Régie du bâtiment Québec

Direction générale de l'inspection

Montréal, 3 octobre 2022.

MADAME CECYLIA GARBACZ
TECHNICAL STANDARDS & SAFETY AUTHORITY
345 CARLINGVIEW DRIVE
TORONTO ON
CANADA M9W 6N9

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

Numéro de dossier : 947298
Numéro(s) de dessin(s) : AS PER SCOPE OF REGISTRATION - APPENDIX A

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 : **0C07212.56.**

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

Régie du bâtiment Québec

Direction générale de l'inspection

Montréal, le 3 octobre 2022.

MRS. CECYLIA GARBACZ
TECHNICAL STANDARDS & SAFETY AUTHORITY
345 CARLINGVIEW DRIVE
TORONTO ON
CANADA M9W 6N9

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

OUR REFERENCE : 947298
Design number : AS PER SCOPE OF REGISTRATION - APPENDIX A

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): **0C07212.56.**

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

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

NOTE: You cannot save the DATA you entered on this form, you must print a copy and FAX it or MAIL it!

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

See attached

STATUTORY DECLARATION
Registration of Fittings

I, Ken Reid, Division QA Manager
(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Parker Hannifin Instrumentation Products Division
(Name of Manufacturer)

Located at 1005 A Cleaner Way, Huntsville, AL, 35805, USA 256-881-2040
(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

(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 Parker Engineering Standards 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:

See Attached Submission
(drawings, calculations, test reports, etc.)

Declared before me at The UPS STORE 2433, HUNTSVILLE, AL **in the** ALABAMA **of** MADISON COUNTY

the 2ND **day of** DECEMBER **AD 20** 21.

Commissioner for Oaths: COMM: 09/17/2025

CRYSTAL KAY KASTANAKIS
(Printed name)

Crystal Kay Kastanakis 12/02/2021
(Signature)

Ken Reid 12/02/2021
(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: _____

Enregistré au Québec 0C7512.56
Régie du bâtiment Québec
23/09/2022 Revue par la RBQ

Registration is as per ASME B31.3

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.*

LABORATORY CERTIFICATE

FTI/Anamet

3400 INVESTMENT BOULEVARD • HAYWARD, CALIFORNIA 94545-3811 • (510) 887-8811

March 21, 2001

LABORATORY NUMBER:	5003.3209
CUSTOMER AUTHORIZATION:	PO# 31252, Shipper 4710
DATE SUBMITTED:	March 9, 2001
REPORT TO:	Parker Hannifin Corporation Attn: Jerry Gray 250 Canal Blvd. Richmond, Ca 94804-0034

SUBJECT:

Two bar sections were submitted for mechanical testing. The samples were identified as material: 1" Square, Brass, CDA 360 and 2" Dia., Brass, CDA 360.

TENSILE TEST (ASTM A 370-97a)

	1" Sq	2" Dia
Diameter of Specimen (in.)	0.505	0.505
Area (sq. in.)	0.200	0.200
Tensile Strength (psi)	54800	49500
Yield Strength @ 0.5% E.U.L. (psi)	36600	30000
Elongation in 2.0" Gage (%)	29	37

BRINELL HARDNESS TEST*
(ASTM E 10-98)

Specimen	Result (HB)
1" Sq.	116
2" Dia.	99

*3000 kg load; 10 mm ball

This testing was completed on March 19, 2001 and was performed in accordance with the customer's authorization.

Submitted by:

Edward C. Foreman

Edward A. Foreman
Quality Manager

rnj

TENSILE TEST FORM

Customer Reuben Hannifin Corp Lab. No. 5003209 Date 3-9-01

Sample

	1" Sq	2" Ø		
Temperature (room or as noted) →				
Dimensions of Specimen (in.) Width →				
Thickness →				
Diameter of Specimen (in.) →	0.505	0.505		
Area (in²) →	0.200	0.200		
Tensile Load (lbs)	10950	9900		
Tensile Strength (psi) →	54800	49500		
Yield Load ____ % Offset (lbs)				
Yield Strength ____ % Offset (psi) →				
Yield Load 0.5% E.U.L. (lbs)	7325	6000		
Yield Strength 0.5% E.U.L. (psi) →	36600	30000		
Yield Point (lbs)				
Yield Point (psi) →				
Specimen Length (in.) After				
Before				
Elongation (in.)	.58	.74		
Elongation in 2.0" Gage (%) →	29	37		
Final Diameter (in.)				
Reduction of Area (%) →	-			
Fracture Location →				
Fracture Characteristic →				

Brinell Hardness Test

ASTM E10-98

Specimen	Result	Requirement
1" Sq.	116 HB	
2" Dia.	99 HB	

3000 kg load; 10mm ball

Bend Test

Angle ____ Diameter ____

Specimen	Result

Remarks ____ Technician CAR Date 3-19-01

CRN
Project 2000-009
NOVA Series Valves

October 3, 2001

Product Specification Summary

Materials of Construction

360 Brass
316L SSt
Monel R405

Operating Conditions

Maximum Allowed Operating Pressure (MAWP)	3500 psig
Minimum Operating Pressure	Vacuum
Operating Temperature Range	-40F to 400F
	150F max Brass

Connections

Pipe Thread - 1/8", 1/4" Male and Female NPT
Low Volume Analytical (GC)
Tube Compression Fitting (Parker A-Lok) -

Brass	1/8", 1/4", 6mm
SST, Monel	1/8" - 1/2", 6mm - 12mm

Analysis

The NOVA Series valve cavity design (geometry, diaphragm, piston and capnut) is identical for all configurations and materials. Table 1 compares the tensile strength of available material options at maximum operating temperature. Data is taken from applicable Veriflo, ASTM and ASME specifications as referenced. Brass is the worst case condition.

The minimum wall condition occurs with the machined-on compression fitting option as shown in SK4498. Table 2 compares calculated relative strength requirements for each size option. The calculation uses the ASME B31.3 design pressure equation. Nominal sizes larger than 1/4" are not available in Brass. The 1/4" compression fitting in Brass is the worst case. This corresponds to p/n 15600070, NOVAB44TT.

CRN			
Project 2000-009			October 3, 2001
NOVA Series Valves			
Table 1 - Material Comparison			
Unless otherwise specified, material properties data is from ASME BPV Sect II Part D			
360 Brass, UNS C36000, Half Hard			
S = Tensile Strength, ksi min	[ASTM B16, Cond H02, Bar, 1" Sq]	45.0	
Sy = Yield Strength, ksi min	[ASTM B16, Cond H02, Bar, 1" Sq]	17.0	
Ry = Temperature Factor = S ambient / S allowed 150F [BPV - UNS C48500]		0.96	
Tensile Strength at 150F = S x Ry, ksi min		43.2	
316L SSt, UNS S31603, Light Cold Worked			
BHN min, 3000 lb, 10 mm Ball	[Veriflo 42399794, Cond A]	150	
Sy = Yield Strength, ksi min	[Veriflo 42399794, Cond A]	80.0	
S = Tensile Strength = 515 x BHN, ksi min		77.2	
Ry = Temperature Factor = S ambient / S allowed 400F		0.93	
Tensile Strength at 400F = S x Ry, ksi min		71.8	
Monel R405, UNS N04405, ASTM B164, Cold Drawn, Stress Relieved			
S = Tensile Strength, ksi min		85.0	
Sy = Yield Strength, ksi min		50.0	
Ry = Temperature Factor = S ambient / S allowed 400F [UNS N04400]		0.99	
Tensile Strength at 400F = S x Ry, ksi min		84.2	

CRN									October 3, 2001	
Project 2000-009										
NOVA Series Valves										
Table 2 - Relative Strength Comparison, Machined-on Compression Fittings										
Nominal Size	1/8"	1/4"	5/16"	3/8"	1/2"	6mm	8mm	10mm	12mm	
OD, min	0.244	0.365	0.431	0.495	0.682	0.366	0.428	0.553	0.678	
Wall, min	0.059	0.058	0.059	0.060	0.091	0.061	0.053	0.076	0.099	
P / S = Design Pressure / Material Strength = 2 x Wall / (OD - 0.8 x Wall) [ASME B31.3 para 304.1.2 eq 3a]										
P / S =	0.60	0.36	0.31	0.27	0.30	0.38	0.27	0.31	0.33	
S rel = Relative Strength = (P / S) x Tensile Strength at Temperature										
S rel, Brass, 150F	25.9	15.7	n/a	n/a	n/a	16.6	n/a	n/a	n/a	
S rel, SSt, 150F	46.3	28.1	23.7	20.7	23.1	29.7	21.2	23.8	25.5	
S rel, Monel, 150F	51.0	30.9	26.1	22.8	25.4	32.7	23.4	26.2	28.1	

CRN
Project 2000-009
NOVA Series Valves

October 3, 2001

Test Protocol

Test 2 each 15600070, NOVAB44TT, production valves

Material tensile strength determined by laboratory test FTI/Anamet, 3/21/01, 5003.3209
Tensile Strength = 54.8 ksi

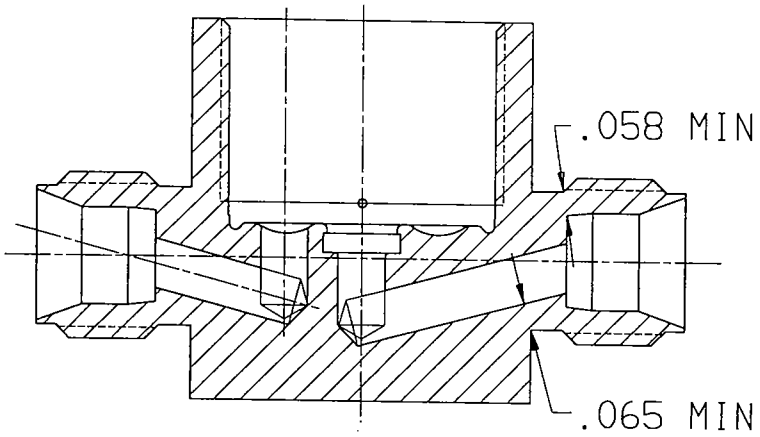
Test Procedure - ETP002 sect 3.2, Valve Burst Test except

Assembly and performance test data is not required - production assemblies will be tested
Test Pressure is as calculated below
Static seal helium leak test only is required before and after pressure test; use standard 2 minute inboard test (42399246)
Measure and record before and after pressure test
body width at 0.1" below top surface
fitting diameter at body
clampnut height
Failure criteria is rupture only -
dimensional and leak test data is reference only

Test Pressure - The calculation includes a correction for actual body material tensile strength at room temperature vs specified minimum, the required safety factor and the temperature derating factor from Table 1

$P = MAWP \times 4 \times (1/Ry) \times (Sact/Smin)$
$= 3500 \times 4 \times (1/0.96) \times (54.8/45.0)$
$= 17800$ psig

Test Time = 5 minutes



TITLE

NOVA SERIES VALVE WITH 1/4" COMPRESSION FITTINGS

PART NUMBER	REV	DRAWN	DATE	CHECKED	APPROVED
SK 4498	A	HEW	03/28/01		

VERIFLO®
PARKER HANNIFIN CORPORATION
VERIFLO DIVISION
250 CANAL BOULEVARD, P.O. BOX 4034
RICHMOND, CA 94804-0034
Parker INSTRUMENTATION

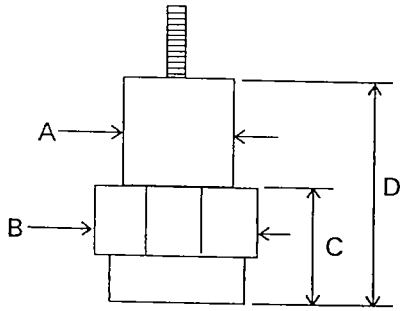
VALVE BURST PRESSURE TEST DATA SHEET

PROCEDURE ETP002

MODEL NUMBER: NOVA B44TT	PART NUMBER: 156000070	TEST DATE: 10-23-01
UNIT ID NUMBER:	SERIAL NUMBER: 047901	MFG DATE CODE: 510320
NON-PRODUCTION PARTS:		

ASSEMBLY TORQUE

ASSY SPECIFICATION/DWG:	CAP:	CLAMP NUT:	NOZZLE ASSY:
SEAT ASSY:	OTHER:		



DIMENSIONS

		PRE-TEST	POST-TEST
A	~~CAP DIA.~~ Body Width	.993	.994
B	CLAMP NUT DIA.		
C	CLAMP NUT HGT.	2.45	2.455
D	ASSEMBLY HGT.		
	OTHER: Fitting Dia.	HP.362 LP.362	HP.362 LP.362

PRODUCTION TESTS

SPECIFICATION/DWG:	REQUIREMENT	PRE -TEST
OUTLET BUBBLE TIGHT		
FLOW		
STATIC HELIUM LEAK		BACKGROUND:
		RATE AT TIME:
DYNAMIC HELIUM LEAK		BACKGROUND:
		RATE AT TIME:

VALVE BURST TEST

PRESSURE: 17,800 PSIG	TIME: 5 MIN	LEAKS:
OBSERVATIONS: None		

POST TEST DISASSEMBLY

OBSERVATIONS:

TECHNICIAN: Kirk Kamp	DATE: 10-23-01
ENGINEER:	DATE: 10/23/01

A.N.I. REVIEW BR Reed 10-23-01

NB7402-A

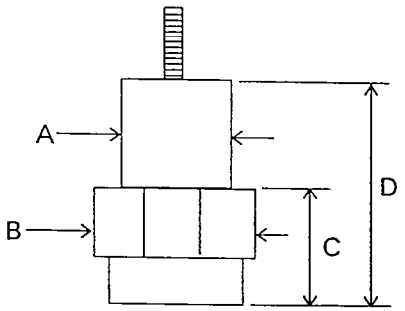
VALVE BURST PRESSURE TEST DATA SHEET

PROCEDURE ETP002

MODEL NUMBER: NOVA B44TT	PART NUMBER: 1560007 0	TEST DATE: 10-22-01
UNIT ID NUMBER:	SERIAL NUMBER: 047905	MFG DATE CODE: 510320
NON-PRODUCTION PARTS:		

ASSEMBLY TORQUE

ASSY SPECIFICATION/DWG:	CAP:	CLAMP NUT:	NOZZLE ASSY:
SEAT ASSY:	OTHER:		



DIMENSIONS

		PRE-TEST	POST-TEST
A	~~CAP DIA.~~ Body Width	.992	.993
B	CLAMP NUT DIA.		
C	CLAMP NUT HGT.	2.472	2.473
D	ASSEMBLY HGT.		
	OTHER: Fitting Dia.	HP.362 LP.362	HP.363 LP.363

PRODUCTION TESTS

SPECIFICATION/DWG:	REQUIREMENT	PRE -TEST
OUTLET BUBBLE TIGHT		
FLOW		
STATIC HELIUM LEAK		BACKGROUND:
		RATE AT TIME:
DYNAMIC HELIUM LEAK		BACKGROUND:
		RATE AT TIME:

VALVE BURST TEST

PRESSURE: 17,800 PSIG	TIME: 5 MIN	LEAKS:
OBSERVATIONS: None		

POST TEST DISASSEMBLY

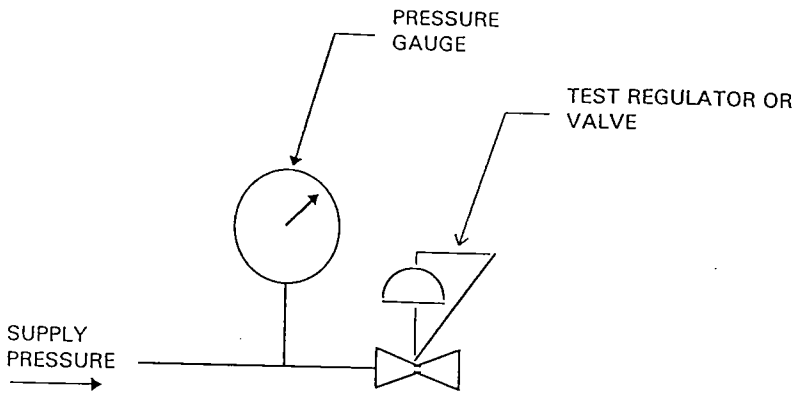
OBSERVATIONS:

TECHNICIAN: Kirk Kamp	DATE: 10-23-01
ENGINEER: David G. Mick	DATE: 10/23/01

A.M.I. REVIEW B.Reed NB7402-A
HSB 10-23-01

BURST PRESSURE TEST INSTRUMENTATION RECORD

PROCEDURE ETP002



TEST TITLE	PRESSURE GAUGE SERIAL NUMBER	SCALE RANGE	CALIBRATION DUE DATE
REGULATOR BURST PRESSURE			
INLET			
OUTLET			
DOME			
VALVE BURST	V7428	0-20,000PSIG	12-1-01

TORQUE WRENCH SERIAL NUMBER	SCALE RANGE	CALIBRATION DUE DATE

TECHNICIAN:	Kyle Kaump	DATE:	10-23-01
ENGINEER:	[signature]	DATE:	10/23/01

A.M.I. REVIEW BReed N37402-A

HSB 10-23-01

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
51495-2009-AQ-USA-ANAB

Initial certification date:
07 April, 2009

Valid:
08 April, 2021 – 07 April, 2024

This is to certify that the management system of

Parker Hannifin Corporation Instrumentation Products Division

1005 A Cleaner Way, Huntsville, AL, 35805, USA

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:

ISO 9001:2015

Enregistré au Québec
0C7512.56
Régie du bâtiment Québec
23/09/2022
Revue par la RBQ

This certificate is valid for the following scope:

Design, Manufacture, and Service of Instrumentation Products, Pressure and Temperature Systems, Pneumatic Pumps, Power Supplies, and Anhydrous Ammonia/Propane Valves

Place and date:
Katy, TX, 05 March, 2021

For the issuing office:
DNV - Business Assurance
1400 Ravello Drive, Katy, TX, 77449-5164, USA

Sherif Mekkawy
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV Business Assurance USA Inc., 1400 Ravello Drive, Katy, TX, 77449, USA - TEL: +1 281-396-1000. www.dnvglcert.com

Certificate no.: 51495-2009-AQ-USA-ANAB
Place and date: Katy, TX, 05 March, 2021

Appendix to Certificate

Parker Hannifin Corporation Instrumentation Products Division

Locations included in the certification are as follows:

Site Name	Site Address	Site Scope
Parker Hannifin Corporation Instrumentation Products Division/Plant #2	301 Wagner Drive, Boaz, AL, 35957, USA	Manufacture of Instrumentation Products.
Parker Hannifin Corporation Instrumentation Products Division/Plant #3	2651 AL Highway 21 North, Jacksonville, AL, 36265, USA	Manufacture and Service of Instrumentation Products.
Parker Hannifin Corporation Instrumentation Products Division/Plant #5	16101 Vallen Dr, Houston, TX, 77041, USA	Design, Manufacture, and Service of Instrumentation Products, and Anyhdrous/Propane Valves.
Parker Hannifin Corporation Instrumentation Products Division	1005 A Cleaner Way, Huntsville, AL, 35805, USA	Design, Manufacture, and Service of Instrumentation Products
Parker Hannifin Corporation Instrumentation Products Division/Plant #4	8325 & 8355 Hessinger Drive, Erie, PA, 16509, USA	Design, Manufacture, and Service of Instrumentation Products, Pressure and Temperature Systems, and Pnuematic Pumps.

CRN Renewal: 0C7512.5

NOVA and NOVA AP Series Valves

Parker Hannifin Corporation
Instrumentation Products Division
Huntsville, Alabama

Initial: November 29, 2021

Revised: June 8, 2022

Parker Hannifin Corporation
Instrumentation Products Division
1005 A Cleaner Way
Huntsville, AL 35805 USA
Phone (256) 881-2040

Scope of Registration:

Pressure Regulators: NOVA and NOVA AOP Series Valves

Parker is requesting a renewal of CRN 0C7512.5Add2. There are no changes to the design and scope of registration under this renewal.

The products listed above currently have active registrations in Canada – Canadian Registration Number (CRN) 0C7512.5ADD2 issued March 29, 2018. This scope of registration is in support of an application to renew the CRN for the named products.

Attached are:

- The CRN Report for the NOVA and NOVA AOP Series Valves
- A copy of the previous approved design submission
- The Quality certification for the one (1) manufacturing locations
- Appendix A: Scope of Registration
- Appendix B: Catalog Pages

If there are any questions, concerns or you need additional information please contact me on 256-881-2040.

Respectfully,

Laura C. Veal

Laura C. Veal
Quality Engineer

Parker Hannifin Corporation
Instrumentation Products Division
1005 A Cleaner Way
Huntsville, AL 35805 USA
Phone (256) 881-2040
Fax Number (256) 881-5730

Appendix A: Scope of Registration

NOVA Valves

Product Specification Summary:

Materials of Construction:

360 Brass, ASTM B16 C36000
316L Stainless Steel, ASTM A276 S31603
Monel 405, ASTM B164 N04405

Operation Conditions:

Temperature	-15°F to 150°F
MAWP	3500 psig max

Pressure Rating: Refer to Attachment B

Connections: Refer to Attachment B

Code of Registration:

Parker Engineering Specifications as noted in the TSSA Statutory Declaration

Appendix B: Catalog Pages

NOVA & NOVA AOP Series

Diaphragm Valve, Manual and Air Actuated

General Purpose • Stainless Steel

Value Proposition:

The NOVA Series valves are economical, general purpose diaphragm valves for regulator outlet valves, gas control panels, & analyzer sampling system applications. Standard construction includes a 316L Stainless Steel body, various seat materials, and an Elgiloy® diaphragm with metal-to-metal external seal for leak integrity.

The NOVA AOP Series Air Actuated Diaphragm Valve is a derivative of the NOVA manually operated valve and is available in normally open (NO) or normally closed (NC) configurations. A choice of two line pressures are available: 250 psig and 500 psig.

Product Features:

- High Cycle Life
- Compact Size
- Positive, consistent shutoff
- Metal to Metal seal to atmosphere
- Low Internal volume
- Low actuation pressure for AOP configuration

NOVA / NOVA AOP Series

NOVA Series Specifications:

Functional Performance	
Pressure Ratings	
Operating Pressure	
Manual Valve	Vacuum to 3500 psig (241 bar
Proof Pressure	5,250 psi (362 bar)
Burst Pressure	10,500 psi (724 bar)
AOP1, AOP3 Valve	Vacuum to 250 psig (17 bar)
Proof Pressure	375 psi (26 bar)
Burst Pressure	750 psi (52 bar)
AOP2, AOPNO Valve	Vacuum to 500 psig (34 bar)
Proof Pressure	750 psi (52 bar)
Burst Pressure	1,500 psi (103 bar)
Seat Leakage Class	Bubble Tight
Temperature Rating	-15°F to 150°F (-26°C to 66°C)
Flow Capacity	C_V = 0.17
Orifice Diameter	.125 inch (3.2 mm)
Internal Volume	Less than 1.0 cc
Approximate Weight	.9 oz. (0.26 kg)

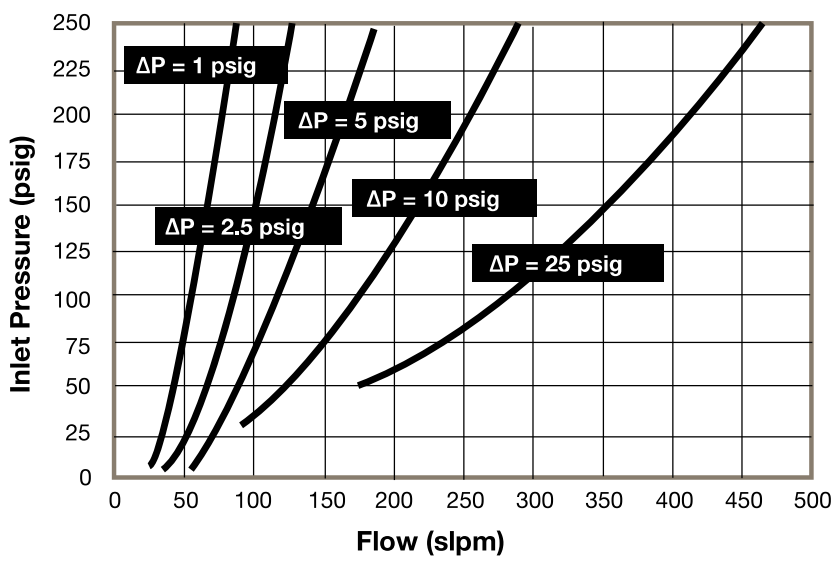
Material of Construction	
Wetted	
Body	316L Stainless Steel (std)
Diaphragm	Elgiloy®
Seat	PCTFE (std), PEEK™, Vespel®
Non-Wetted	
Bonnet Nut	316 Stainless Steel
Stem	316 Stainless Steel
Knob/Lever	ABS/Aluminum
AOP Actuator	Aluminum

Elgiloy® is a registered trademark of Elgiloy Company
Vespel® is a registered trademark of DuPont Performance Elastomers L.L.C.
PEEK™ is a registered trademark of Victrex plc.

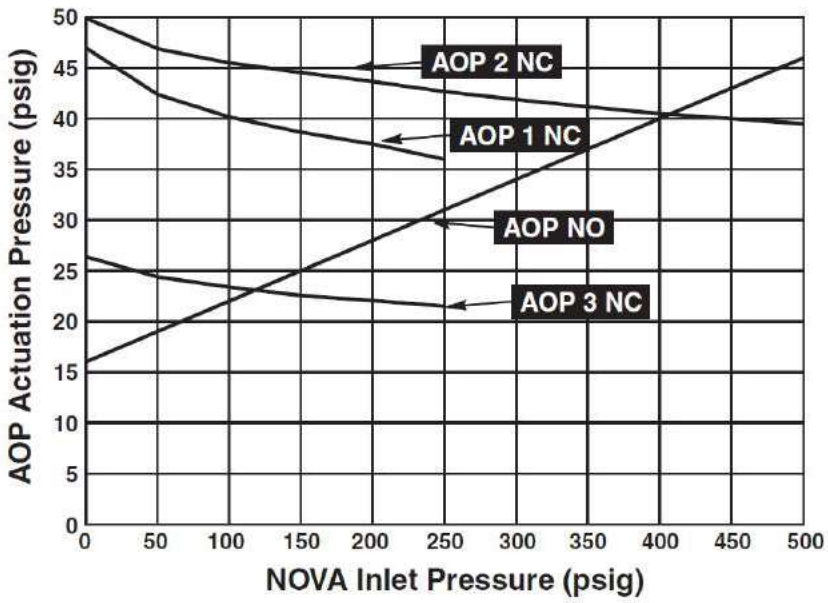
Maximum Actuation Air Pressure	
AOP1 (normally closed)	65 psig (4.5 bar)
AOP2 (normally closed)	75 psig (5.2 bar)
AOP3 (normally closed)	40 psig (2.8 bar)
AOPNO (normally open)	50 psig (3.5 bar)

NOVA / NOVA AOP Series

NOVA Series Flow Curves:

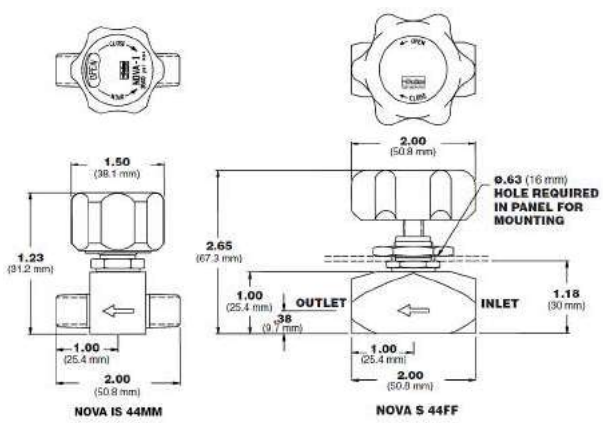


NOVA Series Actuation Air Pressure vs. Valve Inlet Pressure:



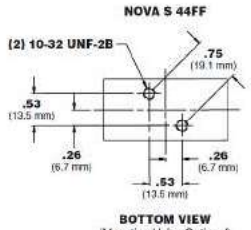
NOVA / NOVA AOP Series

NOVA Dimensional Drawing:

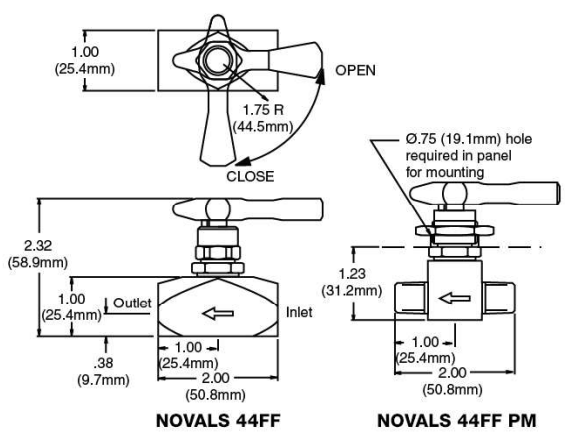


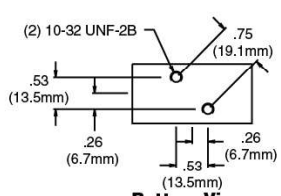
Connection	End to End Dimension
44TT	1.71
44FF	2.00
44MM	2.00
44MF	3.15

Dimensions for the Compression Fitting Connection do not include nuts and ferrules.

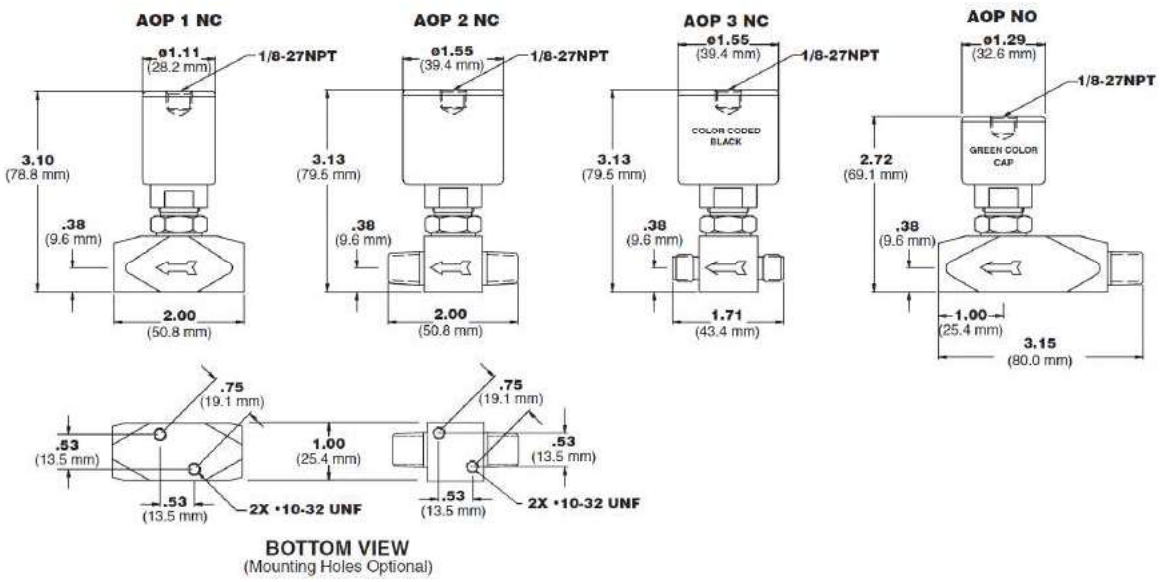


NOVALS Dimensional Drawing:





NOVA AOP Dimensional Drawing:



NOVA / NOVA AOP Series

NOVA Series Ordering Information:

Building a Part Number: *Example:* NOVAS44FF

Example Part Number:	NOVA	S	44FF	
Ordering Parameters/Options:	Series	Material	Connections	Options
Table Reference: (see below)	A	B	C	D

A - Series	
NOVA	Multi-Turn Handwheel
NOVAI	Indicating Knob
NOVAL	Lever

B - Material	
S	316L Stainless Steel

C - Connections	
44TT	1/4" Compression In and Out
44FF	1/4" Female NPT In and 1/4" Female NPT Out
44MM	1/4" Male NPT In and 1/4" Male NPT Out
44MF	1/4" Male NPT In and 1/4" Female NPT Out

D - Options	
MH	Mounting Holes
PM	Panel Mount
PEEK	PEEK™ Seat
VESP	Vespel® Seat

Notes:
Panel Mount Option is not available with Indicating Knob
Vespel® is a registered trademark of DuPont Performance Elastomers L.L.C
PEEK™ is a registered trademark of Victrex plc.
Compression Ends include Nuts and Ferrules

NOVA AOP Series Ordering Information:

Building a Part Number: *Example:* NOVAAOP1S44TT

Example Part Number:	NOVAAOP	1	S	44TT	
Ordering Parameters/Options:	Series	Style	Material	Connections	Options
Table Reference: (see below)	A	B	C	D	E

A - Series	
NOVAAOP	Air Operated

B - Style	
1	Normally Closed - 250 psig
2	Normally Closed - 500 psig
3	Normally Closed - 250 psig
NO	Normally Open - 500 psig

C - Material	
S	316L Stainless Steel

D - Connections	
44FF	1/4" Female NPT In and 1/4" Female NPT Out
44MM	1/4" Male NPT In and 1/4" Male NPT Out
44MF	1/4" Male NPT In and 1/4" Female NPT Out
44TT	1/4" Compression In x 1/4" Compression Out

E - Options	
MH	Mounting Holes
PEEK	PEEK™ Seat
VESP	Vespel® Seat

Notes:
Vespel® is a registered trademark of DuPont Performance Elastomers L.L.C
PEEK™ is a registered trademark of Victrex plc.
Compression Ends include Nuts and Ferrules