

TECHNICAL STANDARDS & SAFETY AUTHORITY
345 CARLINGVIEW DRIVE
TORONTO ON M9W 6N9

Date: April 23, 2019
Account #: 35231
Journal #: 73045

Attn: TANYA FRANCIS

Re: Application for Design Registration

The design, as detailed in your, 60BALL-2018, job #2456226, for a Fitting is accepted for registration as follows:

Registered To: SWAGELOK COMPANY **CRN:** 0C21138.51

Drawing #: Scope of Registration

Drawing Revision: N/A

This design was registered based on a technical review performed by the province of initial registration in accordance with the Association of Chief Inspectors policy on reciprocal recognition of design review.

Reviewer's Notes:

As required by CSA B51 4.2.1, this registration expires on 22-Feb-2029. This CRN is valid until the expiry date as long as the Manufacturer maintains a valid quality control program verified by an acceptable third-party agency until that date. Should the certification of the quality control program lapse before the expiry date, this registration shall become void. Any additional conditions of registration stated in TSSA CRN# 0C21138.5 registration shall apply to BC registration.

Contact me if you have any questions. The invoice for registration will be forwarded under separate cover.

Janina Mihailescu

janina.mihailescu@technicalsaftybc.ca
Design Administration

cc:



Technical Standards and Safety Authority
 345 Carlingview Drive
 Toronto, Ontario M9W 6N9
 www.tssa.org

Show facsimile of manufacturer's logo or trademark, as it will appear on the fitting, in the space below

Swagelok

STATUTORY DECLARATION Registration of Fittings

I, Joel Feldman, Vice President of Engineering
(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Swagelok Company
(Name of Manufacturer)

Located at 29500 Solon Road, Solon, Ohio 44139 USA (440) 248-4600 (440) 349-5970
(Plant Address) (Telephone No.) (Fax No.)

- do solemnly declare that the fittings listed hereunder, which are subject to the **Technical Standards and Safety Act, Boilers and Pressure Vessels Regulation**, comply with all of the requirements of ASME B31.1 for unlisted components, and ASME B31.3 for unlisted components
(Title of recognized North American Standard)
 which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;
- or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of ISO 9001:2015 which has been verified by the following authority, BSI

The items covered by this declaration, for which I seek registration, are category C. Valves type fittings. In support of this application, the following information and/or test data are attached as follows:
ISO 9001:2015 Certificate, Attachment A, Attachment B, Catalog Information and other Support Documents
(drawings, calculations, test reports, etc.)

Declared before me at Solon in the State of Ohio
 the 29th day of November AD 2018.

Commissioner for Oaths:

Jamie L Ristau Jamie L. Ristau
(Printed name) Resident Portage County
 Notary Public, State of Ohio
 My Commission Expires: 03/06/2019
Jamie L Ristau
(Signature)

Joel Feldman
(Signature of Declarer)

FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the **Technical Standards and Safety Act, Boilers and Pressure Vessels Regulation, and CSA Standard B51** and is accepted for registration in Category C

CRN: OC21138.5

Registered by: [Signature]

Dated: Feb 22, 2019

NOTE: This registration expires on: Feb. 22, 2029

Technical Standards and Safety Authority **Boilers and Pressure Vessels Safety Program**

REGISTERED

C.R.N.: OC21138.5

Signed: [Signature]

Date: Feb 22, 2019

For scope of registration see attached stamped documents: attachment A and B

Swagelok

Canadian Registration Number Submittal #60BALL-2018
 Category C: Swagelok 60 Series Ball Valves

Date: January 22, 2019
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Attachment B: Scope for Swagelok 60 Series Ball Valves (Category C)

This document represents the scope of the 60 Series Ball Valves covered by this submission for CRN approval. The Swagelok 60 Series Ball Valves were designed and evaluated in accordance with ASME B31.1-2016 for unlisted components and ASME B31.3-2016 for unlisted components.

Summary Tables

Product Series	Main Pressure Bearing Component	Main Pressure Bearing Material	Port Connections, Sizes*	Maximum Rated Pressure (Note 1)		Design Code of Construction
				At 100°F	At Max Temp	
62	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/8", 1/4" Female ISO 1/4" Tube Butt Weld 1/4", 3/8" Pipe Butt Weld 1/4", 3/8" Tube Socket Weld 1/4", 3/8" Male VCO Fitting 1/4" Male VCR Fitting 1/4"	3000 psig (4 bolt body) 2500 psig (8 bolt body)	800 psig @450°F (4 bolt body) 200 psig@600°F (8 bolt body)	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
			Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/8", 1/4" Tube Butt Weld 1/4", 3/8" Pipe Butt Weld 1/4", 3/8" Tube Socket Weld 1/4", 3/8"	3000 psig (4 bolt body) 2500 psig (8 bolt body)	800 psig @450°F (4 bolt body) 200 psig @600°F (8 bolt body)	
			Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/8", 1/4"	2000 psig	100 psig @400°F	
			Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/4"	1500 psig	1470 psig @150°F	
			Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/4"	1500 psig	1470 psig @150°F	
			Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/4"	1500 psig	1380 psig @150°F	
63	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 1/2", 3/4" Female NPT 3/8", 1/2" Female ISO 1/2" Tube Butt Weld 1/2" Pipe Butt Weld 1/2" Tube Socket Weld 1/2", 3/4" Pipe Socket Weld 1/2" Male VCO Fitting 1/2" Male VCR Fitting 1/2"	2500 psig (4 bolt and 8 bolt bodies) 3000 psig (welded bodies)	800 psig @450°F (4 bolt body) 1000 psig @850°F (8 bolt body) 100 psig @450°F (welded)	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
			Swagelok Tube Fitting 1/2", 3/4" Female NPT 3/8", 1/2" Female ISO 1/2" Tube Butt Weld 1/2" Pipe Butt Weld 1/2" Tube Socket Weld 1/2", 3/4" Pipe Socket Weld 1/2"	2500 psig	800 psig @450°F (4 bolt body) 200 psig @800°F (8 bolt body)	
			Swagelok Tube Fitting 1/4", 3/8" Female NPT 1/8", 1/4"	1500 psig	100 psig @400°F	
			Swagelok Tube Fitting 1/2" Female NPT 1/2"	1500 psig	1470 psig @150°F	
			Swagelok Tube Fitting 1/2" Female NPT 1/2"	1500 psig	1470 psig @150°F	
			Swagelok Tube Fitting 1/2" Female NPT 1/2"	1500 psig	1380 psig @150°F	

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Product Series	Main Pressure Bearing Component	Main Pressure Bearing Material	Port Connections, Sizes*	Maximum Rated Pressure (Note 1)		Design Code of Construction
				At 100°F	At Max temp	
65	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 1" Female NPT 3/4", 1" Female ISO 3/4", 1" Pipe Butt Weld 3/4", 1" Tube Butt Weld 3/4", 1" Tube Socket Weld 1" Pipe Socket Weld 3/4", 1"	2500 psig (4 bolt and 8 bolt bodies) 3000 psig (Welded bodies)	800 psig @450°F (4 bolt body) 1000 psig @850°F (8 bolt body) 100 psig @450°F (welded)	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
		WCB Carbon Steel (ASTM A216)	Swagelok Tube Fitting 1" Female NPT 3/4", 1" Female ISO 3/4", 1" Pipe Butt Weld 3/4", 1" Tube Butt Weld 3/4", 1" Tube Socket Weld 1" Pipe Socket Weld 3/4", 1"	2500 psig	800 psig @450°F (4 bolt body) 200 psig @800°F (8 bolt body)	
		Brass C36000 or C35600 (ASTM B16)	Swagelok Tube Fitting 1" Female NPT 3/4", 1"	1500 psig	100 psig @400°F	
		Alloy C276 bar (ASTM B574) or CW-12MW Cast (ASTM A494)	Female NPT 1"	1500 psig	1470 psig @150°F	
		Alloy 400 N04400 (ASTM B164)	Swagelok Tube Fitting 1" Female NPT 1"	1500 psig	1470 psig @150°F	
		Titanium Grade 4 UNS R50700 (ASTM B348)	Female NPT 1"	1500 psig	1380 psig @150°F	
67	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 1-1/2" Female NPT 1-1/4", 1-1/2" Female ISO 1-1/4" Pipe Butt Weld 1-1/2" Tube Butt Weld 1-1/2" Tube Socket Weld 1-1/4", 1-1/2" Pipe Socket Weld 1-1/4", 1-1/2"	1500 psig (4 bolt body) 2000 psig (8 bolt body)	500 psig @450°F (4 bolt body) 500 psig @850°F (8 bolt body)	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
		WCB Carbon Steel (ASTM A216)	Swagelok Tube Fitting 1-1/2" Female NPT 1-1/4", 1-1/2" Female ISO 1-1/4" Pipe Butt Weld 1-1/2" Tube Butt Weld 1-1/2" Tube Socket Weld 1-1/4", 1-1/2" Pipe Socket Weld 1-1/4", 1-1/2"	2200 psig	800 psig @450°F (4 bolt body) 200 psig @800°F (8 bolt body)	
68	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 2" Female NPT 2" Female ISO 2" Pipe Butt Weld 2" Tube Butt Weld 2" Tube Socket Weld 2" Pipe Socket Weld 2"	1500 psig (4 bolt body) 2000 psig (8 bolt body)	500 psig @450°F (4 bolt body) 500 psig @850°F (8 bolt body)	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
		WCB Carbon Steel (ASTM A216)	Swagelok Tube Fitting 2" Female NPT 2" Female ISO 2" Pipe Butt Weld 2" Tube Butt Weld 2" Tube Socket Weld 2" Pipe Socket Weld 2"	2200 psig (4 bolt body) 2000 psig (8 bolt body)	800 @450°F (4 bolt body) 200 psig @800°F (8 bolt body)	
62, 63, 65 (3-way)	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 1/4", 3/8", 1/2" Female NPT 1/8", 1/4", 1/2", 1" Female ISO 1/4", 1/2, 3/4", 1"	1000 psig	800 psig @450°F	
67, 68 (3-way)	Body	316SS (ASTM A479 or ASTM A351)	Swagelok Tube Fitting 1-1/2" 2" Female NPT 1-1/4", 1-1/2", 2" Female ISO 1-1/4", 1-1/2", 2" Tube Socket Weld 1-1/4", 1-1/2", 2" Pipe Socket Weld 1-1/4", 1-1/2", 2"	500 psig	500 psig @450°F	

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* Fractional port connection sizes shown. Equivalent metric size ranges are also in scope, and have the same pressure/temperature ratings

Note 1: Pressure ratings shown are the maximum possible for the combination of valve series and body material. Seat and flange seals will affect ratings; please refer to product literature.

Product Illustration

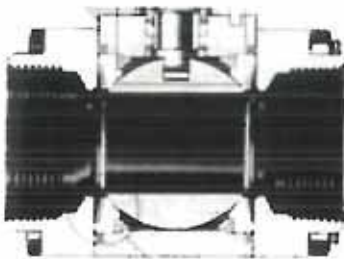


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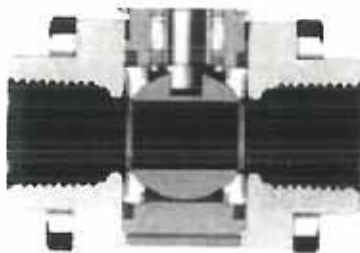
Configurations

The pressure retaining components of the 60 Series ball valve bodies can be categorized into three main types of assemblies based on the method used to attach the flanges to the body:

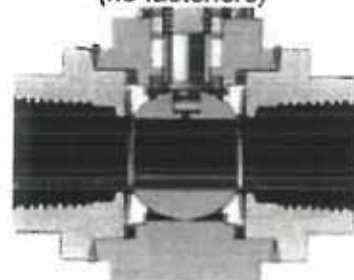
4 bolt (with nuts)
(fasteners through body)



8 bolt
(fasteners thread into body)

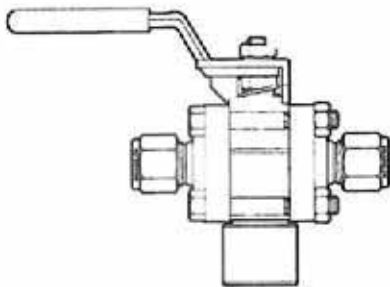


welded
(no fasteners)



The 4 bolt type assemblies are available in all body materials.
The 8 bolt type assemblies are available in Stainless Steel and Carbon Steel only.
The welded assemblies are available in Stainless Steel only.

60 Series 3-Way Valves



3-Way valves are available in the 4-bolt type assembly and Stainless Steel material only.

Product Options:

The product options listed below affect pressure and/or temperature ratings shown in the above Summary Table, but in all cases the ratings are less than those shown in the table.

Flange Seal Material Options

Fluorocarbon, FKM
Buna N
Buna C
Ethylene Propylene
Neoprene
Grafoil
PTFE

Stem Seal Material Options

PTFE, virgin
Fluorocarbon, FKM
Buna C
Ethylene Propylene
Grafoil
PEEK (virgin, coated, or reinforced)

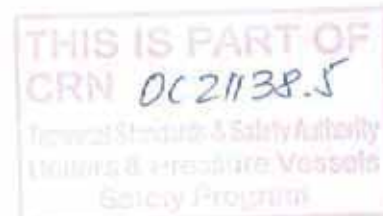
Seat Material Options

PTFE, virgin
PTFE, reinforced
PTFE, carbon glass filled
PEEK (virgin, coated, or reinforced)
UHMWPE
Inconel X-750

Additional options that do not increase the pressure and/or temperature ratings may be made available within the scope of this approval. Examples of these would include the following:

Handle options
Actuators (e.g. pneumatic, electric)
Panel mounting
Low dead space inserts

All of the above options, those that affect pressure and/or temperature ratings and those that do not, are within the scope of this approval.



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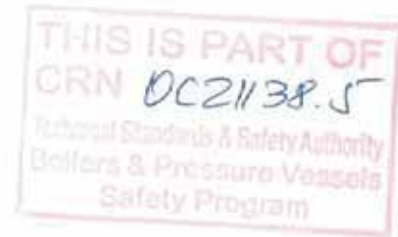
Quality System

The Swagelok Company quality system complies with the requirements of ISO 9001:2015. The Swagelok Company maintains BSI Certificate of Registration Number FM 01729, which applies to all locations listed on the Certificate.

References

The product catalog does not represent the full scope of registration, but rather details some of the most common options.

- 60 Series Ball Valve Catalog MS-01-146, Rev U



Attachment A. Swagelok Manufacturing Locations

This document lists the Swagelok locations where end item or component level manufacturing activities take place.

Swagelok Company 29500 Solon Road Solon, Ohio 44139 USA	Swagelok Company (Falon 1) 348 Bishop Road Highland Heights, Ohio 44143 USA
Swagelok Company (Highland) 318 Bishop Road Highland Heights, Ohio 44143 USA	Swagelok Company (Falon 2) 358 Bishop Road Highland Heights, Ohio 44143 USA
Swagelok Company (OFC) 29495 F.A. Lennon Drive Solon, Ohio 44139 USA	Swagelok Company (HPF) 6050 Cochran Road Solon, Ohio 44139 USA
Swagelok Company (Atlantic) 26651 Curtiss Wright Parkway Willoughby Hills, Ohio 44092 USA	Swagelok Company (Snow Metal) 6060 Cochran Road Solon, Ohio 44139 USA
Swagelok Company (Micro) 26653 Curtiss Wright Parkway Willoughby Hills, Ohio 44092 USA	Swagelok Company (Alfred) 29500 Ambina Drive Solon, Ohio 44139
Swagelok Hose Services Company (SHSC) 29900 Solon Industrial Parkway Solon, Ohio 44139	Swagelok Company (Strongsville) 15400 Foltz Road Strongsville, Ohio 44119
Swagelok (China) Fluid System Technologies Ltd. Changshu Export Process Zone Changshu Economic Development Zone Changshu, Jiangshu 215513 China	Swagelok Company A.G. (European Technology Center) St. GallerstraBe 84 Lachen, Switzerland 8853 Switzerland
Swagelok Limited Ballafletcher Road Tromode IM4 4RA Isle of Man	

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