Ordering Information and Dimensions

83 Series

Select a valve ordering number from the table below.

Valve ordering numbers specify stainless steel material. To order valves of alloy 400 material, replace **SS** in the ordering number with **M.**

Example: **M**-83KF2

Valve ordering numbers specify a PCTFE seat. To order valves with other seat materials, replace **K** in the ordering number with a seat material designator.

Seat Material	Designator
PTFE	T
Reinforced nylon	N
PEEK	P

Example: SS-83**T**F2

H83 Series

Select a valve ordering number from the table below.

End Connections		Flow Coefficient (C_v)	83 Series Valve Ordering Number	H83 Series Valve Ordering Number	Dimensions, in. (mm)	
Type	Size				A	B
2-Way Valve, 0.187 in. (4.75 mm) Orifice						
Female NPT	1/8 in.	1.2	SS-83KF2	SS-H83PF2	2.94 (74.7)	1.47 (37.3)
	1/4 in.	1.0	SS-83KF4	—	2.94 (74.7)	1.47 (37.3)
			—	SS-H83PF4	3.93 (99.8)	1.97 (50.0)
	1/2 in.①	1.2	SS-83KF8	—	4.25 (108)	2.13 (54.1)
Fractional Swagelok tube fitting	1/4 in.	1.6	SS-83KS4	SS-H83PS4	4.14 (105)	2.07 (52.6)
	3/8 in.	1.4	SS-83KS6	SS-H83PS6	4.39 (112)	2.19 (55.6)
	1/2 in.①	1.0	SS-83KS8	SS-H83PS8	4.60 (117)	2.30 (58.4)
Metric Swagelok tube fitting	6 mm	1.6	SS-83KS6MM	SS-H83PS6MM	4.14 (105)	2.07 (52.6)
	8 mm	1.5	SS-83KS8MM	SS-H83PS8MM	4.15 (105)	2.07 (52.6)
	10 mm	1.3	SS-83KS10MM	SS-H83PS10MM	4.41 (112)	2.20 (55.9)
	12 mm①	1.0	SS-83KS12MM	SS-H83PS12MM	4.60 (117)	2.30 (58.4)
3-Way Valve, 0.187 in. (4.75 mm) Orifice						
Female NPT②	1/8 in.	0.75	SS-83XKF2	SS-H83XPF2	2.94 (74.7)	1.47 (37.3)
	1/4 in.		SS-83XKF4	—	2.94 (74.7)	1.47 (37.3)
			—	SS-H83XPF4	3.93 (99.8)	1.97 (50.0)
Fractional Swagelok tube fitting②	1/4 in.		SS-83XKS4	SS-H83XPS4	4.14 (105)	2.07 (52.6)
	3/8 in.		SS-83XKS6	SS-H83XPS6	4.39 (112)	2.19 (55.6)
	1/2 in.①		SS-83XKS8	SS-H83XPS8	4.60 (117)	2.30 (58.4)
Metric Swagelok tube fitting②	6 mm		SS-83XKS6MM	SS-H83XPS6MM	4.14 (105)	2.07 (52.6)
	8 mm		SS-83XKS8MM	SS-H83XPS8MM	4.15 (105)	2.07 (52.6)
	10 mm		SS-83XKS10MM	SS-H83XPS10MM	4.41 (112)	2.20 (55.9)
	12 mm①		SS-83XKS12MM	SS-H83XPS12MM	4.60 (117)	2.30 (58.4)

For more information about pressure ratings of valves with tube fitting end connections, see Swagelok *Tubing Data*, MS-01-107.

① Not recommended for panel mounting.

② Bottom port of all 3-way valves is 1/4 in. female NPT.

Options and Accessories

83 and H83 Series Handles

Black phenolic handles are standard. Colored phenolic, oval, and 316 stainless steel bar handles are available. To order, add a handle designator to the valve ordering number.

Example: SS-83KF2-**RD**

Handle	Designator
Black phenolic	-BK
Blue phenolic	-BL
Green phenolic	-GR
Orange phenolic	-OG
Red phenolic	-RD
Yellow phenolic	-YW
Stainless steel bar	-SH
Oval	-K

Handle Kits

Handle kits contain a handle and set screw.

Standard black phenolic handle kit ordering number: **PH-5K-83-BK**

To order handles in other colors, replace **-BK** in the kit ordering number with a handle designator.

Example: PH-5K-83-**RD**

Oval handles are available factory assembled only.

Stainless steel bar handle kit ordering number: **SS-5K-83**

Locking Handle

The stainless steel locking handle accommodates shackle diameters from 1/4 to 5/16 in. (6.4 to 7.9 mm) and a 3/4 in. (19.0 mm) minimum shackle length. It can lock 83 series and H83 series 2-way and 3-way valves in the open or closed position.

To order a valve with a factory-assembled locking handle, add **-LH** to a valve ordering number.

Examples: SS-83KS8-**LH**
SS-83XKS8-**LH**

Locking Handle Kits

The stainless steel locking handle kit is available for replacing an existing phenolic or stainless steel bar handle; it cannot be used to replace an existing oval handle. The kit includes a locking handle, lock plate, set screw, and instructions.

Kit ordering number: **SS-5K-83LH**

83 Series Seal Kits

Seal kits contain components of the same materials as new components. See **Materials of Construction,** page 4, or **Low-Temperature Service,** page 9.

For a complete ordering number, add a seat material designator to a basic seal kit ordering number.

Example: SS-9K-83**K**

Seat Material	Designator
PEEK	P
PCTFE	K
PTFE	T
Reinforced nylon	N

Valve Series	Basic Seal Kit Ordering Number	Kit Contents
83 2-way	SS-9K-83	O-rings, stem bearing, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant, lubricant Material Safety Data Sheet (MSDS), instructions
Low-temperature 83 2-way	SS-9K-L83	
83 3-way	SS-9K-83X	Stem, handle set screw, O-rings, backup rings, bearings, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant, lubricant MSDS, instructions
Low-temperature 83 3-way	SS-9K-L83X	

Seal kit ordering numbers specify stainless steel material. For alloy 400 material, replace **SS** with **M** for in the basic ordering number.

Example: **M**-9K-83K

H83 Series Seal Kits

Seal kits contain components of the same materials as new components. See **Materials of Construction,** page 5, or **Low-Temperature Service,** page 9.

Valve Series	Seal Kit Ordering Number	Kit Contents
H83 2-way	SS-9K-H83P	Stem, handle set screw, O-rings, backup rings, stem bearing, ball, seat subassemblies (seats and seat carriers), seat springs, end screw seals, lubricant, lubricant MSDS, instructions
Low-temperature H83 2-way	SS-9K-LH83P	
H83 3-way	SS-9K-H83XP	
Low-temperature H83 3-way	SS-9K-LH83XP	

83 Series Vent Options

A downstream or upstream ball vent is available in 83 series 2-way valves. The vent port in the ball does not intersect the main flow passage, ensuring no leakage of system media from the vent port. When the valve is open, flow is straight through. The pressure rating with a ball vent is reduced to 500 psig (34.4 bar).

Downstream (DV) Vent

When a downstream-vented valve is closed, full shutoff occurs at the upstream seat. Downstream system media passes through the vent hole in the ball trunnion and vents to atmosphere through the bottom of the trunnion.

To order, insert **DV** into the valve ordering number.

Example: SS-83K**DV**F2

Upstream (UV) Vent

When an upstream-vented valve is closed, full shutoff occurs at the downstream seat. Upstream system media passes through the vent hole in the ball trunnion and vents to atmosphere through the bottom of the trunnion.

To order, insert **UV** into the valve ordering number.

Example: SS-83K**UV**F2

Service Options

83 and H83 Series Low-Temperature Service

Trunnion ball valves for low-temperature service, with a temperature rating of –40 to 200°F (–40 to 93°C), are available. Low-temperature valves have low-temperature Buna C O-rings. All other materials and ratings are the same as those of standard valves.

To order a valve for low-temperature service, insert **L** into the valve ordering number.

Example: SS-**L**83KF2

L83 Series Pressure-Temperature Ratings

Material	316 SS			Alloy 400		
Seat Material	PCTFE, Nylon	PTFE	PEEK	PCTFE, Nylon	PTFE	PEEK
Temperature, °F (°C)	Working Pressure, psig (bar)					
–40 (–40) to 100 (37)	6000 (413)	1500 (103)	6000 (413)	5000 (344)	1500 (103)	5000 (344)
150 (65)	3000 (206)	1125 (77.5)	5800 (399)	3000 (206)	1125 (77.5)	4690 (323)
200 (93)	2000 (137)	750 (51.6)	5000 (344)	2000 (137)	750 (51.6)	4390 (302)

LH83 Series Pressure-Temperature Ratings

Material	316 SS				
End Connections	F2, F4, S4, S6MM	S10MM	S6, S8MM	S8	S12MM
Temperature, °F (°C)	Working Pressure, psig (bar)				
–40 (–40) to 100 (37)	10 000 (689)	8400 (578)	7500 (516)	6700 (461)	6600 (454)
150 (65)	7 500 (516)	7500 (516)	7500 (516)	6700 (461)	6600 (454)
200 (93)	5 000 (344)	5000 (344)	5000 (344)	5000 (344)	5000 (344)

83 Series Valves With ECE R110-Type Approval

–40 to 185°F (–40 to 85°C) Temperature Range

Stainless steel 83 series 2-way and 3-way valves with PEEK seats and Buna C O-rings are available with ECE R110-type approval for use in alternative fuel service.

- Temperature rating: –40 to 185°F (–40 to 85°C)
- Pressure rating within the range: 3770 psig (260 bar)

To order, add **-11354** to a PEEK-seated, low-temperature valve ordering number.

Examples: SS-L83PS8**-11354**
SS-L83XPS8**-11354**

–40 to 248°F (–40 to 120°C) Temperature Range

Stainless steel 83 series 2-way and 3-way valves with PEEK seats and low-temperature fluorocarbon FKM O-rings are available with ECE R110-type approval for use in alternative fuel service.

- Temperature rating: –40 to 248°F (–40 to 120°C)
- Pressure rating within the range: 3770 psig (260 bar)

To order, add **-21265** to a PEEK-seated, low-temperature valve ordering number.

Examples: SS-L83PS8**-21265**
SS-L83XPS8**-21265**

G83 Series Valves with AGA and CGA Approval

Stainless steel G83 series 2-way and 3-way manual valves with PEEK seats and Buna C O-rings are available with ANSI/AGA NGV 3.1/CGA 12.3-95 approval.

- Temperature rating: –40 to 180°F (–40 to 82°C)
- Pressure rating: 5000 psig (344 bar)
- Marking: CSA (Canada and U.S.A.) mark and manufacturing date code

Testing

Every Swagelok G83 series valve is factory tested with nitrogen at 5000 psig (344 bar), with a maximum allowable leak rate of 0.5 std cm^3/min, and at 100 psig (6.8 bar), with a maximum allowable leak rate of 0.1 std cm^3/min Shell testing is performed to a requirement of no detectable leakage with a liquid leak detector.

To order, replace **L** with **G** in a PEEK-seated, low-temperature valve ordering number.

Examples: SS-**G**83PS8
SS-**G**83XPS8

83 Series Special Cleaning and Packaging (SC-11)

To order optional cleaning and packaging in accordance with Swagelok *Special Cleaning and Packaging (SC-11),* MS-06-63, to ensure compliance with product cleanliness requirements stated in ASTM G93 Level C for 83 series valves, add **-SC11** to the valve ordering number.

Example: SS-83KF2**-SC11**

Oxygen Service Hazards

For more information about hazards and risks of oxygen-enriched systems, see the Swagelok *Oxygen System Safety* technical report, MS-06-13.

Additional Valve Materials

Alloy 625, alloy 825, and SAF 2507™ super duplex stainless steel materials are available for 83 series valves. See the *Trunnion Ball Valves—Special Alloy Materials* catalog, MS-02-357.