering Number Description

PVSS - FL8 - ML12 - FL8 - B04GV - 3SF2

Series	Body Material	Inlet 1 Type	Inlet 1 Size	Outlet 2/3 Type	Outlet 2/3 Size	O-ring Material	Orifice	Handle	Downstream Vent	Flow Pattern	Special Application	Cleaning and Packaging
PV	SS 316 SS 6L 316L SS S4 304 SS B Brass 904L 904L SS	FNS Female NPT NS Male NPT FRT Female BSPT RT Male BSPT FMS Female Metallic Thread (for RG) MS Male Metallic Thread (for RG) FRP Female BSPP (for RP) BP Male BSPP (for RG) FL Fractional Tube Fitting ML Metric Tube Fitting	2 1/8" 3 3 mm 4 1/4" 6 3/8" or 6 mm 8 1/2" or 8 mm 10 10 mm 12 3/4" or 12 mm	Same as Inlet 1 Specified in the same way as the inlet 1 type and size		Fluorocarbon FKM B Buna N E EPDM N Neoprene Z Kalrez	02 0.09" (2.4 mm) 04 0.17" (4.4 mm) 07 0.28" (7.2 mm)	Black Nylon R Red Nylon G Green Nylon Y Yellow Nylon B Blue Nylon A Black Aluminium	NO V YES	2-Way 3 3-Way	No S NACE MR0175	FC-01 F2 FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Two-Piece Forged Metal-Seated Ball Valves

BM Series

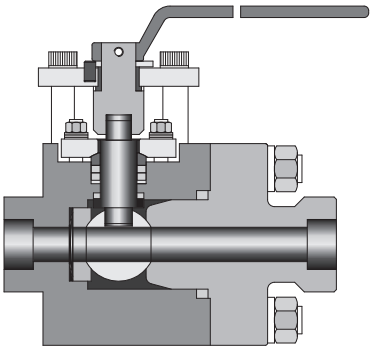
◎ Size: NPS 1/2 ~ NPS 2 (DN 15 ~ DN 50)
◎ Classes: 150 ~ 2500

Specifications

◎ Design: ASME B16.34
◎ Testing: ASME B16.34 and API 598
◎ Marking: MSS-SP-25
◎ Socket weld ends: ASME B16.11
◎ Butt weld ends: ASME B16.25
◎ Pipe ends: ASME B1.20.1

Features

◎ Two-piece forged body designs
◎ Ball and seats mate-lapped for 100% contact ensures absolute shutoff
◎ Free floating ball design provides seat wear compensation
◎ The ball is forced to load into the seat by a high-strength Belleville spring
◎ Advanced HVOF custom trim coating technology with hardness in excess of 900Hv
◎ An advanced packing chamber design and live-loading provide long lasting, maintenance free, stem packing tightness
◎ Working temperature: -20°F to 1000°F (-28°C to 538°C)
◎ Low operating torque
◎ Blowout-proof stem
◎ Positive handle stop



Ordering Number Description

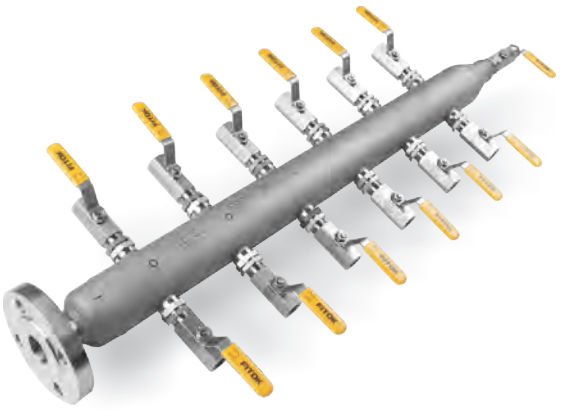
BMSS - PS8G

Series	Body Material		Type of Connection		Size of Connection		Class	
BM	CS	A105	PS	Pipe Socket Weld	8	NPS 1/2 (DN 15)	A	150 CL
	22	F22	PB	Pipe Butt Weld	12	NPS 3/4 (DN 20)	B	300 CL
	91	F91			16	NPS 1 (DN 25)	C	600 CL
	SS	F316			20	NPS 1 1/4 (DN 32)	E	900 CL
					24	NPS 1 1/2 (DN 40)	F	1500 CL
					32	NPS 2 (DN 50)	G	2500 CL

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Manifolds

Air Headers and Distribution Manifolds

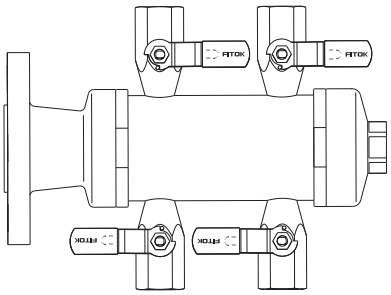


- Distribution lines and drain ports with ball valves, plug valves, and needle valves
- Red, green, yellow, and blue handles are available
- Main lines: NPS2
- Connections:
  Inlet ports: 1" ASME, EN and GB flange
  1 pipe thread
  Outlet ports: 1/4 or 1/2 pipe thread
  1/2" or 12 mm tube fitting
  Drain ports: 1/4 or 1/2 pipe thread
- Quantity of branches: 4 to 16
- Materials: 316 SS, 304 SS
- Each Series manifold leak tested with nitrogen at the maximum working pressure before delivering

Air Headers

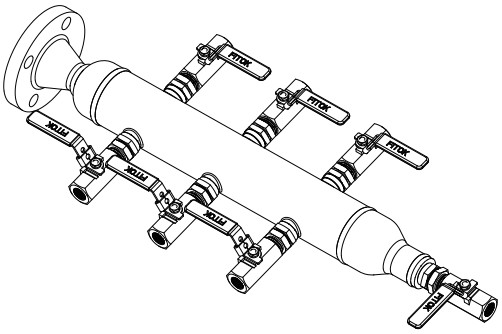
AH Series

- Distribution ports are BR series ball valves
- The main line is pipe (Sch 10)
- Working pressure up to: 500 psig (35 bar)
- Working temperature: -15°F to 194°F (-26°C to 90°C)



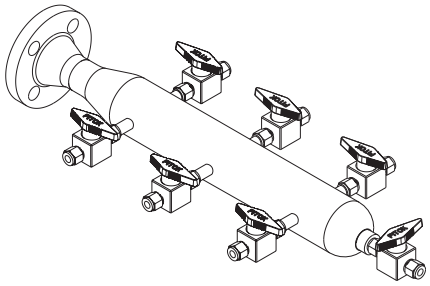
AP Series

- Distribution ports are BR series ball valves
- The main line is pipe (Sch 10)
- Working pressure up to: 1000 psig (69.0 bar)
- Working temperature: -15°F to 450°F (-26°C to 232°C)



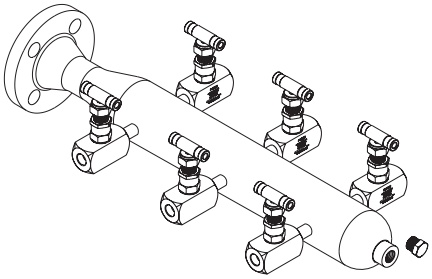
MP Series

- Distribution ports are PV series plug valves
- The main line is pipe (Sch 160)
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -15°F to 450°F (-26°C to 232°C)



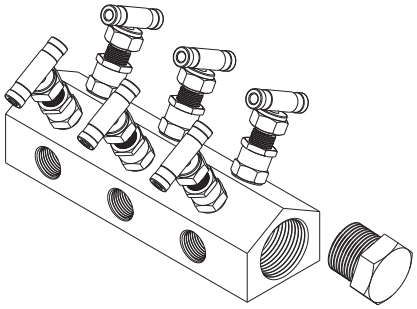
MN Series

- Distribution ports are NF series needle valves
- The main line is pipe (Sch 160)
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -15°F to 450°F (-26°C to 232°C)



CM Series

- Distribution ports are NB series needle valves
- The main line is made of pentagon bar
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -15°F to 1200°F (-26°C to 649°C)



Ordering Number Description

AH Series

AHS4 - FNS8Y - 4ML10P - VFNS8 - C - F2

Series	Body Material	Inlet Type	Inlet Size	Inlet Valve	Outlet Quantity	Outlet Type	Outlet Size	Outlet Plug	Vent Valve/Plug	Vent Type	Vent Size	Handle	Cleaning and Packing
AH	S4 304 SS	FNS Female NPT	8 1/2	No	4	ML Metric Tube Fitting	8 1/2 " or 8 mm	None	Valve with plug	None	None	SS with Yellow Vinyl Cover	FC-01
	SS 316 SS	NS Male NPT	12 3/4	Y Yes	8	FL Fractional Tube Fitting	10 M10x1 or 10 mm	P Plug	V Valve	ML Metric Tube Fitting	8 1/2" or 8 mm	C SS with Red Vinyl Cover	F2 FC-02
	4L 304L SS	AM Class 150 RF Flange (ANSI B16.5)	16 1		12	FNS Female NPT	12 3/4 " or 12 mm		TP Thread with plug	FL Fractional Tube Fitting	10 M10x1 or 10 mm	J SS with Blue Vinyl Cover	
	6L 316L SS	DM PN 25 RF Flange (EN 1092)	20 1 1/4		. . .	NS Male NPT	14 M14x1.5 or 14 mm		T Thread	FNS Female NPT	12 3/4" or 12 mm		
		DE PN 16 RF Flange (EN 1092)	24 1 1/2			RT Male BSPT			N No drain	NS Male NPT	14 M14x1.5 or 14 mm		
		GM PN 16 RF Flange (GB/T 9115)	32 2			MS Male Metric Thread (for RG)				RT Male BSPT			
		GE PN 25 RF Flange (GB/T 9115)				BP Male BSPP (for RG)				MS Male Metric Thread (for RG)			
										BP Male BSPP (for RG)			

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirements as stated in ASTM G93 Level C.

AP Series

APSS - FNS16Y - 8NS12T - TNS8 - C - SF2

Series	Body Material	Inlet Type	Inlet Size	Inlet Valve	Outlet Quantity	Outlet Type	Outlet Size	Outlet Valve/Plug	Drain Valve/Plug	Drain Type	Drain Size	Handle	Special Application	Cleaning and Packaging
AP	SS 316 SS	FNS Female NPT	12 3/4	No	4	FNS Female NPT	8 1/2 " or 8 mm	Valve	Valve with Plug	None	None	Stainless steel with Yellow Vinyl Cover	NO	FC-01
	S4 304 SS	FRT Female BSPT	16 1	Y Yes	6	NS Male NPT	10 M10 × 1 or 10 mm	VP Valve with Plug	V Valve	8 1/2 " or 8 mm	C Stainless Steel with Red Vinyl Cover	S NACE MR0175	F2 FC-02	
	4L 304L SS	FRP Female BSPP (For RP)	20 1 1/4		8	FRT Female BSPT	12 3/4 " or 12 mm	T Thread	TP Thread with plug	10 M10×1 or 10 mm	W Stainless Steel with Blue Vinyl Cover			
	6L 316L SS	PS Pipe Socket Weld	24 1 1/2		10	RT Male BSPT	14 M14 × 1.5 or 14 mm	TP Thread with Plug	T Thread	12 3/4 " or 12 mm	U Black Aluminium			
		PB Pipe Butt Weld	32 2		12	FMS Female Metric Thread (for RP)			N No drain	14 M14×1.5 or 14 mm	NY Black Nyon			
		AM Class 150 RF Flange (ANSI B 16.5)			. . . . .	MS Male Metric Thread (for RG)					L Handle Lock			
		DM PN 25 RF Flange (EN 1092)				FRP Female BSPP (For RP)								
		DE PN 16 RF Flange (EN 1092)				BP Male BSPP (For RG)								
		GM PN 16 RF Flange (GB/T 9115)				FL Fractional Tube Fitting								
		GE PN 20 RF Flange (GB/T 9115)				ML Metric Tube Fitting								
		AET Class 300 RF Flange (ANSI B 16.5)				UFB Nut+Gasket +Fractional BulgeNipple								
		DMT PN 40 RF Flange (EN 1092)				UMB Nut+Gasket+ Metric Bulge Nipple								
		GMT PN 40 RF Flange (GB/T 9115)												

	None
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP)
MS	Male Metric Thread (for RG)
FRP	Female BSPP (For BP)
BP	Male BSPP (For RG)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirements as stated in ASTM G93 Level C.

MP, MN Series

MNSS - FNS16Y - 10NS8T - TFNS8 - C - SF2

Series	Body Material	Inlet Type	Inlet Size	Inlet Valve	Outlet Quantity	Outlet Type	Outlet Size	Outlet Valve/Plug	Drain Type	Drain Type	Drain Size	Handle	Special Application	Cleaning and Packaging
MP	SS 316 SS	FNS Female NPT	12 3/4	No	4	FNS Female NPT	8 1/2 " or 8 mm	Valve	Valve with Plug	FNS Female NPT	None	Black Aluminum Bar	NO	FC-01
MN	S4 304 SS	FRT Female BSPT	16 1	Y Yes	6	NS Male NPT	10 M10 × 1 or 10 mm	VP Valve with Plug	V Valve	NS Male NPT	8 1/2 " or 8 mm	C Red Aluminum Bar	S NACE MR0175	F2 FC-02
	4L 304L SS	FRP Female BSPP (For RP)	20 1 1/4		8	FRT Female BSPT	12 3/4 " or 12 mm	T Thread	TP Thread with plug	FRT Female BSPT	10 M10 × 1 or 10 mm	F Green Aluminum Bar		
	6L 316L SS	PS Pipe Socket Weld	24 1 1/2		10	RT Male BSPT	14 M14 × 1.5 or 14 mm	TP Thread with Plug	T Thread	RT Male BSPT	12 3/4 " or 12 mm	J Blue Aluminum Bar		
		PB Pipe Butt Weld	32 2		12	FMS Female Metric Thread (for RP)			N No drain	FMS Female Metric Thread (for RP)	14 M14 × 1.5 or 14 mm	M 321 Stainless Steel Bar		
		AM Class 2500 RF Flange (ANSI B 16.5)			. . . . .	MS Male Metric Thread (for RG)				MS Male Metric Thread (for RG)				
		DM PN 420 RF Flange (EN 1092)				FRP Female BSPP (For RP)				FRP Female BSPP (For RP)				
		GM PN 420 RF Flange (GB/T 9115)				BP Male BSPP (For RG)				BP Male BSPP (For RG)				
						FL Fractional Tube Fitting				FL Fractional Tube Fitting				
						ML Metric Tube Fitting				ML Metric Tube Fitting				
						UFB Nut+Gasket+ Fractional Bulge Nipple				UFB Nut+Gasket+ Fractional Bulge Nipple				
						UMB Nut+Gasket+ Metric Bulge Nipple				UMB Nut+Gasket+ Metric Bulge Nipple				

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleaning requirement as stated in ASTM G93 Level C.

CM Series

CMSS - FNS16 - 8FNS12P - 12T - C - SF2

Series	Body Material	Inlet Type	Inlet Size	Outlet Quantity	Outlet Type	Outlet Size	Outlet Valve/Plug	Drain Type/Size	Drain Plug	Handle	Special Application	Cleaning and Packaging
CM	SS 316 SS	FNS Female NPT	8 1/2	4	FNS Female NPT	4 1/4 "	NB Series Needle Valve	1/2 " Female NPT	Plug	Black Aluminum Bar	NO	FC-01
	S4 304 SS	FRT Female BSPT	12 3/4	6	FRT Female BSPT	6 3/8 " or M6 × 1	P Valve with Plug	12 3/4 " Female NPT	T Thread	C Red Aluminum Bar	S NACE MR0175	F2 FC-02
	4L 304L SS	FRP Female BSPP (For RP)	*16 1	8	FMS Female Metric Thread (for RP)	8 1/2 "		*16 1 " Female NPT		F Green Aluminum Bar		
	6L 316L SS	PS Pipe Socket Weld		10	FRP Female BSPP (For RP)	10 M10 × 1				J Blue Aluminum Bar		
		PB Pipe Butt Weld		12	PS Pipe Socket Weld	12 3/4 " or M12 × 1.5				M 321 Stainless Steel Bar		
				. . . . .		14 M14 × 1.5						

	Valve with Plug
L	PV Series Plug Valve
B	NB Series Needle Valve
E	NF Series Needle Valve
	Plug
	Thread
	No drain

* only applies to maximum working pressure up to 3000 psig.

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

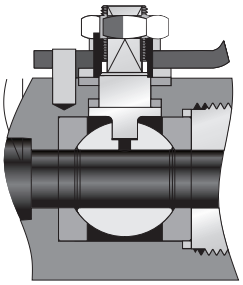
Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleaning requirement as stated in ASTM G93 Level C.

Block and Bleed Valves

Element Features

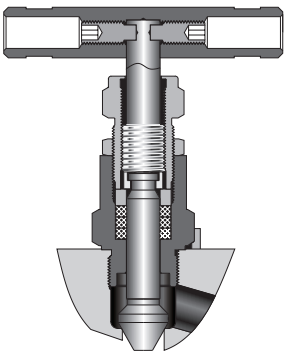
Ball Valves

- Pressure rating up to: Class 2500
- Working temperature: 65°F to 450°F (-54°C to 232°C)
- Bottom-loaded stem prevents stem blowout and enhances system safety
- High-strength stem bearings provide smooth actuation and eliminate galling between the valve stem and body
- FITOK ball valves are designed to be operated in a fully open or fully closed position



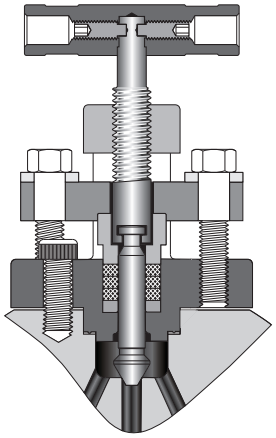
Needle Valves

- Pressure rating up to: Class 4500
- Working temperature:
  PTFE: -65°F to 450°F (-54°C to 232°C)
  Graphite: -65°F to 1200°F (-54°C to 649°C)
- Two stems design. The upper stem has hardened threads, the lower stem has hardened smooth surface
- The lower stem performs vertical linear movement instead of screwing movement, significantly reducing the friction area
- The nonrotating lower stem eliminates galling between the seat and tip
- Upper stem thread lubricant is isolated from system media
- Stem back seating seals in the fully open position
- Double lock-pins enable steady and durable fastening of the handle



OS & Y Needle Valves

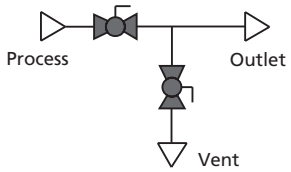
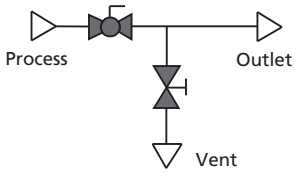
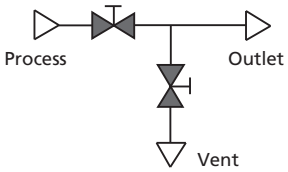
◎ Pressure rating up to: Class 2500
◎ Working temperature:
PTFE: -65°F to 450°F (-54°C to 232°C)
Graphite: -65°F to 1200°F (-54°C to 649°C)
◎ Two-piece stem design: thread hardened upper stem and smooth surface hardened lower stem
◎ Upper stem thread lubricant is isolated from system fluid
◎ The nonrotating lower stem, linearly instead of helical movement, avoids galling damage to the seat and tip, as well as reduces the total friction area between the packing and the lower stem
◎ Bolted bonnet enhance strength and reliability
◎ Adjustable gland flange allows easy access to the packing gland and packing adjustment for an effective stem seal
◎ Investment case yoke is formed by precision casting which enhances strength and perfect stem alignment
◎ Two handle pins make the handle fixed firmly and lastingly



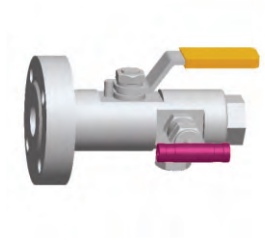
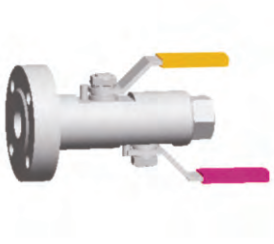
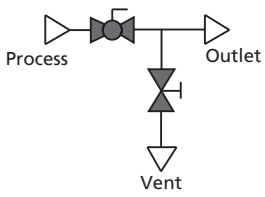
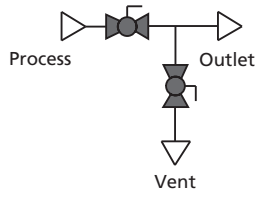
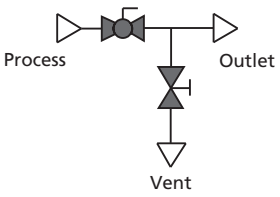
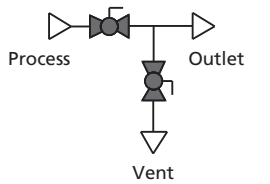
Handle colors indicate functions:
Needle and OS & Y valves: **Black** = Isolate/Block **Red** =Vent/Bleed
Ball valves: **Yellow**=Isolate/Block **Red** =Vent/Bleed

Single Block and Bleed Valves - BB Series

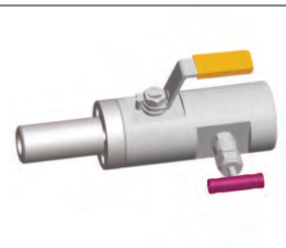
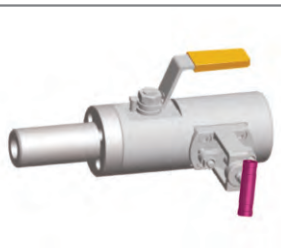
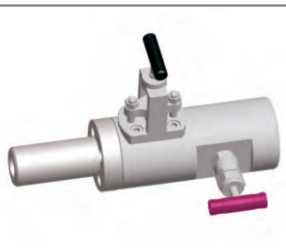
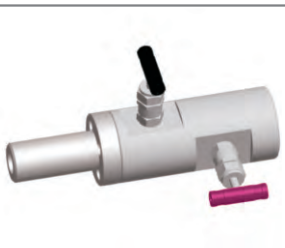
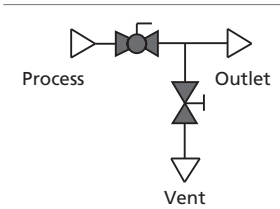
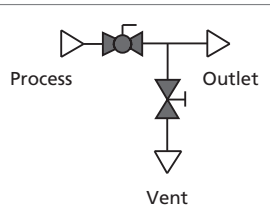
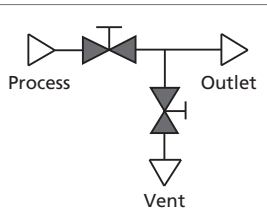
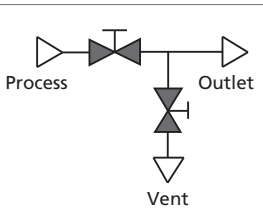
Instrument Single Block and Bleed Valves

BB□□-BB-FNS8-V4-C	BB□□-BN-FNS8-V4-V	BB□□-NN-NS8-FNS8-V4-H
		
		

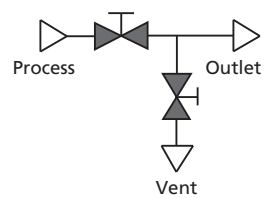
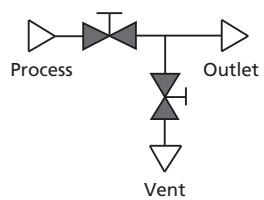
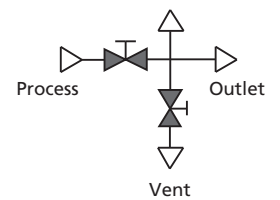
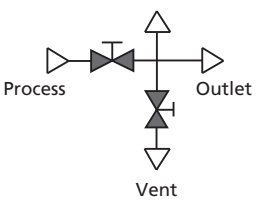
Flange Single Block and Bleed Valves

BB□□-BN-FM8300-FNS8-V8	BB□□-BB-FM8300-FNS8-V8	BB□□-BN-FM8300-V8	BB□□-BB-FM8300-V8
			
			

Root Single Block and Bleed Valves

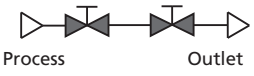
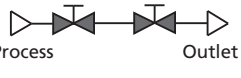
BB□□-BN-RV8-FNS8-V8	BB□□-BO-RV8-FNS8-V8	BB□□-ON-RV8-FNS8-V8	BB□□-NN-RV8-FNS8-V8
			
			

Monoflange Single Block and Bleed Valves

BB□□-ON-MM16600-FNS8-V4	BB□□-NN-MM16600-FNS8-V4	BB□□-ON-MM16600-FNS8-2V4	BB□□-NN-MM16600-FNS8-2V4
			
			

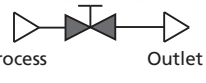
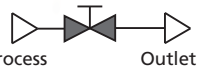
Double Block Valves - DB Series

Monoflange Double Block Valves

DB□□-ON-MM8300-FNS8	DB□□-NN-MM8300-FNS8
	
	

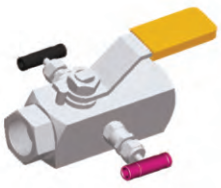
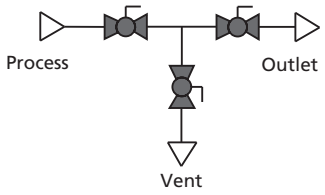
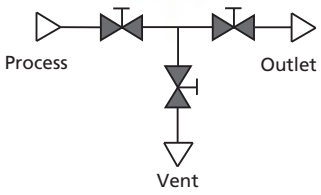
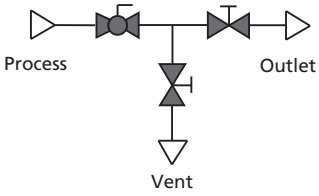
Single Block Valves - SB Series

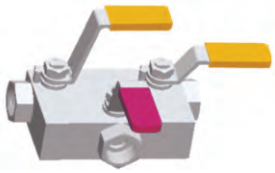
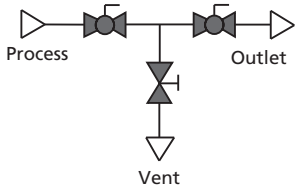
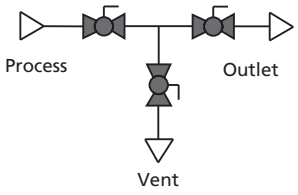
Monoflange Single Block Valves

SB□□-O-MM8300-FNS8	SB□□-N-MM8300-FNS8
	
	

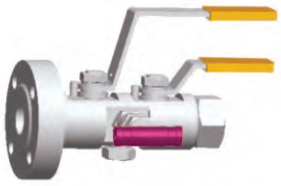
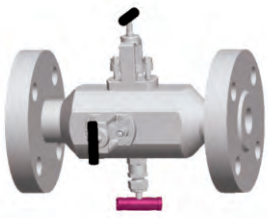
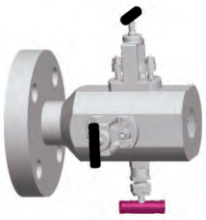
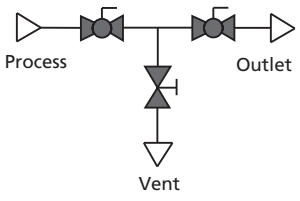
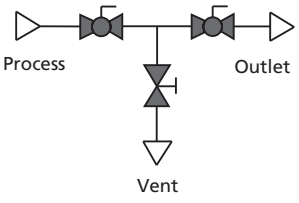
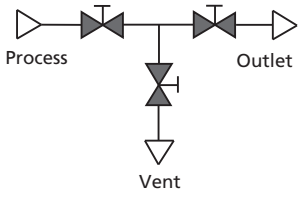
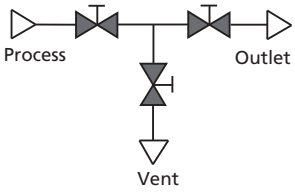
Double Block and Bleed Valves - DBB Series

Instrument Double Block and Bleed Valves

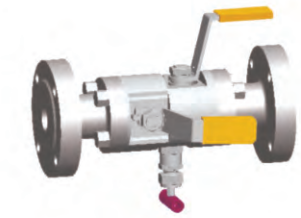
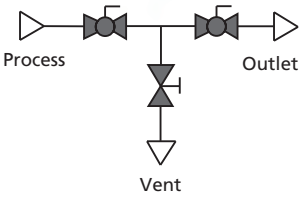
DBB□□-BBB-FNS8-V4-L	DBB□□-NNN-NS8-FNS8-V4-V	DBB□□-BNN-FNS8-V4-H
		
		

DBB□□-BBN-FNS8-V4-V	DBB□□-BBB-FNS8-V4-C
	
	

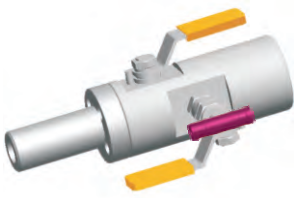
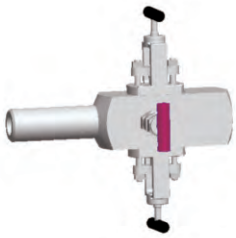
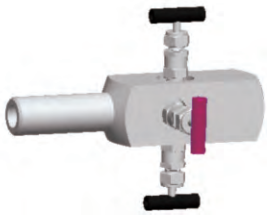
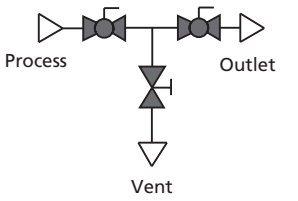
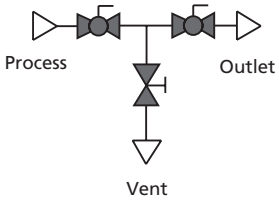
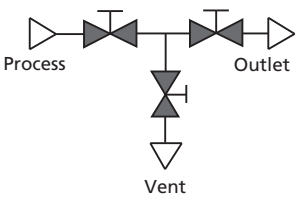
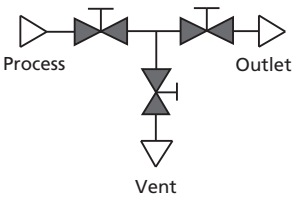
Flange Double Block and Bleed Valves

DBB□□-BBN-FM8600-V4	DBB□□-BBN-FM8600-FNS8-V4	DBB□□-OON-FM8600-V4	DBB□□-OON-FM8600-FNS8-V4
			
			

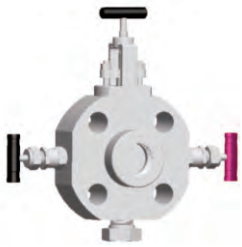
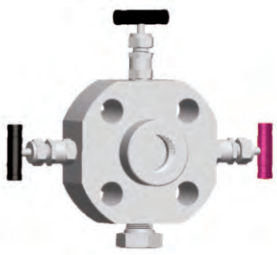
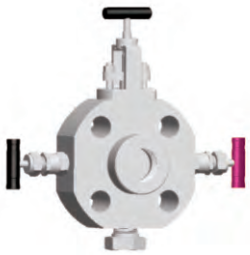
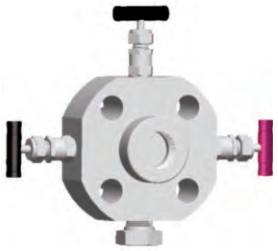
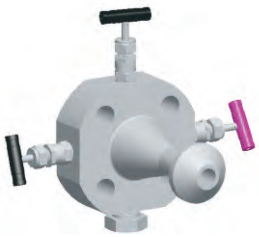
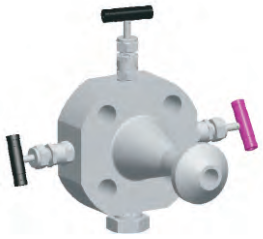
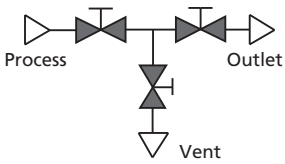
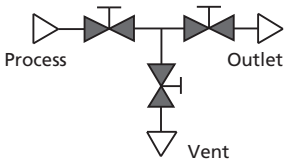
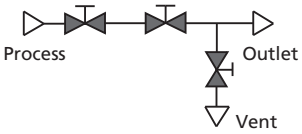
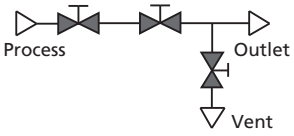
Three-Piece Bolted Flange Double Block and Bleed Valves

DBB□□-BBN-FM16600-V4-F



Root Double Block and Bleed Valves

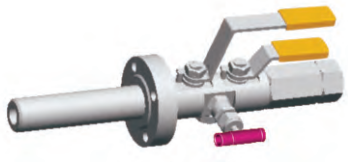
DBB□□-BBN-RV8-FNS8-V8	DBB□□-BBO-RV8-FNS8-V8	DBB□□-OON-RV8-FNS8-V8	DBB□□-NNN-RV8-FNS8-V8
			
			

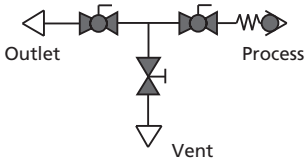
Monoflange Double Block and Bleed Valves

DBB□□-ONN-MM8600-FNS8-V4	DBB□□-NNN-MM8600-FNS8-V4	DBB□□-ONN-MM8600-FNS8-V4-X	DBB□□-NNN-MM8600-FNS8-V4-X
			
DBB□□-ONN-BWE8-MM8600-V4	DBB□□-NNN-BWE8-MM8600-V4	DBB□□-ONN-BWE8-MM8600-V4-X	DBB□□-NNN-BWE8-MM8600-V4-X
			
			

Injection Double Block and Bleed Valves

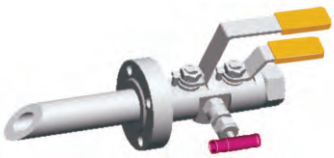
DBB□□-BBN-FNS8-FM8150-IN

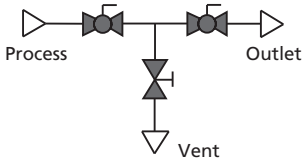




Sampling Double Block and Bleed Valves

DBB□□-BBN-FM8150-FNS8-SA





Ordering Number Description

DBBSS - 1BBO1 - FM16300 - FNS8 - 2V8 - HGSF2 - IE

Series	Body Material
BB	Single Block and Bleed
DB	Double Block
SB	Single Block
DBB	Double Block and Bleed

Body Material
SS 316 SS
6L 316L SS
D5 Duplex 2205
CS Carbon Steel

Options of Needle Valve Orifice
No Needle Valves Configuration
0.16" (4 mm)
1 0.25" (6.4 mm)
2 0.38" (9.5 mm)

Configuration	Primary Isolate	Secondary Isolate	Bleed
NNN	Needle	Needle	Needle
BNN	Ball	Needle	Needle
BBN	Ball	Ball	Needle
BBB	Ball	Ball	Ball
OON	OS&Y	OS&Y	Needle
BBO	Ball	Ball	OS&Y
ONN	OS&Y	Needle	Needle
BB	Ball	——	Ball
NN	Needle	——	Needle
	Needle	Needle	——
BN	Ball	——	Needle
BO	Ball	——	OS&Y
ON	OS&Y	——	Needle
	OS&Y	Needle	——
O	OS&Y	——	——
N	Needle	——	——

Options of Ball Valve Orifice
No Ball Valves Configuration
3/8" (9.5 mm)
1 1/2" (14 mm)
2 3/4" (20 mm)
3 1" (25.4 mm)
4 1 1/2" (38.1 mm)
5 2" (50.8 mm)

Inlet Type
FNS Female NPT
NS Male NPT
FRT Female BSPT
RT Male BSPT
ML Metric Tube Fitting
FL Fractional Tube Fitting
FMS Female Metric Thread (for RP)
MS Male Metric Thread (for RG)
UMB Nut+Gasket+Metric Bulge Nipple
FM RF Smooth Flange
FJ RTJ Flange
MM RF Smooth Monoflange
MJ RTJ Monoflange
RV Root Valve Plain End
BWE Butt Welding Branch

Inlet Size
4 1/4"
6 3/8" or 6 mm
8 1/2" or 8 mm
10 10 mm
12 3/4" or 12 mm
14 14 mm
16 1" or 16 mm
20 1 1/4" or M20 x 1.5
24 1 1/2"
32 2"
48 3"

Pressure Ratings

Outlet Type
Same as inlet

Outlet Size

Pressure Ratings
Instrument
Class 2500
10K Class 4500
ASME Flange (Class Series)
150 Class 150
300 Class 300
600 Class 600
900 Class 900
1500 Class 1500
2500 Class 2500
EN Flange (PN Series)
6 PN 6
10 PN 10
16 PN 16
25 PN 25
40 PN 40
63 PN 63
100 PN 100
160 PN 160

Vent Number
One Vent
2 Two Vents

Vent Type and Size
V4 1/4 Female NPT with plug
V8 1/2 Female NPT with plug

Body Style/ Function
Flange or Root pattern
C Compact pattern
L Valves in-line mounted
V Valves vertically mounted
H Valves horizontally mounted
F Three-piece Bolted Joint Body
X Block/Block/Bleed
SA Sampling application
IN Injection application

Packing/ Sealing Material
PTFE
Fire safe
G Graphite

Special Application
No
S NACE MR 0175

Cleaning and Packaging
FC-01
F2 FC-02

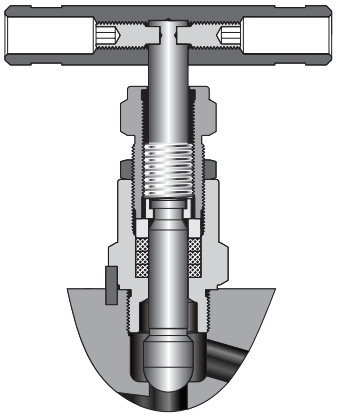
Special Function
No
I Fire safe (it does not apply to the valves consisting of all needle valve)
E Anti-static
IE Fire safe and Anti-static

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

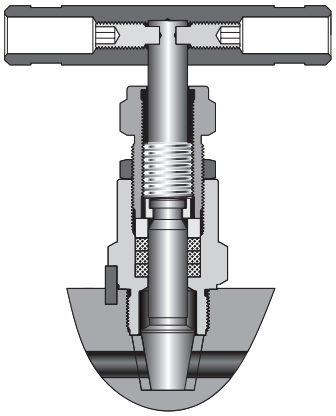
Gauge Valves

◎ Working pressure up to:
Stainless steel: GV, GR up to 6000 psig (414 bar)
GVH up to 10000 psig (690 bar)
◎ GV series and GVH 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)
◎ GR series working temperature:
Acetal seat: -20°F to 250°F (-28°C to 121°C)
PEEK seat: -20°F to 400°F (-28°C to 204°C)
◎ Non-rotating lower stem, ball tip and plug tip designs
◎ 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
◎ Each GV/GR Series gauge valve leak tested with Nitrogen or compressed air at the maximum working pressure, each GVH Series gauge valve leak tested with water at 1.1 times the maximum working pressure

Ball Tip Design Valves (GV, GVH)



Plug Tip Design Valves (GR)



GV□□-NS8-FNS8 GVH□□-NS8-FNS8 GR□□-NS8-FNS8	GV□□-NS8-FNS8-E GVH□□-NS8-FNS8-E GR□□-NS8-FNS8-E	GV□□-NS8-FNS8-C GVH□□ -NS8-FNS8-C GR□□-NS8-FNS8-C
		

Ordering Number Description

GRSS - NS8 - FNS8 - CPW - GR - SF2

Series	Body Material	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Body Style	Seat Material	Tip Material	Packing Material	Handle	Special Application	Cleaning and Packaging
GV, GVH: Ball Tip Design GR: Plug Tip Design	SS: 316 SS 6L: 316L SS S4: 304 SS S1: 321 SS D5: Duplex 2205 M: Alloy 400 INC: Alloy 600 HC: Alloy C-276	FNS: Female NPT NS: Male NPT FRT: Female BSPT RT: Male BSPT FMS: Female ISO (for RP) MS: Male ISO (for RG) FRP: Female BSPP (for RP)	8: 1/2" 12: 3/4" 20: M20 x 1.5	Same as Inlet Specify in the same way as inlet type and size		Standard Type C: Miniature Type E: Extended Type	Same as Body: GV Series 1: Stellite: GV Series Acetal: GR Series P: PEEK: GR Series	Same as Body W: Stellite D5: Duplex 2205 TI: Titanium Gr.4 A20: Alloy 20 INC: Alloy 600 HC: Alloy C-276	PTFE: GV Series G: Graphite: GV Series PTFE: GR Series	Black Aluminum Bar R: Red Aluminum Bar M: Stainless Steel Bar	NO S: NACE MR0175	FC-01 F2: FC-02

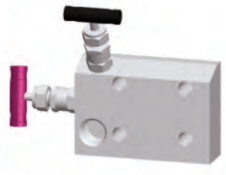
Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

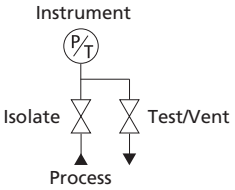
Instrumentation Manifolds

◎ Working pressure up to:
Stainless steel: 2D, 2R, 3D, 3R, 5D, 5R up to 6000 psig (414 bar)
2DH, 2RH, 3DH, 3RH, 5DH, 5RH up to 10000 psig (690 bar)
Alloy C-276: 2D, 2R, 3D, 3R, 5D, 5R up to 6000 psig (414 bar)
◎ 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)
◎ Orifice: 0.157" (4.0 mm).
◎ Two-piece stem design: thread hardened upper stem and smooth surface hardened lower stem
◎ Upper stem thread lubricant isolated from system media
◎ Linear instead of helical movement of the nonrotating lower stem avoids galling damage to the seat and tip, as well as reduces the total friction area between the packing and the lower stem
◎ Safety back seating seals in fully open position
◎ Steady and durable fastening of the handle by double lock-pins
◎ Each 2D/2R/3D/3R/5D/5R Series manifold leak tested with Nitrogen or compressed air at the maximum working pressure, each 2DH/2RH/3DH/3RH/5DH/5RH Series manifold leak tested with water at 1.1 times the maximum working pressure

Handle colors indicate functions:
Black=Isolate/Block **Red**=Test/Vent **Green**=Equalize

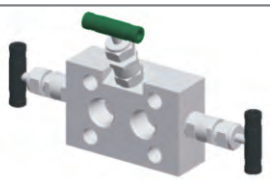
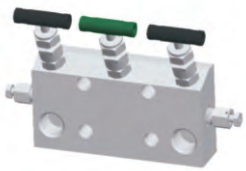
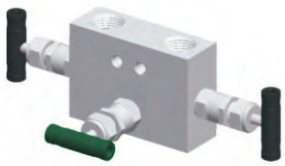
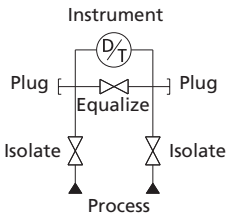
2-Valve Manifolds

2D□□-FNS8-A	2D□□-FNS8-L
	
2R□□-FNS4-A	2R□□-FNS8-L
	

2R□□-FNS8-NS8-H	2R□□-FNS8-V	Flow Diagram
		

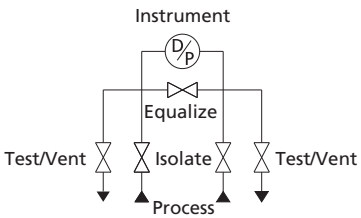
◎ The standard configuration of direct mount manifolds contains PTFE flange seal ring and 7/16 - 20 × 1.75" high tensile bolts.

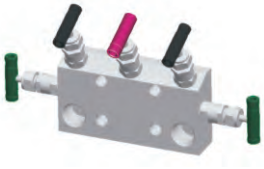
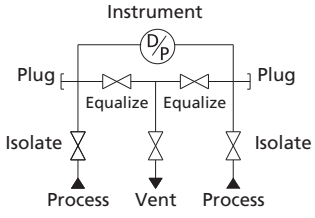
3-Valve Manifolds

3D□□-FNS8-A	3D□□-FNS8-L-T
	
3R□□-FNS8-V	**Flow Diagram**
	

◎ The standard configuration of direct mount manifolds contains PTFE flange seal ring and 7/16 - 20 × 1.75" high tensile bolts.

5-Valve Manifolds

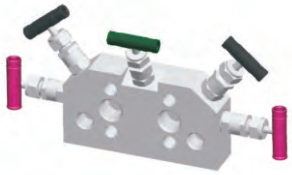
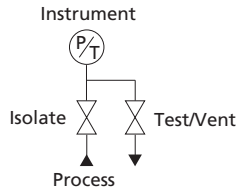
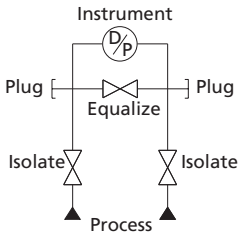
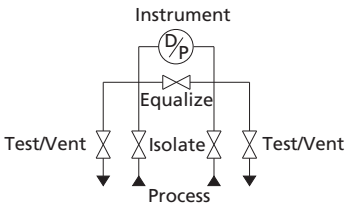
5D□□-FNS8-A	5R□□-FNS8-L	Flow Diagram
		

5D□□-FNS8-AB	5R□□-FNS8-AB	Flow Diagram
		

◎ The standard configuration of direct mount manifolds contains PTFE flange seal ring and 7/16 - 20 × 1.75" high tensile bolts.

Instrumentation Integral Manifolds

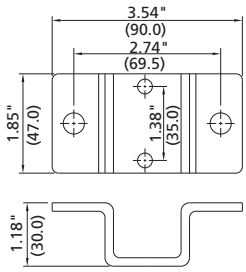
◎ C Integral Manifold is specifically designed for the pressure transmitters of Rosemount ® coplanar™, including Model 3051C, 3051S, 2024 and 3095.

2D□□-FNS8-C	3D□□-FNS8-C	5D□□-FNS8-C
		
		

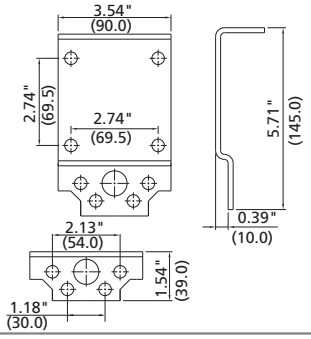
◎ The standard configuration of direct mount manifolds contains 7/16 - 20 × 2" high tensile bolts.

Manifold Mounting Brackets

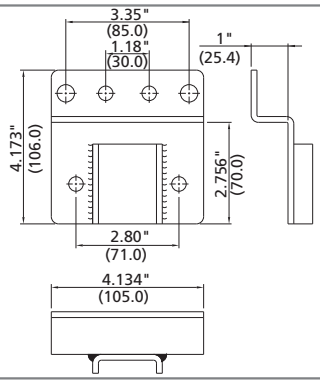
SS-M2P-2BK

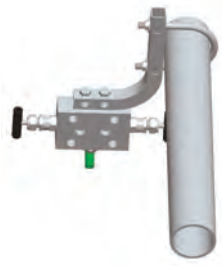


SS-M2P-4BK

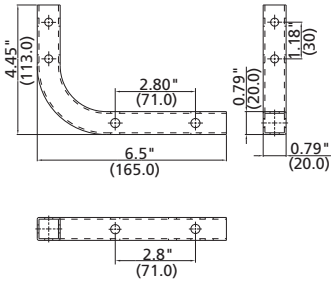


SS-M2P-6BK



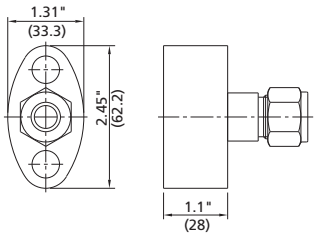


SS-M2P-8BK

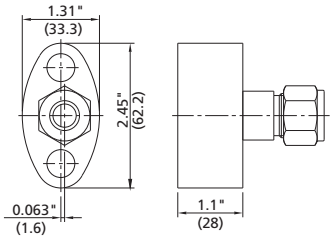


Kidney and Eccentric Flanges

Kidney Flange



Eccentric Flange



Ordering Number Description

3DSS - FNS8 - LG - ET - 1M - SF2

Manifold Series	Mount Type	Body Material	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Body Style	Packing Sealing Material	Test & Vent	Test Ports & Plugs	For direct mount only: Flange Fasteners	For direct mount only: Bolt Material	For direct mount only: Flange Outlet Centerline	For direct mount only: Flange Type Standard	Special Application	Cleaning and Packaging
2 2-valve	D Direct Mount	SS 316 SS	FNS Female NPT	4 1/4"	D type: Flanged	A Angle Pattern	PTFE	Test and vent sharing one port	7/16 - 20 x 1.75"	Zinc Plated Carbon Steel	2.13" (54 mm)	acc. to MSS SP-99	NO	FC-01
3 3-valve	DH Direct Mount	6L 316L SS	FRT Female BSPT	8 1/2" or 8 mm	R type: Same as Inlet	C Integral Coplanar	G Graphite	E Test and vent separated	1 7/16 - 20 x 3"	M 316 SS	56 2.19" (55.6 mm)	FA IEC 61518, Type A	S NACE MR0175	F2 FC-02
5 5-valve	R Remote Mount	S4 304 SS	FMS Female Metric Thread (for RP)	12 3/4" or 12 mm	Specified in the same way as the inlet type and size	L Valves In-Line Mounted			2 M10 x 40 mm	No	57 2.25" (57.2 mm)	FB IEC 61518, Type B		
	RH Remote Mount	S1 321 SS	F Flanged	20 M20 x 1.5		H Valves Horizontally Mounted			3 M12 x 40 mm	T 1/4 Female NPT with Relief Valve				
		D5 Duplex 2205				V Valves Vertically Mounted				P 1/4 Female NPT with Plug				
		M Alloy 400												
		INC Alloy 600												
		HC Alloy C-276												

Notes:

1.To order 5-valve manifolds with double-equalize function, add B to the Body Style of the manifold ordering number. Example: 5DSS-FNS8-AB

2.Plug options are as follow:

1) if option of test and vent sharing one port with plug is needed, add "-P" to the ordering number. Example: 5DSS - FNS8 - AB - P;

2) If option of test and vent separating with a plug to the test port is needed, add "-EP" to the ordering number. Example: 5DSS - FNS8 - AB - EP;

3) If option of test and vent separating with plug for each port is needed, add "-E2P" to the ordering number. Example: 5DSS - FNS8 - AB - E2P.

3. The standard center line distance of direct mounting flange outlet of 3-valve manifold and 5-valve manifold is 2.13" (54 mm).
Center line distance of 2.19" (55.6 mm) is suitable for range 6 and 7, 1151 series transmitter.
Center line distance of 2.25" (57.2 mm) is suitable for range 8, 1151 series transmitter.

4. The standard configuration of direct mounting manifold contains PTFE flange seal ring and 7/16 - 20 X 1.75" high tensile bolts, can be connected with transmitters under main brands, such as EJA, Honeywell, Foxboro 843 d/p, and Rosemount® 151, 2024, 3051H series.

5. 7/16 - 20 x 3" high tensile bolts can be supplied, can be used for Rosemount® 3051C transmitter with process flange and coplanar mounting manifold.

6. Cleaning and Packaging: FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

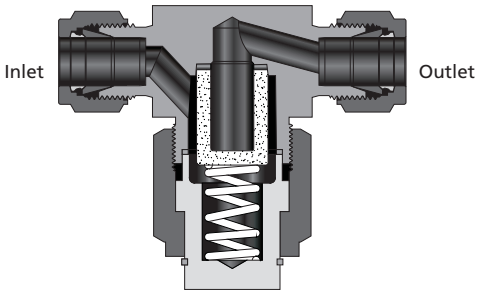
7. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Filters

Tee-type Filters

FT Series

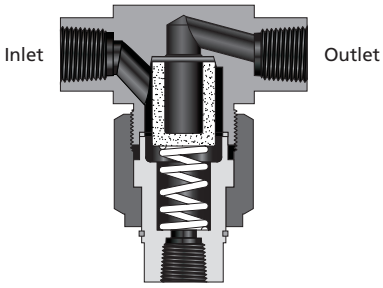
- ◎ Filter element replaceable without removing body from system
- ◎ Union bonnet design
- ◎ Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 80 μm
- ◎ Nominal pore sizes for strainer element: 100, 150, 250 and 450 μm
- ◎ Working pressure up to: 6000 psig (414 bar)
- ◎ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ◎ Body materials: 316 SS, 316L SS, 304 SS, 304L SS, 904L SS and Brass
- ◎ Variety of end connections available



Bypass Filters

FB Series

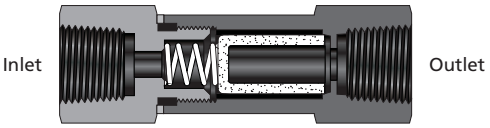
- Bypass port at filter bottom for the ease of sampling or purging
- Union bonnet design
- Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 80 μm
- Nominal pore sizes for strainer element: 100, 150, 250 and 450 μm
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -20 °F to 900°F (-28°C to 482°C)
- Body materials: 316 SS, 316L SS, 304 SS, 304L SS, 904L SS and Brass
- Variety of end connections available



In-line Filters

FI Series

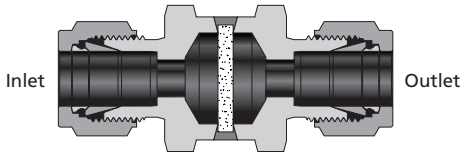
- Compact and space-saving design
- Nominal pore sizes for sintered element: 0.5, 2, 7, 15, 40, 60 and 80 μm
- Nominal pore sizes for strainer element: 100, 150, 250 and 450 μm
- Working pressure up to: 3000 psig (207 bar)
- Working temperature: -20 °F to 900°F (-28°C to 482°C)
- Body materials: 316 SS, 316L SS, 304 SS, 304L SS, 321 SS, 904L SS and Brass
- Variety of end connections available



All-welded In-line Filters

FW Series

- Large filtration area and high flow coefficient
- All-welded construction for elimination of leakage
- Easy cleaning of filters by backflushing
- Full-penetration weld between body and filter element
- Nominal pore sizes for sintered element: 0.5 μm
- Nominal pore sizes for strainer element: 2, 7, 15 and 40 μm
- Working pressure up to: 6000 psig (414 bar)
- Working temperature: -20 °F to 900°F (-28°C to 482°C)
- Body materials: 316 SS, 316L SS, 304 SS, 304L SS and 904L SS
- Variety of end connections available



Filters Ordering Number Description

FBSS - FI8 - MI10 - S - P150 - FL4SF2

Series
FT
FB
FI
FW

Body Material	
SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
S1	321 SS
B	Brass
904L	904L SS

Inlet Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RP)
MS	Male Metric Thread (for RG)
FRP	Female BSPP (for RP)
BP	Male BSPP (for RG)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
TS	Fractional Tube Socket Weld
TB	Fractional Tube Butt Weld
FR	Male FR Fitting

Inlet Size	
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm

Outlet Type / Outlet Size	
	Same as Inlet
Specified in the same way as the inlet type and size	

Element Type	
	Sintered
S	Strainer

Gasket Material	
	Silver-plated 316 SS for FT, FB, FI
P	PTFE-plated 316 SS for FT, FB, FI
A	Aluminum for FT, FB, FI (the only option for brass body)
W	No-plated 316 SS for FT, FB, FI

Element Nominal Pore Size	
05	0.5 μm (Sintered)
2	2 μm
7	7 μm
15	15 μm
40	40 μm
60	60 μm
80	80 μm
100	100 μm (Strainer)
150	150 μm (Strainer)
250	250 μm (Strainer)
450	450 μm (Strainer)
EL	Without filter element

Bypass Port (for FB Series Only)	
	1/8 Female NPT
FL2	1/8" Fractional Tube Fitting
FL4	1/4" Fractional Tube Fitting
TS4	1/4" Tube Socket Weld
FL6	3/8" Fractional Tube Fitting
FL8	1/2" Fractional Tube Fitting

Special Application	
	NO
S	NACE MR0175

Cleaning and Packaging	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Hoses and Connectors

Metal Flexible Hose Assemblies

MH, MM Series

- Core tube and fitting material: 316 stainless steel
- Overbraid material: 304 stainless steel
- Working pressure up to: 3100 psig (213 bar)
- Hose sizes: 1/4" to 2"
- Working temperature: -325°F to 800°F (-200°C to 426°C)
- End connections:
  1/4 to 2 thread
  1/4" to 2" and 6 mm to 50 mm tube fitting
- Welded fitting-to-hose construction to ensure reliable seal
- Standard and custom-length available

PTFE-lined, Stainless Steel Braided Hose Assemblies

PS 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 sizes: 1/4" to 1"
- Working temperature: -65°F to 400°F (-53°C to 204°C)
- End connections:
  1/8 to 1 thread
  1/8" to 1" and 6 mm to 22 mm tube fitting
- Standard and custom-length available

Thermoplastic Hose Assemblies

TH Series

- Cover: polyurethane for resistance to oil, weather and abrasion
- Reinforcement: double-braid high-strength synthetic fiber
- Core tube: nylon
- Working pressure up to: 5000 psig (345 bar)
- Hose sizes: 3/16" to 1"
- Working temperature: -40°F to 200°F (-40°C to 93°C)
- End connections:
  1/4 to 1 thread
  1/4" to 1" and 6 mm to 22 mm tube fitting
- End connection materials: stainless steel, brass, and carbon steel
- Standard and custom-length available

Multipurpose Push-on Hose Assemblies

MP Series

- Cover: weather-, abrasion-, and oil-resistant synthetic rubber
- Reinforcement: single-braid high-strength synthetic fiber woven for maximum strength and end connection retention
- Core tube: highly oil-resistant rubber
- Hose colors: blue, black, green, gray, red and yellow
- Working pressure up to: 300 psig (20.7 bar)
- Hose sizes: 1/4" to 3/4"
- Working temperature: -40°F to 190°F (-40°C to 88°C)
- End connections:
  1/4 to 3/4 thread
  1/4" to 3/4" and 6 mm to 18 mm tube fitting
- End connection materials: stainless steel and brass
- End connections reusable
- Standard and custom-length assemblies

Hose Ordering Number Description

MP - 4 - F36 - BK

Hose Series	Nominal Hose Size	Overall Length	Hose Color
MP	4 1/4" (6.4mm)	FXX XX in.	Blue
	6 3/8" (9.5 mm)	MXX XX mm	BK Black
	8 1/2" (12.7 mm)		RD Red
	12 3/4" (19.0 mm)		GR Green
			GY Gray
			YW Yellow

Example: **MP-8-F60-BK**
MP: Hose series
8: Hose size is 1/2"
F60: Overall length is 60"
BK: Hose color is black

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Ordering Number Description

SS - MH4 - ML10 - NS4 - F36 - BK - SPF2

End Connection Material	
SS	316 SS
S1	321 SS
S4	304 SS
A20	Alloy 20
INC	Alloy 600
HC	Alloy C-276
TI	Titanium

Hose Series	
MH	
MM	
PS	
MP	
TH	

Hose ID	
4	1/4" (6.4 mm)
6	3/8" (9.5 mm)
8	1/2" (12.7 mm)
12	3/4" (19.1 mm)
16	1" (25.4 mm)

End Connection 1 Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RG gasket)
MS	Male Metric Thread (for RG gasket)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
FT	Fractional Tube Adapter
MT	Metric Tube Adapter
AN	Male JIC 37° Flare
SAN	Female JIC 37° Flare Swivel
SMS	Female Metric Thread Swivel (for MRG)
SNS	Male NPT Swivel
SRT	Male BSPT Swivel
SRG	Female BSPP Swivel (for RG)

End Connection 1 Size	
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	5/8" or 10 mm
12	3/4" or 12 mm
14	M14 x 1.5
16	1" or 16 mm
18	M18 x 1.5
20	M20 x 1.5

End Connection 2 Type and Size	
	Same as End 1
Specify in the same way as End Connection 1 Type and Size	

Overall Length	
FXX	XX in.
MXX	XX mm

Hose Color Only MP Series	
	Blue
BK	Black
RD	Red
GR	Green
GY	Gray
YW	Yellow

Option Only PS Series	
SP	302 Stainless Steel Spring Guard

Cleaning and Packaging Only PS Series	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Options and accessories do not change hose technical data. Hose operating parameters must be considered when selecting a cover.
2. 302 stainless steel spring guard covers entire hose to protect against kinking and abrasion.
3. To order a hose assembly with special cleaning and packaging (FC-02), following ASTM G93 level C, add -F2 as a suffix to the ordering number.
Example: SS-PS4-FT4-F24-F2.

End 1 and end 2 follow the orders and regulations below:
1. Metric Double Ferrules - Fractional Double Ferrules - Metric Tube Adapters - Fractional Tube Adapters - NPT Threads - BSPT Threads - BSPP Threads - SAE/MS Parallel Threads - 37° Flare - Others
2. Put the sizes from the biggest down to the smallest if they are of the same type.
3. Describe end 1 if they are of the same type and size.
4. Put the female before male.

Hose Connectors, Adapters, and Sleeves

HC Series

- For connecting with soft plastic or rubber tubing
- Working pressure and temperature range is higher than the corresponding connecting hose
- Stainless steel or brass material
- Shank design for secure holding of tubing inside diameter
- Hose connectors reusable

Ordering Number Description

SS - HC - F4 - NS4

End Connection Material		Series	End 1 Connection Type		End 1 Connection Size		End 2 Connection Type		End 2 Connection Size	
SS	316 SS	HC	F	Fractional	4	1/4" or 4 mm	ML	Metric Tube Fitting	4	1/4"
S4	304 SS		M	Metric	6	3/8" or 6 mm	FL	Fractional Tube Fitting	6	3/8" or 6 mm
A20	Alloy 20				8	1/2" or 8 mm	MT	Metric Tube Adapter	8	1/2" or 8 mm
INC	Alloy 600				10	5/8" or 10 mm	FT	Fractional Tube Adapter	10	5/8" or 10 mm
HC	Alloy C-276				12	3/4" or 12 mm	FNS	Female NPT	12	3/4" or 12 mm
TI	Titanium				16	1" or 16 mm	NS	Male NPT	16	1" or 16 mm
AL	Aluminum						FRT	Female BSPT	18	M18 x 1.5
904L	904L SS						RT	Male BSPT	20	M20 x 1.5
							FMS	Female Metric Thread (for RG gasket)		
							MS	Male Metric Thread (for RG gasket)		

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Quick-connects

QC Series

- Working pressure up to: 3000 psig (207 bar)
- Working temperature:
  -10°F to 400°F (-23°C to 204°C) with Fluorocarbon FKM seal
  -10°F to 250°F (-23°C to 121°C) with Buna N seal
- Materials: stainless steel or brass
- 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 connectors
- 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
- Simple push-to-connect coupling for quick and easy operation
- Sturdy locking mechanism with large contact area to ensure reliable stem retainment

Ordering Number Description

SS - QC4 - FL4 - S - K1 - B - CE

Material		Series		End Connection Type		End Connection Size		Stem or Body		Key Number and Color		O-ring Material		Special Application	
SS	316 SS	QC4	1/4" (6.4 mm)	FNS	Female NPT	4	1/4"	S	Stem without valve remains open when uncoupled		Without key		Fluorocarbon FKM		NO
B	Brass	QC6	3/8" (9.5 mm)	NS	Male NPT	6	3/8" or 6 mm	D	Stem with valve shuts off when uncoupled	K1	Black	B	Buna N	CE	NACE MR 0175
		QC8	1/2" (12.7 mm)	FRT	Female BSPT	8	1/2" or 8 mm	B	Body with valve shuts off when uncoupled	K2	Orange	E	EPDM		
				RT	Male BSPT	10	5/8" or 10 mm	F	Full-flow body	K3	Green	N	Neoprene		
				FMS	Female Metric Thread (for RG gasket)	12	3/4" or 12 mm			K4	Yellow	Z	Kalrez		
				MS	Male Metric Thread (for RG gasket)	14	M14 x 1.5			K5	Blue				
				FL	Fractional Tube Fitting	16	1" or 16 mm			K6	White				
				ML	Metric Tube Fitting	18	M18 x 1.5			K7	Purple				
				FT	Fractional Tube Adapter	20	M20 x 1.5			K8	Brown				
				MT	Metric Tube Adapter										
				AN	Male JIC 37° Flare										

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

QF Series

- Working pressure up to: 6000 psig (414 bar)
- Working temperature:
  -10°F to 400°F (-23°C to 204°C) with Fluorocarbon FKM seal
  -10°F to 250°F (-23°C to 121°C) with Buna N seal
- Materials: stainless steel, carbon steel and brass
- End connections: 1/4 to 1 NPT, 1/4" to 1" and 6 mm to 25 mm tube fitting
- Full flow
- Quick, easy operation
- Smooth, open bores without valve on either end to minimize pressure drop and allow easy cleaning

Ordering Number Description

SS - QF4 - FL4 - S - B - CE

Material	
SS	316SS
B	Brass

Series	
QF4	1/4" (6.4 mm)
QF8	1/2" (12.7 mm)
QF12	3/4" (19.0 mm)
QF16	1" (25.4 mm)

End Connection Type	
FNS	Female NPT
NS	Male NPT
FRT	Female BSPT
RT	Male BSPT
FMS	Female Metric Thread (for RG gasket)
MS	Male Metric Thread (for RG gasket)
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
FT	Fractional Tube Adapter
MT	Metric Tube Adapter
AN	Male JIC 37° Flare

End Connection Size	
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	5/8" or 10 mm
12	3/4" or 12 mm
14	M14 x 1.5
16	1" or 16 mm
18	M18 x 1.5
20	M20 x 1.5

Stem or Body	
S	Stem
B	Body

O-ring Material	
	Fluorocarbon FKM
B	Buna N
E	EPDM
N	Neoprene
Z	Kalrez

Special Application	
	NO
CE	NACE MR 0175

Note: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. Dimensions are for reference only and are subject to change.

QV Series

- Working pressure up to: 2000 psig (137 bar)
- Working temperature:
  -10°F to 400°F (-23°C to 204°C) with Fluorocarbon FKM seal
  -10°F to 250°F (-23°C to 121°C) with Buna N seal
- Materials: stainless steel, carbon steel and brass
- End connections:
  1/8 to 1 NPT and BSPT
- Double-end shutoff available
- Durable ball-locking mechanism assures reliable connection
- Simple push-to-connect coupling for quick and easy operation

Ordering Number Description

SS - QV8 - FNS8 - D - B - CE

Material		Series		End Connection Type		End Connection Size		Stem or Body		O-ring Material		Special Application	
SS	316SS	QV2	1/8" (3.2 mm)	FNS	Female NPT	2	1/8"	D	Stem with valve shuts off when uncoupled		Fluorocarbon FKM		NO
B	Brass	QV4	1/4" (6.4 mm)	FRT	Female BSPT	4	1/4"	B	Body with valve shuts off when uncoupled	B	Buna N	CE	NACE MR 0175
		QV8	1/2" (12.7 mm)			6	3/8"			E	EPDM		
		QV12	3/4" (19.0 mm)			8	1/2"			N	Neoprene		
		QV16	1" (25.4 mm)			12	3/4"			Z	Kalrez		
						16	1"						

Note: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. Dimensions are for reference only and are subject to change.

QM Series

- Working pressure up to: 4000 psig (276 bar)
- Working temperature:
  -10°F to 400°F (-23°C to 204°C) with Fluorocarbon FKM seal
  -10°F to 250°F (-23°C to 121°C) with Buna N seal
- Materials: stainless steel or brass
- Single-end shutoff, double-end shutoff and full-flow available
- Quick, easy operation

Ordering Number Description

SS - QM - FL2 - S - B - CE

Material		Series	End Connection Type		End Connection Size		Stem or Body		O-ring Material		Special Application	
SS	316 SS	QM	FNS	Female NPT	1	1/16"	S	Stem without valve remains open when uncoupled		Fluorocarbon FKM		NO
B	Brass		NS	Male NPT	2	1/8"	D	Stem with valve shuts off when uncoupled	B	Buna N	CE	NACE MR 0175
			FRT	Female BSPT			B	Body with valve shuts off when uncoupled	E	EPDM		
			RT	Male BSPT			F	Full-flow body	N	Neoprene		
			FL	Fractional Tube Fitting					Z	Kalrez		
			ML	Metric Tube fitting								

Note: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. Dimensions are for reference only and are subject to change.

◎ Working pressure up to: 4000 psig (276 bar)

QTM Series

◎ Working pressure up to: 4500 psig (310 bar)
◎ Special design to reduce air inclusion and spillage
◎ PTFE sealing to enable applications for diverse media types
◎ Push-to-connect design to enable quick and easy operation
◎ Locking mechanism with large contact area to ensure reliable stem retainment

Ordering Number Description

SS - QTM4 - Fl6 - S

Material		Series	End Connection Type		End Connection Size		Stem or Body	
SS	316 SS	QTM2	FNS	Female NPT	4	1/4"	S	Stem without valve remains open when uncoupled
M	Alloy 400	QTM4	NS	Male NPT	6	3/8" or 6 mm	D	Stem with valve shuts off when uncoupled
		QTM8	FRT	Female BSPT	8	1/2"or 8 mm	B	Body with valve shuts off when uncoupled
			RT	Male BSPT	10	5/8"or 10 mm		
			FL	Fractional Tube Fitting	12	3/4" or 12 mm		
			ML	Metric Tube fitting	16	1"or 16 mm		
			AN	Male JIC 37° Flare				

Note: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. Dimensions are for reference only and are subject to change.

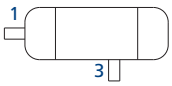
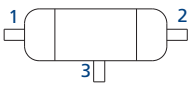
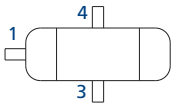
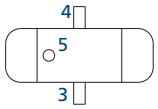
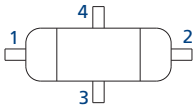
Condensate Pots and Vessels

Condensate Pots

CP Series

- Working pressure up to: Class 2500 as per ASME B16.34
- Socket weld connection as per ANSI B16.11
- Butt welding ends as per ANSI B16.9
- NPT as per ANSI B1.20.1 taper pipe thread
- All chambers are factory tested fully prior to shipment
- Standard material of construction: 316 SS, 304 SS, carbon steel
- Pipe schedule No.: 40, 80, 160, XXS seamless steel
- Variety of end connections available

Configurations

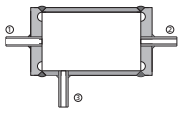
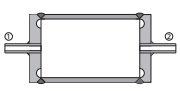
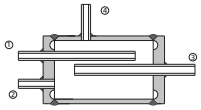
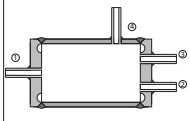
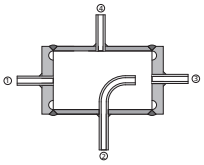
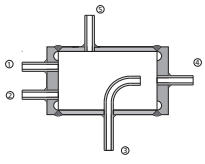
2A	2B	3A	3B	3C	4A
					

Vessels

SV Series

- 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 B1.20.1 taper pipe thread
- All vessels are factory tested fully prior to shipment
- Standard material of construction: 316 SS, 304 SS, Carbon steel
- Pipe schedule No.: 40, 80, 160, XXS seamless steel
- Variety of end connections available

Configurations

CV1	SV1	IV1	IV2	IV3	IV4
					

Ordering Number Description

SS - SV - 36 - 4A - FNS8 - MTS14 - MTB12 - SF2

Body Material	
SS	316 SS
6L	316L SS
S4	304 SS
4L	304L SS
S1	321 SS
CS	Carbon Steel

Series	
CP	
SV	

Body O.D.	
3	NPS 3
4	NPS 4

ANSI Class	
3	Class 300
6	Class 600
9	Class 900
15	Class 1500
25	Class 2500

Configuration
CP Series
2A
2B
3A
3B
3C
4A
SV Series
CV1
SV1
IV1
IV2
IV3
IV4

Connection 1 Type	
FNS	Female NPT
FRT	Female BSPT
TS	Fractional Tube Socket Weld
MTS	Metric Tube Socket Weld
TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld
PS	Pipe Socket Weld
PB	Pipe Butt Weld
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
FT	Fractional Tube Fitting
MT	Metric Tube Fitting
RB	Bleed Valve (normative)

Connection 1 Size	
2	1/8"
4	1/4"
8	1/2 " or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm
16	1 " or 16 mm

Connection 2 to 6 Type / Connection 2 to 6 Size	
	Same as connection 1
Specified in the same way as the connection 1 type and size	

Special Application	
	NO
S	NACE MR0175

Cleaning and Packaging	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

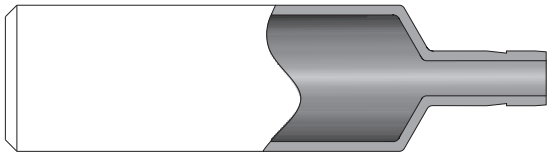
Sample Cylinders

SC Series

- Capacities from 40 cm^3 to 3785 cm^3 (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)
- DOT and non-DOT cylinders available
- Accessories, such as valves, relief devices, outage tubes, carrying handles, caps and plugs available

MC Series

- Working pressure up to: 1000 psig (69.0 bar)
- Capacity: 10, 25 and 50 cm^3
- Single-ended and double-ended designs
- Smooth internal neck transition for easy cleaning
- 316 SS construction to ensure high corrosion resistance
- Full-penetration butt weld constructions



Ordering Number Description

6L - MC - DFT6 - 10 - F2

Material		Series	Type		End Connection		Internal Volume		Cleaning and Packaging	
6L	316L SS	MC	S	Single-ended	FT6	3/8 tube fittings (applicable to butt weld for 3/8" OD, or tube socket weld for 1/4" ID)	10	10 cm^3		FC-01
4L	304L SS		D	Double-ended			25	25 cm^3	F2	FC-02
							50	50 cm^3		

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Ordering Number Description

6L - SC18 - DN4 - T - EC - H2 - OT4087 - 300 - DOT - F2

Material		Series	Working Pressure		End Type		End Connection		Internal Cylinder Surface		Cap & Plug		Carrying Handle		Outage Tube Code		Internal Volume			Approval		Cleaning and Packaging	
6L	316L SS	SC	5	500 Psig	S	Single -ended	N2	1/8 Female NPT		No Special Treatment		NO		NO		No	150	150 cm^3			No		FC-01
4L	304L SS		18	1800 Psig	D	Double -ended	N4	1/4 Female NPT	T	PTFE Coating	EC	End Cap	H2	Cylinder OD 1.9" to 3.5"	OT4087	Outage Tube OD 1/4" Length 0.87"	300	300 cm^3		DOT	DOT Approval	F2	FC-02
M	Alloy 400		50	5000 Psig			N8	1/2 Female NPT	E	Electropolishing			H4	Cylinder OD 1.9" and 4"			500	500 cm^3					
																	40	40 cm^3	For Double -ended Only				
																	50	50 cm^3					
																	75	75 cm^3					
																	290	290 cm^3					
																	400	400 cm^3					
																	1000	1000 cm^3					
																	2250	2250 cm^3					
																	3785	3785 cm^3					

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Tubing Tools

Hand Tube Benders

HTB Series

- Can bend stainless steel or copper tubing, the outside diameter ranges from 1/4" to 1/2" and 6 mm to 12 mm
- Roll dies reduce bending force and tube ovality, as compared to conventional slide block design
- 1° to 180° bending range

Ordering Number	Tube O.D.	Bend Radius
HTB-4S	1/4"	0.56"
HTB-4	1/4"	0.75"
HTB-5	5/16"	0.94"
HTB-6	3/8"	
HTB-8	1/2"	1.5"
HTB-6M	6 mm	15 mm
HTB-8M	8 mm	24 mm
HTB-10M	10 mm	
HTB-12M	12 mm	38 mm
HTB-14M-L	14 mm	56 mm
HTB-16M-L	5/8", 16 mm	

The hand tube bender cannot be used for SAF 2507 tubing over 1/4" or for medium-pressure tubing.

Tube Cutters

Ordering Number: FTC-03, FTC-04, FTC-05

- For cutting stainless steel, copper, and aluminum tubing
- For cutting 1/8" to 2 5/8" and 3 mm to 65 mm outside diameter tubing

Tube Deburring Tools

Ordering Number: TDT-01, TDT-03, TDT-05

- For deburring tubing made from stainless steel, carbon steel, aluminium, and copper materials
- For deburring 1/8" to 1 1/2" and 3 mm to 38 mm outside diameter tubing

Hydraulic Presetting Tools

Ordering Numbers: HPT-03 (for 1/2" to 1"and 12 mm to 25 mm tubing)
HPT-05 (for 1 1/4" to 2" and 28 mm to 50 mm tubing)

- For installation of 1/2" to 2" and 12 mm to 50 mm tube fittings
- Used to install carbon steel, stainless steel, and alloy steel tube fittings
- Manually operated hydraulic pump, without requirement for power or compressed air
- Flexible hose connection between the pump and jig to assure easy and comfortable operation
- Sturdy plastic package for easy carrying
- Overall dimensions (without handle) of 12.6 in. x 9.8 in. x 5.9 in.

Manual Presetting Tools

MPT Series

For tube fitting installations in close quarters, the presetting tool can make installation easier when paired with the table vice.

◎ For 1/4" to 1" and 6 mm to 25 mm tube fittings

Gap Inspection Gauges

GIG Series

During initial installation of tube fittings, installer or inspector can use gap inspection gauge to check whether a fitting has been sufficiently tightened and eliminate the latent danger of leakage for the system.

◎ For all metal fittings, sizes from 1/16" to 1" and 2 mm to 25 mm

Individual Sizes

Multiple Sizes

Universal Adapters Cases

◎ Packaged in a toolkit

◎ Can be customized

Ordering Numbers:

ZR45K-65P: 65 standard pieces inside

ZR25K-30P: 30 standard pieces inside

Other Elements

Stainless Steel Seamless Tubing

Material Standards

Grade	UNS Designation	ASTM
316/316L	S31600/S31603	A269
304/304L	S31400/S31403	
321	S32100	

Example:
Fractional: 6L-ST8-049-12-MP-A269
Metric: 6L-ST12M-1.0-2M-MP-A269

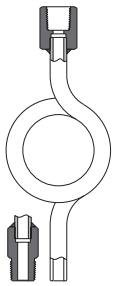
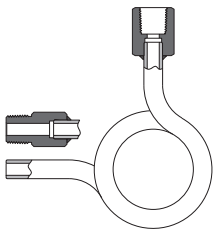
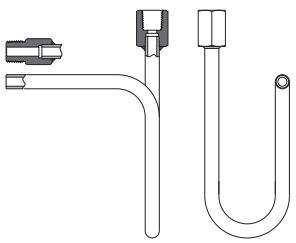
Gaskets and O-rings

Configuration	Gasket Type	Example
	RS Gasket	CSB-RS-8
	RP Gasket	CU-RP-6
	RG Gasket	CU-RG-4

Configuration	O-ring Type	Example
	70 durometer NBR	BN7-116
	90 durometer FKM	VI9-912

Syphons

- Working pressures up to: 6000 psig (414 bar)
- Working temperatures up to: 850°F (454°C)
- 316 SS, 304 SS materials are available

Configuration	Type	Example
	WS Series	SS-WS-FNS8-MTB14
	LWS Series	S4-LWS-FNS8-MTB14
	UWS Series	S1-UWS-FNS8-MTB14

Pressure Gauges

All Stainless Steel Pressure Gauges

GA Series

- 63 mm and 100 mm dial sizes available
- Pressure measurement up to: 15,000 psig
- Lower mount, lower-back mount and center-back mount configurations available
- Liquid-filled configuration available

Stainless Steel Safety Gauges

GB Series

- 63 mm and 100 mm dial sizes available
- Pressure measurement up to: 15,000 psig
- Lower mount and Lower-back mount configurations available
- Liquid-filled configuration available

Purity Gas Pressure Gauges

GC Series

- 50 mm dial size available
- Pressure measurement up to: 6,000 psig
- Special cleaning with degreasing and deoiling treatment
- Lower mount and center-back mount available

Dial Range Designators

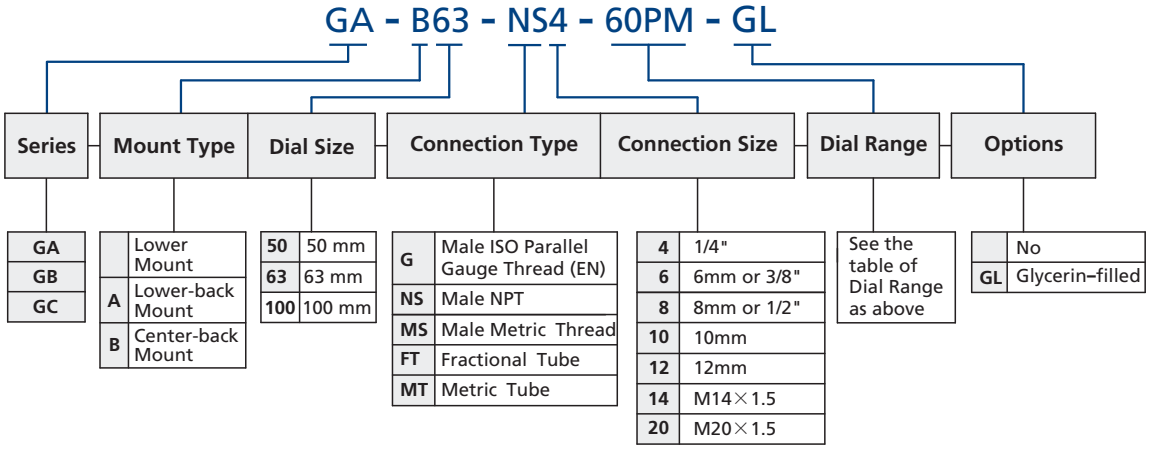
Min. Scale	Max. Scale			Designator for Dial		Dial Size (mm)		
	psi (primary scale)	Mpa (secondary scale)	Bar (secondary scale)	psi (primary scale) Mpa (secondary scale)	psi (primary scale) Bar (secondary scale)	50	63	100
Vacuum −30 in. Hg	0	0	0	V0PM	V0PB	O	O	O
	15	0.1	1	V15PM	V15PB	O	O	O
	30	0.2	2	V30PM	V30PB	O	O	O
	60	0.4	4	V60PM	V60PB	O	O	O
	100	0.7	7	V100PM	V100PB	O	O	O
	160	1.0	10	V160PM	V160PB	O	O	O
	200	1.3	13	V200PM	V200PB	O	O	O
0	15	0.1	1	15PM	15PB	O	O	O
	30	0.2	2	30PM	30PB	O	O	O
	60	0.4	4	60PM	60PB	O	O	O
	100	0.7	7	100PM	100PB	O	O	O
	160	1.0	10	160PM	160PB	O	O	O
	200	1.3	13	200PM	200PB	O	O	O
	300	2	20	300PM	300PB	O	O	O
	400	2.5	25	400PM	400PB	O	O	O
	600	4	40	600PM	600PB	O	O	O
	800	5	50	800PM	800PB	O	O	O
	1000	7	70	1000PM	1000PB	O	O	O
	1500	10	100	1500PM	1500PB	O	O	O
	2000	13	130	2000PM	2000PB	O	O	O
	3000	20	200	3000PM	3000PB	O	O	O
	4000	25	250	4000PM	4000PB	O	O	O
	5000	35	350	5000PM	5000PB	O	O	O
	6000	40	400	6000PM	6000PB	O	O	O
	8000	55	550	8000PM	8000PB	X	O	O
	10000	70	700	10000PM	10000PB	X	O	O
	15000	100	1000	15000PM	15000PB	X	O	O

O: available X: unavailable

Notes:

1. The selected dial range should be approximately two times the system working pressure, and the system working pressure should be 25%~75% of the dial range.
2. Maximum working pressure is restricted by the end connection.
3. Not all the dial ranges and end connections are available for all configurations.
4. Primary scale should be taken as a priority than the secondary scale (reference only). Example: If the scale range can reach up to 200 psig, the maximum value for primary scale (psig) is 200, while the maximum value for secondary scale (MPa) shall be 1.3 or 1.4.

Ordering Number Description



Note: The "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. If there is any questions, please contact FITOK Group or our authorized distributors.

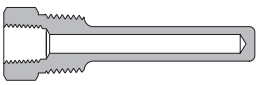
Thermowells and Bosses

Thermowells

- FITOK thermowells provide reliable heat-transmission performance under high temperature, high pressure, and corrosive conditions
- Rugged mechanical construction ensures resistance to distortion under sharp temperature fluctuation conditions
- Straight, stepped, and tapered shank designs are available
- Standard instrument connection is 1/2" NPT; other connections are available on request
- Materials: 316 SS, 304 SS, 321 SS, F91, F92, 316H SS, carbon steel, brass, titanium, alloy C-276 and alloy 400

TW Series

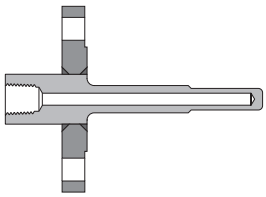
- Process connections: 1/2" to 1" NPT; other connections available on request



Example: SS-TW-FNS8-NS12-ST12-4-4

TF Series

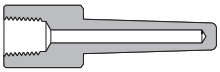
- Process connection: flange complying with ANSI B16.5
  Flange sizes: 1" to 2"
  Flange ratings: class 150 to 2500
  Flange types: raised face and flat face
- Welded flange-to-body construction



Example: SS-TF-FNS8-RF16150-SP12-4-4.5

TS Series

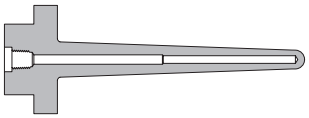
- Process connection: socket weld



Example: SS-TS-FNS8-TP12-4-2.5

TJ Series

- Process connection: flange
- Flange complying with ANSI B16.5



Example: SS-TJ-FNS8-LJ24300-TP-4-11.5

Ordering Number Description

SS - TW - FNS8 - RF12150 - ST10 - 6 - 4.5 - SF2

Material	
SS	316 SS
S1	321 SS
S4	304 SS
91	F91
92	F92
6H	316H SS
B	Brass
CS	Carbon Steel
TI	Titanium
HC	Alloy C-276
M	Alloy 400/ R-405
904L	904L SS

Series	
TW	Thread Thermowells
TF	Flange Thermowells
TS	Socket Weld Thermowells
TJ	Wafer Flanged Thermowells

Instrument Connection Type	
FNS	Female NPT
FRT	Female BSPT

Instrument Connection Size	
8	1/2

Process Connection Type	
NS	Male NPT
RT	Male BSP Tapered
RF	Raised Face Flange
FF	Flat Face Flange
RJ	Ring Type Joint Flange
LJ	Wafer Type Joint Flange

Process Connection Size	
8	1/2
12	3/4
16	1
20	1 1/4
24	1 1/2
32	2

ANSI Class	
150	Class 150
300	Class 300
600	Class 600
900	Class 900
1500	Class 1500
2500	Class 2500

Shank Style	
ST	Straight
SP	Stepped
TP	Tapered

Shank Diameter (ST&SP) and TS Series Tapered Root Diameter	
8	0.5"
10	0.625"
12	0.75"
14	0.875"
16	1.06"
20	1.25"
24	1.5"

Bore Diameter	
4	0.26"
5	0.335"
6	0.385"
7	0.437"
8	0.515"
10	0.656"

Insertion Length	
2.5	2.5"
4	4"
4.5	4.5"
7	7"
7.5	7.5"
10	10"
10.5	10.5"
13	13"
13.5	13.5"
16	16"
16.5	16.5"
22	22"

Special Application	
	NO
S	NACE MR0175

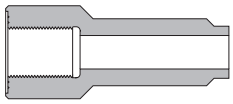
Cleaning and Packaging	
	FC-01
F2	FC-02

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Bosses

BS Series

- Variety of process connection types and sizes available on request
- Working pressure up to: 1500 psig (104 bar)
- Instrument connections: M12 x 1.5 to M33 x 2.0, and 1/2 to 1 thread
- Materials: 316 SS, 304 SS, 321 SS, carbon steel, brass, titanium, alloy C-276, and alloy 400/R-405



Example: SS-BS-FMS27-17-40-120

Ordering Number Description

SS - BS - FNS12 - 7 - 27 - 60 - SF2

Material	Series	Instrument Connection Type	Instrument Connection Size	Bore Diameter	Wrench Allowance	Overall Length	Special Application	Cleaning and Packaging
SS 316 SS	BS	FNS Female NPT	8 1/2"	7 7 mm	20 20 mm	60 60 mm	NO	FC-01
S1 321 SS		FMS Female Metric thread	12 12 mm or 3/4"	9 9 mm	27 27 mm	80 80 mm	S NACE MR0175	F2 FC-02
S4 304 SS		FRP Female BSPT	16 16 mm or 1"	16 16 mm	35 35 mm	120 120 mm		
D5 2205			27 27 mm	17 17 mm	40 40 mm	140 140 mm		
			33 33 mm	20 20 mm	45 45 mm			
				24 24 mm				

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

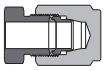
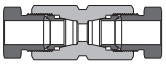
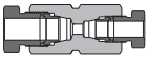
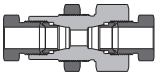
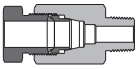
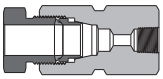
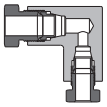
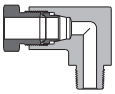
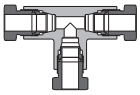
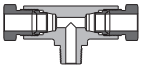
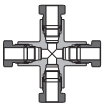
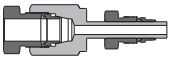
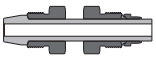
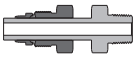
Medium & High Pressure Valves and Fittings

Medium & High Pressure Fittings

DHL Series Tube Fittings

- Working pressure up to 15,000 psig (1034 bar)
- Double ferrules to compress sleeve
- Easy and quick connection
- Tubing sizes available in 1/8", 1/4", 3/8", 1/2", 9/16" and 3/4"
- High tensile 316 Stainless Steel as raw material
- Nut threads coated with molybdenum disulfide-based lubricant to minimize the friction
- Every fitting marked with size, material and heat number
- Long tube-support area to improve vibration resistance and line loads
- 4:1 safety factor

Configuration	Fitting Type	Example
	Nuts	SS-N-DHL4
	Front Ferrules	SS-FF-DHL4
	Rear Ferrules	SS-RF-DHL4
	Plugs	SS-TP-DHL4

Configuration	Fitting Type	Example
	Caps	SS-TC-DHL4
	Unions	SS-U-DHL6
	Reducing Unions	SS-U-DHL8-DHL6
	Bulkhead Unions	SS-BU-DHL4
	Male Connectors	SS-CM-DHL4-NS8
	Female Connectors	SS-CF-DHL6-NS4
	Union Elbows	SS-LU-DHL6
	Union Reducing Elbows	SS-LU-DHL6-DHL4
	Male Elbows	SS-LM-DHL8-NS6
	Union Tees	SS-TTT-DHL8
	Male Branch Tees	SS-TTM-DHL12-NS12
	Union Crosses	SS-C-DHL4
	Reducers	SS-R-DHL6-DHM8
	Port Connectors	SS-P-DHL8
	Adapters	SS-AM-DHM8-NS4

Ordering Number Description

SS - U - DHL8 - DHL6 - □ - □

Material

SS	316 SS

Fitting Type

N	Nut
FF	Front Ferrule
RF	Rear Ferrule
TP	Plug
TC	Cap
U	Union or Reducing Union
BU	Bulkhead Union
CM	Male Connector
CF	Female Connector
LU	Union Elbow Union Reducing Elbow
LM	Male Elbow
TTT	Union Tee
TTM	Male Branch Tee
C	Union Cross
R	Reducer
P	Port Connector
AM	Adapter

P1 Type

DHL	Female DHL Series
DHM	Tube Stub with Ferrules and Nut

P1 Size

2	1/8"
4	1/4"
6	3/8"
8	1/2"
9	9/16"
12	3/4"

P2 Type

In addition to those specified for P1, the other types are as follows:

NS	NPT Thread
SH	SAE/MS Straight Thread

P2 Size

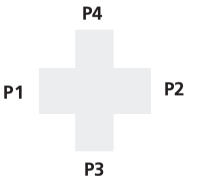
In addition to those specified for P1, the other sizes are as follows:

7	7/16-20
9	9/16-18
16	1"

P3 and P4

Specify in the same way as the P2

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

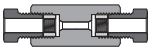
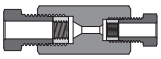
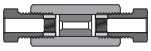
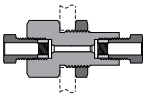
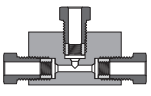
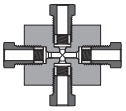
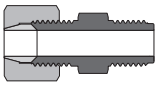


P1, P2, P3 and P4 shall be described in the following orders:

- ◎ Ferrule - Tube - Others
- ◎ Describe in descending order as per size if the end connection types are the same
- ◎ Describe the end of P1 if all end connections are the same

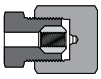
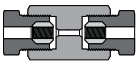
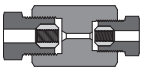
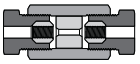
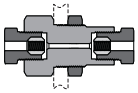
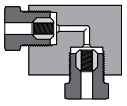
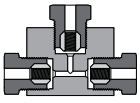
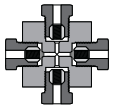
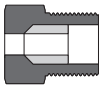
Medium Pressure Tube Fittings

- Maximum working pressure: 20,000 psig (1379 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Coned-and-threaded connection
- Medium pressure tubing sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- High tensile 316 Stainless Steel as raw material
- Anti-vibration connection components available
- Easy to disconnect and retighten
- Metal-to-metal seal to provide perfect leak-tight service for working conditions from critical vacuum to medium pressure
- Every fitting marked with size, material and heat number
- Available to NACE MR0175

Configuration	Fitting Type	Example
	Glands	SS-G-2FH4
	Collars	SS-CO-2FH6
	Plugs	SS-TP-2FH9
	Caps	SS-TC-2FH6
	Unions	SS-U-2FH12
	Reducing Unions	SS-U-2FH6-2FH4
	Unions (Slip Type)	SS-SU-2FH16
	Bulkhead Unions	SS-BU-2FH6
	Union Elbows	SS-LU-2FH9
	Union Tees	SS-TTT-2FH12
	Union Crosses	SS-C-2FH4
	Anti-vibration Gland Assemblies	SS-AVGA-2FH9

High Pressure Tube Fittings

- Maximum working pressure: 60,000 psig (4137 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Coned-and-threaded connection
- High pressure tubing sizes available in 1/4", 3/8" and 9/16"
- High tensile 316 Stainless Steel as raw material
- Anti-vibration connection components available
- Easy to disconnect and retighten
- Metal-to-metal seal to provide perfect leak-tight service from critical vacuum to high pressure
- Every fitting marked with size, material and heat number
- Available to NACE MR0175

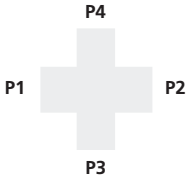
Configuration	Fitting Type	Example
	Glands	SS-G-6FH4
	Collars	SS-CO-6FH6
	Plugs	SS-TP-6FH9
	Caps	SS-TC-6FH6
	Unions	SS-U-6FH4
	Reducing Unions	SS-U-6FH6-6FH4
	Unions (Slip Type)	SS-SU-6FH6
	Bulkhead Unions	SS-BU-6FH6
	Union Elbows	SS-LU-6FH9
	Union Tees	SS-TTT-6FH6
	Union Crosses	SS-C-6FH4
	Anti-vibration Gland Assemblies	SS-AVGA-6FH9

Ordering Number Description

For Medium & High Pressure Fittings

SS - SU - 2FH16 - □ - □ - □

Material	Fitting Type	P1 Type	P1 Size	P2, P3 and P4
SS 316 SS	G Gland CO Collar TP Plug TC Cap U Union or Reducing Union SU Union (Slip Type) BU Bulkhead Union LU Union Elbow TTT Union Tee C Union Cross AVGA Anti-vibration Gland Assembly	2FH Female MP 6FH Female HP	4 1/4" 6 3/8" 9 9/16" 12 3/4" 16 1"	Specify in the same way as the P1



NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

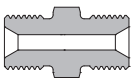
P1, P2, P3 and P4 shall be described in the following orders:

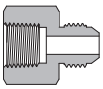
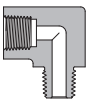
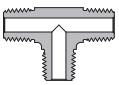
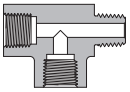
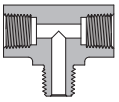
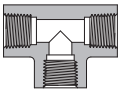
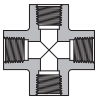
◎ Describe in descending order as per size if the end connection types are the same

◎ Describe the end of P1 if all end connections are the same

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-HPP-NS4
	Hex Nipples	SS-HPHN-HM9
	Hex Long Nipples	SS-HPLN-NS4-2
	Pipe Caps	SS-HPC-NS4
	Pipe Cap Assemblies (Moveable Insert)	SS-HMC-AS6
	Hex Couplings	SS-HPCG-NS4

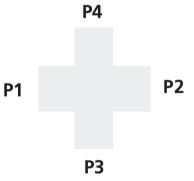
Configuration	Fitting Type	Example
	Zero-Clearance Unions	SS-HPZC-NS4
	Adapters	SS-HPA-NS4-AN6
	Male Elbows	SS-HPME-NS4
	Street Elbows	SS-HPSE-NS4
	Female Elbows	SS-HPE-NS4
	Male Tees	SS-HPMT-NS4
	Male Street Tees	SS-HPST-NS4
	Male Branch Tees	SS-HPBT-NS4
	Female Tees	SS-HPT-NS4
	Female Crosses	SS-HPCR-NS4

Ordering Number Description

SS - HPHN - NS6 - RT4 - □ - □

Material	Fitting Type	P1 Type	P1 Size	P2 Type	P2 Size	P3 and P4
SS 316 SS	HPP Pipe Plugs HPHN Hex Nipples HPLN Hex Long Nipples HPC Pipe Caps HMC Pipe Cap Assemblies (Moveable Insert) HPCG Hex Couplings HPZC Zero-Clearance Unions HPA Adapters HPME Male Elbows HPSE Street Elbows HPE Female Elbows HPMT Male Tees HPST Male Street Tees HPBT Male Branch Tees HPT Female Tees HPCR Female Crosses	NS Male or Female NPT RT Male or Female ISO/BSP Tapered SH Heavy-Duty Stud Ends (SAE J1926-2, ISO 11926-2) US Ports with O-ring seal in truncated housing (SAE J1926-1, ISO 11926-1) AN Male or Female JIC (37° Flare) AS Female Swivel JIC (37°Flare) HM Male Type "M"	NS and RT Size 2 1/8" 4 1/4" 6 3/8" 8 1/2" 12 3/4" 16 1" SH, US and HM Thread Size 7 7/16-20 9 9/16-18 12 3/4-16 14 7/8-14 16 1-12 21 1 5/16-12 AN and AS Thread Size 4 7/16-20 6 9/16-18 8 3/4-16 10 7/8-14 12 1 1/16-12 16 1 5/16-12	Specify in the same way as the P1	Specify in the same way as the P1 Size	Specify in the same way as the P1

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.



P1, P2, P3 and P4 shall be described in the following orders:

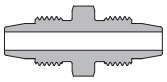
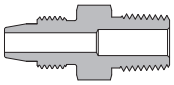
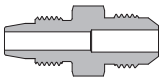
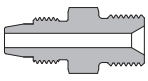
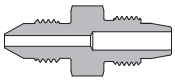
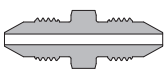
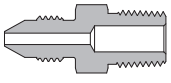
- ◎ Describe the female thread end first if there is any
- ◎ For male connections: NPT - ISO/BSP Tapered - Heavy-Duty Stud Ends - JIC (37° Flare) - Male Type"M"
- ◎ For female connections: NPT - ISO/BSP Tapered - Ports with O-ring seal in truncated housing - JIC (37° Flare)
- ◎ Describe in descending order as per size if the end connection types are the same
- ◎ Describe the end of P1 if all end connections are the same

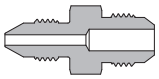
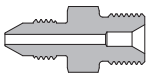
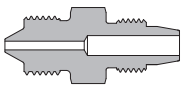
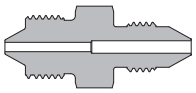
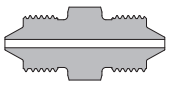
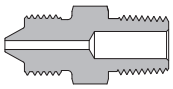
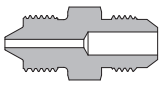
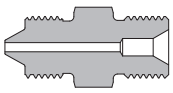
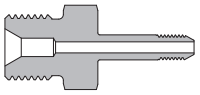
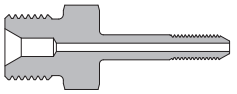
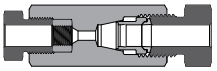
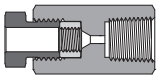
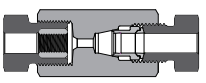
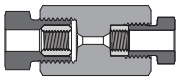
Adapters and Couplings

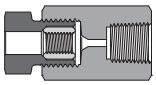
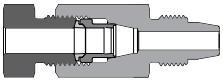
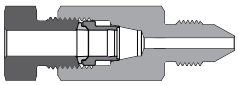
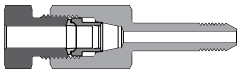
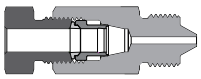
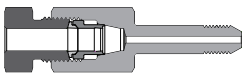
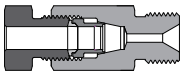
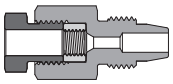
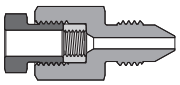
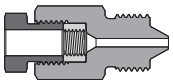
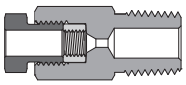
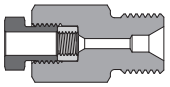
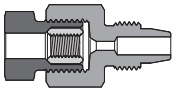
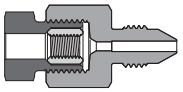
◎ High tensile 316 Stainless Steel as standard material, other materials also available upon request
◎ Every fitting marked with size, material and heat number
◎ Available to NACE MR0175

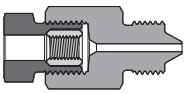
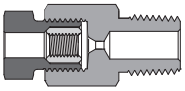
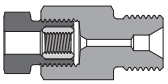
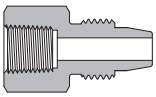
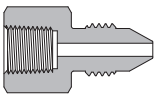
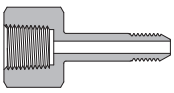
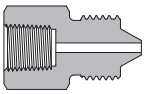
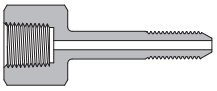
"Two-piece" Design

Ordering number with designator "□CP" is for "two-piece" male to male and female to male adapters. They are identical to the "one-piece" design in length. They can be ordered by using "CP" to take the place of "MP".
Example:
Ordering number of "one-piece": SS-MMA-6MP6-6MP4
The corresponding ordering number of "two-piece": SS-MMA-6CP6-6CP4.

Configuration	Fitting Type	Example
	Male DHL Series to Male DHL Series	SS-MMA-DMP6-DMP4
	Male DHL Series to Male NPT	SS-MMA-DMP6-NS6
	Male DHL Series to Male JIC	SS-MMA-DMP4-AN6
	Male DHL Series to Male Type "M"	SS-MMA-DMP4-HM9
	Male MP to Male DHL Series	SS-MMA-2MP6-DMP6
	Male MP to Male MP	SS-MMA-2MP9-2MP6
	Male MP to Male NPT	SS-MMA-2MP9-NS4

Configuration	Fitting Type	Example
	Male MP to Male JIC	SS-MMA-2MP9-AN6
	Male MP to Male Type "M"	SS-MMA-2MP6-HM9
	Male HP to Male DHL Series	SS-MMA-6MP6-DMP4
	Male HP to Male MP	SS-MMA-6MP6-2MP4
	Male HP to Male HP	SS-MMA-6MP9-6MP4
	Male HP to Male NPT	SS-MMA-6MP6-NS4
	Male HP to Male JIC	SS-MMA-6MP6-AN6
	Male HP to Male Type "M"	SS-MMA-6MP4-HM16
	Male Type "M" to MP Nipples	SS-MMA-HM9-2CT6
	Male Type "M" to HP Nipples	SS-MMA-HM9-6CT9
	Female MP to Female DHL Series	SS-FFC-2FH6-DHL4
	Female MP to Female NPT	SS-FFC-2FH6-NS4
	Female HP to Female DHL Series	SS-FFC-6FH4-DHL8
	Female HP to Female MP	SS-FFC-6FH6-2FH4

Configuration	Fitting Type	Example
	Female HP to Female NPT	SS-FFC-6FH6-NS4
	Female DHL Series to Male DHL Series	SS-FMA-DHL4-DMP6
	Female DHL Series to Male MP	SS-FMA-DHL4-2MP4
	Female DHL Series to MP Nipples	SS-FMA-DHL6-2CT4
	Female DHL Series to Male HP	SS-FMA-DHL6-6MP4
	Female DHL Series to HP Nipples	SS-FMA-DHL4-6CT9
	Female DHL Series to Male Type "M"	SS-FMA-DHL6-HM9
	Female MP to Male DHL Series	SS-FMA-2FH9-DMP6
	Female MP to Male MP	SS-FMA-2FH6-2MP9
	Female MP to Male HP	SS-FMA-2FH9-6MP4
	Female MP to Male NPT	SS-FMA-2FH9-NS4
	Female MP to Male Type "M"	SS-FMA-2FH9-HM9
	Female HP to Male DHL Series	SS-FMA-6FH6-DMP4
	Female HP to Male MP	SS-FMA-6FH9-2MP4

Configuration	Fitting Type	Example
	Female HP to Male HP	SS-FMA-6FH6-6MP6
	Female HP to Male NPT	SS-FMA-6FH6-NS4
	Female HP to Male Type "M"	SS-FMA-6FH6-HM9
	Female NPT to Male DHL Series	SS-FMA-NS4-DMP6
	Female NPT to Male MP	SS-FMA-NS6-2MP4
	Female NPT to MP Nipples	SS-FMA-NS4-2CT6
	Female NPT to Male HP	SS-FMA-NS6-6MP4
	Female NPT to HP Nipples	SS-FMA-NS6-6CT6

Ordering Number Description

SS - MMA - 2MP6 - NS4

Material	
SS	316 SS

Fitting Type	
MMA	Male to Male
FFC	Female to Female
FMA	Female to Male

P1 Type	
NS	Male NPT or Female NPT
DMP and DCP	Male DHL Series
2MP and 2CP	Male MP
6MP and 6CP	Male HP
DHL	Female DHL Series
2FH	Female MP
6FH	Female HP
HM	Male Type "M"

P1 Size	
NS Thread Size	
2	1/8"
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
DMP, DCP and DHL Thread Size	
2	3/8-24
4	1/2-20
6	5/8-18
8	13/16-16
2MP, 2CP and 2FH Thread Size	
4	7/16-20
6	9/16-18
9	13/16-16
12	3/4-14
16	1 3/8-12
6MP, 6CP and 6FH Thread Size	
4	9/16-18
6	3/4-16
9	1 1/8-12
HM Thread Size	
9	9/16-18
12	3/4-16
14	7/8-14
16	1-12
21	1 5/16-12

P2 Type	
In addition to those specified for P1, other types are as follows:	
2CT	MP Nipples
6CT	HP Nipples
AN	Male JIC or Female JIC

P2 Size	
In addition to those specified for P1, other sizes are as follows:	
2CT Thread Size (Left Hand)	
4	1/4-28
6	3/8-24
9	9/16-18
12	3/4-16
16	1-14
6CT Thread Size (Left Hand)	
4	1/4-28
6	3/8-24
9	9/16-18
AN Thread Size	
4	7/16-20
6	9/16-18
8	3/4-16
10	7/8-14
12	1 1/16-12
16	1 5/16-12

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

P1 P2

P1 and P2 shall be described in the following orders:

◎ For fitting type MMA: 6MP□ - 2MP□ - DMP□ - NS□ - AN□ - HM□ - 6CT□ - 2CT□
For fitting type FFC: 6FH□ - 2FH□ - DHL□ - NS□ - AN□
For fitting type FMA: Female connection type is the first

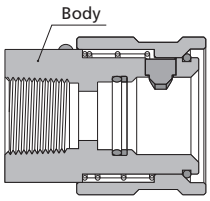
◎ Describe the descending order as per size if the end connection types are the same

◎ Describe the end of P1 if all end connections are the same

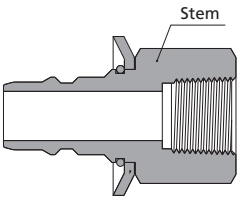
Quick Couplings

HQP Series

- Working pressure: 10,000 psig (690 bar)
- Push-and-pull type quick coupling without check valve
- Stem and body material: high tensile 316 Stainless Steel
- Fluorocarbon FKM O-ring as standard, other O-ring materials available
- Flow coefficient (Cv) up to 8.2
- Sturdy locking mechanism with large contact area to ensure reliable stem retainment
- Easy and quick connection to hoses and fixed ports



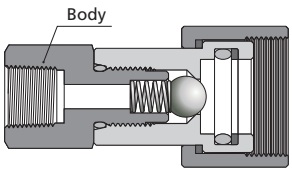
Coupler



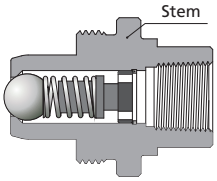
Nipple

HQB Series

- Working pressure: 10,000 psig (690 bar)
- Screw type quick coupling with check valve
- 17-4PH Stainless Steel stem and high tensile 316 Stainless Steel body
- Fluorocarbon FKM O-ring as standard, other O-ring materials available
- Flow coefficient (Cv) up to 0.53
- Withstand full working pressure when disconnected
- Check valve with metal ball sealing, without guarantee of full gas impermeability
- Easy and quick connection to hoses and fixed ports



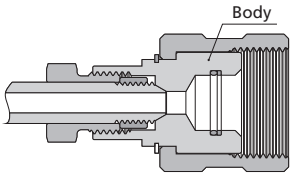
Coupler



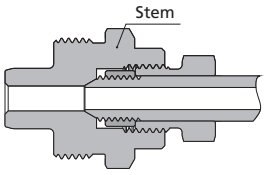
Nipple

HQS Series

- Working pressure up to 20,000 psig (1379 bar)
- Screw type quick coupling without check valve
- High tensile 316 Stainless Steel stem and17-4PH Stainless Steel body
- Fluorocarbon FKM O-ring as standard, other O-ring materials available
- Flow coefficient (Cv) up to 3.6
- Easy and quick connection to hoses and fixed ports



Coupler

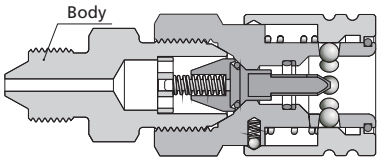


Nipple

HQC Series

HQC Series Couplers with Check Valves

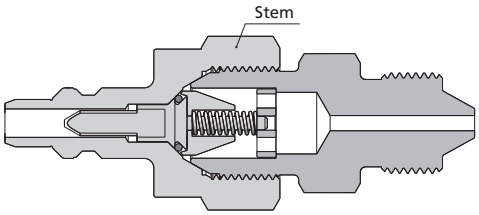
- Working pressure up to 30,000 psig (2068 bar)
- Push-and-pull type coupler with check valve
- Body material: 17-4PH Stainless Steel
- Fluorocarbon FKM O-ring as standard, other O-ring materials available
- Flow coefficient (Cv) up to 0.66
- Withstand full working pressure when disconnected
- Easy and quick connection to hoses and fixed ports



Coupler

HQC Series Nipples With Check Valve

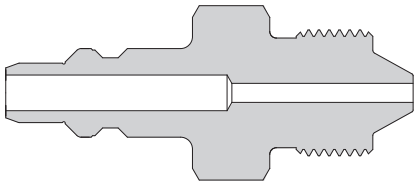
- Working pressure up to 30,000 psig (2068 bar)
- Push-and-pull type nipple with check valve
- Stem material: 17-4PH Stainless Steel
- Fluorocarbon FKM O-ring as standard, other O-ring materials available
- Flow coefficient (Cv) up to 0.66
- Withstand full working pressure when disconnected
- Easy and quick connection to hoses and fixed ports



Nipple (with check valve)

HQC Series Nipples Without Check Valve

- Working pressure up to 30,000 psig (2068 bar)
- Push-and-pull type nipple without check valve
- Material: 17-4PH Stainless Steel
- Flow coefficient (Cv) up to 0.66
- Easy and quick connection to hoses and fixed ports



Nipple (without check valve)

Ordering Number Description

HQC4P - 6MP6 - NP1 - N

Series	Body/Stem Material	Connection Type and Size	Product Type	O-ring Material
HQP	SS 316 SS	2FH9 9/16" Female MP	CP Coupler	Fluorocarbon FKM
HQB	4P 17-4PH SS	NS4 1/4" Male NPT	NP Nipple	N NBR
HQS		NS6 3/8" Male NPT	NP1 HQC Series Nipple without Check Valve	F FFKM
HQC		NS8 1/2" Male NPT		E EPDM
		FNS4 1/4" Female NPT		
		FNS6 3/8" Female NPT		
		FNS8 1/2" Female NPT		
		AN4 1/4" Male JIC		
		AN6 3/8" Male JIC		
		AN8 1/2" Male JIC		
		HBP4 Male G1/4"		
		HBP6 Male G3/8"		
		HBP8 Male G1/2"		
		2MP4 1/4" Male MP		
		2MP6 3/8" Male MP		
		2MP9 9/16" Male MP		
		6MP4 1/4" Male HP		
		6MP6 3/8" Male HP		
		6MP9 9/16" Male HP		
		HM9 9/16" Male Type "M"		
		HM12 3/4" Male Type "M "		
		HM16 1" Male Type “M “		

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK Product Part Number. Not all combinations are available.

Code	O-ring Material	Working Temperature Range, °F(°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 550 (-29 to 288)
E	EPDM	-50 to 300 (-45 to 148)

Medium & High Pressure Valves

Ball Valves and Pneumatic 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 to offer excellent resistance to chemicals, heat and abrasion
- Fluorocarbon FKM O-ring as standard, other 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)

10B Series Ball Valves

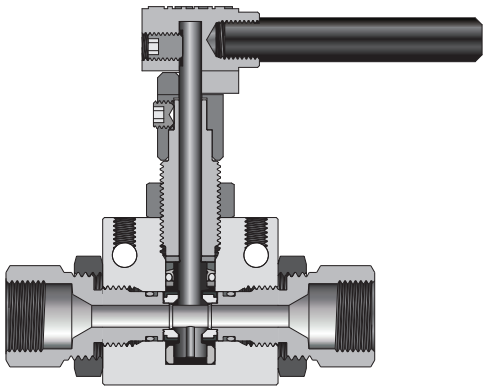
- End connections:
  3/4" and 1" tube fittings
  3/4" and 1" NPT threads
- Body material: High tensile 316 Stainless Steel
- Orifice:
  2-way: 0.5"(12.7mm)
  3-way: 0.5"(12.7mm)
- Working pressure up to: 10,000 psig (690 bar)

15B Series Ball Valves

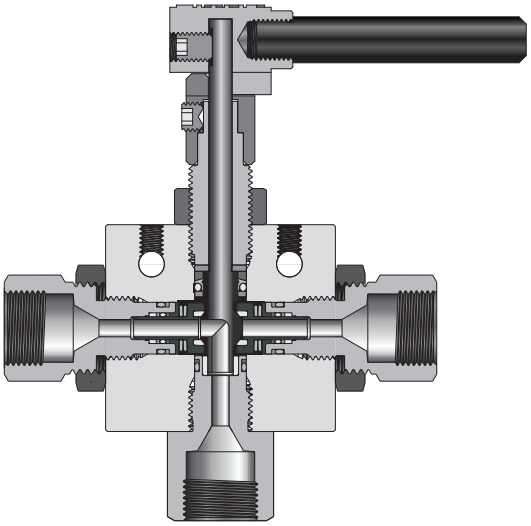
- End connections:
  1/8", 1/4", 3/8", 1/2", 9/16" and 3/4" tube fittings
  1/8", 1/4", 3/8" and 1/2" NPT threads
- Body material: High tensile 316 Stainless Steel
- Orifice:
  2-way: 0.094"(2.39mm) to 0.375"(9.53mm)
  3-way: 0.094"(2.39mm) to 0.328"(8.33mm)
- Working pressure up to: 15,000 psig (1034 bar)

20B Series Ball Valves

- End connections: 1/4", 3/8", 9/16" and 3/4" tube fittings
- Body material: High tensile 316 Stainless Steel
- Orifice:
  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)



On-Off



Switching
180° Turn

Diverting
90° Turn

Ordering Number Description

15BSS - 2FH6 - 6 - 2 - N - AO

Series	Body Material	Connection Type	Connection Size	Orifice No.	Flow Pattern	O-ring Material	Pneumatic Actuator
10B	SS 316 SS	DHL Female DHL Series	2 1/8"	For 2-way	1 2-way Straight Valves	Fluorocarbon FKM	None
15B		2FH Female MP	4 1/4"	1/4"	2 3-way Valves, 180° Turn	N NBR	AO Air-to-open/ spring-to-close
20B		FNS Female NPT	6 3/8"	6 3/8"	2D 3-way Valves, 90° Turn	F FFKM	AC Air-to-close/ spring-to-open
		6FH Female HP	8 1/2"	8 1/2"		E EPDM	AOC Double acting
			9 9/16"	For 3-way			
			12 3/4"	3/16"			
			16 1"	6 3/8"			
				8 1/2"			

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Code	O-ring Material	Working Temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

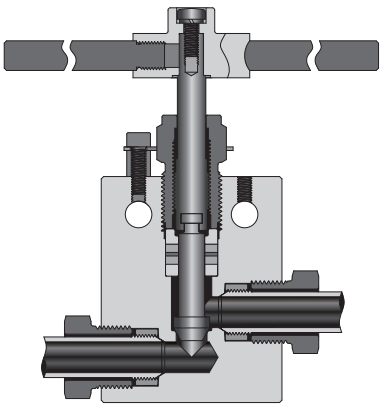
Needle Valves and Pneumatic Needle Valves

Needle Valves

- High tensile 316 Stainless Steel for the valve body and 17-4PH 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)
- Easy to assemble and replace packing
- Packing located under stem threads
- Reliable locking device for packing gland
- Options for Vee or Regulating stem tips
- Five flow patterns available
- Available to NACE MR0175

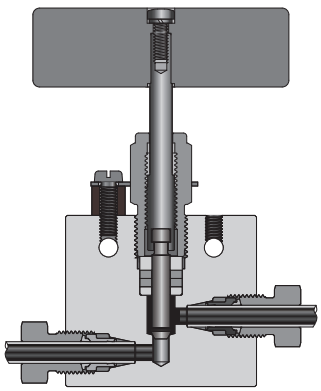
10N Series

- Working pressure: 10000 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: 0.359"(9.12mm), 0.516"(13.10mm), 0.688"(17.48mm), 0.437"(11.10mm) and 0.562"(14.27mm)



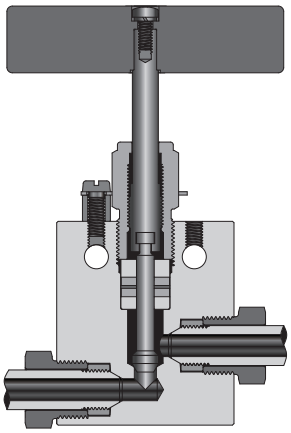
15N Series

- Working pressure: 15000 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: 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)



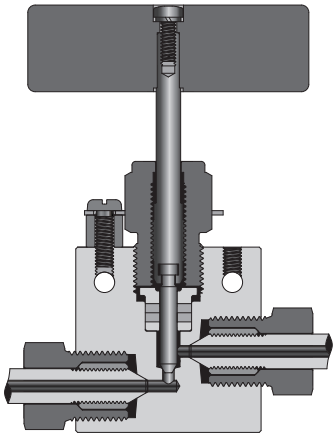
20N Series

◎ Working pressure: 20000 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: 0.125"(3.18mm), 0.204"(5.18mm), 0.312"(7.92mm), 0.438"(11.13mm) and 0.562"(14.27mm)



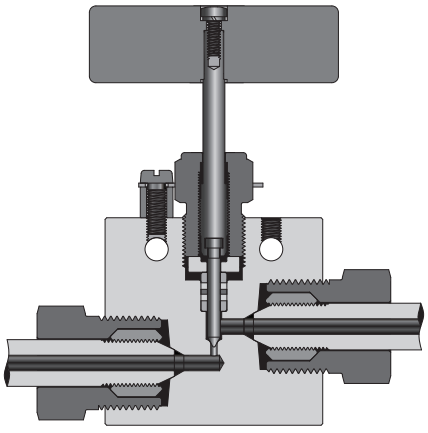
30N Series

◎ Working pressure: 30000 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: 0.094"(2.39mm) and 0.125"(3.18mm)



60N Series

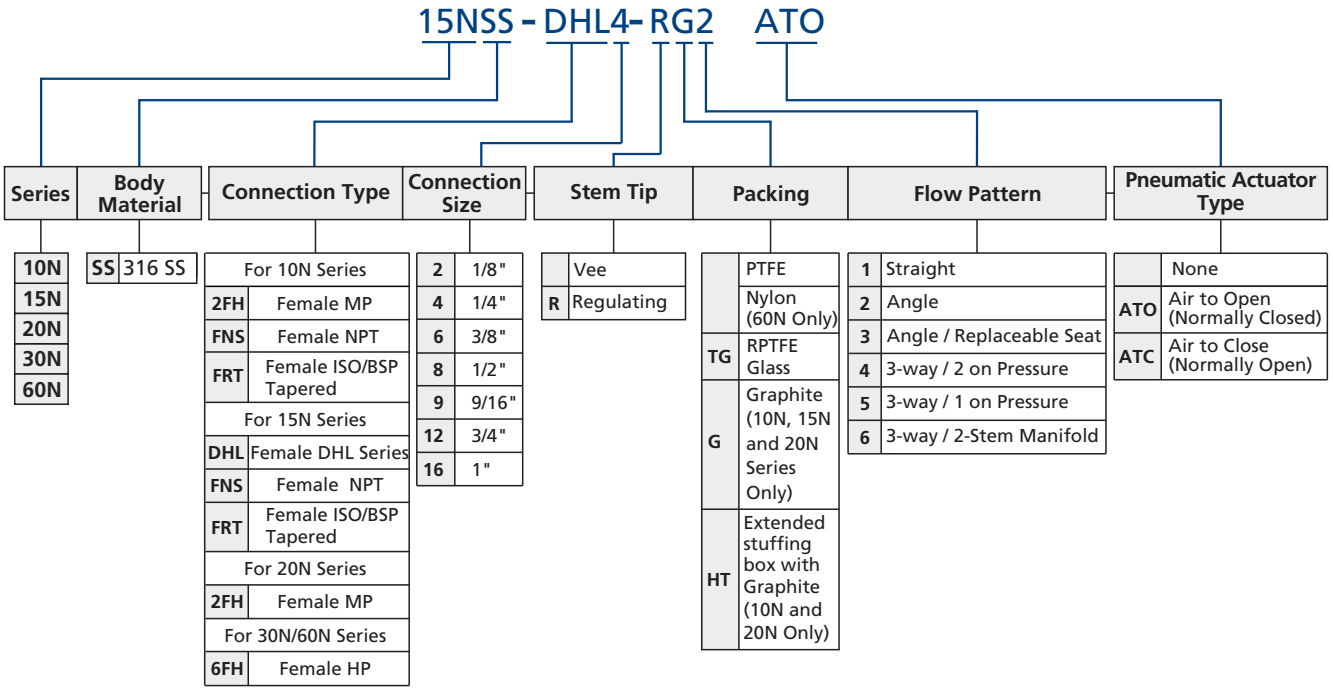
◎ Working pressure: 60000 psig (4137 bar)
◎ Working temperature: -100°F to 600°F (-73°C to 316°C)
◎ End connections: 1/4", 3/8", 9/16" Female HP
◎ Orifice sizes: 0.063"(1.59mm) and 0.078"(1.98mm)



Pneumatic Needle Valves

◎ Small and compact piston actuator
◎ Air-to-open (normally closed) with spring return and air-to-close (normally open) with spring return
◎ Maximum working pressure for air operator: 100 psig (6.9 bar)
◎ Air operator temperature range from -10°F~200°F (-23°C~93°C) with NBR O-rings, other O-ring materials available
◎ Air inlet connection: 1/8" or 3/8" Female NPT
◎ Positive shut-off with metal-to-metal seating
◎ Yoke design for separation of process and air pressure
◎ Anodized aluminum actuator to provide good corrosion and wear resistance
◎ Tested to 100,000 cycles at 100 psig (6.9 bar) with no leakage, no signs of wear or fatigue

Ordering Number Description



NOTES: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

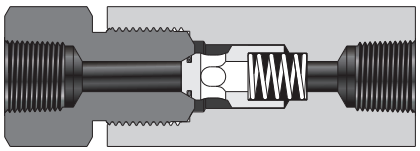
2. Pneumatic needle valves are open/closed valves, and will not regulate flow. Ordering pneumatic valve models with regulating stems is not recommended.

Check Valves

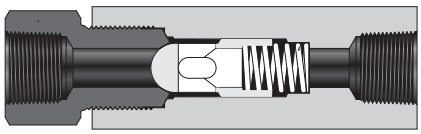
◎ O-ring Check Valves provide unidirectional flow and tight shut-off for liquids and gases with high reliability. Ball Check Valves prevent reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
◎ Body material: High tensile 316 SS
◎ Resilient O-ring seat design for noise-free closing leakage-free
◎ Optional O-rings available for high-temperature applications
◎ Cracking pressure:
10C, 15C, 20C and 60C Series Check Valves: 14 psig~26 psig (0.966 bar~1.794 bar)
◎ Available to NACE MR0175

10C, 10CO Series Check Valves

◎ 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:
10C Series (Pipe O-ring Check Valves): -50°F to 400°F (-45°C to 204°C)
10CO Series (Ball Check Valves): -110°F to 400°F (-79°C to 204°C)



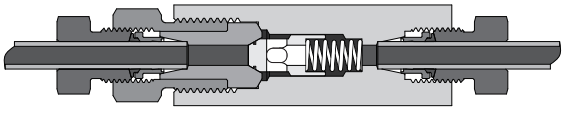
10C Series (Pipe O-ring Check Valves)



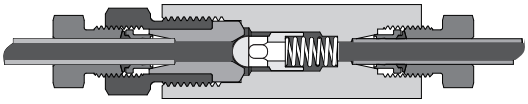
10CO Series (Pipe Ball Check Valves)

15C, 15CO Series Check Valves

◎ End connections:
O-ring Check Valves and Ball Check Valves:
1/4", 3/8" and 1/2" Female DHL Series
Pipe O-ring Check Valves and Pipe Ball Check Valves:
1/4" Female NPT, 3/8" Female NPT and 1/2" Female NPT
◎ Orifice sizes:
O-ring Check Valves and Ball Check Valves:
0 .188" (4.78mm), 0.25" (6.35mm) and 0.375" (9.53mm)
Pipe O-ring Check Valves and Pipe 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:
15C Series (O-ring Check Valves): -50°F to 550°F (-45°C to 288°C)
15C Series (Pipe O-ring Check Valves): -50°F to 400°F (-45°C to 204°C)
15CO Series (Ball Check Valves): -110°F to 800°F (-79°C to 427°C)
15CO Series (Pipe Ball Check Valves): -110°F to 400°F (-79°C to 204°C)



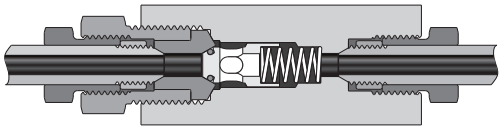
15C Series (O-ring Check Valves)



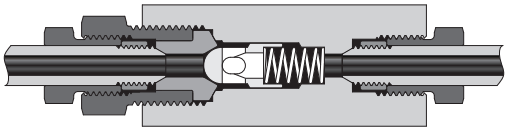
15CO Series (Ball Check Valves)

20C, 20CO Series Check Valves

- End connections: 1/4", 3/8", 9/16", 3/4" and 1" Female MP
- Orifice sizes: 0.125" (3.18mm), 0.218" (5.54mm), 0.359" (9.12mm), 0.516" (13.11mm) and 0.688" (17.48mm)
- Working pressure up to: 20000 psig (1379 bar)
- Working temperature:
  20C Series Check Valves (O-ring Check Valves):
  -50°F to 550°F (-45°C to 288°C)
  20CO Series Check Valves (Ball Check Valves):
  -110°F to 1200°F (-79°C to 649°C)



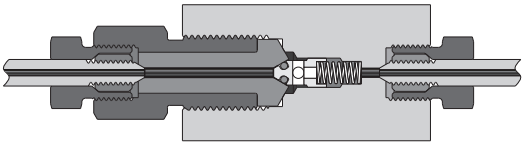
20C Series (O-ring Check Valves)



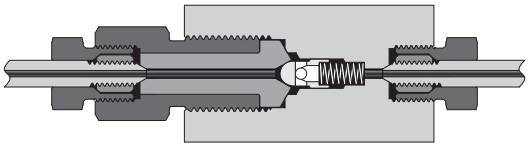
20CO Series (Ball Check Valves)

60C, 60CO Series Check Valves

- End connections: 1/4", 3/8" and 9/16" Female HP
- Orifice sizes: 0.094" (2.39mm), 0.125" (3.18mm) and 0.187" (4.75mm)
- Working pressure up to: 60000 psig (4137 bar)
- Working temperature:
  60C Series Check Valves (O-ring Check Valves):
  -50°F to 550°F (-45°C to 288°C)
  60CO Series Check Valves (Ball Check Valves):
  -110°F to 1200°F (-79°C to 649°C)



60C Series (O-ring Check Valves)



60CO Series (Ball Check Valves)

Ordering Number Description

15CSS - DHL4 - N

Series	Body Material	Connection Type	Connection Size	O-ring Material
10C	SS 316 SS	For 10C/10CO Series	4 1/4"	Fluorocarbon FKM
10CO		FNS Female NPT	6 3/8"	N NBR
15C		For 15C/15CO Series	8 1/2"	F FFKM
15CO		DHL Female DHL Series	9 9/16"	E EPDM
20C		FNS Female NPT	12 3/4"	
20CO		For 20C/20CO Series	16 1"	
60C		2FH Female MP		
60CO		For 60C/60CO Series		
		6FH Female HP		

NOTES: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Code	O-ring Material	Working Temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 550 (-29 to 288)
E	EPDM	-50 to 300 (-45 to 148)

Metering Valves

- ◎ Precisely tapered valve stem accurately controls flow for gases and liquids
- ◎ The design of Barrel and Thimble micrometer permits repeatable settings
  Each division of barrel equal to 0.025"
  Thimble is divided into 25 divisions, each division of thimble equal to 0.001"
  stem travel One revolution equal to valve stem 0.025" travel
- ◎ Valve body made of high tensile 316 stainless steel for maximum wear and corrosion resistance
- ◎ Packing located under stem threads
- ◎ Reliable locking device for packing gland
- ◎ Not intended as shut-off valves. Install a correlated shutoff valve when shut-off is required
- ◎ Minimum flow rate set at"0" position, and operation below "0" position not allowed

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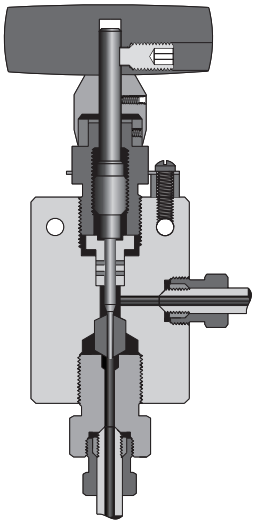
- ◎ End connections:
  15M series: 1/8" and 1/4" Female DHL Series
  30M series: 1/4" Female HP
  60M series: 1/4" and 3/8" Female HP
- ◎ Body material: High tensile 316 SS
- ◎ Orifice sizes: 0.062" (1.57mm)
- ◎ Flow coefficient (Cv): 0.04
- ◎ Working pressure up to:
  15M series: 15000 psig (1034 bar)
  30M series: 30000 psig (2068 bar)
  60M series: 60000 psig (4137 bar)
- ◎ Working temperature: -100°F to 800°F (-73°C to 427°C)



Ordering Number Description

30MSS - 6FH4 - TG

Series	Body Material	Connection	Packing Material
15M	SS 316 SS	DHL2 1/8" Female DHL Series	PTFE(15M and 30M Series Only)
30M		DHL4 1/4" Female DHL Series	Nylon (60M Series Only)
60M		6FH4 1/4" Female HP	TG RPTFE Glass
		6FH6 3/8" Female HP	G Graphite (15M Only)

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

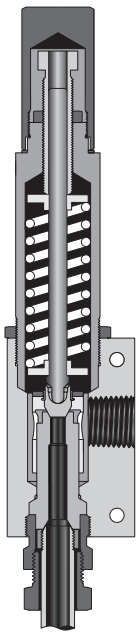
Code	Packing Material	Working Temperature Range, °F (°C)
	PTFE	-100 to 450 (-73 to 232)
	Nylon	40 to 230 (4.4 to 110)
TG	RPTFE Glass	-100 to 600 (-73 to 316)
G	Graphite	0 to 800 (-17.8 to 427)

Relief Valves

- Maximum back pressure: 500 psig (34.5 bar)
- Liquid or gas service
- Mark the set pressure of HSR and HMR Series on the nameplate before delivery, specify the required set pressure when ordering
- Set pressure of HAR Series can be self-adjusted
- Lock wire the cap and body together to maintain relief setting
- Free assembly positions

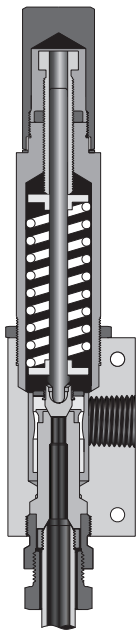
HSR Series

- Inlet connection: 9/16" Female MP
- Outlet connection: 3/4" NPT thread
- Body material: High tensile 316 SS
- Orifice sizes: 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)



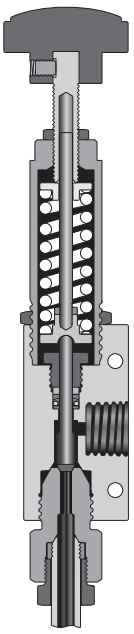
HMR Series

- Inlet connection: 9/16" Female MP 3/8" Female HP
- Outlet connection: 3/4" NPT thread
- Body material: High tensile 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)



HAR Series

- Inlet connection: 9/16" Female MP
- Outlet connection: 3/4" NPT thread
- Body material: High tensile 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

HMRSS - 2FH9 - FNS12 - 2

Series	Body Material	Inlet Connection	Outlet Connection	Grade
HSR HMR HAR	SS 316 SS	6FH6 3/8" Female HP (HMR Series Only) 2FH9 9/16" Female MP	FNS12 3/4" Female NPT	

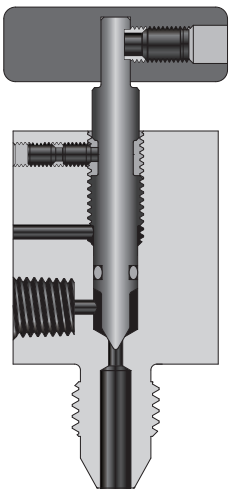
1	1,500~5,000 psig (103~345 bar)	HSR
	3,000~5,000 psig (207~345 bar)	HMR
	3,000~10,000 psig (207~690 bar)	HAR
2	5,000~10,000 psig (345~690 bar)	HSR, HMR
	10,000~20,000 psig (690~1379 bar)	HAR
3	10,000~15,000 psig (690~1034 bar)	HMR
	10,000~20,000 psig (690~1379 bar)	HSR
4	15,000~20,000 psig (1034~1379 bar)	HMR
5	20,000~30,000 psig (1379~2068 bar)	
6	25,000~45,000 psig (1724~3103 bar)	
7	30,000~60,000 psig (2068~4137 bar)	

NOTES: 1. Valves are factory-set, test, locked, and tagged with the set pressure. Please specify the required set pressure when ordering.

2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Bleed Valves and Block & Bleed Valves

Bleed Valves



- One piece hex construction compact design allows easy installation
- Working pressure up to: 30,000 psig (2068 bar)
- 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 sizes: 0.094" (2.4mm)
- Inlet connection:
  3/8", 1/2", 9/16" tube stub with ferrules and nut
  3/8", 9/16" male MP or MP nipples
  3/8", 9/16" male HP or HP nipples
- Outlet connection: 1/8" Female NPT

Ordering Number Description

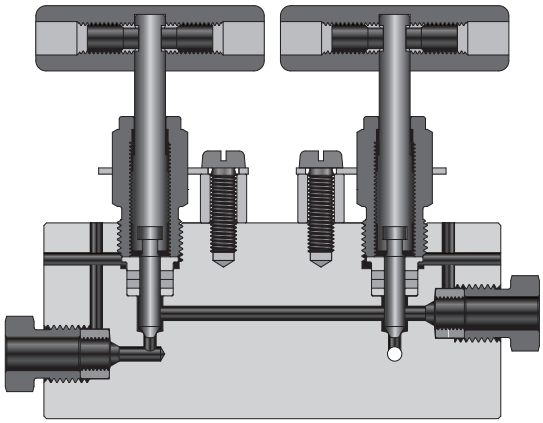
20BVSS - 2CT9 - FNS2

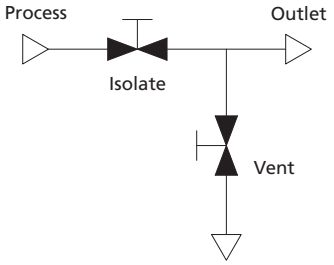
Series	Body Material	Inlet Connection	Outlet Connection
15BV	SS 316 SS	DHM6 3/8" Tube Stub with Ferrules and Nut	FNS2 1/8" Female NPT
20BV		DHM8 1/2"Tube Stub with Ferrules and Nut	
30BV		DHM9 9/16" Tube Stub with Ferrules and Nut	
		2MP6 3/8'' Male MP	
		2MP9 9/16'' Male MP	
		2CT6 3/8'' MP Nipples	
		2CT9 9/16'' MP Nipples	
		6MP6 3/8'' Male HP	
		6MP9 9/16'' Male HP	
		6CT6 3/8'' HP Nipples	
		6CT9 9/16'' HP Nipples	

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Block & Bleed Needle Valves

- Working pressure up to: 20,000 psig (2068 bar)
- Working temperature range: -100°F to 600°F (-73°C to 316°C)
- Minimal space needed for installation and operation
- Non-rotating stem and bar stock body design
- 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
- High tensile 316 stainless steel as body material
  17-4PH Stainless Steel for lower stem
- PTFE is the standard packing material, RPTFE glass also available
- Orifice sizes: 0.094" (2.4mm)
- End connection: 1/4", 3/8" Female NPT and 1/4", 3/8" Female MP





Ordering Number Description

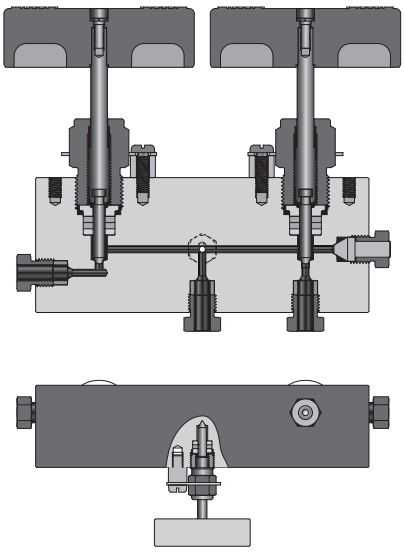
20BNSS - 2FH6 - TG

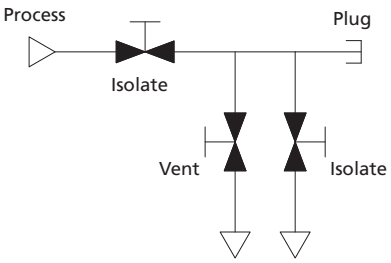
Series	Body Material	Connection	Packing
15BN	SS 316 SS	FNS4 1/4" Female NPT	PTFE
20BN		FNS6 3/8" Female NPT	TG RPTFE Glass
		2FH4 1/4" Female MP	
		2FH6 3/8" Female MP	

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Double Block & Bleed Needle Valves

- Working pressure: 20,000 psig (2068 bar)
- Working temperature range: -100°F to 600°F (-73°C to 316°C)
- Compact design provides large valve performance in a small package
- Non-rotating stem and bar stock body design
- 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
- High tensile 316 stainless steel as body material
  17-4PH Stainless Steel for lower stem
- PTFE is the standard packing material, RPTFE glass also available
- Orifice sizes: 0.094" (2.4mm)
- End connection: 1/4", 3/8", 9/16" Female MP and 9/16" Female HP
- Vent connection: 1/4" Female MP





Bottom View

Ordering Number Description

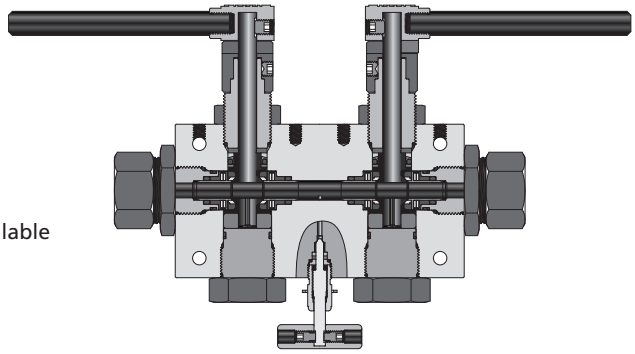
20DBNSS - 2FH6 - 2FH4 - TG

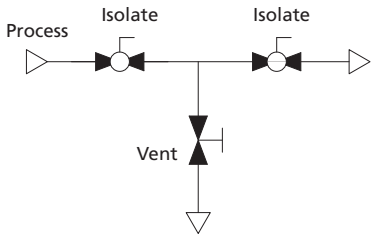
Series	Body Material	Connection Type (Inlet and Outlet)	Vent Connection	Packing
20DBN	SS 316 SS	2FH4 1/4'' Female MP	2FH4 1/4'' Female MP	PTFE
		2FH6 3/8'' Female MP		TG RPTFE Glass
		2FH9 9/16'' Female MP		
		6FH9 9/16'' Female HP		

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Double Block & Bleed Ball Valves

- One-piece, trunnion mounted stem design
- Full-port flow path to minimize pressure drop
- Carbon filled PEEK seats to offer excellent resistance to chemicals, heat and abrasion
- Working pressure: 15,000 psig (1034 bar)
- High tensile 316 stainless steel as body material
- Fluorocarbon FKM O-ring as standard, other O-ring materials available
- Orifice sizes: 0.20" to 0.33" (5.2mm to 8.3mm)
- End connection:
  1/4", 3/8", 1/2", 9/16", 3/4", 1" tube fittings
  1/4", 3/8", 1/2" Female NPT
- Vent connection: 1/4" Female MP or 1/4" Female NPT





Ordering Number Description

15DBBSS - 2FH9 - FNS4 - 6 - N

Series	Body Material	Connection Type (Inlet and Outlet)	Connection Size	Vent Connection Type	Connection Size	Orifice No.	O-ring Material
15DBB	SS 316 SS	DHL Female DHL Series	4 1/4"	2FH Female MP	4 1/4"	6 3/8"	Fluorocarbon FKM
		2FH Female MP	6 3/8"	FNS Female NPT			N NBR
		FNS Female NPT	8 1/2"				F FFKM
			9 9/16"				E EPDM
			12 3/4"				
			16 1"				

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Code	O-ring Material	Working temperature Range, °F (°C)
	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
N	NBR	-10 to 250 (-23 to 121)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

Line Filters

Dual-disc Line Filters

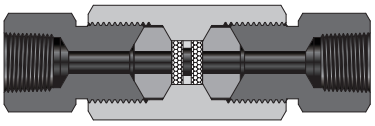
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 μm. Other element combinations available on request
- Easy to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

Cup-type Line Filters

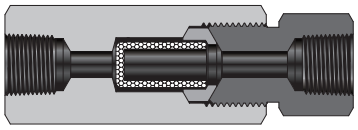
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 μm
- Easy to replace filter elements
- Pressure differential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

10FD, 10FC Series

- Working pressure: 10000 psig (690 bar)
- Working temperature: -60°F to 400°F (-50°C to 204°C)
- End connections: 3/4" NPT and 1" NPT
- Body material: High tensile 316 Stainless Steel
- Orifice:
  10FD Series: 0.36"(9.1mm) and 0.56"(14.3mm)
  10FC Series: 0.52"(13.1mm) and 0.69"(17.5mm)



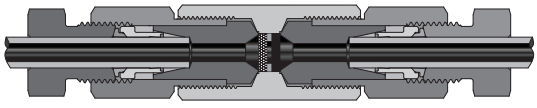
10FD Series (Dual-disc)



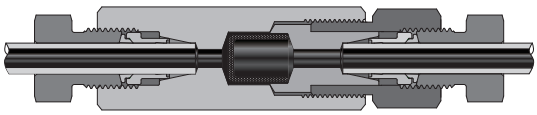
10FC Series (Cup-type)

15FD, 15FC Series

- Working pressure: 15000 psig (1034 bar)
- Working temperature:
  Tube fittings: -60°F to 660°F (-50°C to 350°C)
  NPT thread ends: -60°F to 400°F (-50°C to 204°C)
- End connections: 1/8", 1/4", 3/8", 1/2" Female MP and 1/8" NPT, 1/4" NPT, 3/8" NPT, 1/2" NPT
- Body material: High tensile 316 Stainless Steel
- Orifice sizes:
  15FD Series: 0.09"(2.4mm), 0.13"(3.2mm), 0.19"(4.8mm) and 0.31"(7.9mm)
  15FC Series: 0.13"(3.2mm), 0.19"(4.8mm), 0.31"(7.9mm) and 0.44"(11.1mm)



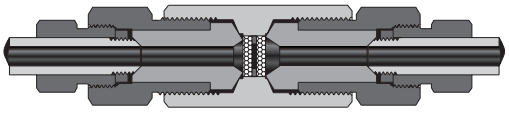
15FD Series (Dual-disc)



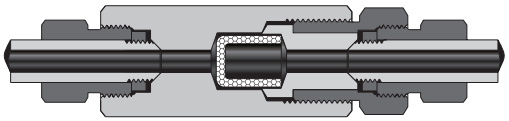
15FC Series (Cup-type)

20FD, 20FC Series

- Working pressure: 20000 psig (1379 bar)
- Working temperature: -60°F to 660°F (-50°C to 350°C)
- End connections:
  20FD Series: 9/16" Female MP
  20FC Series: 1/4", 3/8", 9/16", 3/4" and 1" Female MP
- Body material: 316 SS
- Orifice sizes:
  20FD Series: 0.31"(7.9mm)
  20FC Series: 0.13"(3.2mm), 0.22"(5.5mm), 0.36"(9.1mm), 0.52"(13.1mm) and 0.69"(17.5mm)



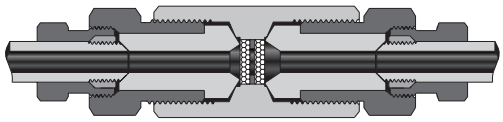
20FD Series (Dual-disc)



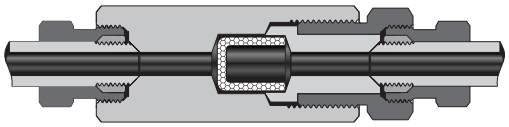
20FC Series (Cup-type)

60FD, 60FC Series

- Working pressure: 60000 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: High tensile 316 Stainless Steel
- Orifice:
  60FD Series: 0.09"(2.4mm), 0.13"(3.2mm) and 0.19"(4.8mm)
  60FC Series: 0.09"(2.4mm), 0.13"(3.2mm) and 0.19"(4.8mm)



60FD Series (Dual-disc)



60FC Series (Cup-type)

Ordering Number Description

15FDSS - DHL4 - 1035

Series	Body Material	Connection Type	Connection Size	Nominal Pore Size
10FD	SS 316 SS	For 10FD/10FC Series	2 1/8"	For 10FD/15FD/20FD/60FD Series
10FC		FNS Female NPT	4 1/4"	0510 5/10 μm
15FD		For 15FD/15FC Series	6 3/8"	1035 10/35 μm
15FC		DHL Female DHL Series	8 1/2"	3565 35/65 μm
20FD		FNS Female NPT	9 9/16"	For 10FC/15FC/20FC/60FC Series
20FC		For 20FD/20FC Series	12 3/4"	5 5 μm
60FD		2FH Female MP	16 1"	35 35 μm
60FC		For 60FD/60FC Series		65 65 μm
		6FH Female HP		

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Valves

Subsea Ball Valves

2-way Valves, 3-way Valves

- Maximum external pressure: 6,000 psig (414 bar)
- High tensile 316 stainless steel as standard material for valve body
- NBR O-ring as standard, other O-ring materials available
- Available to NACE MR0175
- Rapid quarter turn action to provide quick open/close action for easy ROV or diver operation
- PEEK seats to offer excellent resistance against chemicals, heat and abrasion
- Full-port flow path to minimize pressure drop
- Maximum water depth: 13,800 ft. (4200 m)

10SB Series

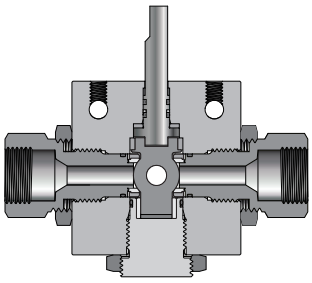
- End connections:
  3/4" and 1" Female MP
  3/4" and 1" Female NPT
- Orifice sizes:
  2-way: 0.5" (12.7mm)
- Working pressure up to: 10000 psig (690 bar)

15SB Series

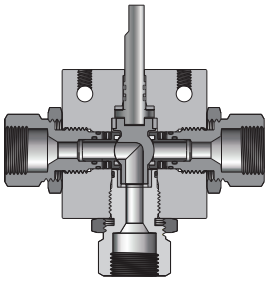
- End connections:
  1/4" and 3/8" Female DHL series
  1/4", 3/8" and 1/2" Female NPT
- Orifice sizes:
  2-way: 0.25" (6.35mm) and 0.375" (9.52mm)
  3-way: 0.188" (4.77mm)
- Working pressure up to: 15000 psig (1034 bar)

20SB Series

- End connections:
  1/4", 3/8", 9/16" and 3/4" Female MP
  1/4" and 3/8" Female HP
- Orifice sizes:
  2-way: 0.25" (6.35mm) and 0.375" (9.52mm)
  3-way: 0.188" (4.77mm)
- Working pressure up to: 20000 psig (1379 bar)



On-Off



Switching
180° Turn

Diverting
90° Turn

Ordering Number Description

15SBSS - 2FH6 - 6 - 2 - V

Series

10SB
15SB
20SB

Body Material

4P	630
SS	316SS

Connection

For 10SB Series	
FNS12	3/4" Female NPT
FNS16	1" Female NPT
2FH12	3/4" Female MP
2FH16	1" Female MP
For 15SB Series	
DHL4	1/4" Female DHL Series
DHL6	3/8" Female DHL Series
FNS4	1/4" Female NPT
FNS6	3/8" Female NPT
FNS8	1/2" Female NPT
For 20SB Series	
2FH4	1/4" Female MP
2FH6	3/8" Female MP
2FH9	9/16" Female MP
2FH12	3/4" Female MP
6FH4	1/4" Female HP
6FH6	3/8" Female HP

Orifice No.

For 2-way	
4	1/4"
6	3/8"
8	1/2"
For 3-way	
4	3/16"
6	3/8"
8	1/2"

Flow Pattern

1	2-way Straight Valves
2	3-way Valves, 180° Turn
2D	3-way Valves, 90° Turn

O-ring Material

	NBR
V	Fluorocarbon FKM
F	FFKM
E	EPDM

Code	O-ring Material	Working temperature Range, °F(°C)
	NBR	0 to 250 (-17.8 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Hydraulic Ball Valves

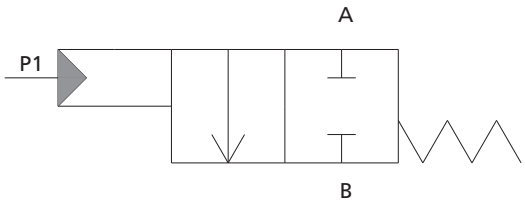
Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Maximum drive pressure: 3,000 psig (207 bar)
- Hydraulic actuated working temperature: 0°F to 200°F (-18°C to 93°C)
- High tensile 316 stainless steel for valve body and 17-4 PH for hydraulic actuator
- Gear shaft and rack in the transmission mechanism with special heat treatment and surface hardening to ensure excellent abrasive resistance and long cycle life
- Fluorocarbon FKM O-ring and PEEK seal to provide excellent resistance against chemicals, heat and abrasion
- Three types of hydraulic actuators (HTO, HTC, DH) available
- Maximum water depth: 13,800 ft. (4200 m)

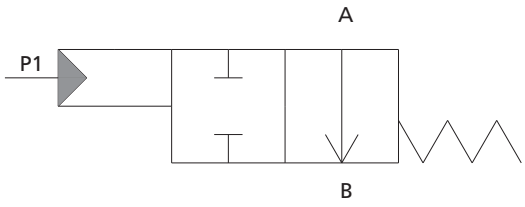
Subsea Hydraulic Ball Valves (2-way)

Subsea Hydraulic Ball Valves (3-way)

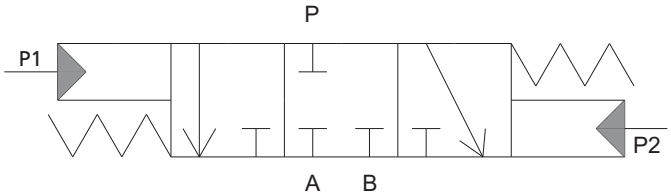
Schematic Diagram:



2-way (HTO)



2-way (HTC)



3-way (DH)

- HTO: Hydraulic to open, single acting with spring return (Normally Closed)
- HTC: Hydraulic to close, single acting with spring return (Normally Open)
- DH: Double acting with spring return

Ordering Number Description

15SBSS - 2FH6 - 6 - 2 - HTO - FNS4

Series	Body Material	Connection	Orifice No.	Flow Pattern	Hydraulic Actuator	Hydraulic Connection Type	Hydraulic Connection Size
10SB	4P 630	For 10SB Series	For 2-way	1 2-way Straight Valves	For 2-way, 3-way	FNS NPT Thread	4 1/4"
15SB	SS 316SS	FNS12 3/4" Female NPT	4 1/4"	2 3-way Valves, 180° Turn	HTO Hydraulic to open (Normally closed)	US Female SAE/MS Straight Thread	7 7/16"-20
20SB		FNS16 1" Female NPT	6 3/8"	2D 3-way Valves, 90° Turn	HTC Hydraulic to closed (Normally open)		8 1/2"
		2FH12 3/4" Female MP	For 3-way		DH 180° Normally closed, double acting with spring return		
		2FH16 1" Female MP	4 3/16"				
		For 15SB Series	6 3/8"				
		DHL4 1/4" Female DHL Series					
		DHL6 3/8" Female DHL Series					
		FNS4 1/4" Female NPT					
		FNS6 3/8" Female NPT					
		FNS8 1/2" Female NPT					
		For 20SB Series					
		2FH4 1/4" Female MP					
		2FH6 3/8" Female MP					
		2FH9 9/16" Female MP					
		2FH12 3/4" Female MP					
		6FH4 1/4" Female HP					
		6FH6 3/8" Female HP					

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Check Valves

Features

◎ Maximum external pressure: 6,000 psig (414 bar)
◎ Cracking pressure: 14 psig~26 psig (0.966 bar~1.794 bar)
◎ High tensile 316 stainless steel for valve body
◎ NBR O-ring as standard, other O-ring materials available
◎ Available to NACE MR0175
◎ 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)
◎ Maximum water depth: 13,800 ft. (4200 m)

10SC/10SCO Series

◎ End connections:
3/4" and 1" Female NPT
◎ Orifice sizes: 0.52" (13.21mm) and 0.69" (17.53mm)
◎ Working pressure up to: 10000 psig (690 bar)

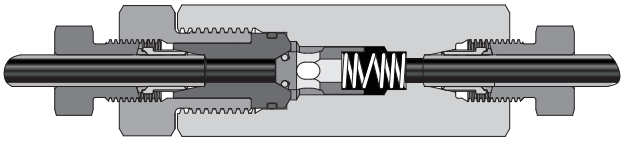
15SC/15SCO Series

◎ End connections:
1/4", 3/8" and 1/2" Female DHL series
1/4", 3/8" and 1/2" Female NPT
◎ Orifice sizes:
0.188" (4.78mm), 0.25" (6.35mm), 0.375" (9.53mm),
0.12" (3.05mm), 0.22" (5.59mm) and 0.36" (9.12mm)
◎ Working pressure up to: 15000 psig (1034 bar)

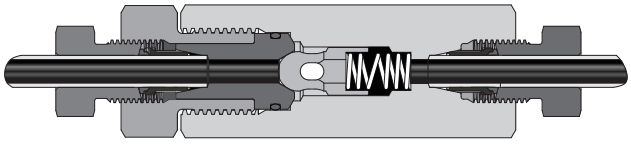
20SC/20SCO Series

◎ End connections:
1/4", 3/8", 9/16", 3/4" and 1" Female MP
◎ Orifice sizes:
0.125" (3.18mm), 0.218" (5.54mm), 0.359" (9.12mm),
0.516" (13.11mm) and 0.688" (17.48mm)
◎ Working pressure up to: 20000 psig (1379 bar)

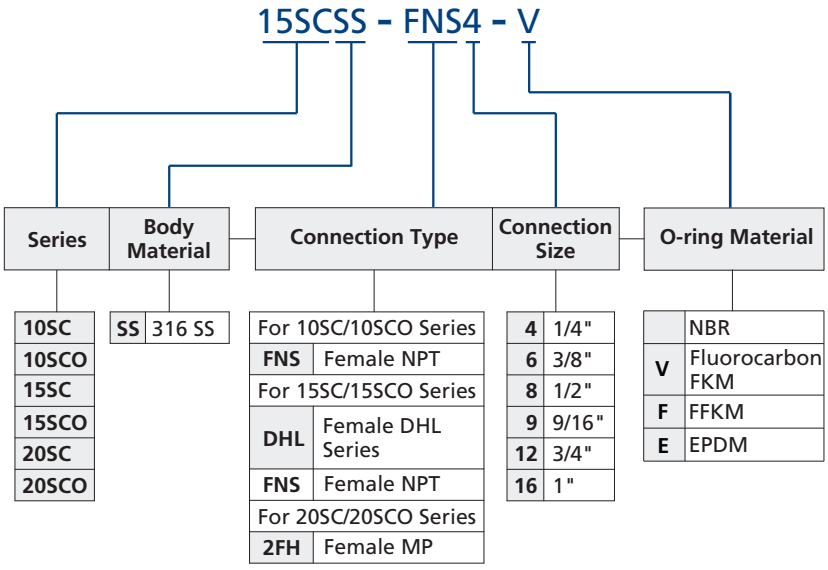
SC Series



SCO Series



Ordering Number Description



Code	O-ring Material	Working temperature Range, °F(°C)
	NBR	0 to 250 (-17.8 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

NOTES: 1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. Please contact FITOK Group or our authorized distributors for more information on wetted materials (Eg: 2507 SD), seal materials and operational designs to fulfill your application requirements.

Subsea Needle Valves

Features

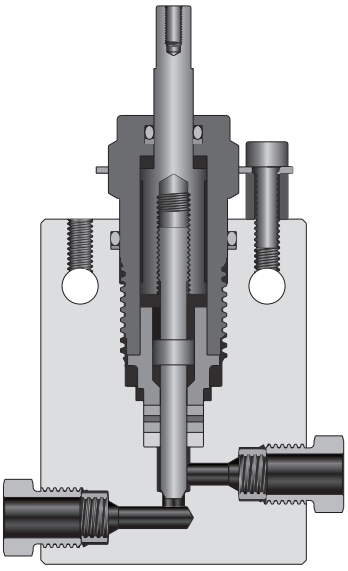
- Maximum external pressure: 6,000 psig (414 bar)
- High tensile 316 stainless steel for valve body
- Standard stem seal material: PTFE
- NBR O-ring as standard, other O-ring materials available
- Available to NACE MR0175
- Using a two-part spindle assembly with a non-rising upper stem, it is of great advantage when being used with ROVs
- Non-rotating lower stem to ensure positive non-galling operation during shut-off
- Packing located under stem threads
- Metal-to-metal seating to ensure ideal shut-off, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Reliable locking device of packing gland
- 2-way straight and 2-way angle available for flow pattern
- Maximum water depth: 13,800 ft. (4200 m)

15SN Series

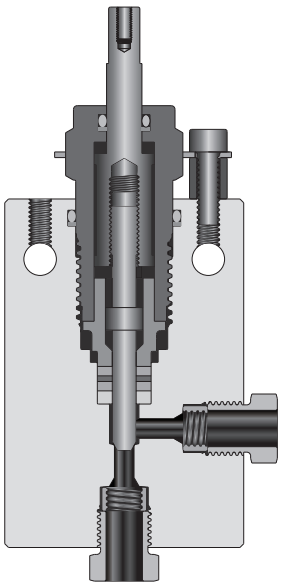
- End connections:
  1/4",3/8" and 1/2" Female DHL series
  1/4",3/8" and 1/2" Female NPT
- Orifice sizes:0.203" (5.16mm)
- Working pressure up to: 15000 psig (1034 bar)

20SN Series

- End connections:
  3/8",9/16", 3/4" Female MP
- Orifice sizes:0.203" (5.16mm)
- Working pressure up to: 20000 psig (1379 bar)



2-way straight



2-way angle

Ordering Number Description

20SNSS - 2FH6 - R2 - V

Series	Body Material	Connection	Stem Tip	Flow Pattern	O-ring Material

Series
15SN
20SN

Body Material	
SS	316 SS

For 15SN Series	
DHL4	1/4"Female DHL Series
DHL6	3/8"Female DHL Series
DHL8	1/2"Female DHL Series
FNS4	1/4" Female NPT
FNS6	3/8" Female NPT
FNS8	1/2" Female NPT
For 20SN Series	
2FH6	3/8" Female MP
2FH9	9/16"Female MP
2FH12	3/4" Female MP

Stem Tip	
	Vee
R	Regulating

Flow Pattern	
1	Straight
2	Angle

O-ring Material	
	NBR
V	Fluorocarbon FKM
F	FFKM
E	EPDM

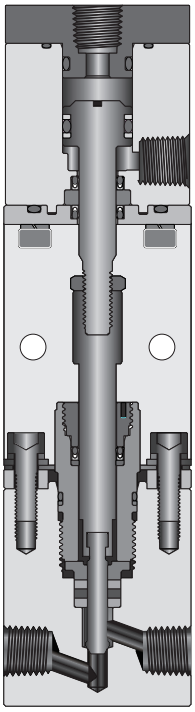
Code	O-ring Material	Working temperature Range, °F(°C)
	NBR	0 to 250 (-17.8 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Hydraulic Needle Valves

Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Maximum drive pressure: 3,000 psig (207 bar)
- Hydraulic actuated working temperature: 0°F to 175°F (-18°C to 80°C)
- High tensile 316 stainless steel for valve body
- Standard stem seal material: PTFE
- Available to NACE MR0175
- Metal-to-metal seating to ensure ideal shut-off, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Wide selection of tube and pipe end fittings available
- 2-way straight and 2-way angle available for flow pattern
- Orifice: 0.203" (5.16mm)
- Rated Cv: 0.75
- Maximum water depth: 13,800 ft. (4200 m)



Ordering Number Description

20SNSS - 2FH6 - R2 - H - FAN4

Series	Body Material	Connection	Stem Tip	Flow Pattern	Control Pattern	Hydraulic Connection
15SN	SS 316 SS	For 15SN Series	Vee	1 Straight	H Hydraulic	1/4" Female NPT
20SN		DHL4 1/4"Female DHL Series	R Regulating	2 Angle		FAN4 1/4" Female JIC
		DHL6 3/8"Female DHL Series				
		DHL8 1/2"Female DHL Series				
		FNS4 1/4" Female NPT				
		FNS6 3/8" Female NPT				
		FNS8 1/2" Female NPT				
		For 20SN Series				
		2FH6 3/8" Female MP				
		2FH9 9/16"Female MP				
		2FH12 3/4" Female MP				

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Hydraulic Directional Control Valves

Features

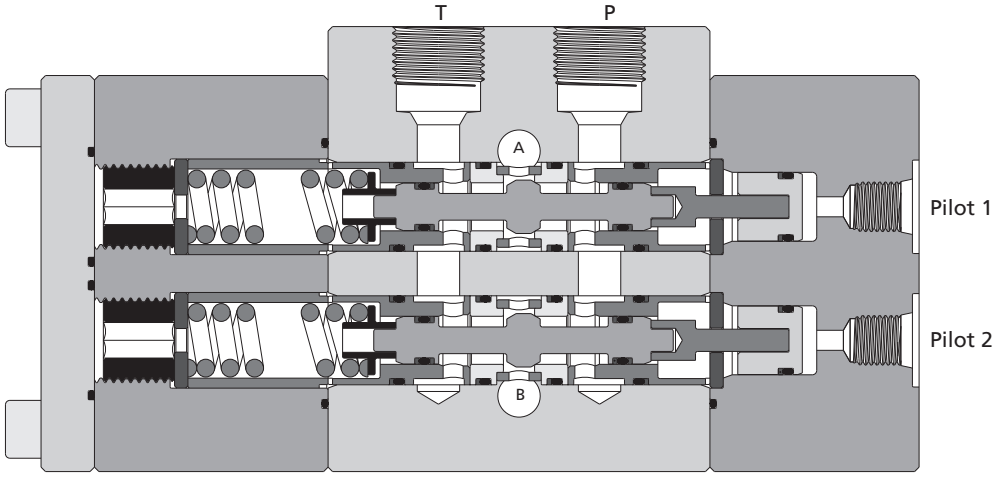
- Pilot working pressure: 3,000 psig (207 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- High tensile 316 stainless steel for valve body
- NBR O-ring as standard, other O-ring materials available
- Easy to connect, switch off and reverse between different flow channels
- Hydraulic remote control for easy operation
- Bolt connection for easy disassembly and maintenance
- Low impact performance to maximize cycle life
- Suitable for application with oil or water
- Maximum water depth: 13,800 ft. (4200 m)

15SDC Series

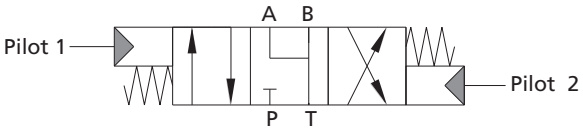
- End connections:
  1/4",3/8" and 1/2" Female NPT
- Orifice sizes: 0.25" (6.35mm) and 0.375" (9.53mm)
- Working pressure up to: 15000 psig (1034 bar)

20SDC Series

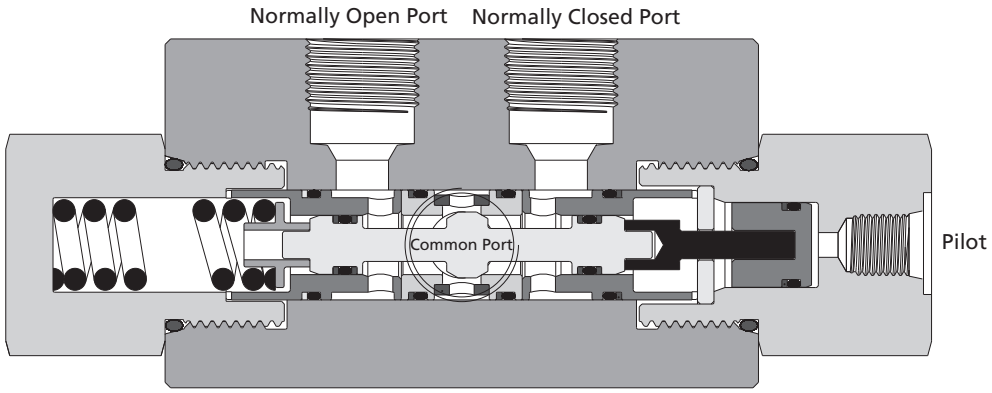
- End connections:
  3/8",9/16" and 3/4" Female MP
- Orifice sizes: 0.25" (6.35mm) and 0.375" (9.53mm)
- Working pressure up to: 20000 psig (1379 bar)



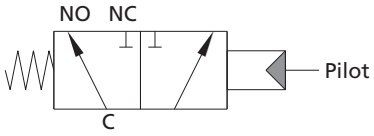
Circuit Symbol



3-position, 4-way



Circuit Symbol



2-position, 3-way

Ordering Number Description

20SDCSS - 3P4W - 2FH9 - 6 - US7 - V

Series	Body Material	Position Number	Way Number	Port Connection	Orifice No.	Pliot Connection	Size	O-ring Material
15SDC	SS 316	3P 3-position	4W 4-way	For 15SDC Series				
20SDC		2P 2-position	3W 3-way	FNS4 1/4" Female NPT				
				FNS6 3/8" Female NPT				
				FNS8 1/2" Female NPT				
				For 20SDC Series				
				2FH6 3/8" Female MP				
				2FH9 9/16" Female MP				
				2FH12 3/4" Female MP				
					1/4"			
					6 3/8"			
						US Female SAE/MS Straight Thread		
							7 7/16-20	
								NBR
								V Fluorocarbon FKM
								F FFKM
								E EPDM

Code	O-ring Material	Working temperature Range, °F(°C)
	NBR	0 to 250 (-17.8 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
F	FFKM	-20 to 500 (-29 to 260)
E	EPDM	-50 to 300 (-45 to 148)

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Medium & High Pressure Tubing

DHL Series Tubing

◎ Working pressure up to 15,000 psig (1034 bar)
◎ Working temperature range: -325°F to 800°F (-198°C to 427°C)
◎ Cold-drawn 1/8-Hard and Heavy-wall annealed 316/316L Stainless Steel seamless tubing available
◎ Examples of Ordering Number:
1. Cold-drawn 316/316L SS tubing: SS-15T8H-109-10.
2. Annealed 316/316L SS tubing: SS-15T12-240-3M.

Medium Pressure Tubing

◎ Working pressure: 20,000 psig (1379 bar)
◎ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
◎ Cold-drawn 316/316L Stainless Steel seamless tubing
◎ Coned and threaded nipples available
◎ Examples of Ordering Number:
1. Cold-drawn 316/316L SS tubing: SS-MT-2FH6-6M
2. 316/316L coned and threaded nipple: SS-CTN-2FH9-6

High Pressure Tubing

◎ Working pressure: 60,000 psig (4137 bar)
◎ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
◎ Cold-drawn 316/316L Stainless Steel seamless tubing
◎ Coned and threaded nipples available
◎ Examples of Ordering Number:
1. Cold-drawn 316/316L SS tubing: SS-HT-6FH6-3M
2. 316/316L coned and threaded nipple: SS-CTN-6FH4-4

Medium & High Pressure Tools

Manual Presetting Tools

◎ To preset double ferrules onto DHL Series tubing. Tubing sizes available in 1/8", 1/4", 3/8" and 1/2" O.D.

Ordering Number	Tube O.D., in.
PST-2D	1/8
PST-4D	1/4
PST-6D	3/8
PST-8D	1/2

Hydraulic Presetting Tools

◎ To preset double ferrules onto DHL Series tubing. Tubing sizes available in 1/2", 9/16" and 3/4" O.D.

Ordering Number	Description
HPT-DHF	With full set of die heads
HPT-H	Without die heads The die heads can be ordered individually.

Die Heads

Ordering Number	Tube O.D., in.
HPT-H-DHL8	1/2
HPT-H-DHL9	9/16
HPT-H-DHL12	3/4

Die Heads

Cutting Oil

◎ FUCHS RENOFORM MZAN 51 is offered by FITOK as cutting oil.
Ordering Number: HT-CO

Manual Coning Tools

◎ Applied in medium and high pressure tubing for concentric cone processing

Connection	Tube O.D. x I.D. in.	Ordering Number
2FH4	1/4 × 0.109	HCT-M4
2FH6	3/8 × 0.203	HCT-M6
2FH9	9/16 × 0.312	HCT-M9
6FH4	1/4 × 0.083	HCT-H4
6FH6	3/8 × 0.125	HCT-H6
6FH9	9/16 × 0.188	HCT-H9

Manual Threading Tools

◎ Applied in medium and high pressure tubing for thread processing

Tube O.D. in.	Ordering Number	Thread Size (Left Hand)
1/4	HTT-4	1/4-28 UNF
3/8	HTT-6	3/8-24 UNF
9/16	HTT-9	9/16-18 UNF

Manual Reseating Tools

◎ The tool is used for repairing the wearing cone seat of medium and high pressure fitting or valve

Connection	Ordering Number
2FH4	HRT-M4
2FH6	HRT-M6
2FH9	HRT-M9
2FH12	HRT-M12
2FH16	HRT-M16
6FH4	HRT-H4
6FH6	HRT-H6
6FH9	HRT-H9

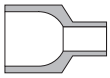
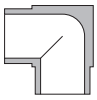
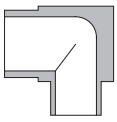
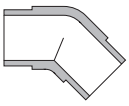
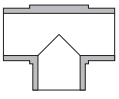
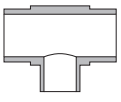
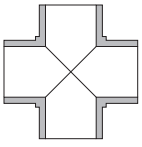
High Purity & Ultra High Purity Products

Fittings

Butt Weld Fittings

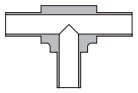
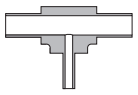
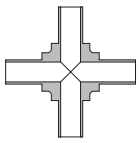
M Series

- 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 for elbows provides smooth flow path
- Maximum working temperature is 850°F (454°C)
- Standard wetted surface finish is average Ra 10 µin. (0.25µm)
- Every fitting is marked with size, material, and heat number

Configuration	Fitting Type	Example
	Reducing Union	6LV-WU1-TB8-TB4
	90° Union Elbow	6LW-WL1-MTB10
	Reducing Union Elbow	6LW-WL1-MTB12-MTB6
	45° Union Elbow	6LW-WV1-TB4
	Tribow	6LW-WB1-TB4
	Union Tee	6LW-WT1-MTB12
	Reducing Tee	6LW-WT1-TB8-TB8-TB4
	Union Cross	6LW-WC1-TB6

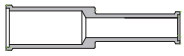
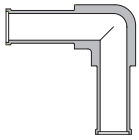
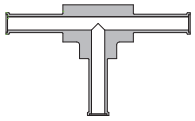
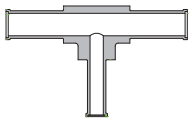
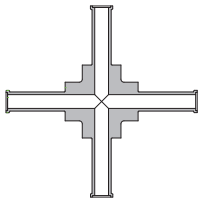
L Series

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

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

A Series

- Sizes ranging from 1/4" to 1" and 6 mm to 18 mm
- Integral filler ring aids in alignment
- Radius junction design for elbows provides smooth flow path
- Maximum working temperature is 850°F (454°C)
- Standard wetted surface finish is average Ra 10 µin. (0.25 µm)
- Every fitting is marked with size, material, and heat number

Configuration	Fitting Type	Example
	Automatic reducing Union	6L-WU2-TB8A-TB4A
	Automatic Union Elbow	6L-WL2-TB4A
	Automatic Union Tee	6L-WL2-TB8A
	Automatic Reducing Tee	6L-WT2-TB8A-TB8A-TB4A
	Automatic Union Cross	6L-WC2-TB6A

Butt Weld Fitting Ordering Number Description

6L - WU2 - TB8A - TB4 - □ - □ - F2

Material

SS	316 SS
6L	316L SS
6LV	316L VAR SS
6LW	316L VIM/VAR SS

Fitting Type

WU	Reducing Union
WL	Union Elbow
WT	Union Tee
WV	45°Union Elbow
WC	Union Cross
WB	Tribow

Fitting Series

1	M Series
2	L Series

P1 Type

TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld

P1 Size

2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
16	1" or 16 mm
18	18 mm

Weld Type

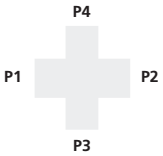
	Tube Butt weld
A	Automatic Weld

P2, P3 and P4

Specify in the same way as the P1

Technology Grade

	Standard Cleaning and Packaging
F2	Special Cleaning and Packaging
F3	Ultrahigh-purity Process Specification



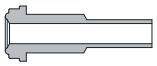
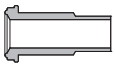
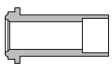
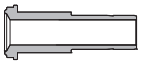
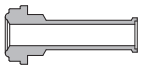
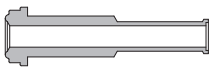
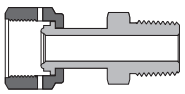
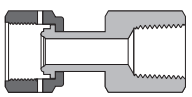
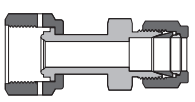
P1, P2, P3 and P4 shall be described in the following orders:
◎ Describe in descending order as per size if the end connection types are the same
◎ Describe the end of P1 if all end connections are the same

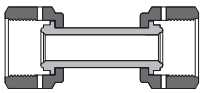
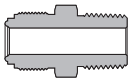
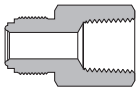
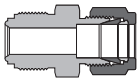
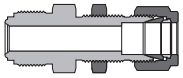
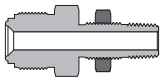
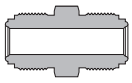
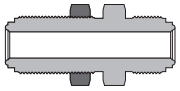
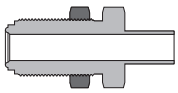
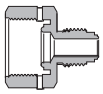
NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

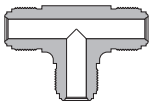
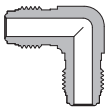
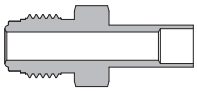
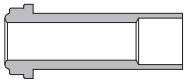
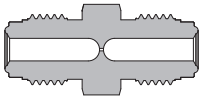
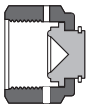
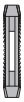
Metal Gasket Face Seal Fittings

FR 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 Ra 10 µin. (0.25 µm)
- Glands and bodies are marked with size, material, and heat number
- All seal faces and male threads are protected with plastic caps
- FR female threads are silver plated

Configuration	Fitting Type	Example
	FR Gland to Short Tube Butt Weld	6LV-G-FR8-TB8-6S
	FR Gland to long Butt Weld	6LV-G-FR8-TB8-6
	FR Gland to Male Weld	6L-G-FR8-TB4
	FR Gland to Tube Socket Weld	SS-G-FR8-TS6
	FR Gland to Short Tube Socket Weld	SS-G-FR4-TS4-0.75
	FR Gland to Tube Port	SS-G-FR8-FT6
	Short Fractional Automatic Tube Butt Weld	SS-AG-FR4-TB4-12S
	Long Fractional Automatic Tube Butt Weld	SS-AG-FR4-TB4-12
	Blind Gland	SS-G-FR8-B
	FR Welded Gland to Male NPT	SS-WG-FR8-NS6
	FR Welded Gland to Female NPT	SS-WG-FR8-FNS6
	FR Welded Gland to Tube Fitting	SS-WG-FR8-FL8

Configuration	Fitting Type	Example
	FR Welded Gland Union	SS-WG-FR4
	Female Nut	SS-N-FR4
	Male Nut	SS-MN-FR8
	FR Body to Male NPT	SS-CM-FR8-NS4
	FR Body to Female NPT	SS-CF-FR8-NS4
	FR Body to Tube Fitting	SS-U-FR8-FL6
	FR Body to Bulkhead Tube Fitting Union	SS-UB-FR8-FL8
	FR Body to Bulkhead Male Connector	SS-CMB-FR8-NS4
	Union Body	SS-U-FR8
	Bulkhead Union Body	SS-BU-FR8
	FR Bulkhead Body to Tube Butt Weld	SS-BW-FR4-TB4
	Coupling	SS-BC-FR8
	Female Reducing Union	SS-RU-FR8-FR4
	Reducing Adapter	SS-RA-FR8-FR4

Configuration	Fitting Type	Example
	Reducing Bushing	SS-RB-FR8-FR4
	FR Body to Male NPT Elbow	SS-LM-FR8-NS6
	FR Body Union Elbow	SS-LU-FR8
	FR Body Union Tee	SS-TTT-FR8
	FR Body Union Cross	SS-C-FR8
	"H" Type Union Elbow	SS-LU-HFR4
	"H" Type Tube Butt Weld	SS-CW-HFR4-TB6
	"H" Type Tube Butt Weld	SS-G-HFR4-TB6-30.2
	Flow Restrictors	6LV-R-FR4-020
	Plug	SS-PG-FR4
	Cap	SS-CP-FR4
	Non-retained Gaskets	6L-GT-FR8
	Snubber Gasket	6L-GT-FR4-5M
	Knurled Gasket	6L-GT-FR4-KN-A-UP
	Gasket Retainer Assembly	NI-GT-FR8-A
	Side-load Retainer Gasket	NI-GT-FR4-AS-UP

Ordering Number Description

SS - LM - FR8 - NS6 - □ - □ - F2

Material	
SS	316 SS
6L	316L SS
6LV	316L VAR SS

Fitting Type	
G	Gland
WG	Weld Gland
N	Female Nut
MN	Male Nut
CM	Male Connector Body
CF	Female Connector Body
U	Union Body
UB	Body to Bulkhead Tube Fitting Union
CMB	Body to Bulkhead Male Connector
BY	Blind Body
BU	Bulkhead Union Body
BW	Bulkhead Body to Tube Butt Weld
BC	Coupling
CW	Body to Tube Socket Weld
RU	Female Reducing Union
RA	Reducing Adapter
RB	Reducing Bushing
LM	Male Elbow
LU	Union Elbow
TTT	Union Tee
C	Union Cross
PG	Plug
CP	Cap
GT	Gasket

P1 Type	
FR	Metal Gasket Face Seal

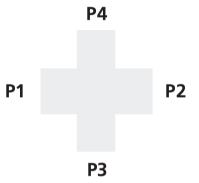
P1 Size	
2	1/8"
4	1/4"
8	1/2" or 3/8"
12	3/4"
16	1"

P2 Type	
FR	Metal Gasket Face Seal
FL	Fractional Double Ferrule
FT	Fractional Tube
TS	Fractional Tube Socket Weld
TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld
NS	NPT Thread
FNS	Female NPT Thread
ST	SAE/MS Straight Thread

P2 Size	
In addition to those specified for P1, other sizes are as follows:	
1	1/16"
2	1/8"
4	1/4"
6	3/8" or 6 mm
7	7/16-20
8	8 mm
9	9/16-18
10	10 mm
12	3/4" or 3/4-16 or 12 mm
17	1 1/16-12
18	18 mm
21	1 5/16-12

P3 and P4
Specify in the same way as the P2

Technology grade	
	Standard Cleaning and Packaging
F2	Special Cleaning and Packaging
F3	Ultrahigh-purity Process Specification



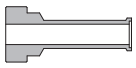
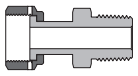
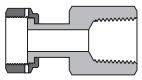
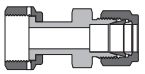
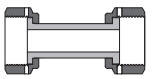
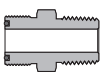
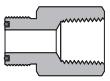
NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

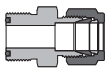
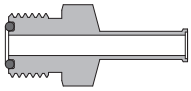
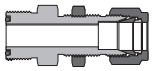
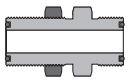
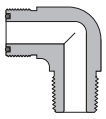
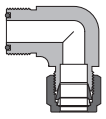
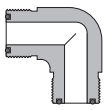
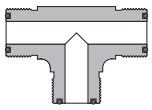
P1, P2, P3 and P4 shall be described in the following orders:
◎ Describe in descending order as per size if the end connection types are the same
◎ Describe the end of P1 if all end connections are the same

O-ring Face Seal Fittings

FO Series

- Sizes range from 1/8" to 1"
- 316 and 316L stainless steel materials are available
- O-ring seal provides perfect leak-tight service from vacuum to high pressure
- Glands and bodies are marked with size, material, and heat number
- Fittings are easy to install and maintain
- FO female threads are silver plated

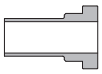
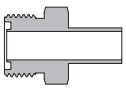
Configuration	Fitting Type	Example
	FO Gland to Tube Butt Weld	6L-G-FO8-TB6
	FO Gland to Tube Socket Weld	6L-G-FO8-TS8
	FO Gland to Tube Port	SS-G-FO8-FT8
	FO Gland to Automatic Tube Weld	6L-G-FO4-TB4A
	FO Welded Gland to Male NPT	SS-WG-FO4-NS4
	FO Welded Gland to Female NPT	SS-WG-FO4-FNS4
	FO Welded Gland to Tube Fitting	SS-WG-FO8-FL6
	FO Welded Gland Union	SS-WG-FO4
	Female Nut	SS-N-FO8
	Blind Nut	SS-N-FO4-B
	FO Body to Male NPT	SS-CM-FO8-NS8
	FO Body to Female NPT	SS-CF-FO8-NS6

Configuration	Fitting Type	Example
	FO Body to Tube Fitting	SS-U-FO8-FL6
	FO Body to Automatic Tube Weld	6L-CW-FO4-TB4A
	FO Body to Bulkhead Tube Fitting Union	SS-UB-FO8-FL8
	Blind Body	SS-BY-FO8
	Union Body	SS-U-FO4
	Bulkhead Union Body	SS-BU-FO8
	FO Body to Tube Socket Weld	SS-CW-FO8-TS8
	FO Body to Male NPT Elbow	SS-LM-FO8-NS6
	FO Body to Tube Fitting Elbow	SS-LU-FO8-FL8
	FO Body Union Elbow	SS-LU-FO8
	FO Body Union Tee	SS-TTT-FO4

L-ring Face Seal Fittings

TFO Series

- Sizes range from 1/4" to 1"
- Materials:
  Body, gland: 316L stainless steel
  Nut: 316 stainless steel
- Reduced internal entrapment
- Lubricant-free L-ring seal
- Tube butt end connections
- Controlled L-ring extrusion, no overtightening

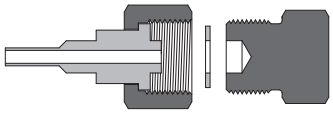
Configuration	Fitting Type	Example
	Gland	6L-G-TFO8-TB8
	Tube Butt Weld Body	6L-CW-TFO8-TB8
	Nut	SS-N-TFO8
	L-ring Seal	T-GT-TFO8

Cylinder Connections

- ◎ 100% visual inspection of critical surfaces
- ◎ Diverse material and configurations available
- ◎ Silver-plated nut threads to reduce installation torque
- ◎ Every fitting marked with size, material and heat number
- ◎ Cleaned and packaged for Oxygen and Ultra High Purity Service available
- ◎ Customized solutions available

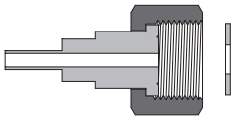
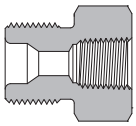
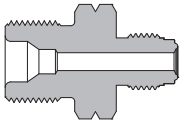
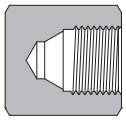
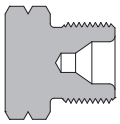
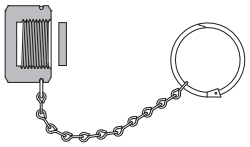
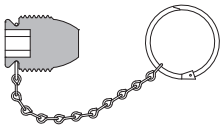
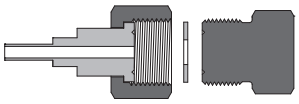
DIN Series

- ◎ DIN 477-1 compliant
- ◎ Nipple with TB fitting electropolished with internal surface roughness finished to an average of Ra 9 µin. (0.23 µm)
- ◎ Test with helium (maximum allowable leak rate: 1 x 10^{-9} mbar l/s)

Configurations	Fitting Type	Example
	Complete Pigtail Connections (Including Nipples, Nuts, Gaskets and Blank Plugs)	6L-DIN8-TB4-A

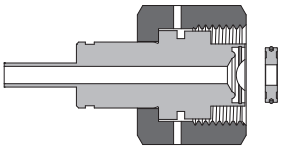
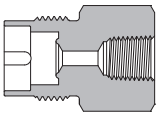
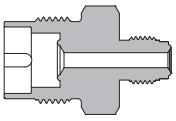
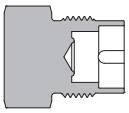
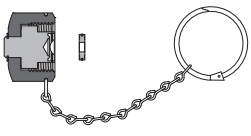
CGA Series

◎ CGA V-1-2005 compliant
◎ Nipple with TB or FR fitting electropolished with internal surface roughness finished to an average of Ra 9 µin. (0.23 µm)
◎ Test with helium (maximum allowable leak rate: 1 x 10^{-9}mbar l/s)

Configurations	Fitting Type	Example
	Cylinder Connections (Including Nipples, Nuts and Gaskets)	6L-C580-TB4
	Gaskets	K-C170-GT
	Female NPT	6L-C580-A-FNS4
	Male Face Seal	6L-C540-A-FR4
	Blank Caps	6L-C296-BC
	Blank Plugs	6L-C320-BP
	Valve Outlet Caps (Including Chains, Rings and Gaskets)	6L-C670-CP
	Valve Outlet Plugs (Including Chains and Rings)	6L-C510-PG
	Complete Pigtail Connections (Including Nipples, Nuts, Gaskets and Blank Plugs or Caps)	6L-C590-TB4-A

CGA DISS Series

◎ Non-rotating design
◎ Nipple with TB or FR fitting electropolished with internal surface roughness finished to an average of Ra 9 μin. (0.23 μm)
◎ Cleaned for Ultra High Purity Service; packaged in a Class 100 clean room
◎ Test with helium (maximum allowable leak rate: 1 x 10^{-9} mbar l/s)

Configurations	Fitting Type	Example
	Cylinder Connections (Including Nipples, Nuts and Gaskets)	6L-C634-TB4
	Gaskets	K-C630-GT
	Female NPT	6L-C634-A-FNS4
	Male Face Seal	6L-C712-A-FR4
	Blank Plugs	6L-C720-BP
	Valve Outlet Caps (Including Chains, Rings and Gaskets)	6L-C728-CP

Gas Connection Assignment Table®

Gas	Formula	UHP CGA	CGA	DIN	JIS
Ammonia	NH_3	720	705	DIN6	22-R
Argon	Ar	718	580	DIN6	22-R or 23-R
Arsenic Pentafluoride	AsF_5	642	—	—	—
Arsine	AsH_3	632	350	—	22-L
Boron Trichloride	BCl_3	634	660	DIN8	—
Boron Trifluoride	BF_3	642	330	DIN8	22-L
Carbon Dioxide	CO_2	716	320	DIN6	—
Carbon Monoxide	CO	724	350	DIN5	22-L
Chlorine	Cl_2	728	—	DIN8	26-R
Diborane	B_2H_6	632	350	—	22-L
Dichlorosilane	SiH_2Cl_2	636	678	DIN5	—
Diethlyzinc	$Zn(C_2H_5)_2$	726	510	—	—
Diethyltelluride	$(C_2H_5)_2Te$	726	—	—	—
Dimethylzinc	$(CH_3)_2Zn$	726	—	—	—
Disilane	Si_2H_6	632	—	—	—
Germane	GeH_4	632	350 or 660	—	—
Halocarbon 11	CCl_3F	716	660	—	—
Halocarbon 115	$ClCF_2CF_3$	716	660	DIN6	—
Halocarbon 12	CCl_2F_2	716	660	DIN6	—
Halocarbon 13	$ClCF_3$	716	660	DIN6	—
Halocarbon 14	CF_4	716	320 or 580	DIN6	—
Halocarbon 23	CHF_3	716	660	DIN6	—
Halocarbon 116	F_3CCF_3	716	660	—	—
Helium	He	718	580	DIN6	22-R or 23-R
Hydrogen	H_2	724	350	DIN1	22-L
Hydrogen Bromide	HBr	634	330	DIN8	26-R
Hydrogen Chloride	HCl	634	330	DIN8	26-R
Hydrogen Fluoride	HF	638	660 or 670	—	26-R
Hydrogen Sulfide	H_2S	722	330	DIN5	—
Krypton	Kr	718	580	DIN6	22-R or 23-R
Neon	Ne	718	580	DIN6	22-R or 23-R
Nitrogen	N_2	718	580	DIN10	22-R or 23-R
Nitrogen Trifluoride	NF_3	640	330 or 670	DIN8	—
Nitrous Oxide	N_2O	712	326	DIN8	—
Oxygen	O_2	714	540	DIN9	22-R or 23-R
Perfluoropropane	$CF_2(CF_3)$	716	660	—	—
Phosphine	PH_3	632	350 or 660	DIN1	—
Phosphorus Pentafluoride	PF_5	642	330 or 660	—	—
Silane	SiH_4	632	350	—	—
Silicon Tetrachloride	$SiCl_4$	636	—	—	—
Silicon Tetrafluoride	SiF_4	642	330	—	22-L
Sulphur Hexafluoride	SF_6	716	590	DIN6	26-R
Trichlorosilane	$SiHCl_3$	636	—	—	—
Triethylaluminum	$(C_2H_5)_3Al$	726	510	—	—
Tungsten Hexafluoride	WF_6	638	670	DIN8	—
Xenon	Xe	718	580	DIN6	22-R

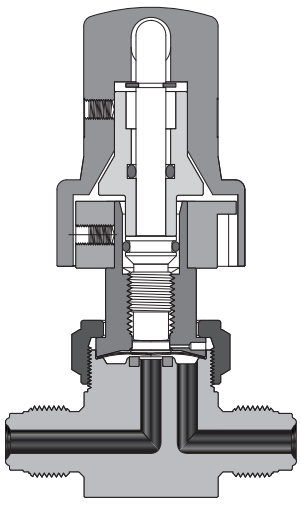
Information in this table is for reference only.

Valves

Diaphragm Valves

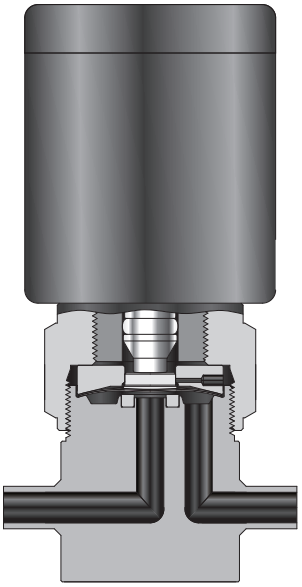
DQ Series

- ◎ Suitable for ultra high purity applications
- ◎ Low internal volume, fully swept flow path
- ◎ Contained seat to provide excellent resistance to swelling and contamination
- ◎ Elgiloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
- ◎ Different handle types and colors available
- ◎ Max. working pressure: 250 psig (17.2 bar)
- ◎ Working temperature: PCTFE: -10~150°F (-23~+65°C)
  PFA: -10~302°F (-23~+150°C)
- ◎ Leak rate (helium): Internal: ≤ 1.0 x 10^{-9} mbar l/s
  External: ≤ 1.0 x 10^{-9} mbar l/s
- ◎ Orifice size: 0.16 in. (4.1 mm)
- ◎ Flow coefficient: 0.27
- ◎ Connections: 1/4" to 3/8" or 6 mm to 8 mm
- ◎ Flow patterns: straight type, branch type, 2-valve 3-way block type, 3-valve 4-way block type



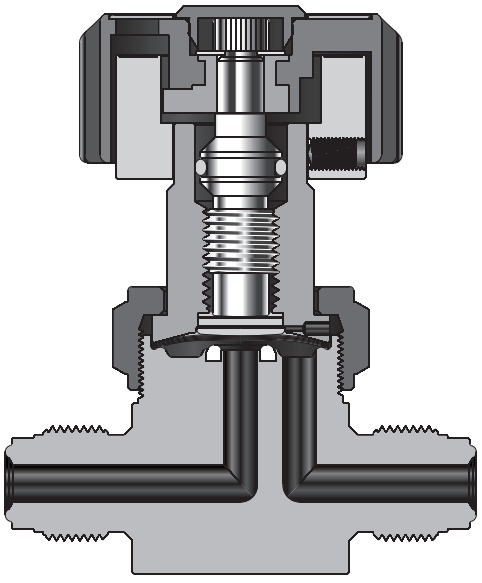
DP Series

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



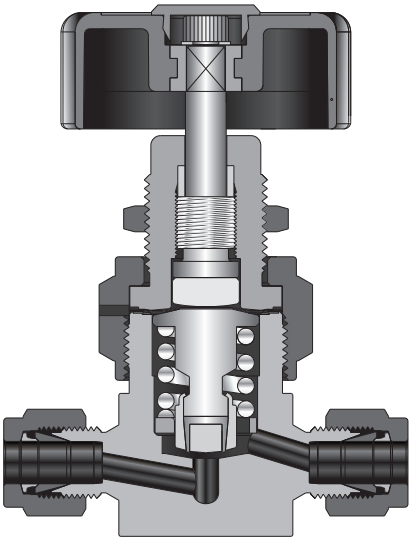
DH Series

◎ Fully contained PCTFE seat to provide excellent resistance to swelling and contamination
◎ Elgiloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
◎ Manual and pneumatic actuators available
◎ Max. working pressure: 3000 psig (206 bar)
◎ Pneumatic actuator operating pressure: 60 to 90 psig (4.2 to 6.2 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C):
◎ Leak rate (helium): Internal: ≤ 1.0×10^{-9} mbar l/s
External: ≤ 1.0×10^{-9} mbar l/s
◎ Orifice size: 0.16 in. (4.1 mm)
◎ Flow coefficient: 0.20
◎ Connections: 1/4" to 3/8" or 6 mm to 8 mm
◎ Flow patterns: straight type, branch type



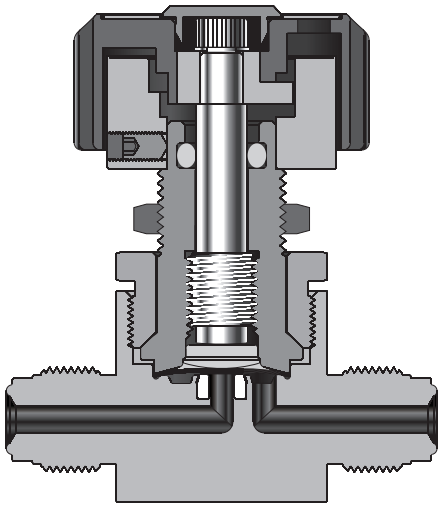
DM Series

◎ Fully functional under vacuum conditions
◎ Repetitive shutoff with fully contained soft-seat stem tip
◎ Manual (position indicator ring for lever handle) and pneumatic actuators available
◎ Different handle types and colors available
◎ Max. working pressure: 3500 psig (241 bar)
◎ Pneumatic actuator operating pressure: 60 to 90 psig (4.2 to 6.2 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C)
Vespel: -10~+250°F (-23~121°C)
◎ Leak rate (helium): Internal: ≤ 4.0 x 10^{-9} mbar l/s
External: ≤ 4.0 x 10^{-9} mbar l/s
◎ Orifice size: 0.16 in. (4.1 mm)
◎ Flow coefficient: Lever handle 0.14
Round handle 0.30
Pneumatic actuator 0.20
◎ Connections: 1/4" to 3/8" or 6 mm to 8 mm
◎ Flow patterns: straight type, angle type, branch type



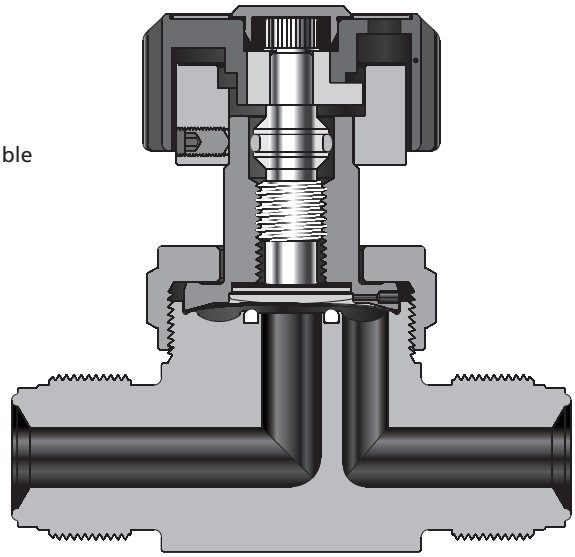
DS Series

◎ Suitable for ultra high purity applications
◎ Fully contained PCTFE seat to provide excellent resistance to swelling and contamination
◎ Elgiloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
◎ Max. working pressure: 4500 psig (310 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C)
Vespel: -10~+250°F (-23~+121°C)
◎ Leak rate (helium): Internal: ≤ 1.0 x 10^{-9} mbar l/s
External: ≤ 1.0 x 10^{-9} mbar l/s
◎ Orifice size: 0.12 in. (3.0 mm)
◎ Flow coefficient: 0.17
◎ Connections: 1/4" to 3/8" or 6 mm to 8 mm
◎ Flow patterns: straight type, 2-valve 3-way block type



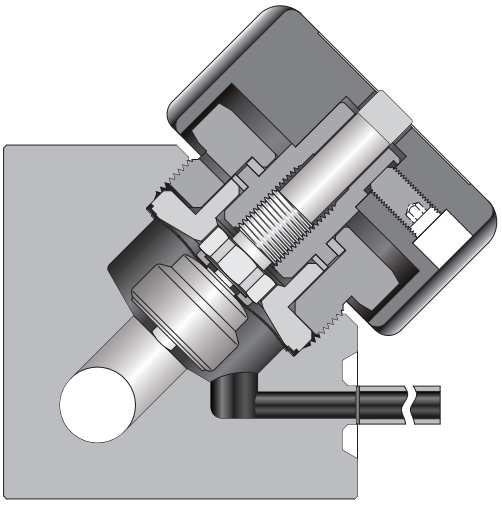
DR Series

◎ Fully contained seat to provide excellent resistance to swelling and contamination
◎ Elgiloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
◎ Manual (position indicator for handle) and pneumatic actuators available
◎ Pneumatic actuator operating pressure: 60 to 90 psig (4.2 to 6.2 bar)
◎ Max. working pressure: 145 psig (10 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C)
PFA: -10~+302°F (-23~+150°C)
◎ Leak rate (helium): Internal: ≤ 1.0 x 10^{-9} mbar l/s
External: ≤ 1.0 x 10^{-9} mbar l/s
◎ Orifice size: 0.31 in. (7.9 mm)
◎ Flow coefficient: 0.70
◎ Connections: 3/8" to 1/2" or 10 mm to 12 mm
◎ Flow patterns: straight type, branch type, 2-valve 3-way block type, 3-valve 4-way block type



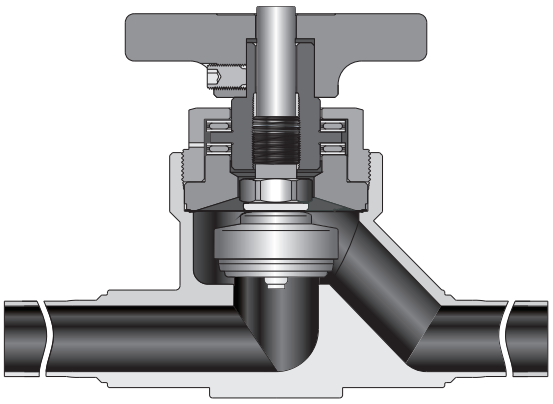
DV Series

◎ 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
◎ Max. working pressure: 300 psig (20.6 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C)
Vespel: -10~+250°F (-23~+121°C)
◎ Leak rate (helium): Internal: ≤ 1.0 x 10^{-9} mbar l/s
External: ≤ 1.0 x 10^{-9} mbar l/s
◎ Orifice size: 0.5 in. (12.7 mm)
◎ Flow coefficient: 2.8
◎ Connections: 1/2" to 1" or 12 mm to 18 mm
◎ Flow patterns: straight type, branch type, 2-valve 3-way block type, 2-valve 4-way block type



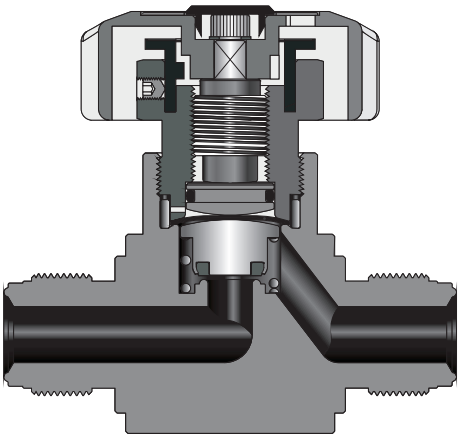
DL Series

◎ 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
◎ Max. working pressure: 300 psig (20.6 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C)
Vespel: -10~+250°F (-23~+121°C)
◎ Leak rate (helium): Internal: ≤ 1.0 x 10^{-9} mbar l/s
External: ≤ 1.0 x 10^{-9} mbar l/s
◎ Orifice size: 1.125 in. (28.6 mm)
◎ Flow coefficient: 13
◎ Connections: 3/4" to 1" or 23 mm to 25 mm
◎ Flow patterns: straight type, straight type with purge port



DF Series

◎ Fully functional under vacuum conditions
◎ Repetitive shutoff with fully contained soft-seat stem tip
◎ Manual (with position indicator ring) and pneumatic actuators available
◎ Max. working pressure: Manual: 3500 psig (241 bar)
Pneumatic: 3000 psig (206 bar)
◎ Pneumatic actuator operating pressure: 60 to 90 psig (4.2 to 6.2 bar)
◎ Working temperature: PCTFE: -10~+150°F (-23~+65°C)
Vespel: -10~+250°F (-23~+121°C)
◎ Leak rate (helium): Internal: ≤ 4.0 x 10^{-9} mbar l/s
External: ≤ 4.0 x 10^{-9} mbar l/s
◎ Orifice size: 0.31 in. (8.0 mm)
◎ Flow coefficient: 0.80
◎ Connections: 3/8" to 1/2" or 8 mm to 12 mm
◎ Flow pattern: straight type



Ordering Number Description

DQ236L - FR4 - ML6 - FR4 - FFR4 - VT - B - P2 - RVF2

Series	Valve Type	Body Material	Port 1 Type	Port 1 Size	Port 2/3/4 Type	Port 2/3/4 Size	Flow Pattern	Body Type	Purge Port	Actuator Type	Seat	Technology Grade
DQ	Straight	SS 316 SS	FR Male FR Fitting	4 1/4 "	Same as Port 1	Same as Port 1	Straight	Cast (DL Series)	None (DV,DL Series)	Handle (DV, DLSeries)	PCTFE	General Purpose
DP	Branch (DQ,DP,DH, DM,DR,DV Series)	6L 316L SS	FFR Female FR Fitting	6 6 mm or 3/8 "	Specify in the same way as Port 1		A Angle	B Bar Stock (DL Series)	P0 Inlet (DV, DL Series)	U Integral Lockout Handle (DQ Series)	A PFA	F2 Special Cleaning and Packaging
DH		6LW 316L SS VIM-VAR (Excluding DM,DV, DL Series)	RFR Rotatable Male FR Fitting	8 8 mm or 1/2 "			3D Branch		P1 Outlet (DV, DL Series)	L Lever Handle (DM Series)	V Vespel	F3 Ultra High Purity
DM	Angle (DM Series)	SS CF8M (DL Series)	TB Fractional Tube Butt Weld	10 10 mm			3E		P2 Inlet and Outlet (DV, DL Series)	R Round Handle (Single Actuator)		
DS	2-Valve 3-Way (DV Series)	6L CF3M (DL Series)	MTB Metric Tube Butt Weld	12 12 mm or 3/4 "			3F			C Normally closed (Single Actuator)		
DR	2-Valve 4-Way (DV Series)		FL Fractional Tube Fitting	16 16 mm or 1 "			3G			O Normally Open (Single Actuator)		
DV	23 2-Valve 3-Way (DQ,DP, DS Series)		ML Metric Tube Fitting	23 23 mm			3K			RO V1 Handle V2 Open	(2-valve Dual Actuators)	
D L	34 3-Valve 4-Way Block (DQ, DP Series)		NS Male NPT	25 25 mm			ST			RC V1 Handle V2 Closed		
DF			FNS Female NPT				DT 2-Valve 3-Way Block			CR V1 Closed V2 Handle		
							VT			CO V1 Closed V2 Open		
							VF			OR V1 Open V2 Handle		
							VB			OC V1 Open V2 Closed		
							WT					
							WF					
							DC 2-Valve 4-Way Block					
							GK 3-Valve 4-Way Block					
							KG					

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Cylinder Pressure Regulators

FCR-1 Series

- Single-stage regulator
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~250, 0~500 psig
- Material of the internal components:
  Seat: PCTFE
  Diaphragm: Hastelloy
  Filter: 316L
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.06
- Weight (regulator only): ≈ 1.98 lbs (0.9 kg)
- Metal-to-metal diaphragm seal
- Convoluted diaphragm design to improve regulation precision and cycle life
- Applicable to corrosive or toxic gases
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Adjustable relief pressure
- 20 μm filter installed at inlet

FCR-1S Series

- Single-stage regulator
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~200 psig
- Material of the internal components:
  Seat: PCTFE
  Diaphragm: 316L
  Filter: 316L
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.06
- Weight (regulator only): ≈ 2.87 lbs (1.3 kg)
- Large diameter convoluted diaphragm to increase pressure sensitivity and minimize pressure drop
- Metal-to-metal diaphragm seal
- 316L SS and Brass available for valve
- With special cleaning and packaging, applicable to oxygen-enriched environments
- 20 μm filter installed at inlet

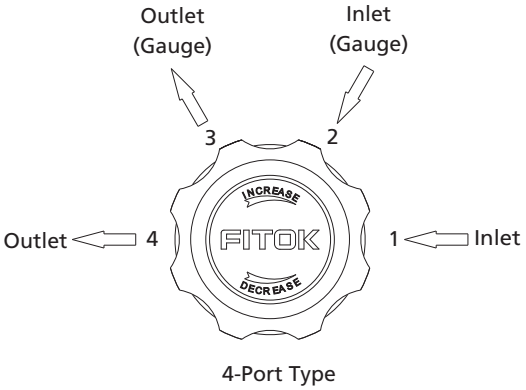
FCR-2 Series

- Single-stage regulator
- Maximum inlet pressure: 4500 or 6000 psig
- Outlet pressure range: 0~750, 0~1500, 0~2500 psig
- Material of the internal components:
  Seat: PCTFE
  Piston: 316L
  O-ring: Viton or Kalrez Filter: 316L
- Working temperature: -15°F~+165°F (-26°C~+74°C)
- Leak rates:
  Internal: bubble-tight
  External: bubble-tight
- Flow coefficient (Cv):
  Without vent: 0.06 With vent: 0.1
- Weight (regulator only): ≈ 1.98 lbs (0.9 kg)
- Robust piston-sensed design to ensure safety and reliability
- 316L SS or Nickel-plated Brass body optional
- For non-corrosive gases (due to seal limit)
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Venting model available
- 20 μm filter installed at inlet

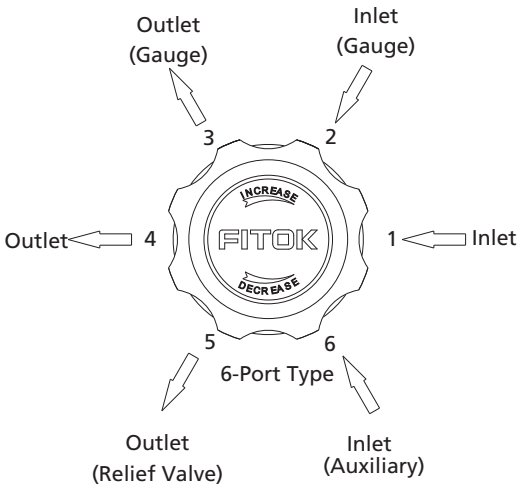
FCR-1D Series

- Dual-stage pressure reducing construction to provide accurate and stable pressure
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~250 psig
- Material of the internal components:
  Seat: PCTFE Diaphragm: Hastelloy Filter: 316L
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.05
- Weight (regulator only): ≈ 3.3 lbs (1.5 kg)
- With special cleaning and packaging, applicable to oxygen-enriched environments
- 20 μm filter installed at inlet

Port Configuration



4-Port Type



6-Port Type

Ordering Number Description

FCR - 2VZ6L - 45 - 750 - 00 - B - B - 00 - R - P

Series
FCR-1 General Diaphragm Regulators
FCR-1S Sensitive Diaphragm Regulators
FCR-2 High Pressure Piston Regulators
FCR-1D Dual-stage Diaphragm Regulators

Only for FCR-2 Series	
Vent Option	O-ring Material
Without	FKM
V With	Z Kalrez

Body Material
6L 316L SS
SS 316 SS
B Brass
HC Hastelloy C-276

Maximum Inlet Pressure	
FCR-1, FCR-1S FCR-1D	
30	3000 psig
45	4500 psig
FCR-2	
45	4500 psig
60	6000 psig

Outlet Pressure Range		
25	0~25 psig	FCR-1
50	0~50 psig	
100	0~100 psig	
250	0~250 psig	
500	0~500 psig	
750	0~750 psig	FCR-2
1500	0~1500 psig	
2500	0~2500 psig	
25	0~25 psig	FCR-1S
50	0~50 psig	
100	0~100 psig	
150	0~150 psig	
200	0~200 psig	
25	0~25 psig	FCR-1D
50	0~50 psig	
100	0~100 psig	
150	0~150 psig	
250	0~250 psig	

Connection 1	
00	1/4" Female NPT
C_ _ _	CGA Series (USA)
DIN_	DIN Series (Germany)
Cylinder connections compliant to other standards are available upon request. Contact FITOK for details.	

Connection 2	
B	With Gauge (psig/bar)
M	With Gauge (MPa)
P	Plug
Others refer to Connection 4	

Connection 3
Specify in the same way as Connection 2

Connection 4	
00	1/4"Female NPT
01	1/4" Male NPT
10	1/4" Fractional Tube Fitting
11	3/8" Fractional Tube Fitting
20	6mm Metric Tube Fitting
21	8mm Metric Tube Fitting
30	Diaphragm Valve with 1/4" Female NPT
31	Diaphragm Valve with 1/4" Male NPT
32	Diaphragm Valve with 1/4" Tube Fitting
33	Diaphragm Valve with 3/8" Tube Fitting
34	Diaphragm Valve with 6 mm Metric Tube Fitting
35	Diaphragm Valve with 8 mm Metric Tube Fitting
Other connections are available upon request	

Connection 5	
R	Relief Valve
P	Plug
00	1/4" Female NPT

Connection 6
Specify in the same way as Connection 5

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Line Pressure Regulators

FLR-1 Series

- Single-stage regulator
- Maximum inlet pressure: 500 or 1500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~250 psig
- Material of the internal components:
  Seat: PCTFE
  Diaphragm: Hastelloy
  Filter: 316L
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.14
- Weight (regulator only): ≈1.98 lbs (0.9 kg)
- Metal-to-metal diaphragm seal
- Similar to FCR-1 Series Regulators with larger orifice to provide higher flow capacity
- 316L SS body for corrosive or toxic gases, Nickel-plated Brass body for non-corrosive gases
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Configuration with filter installed at inlet as standard
- Panel mounted or installed with screw at the bottom

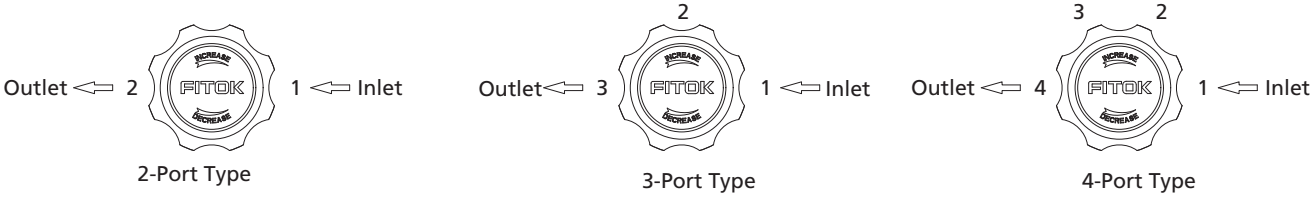
FLR-2 Series

- Single-stage regulator
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~250, 0~500, 0~750, 0~1000 psig
- Material of the internal components:
  Seat: PCTFE
  Piston: 316L
  O-ring: Viton or Kalrez
  Filter: 316L
- Working temperature: -15°F~+165°F (-26°C~+74°C)
- Leak rates:
  Internal: Bubble-tight
  External: Bubble-tight
- Flow coefficient (Cv):
  Without vent: 0.06
  With vent: 0.1
- Weight (regulator only): ≈1.98 lbs (0.9 kg)
- Applicable to non-corrosive gases or low-viscosity liquids
- Easy to assemble and disassemble, convenient replacement of springs with different output ranges
- Robust piston-sensed design to provide safety and reliability
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Panel mounted or installed with screw at the bottom

FLR-3 Series

- Single-stage regulator
- Maximum inlet pressure: 500 or 3000 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~150, 0~200 psig
- Material of the internal components:
  Seat: PCTFE
  Diaphragm: 316L
- Working temperature: -40°F~+140°F (-40°C~+60°C)
- Leak rates:
  Internal: Bubble-tight
  External: ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 1.0
- Weight (regulator only): ≈ 3.53 lbs (1.6 kg)
- Balanced poppet
- With large orifice to minimize outlet pressure change when inlet pressure reduces
- Large diameter convoluted diaphragm to increase pressure sensitivity
- 316L SS body for corrosive or toxic gases, Brass body for non-corrosive gases
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Panel mounted or installed with screw at the bottom

Port Configuration



Ordering Number Description

FLR - 2VZ6L - 45 - 750 - 00 - B - B - 00 - Z

Series	
FLR-1	Compact Diaphragm Regulators
FLR-2	Piston Regulators
FLR-3	Medium Flow Diaphragm Regulators

Only for FLR-2 Series – Vent Option	
	Without
V	With

Only for FLR-2 Series – O-ring Material	
	FKM
Z	Kalrez

Body Material	
6L	316L SS
SS	316 SS
B	Brass (Nickel-plated)
HC	Hastelloy C-276

Maximum Inlet Pressure	
FLR-1	
05	500 psig
15	1500 psig
FLR-2	
30	3000 psig
45	4500 psig
FLR-3	
05	500 psig
30	3000 psig

Outlet Pressure Range		
25	0~25 psig	FLR-1
50	0~50 psig	
100	0~100 psig	
250	0~250 psig	
250	0~500 psig	FLR-2
500	0~500 psig	
750	0~750 psig	
1000	0~1000 psig	
25	0~25 psig	FLR-3
50	0~50 psig	
100	0~100 psig	
150	0~150 psig	
200	0~200 psig	

Connection 1	
00	1/4" Female NPT
01	1/4" Male NPT
10	1/4" Fractional Tube Fitting
11	3/8" Fractional Tube Fitting
20	6mm Metric Tube Fitting
21	8mm Metric Tube Fitting
Other connections are available upon request	

Connection 2	
B	With Gauge (psig/bar)
M	With Gauge (MPa)
P	Plug
Others refer to Connection 1	

Connection 3
Specify in the same type as Connection 2

Connection 4
Specify in the same way as Connection 1

Installation Type	
	Not required
Z	Installed with One Panel Nut
N	Installed with Screws at the Bottom

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Back Pressure Regulators

BPR-1 Series

- Maximum control pressure: 250 psig
- Pressure control range: 0~25, 0~50, 0~100 or 0~250 psig
- Material of the main components:
  Seat: PCTFE
  Diaphragm: Hastelloy
- Working temperature: -40°F~+140°F (-40°C~+60°C)
- Leak rates:
  Internal: Bubble-tight
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.3
- Weight (regulator only): ≈ 1.98 lbs (0.9 kg)
- Metal-to-metal seal with convoluted diaphragm
- Close pressure differential between crack and reseat
- Panel mounting available

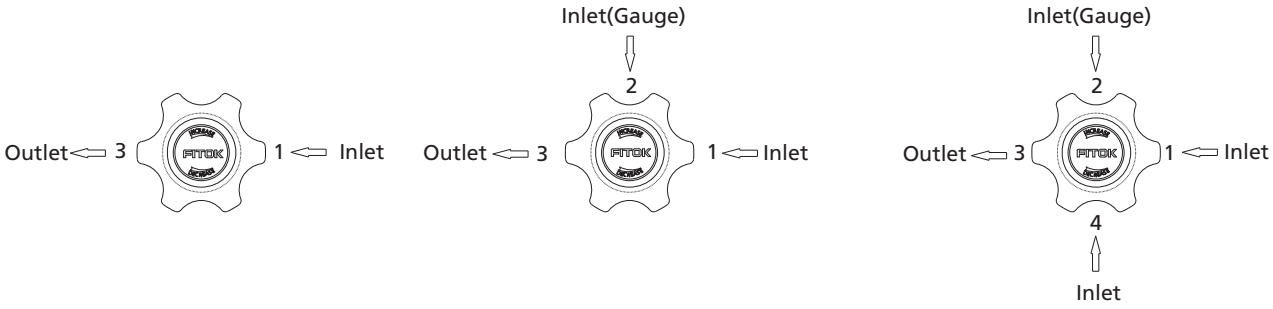
BPR-2 Series

- Maximum control pressure: 1000 psig
- Pressure control range: 10~300, 10~500 or 10~1000 psig
- Material of the main components:
  Seat: PCTFE
  Piston: 316L
  O-ring: Viton or Kalrez
- Working temperature: -15°F~+165°F (-26°C~+74°C)
- Leak rates:
  Internal: Bubble-tight
  External: Bubble-tight
- Flow coefficient (Cv): 0.3
- Weight (regulator only): ≈ 1.98 lbs (0.9 kg)
- Durable piston-sensed design
- Bubble-tight shutoff at all reseating pressure
- Low operating torque
- Panel mounting available
- With special cleaning and packaging, applicable to oxygen-enriched environments

BPR-3 Series

- Maximum control pressure:
  Stainless steel: 10000 psig
  Brass: 6000 psig
- Pressure control ranges: 5~500, 5~800, 10~1500, 15~2500, 25~4000, 50~6000, 200~10000 psig
- Material of the main components:
  Seat: PEEK
  Piston: 316L
  O-rings: Viton or Kalrez
- Working Temperature: -15°F~+165°F (-26℃~+74℃)
- Leak rates:
  Internal: Bubble-tight
  External: Bubble-tight
- Flow coefficient (Cv): 0.25
- Weight (regulator only): ≈5.7 lbs (2.6 Kg)
- Safe and reliable piston sensing
- Panel mounting available

Port Configuration



Ordering Number Description

BPR - 26L - 300 - 10 - M - 11 - 10

Series	
BPR-1	Back Pressure Diaphragm Regulators
BPR-2	Back Pressure Piston Regulators
BPR-3	Back Pressure Piston Regulators

Body Material	
6L	316 SS
SS	316 SS
B	Brass (Nickel-plated) for BPR-2 and BPR-1 Series, Brass for BPR-3 Series

Control Pressure Range		
25	0~25 psig	BPR-1
50	0~50 psig	
100	0~100 psig	
250	0~250 psig	
300	10~300 psig	BPR-2
500	10~500 psig	
1000	10~1000 psig	
5	5~500 psig	BPR-3
8	5~800 psig	
15	10~1500 psig	
25	15~2500 psig	
40	25~4000 psig	
60	50~6000 psig	
100	200~10000 psig	

Connection 1 (Inlet)	
00	1/4" Female NPT
01	1/4" Male NPT
10	1/4" Fractional Tube Fitting
11	3/8" Fractional Tube Fitting
20	6mm Metric Tube Fitting
21	8 mm Metric Tube Fitting
Other connections are available upon request	

Connection 2 (Inlet)	
	None
B	With Gauge (psig/bar)
M	With Gauge (MPa)
P	Plug
00	1/4" Female NPT
01	1/4" Male NPT
10	1/4" Fractional Tube Fitting
Other connections are available upon request	

Connection 3 (Outlet)
Specify in the same way as Connection 1

Connection 4 (Inlet)
Specify in the same way as Connection 1
Applicable only to BPR-3 Series

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available

Point-of-use Panels

FPR-1 Series

- With a FLR-1 Series Regulator
- Maximum inlet pressure: 1500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Diaphragm: Hastelloy (regulator), Elgiloy (diaphragm valve)
  Filter: 316L
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.14
- With metal diaphragm regulators
- Shutoff valves with window to visually indicate open and closed states
- Anodized Aluminium panel, easy to install
- Three port configurations available

FPR-1S Series

- With a FCR-1S Series Regulator of large diameter metal diaphragm to provide accurate pressure control
- Maximum inlet pressure: 1500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Diaphragm: 316L (regulator), Elgiloy (diaphragm valve)
  Filter: 316L
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (Cv): 0.06
- Shutoff valves with window to visually indicate open and closed states
- Anodized Aluminium panel, easy to install
- 3 port configurations available

Ordering Number Description

FPR - 1C6L - 15 - 100 - 10 - M - 10 - 00 - 00

Series	Outlet	Body Material	Inlet Pressure P1	Outlet Pressure Range P2	Connection 1	Connection 2	Connection 3	Connection 4	Connection 5
FPR-1	U Single Outlet	6L 316L SS	15 1500 psig	25 0~25 psig FPR-1	00 1/4" Female NPT	B With Gauge (psig/bar)			
FPR-1S	T Dual-Outlet	SS 316 SS		50 0~50 psig FPR-1	01 1/4" Male NPT	M With Gauge (MPa)			
	C Triple Outlet	HC Hastelloy C-276		100 0~100 psig FPR-1	10 1/4" Fractiona Tube Fitting	P Plug			
		B Brass		250 0~250 psig FPR-1	11 3/8" Fractional Tube Fitting	00 1/4" Female NPT			
				500 0~500 psig FPR-1	20 6mm Metric Tube Fitting				
				25 0~25 psig FPR-1S	21 8 mm Metric Tube Fitting				
				50 0~50 psig FPR-1S	Other connections are available upon request				
				100 0~100 psig FPR-1S					
				150 0~150 psig FPR-1S					
				200 0~200 psig FPR-1S					

Same as Connection 1

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

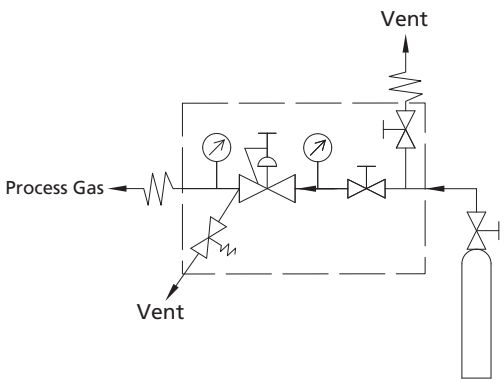
Pressure Control Panels

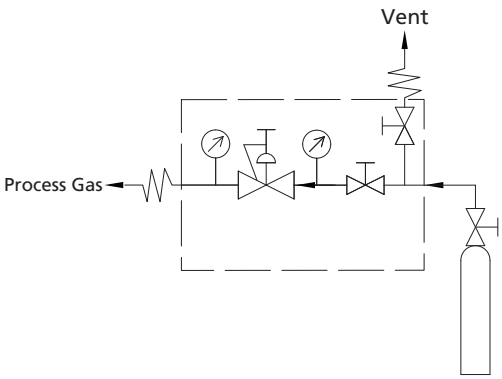
FSR-1 Series

- With a FCR-1 Series Regulator
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Diaphragm: Hastelloy (regulator), Elgiloy (diaphragm valve)
  Filter: 316L
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal: ≤ $1x10^{-7}$ mbar l/s helium
  External: ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (regulator Cv): 0.06
- Maximum inlet pressure up to 4500 psig
- With vent valves to relieve residual pressure quickly, easy and safe to remove and replace gas source
- Anodized Aluminium panel
- Bracket mounting as standard

FSR-2 Series

- With a FCR-2 Series Regulator
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~750, 0~1500 or 0~2500 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Piston: 316L
  Diaphragm: Elgiloy (diaphragm valve)
  O-ring: Viton or Kalrez
  Filter: 316L
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal: Bubble-tight
  External: Bubble-tight
- Flow coefficient (regulator Cv):
  Without vent: 0.06
  With vent: 0.1
- Applicable to non-corrosive gases or low-viscosity liquids
- With diaphragm valves to relieve residual pressure quickly, easy and safe to remove and replace gas source
- Venting model available
- Anodized Aluminium panel
- Bracket mounting as standard





Ordering Number Description

FSR - 2VZ6L - 45 - 750 - 00 - B - B - 00 - R - P

Series

FSR-1	
FSR-2	

Only for FSR-2 Series

Vent Option

	Without
V	With

O-ring Material

	FKM
Z	Kalrez

Body Material

6L	316L SS
SS	316 SS
B	Brass (Nickel-plated)
HC	Hastelloy C-276

Maximum Inlet Pressure

30	3000 psig
45	4500 psig

Outlet Pressure Range

25	0~25 psig	FSR-1
50	0~50 psig	
100	0~100 psig	
250	0~250 psig	
500	0~500 psig	
750	0~750 psig	FSR-2
1500	0~1500 psig	
2500	0~2500 psig	

Connection 2

00	1/4" Female NPT
01	1/4" Male NPT
10	1/4" Fractional Tube Fitting
11	3/8" Fractional Tube Fitting
20	6mm Metric Tube Fitting
21	8 mm Metric Tube Fitting

Other connections are available upon request

Connection 2

B	With Gauge (psig/bar)
M	With Gauge (MPa)
P	Plug
00	1/4" Female NPT

Specify in the same way as Connection 2

Connection 3

00	1/4" Female NPT
01	1/4" Male NPT
10	1/4" Fractional Tube Fitting
11	3/8" Fractional Tube Fitting
20	6mm Metric Tube Fitting
21	8 mm Metric Tube Fitting
30	Diaphragm Valve with 1/4" Female NPT
31	Diaphragm Valve with 1/4" Male NPT
32	Diaphragm Valve with 1/4" Fractional Tube Fitting
33	Diaphragm Valve with 3/8" Fractional Tube Fitting
34	Diaphragm Valve with 6mm Metric Tube Fitting
35	Diaphragm Valve with 8mm Metric Tube Fitting

Other connections are available upon request

Connection 4

Connection 5

R	Relief Valve
P	Plug
00	1/4" Female NPT

Connection 6

Specify in the same way as Connection 5

NOTE: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Changeover Systems

CEPR Series

- Maximum inlet pressure: 3000 psig
- Outlet pressure ranges: 85~115, 135~165, 185~215 ,235~265 psig
- Flow coefficient (Cv): 0.06
- Working Temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rate:
  Internal: Bubble-tight
  External: ≤ $2x10^{-8}$ mbar l/s helium
- Mounting bracket standard

DPPR Series

- Maximum inlet pressure: 3000 psig
- Outlet pressure ranges: 0~25, 0~50, 0~100, 0~150 psig
- Flow coefficient (Cv): 0.06
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rate:
  Internal: Bubble-tight
  External: ≤ $2x10^{-8}$ mbar l/s helium
- Mounting bracket standard

Ordering Number Description

COSSS - CEPR - 610P - FNS4 - NS4 - O

Base Series	Body Material	Embodied Series	Inlet Pressure	Outlet Pressure	Gauge	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Check Valve
COS	6L 316L SS SS 316 SS B Brass	CEPR DPPR	6 3000 psig	10 85~115 psig (CEPR) 15 135~165 psig (CEPR) 20 185~215 psig (CEPR) 25 235~265 psig (CEPR) 02 0~25 psig (DPPR) 05 0~50 psig (DPPR) 10 0~100 psig (DPPR) 15 0~150 psig (DPPR)	M With Gauge (Mpa) P With Gauge (psig) B With Gauge (bar)	FNS Female NPT NS Male NPT FL Fractional Tube Fitting ML Metric Tube Fitting Other types available	2 1/8" 4 1/4" 6 3/8" or 6 mm 8 3/8" or 6 mm Other sizes available	Same as inlet type and size	V CV Series O CO Series A COA Series See check valve catalog for the detail	

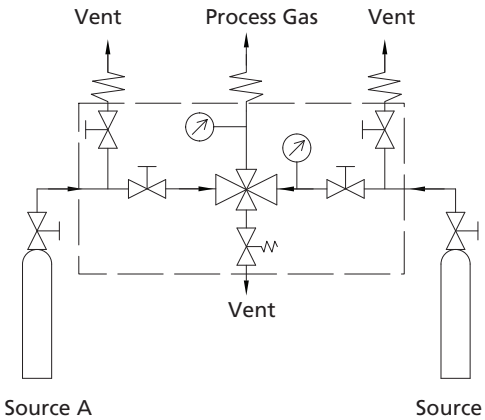
Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

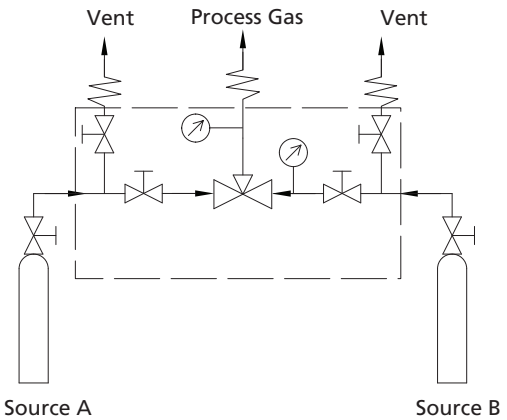
FDR-1 Series

- A small manual changeover system with a regulator similar to FCR-1 Series Regulators
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~25, 0~50, 0~100, 0~250 or 0~500 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Diaphragm: Hastelloy (regulator), Elgiloy (diaphragm valve)
  O-ring: Viton
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (regulator Cv): 0.06
- Connecting with two independent gas sources at a time, gas source selected through diaphragm valves
- Applicable to corrosive or toxic gases
- With vent valves to relieve residual pressure quickly, easy and safe to remove and replace gas source
- Anodized Aluminium panel

FDR-2 Series

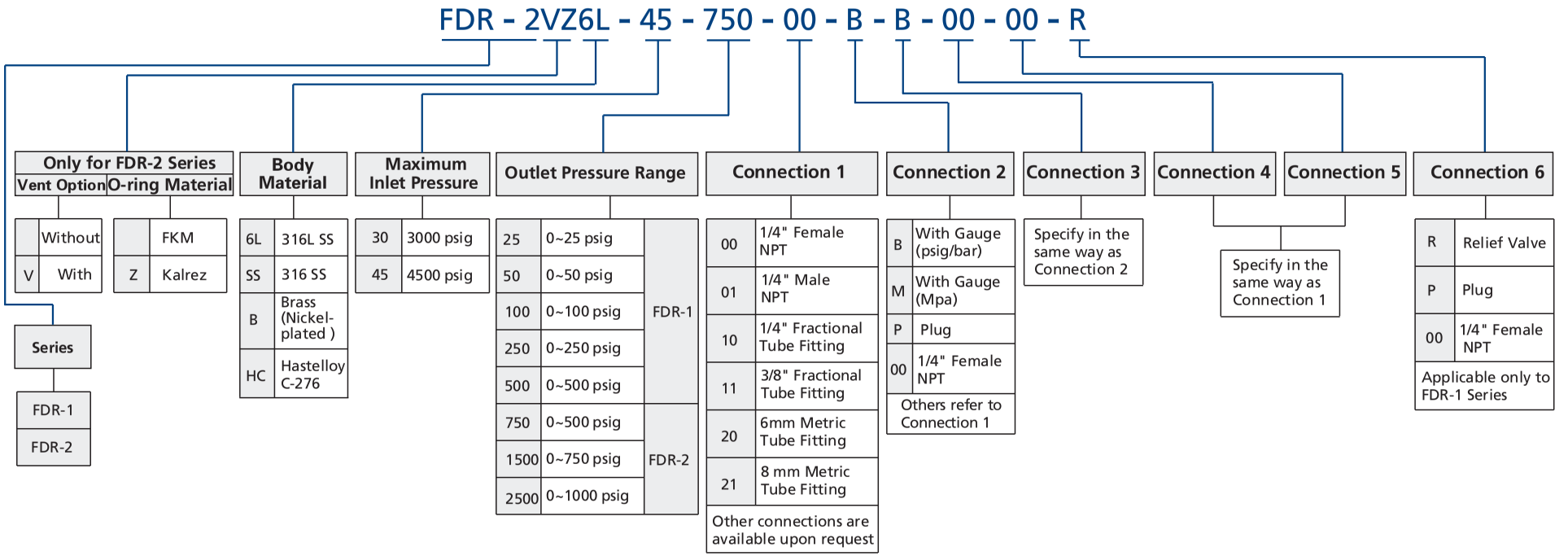
- A small manual changeover system with a regulator similar to FCR-2 Series Regulators
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~750, 0~1500 or 0~2500 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Piston: 316L
  Diaphragm: Elgiloy (diaphragm valve)
  Filter: 316L
  O-ring: Viton or Kalrez
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal: Bubble-tight
  External: Bubble-tight
- Flow coefficient (regulator Cv):
  Without vent: 0.06
  With vent: 0.1
- Connecting with two independent gas sources at a time, gas source selected through diaphragm valves
- Applicable to non-corrosive gases
- Venting model available
- Anodized Aluminium panel





Ordering Number Description

FDR - 2VZ6L - 45 - 750 - 00 - B - B - 00 - 00 - R



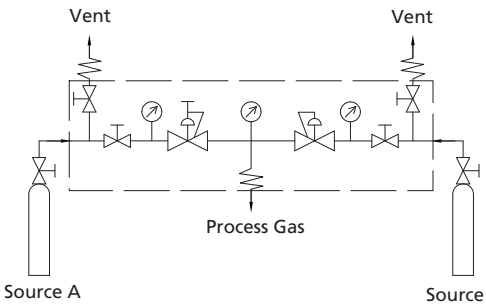
Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

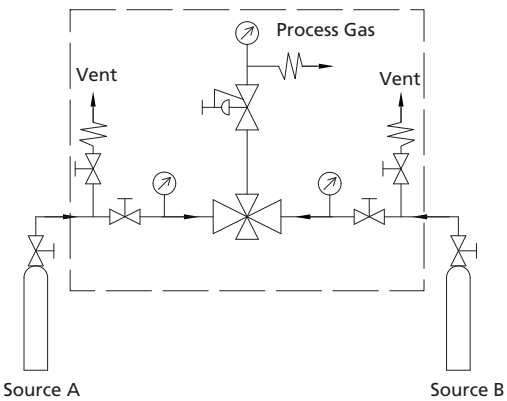
FDR-1L Series

- With 2 regulators similar to FCR-1 Series Regulators
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 85~115, 135~165, 185~215 or 235~265 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Diaphragm: Hastelloy (regulator), Elgiloy (diaphragm valve)
  Body: 316L
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (regulator Cv): 0.06
- Weight: ≈ 12.1 lbs (5.5 kg)
- With vent valves to relieve residual pressure quickly, easy and safe to remove and replace gas source
- Automatic switching of gas source to ensure continuous gas supply
- Four fixed outlet pressure ranges available
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Anodized Aluminium box with clearly marked panel

FDR-1T Series

- With a FCR-1 Series Regulator and a FLR-1 Series Regulator to enable outlet pressure adjustment
- Maximum inlet pressure: 3000 or 4500 psig
- Outlet pressure range: 0~25, 0~50, 0~100 or 0-150 psig
- Material of the main components:
  Seat: PCTFE (regulator and diaphragm valve)
  Diaphragm: Hastelloy (regulator), Elgiloy (diaphragm valve)
  Body: 316L
- Working temperature: -10°F ~+150°F (-23 °C ~+65°C)
- Leak rates:
  Internal ≤ $1x10^{-7}$ mbar l/s helium
  External ≤ $1x10^{-9}$ mbar l/s helium
- Flow coefficient (regulator Cv): 0.05
- Weight: ≈ 19.6 lbs (8.9 kg)
- With diaphragm valves to relieve residual pressure quickly, easy and safe to remove and replace gas source
- Automatic switching of gas source to ensure continuous gas supply
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Anodized Aluminium box with clearly marked panel





Ordering Number Description

FDR - 1L6L - 30 - 20 - 10 - 00 - 00

Series	Body Material	Inlet Pressure P1	Outlet Pressure Range P2	Inlet A	Inlet B	Outlet
FDR-1L	6L 316L SS	30 3000 psig	10 85~115 psig FDR-1L	00 1/4" Female NPT	Specify in the same way as Inlet A	
FDR-1T	SS 316 SS	45 4500 psig	15 135~165 psig FDR-1L	01 1/4" Male NPT		
	HC Hastelloy C-276		20 185~215 psig FDR-1L	10 1/4" Fractional Tube Fitting		
	B Brass (Nickel-plated)		25 235~265 psig FDR-1L	11 3/8" Fractional Tube Fitting		
			25 0~25 psig FDR-1T	20 6mm Metric Tube Fitting		
			50 0~50 psig FDR-1T	21 8 mm Metric Tube Fitting		
			100 0~100 psig FDR-1T	Other connections are available upon request		
			150 0~150 psig FDR-1T			

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Sampling Systems

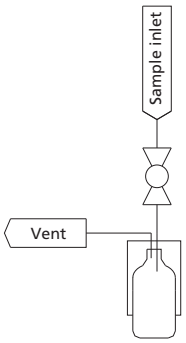
- Two kinds of optional sampling containers: Bottles and Cylinders
- System main body materials: 316 SS, 316L SS, 304L SS, etc. (Can be customized)
- Connection: 1/4" Tube fitting, 1/2" NPT Thread or NPS 1/2" Flange (Can be customized)
- Working temperature and pressure range: can be customized according to customers' requirements
- Applicable process conditions: High-temperature, high-pressure, high-viscosity, corrosive, high-toxicity or environmentally hazardous liquids
- Various mounting types

BL - Bottle Configuration Sampling Systems for Liquids

A Series

BLA1 - On-off Type

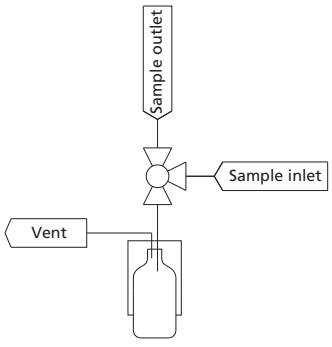
- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)



P&ID

BLA2 - System Purge Type

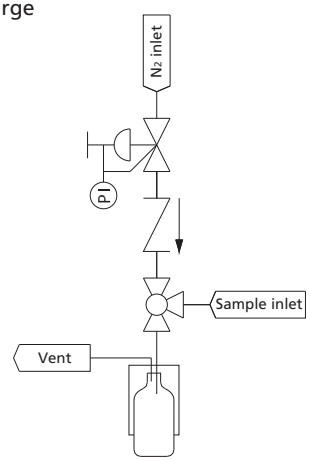
- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- System purge



P&ID

BLA3 - Back Purge Type

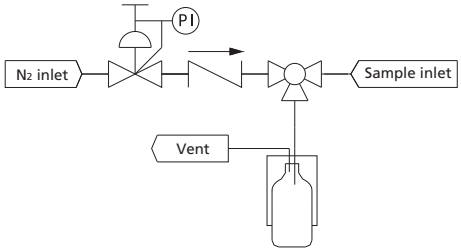
◎ Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
◎ Back purge



P&ID

BLA4 - Needle Purge Type

◎ Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
◎ Needle purge



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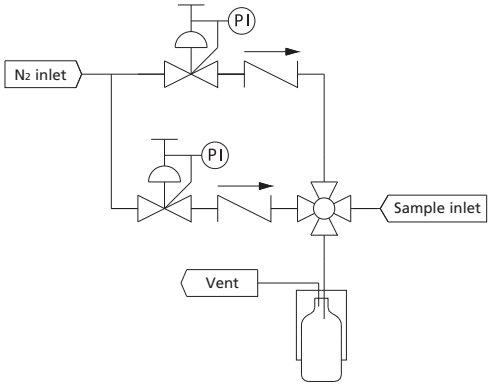
BLA5 - Back and Needle Purge Type

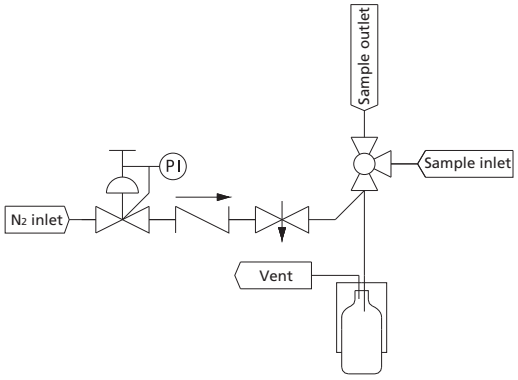
◎ Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
◎ Back purge and needle purge



P&ID

BLA6 - System Purge and Continuous Needle Purge Type

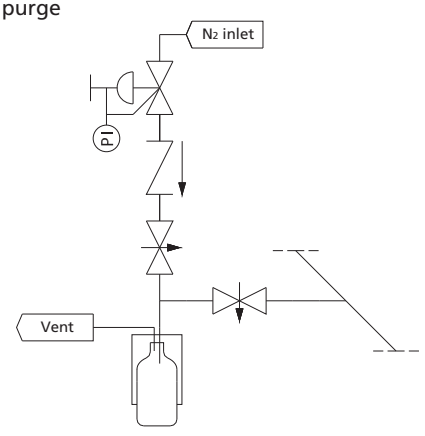
◎ Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
◎ System purge and continuous needle purge



P&ID

BLA7 - 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

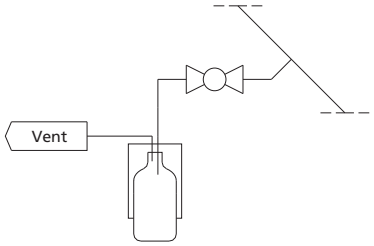


P&ID

B Series

BLB1 - On-off Type with In-line Ball Valve

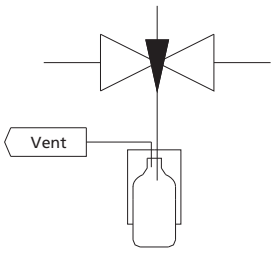
- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling
- Fire safe and antistatic ball valve



P&ID

BLB2 - On-off Type with In-line Needle Valve

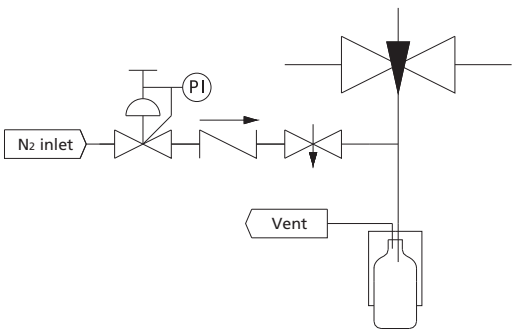
- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling



P&ID

BLB3 - In-line and Continuous Needle Purge Type

- Sampling from low pressure devices or process lines: 0-145 psig (0-10 bar)
- In-line sampling
- Sampling for viscous liquids
- Needle purge



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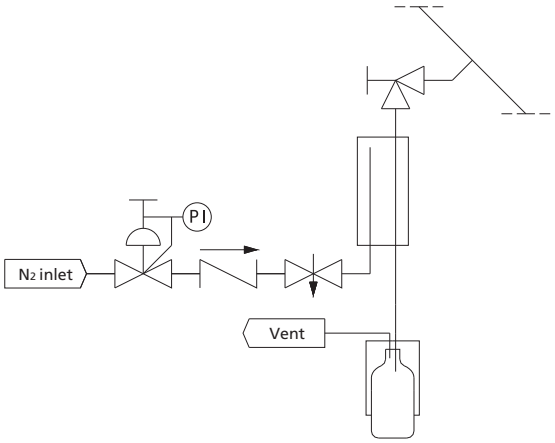
C Series

BLC1 - Purge Type

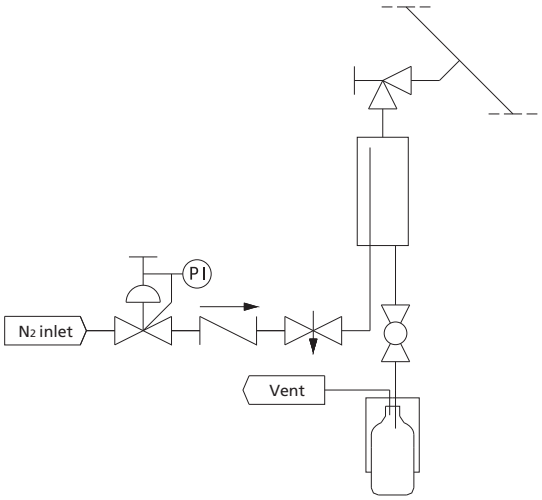
- Sampling from vacuum, low or high pressure devices or process lines
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Needle purge



P&ID

BLC2 - Fixed Volume and Purge Type

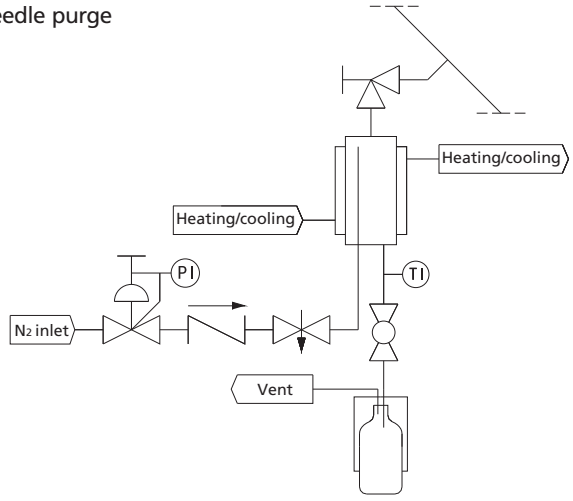
- Sampling from vacuum, low or high pressure devices or process lines
- Fixed volume sampling
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Needle purge



P&ID

BLC3 - Fixed Volume Type with Heating/Cooling Jacket

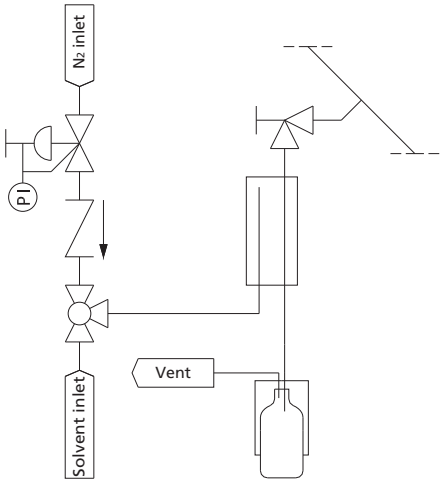
- Sampling from vacuum, low or high pressure devices or process lines
- Fixed volume sampling
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Heating/cooling jacket to ensure sampling within a certain range of temperature
- Needle purge



P&ID

BLC4 - Solvent Purge Type

- Sampling from vacuum, low or high pressure devices or process lines
- Sampling with a piston valve to ensure zero dead volume
- Sampling for highly viscous liquids
- Needle purge and solvent purge

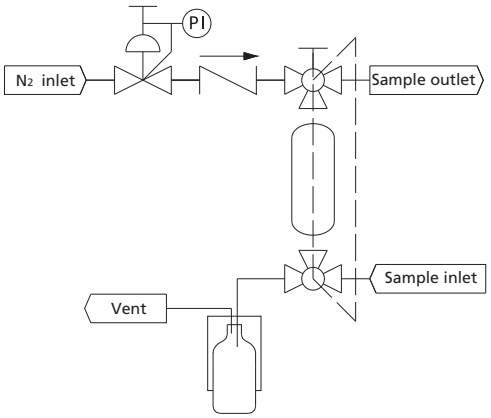


P&ID

D Series

BLD1 - Threaded Connection Type

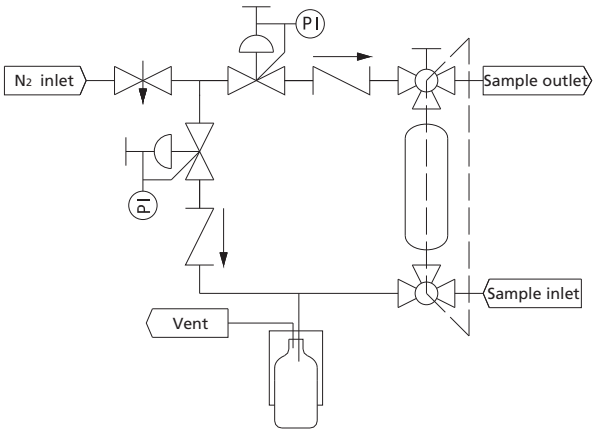
- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge and needle purge
- Easy operation with a single handle by linkage valve



P&ID

BLD2 - Continuous Needle Purge Type

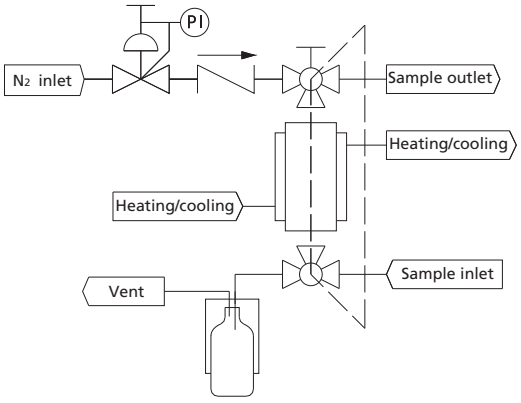
- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- Continuous needle purge and system purge
- Easy operation with a single handle by linkage valve



P&ID

BLD3 - Heating/Cooling Type

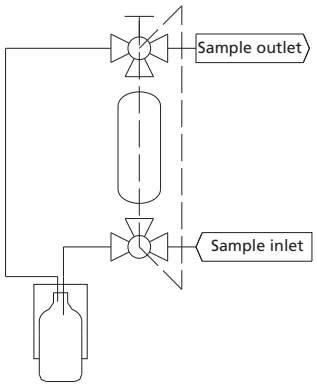
- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge and needle purge
- Heating/cooling jacket to ensure sampling within a certain range of temperature
- Easy operation with a single handle by linkage valve



P&ID

BLD4 - Sampling by Gravity Type

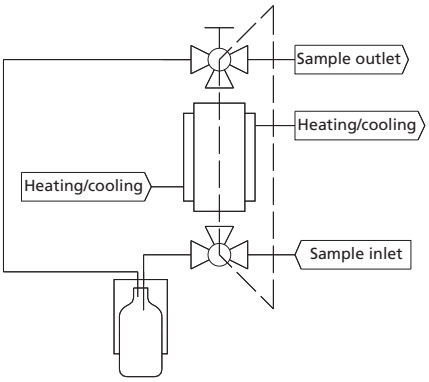
- Sampling from medium or high pressure devices or process lines
- Fixed volume sampling
- System purge
- Sampling by gravity without Nitrogen purge
- Easy operation with a single handle by linkage valve



P&ID

BLD5- 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

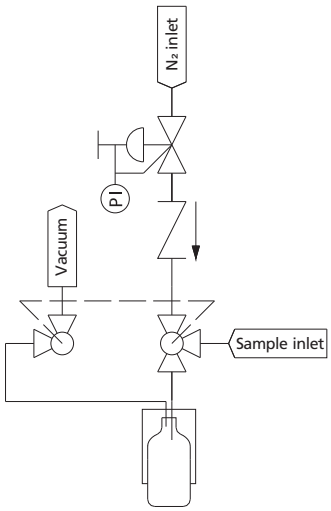


P&ID

E Series

BLE1 - Back Purge Type with Vacuum Connection

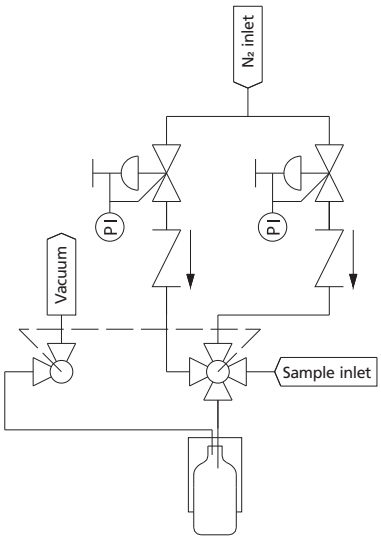
- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge
- Easy operation with a single handle by linkage valve



P&ID

BLE2 - Back and Needle Purge Type with Vacuum Connection

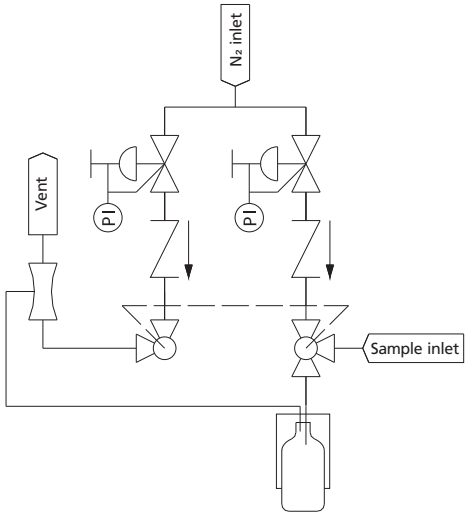
- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge and needle purge
- Easy operation with a single handle by linkage valve



P&ID

BLE3 - Back Purge Type with Venturi Unit

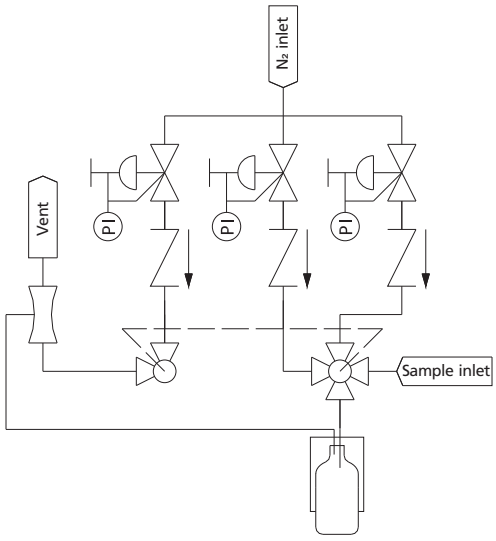
- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge
- Easy operation with a single handle by linkage valve



P&ID

BLE4 - Back and Needle Purge Type with Venturi Unit

- Sampling from process lines at atmospheric pressure or vacuum condition
- Back purge and needle purge
- Easy operation with a single handle by linkage valve



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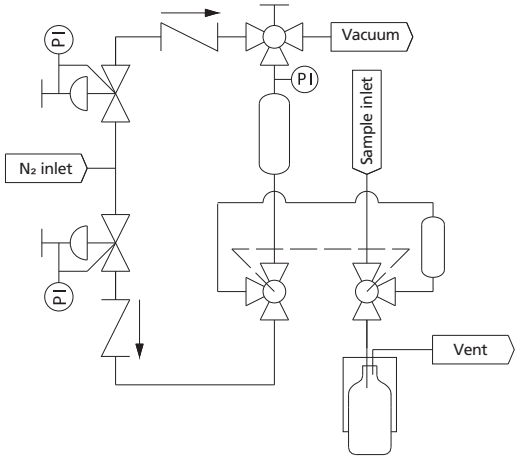
BLE5 - Overflow Type with Vacuum Connection

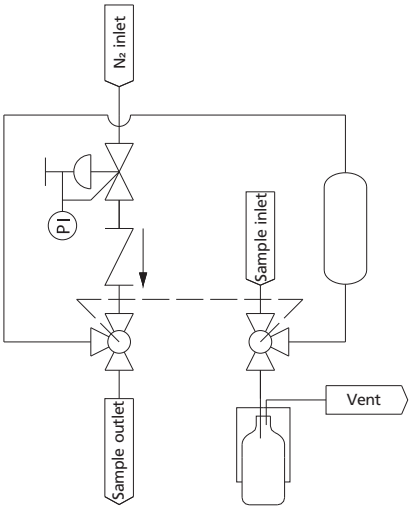
- Sampling from process lines at atmospheric pressure or vacuum condition
- Fixed volume sampling
- Overflow sampling and back purge
- Easy operation with a single handle by linkage valve



P&ID

BLE6 - 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

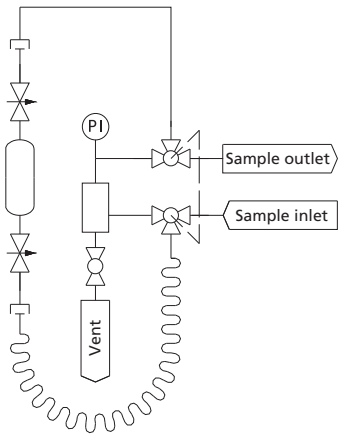


P&ID

CS - Cylinder Configuration Sampling Systems for Liquefied Gases

CSF1 - System Purge Type with Expansion Chamber

- Sampling from devices or process lines
- System purge
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle by linkage valve



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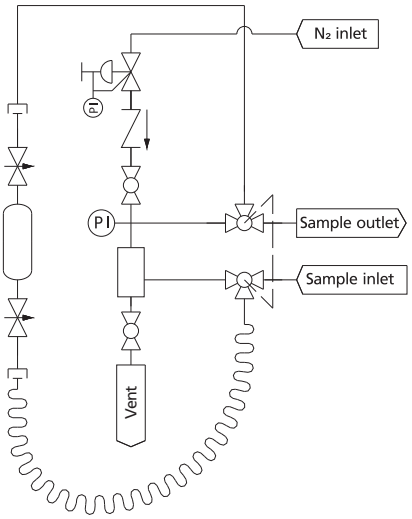
CSF2 - Expansion Chamber Purge Type

- Sampling from devices or process lines
- System purge and expansion chamber purge
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle by linkage valve



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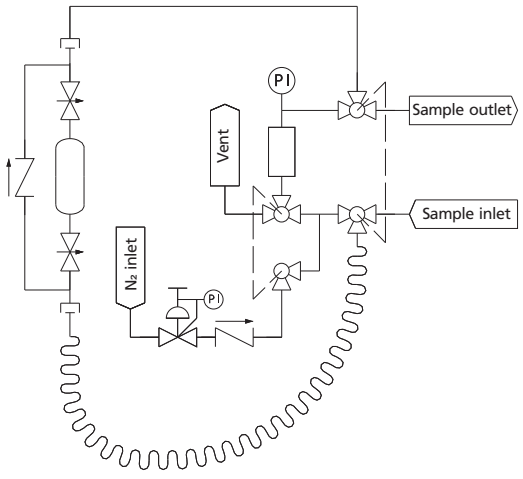
CSF3 - Bypass Purge Type with Expansion Chamber

- Sampling from devices or process lines
- System purge and bypass purge
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle by linkage valve



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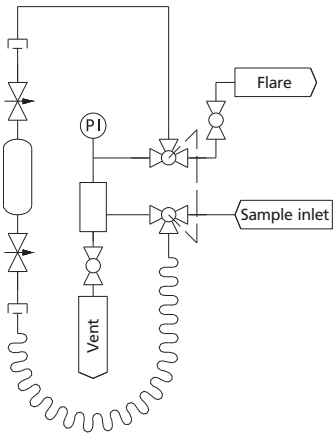
CSF4 - Vent to Flare Type with Expansion Chamber

- Sampling from devices or process lines
- System purge to flare (no circulation loop)
- Predefined sampling volume controlled by an expansion chamber to ensure safe sampling
- Easy operation with a single handle by linkage valve



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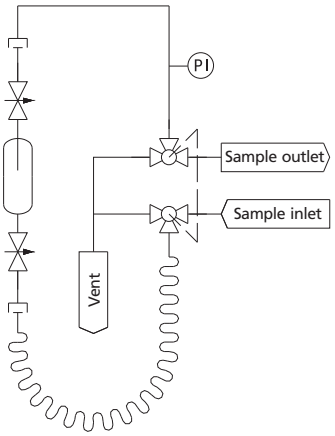
CSF5 - Outage Tube Type

- Sampling from devices or process lines
- System purge
- Predefined sampling volume controlled by an outage tube to ensure safe sampling
- Easy operation with a single handle by linkage valve



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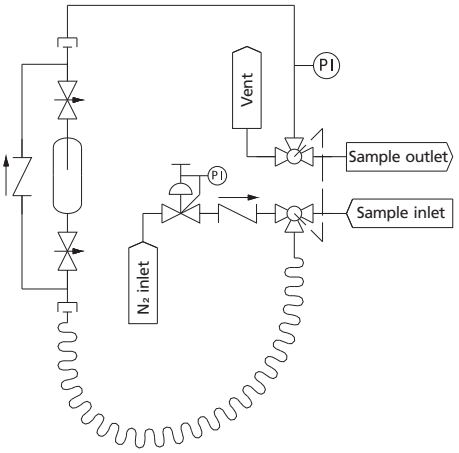
CSF6 - Bypass Purge Type with Outage Tube

- Sampling from devices or process lines
- System purge and bypass purge
- Predefined sampling volume controlled by an outage tube to ensure safe sampling
- Easy operation with a single handle by linkage valve



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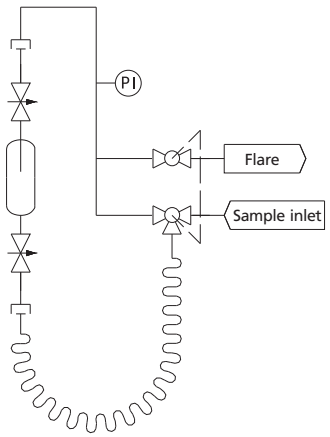
CSF7 - Vent to Flare Type with Outage Tube

- Sampling from devices or process lines
- System purge to flare (no circulation loop)
- Predefined sampling volume controlled by an outage tube to ensure safe sampling
- Easy operation with a single handle by linkage valve



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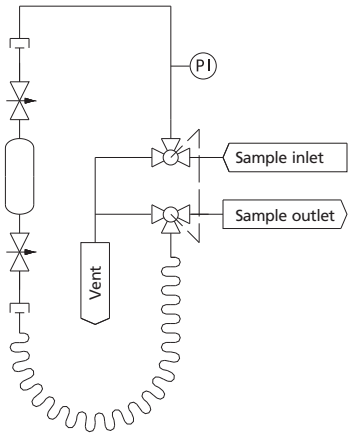
CG - Cylinder Configuration Sampling Systems for Gases

CGG1 - System Purge Type

- Sampling from devices or process lines
- System purge
- Easy operation with a single handle by linkage valve



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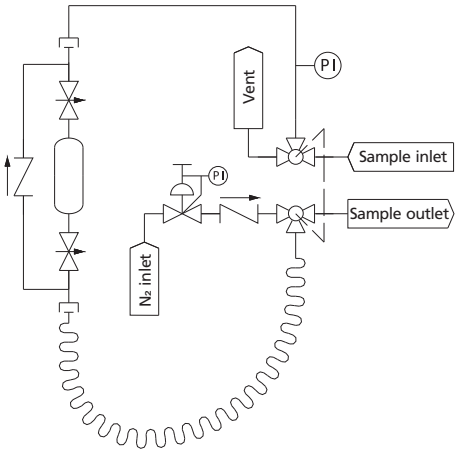
CGG2 - Bypass and System Purge Type

- Sampling from devices or process lines
- System purge
- Easy operation with a single handle by linkage valve



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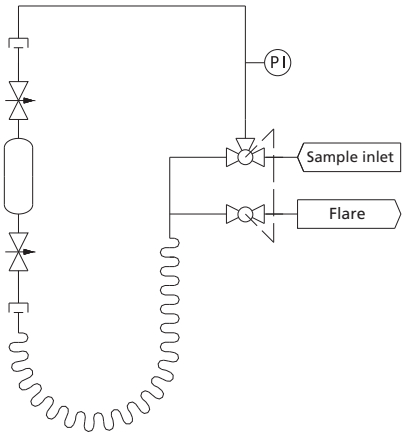
CGG3 - Vent to Flare Type

- Sampling from devices or process lines
- System purge to flare (no circulation loop)
- Easy operation with a single handle by linkage valve



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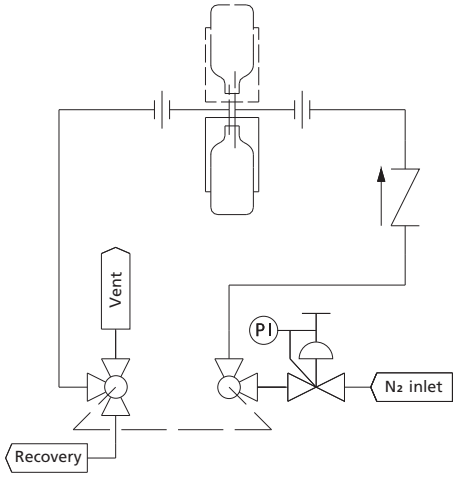
SR - Sample Handling Systems

SRB - Sample Recovery System for Bottle

- Recover the sample from the sample bottle and purge the bottle
- Closed recovery without spillage
- Easy operation with a single handle by linkage valve



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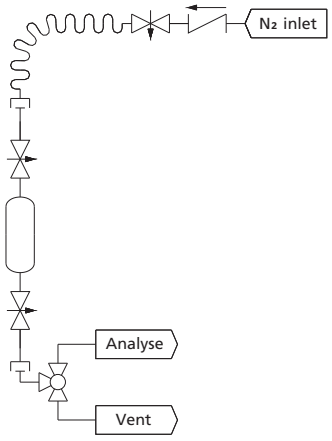
SRC - Sample Emptying System for Cylinder

- Analyse the sample from the sample cylinder and empty the cylinder for application in the laboratory
- Closed emptying without spillage
- Depressurization of quick-connects



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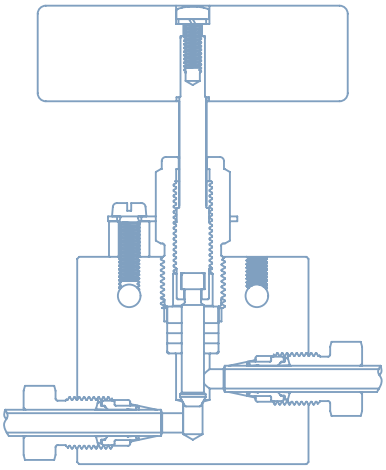

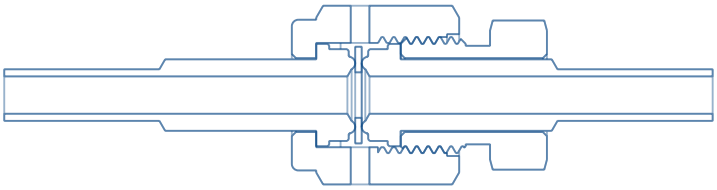

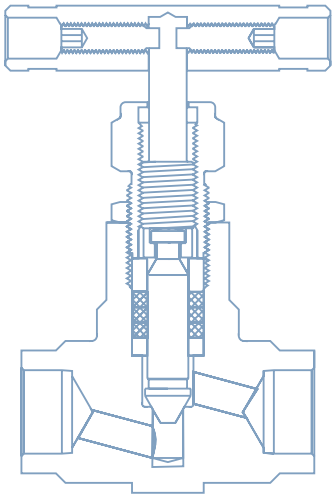

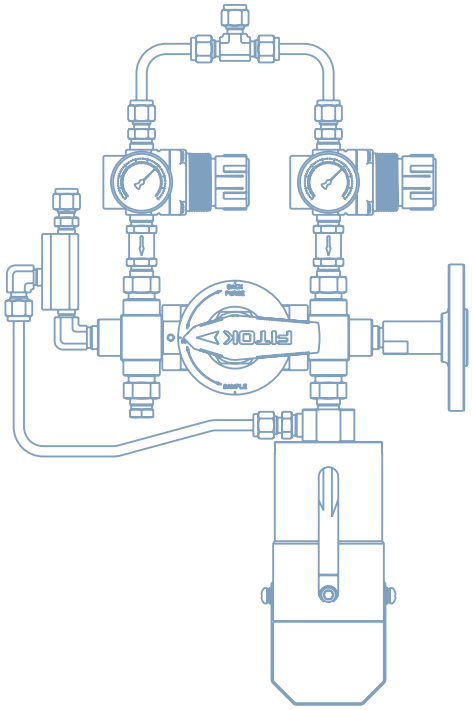

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