TECHNICAL SAFETY BC

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

Date: May 4, 2018
Account #: 35231
Journal #: 70360

Attn: TANYA FRANCIS

Re: Application for Design Registration

The design, as detailed in your, TSSA SR# 2256534, for a Fitting is accepted for registration as follows:

Registered To: SWAGELOK COMPANY **CRN:** 0H20020.51

Drawing #: MS-02-358 **Drawing Revision:** C

Conditions Of Registration:

Registration of a Fluid Distribution Headers (FDH) per attached scope of registration sheets (3 pgs + Mfg Locs

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 January 31, 2028. 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.

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

SHARON PETERS

boiler.designregistration@technicalsafetybc.ca
Design Administration

cc:

Swagelok

Attachment B. Scope of Registration for Swagelok Fluid Distribution Headers (FDH) (Category H)

Product Scope

This document represents the scope of Swagelok® Fluid Distribution Headers covered by this submission for CRN approval. These products have been evaluated in accordance with ASME B31.1 for unlisted components and ASME B31.3 for unlisted components.

Summary Table

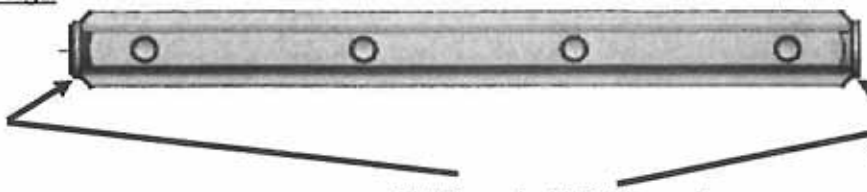
Product Series	Main Pressure Bearing Component	Main Pressure Bearing Material (Standard)	End Cap/Body Connections and Sizes	Maximum Allowable Working Pressure (psig)		Design Code of Construction
				@100°F	@Max. Temp	
FDH1 (1" pipe platform)	Body (Extrusion) ¾" female NPT ends Or End Caps on straight threads	316 SS bar (ASTM A479)	**Inlet Connections:** Swagelok tube fitting 1/2", 3/4", 1", 12mm, 25mm Female NPT 3/8", 1/2," 3/4" Swagelok Tube Adapter 3/8", 1/2", 3/4", 1" **Outlet Connections**: Swagelok Tube Fitting 1/4", 1/2", 6mm, 10mm, 12 mm, 25 mm Female NPT 1/4", 3/8" 1/2" Swagelok Tube Adapter 1/4", 3/8", 1/2", 3/4"	3000 psig	2145 psi @ 400°F	ASME B31.1 (Unlisted Components) And ASME B31.3 (Unlisted Components)
FDH2 (2" pipe platform)	Body (Extrusion) and End Caps	316 SS bar (ASTM A479)	**Inlet Connections** Swagelok Tube Fitting 3/4", 1", 2", 25mm, 50mm, Female NPT 1/2," 3/4", 1" Swagelok Tube Adapter 3/4, 1", 2" **Outlet Connections** Swagelok Tube Fitting 3/8", 1/2", 3/4", 1", 10mm, 12 mm, 25 mm Female NPT 3/8" 1/2", 3/4", 1" Swagelok Tube Adapter 3/8", 1/2",3/4"	1000 psig	715psi @ 400°F	

TECHNICAL SAFETY BC
CRN #: OH20020.51
Date: April 27, 2018
BC J#: 70360

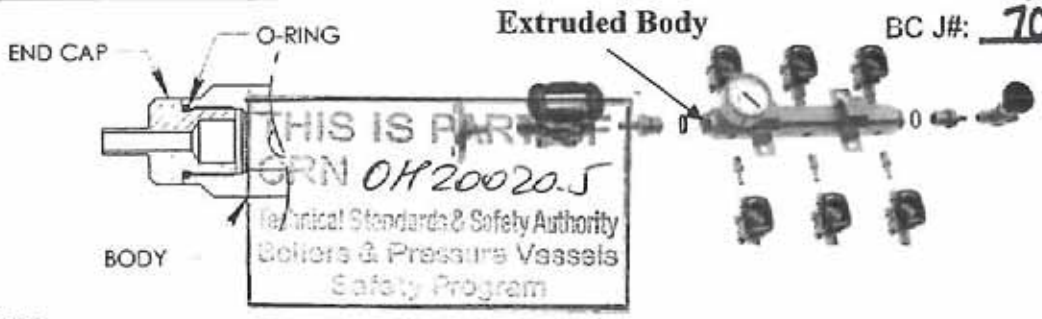
THIS IS PART OF CRN OH20020.5
Technical Standards & Safety Authority
Boilers & Pressure Vessels Safety Program

Product Illustrations

Primary FDH1 Design



FDH2 and Optional FDH 1 Design



Configurations

The Swagelok Fluid Distribution Header (FDH) is a pre-engineered and fully documented piping assembly that can act as a distribution manifold or collection manifold in gas or liquid applications. The main pressure-bearing component is an extruded manifold body that may or may not include an end-cap at the inlet and outlet ends, as explained below. When end caps are used, they are connected to the body with straight threads and O-ring seals.

FDH assemblies are available in two sizes – the FDH1 is a one-inch pipe platform and the FDH2 is a two-inch pipe platform. The FDH can be ordered with two to 18 branch outlets, where valves and other system components are connected to the branch outlets with tapered pipe threads. Swagelok offers a variety of system components to connect to the manifold body and/or end cap assemblies.

The pressure rating of the total piping assembly is the lowest pressure rating of any valve or other system component connected to the body. The scope of this registration is only for the extruded body with 3/4" NPT ends or the extruded body and end cap assemblies.

Product Options:

Fluid distribution headers are common components for a variety of gas and liquid applications. A wide variety of product options such as clamps or various system components can be attached to manifold body and end-cap assemblies to create subsystems for conveying systems or gases. These options do not affect the pressure or temperature ratings of the body or body and end cap assemblies within the scope of this CRN registration..

Quality System

The Swagelok Company quality system for Fluid Distribution Headers complies with the requirements of BS EN ISO 9001:2015. Swagelok Company maintains British Standards Institution Certificate of Registration Number FM 01729, which applies to all locations listed on the Certificate.

References

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

- Fluid Distribution Header Catalog MS-02-358

TECHNICAL SAFETY BC
CRN #: OH20020.51
Date: April 27, 2018
BC J#: 70360

THIS IS PART OF CRN OH20020.5
Technical Standards & Safety Authority
Boilers & Pressure Vessels Safety Program

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 Tromode IM4 4RA Isle of Man	

TECHNICAL SAFETY BC

CRN #: OH20020.5

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