

# Lift Check Valves

## 50 Series

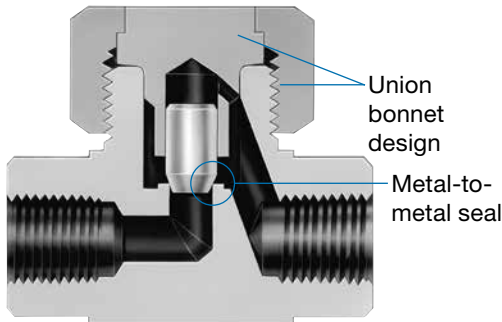
Swagelok® lift check valves limit reverse flow under pressures up to 6000 psig (413 bar) and temperatures up to 900°F (482°C).

Forward flow lifts the poppet, opening the valve. Reverse flow seats the poppet against the orifice, closing the valve.

**The lift check valve is gravity assisted and must be mounted horizontally, with bonnet nut on top.**

### Features

- Rugged, all-stainless steel construction
- Reverse flow coefficient less than 0.1 % of forward flow coefficient
- No springs or elastomers
- Compact size

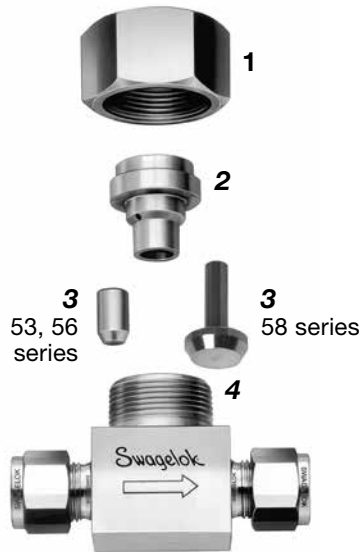


### Pressure-Temperature Ratings

ASME Class	2500
Material Group	2.2
Material Name	316 SS
Temperature °F (°C)	Working Pressure psig (bar)
-65 (-53) to 100 (37)	6000 (413)
200 (93)	5160 (355)
250 (121)	4910 (338)
300 (148)	4660 (321)
350 (176)	4470 (307)
400 (204)	4280 (294)
450 (232)	4130 (284)
500 (260)	3980 (274)
600 (315)	3760 (259)
650 (343)	3700 (254)
700 (371)	3600 (248)
750 (398)	3520 (242)
800 (426)	3460 (238)
850 (454)	3380 (232)
900 (482)	3280 (225)

For more information about pressure ratings of valves with tube fitting end connections, refer to *Tubing Data* catalog, [MS-01-107](#).

### Materials of Construction



Component	Material Grade/ ASTM Specification
1 Bonnet nut	316 SS/A479
2 Bonnet	316 SS/A479
3 Poppet	<i>S17400/A564</i>
4 Body	316 SS/A479
Lubricant	<i>Nickel-based</i>

Wetted components listed in *italics*.

### Testing

Every Swagelok lift check valve is factory tested for proper operation.

### Cleaning and Packaging

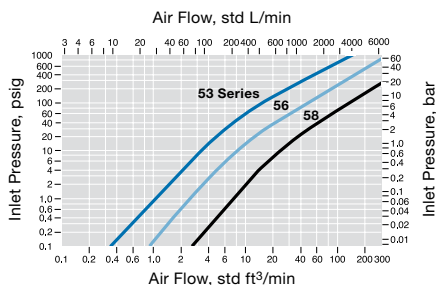
All Swagelok lift check valves are cleaned and packaged in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)* catalog, [MS-06-62](#).

### Oxygen Service Hazards

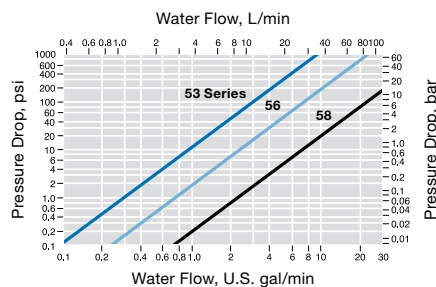
For more information about hazards and risks of oxygen-enriched systems, refer to *Oxygen System Safety* technical report, [MS-06-13](#).

## Flow Data at 100°F (37°C)

### Air



### Water



## Options

### Special Cleaning and Packaging (SC-11)

To order lift check valves cleaned and packaged in accordance with *Special Cleaning and Packaging (SC-11)* catalog, [MS-06-63](#), to ensure compliance with product cleanliness requirements stated in ASTM G93 Level C, add **-SC11** to the valve ordering number.

Example: SS-53S4-SC11

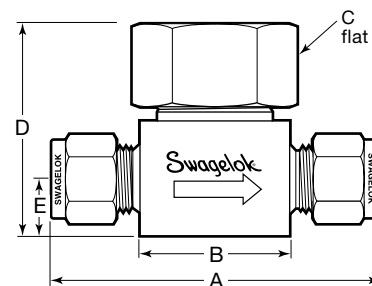
### Special Alloys

Many valve bodies are available in other alloys. Contact your authorized Swagelok sales and service representative for more information.

## Ordering Information and Dimensions

Select an ordering number.

Dimensions are for reference only and are subject to change.



End Connections		C <sub>v</sub>	Orifice in. (mm)	Ordering Number	Series	Dimensions, in. (mm)				
Inlet/Outlet	Size					A	B	C	D	E
Swagelok tube fittings	1/4 in.	0.30	0.156 (4.0)	SS-53S4	53	2.40 (61.0)	1.01 (25.7)	7/8	1.47 (37.3)	0.39 (9.9)
	3/8 in.	0.64	0.250 (6.4)	SS-56S6	56	2.83 (71.9)	1.31 (33.3)	1 1/4	1.85 (47.0)	0.50 (12.7)
	1/2 in.	2.20	0.437 (11.1)	SS-58S8	58	3.92 (99.6)	2.19 (55.6)	1 1/2	2.44 (62.0)	0.62 (15.7)
	3/4 in.			SS-58S12						
	6 mm	0.30	0.156 (4.0)	SS-53S6MM	53	2.40 (61.0)	1.01 (25.7)	7/8	1.47 (37.3)	0.39 (9.9)
Female NPT	1/8 in.	0.30	0.156 (4.0)	SS-53F2	53	2.00 (50.8)	1.00 (25.4)	7/8	1.47 (37.3)	0.39 (9.9)
	1/4 in.			SS-53F4		2.06 (52.3)	0.94 (23.9)			
	1/4 in.	0.64	0.250 (6.4)	SS-56F4	56	2.25 (57.2)	1.25 (31.8)	1 1/4	1.85 (47.0)	0.50 (12.7)
	3/8 in.	2.20	0.437 (11.1)	SS-58F6	58	3.12 (79.2)	1.86 (47.2)	1 1/2	2.44 (62.0)	0.62 (15.7)
	1/2 in.			SS-58F8						
Tube socket weld or pipe butt weld	1/4 in.	0.30	0.156 (4.0)	SS-53SW4T	53	1.81 (46.0)	0.90 (22.9)	7/8	1.47 (37.3)	0.39 (9.9)
	3/8 in.	0.64	0.250 (6.4)	SS-56SW6T	56	2.25 (57.2)	1.25 (31.8)	1 1/4	1.85 (47.0)	0.50 (12.7)
	1/2 in.			SS-56SW8T						
	1/2 in.	2.20	0.437 (11.1)	SS-58SW8T	58	3.13 (79.5)	1.88 (47.8)	1 1/2	2.44 (62.0)	0.62 (15.7)
Swagelok tube fitting/ female NPT	1/4 in.	0.30	0.156 (4.0)	SS-53S4-F4	53	2.23 (56.6)	0.97 (24.6)	7/8	1.47 (37.3)	0.39 (9.9)

Dimensions shown with Swagelok nuts finger-tight.

## Sour Gas Service

Lift check valves are available for sour gas service. Materials are selected in accordance with NACE MR0175/ISO 15156.

### Technical Data

#### Pressure Rating at 70°F (20°C)

6000 psig (413 bar)

#### Temperature Rating

-65 to 500°F (-53 to 260°C)

### Materials of Construction

Poppet—alloy 400/B164

All other materials and lubricant same as standard product. See **Materials of Construction**, page 1.

## Introduction

Since 1947, Swagelok has designed, developed, and manufactured high-quality, general-purpose and specialty fluid system products to meet the evolving needs of global industries. Our focus is on understanding our customers' needs, finding timely solutions, and adding value with our products and services.

We are pleased to provide this global edition of the book-bound *Swagelok Product Catalog*, which compiles more than 100 separate product catalogs, technical bulletins, and reference documents into one convenient, easy-to-use volume. Each product catalog is up to date at the time of printing, with its revision number shown on the last page of the individual catalog. Subsequent revisions will supersede the printed version and will be posted on the Swagelok website and in the Swagelok electronic Desktop Technical Reference (eDTR) tool.

For more information, visit your Swagelok website or contact your authorized Swagelok sales and service representative.

## Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit [swagelok.com](http://swagelok.com) or contact your authorized Swagelok representative.

### Safe Product Selection

**When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.**

### WARNING

**Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.**

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