

Montréal, 5 novembre 2020.

MADAME TANYA FRANCIS  
TECHNICAL STANDARDS & SAFETY AUTHORITY  
345 CARLINGVIEW DRIVE  
TORONTO ONTARIO  
CANADA M9W 6N9

Fabricant : PARKER HANNIFIN - INSTRUMENT PRODUCT DIV.  
1005 A CLEANER WAY,  
HUNSTVILLE AL  
USA 35805

Numéro de dossier : 950439

Numéro(s) de dessin(s) : LC Series Check Valves per Registration Scope

**Objet : Enregistrement des plans et devis – Confirmation de l'enregistrement**

Bonjour,

Nous vous informons que votre demande d'enregistrement de plans et devis a été traitée et que cette conception a été enregistrée sous le numéro d'enregistrement canadien (NEC\CRN) suivant : **0C22701.56.**

Nous portons votre attention sur certaines exigences réglementaires concernant les installations sous pression, ainsi que des codes et normes qui y sont associés :

- Le fabricant doit maintenir un programme de contrôle de la qualité valide pour fabriquer un équipement selon ce NEC;
- Ce numéro d'enregistrement demeure valide tant et aussi longtemps que les paramètres de conception demeurent inchangés. Dans le cas d'accessoires, l'enregistrement est valide pour une durée de 10 ans à partir de la date de conception doivent alors être resoumis pour validation;
- Le fabricant doit nous transmettre une copie de l' *Déclaration de conformité du constructeur (Manufacturer's Data Report)* pour chaque appareil ou chaudière fabriqué selon ce NEC dans les 30 jours suivant la signature de cette déclaration;
- Le numéro de dessin enregistré et le numéro de révision doivent être indiqués sur la déclaration de conformité pour les équipements fabriqués selon ce NEC.

Le présent avis d'approbation ne dégage pas le fabricant de ses responsabilités quant à la conception ou à la construction des équipements ou d'accessoires fabriqués selon un NEC.

Bureau d'expertise et d'homologation en équipements sous pression

**Montréal**

545, boul. Crémazie Est, 7ième étage

Montréal (Québec) H2M 2V2

Téléphone : 514 873-6459

Sans frais : 1 866 262-2084

[www.rbq.gouv.qc.ca](http://www.rbq.gouv.qc.ca)

Montréal, le 5 novembre 2020.

MRS. TANYA FRANCIS  
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Manufacturer : PARKER HANNIFIN - INSTRUMENT PRODUCT DIV.  
1005 A CLEANER WAY,  
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USA 35805

OUR REFERENCE : 950439  
Design number : LC Series Check Valves per Registration Scope

**Subject: Design registration confirmation**

Hi,

We wish to inform you that your design registration application has been evaluated and that it was registered under the following Canadian Registration Number (CRN): **0C22701.56.**

The following is a reminder of your obligations regarding certain requirements of the regulation respecting pressure vessels, and the referenced codes and standards:

- The manufacturer must maintain a valid quality control program to manufacture equipment according to the CRN.
- The CRN remains valid as long as there are no changes to the design calculations that might affect the pressure boundary. The design registration of fittings expires 10 years after acceptance. It must, therefore, be resubmitted for validation.
- The manufacturer shall submit a copy of the *Manufacturer's Data Report* to us for each equipment manufactured according to this CRN within 30 days following the signing of this report.
- The drawing number and the revision number registered under this CRN must be indicated on the *Manufacturer's Data Report* for equipment manufactured according to the CRN.

This notice of approval does not relieve the manufacturer of their responsibilities with respect to the design or fabrication of equipment manufactured according to this CRN.

Yours sincerely,

Bureau d'expertise et d'homologation en équipements sous pression

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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

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 \_\_\_\_\_.

CRN: \_\_\_\_\_

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

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

NOTE: This registration expires on: \_\_\_\_\_



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



## 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<br>(Refer to Table 2 for Sizes) | ASTM A276, Type 316<br><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.

*Added pg #  
to doc in file*

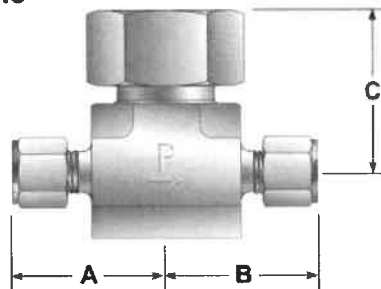
**Table 2: Dimensions and End Connections**

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:

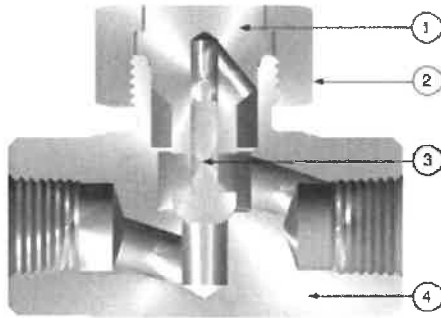
LC6 Series.....  $C_V = .63$   $X_T = .47$   
LC12 Series.....  $C_V = 1.20$   $X_T = .63$   
LC16 Series.....  $C_V = 2.29$   $X_T = .65$

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

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.