

February 04, 2021

Attention: Tanya Francis
TECHNICAL STANDARDS & SAFETY AUTHORITY
345 CARLINGVIEW DRIVE
TORONTO, ON M9W 6N9

The design submission, tracking number 2020-05140, originally received on October 23, 2020 was surveyed and accepted for registration as follows:

CRN : 0C21231.2	Accepted on: February 04, 2021
Reg Type: NEW DESIGN	Expiry Date: February 04, 2031
Drawing No. : REGISTRATION SCOPE	
Fitting type: U16 UNION BONNET VALVE	
Design registered in the name of : PARKER HANNIFIN	

The registration is conditional on your compliance with the following notes:

*** The end connectors for the U16 Union Bonnet valves are covered under CRN's for Parker's A-Lok and CPI compression ends (0A6793.52), and for Parker's pipe ends (0A2205.52)*

*** Only the U16 Union Bonnet Valve are included as part of this registration.*

As indicated on AB-41 Statutory Declaration form and submitted documentation, the code of construction is other engineering analysis.

- It is our understanding that the fitting(s), included as the scope of this submission, that is(are) subject to the Safety Codes Act shall comply with the requirements of the indicated Standard or Code of Construction on the AB-41 Statutory Declaration as supported by the attached data which identifies the dimensions, materials of construction, press./temp. ratings and the basis for such ratings, and the identification marking of the fittings.*
- This registration is valid only for fittings fabricated at the location(s) covered by the QC certificate attached to the accepted AB-41 Statutory Declaration form.*
- This registration is valid only until the indicated expiry date and only if the Manufacturer maintains a valid quality management system approved by an acceptable third-party agency until that date.*
- Should the approval of the quality management system lapse before the expiry date indicated above, this registration shall become void.*

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 ext 3337 or fax (780) 437-7787 or e-mail Dick@absa.ca.

Sincerely,



DICK, ASHLING, P. Eng.
DOP Cert. No. D00007936

**STATUTORY DECLARATION
Registration of Fittings**
Single or Multiple Fitting Designs within one Fitting Category

I, Craig Beckwith, Division General Manager
(name of applicant) (position title) (must be in a position of authority)
of Parker Hannifin Corporation - Instrumentation Products Division
(name of manufacturer)
located at 1005 A Cleaner Way, Huntsville, AL, 35805, USA
(plant address)

In this space, show facsimile of manufacturer's logo or trademark as it will appear on the fitting.

P

do solemnly declare that the fittings listed hereunder, which are subject to the Safety Codes Act (select only one)

- ☐ comply with the requirements of _____ which specifies the dimensions,
(title of recognized North American Standard)
materials of construction, pressure/temperature ratings and identification marking of the fittings, or
- ☒ are not covered by the provisions of a recognized North American standard and are therefore
manufactured to comply with MSS-SP-105 as supported by the
(title of code of construction or other applicable document)
attached data which identifies the dimensions, materials of construction, pressure/temperature ratings and the basis for such ratings, and the identification marking of the fittings.

I further declare that the manufacture of these fittings is controlled by a quality control program which has been verified as described in the below Table as being suitable for the manufacturing of these fittings to the stated standard, regulation, code, guideline or other applicable document. The fittings covered by the declaration for which I seek registration are as provided in the Supplementary Sheet(s) attached.

Quality Program Verification and Manufacturing Sites

A copy of the Quality Certificate from each manufacturing site must be included

Item #	Product Description, Model or Series	Quality Program	Scope of Certification	Expiry Date	Verifying Organization	Location(s) Plant Name and address
1.	U16 Union Bonnet Valve	ISO 9001:2015	Design, Manufacture, and Service of Instrumentation Products, Pressure and Temperature Systems, Pneumatic Pumps, Power Supplies, and Anhydrous Ammonia/Propane	April 7, 2021	DNV-GL	2625 AL Hwy 21 N, Jacksonville, AL 36265, USA

Tracking #: 2020-05140

			Valves.			
2.						

In support of this application, the following information, calculations and/or test data are attached:

Scope of Registration and Catalog 4110-NV - May 2019

[Signature] 1/7/20
(Signature of the Declarer) (Date)

DECLARED before me at Huntsville in the Madison County of Alabama
(city) (province, territory, or state)

this _____ day of _____, 2020
(Month) (Year)

(print) _____
(a Commissioner of Oaths or Notary Public)

(sign) _____
(a Commissioner of Oaths or Notary Public)

(expiry date (mm/dd/yy))

Commissioner of Oaths / Notary Public in and for: _____
(province, territory, or state)

For ABSA Office Use Only:

NOTES: ** The Scope of this Registration include the U16 Union Bonnet Valves only

To the best of my knowledge and belief, the application meets the requirements of the Safety Codes Act and CSA Standard B51, Part 1, Clause 4.2, and is accepted for registration in Category _____.

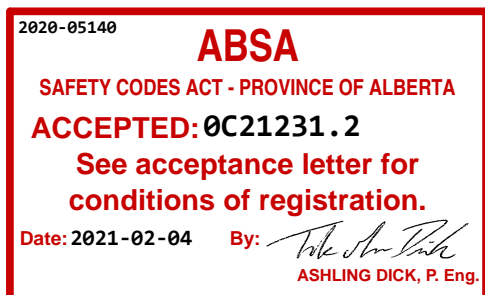
CRN: _____

Registered Date: _____

Expiry Date: _____

Signature: _____
(Signature of the Administrator/SCO)

The information you provide is necessary only for the administration of the programs as required by the Alberta Safety Codes Act and Regulations in the Pressure Equipment Discipline



This stamp and signature have been affixed electronically to this registered design as required by Section 20(1) of the Pressure Equipment Safety Regulation, in accordance with the Electronic Transactions Act.

Table 1 Scope of Fitting Designs**

Item #	Primary Pressure Bearing / Retaining Component	Material of Construction	Port Connections and Size Range	MDMT	Rated Pressure		Pressure Class(es) / Schedule(s)	Design Code(s) of Construction	Reference Catalogue (pages) or Drawing(s)
					At Ambient Temperature	At Maximum Temperature			
U16	Body	ASTM A182 Type F316	Refer to Catalogue	N/A	Refer to Scope of Registration	Refer to Scope of Registration	Refer to Scope of Registration	MSS-SP-105	4110-NV (pages 8-11)

Table 2 Additional Scope Information

List/Attach Additional Detail and References (Product Configurations, Options, Illustrations, etc.)
Example: Series X Options
See attached scope of registration and catalog pages

** For additional alternatives of Table 1, refer to Form AB-41a, Guide for Completing Form AB-41

Registration Scope

Parker Hannifin
Instrumentation Products Division

Catalog 4110-NV, May 2019, Pages 8-11
U Series Needle Valves

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

Series/Model	Size	Body Style	CWP	Body Material	Trim
U16A	1"	Angle	6000 psi	ASTM A182, Type F316	ASTM A479, Type 316
U16L	1"	Linear	6000 psi	ASTM A182, Type F316	ASTM A479, Type 316

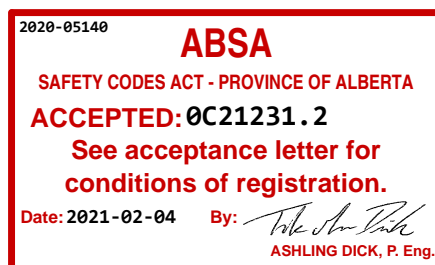
Summary

Table 1: Summary Table for the U16 valves

Main Pressure Bearing Component	Main Pressure Bearing Material (Standard)	Port Connections and Sizes	Pressure Rating	Design Code of Construction
Body (U16)	ASTM A182, Type F316	Refer to End Connection in Table 2 below	6,000 psi CWP	MSS-SP-105

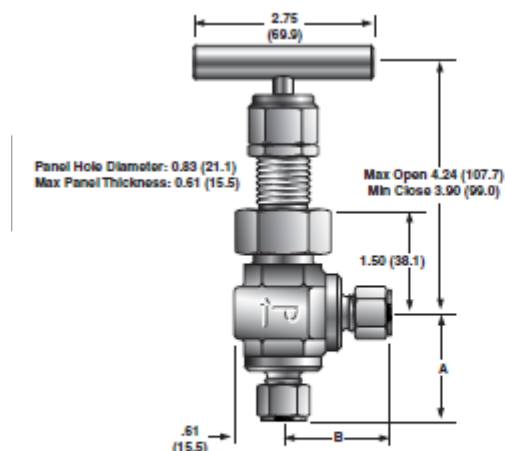
Table 2 below shows the valve part number description from the catalog for the U series needle valves.

For this valve there are two valve bodies (U#A and U#L) available only in one material (ASTM A182 Type F316). The valve is available three sizes designated as U6, U12, and U16 in the part number. The minimum wall thickness for all valves in this line regardless of port connection is at the undercut of the bonnet thread on the valve body. The inlet and outlet port options all have wall thicknesses greater than the valve body minimum. The stem type and packing material do not affect the valve minimum wall.

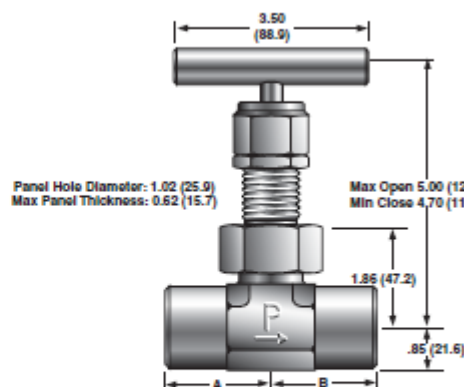


This stamp and signature have been affixed electronically to this registered design as required by Section 20(1) of the Pressure Equipment Safety Regulation, in accordance with the Electronic Transactions Act.

Table 2: Dimensions and End Connections



Model Shown: 8A-U12AB-T-SS



Model Shown: 16F-U16LB-G-SS-HT

() Denotes dimensions in millimeters

Basic Part Number		End Connections		Stem Type	Flow Data						Dimensions A† and B†
		Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		
Inline	Angle				Inch	mm	C _V	X _T *†	C _V	X _T *†	Inch (mm)
8A-U16LR-T-SS	8A-U16AR-T-SS	1/2" Compression A-LOK®	Regulating	0.394	10.0	1.59	0.73	2.11	0.62	1.97	
8A-U16LB-T-SS	8A-U16AB-T-SS		Blunt				1.90	0.95	2.53	0.81	(50.0)
8F-U16LR-T-SS	8F-U16AR-T-SS	1/2" Female NPT	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.56	
8F-U16LB-T-SS	8F-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(39.6)
8PSW-U16LR-T-SS	8PSW-U16AR-T-SS	1/2" Pipe Socket Weld	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.56	
8PSW-U16LB-T-SS	8PSW-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(39.6)
8W-U16LR-T-SS	8W-U16AR-T-SS	1/2" Tube Socket Weld	Regulating	0.394	10.0	1.59	0.73	2.11	0.62	1.69	
8W-U16LB-T-SS	8W-U16AB-T-SS		Blunt				1.90	0.95	2.53	0.81	(42.9)
8Z-U16LR-T-SS	8Z-U16AR-T-SS	1/2" Compression CPI™	Regulating	0.394	10.0	1.59	0.73	2.11	0.62	1.97	
8Z-U16LB-T-SS	8Z-U16AB-T-SS		Blunt				1.90	0.95	2.53	0.81	(50.0)
12A-U16LR-T-SS	12A-U16AR-T-SS	3/4" Compression A-LOK®	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.97	
12A-U16LB-T-SS	12A-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(50.0)
12F-U16LR-T-SS	12F-U16AR-T-SS	3/4" Female NPT	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.63	
12F-U16LB-T-SS	12F-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(41.4)
12PSW-U16LR-T-SS	12PSW-U16AR-T-SS	3/4" Pipe Socket Weld	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.56	
12PSW-U16LB-T-SS	12PSW-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(39.6)
12W-U16LR-T-SS	12W-U16AR-T-SS	3/4" Tube Socket Weld	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.56	
12W-U16LB-T-SS	12W-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(39.6)
12Z-U16LR-T-SS	12Z-U16AR-T-SS	3/4" Compression CPI™	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.97	
12Z-U16LB-T-SS	12Z-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(50.0)
16A-U16LR-T-SS	16A-U16AR-T-SS	1" Compression A-LOK®	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.97	
16A-U16LB-T-SS	16A-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(50.0)
16F-U16LR-T-SS	16F-U16AR-T-SS	1" Female NPT	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.81	
16F-U16LB-T-SS	16F-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(46.0)
16Z-U16LR-T-SS	16Z-U16AR-T-SS	1" Compression CPI™	Regulating	0.437	11.1	1.82	0.72	2.42	0.61	1.97	
16Z-U16LB-T-SS	16Z-U16AB-T-SS		Blunt				2.67	0.80	3.55	0.68	(50.0)
M12A-U16LR-T-SS	M12A-U16AR-T-SS	12mm Compression A-LOK®	Regulating	0.394	10.0	1.59	0.73	2.11	0.62	1.97	
M12A-U16LB-T-SS	M12A-U16AB-T-SS		Blunt				1.90	0.95	2.53	0.81	(50.0)
M12Z-U16LR-T-SS	M12Z-U16AR-T-SS	12mm Compression CPI™	Regulating	0.394	10.0	1.59	0.73	2.11	0.62	1.97	
M12Z-U16LB-T-SS	M12Z-U16AB-T-SS		Blunt				1.90	0.95	2.53	0.81	(50.0)

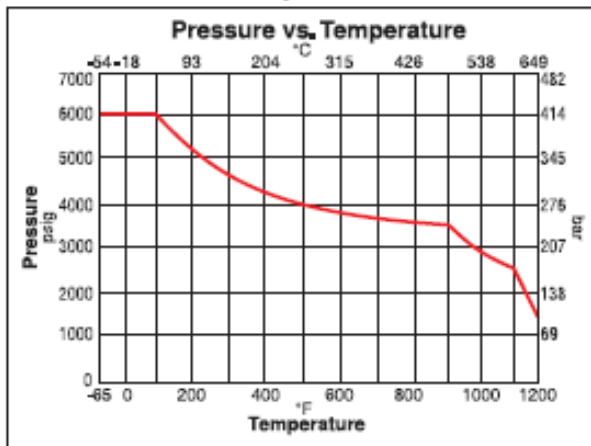
* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

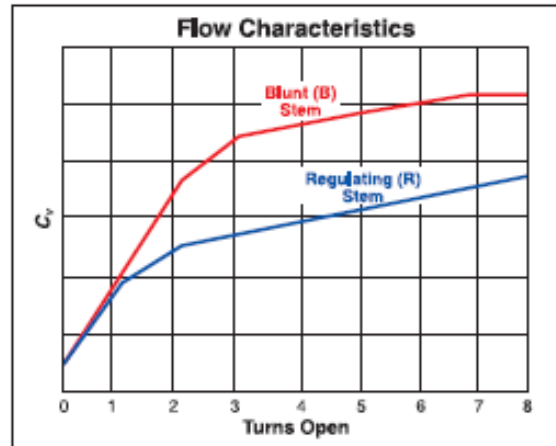
Dimensions in inches/millimeters are for reference only, subject to change.

The Pressure and Temperature curves are shown below.

Pressure vs. Temperature



Flow Characteristics



Specifications

Pressure Rating:

6000 psig (414 bar) CWP

Temperature Rating:

PTFE packing:

-65°F to 450°F (-54°C to 232°C)

Grafoil® packing:

-65°F to 700°F (-54°C to 371°C)

Grafoil® packing with HT option:

-65°F to 1200°F (-54°C to 649°C)

Orifice: .177" to .437" (4.5mm to 11.1mm)

Cv: .53 to 3.55

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 of Construction

Item #	Description	Material
*1	Body	ASTM A 182, Type F316
2	Bonnet Nut	ASTM A 479, Type 316
*3	Bonnet	ASTM A 479, Type 316
4	Lower Stem	ASTM A 564, Type 630
5	Upper Stem	ASTM A 564, Type 630
6	Stem Guide	ASTM A 581, Type 416
7	Ball	440-C Stainless Steel
*8	Bonnet Seal**	Nickel-Chromium-Iron Alloy
9	Packing Nut	ASTM A 479, Type 316
*10	Packing***	Grafoil®
*11	Packing Washer	316 Stainless Steel
12	Handle****	Aluminum
13	Handle Screw	316 Stainless Steel
14	Dust Seal*****	Nylon 6/6
15	Locking Nut	Stainless Steel

* Wetted parts

* Lower Stem material is ASTM A 276 Type 316 with HT option

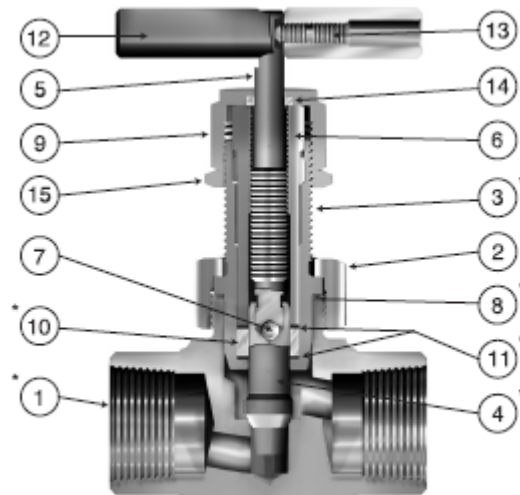
** Not required on U6 and U12 Series which have metal-to-metal seals

*** Optional PTFE Packing is available

**** Handle material is stainless steel with HT option

***** Dust Seal not available with HT option

Lubrication: Molybdenum disulfide with soft metallic fillers



Model Shown: 16F-U16LR-G-SS

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.