

Diaphragm Valves

The best partner for value creation
We support the innovations of customers



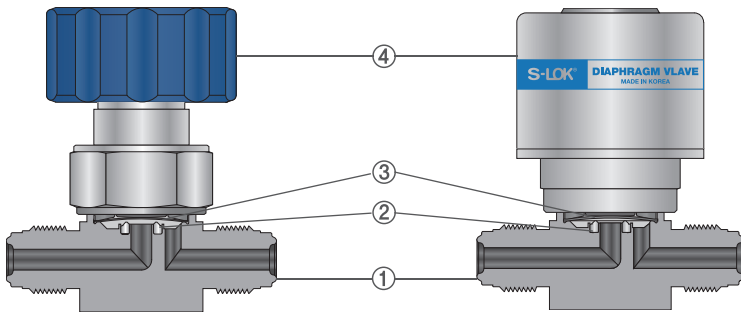
07



Catalogue No. S-LOK Mar.2024

Features

- 316L Stainless steel body material (316L Single and double melting stainless steel materials available)
- Ni-Co alloy material diaphragm for strength and corrosion resistance
- Fully contained seat design minimizes particle generation
- Maximize flow capacity & minimize entrapment areas
- Optimal design for long cycle life
- Manual and pneumatic actuator
- All Valves are factory tested with helium.



Cleaning and Packaging

- All parts are free of emulsion composition and residues involved in the machining process.
- Valves are assembled, inspected, tested and packaged in a CLASS 10-100 cleanroom.
- Double bag packaging is standard, and the inner bag contains ultra pure nitrogen.

Materials of Construction

No.	Component	Material
1	Body	316L Stainless Steel (Single / Double Melt)
2	Seat	PCTFE
3	Diaphragm	Ni-Co Alloy
4	Actuation	Aluminum

Product Grade

Level	Inner Surface Roughness	
	Ra	Ry
EP	≤ 5 μ inch	≤ 0.7 μm
BA	≤ 10 μ inch	≤ 3.0 μm
AP	≤ 100 μ inch	≤ 25 μm

Moisture Test

Test procedure per SEMI F58 for low surface area component, time to recover to baseline from 200 ppb spike in 1 hour.

Reliability

- More than 3 million cycles for pneumatic valves.
- More than 100,000 cycles for manual valves.

Chemical Composition

Element	Composition, Wt%									
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Al
SS316L Single Melt	≤ 0.03	≤ 0.75	≤ 0.8	≤ 0.04	≤ 0.005	12.0~16.0	16.0~18.0	2.0~3.0	≤ 0.5	-
SS316L Double Melt	≤ 0.01	≤ 0.3	≤ 0.4	≤ 0.03	≤ 0.003	14.5~15.0	16.5~17.0	2.2~2.5	≤ 0.25	≤ 0.01
SS316L VIM/VAR	≤ 0.01	≤ 0.2	≤ 0.05	≤ 0.02	≤ 0.003	14.5~15.0	16.5~17.0	2.2~2.5	≤ 0.2	≤ 0.01

Specifications

Size in.	Working Pressure Mpa (psig)	Temperature Rating °C (°F)	Flow Coefficient (Cv)	Orifice mm (in.)	Across the Seat Helium Leak Rates	Inboard Helium Leak Rates	Particle Inspection (EP) (0.1 μm and Larger)
1/4	1 (145)	-10 ~ 80	0.3	4.4 (0.17)	≤ 1 x 10 ⁻⁹ atm cc/sec	≤ 1 x 10 ⁻⁹ atm cc/sec	No count Pressure: 60~80psi N2 Gas
3/8, 1/2, 3/4		(-23 ~ 176)	0.7	7.0 (0.27)			

Low Pressure Diaphragm Valve - Forged Body - Manual Handle

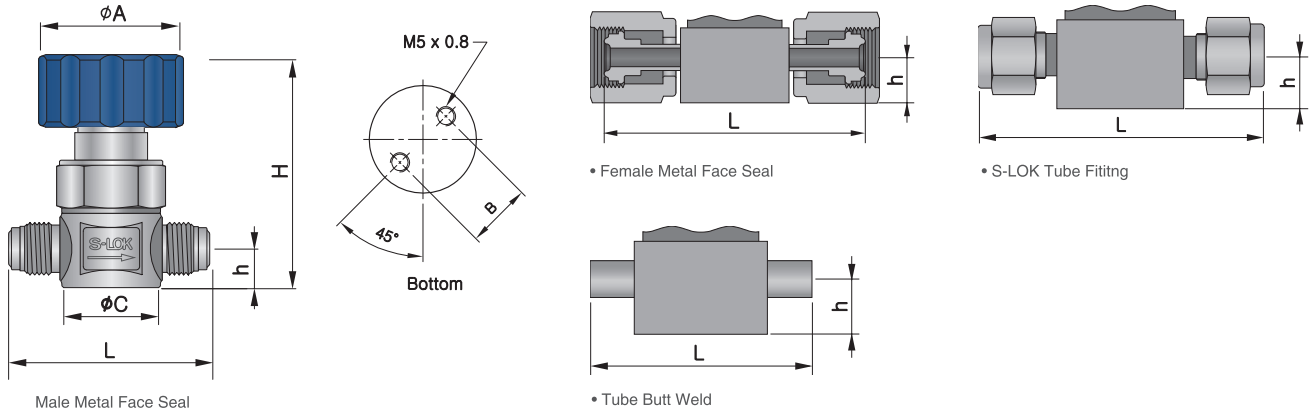


Handle Position

Ordering Information

SFDV	-	MG	-	8	-	EP	-	S6LS
Valve Model		Connection Type		Connection Size		Product Grade		Body Material
- SFDV : Low Pressure Diaphragm Valve - Forged Body - Manual Handle		- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld		- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"		- BA : BA - EP : EP		- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

Dimensions



Basic Ordering Number	End Connection	Dimensions, mm					
		L	h	H	A	B	C
SFDV-MG-4	Male MFS 1/4"	58	11	66.1	40	17	28
SFDV-MG-8	Male MFS 1/2"	76	16	78.2	40	28	38
SFDV-MG-12	Male MFS 3/4"	122	22	84.2	40	28	38
SFDV-FG-4	Female MFS 1/4"	78	11	66.1	40	17	28
SFDV-FG-8	Female MFS 1/2"	104.6	16	78.2	40	28	38
SFDV-FG-12	Female MFS 3/4"	122	22	84.2	40	28	38
SFDV-S-4	S-LOK 1/4"	69.5	11	66.1	40	17	28
SFDV-S-6	S-LOK 3/8"	82.8	16	78.2	40	28	38
SFDV-S-8	S-LOK 1/2"	90.9	16	78.2	40	28	38
SFDV-S-12	S-LOK 3/4"	103.8	22	84.2	40	28	38
SFDV-BW-4	Tube Butt Weld 1/4"	54	11	66.1	40	17	18
SFDV-BW-6	Tube Butt Weld 3/8"	69	16	78.2	40	28	38
SFDV-BW-8	Tube Butt Weld 1/2"	69	16	78.2	40	28	38
SFDV-BW-12	Tube Butt Weld 3/4"	150	22	84.2	40	28	38

Low Pressure Diaphragm Valve - Square Body - Manual Handle

Handle Position



OPEN



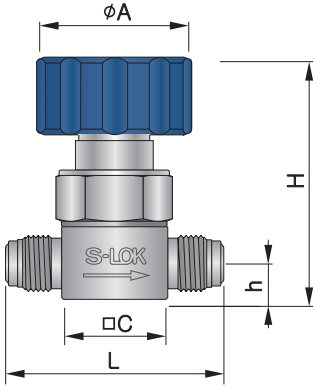
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Ordering Information

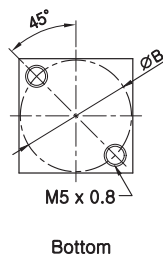
SSDV - MG - 8 - EP - S6LS

Valve Model	Connection Type	Connection Size	Product Grade	Body Material
- SSDV : Low Pressure Diaphragm Valve - Square Body - Manual Handle	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

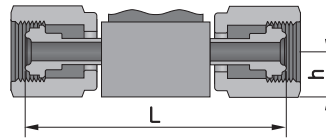
Dimensions



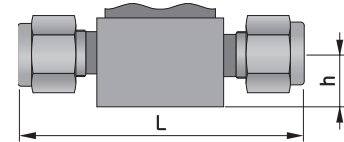
Male Metal Face Seal



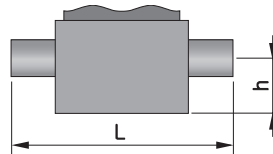
Bottom



• Female Metal Face Seal



• S-LOK Tube Fitting

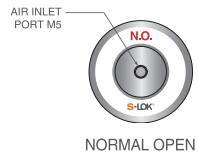
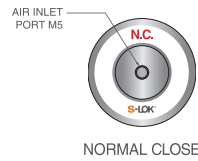


• Tube Butt Weld

Basic Ordering Number	End Connection	Dimensions, mm					
		L	h	H	A	B	C
SSDV-MG-4	Male MFS 1/4"	57	11	64.1	40	25.4	26
SSDV-MG-8	Male MFS 1/2"	76.2	16	76.2	40	28	37
SSDV-MG-12	Male MFS 3/4"	122	22	82.2	40	28	37
SSDV-FG-4	Female MFS 1/4"	70.6	11	64.1	40	25.4	26
SSDV-FG-8	Female MFS 1/2"	83	16	76.2	40	28	37
SSDV-FG-12	Female MFS 3/4"	122	22	82.2	40	28	37
SSDV-S-4	S-LOK 1/4"	69.5	11	64.1	40	25.4	26
SSDV-S-6	S-LOK 3/8"	82.8	16	76.2	40	28	37
SSDV-S-8	S-LOK 1/2"	90.9	16	76.2	40	28	37
SSDV-S-12	S-LOK 3/4"	106	22	82.2	40	28	37
SSDV-BW-4	Tube Butt Weld 1/4"	54	11	64.1	40	25.4	26
SSDV-BW-6	Tube Butt Weld 3/8"	69	16	76.2	40	28	37
SSDV-BW-8	Tube Butt Weld 1/2"	69	16	76.2	40	28	37
SSDV-BW-12	Tube Butt Weld 3/4"	150	22	82.2	40	28	37

Low Pressure Diaphragm Valve - Forged Body - Pneumatic Actuator

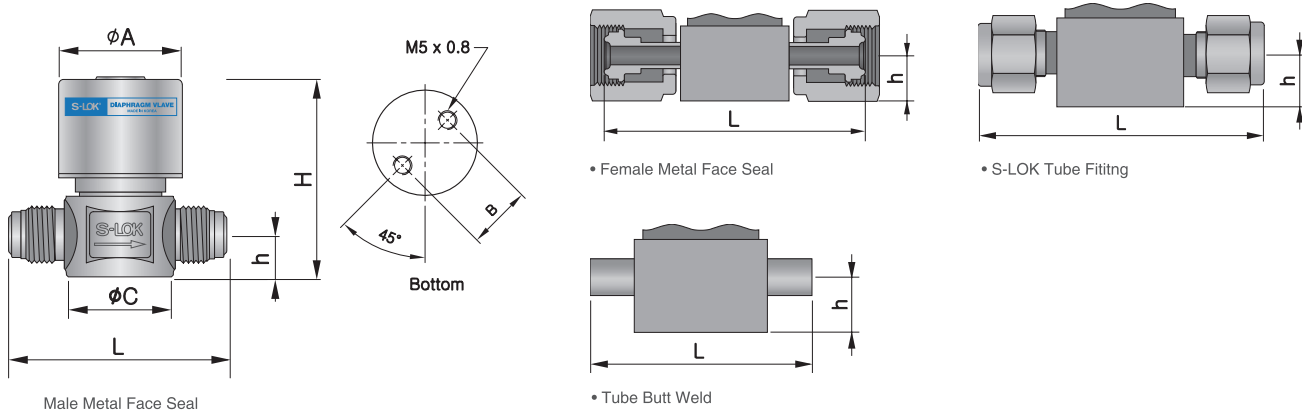
Actuator configuration **Ordering Information**



SFPDV - **MG** - **8** - **NC** - **EP** - **S6LS**

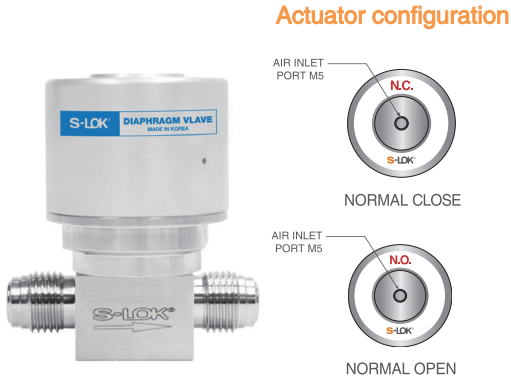
Valve Model	Connection Type	Connection Size	Actuation	Product Grade	Body Material
- SFPDV : - Low Pressure - Diaphragm Valve - Forged Body - Pneumatic Actuator	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- NC : Normally Closed - NO : Normally Open	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

Dimensions



Basic Ordering Number	End Connection	Dimensions, mm					
		L	h	H	A	B	C
SFPDV-MG-4	Male MFS 1/4"	58	11	66.3	40	17	28
SFPDV-MG-8	Male MFS 1/2"	76	16	82.4	52	28	38
SFPDV-MG-12	Male MFS 3/4"	122	22	88.4	52	28	38
SFPDV-FG-4	Female MFS 1/4"	78	11	66.3	40	17	28
SFPDV-FG-8	Female MFS 1/2"	104.6	16	82.4	52	28	38
SFPDV-FG-12	Female MFS 3/4"	122	22	88.4	52	28	38
SFPDV-S-4	S-LOK 1/4"	69.5	11	66.3	40	17	28
SFPDV-S-6	S-LOK 3/8"	82.8	16	82.4	52	28	38
SFPDV-S-8	S-LOK 1/2"	90.9	16	82.4	52	28	38
SFPDV-S-12	S-LOK 3/4"	103.8	22	88.4	52	28	38
SFPDV-BW-4	Tube Butt Weld 1/4"	54	11	66.3	40	17	18
SFPDV-BW-6	Tube Butt Weld 3/8"	69	16	82.4	52	28	38
SFPDV-BW-8	Tube Butt Weld 1/2"	69	16	82.4	52	28	38
SFPDV-BW-12	Tube Butt Weld 3/4"	150	22	88.4	52	28	38

Low Pressure Diaphragm Valve - Square Body - Pneumatic Actuator

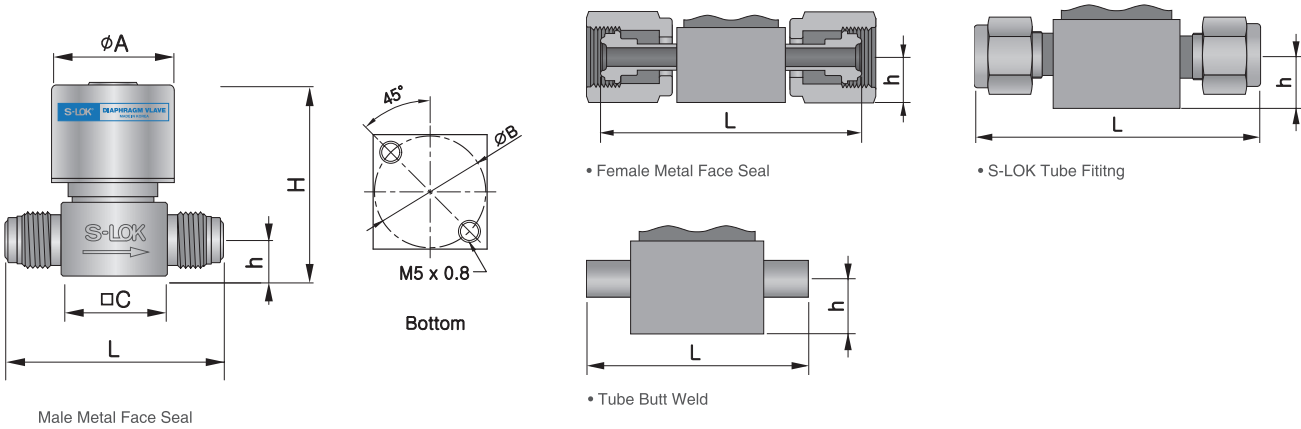


Ordering Information

SSPDV	-	MG	-	8	-	NC	-	EP	-	S6LS
Valve Model		Connection Type		Connection Size		Actuation		Product Grade		Body Material

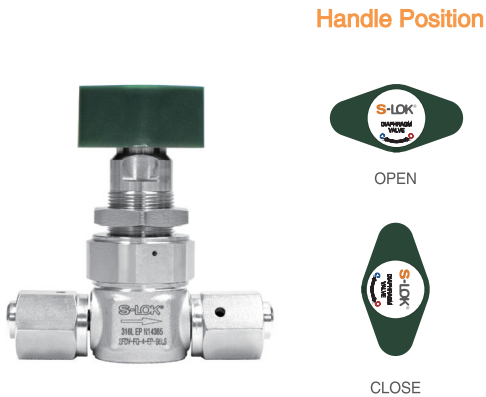
Valve Model	Connection Type	Connection Size	Actuation	Product Grade	Body Material
- SSPDV : Low Pressure Diaphragm Valve - Square Body - Pneumatic Actuator	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- NC : Normally Closed - NO : Normally Open	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

Dimensions



Basic Ordering Number	End Connection	Dimensions, mm					
		L	h	H	A	B	C
SSPDV-MG-4	Male MFS 1/4"	57	11	64.3	40	25.4	26
SSPDV-MG-8	Male MFS 1/2"	76.2	16	80.4	52	28	37
SSPDV-MG-12	Male MFS 3/4"	122	22	86.4	52	28	37
SSPDV-FG-4	Female MFS 1/4"	70.6	11	64.3	40	25.4	26
SSPDV-FG-8	Female MFS 1/2"	83	16	80.4	52	28	37
SSPDV-FG-12	Female MFS 3/4"	122	22	86.4	52	28	37
SSPDV-S-4	S-LOK 1/4"	69.5	11	64.3	40	25.4	26
SSPDV-S-6	S-LOK 3/8"	82.8	16	80.4	52	28	37
SSPDV-S-8	S-LOK 1/2"	90.9	16	80.4	52	28	37
SSPDV-S-12	S-LOK 3/4"	106	22	86.4	52	28	37
SSPDV-BW-4	Tube Butt Weld 1/4"	54	11	64.3	40	25.4	26
SSPDV-BW-6	Tube Butt Weld 3/8"	69	16	80.4	52	28	37
SSPDV-BW-8	Tube Butt Weld 1/2"	69	16	80.4	52	28	37
SSPDV-BW-12	Tube Butt Weld 3/4"	150	22	86.4	52	28	37

Low Pressure Diaphragm Valve - Forged Body - Shutoff Type - Quarter-turn actuation

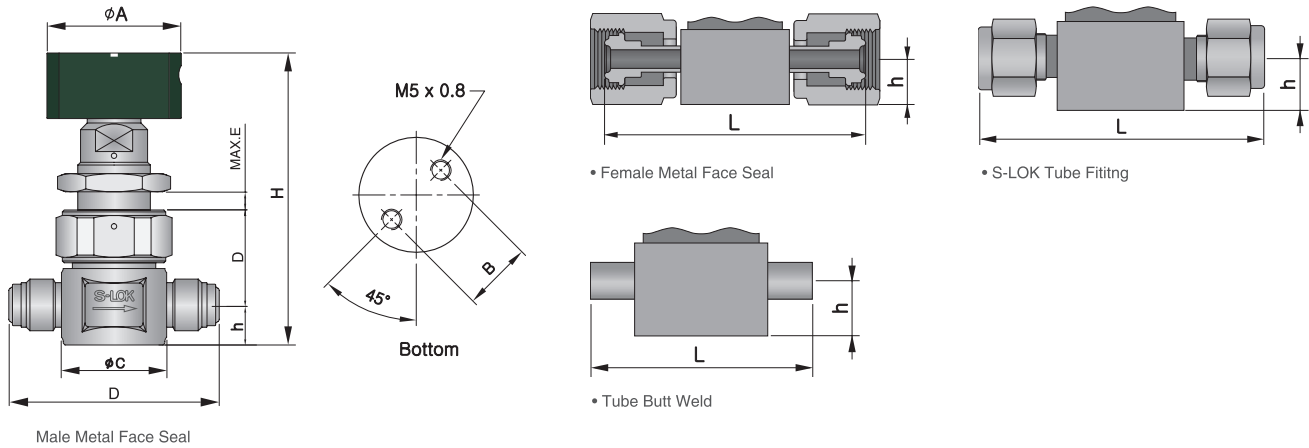


Ordering Information

SFQDV	-	MG	-	8	-	LN	-	EP	-	S6LS
Valve Model		Connection Type		Connection Size		Option		Product Grade		Body Material

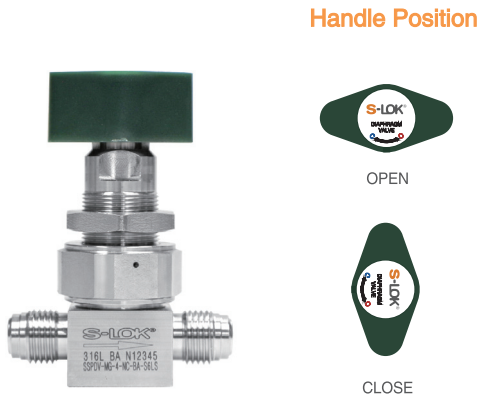
Valve Model	Connection Type	Connection Size	Option	Product Grade	Body Material
- SFQDV : Low Pressure Diaphragm Valve - Forged Body - Shutoff Type	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- Blank : No Option - LN : Lock Nut	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

Dimensions



Basic Ordering Number	End Connection	Dimensions, mm							
		L	h	H	A	B	C	D	E
SFQDV-MG-4	Male MFS 1/4"	58	11	80.2	37	17	28	26	5
SFQDV-MG-8	Male MFS 1/2"	76	16	106.7	50	28	38	33.6	10
SFQDV-MG-12	Male MFS 3/4"	122	22	110.7	50	28	38	31.6	10
SFQDV-FG-4	Female MFS 1/4"	78	11	80.2	37	17	28	26	5
SFQDV-FG-8	Female MFS 1/2"	104.6	16	106.7	50	28	38	33.6	10
SFQDV-FG-12	Female MFS 3/4"	122	22	110.7	50	28	38	31.6	10
SFQDV-S-4	S-LOK 1/4"	69.5	11	80.2	37	17	28	26	5
SFQDV-S-6	S-LOK 3/8"	82.8	16	106.7	50	28	38	33.6	10
SFQDV-S-8	S-LOK 1/2"	90.9	16	106.7	50	28	38	33.6	10
SFQDV-S-12	S-LOK 3/4"	103.8	22	110.7	50	28	38	31.6	10
SFQDV-BW-4	Tube Butt Weld 1/4"	54	11	80.2	37	17	28	26	5
SFQDV-BW-6	Tube Butt Weld 3/8"	69	16	106.7	50	28	38	33.6	10
SFQDV-BW-8	Tube Butt Weld 1/2"	69	16	106.7	50	28	38	33.6	10
SFQDV-BW-12	Tube Butt Weld 3/4"	150	22	110.7	50	28	38	31.6	10

Low Pressure Diaphragm Valve - Square Body - Shutoff Type

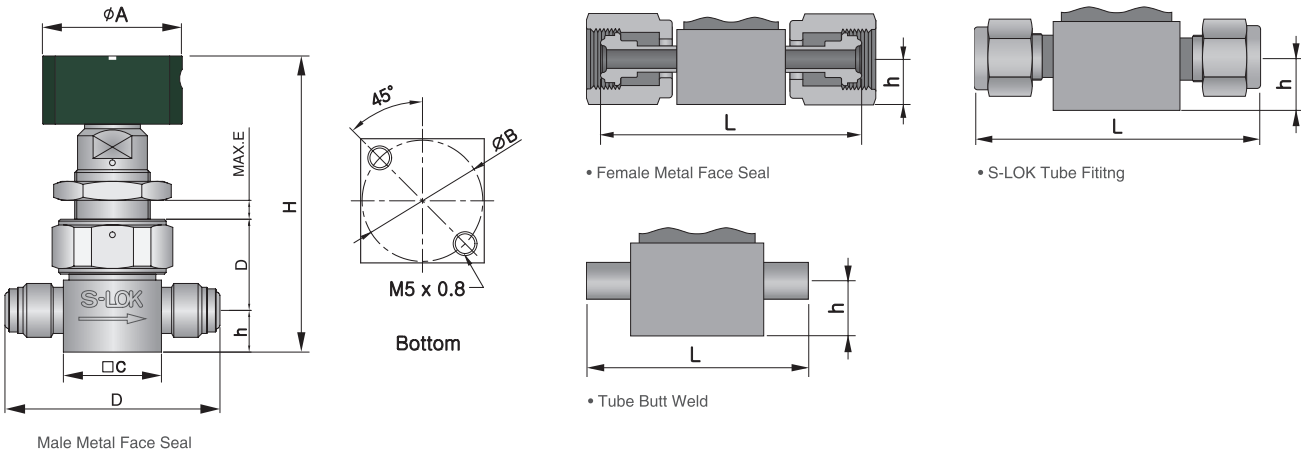


Ordering Information

SSQDV - MG - 8 - LN - EP - S6LS

Valve Model	Connection Type	Connection Size	Option	Product Grade	Body Material
- SSQDV : Low Pressure Diaphragm Valve - Square Body - Shutoff Type	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- Blank : No Option - LN : Lock Nut	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

Dimensions



Basic Ordering Number	End Connection	Dimensions, mm							
		L	h	H	A	B	C	D	E
SSQDV-MG-4	Male MFS 1/4"	57	11	78.2	37	25.4	26	24	5
SSQDV-MG-8	Male MFS 1/2"	76.2	16	104.7	50	28	37	31.6	10
SSQDV-MG-12	Male MFS 3/4"	122	22	111.2	50	28	37	31.6	10
SSQDV-FG-4	Female MFS 1/4"	70.6	11	78.2	37	25.4	26	24	5
SSQDV-FG-8	Female MFS 1/2"	83	16	104.7	50	28	37	31.6	10
SSQDV-FG-12	Female MFS 3/4"	122	22	111.2	50	28	37	31.6	10
SSQDV-S-4	S-LOK 1/4"	69.5	11	78.2	37	25.4	26	24	5
SSQDV-S-6	S-LOK 3/8"	82.8	16	104.7	50	28	37	31.6	10
SSQDV-S-8	S-LOK 1/2"	90.9	16	104.7	50	28	37	31.6	10
SSQDV-S-12	S-LOK 3/4"	106	22	111.2	50	28	37	31.6	10
SSQDV-BW-4	Tube Butt Weld 1/4"	54	11	78.2	37	25.4	26	24	5
SSQDV-BW-6	Tube Butt Weld 3/8"	69	16	104.7	50	28	37	31.6	10
SSQDV-BW-8	Tube Butt Weld 1/2"	69	16	104.7	50	28	37	31.6	10
SSQDV-BW-12	Tube Butt Weld 3/4"	150	22	111.2	50	28	37	31.6	10

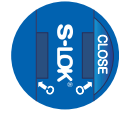
Low Pressure Diaphragm Valve - Forged Body - Locking Type - Quarter-turn actuation



Handle Position



OPEN



CLOSE

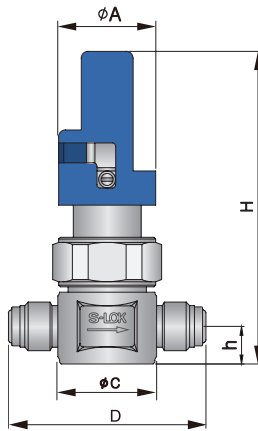
Ordering Information

SFDVQ - MG - 8 - EP - S6LS

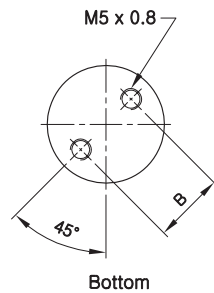
Valve Model Connection Type Connection Size Product Grade Body Material

Valve Model	Connection Type	Connection Size	Product Grade	Body Material
- SFDVQ : Low Pressure Diaphragm Valve - Forged Body - Locking	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

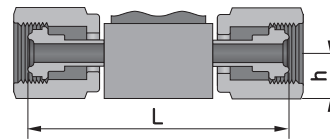
Dimensions



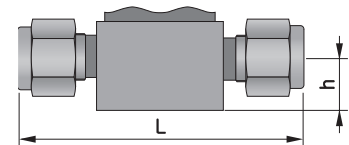
Male Metal Face Seal



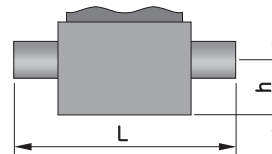
Bottom



• Female Metal Face Seal



• S-LOK Tube Fitting



• Tube Butt Weld

Basic Ordering Number	End Connection	Dimensions, mm					
		L	h	H	A	B	C
SFDVQ-MG-4	Male MFS 1/4"	58	11	91.5	28.5	17	28
SFDVQ-MG-8	Male MFS 1/2"	76	16	104.3	28.5	28	38
SFDVQ-MG-12	Male MFS 3/4"	122	22	110.3	28.5	28	38
SFDVQ-FG-4	Female MFS 1/4"	78	11	91.5	28.5	17	28
SFDVQ-FG-8	Female MFS 1/2"	104.6	16	104.3	28.5	28	38
SFDVQ-FG-12	Female MFS 3/4"	122	22	110.3	28.5	28	38
SFDVQ-S-4	S-LOK 1/4"	69.5	11	91.5	28.5	17	28
SFDVQ-S-6	S-LOK 3/8"	82.8	16	104.3	28.5	28	38
SFDVQ-S-8	S-LOK 1/2"	90.9	16	110.3	28.5	28	38
SFDVQ-S-12	S-LOK 3/4"	103.8	22	110.3	28.5	28	38
SFDVQ-BW-4	Tube Butt Weld 1/4"	54	11	91.5	28.5	17	28
SFDVQ-BW-6	Tube Butt Weld 3/8"	69	16	104.3	28.5	28	38
SFDVQ-BW-8	Tube Butt Weld 1/2"	69	16	110.3	28.5	28	38
SFDVQ-BW-12	Tube Butt Weld 3/4"	150	22	110.3	28.5	28	38

Low Pressure Diaphragm Valve - Square Body - Locking Type - Quarter-turn actuation

Handle Position



OPEN



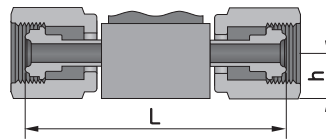
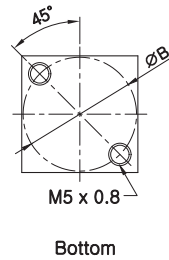
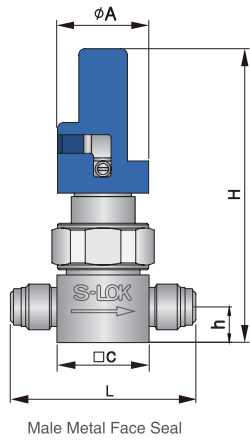
CLOSE

Ordering Information

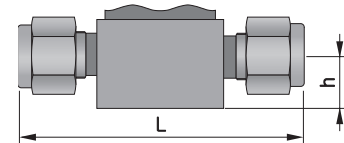
SSDVQ - MG - 8 - EP - S6LS

Valve Model	Connection Type	Connection Size	Product Grade	Body Material
- SSDVQ : Low Pressure Diaphragm Valve - Square Body - Locking	- MG : Male Metal Face Seal - FG : Female Metal Face Seal - S : S-LOK - BW : Tube Butt Weld	- 4 : 1/4" - 6 : 3/8" - 8 : 1/2" - 12 : 3/4"	- BA : BA - EP : EP	- S6LS : SS316L Single Melt - S6LV : SS316L Double Melt

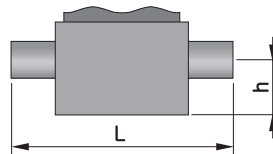
Dimensions



• Female Metal Face Seal



• S-LOK Tube Fitting



• Tube Butt Weld

Basic Ordering Number	End Connection	Dimensions, mm					
		L	h	H	A	B	C
SSQDV-MG-4	Male MFS 1/4"	57	11	89.5	28.5	25.4	26
SSQDV-MG-8	Male MFS 1/2"	76.2	16	102.3	28.5	28	37
SSQDV-MG-12	Male MFS 3/4"	122	22	108.3	28.5	28	37
SSQDV-FG-4	Female MFS 1/4"	70.6	11	89.5	28.5	25.4	26
SSQDV-FG-8	Female MFS 1/2"	83	16	102.3	28.5	28	37
SSQDV-FG-12	Female MFS 3/4"	122	22	108.3	28.5	28	37
SSQDV-S-4	S-LOK 1/4"	69.5	11	89.5	28.5	25.4	26
SSQDV-S-6	S-LOK 3/8"	82.8	16	102.3	28.5	28	37
SSQDV-S-8	S-LOK 1/2"	90.9	16	102.3	28.5	28	37
SSQDV-S-12	S-LOK 3/4"	106	22	108.3	28.5	28	37
SSQDV-BW-4	Tube Butt Weld 1/4"	54	11	89.5	28.5	25.4	26
SSQDV-BW-6	Tube Butt Weld 3/8"	69	16	102.3	28.5	28	37
SSQDV-BW-8	Tube Butt Weld 1/2"	69	16	102.3	28.5	28	37
SSQDV-BW-12	Tube Butt Weld 3/4"	150	22	108.3	28.5	28	37