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September 23, 2020

LAURA VEAL  
PARKER HANNIFIN - INSTRUMENTATION PRODUCTS DIVISION  
1005 A CLEANER WAY  
HUNSTVILLE AL 35805  
US

Service Request Type: BPV-Fitting Registration  
Service Request No.: 2913040  
Your Reference No.:  
Registered to: PARKER HANNIFIN - INSTRUMENTATION PRODUCTS DIVISION

Dear LAURA VEAL,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

**CRN No.: 0C22701.5**  
**Main Design No.: LC Series Check Valves per Registration Scope**

**Expiry Date: 23-Sep-2030**

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

A stamped copy of the approved registration and invoice for engineering services will be sent to you shortly. Should you have any questions or require further assistance, however, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail [customerservices@tssa.org](mailto:customerservices@tssa.org). We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,

Zivko Gacevic P. Eng.  
Mechanical Engineer, BPV  
Tel.: 416-734-3429  
Fax: 416-231-6183  
Email: [zgacevic@tssa.org](mailto:zgacevic@tssa.org)



Technical Standards and Safety Authority  
345 Carlingview Drive  
Toronto, Ontario M9W 6N9  
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Show facsimile of manufacturer's logo or trademark, as it will appear on the fitting, in the space below

P

## STATUTORY DECLARATION Registration of Fittings

I, Craig Beckwith, Division General Manager

(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Parker Hannifin Corporation, Instrumentation Products Division

(Name of Manufacturer)

Located at 1005 A Cleaner Way, Huntsville, Alabama, USA 35805

(Plant Address)

256-881-2040

(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

(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 MSS SP-99 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, DNV-GL.

The items covered by this declaration, for which I seek registration, are category C type fittings. In support of this application, the following information and/or test data are attached as follows:

Scope of Registration with Attachments for LC Series Check Valves

(drawings, calculations, test reports, etc.)

Declared before me at Huntsville in the State of Alabama

the 6<sup>th</sup> day of May AD 2020.

Commissioner for Oaths:

Sheri Coggan  
(Printed name)

Sheri Coggan  
(Signature)

[Signature]  
(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: \_\_\_\_\_

Registered by: \_\_\_\_\_

Dated: \_\_\_\_\_

NOTE: This registration expires on: Sep. 23, 2030

Technical  
Standards  
and Safety  
Authority

Boilers and  
Pressure Vessels  
Safety Program

**REGISTERED**

C.R.N.: 0C22701.5

Signed: [Signature]

Date: September 23, 2020.

\*Information provided in this application is releasable under the Freedom of Information and Privacy Protection Act and may be disclosed upon request.

DNV-GL 00553 (04/17)

Note: See attached Registration Scope

## Registration Scope

Parker Hannifin  
Instrumentation Products Division

Catalog 4135-CV, April 2019, Page 14  
LC Series Check Valves

Based on the following summary, we seek registration for the attached scope .

Series/Model	Size	CWP	Body Material
4Z-LC6L-SS	1/4"	6000 PSI	ASTM A182, Type F316
4A-LC6L-SS	1/4"	6000 PSI	ASTM A182, Type F316
4F-LC6L-SS	1/4"	6000 PSI	ASTM A182, Type F316
4L-LC12L-SS	1/4"	6000 PSI	ASTM A182, Type F316
6Z- LC12L-SS	3/8"	6000 PSI	ASTM A182, Type F316
6A- LC12L-SS	3/8"	6000 PSI	ASTM A182, Type F316
8F-LC16L-SS	1/2"	6000 PSI	ASTM A182, Type F316
8Z-LC16L-SS	1/2"	6000 PSI	ASTM A182, Type F316
8A-LC16L-SS	1/2"	6000 PSI	ASTM A182, Type F316

## Summary

Table 1: Summary Table for the LC Series Check Valves

Main Pressure Bearing Component	Main Pressure Bearing Material (Standard)	Port Connections and Sizes	Pressure Rating	Design Code of Construction
Body (Refer to Table 2 for Sizes)	ASTM A276, Type 316 <i>A 182 F316</i>	Refer to End Connection in Table 2 below	6,000 psi CWP	MSS-SP-99

Table 2 below shows the valve part number description from the catalog for the LC Series Check valves. For this valve the valve bodies are available only in one material (ASTM 182 Type F316). The valve is available three sizes (1/4", 1/2", and 1.0") designated as 6, 12, and 16 in the part number. The minimum wall thickness for all valves in this line is at the undercut of the thread on the valve body.

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*Added pg #  
to doc in file*

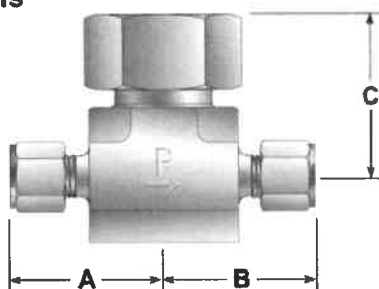
**Table 2: Dimensions and End Connections**

Dimensions in inches (millimeters) are for reference only, subject to change.

Part #	Size/Connection	A	B	C	Bonnet Hex
2F-LC6L-SS	1/8" Female NPT	1.00 (25.4)	1.00 (25.4)	1.34 (34.0)	15/16 (23.8)
4Z-LC6L-SS	1/4" CPI™	1.38 (35.1)	1.38 (35.1)	1.34 (34.0)	15/16 (23.8)
4A-LC6L-SS	1/4" A-LOK®	1.38 (35.1)	1.38 (35.1)	1.34 (34.0)	15/16 (23.8)
4F-LC6L-SS	1/4" Female NPT	1.03 (26.2)	1.03 (26.2)	1.34 (34.0)	15/16 (23.8)
M6A-LC6L-SS	6mm A-LOK®	1.38 (35.1)	1.38 (35.1)	1.34 (34.0)	15/16 (23.8)
4F-LC12L-SS	1/4" Female NPT	1.13 (28.7)	1.13 (28.7)	1.50 (38.1)	1-1/4 (31.8)
6Z-LC12L-SS	3/8" CPI™	1.60 (40.6)	1.60 (40.6)	1.50 (38.1)	1-1/4 (31.8)
6A-LC12L-SS	3/8" A-LOK®	1.60 (40.6)	1.60 (40.6)	1.50 (38.1)	1-1/4 (31.8)
8F-LC16L-SS	1/2" Female NPT	1.56 (39.6)	1.56 (39.6)	1.86 (47.2)	1-1/2 (38.1)
8Z-LC16L-SS	1/2" CPI™	1.97 (50.0)	1.97 (50.0)	1.86 (47.2)	1-1/2 (38.1)
8A-LC16L-SS	1/2" A-LOK®	1.97 (50.0)	1.97 (50.0)	1.86 (47.2)	1-1/2 (38.1)

For CPI™ A-LOK®, dimensions are measured with nuts in the finger-tight position.  
Metric dimensions are noted by ( ).

### Dimensions



The Pressure and Temperature information is shown below.

### Specifications

#### Pressure Rating

.....6000 psig (414 bar) CWP

#### Temperature Rating

..... -100°F to 900°F (-148°C to 482°C)

#### Flow Data:

LC6 Series.....  $C_V = .63$   $X_T = .47$   
LC12 Series.....  $C_V = 1.20$   $X_T = .63$   
LC16 Series.....  $C_V = 2.29$   $X_T = .65$

The Cold Working Pressure (CWP) is established by burst testing in accordance with MSS SP-105.

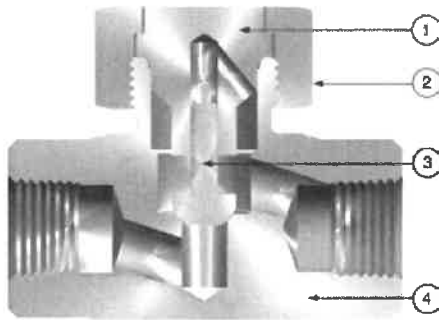
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A diagram of the components and the materials of constructions are provided below.

**Exhibit 1: Diagram of the Components and the Materials of Construction**

**Materials**



Item #	Part	Stainless Valve
1	Poppet Guide	ASTM A479, Type 316
2	Bonnet Nut	ASTM A479, Type 316
3	Poppet	ASTM A564, Type 630
4	Valve Body	ASTM A182, Type F316

LC16 Series utilizes a nickel-chromium-iron alloy bonnet seal.

**Quality System**

Parker Hannifin Instrumentation Products Division's quality management system complies with the requirements of ISO 9001:2015. A copy of the current DNV-GL certificate is included in this submission.

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