

May 08, 2025

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

The design submission, Tracking Number 2024-06040, Web Portal Number 2024-S4391, originally received on October 08, 2024 was surveyed and accepted for registration as follows:

CRN : 0C25429.52 **Accepted on:** May 08, 2025
Reg Type: NEW DESIGN **Expiry Date:** August 15, 2034
Drawing No. : EN-FR-208 CRN Scope of registration:Series BPR,BPRX,AVR Rev F
Fitting type: Back Pressure/Adjustable Vent Regulator
Design registered in the name of : GENERANT COMPANY INC

Description	MAWP	Design Temperature
Per Scope of registration		

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

- Per the manufacture's confirmation, it is our understanding that corrosion allowance is 0.
- Acceptance is given based on ASME B31.3, 2022 Edition.
- As indicated on AB-41 Statutory Declaration or AB-351 Declaration of Conformity form and submitted documentation, the code of construction is ASME B31.3.
- 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 or AB-351 Declaration of Conformity 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 or AB-351 Declaration of Conformity 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, and maintains a valid Certification of Authorization Permit if required by the jurisdiction where manufacturing takes place, 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 (587) 943-8741 or fax (403) 291-4545 or e-mail Zhangl@absa.ca.

Sincerely,



ZHANG, LILI, P. Eng.
DOP Cert. No. D00010626



the pressure equipment safety authority

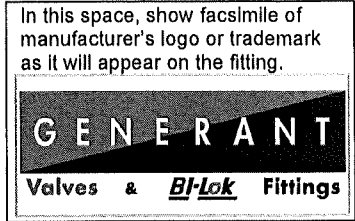
9410 - 20 Ave N.W.
Edmonton, Alberta, Canada T6N 0A4
Tel: (780) 437-9100 / Fax: (780) 437-7787

May 08, 2025



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

I, James Lesky, Director of Quality Assurance
(name of applicant) (position title) (must be in a position of authority)
 of Generant Company, Inc.
(name of manufacturer)
 located at 1865 Route 23 South, P.O. Box 768, Butler, NJ 07405
(plant address)



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

- comply with the requirements of ASME B31.3 Process Piping Code 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 _____ 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.	Series BPR, BPRX, AVR	ISO9001	Design, make, pressure & safety items	2025-08-11	Kiwa	Generant Butler NJ
2.						

2024-06040

Tracking #: _____



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

Category "C" fitting, ISO 9001 Certificate, Series BPR, BPRX and AVR tests, drawings, BOM's and design calculations.

[Signature]
(Signature of the Declarer)

11/14/24
(Date)

DECLARED before me at Newfoundland in the state of NJ.
(city) (province, territory, or state)

this 14 day of November, 2024
(Month) (Year)

(print) Karen L Sabyan
(a Commissioner of Oaths or Notary Public)

(sign) [Signature]
(a Commissioner of Oaths or Notary Public)

KAREN L SABYAN
Notary Public of New Jersey
Commission ID# 2045510
(expiry date (mm/dd/yy)) Commission Expires 6/31/2028

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

For ABSA Office Use Only:

NOTES: The fittings are reviewed and accepted per ASME B31.3, 2022 Edition

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 C.

CRN: _____

Registered Date: _____

Expiry Date: 2034-08-15

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

2024-06040

ABSA

SAFETY CODES ACT - PROVINCE OF ALBERTA

ACCEPTED: 0025429. 52

See acceptance letter for conditions of registration.

Date: 2025-05-08 By: [Signature]

LILI ZHANG, P. Eng.
DOP: D00010626

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			

SEE ATTACHED SCOPE

Table 2 Additional Scope Information

List/Attach Additional Detail and References (Product Configurations, Options, Illustrations, etc.)
Example: Series X Options

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



CRN Scope of Registration:
Series BPR, BPRX, AVR
(Back Pressure / Adjustable Venting Regulator)

Series	ASME Design Standard	Size Range	Spring Models	Main Pressure Bearing Component	Main Pressure Bearing Element Material	MDMT	Operating Temperature Range	Device MAWP @ Max Temp	Pressure Class(es) / Schedule(s)	Device MAWP Burst Test Report
BPR	B31.3	1/4" NPT	A, B, C, D	BPR-1-250 BPR-1-250I	ASTM B16 Brass (UNS C36000)			750 PSIG @ 225°F		Hydrostatic Test Report: BPR-250B Hydrostatic Burst Test Report
BPRX	B31.3	3/8", 1/2" NPT	A, B, C, D	BPRX-1-375B BPRX-1-375SS BPRX-1-500B BPRX-1-500SS	ASTM B16 Brass (UNS C36000), ASTM A479 316 Stainless Steel (UNS S31600)	-320°F (-196°C)	-320°F to 225°F	750 PSIG @ 225°F	Not Defined	Hydrostatic Test Report: BPRX-500 Hydrostatic Burst Test Report
AVR	B31.3	1/4" NPT	A, B, C, D	AVR-1-250I	ASTM B16 Brass (UNS C36000)	-40°F (-40°C)	-40°F to 225°F	750 PSIG @ 225°F		Hydrostatic Test Report: BPR-250B Hydrostatic Burst Test Report (Identical Geometry)

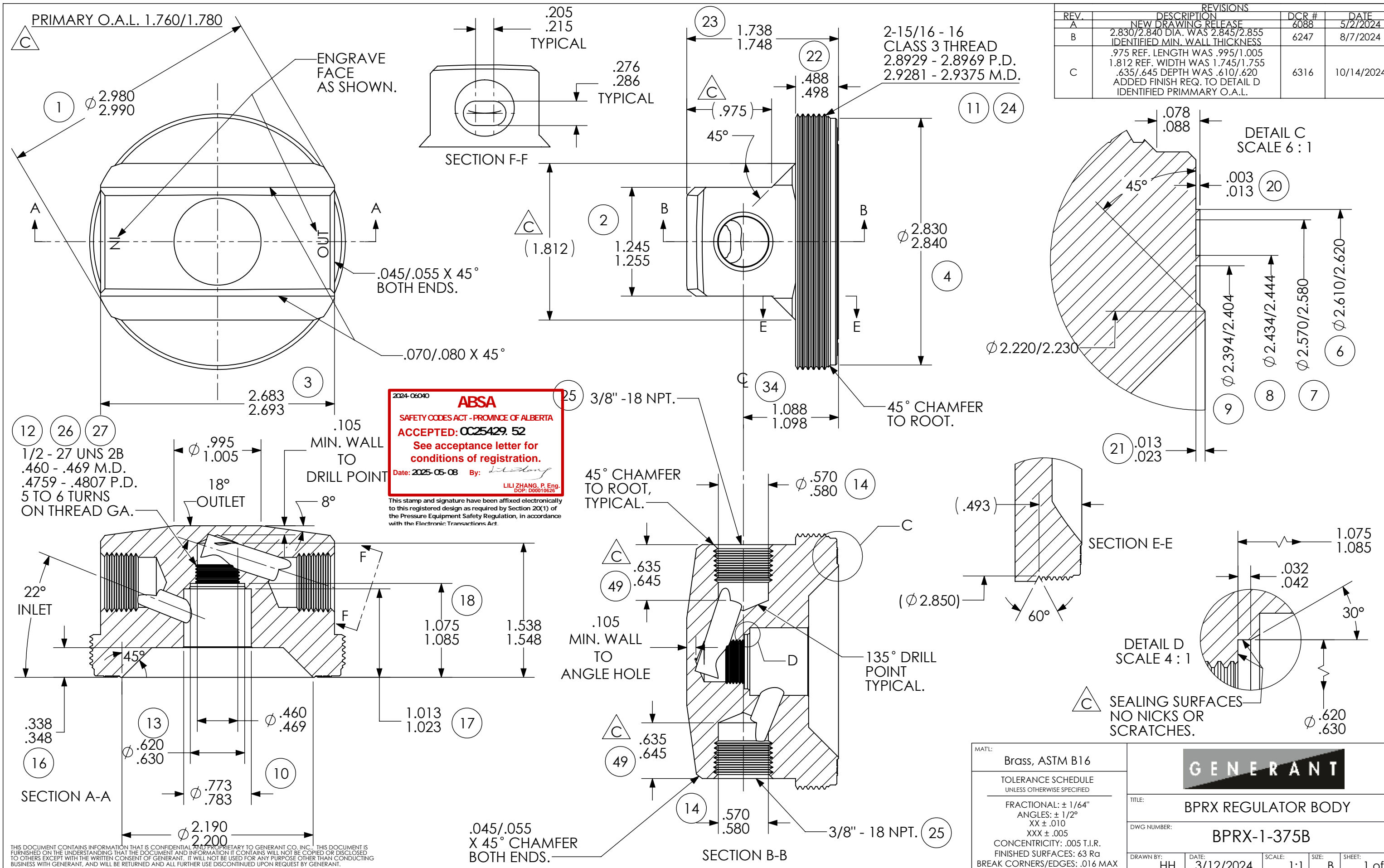
Catalog References

BPR Product Literature: SA.SL.BPR001.H.6342
 BPRX Product Literature: SA.SL.BPRX001.B.6342
 Drawing: AVR-250I-D-480

Note: Pneumatic Pressure is 825 PSI per ASME B31.3 paragraph 345.5.4.

2024-06040

REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW DRAWING RELEASE	6088	5/2/2024
B	2.830/2.840 DIA. WAS 2.845/2.855 IDENTIFIED MIN. WALL THICKNESS .975 REF. LENGTH WAS .995/1.005 1.812 REF. WIDTH WAS 1.745/1.755 .635/.645 DEPTH WAS .610/.620 ADDED FINISH REQ. TO DETAIL D IDENTIFIED PRIMMRY O.A.L.	6247	8/7/2024
C		6316	10/14/2024



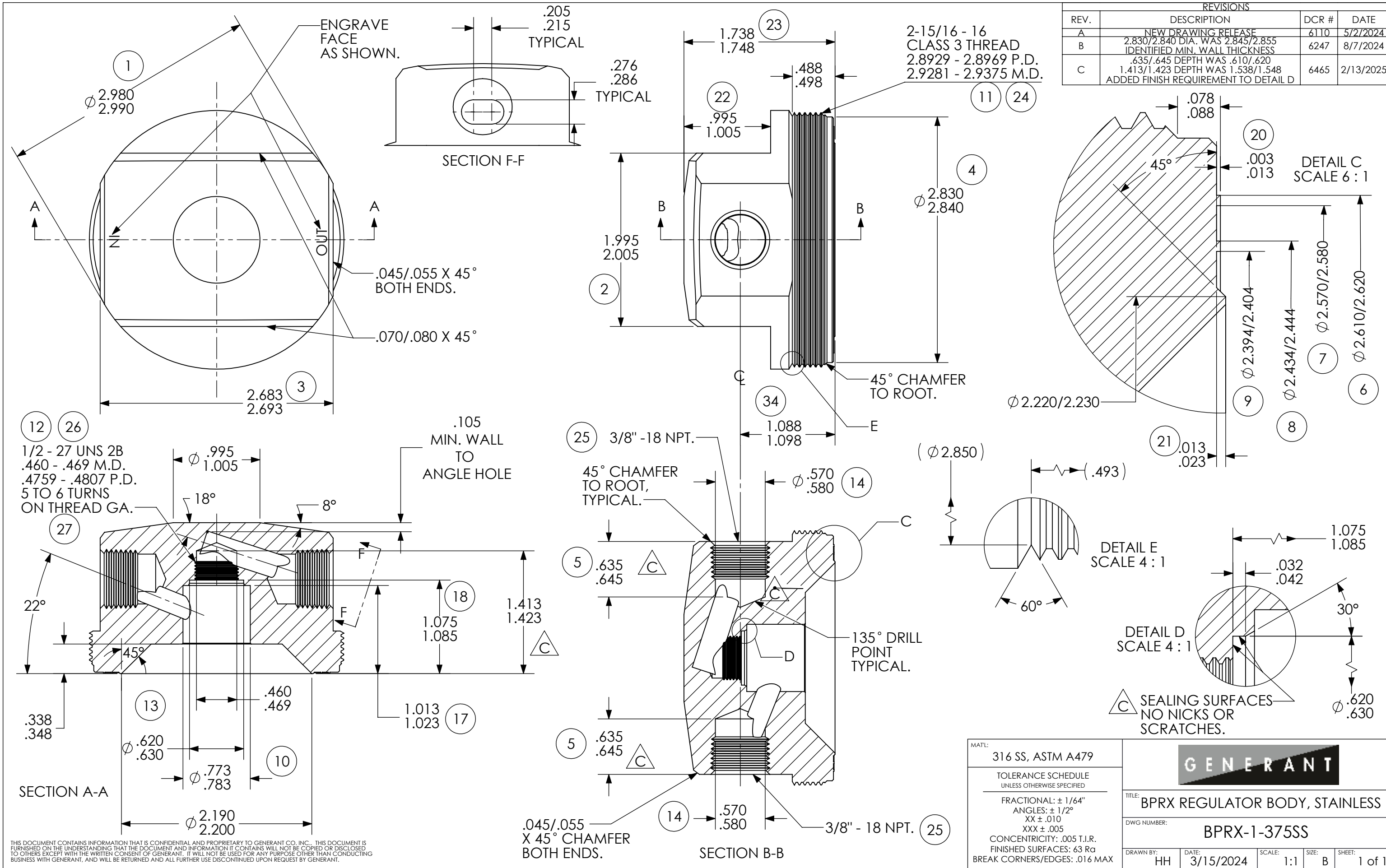
2024-06040
ABSA
 SAFETY CODES ACT - PROVINCE OF ALBERTA
ACCEPTED: OC25429.52
 See acceptance letter for conditions of registration.
 Date: 2025-05-08 By: *Lili Zhang*
 LILI ZHANG, P. Eng.
 DOP: D00010626
 This stamp and signature have been affixed electronically to this registered design as required by Section 20(1) of the Pressure Equipment Safety Regulation, in accordance with the Electronic Transactions Act.

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MATL:	Brass, ASTM B16
TOLERANCE SCHEDULE	UNLESS OTHERWISE SPECIFIED
FRACTIONAL:	± 1/64"
ANGLES:	± 1/2°
XX:	± .010
XXX:	± .005
CONCENTRICITY:	.005 T.I.R.
FINISHED SURFACES:	63 Ra
BREAK CORNERS/EDGES:	.016 MAX

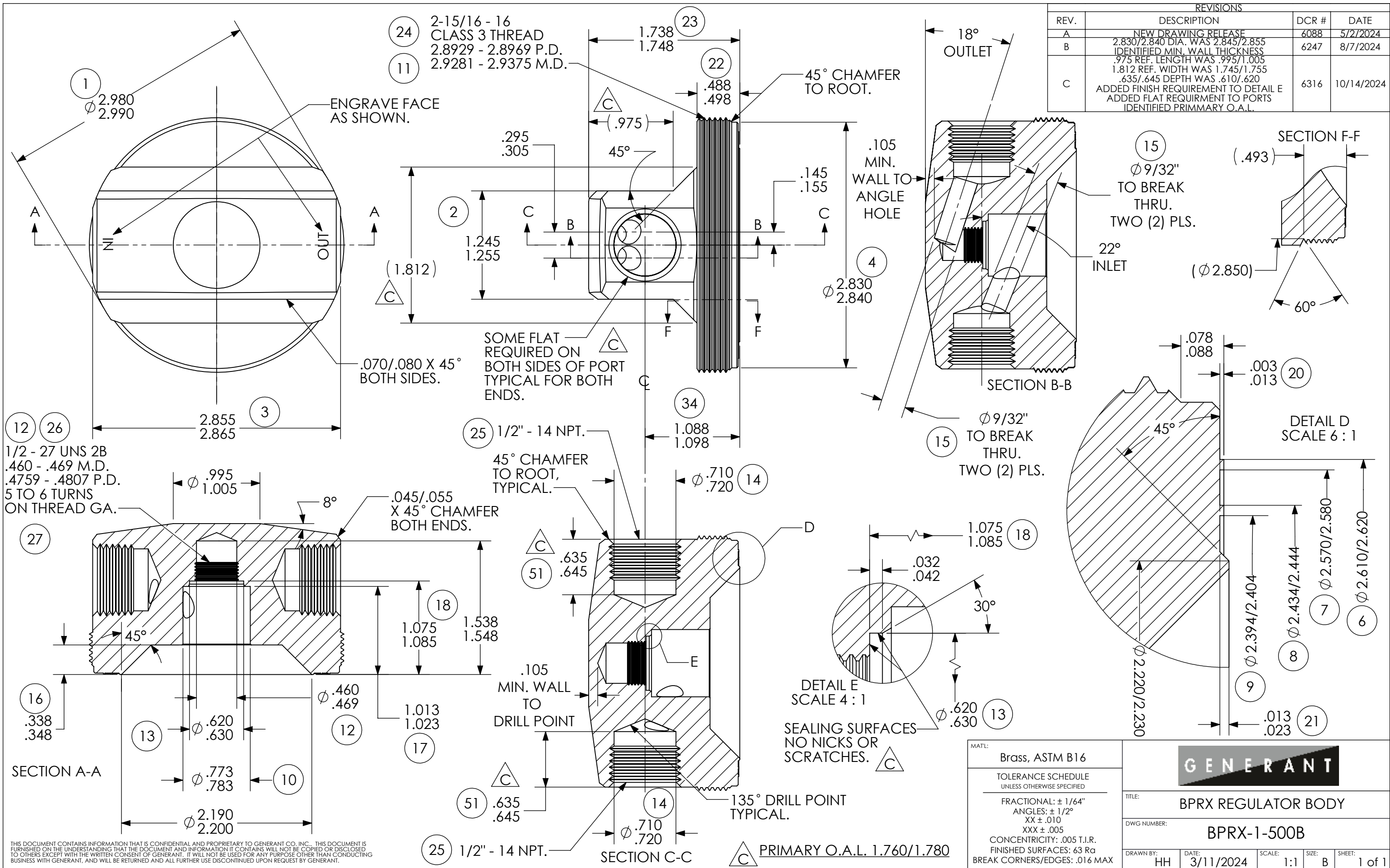
GENERANT			
TITLE:	BPRX REGULATOR BODY		
DWG NUMBER:	BPRX-1-375B		
DRAWN BY:	HH	DATE:	3/12/2024
SCALE:	1:1	SIZE:	B
SHEET:	1	OF:	1

REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW DRAWING RELEASE	6110	5/2/2024
B	2.830/2.840 DIA. WAS 2.845/2.855 IDENTIFIED MIN. WALL THICKNESS	6247	8/7/2024
C	.635/.645 DEPTH WAS .610/.620 1.413/1.423 DEPTH WAS 1.538/1.548 ADDED FINISH REQUIREMENT TO DETAIL D	6465	2/13/2025



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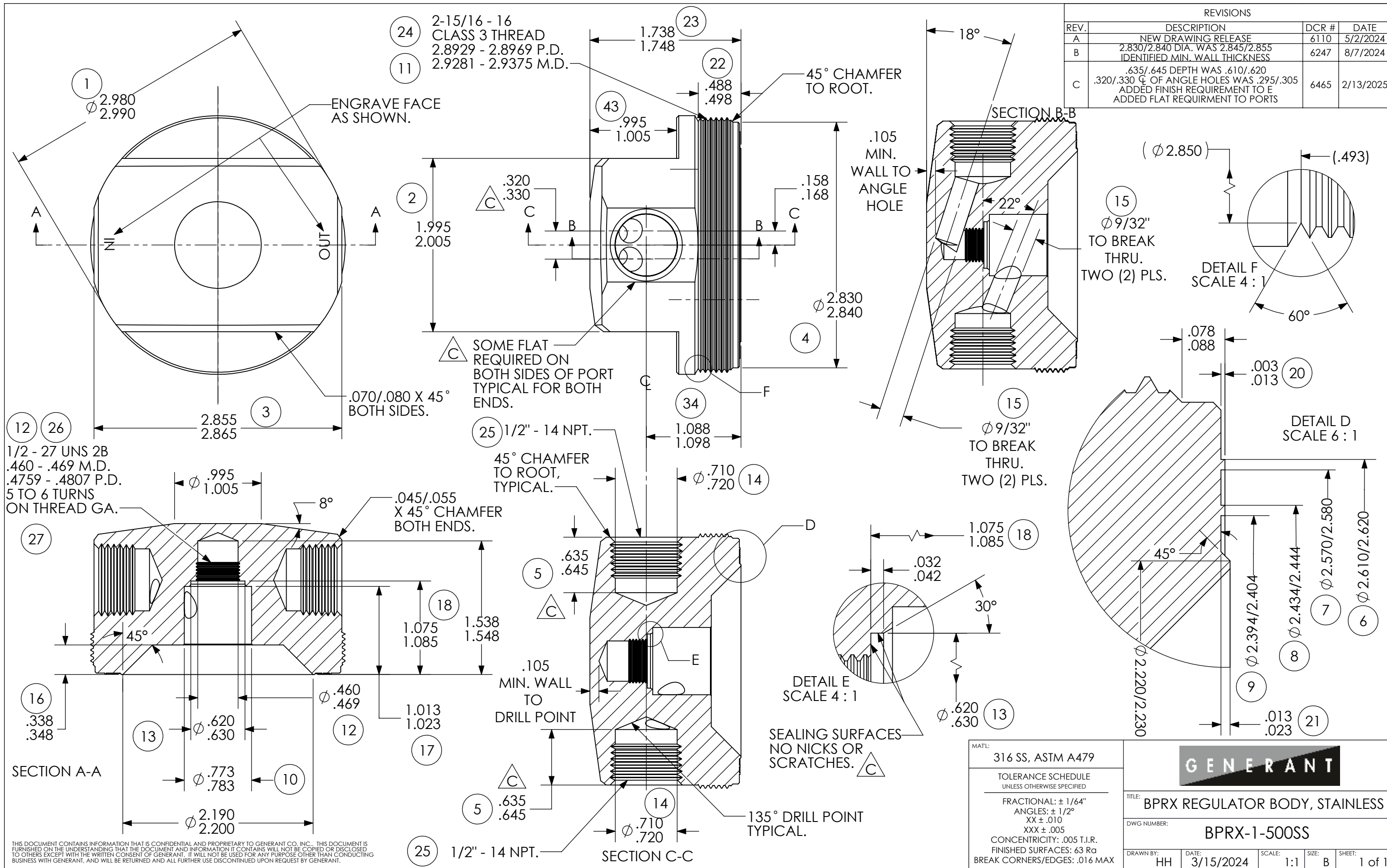
REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW DRAWING RELEASE	6088	5/2/2024
B	2.830/2.840 DIA. WAS 2.845/2.855 IDENTIFIED MIN. WALL THICKNESS .975 REF. LENGTH WAS .995/1.005 1.812 REF. WIDTH WAS 1.745/1.755 .635/.645 DEPTH WAS .610/.620	6247	8/7/2024
C	ADDED FINISH REQUIREMENT TO DETAIL E ADDED FLAT REQUIREMENT TO PORTS IDENTIFIED PRIMARY O.A.L.	6316	10/14/2024



MATL:	Brass, ASTM B16
TOLERANCE SCHEDULE UNLESS OTHERWISE SPECIFIED	
FRACTIONAL: $\pm 1/64"$	
ANGLES: $\pm 1/2^\circ$	
XX $\pm .010$	
XXX $\pm .005$	
CONCENTRICITY: .005 T.I.R.	
FINISHED SURFACES: 63 Ra	
BREAK CORNERS/EDGES: .016 MAX	

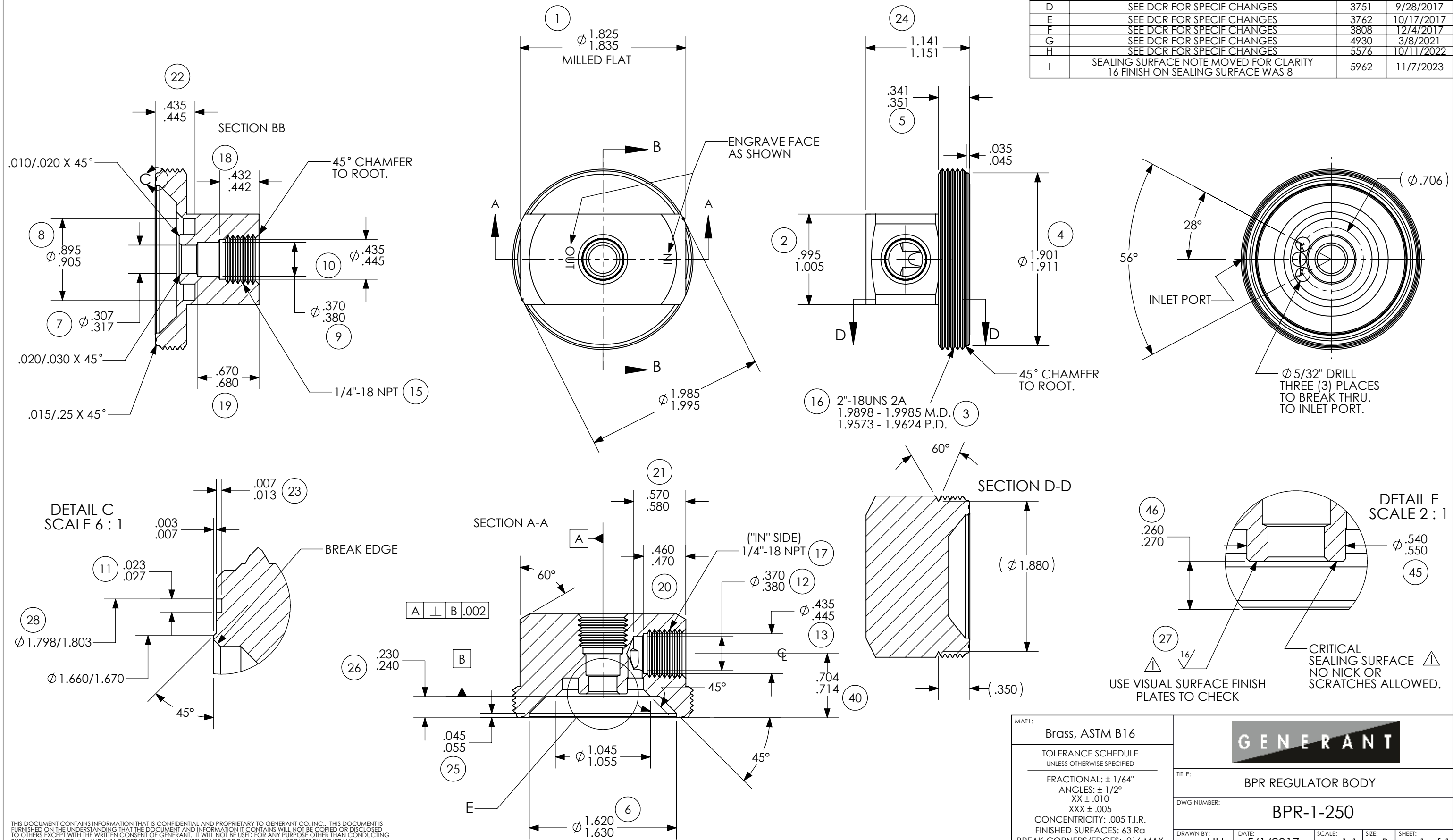
GENERANT			
TITLE: BPRX REGULATOR BODY			
DWG NUMBER: BPRX-1-500B			
DRAWN BY: HH	DATE: 3/11/2024	SCALE: 1:1	SHEET: 1 of 1

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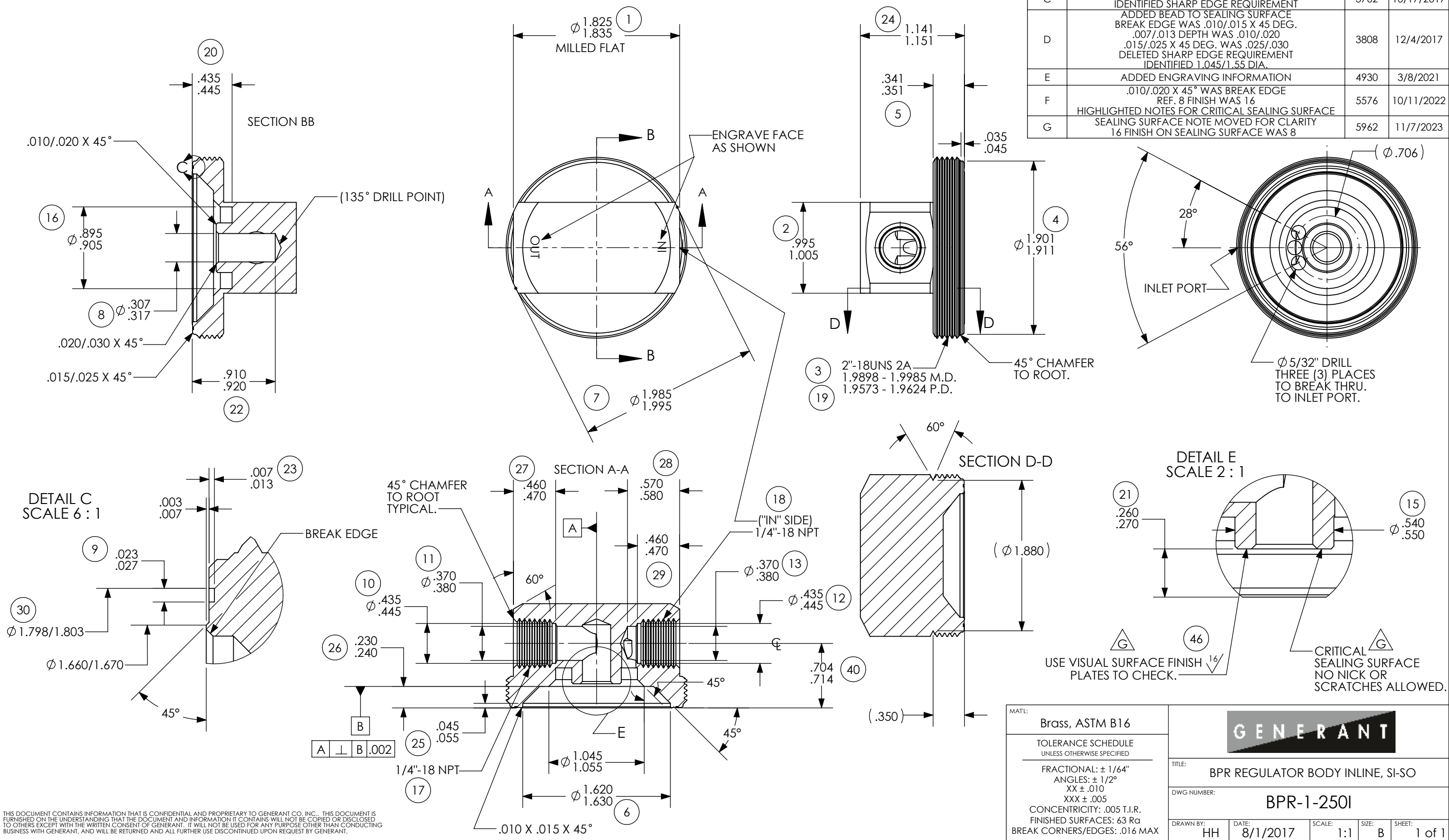
REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW RELEASE	3619	5/15/2017
B	SEE DCR FOR SPECIF CHANGES	3645	6/6/2017
C	SEE DCR FOR SPECIF CHANGES	3711	8/7/2017
D	SEE DCR FOR SPECIF CHANGES	3751	9/28/2017
E	SEE DCR FOR SPECIF CHANGES	3762	10/17/2017
F	SEE DCR FOR SPECIF CHANGES	3808	12/4/2017
G	SEE DCR FOR SPECIF CHANGES	4930	3/8/2021
H	SEE DCR FOR SPECIF CHANGES	5576	10/11/2022
I	SEALING SURFACE NOTE MOVED FOR CLARITY 16 FINISH ON SEALING SURFACE WAS 8	5962	11/7/2023



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MATL: Brass, ASTM B16	GENERANT			
TOLERANCE SCHEDULE UNLESS OTHERWISE SPECIFIED				
FRACTIONAL: ± 1/64" ANGLES: ± 1/2° XX ± .010 XXX ± .005	TITLE: BPR REGULATOR BODY			
CONCENTRICITY: .005 T.I.R. FINISHED SURFACES: 63 R _a BREAK CORNERS/EDGES: .016 MAX	DWG NUMBER: BPR-1-250			
DRAWN BY: HH	DATE: 5/1/2017	SCALE: 1:1	SIZE: B	SHEET: 1 of 1

REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW RELEASE	3711	8/7/2017
B	1.880 REF. DIA. WAS 1.630	3751	9/28/2017
C	ADDED .025/.030 X 45 DEGREE CHAMFER IDENTIFIED SHARP EDGE REQUIREMENT	3762	10/17/2017
D	ADDED BEAD TO SEALING SURFACE BREAK EDGE WAS .010/.015 X 45 DEG. .007/.013 DEPTH WAS .010/.020 .015/.025 X 45 DEG. WAS .025/.030 DELETED SHARP EDGE REQUIREMENT IDENTIFIED 1.045/1.55 DIA.	3808	12/4/2017
E	ADDED ENGRAVING INFORMATION	4930	3/8/2021
F	.010/.020 X 45° WAS BREAK EDGE REF. 8 FINISH WAS 16	5576	10/11/2022
G	HIGHLIGHTED NOTES FOR CRITICAL SEALING SURFACE SEALING SURFACE NOTE MOVED FOR CLARITY 16 FINISH ON SEALING SURFACE WAS 8	5962	11/7/2023

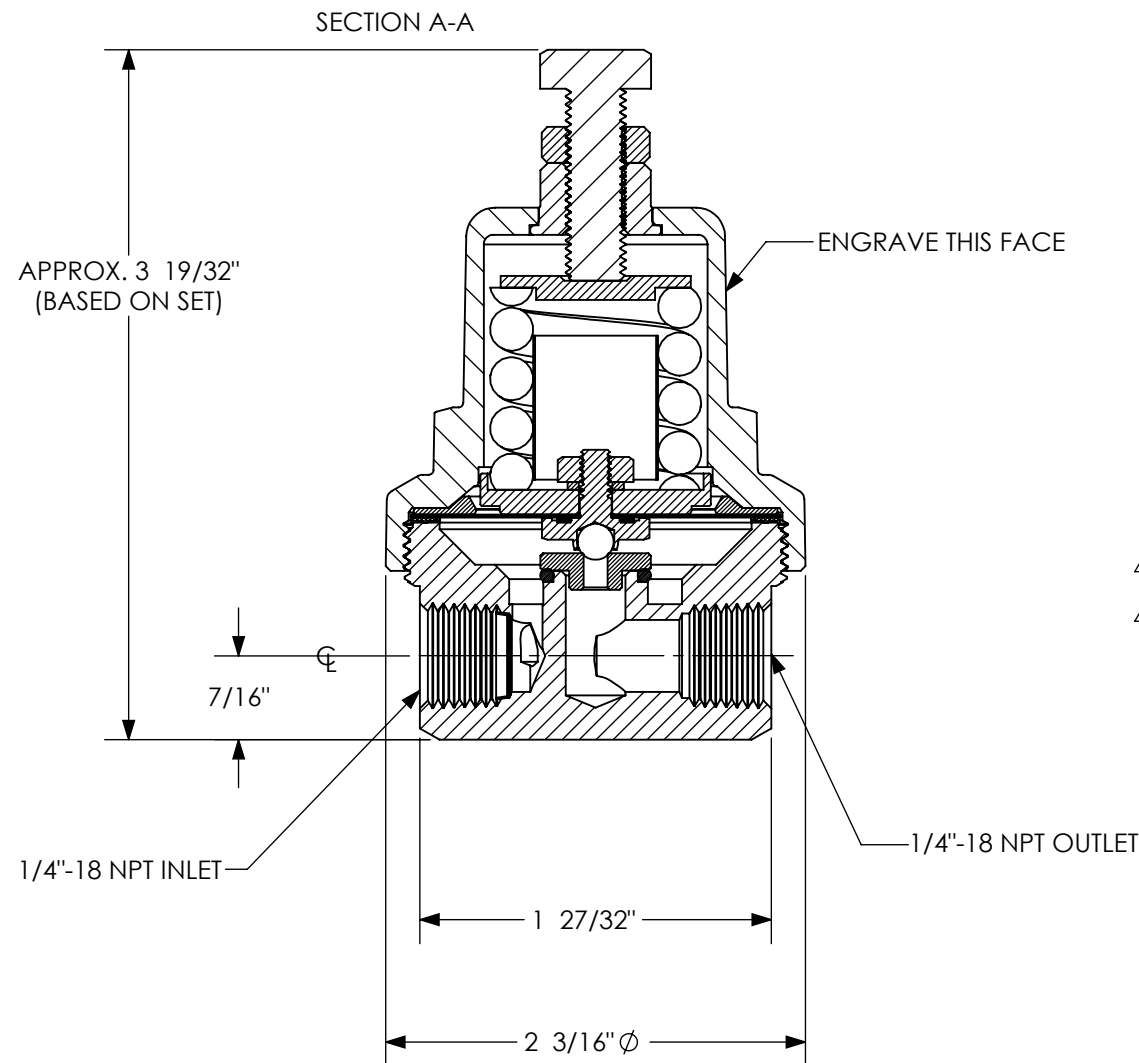
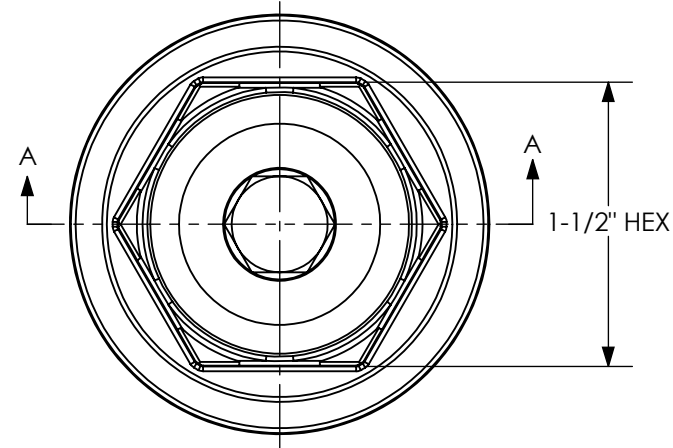
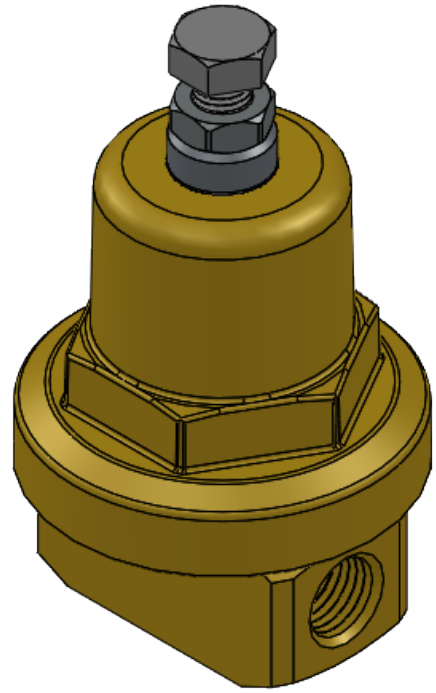


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MATL:	Brass, ASTM B16
TOLERANCE SCHEDULE	UNLESS OTHERWISE SPECIFIED
FRACTIONAL:	± 1/64"
ANGLES:	± 1/2°
XX:	± .010
XXX:	± .005
CONCENTRICITY:	.005 T.I.R.
FINISHED SURFACES:	63 Ra
BREAK CORNERS/EDGES:	.016 MAX

GENERANT			
TITLE:	BPR REGULATOR BODY INLINE, SI-SO		
DWG NUMBER:	BPR-1-250I		
DRAWN BY:	HH	DATE:	8/1/2017
SCALE:	1:1	SIZE:	B
SHEET:	1 of 1		

REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW DRAWING RELEASE	6173	5/31/2024
B	SCREEN006 WAS SCREEN003	6330	10/29/2024
C	UPDATED TEMPERATURE RATING & MAX PRESSURE	6455	1/24/2025



MATERIALS OF CONSTRUCTION

DESCRIPTION	PART NUMBER	MATERIAL
AVR REGULATOR BODY	AVR-1-250I	BRASS, ASTM B16
AVR POPPET	AVR-4	Brass, ASTM B16
AVR VALVE SEAT	AVR-5	Brass, ASTM B16
BPRX DIAPHRAGM ASSEMBLY GASKET	BPR-6-GY	Gylon (R), Style 3504
SPRING RETAINER	BPR-7	BRASS, ASTM B16
DIAPHRAGM, METAL, BPR STYLE	BPR-8 (3)	PHOSPHOR BRONZE
RESONANCE DAMPER	BPR-9	PHOSPHOR BRONZE
SPRING BUTTON	CRM-5S	303 STAINLESS STEEL
DIAPHRAGM GASKET	CRM-6-GY	GYLON (R), STYLE 3504
CRM SERIES CHAMBER RING, VERY HIGH PRESSURE	CRM-9-VHP	BRASS, ASTM B16
CRM SPRING, D RANGE, 300 - 600 PSI	CRM-14-D	17-7 STAINLESS STEEL
5/16 - 24 HEX NUT	NUT08	18-8 STAINLESS STEEL
SPRING LOCK WASHER	WASHER07	18-8 STAINLESS STEEL
5/16 - 24 HEX HEAD BOLT, 1" LONG	SCRO45	18-8 STAINLESS STEEL
SCREEN, 1/4" NPT PORT, 200 X 200 MESH	SCREEN006	BRASS, ASTM E437
3/16" BALL BEARING, HARDENED, TIGHT TOLERANCE	BALL08	440C STAINLESS
8-32 LOCK NUT	NUT18	18-8 STAINLESS STEEL
O'RING, FKM, 90 DUROMETER	O13-V90	FKM, 90 DUROMETER
MCR SPRING CHAMBER	G-105-LG-A	Brass, ASTM B16
CHAMBER SLEEVE	G-105-LG-HP	303 SS, ASTM A582

SPECIFICATIONS:

SET PRESSURE: 480 PSI (33.1 BAR) (outlet to atmos.)
 SET PRESSURE RANGE: 300 - 600 PSI (20.7 - 41.4 BAR)
 INTERNAL SEAT TIGHTNESS: 2 SCCM N2 MAX @ 460 PSI (70°F, outlet to atmos.)



TEMPERATURE RATING: -40° F TO 225° F (-40° C TO 107° C)

MAX. PRESSURE: 750 PSI (51.7 BAR)

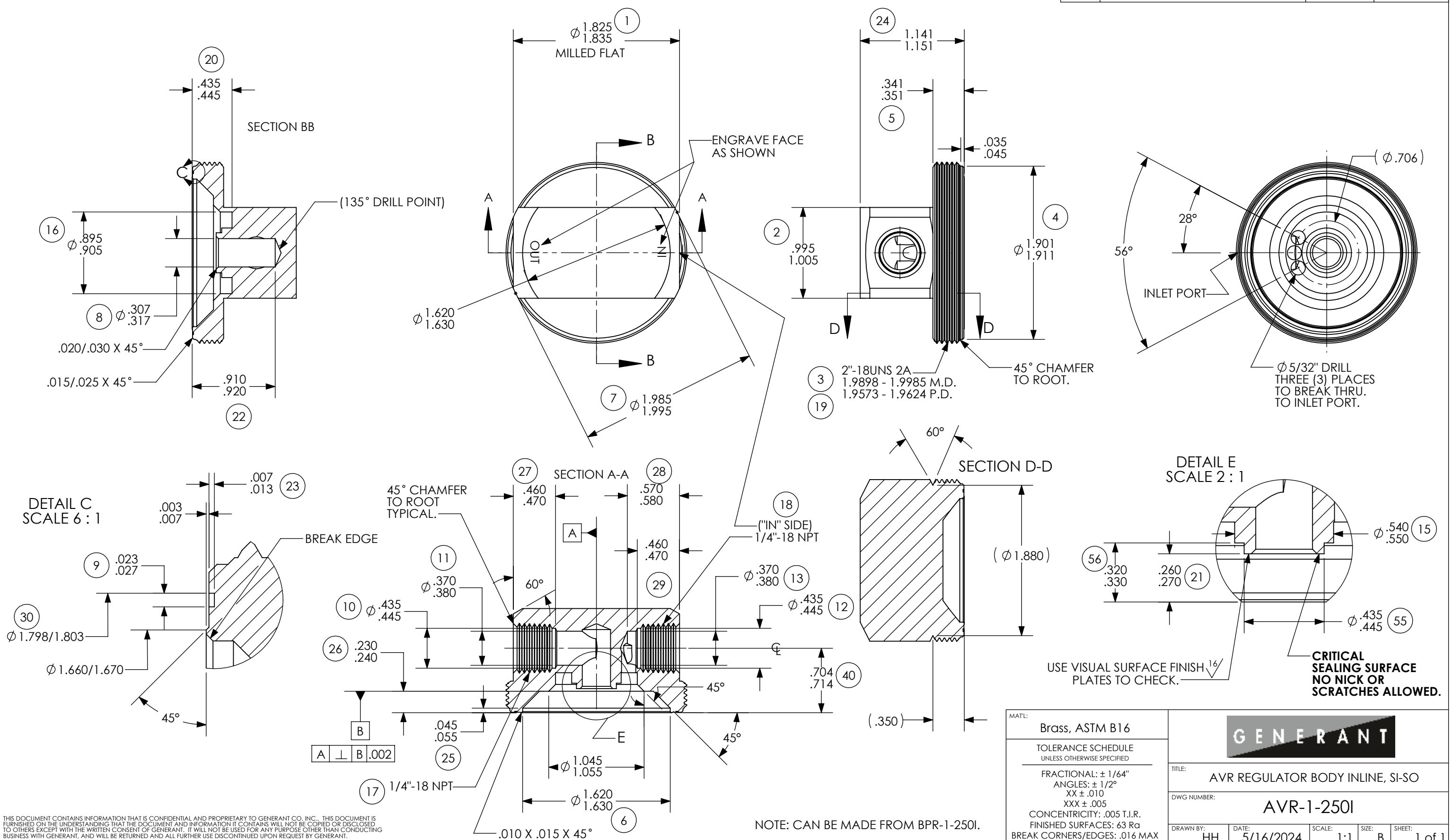
ENGRAVE: GENERANT COMPANY
 PART NUMBER
 SET PRESSURE RANGE
 DATE CODE (e.g. D 1 7)
 "IN" AND "OUT" ON PORTS

CLEANED AND PACKAGED FOR OXYGEN SERVICE.

MATL:	AS SPECIFIED	GENERANT
TOLERANCE SCHEDULE UNLESS OTHERWISE SPECIFIED	FRACTIONAL: ± 1/64" ANGLES: ± 1/2° XX ± .010 XXX ± .005 CONCENTRICITY: .005 T.I.R. FINISHED SURFACES: 63 R _a BREAK CORNERS/EDGES: .016 MAX	
TITLE:		ADJUSTABLE VENT REGULATOR, SI-SO
DWG NUMBER:		AVR-250I-D-480
DRAWN BY:	DATE:	SCALE: SIZE: SHEET:
HH	5/16/2024	1:1 B 1 of 1

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REVISIONS			
REV.	DESCRIPTION	DCR #	DATE
A	NEW RELEASE	6173	5/31/2024



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MATL:	Brass, ASTM B16
TOLERANCE SCHEDULE	UNLESS OTHERWISE SPECIFIED
FRACTIONAL:	± 1/64"
ANGLES:	± 1/2°
XX:	± .010
XXX:	± .005
CONCENTRICITY:	.005 T.I.R.
FINISHED SURFACES:	63 Ra
BREAK CORNERS/EDGES:	.016 MAX

GENERANT				
TITLE: AVR REGULATOR BODY INLINE, SI-SO				
DWG NUMBER: AVR-1-250I				
DRAWN BY: HH	DATE: 5/16/2024	SCALE: 1:1	SIZE: B	SHEET: 1 of 1



Hydrostatic Burst Test Report

Scope (Series / Size): BPR-250B (INLET), Test Piece 2

Test Date: 2/26/24

This testing is per the Burst Test requirements of ASME Boiler and Pressure Vessel Code Section VIII Division 1. Review the Burst Test section of that standard prior to performing this testing.

Pressure Gauge ID #: BSG-01

Caliper ID #: N/A

Critical Dimension Description: N/A

Initial Value: N/A

Manufacturing Lot Code #: 358912 (Main Pressure Bearing Element: BPR-1-250)

Material Heat #: 9747 (Main Pressure Bearing Element)

Material Specification: C36000 H02 (ASTM B16-19) (2" Round)

Actual Material Strength: 53 ksi

Minimum Material Strength: 50 ksi

Desired Pressure Rating: 750 PSI

Desired Temperature Rating: 225 °F

Calculation of Temperature Derating Factor per ASME B31.3

Allowable Stress of Material Type @ Max Temp: 13.6 @ 70°F: 15.3

Temperature Derating Factor = (Stress_{Max Temp} / Stress_{70°F}) = 13.6/15.3 = 0.89

Calculation of Minimum Required Test Pressure per ASME B31.3 (BPVC Section VIII Division 1)

$B = 4 * P * (S_{act} / S_{min}) * E * (1 / T_{derate}) = 4 * (750) * (53/50) * 1 * (1/0.89) = \underline{3573.0 \text{ PSI}}$

Minimum Required Test Pressure: 3600 PSIG

Test Pressure	BURST? (Y/N)	Test Pressure	BURST? (Y/N)
0	N	3000	N
250	N	3500	N
500	N	4000	N
1000	N	4250	Y
1500	N	4750	-
2000	N	5000	-
2500	N	5250	-

Failure Note: Chamber seal extruded into chamber threads.

Maximum Operating Pressure: 750 PSIG at 225°F

Proof Pressure: N/A PSIG

Burst Pressure: >4250 PSIG

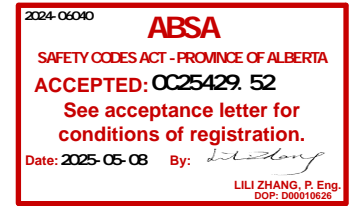
MAWP Rating per ASME BPV Section VIII Division 1: Yes

Performed by: Tim Knapp, VP Engineering

Date: 2/26/24

Witnessed by: Indravadan Patel, Bureau Veritas NB - 17228

Date: 26 FEB 2024



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.



Hydrostatic Burst Test Report

Scope (Series / Size): BPRX-500 (INLET), Test Piece 3

Test Date: 2/26/24

This testing is per the Burst Test requirements of ASME Boiler and Pressure Vessel Code Section VIII Division 1. Review the Burst Test section of that standard prior to performing this testing.

Pressure Gauge ID #: BSG-01

Caliper ID #: N/A

Critical Dimension Description: N/A

Initial Value: N/A

Manufacturing Lot Code #: Xom. Job J01B0572 (Main Pressure Bearing Element: BPR-1-500)

Material Heat #: 05BE9BD (Main Pressure Bearing Element)

Material Specification: C36000 H02 (ASTM B16-19)

Actual Material Strength: 62 ksi

Minimum Material Strength: 45 ksi

Desired Pressure Rating: 750 PSI

Desired Temperature Rating: 225 °F

Calculation of Temperature Derating Factor per ASME B31.3

Allowable Stress of Material Type @ Max Temp: 13.6 @ 70°F: 15.3

Temperature Derating Factor = (Stress_{Max Temp} / Stress_{70°F}) = 13.6/15.3 = 0.89

Calculation of Minimum Required Test Pressure per ASME B31.3 (BPVC Section VIII Division 1)

$B = 4 * P * (S_{act} / S_{min}) * E * (1 / T_{derate}) = 4 * (750) * (62/45) * 1 * (1/0.89) = 4644.2 \text{ PSI}$

Minimum Required Test Pressure: 4650 PSIG


Test Pressure	BURST? (Y/N)	Test Pressure	BURST? (Y/N)
0	N	3500	N
500	N	4000	N
1000	N	4250	N
1500	N	4500	N
2000	N	4750	N
2500	N	5000	N
3000	N	5250	N
3250	N	6000	N

Maximum Operating Pressure: 750 PSIG at 225°F

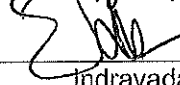
Proof Pressure: N/A PSIG

Burst Pressure: >6000 PSIG

MAWP Rating per ASME BPV Section VIII Division 1: Yes

Performed by: 
 Tim Knapp, VP Engineering

Date: 2/26/24

Witnessed by:  NB - 17228
 Indravadan Patel, Bureau Veritas

Date: 26 FEB 2024

BPRX SERIES

DESCRIPTION:

BPRX Series back pressure regulators are designed especially for use as high efficiency economizer regulators on large cryogenic tanks, trailers, and systems. Optimized diaphragm and adjustment spring designs provide high flow at pressures above the desired setpoint. It is designed for cryogenic service with a lapped poppet and seat to minimize leakage below setpoint. The BPRX Series is offered in brass or stainless steel material configurations and has been extensively qualified for long-lasting performance. All BPRX Series regulators are supplied factory pre-set and cleaned for oxygen service.

FEATURES:

- **OPTIMIZED FOR HIGH FLOW:** Designed for high flow rates in economizer and vent-to-atmosphere applications.
- **QUICK SHUT-OFF:** Regulators transition from the flowing condition to shut in a tight pressure band.
- **INLET FILTER SCREEN:** Monel® Filter Screen protects against system debris and particulate.
- **DESIGNED FOR CRYOGENICS:** All materials were selected specifically for use in cryogenic environments.
- **FIELD ADJUSTABLE:** Regulators can be adjusted to any desired setpoint within the spring's pressure range.
- **CLEANED FOR OXYGEN SERVICE:** Regulators are cleaned for use in Oxygen service standard.

TECHNICAL DATA:

Maximum Inlet Pressure: 750 PSIG (51.7 bar)

Pressure Ranges:

Spring	Pressure Range	PSI/Turn*
A	15 to 75 PSIG (1.0 to 5.2 bar)	10
B	50 to 200 PSIG (3.4 to 13.8 bar)	25
C	100 to 350 PSIG (6.9 to 24.1 bar)	45
D	300 to 600 PSIG (20.7 to 41.4 bar)	75

*PSI/Turn Value is approximate change in setpoint per full turn of the adjustment screw (CW to increase, CCW to decrease), for reference only.

Temperature Range: -320° to 200°F (-196° to 93°C)

MATERIALS OF CONSTRUCTION:

Component	Material Grade	
	Brass Body	316 Stainless Body
Body, Chamber, Spring Retainer, Chamber Ring	CDA 360 Brass, ASTM B16	316SS, ASTM A479
Adjustment Springs	17-7PH SS	
Adjustment Screw, Locknuts (2), Lock Washer, Ball Bearing, Spring Button	Stainless Steel (Non-Wetted)	
Seat and Poppet Set	316 SS (A479) or Monel®	316SS, ASTM A479
Diaphragms, Damper	Phosphor Bronze	300 Series Stainless Steel
Inlet Filter Screen	Monel®, ASTM E437	
Seat Seal	PTFE	
Chamber and Diaphragm Assm. Seal	Gylon®	

NOTE: Regulators are assembled with Krytox® lubricant.



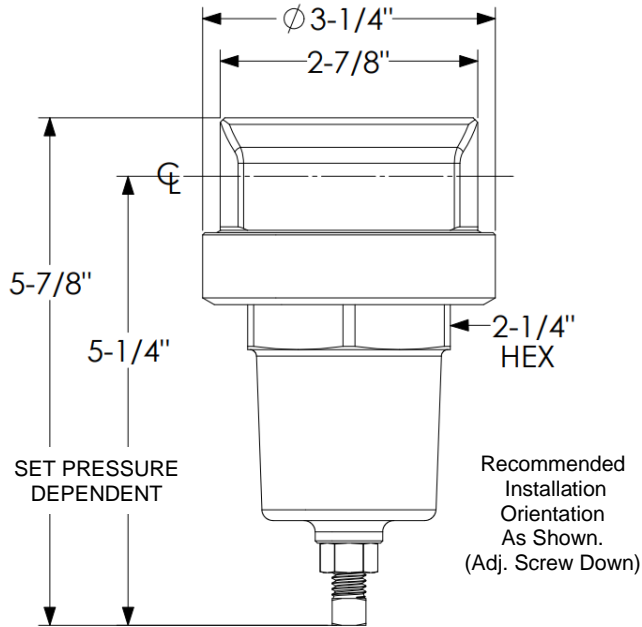
BRASS



316SS

BACK PRESSURE REGULATOR

DIMENSIONAL DATA



FLOW INFORMATION (500 Size - 1/2" NPT)

Set Pressure (PSIG)	Economizer Cv Value		
	110%	120%	130%
50	0.314	0.554	0.688
150	0.603	0.795	0.935
325	0.612	0.838	0.902
475	0.591	0.658	0.658

Set Pressure (PSIG)	Flow to Atm. (SCFH N2)		
	110%	120%	130%
50	990	1280	1400
150	1550	3975	5750
325	4950	9900	13725
475	5150	10450	13125

HOW TO ORDER

BPRX - 500B - B - 140 - M

SERIES

BPRX - Back Pressure Regulator, Large Body

PORT CONFIGURATION

- 375B - 3/8" NPT, Brass
- 500B - 1/2" NPT, Brass
- 375SS - 3/8" NPT, 316 Stainless Steel
- 500SS - 1/2" NPT, 316 Stainless Steel

Spring	Std. Set
A	50
B	150
C	325
D	475

Standard Sets do not come engraved with "Factory Set Pressure."

M OPTION

Monel® Option for Poppet and Seat
OMIT for 316SS Poppet and Seat

SET PRESSURE

Specify set pressure in PSI
OMIT FOR STANDARD SET (BY SPRING, SEE TABLE)

SPRING RANGE

- A - 15 to 75 PSI (1.0 to 5.2 bar)
- B - 50 to 200 PSI (3.4 to 13.8 bar)
- C - 100 to 350 PSI (6.9 to 24.1 bar)
- D - 300 to 600 PSI (20.7 to 41.4 bar)

SPRING KITS

Part Number	Description
BLD-SK-*	Spring Kit, A, B, C Range * Specify Model Spring Code: A, B, C
BPRX-SK-D	Spring Kit, D Range

Note: BLD & BPRX Spring kits are identical for Spring Ranges A, B, C. All Spring kits come with a Replacement Spring & Chamber Seal. D Spring kit also contains Diaph. Seal, Chamber Ring, & Retainer.

REPAIR KITS

Part Number	Description	Seat / Poppet Mat'l
BPRX-RK-*	Seat & Poppet Set, Diaphragms, Gaskets, Seat Seal, Inlet Filter	316 SS
BPRX-RK-M-*		Monel®

* Specify "B" for Phos. Bronze Diaphragms
Specify "SS" for Stainless Steel Diaphragms

PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment, and maintenance are the responsibility of the system designer.



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BPR BPR BPR SERIES

DESCRIPTION:

BPR Series back pressure regulators are designed for use as both economizers or diaphragm type pressure limiting devices on cryogenic liquid cylinders and systems. Optimized diaphragm and adjustment spring designs provide high flow above the desired setpoint. Robust metal-metal seal and seat design ensures low leakage rates below setpoint. The BPR Series is constructed of primarily brass and stainless steel for long-lasting performance. All BPR Series regulators are supplied factory pre-set and cleaned for oxygen service.

FEATURES:

- **OPTIMIZED FOR HIGH FLOW:** Designed for high flow rates in economizer and vent-to-atmosphere applications.
- **QUICK SHUT-OFF:** Regulators transition from the flowing condition to shut in a tight pressure band.
- **INLET FILTER SCREEN:** Protects against system debris and particulate.
- **DESIGNED FOR CRYOGENICS:** All materials were selected specifically for use in cryogenic environments.
- **FIELD ADJUSTABLE:** Regulators can be adjusted to any desired setpoint within the spring's pressure range.
- **CLEANED FOR OXYGEN SERVICE:** Regulators are cleaned for use in Oxygen service standard.

TECHNICAL DATA:

Maximum Inlet Pressure: 750 PSIG (51.7 bar)

Pressure Ranges:

Spring	Pressure Range	PSI/Turn*
A	15 to 65 PSIG (1.0 to 4.5 bar)	15
B	40 to 175 PSIG (2.7 to 12.1 bar)	25
C	100 to 350 PSIG (6.9 to 24.1 bar)	55
D	300 to 600 PSIG (20.7 to 41.4 bar)	85

*PSI/Turn Value is approximate change in setpoint per full turn of the adjustment screw (CW to increase, CCW to decrease), for reference only.

Temperature Range: -320° to 200°F (-196° to 93°C)

MATERIALS OF CONSTRUCTION:

Component	Material	
Body, Chamber, Spring Button, Spring Retainer, Chamber Ring	CDA 360 Brass, ASTM B16	
Adjustment Springs	17-7PH SS	
Adjustment Screw, Locknut, Diaphragm Assembly Screw, Lock Washer	18-8 Stainless Steel	
Poppet, Seat	303 SS, ASTM A313	Monel® 400
Diaphragms, Res. Damper	Phosphor Bronze	
Inlet Filter Screen	Brass Wire Mesh, ASTM E437	
Diaphragm Gasket	Vulcanex ®	
Chamber and Diaphragm Assembly Seal	Gylon ®	

NOTE: Regulators are assembled with Dupont Krytox® lubricant.



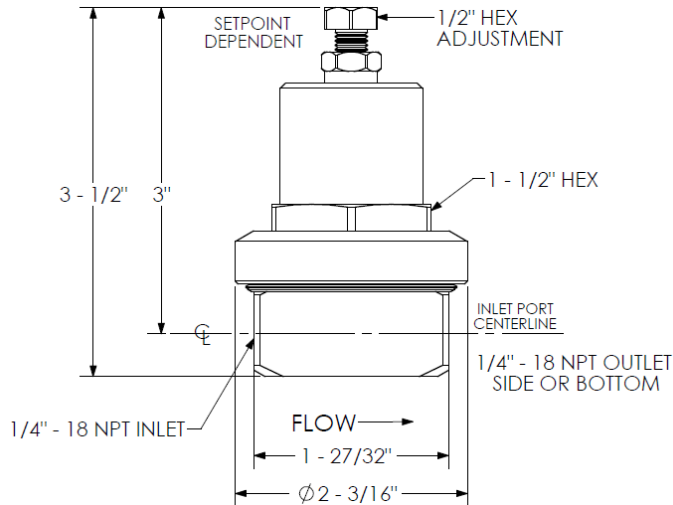
BPR-250



BPR-250I

BACK PRESSURE REGULATOR

DIMENSIONAL DATA



SPRING KITS

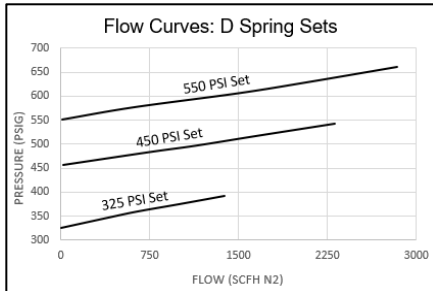
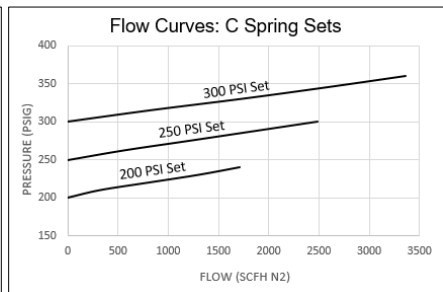
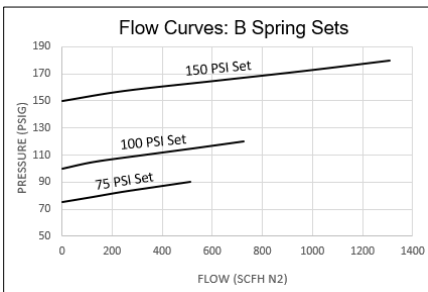
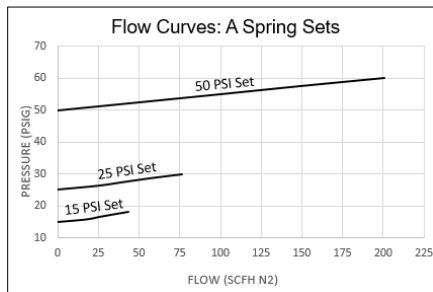
Part Number	Spring
BPR-SK-A	A (15 to 65 PSI)
BPR-SK-B	B (40 to 175 PSI)
BPR-SK-C	C (100 to 350 PSI)
BPR-SK-D	D (300 to 600 PSI)

All Replacement Spring Kits come with a Replacement Spring, Chamber Seal, and either Diaphragm Gasket (A, B, and C springs) or Chamber Ring (D Spring).

REPAIR KITS

Part Number	Description	Trim Mat'l
BPR-RK	Trim (Seat & Poppet Set), Diaphragms, Gasket, Seals, Filter Screen	303 SS
BPR-RK-M		Monel®

FLOW PERFORMANCE



NOTES:

Flow Curves are derived from actual test data at test points up to 120% accumulation above set pressure.

All tests conducted with 0 PSIG on the outlet.

For flow information at higher overpressures, set pressures not listed, or for applications where back pressure is present on the outlet, consult factory.

HOW TO ORDER

BPR - 250 - B - 140 - M

SERIES
BPR - Back Pressure Regulator

PORT CONFIGURATION
250 - 1/4" NPT, Side IN - Bottom OUT
250I - 1/4" NPT, Side IN - Side OUT

M OPTION
Monel® Option for Poppet and Seat
OMIT for 303 SS Poppet and Seat

SET PRESSURE
Specify set pressure in PSI
OMIT FOR STANDARD SET (BY SPRING, SEE TABLE)

SPRING RANGE
A - 15 to 65 PSI (1.0 to 4.5 bar)
B - 40 to 175 PSI (2.7 to 12.1 bar)
C - 100 to 350 PSI (6.9 to 24.1 bar)
D - 300 to 600 PSI (20.7 to 41.4 bar)

Spring	Std. Set
A	35 PSI
B	125 PSI
C	300 PSI
D	450 PSI

Standard Sets do not come engraved with "Factory Set Pressure."

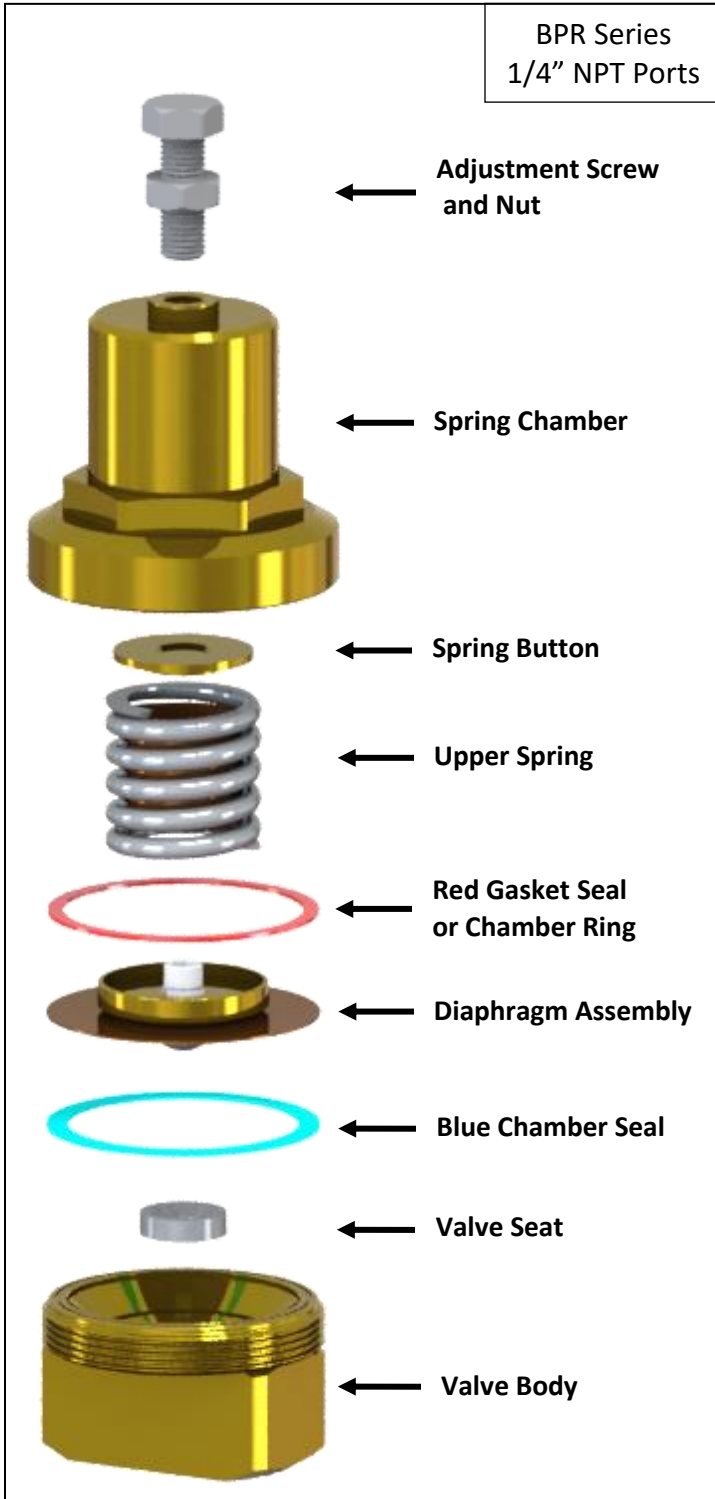
PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



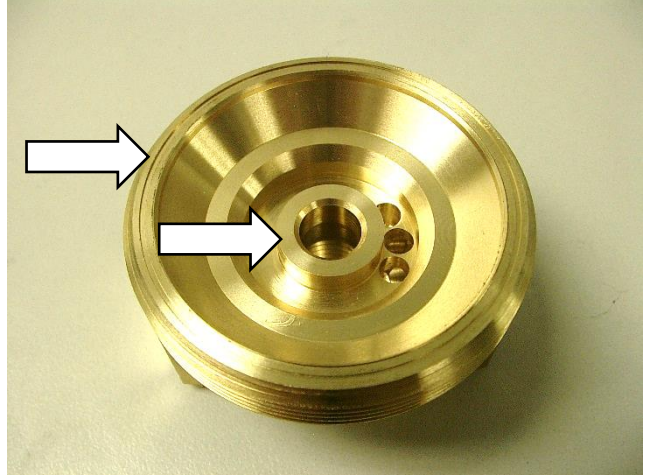
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BPR Series Repair Kit User Instructions



CRITICAL STEP: Disassembly Step 5



Inspect Valve Body sealing surfaces for any damage or scratches. If damage is found, consult factory.

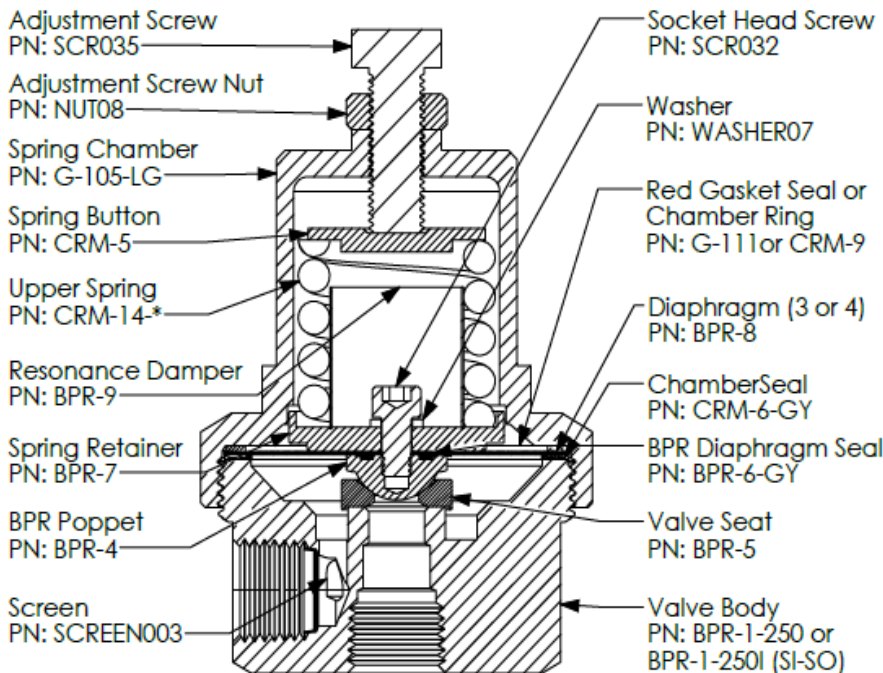
CRITICAL STEP: Assembly Step 3



Place new Red Gasket Seal or Chamber Ring on top of Diaphragm Assembly (NOTE: A, B, and C Spring Valves require the Red Gasket Seal. D Spring Valves require the Chamber Ring).

BPR Series Repair Kit User Instructions

BPR Repair Kit comes with part numbers: BPR-4, BPR-5, BPR-6-GY, BPR-8, CRM-6-GY, SCREEN003 and G-111 (A, B, or C Springs) or CRM-9 (D Spring)



Caution: These instructions should be thoroughly read and understood before attempting any repairs. Consult factory with any questions.

Ensure that all gas is evacuated from the system and no pressure is present on the valve. Then remove valve from the system.

Warning: Repair Kits for BPR Series regulators are supplied cleaned for use in Oxygen Service. Qualified personnel must perform maintenance work in a clean, dry area. Oil, grease or non-oxygen compatible materials must not be allowed to come in contact with any equipment used in oxygen service. Use extreme care to ensure hands, tools, clothing and work area are completely free of dirt, oils, and foreign matter to prevent contamination of component parts. Components used in the service with any other gas cannot be put into oxygen service. Regulators should be removed from the cylinder for repair and reset to desired pressure on the cylinder, if possible. **Generant assumes no responsibility or liability for products repaired in the field.**

Disassembly

1. Loosen Adjustment Screw Nut and unscrew Adjustment Screw from the Chamber until the Upper Spring is disengaged.
2. Place the valve in a bench vice and loosen Spring Chamber using a 1.5" wrench.
3. Remove Spring Chamber, Spring Button, Upper Spring, and Red Gasket Seal or Chamber Ring and set to the side.
4. Remove and discard Blue Chamber Seal and Red Gasket Seal.
5. CRITICAL STEP: Inspect Valve Body sealing surfaces for any damage or scratches. If damage is found, body replacement may be required. Consult factory.
6. Disassemble Diaphragm Assembly using a 9/64" Allen Wrench and 1/2" socket or vise.

NOTE: When removing Spring Chamber from the Valve Body, the Blue Chamber Seal can get stuck in the Spring Chamber threads. Carefully remove seal without damaging sealing surface of diaphragm.

Assembly

1. Place Small Gylon Seal on the Poppet.
2. Place diaphragms* on top of the spring retainer and screw Poppet/Gylon Seal onto the retainer screw.
- * "-A" Spring Valves require 4 diaphragms stacked in Diaphragm Assembly, while the "-B" "-C", and "-D" Spring Valves only require 3.
3. Screw the Socket Head Screw from the Valve Poppet using a 9/64" Allen Wrench and 1/2" socket or vise. When retightening, make sure to tighten diaphragm to 10 ft-lbs.
4. Place new Valve Seat and Blue Chamber Seal onto the valve body. Ensure correct orientation of Valve Seat: angled face oriented up, flat face on body.
5. Place new Diaphragm Assembly on top of Valve Seat and Blue Chamber Seal.
6. CRITICAL STEP: Place new Red Gasket Seal or Chamber Ring on top of Diaphragm Assembly (NOTE: A, B, and C Spring Valves require the Red Gasket Seal. D Spring Valves require the Chamber Ring).
7. Place Upper Spring and Spring Button on top of Diaphragm Assembly.
8. While ensuring Seals and Diaphragm Assembly are concentric with the Valve Body, screw the Spring Chamber on hand tight.
9. Place assembled Valve into Bench Vise and tighten the Spring Chamber to 80 ft-lbs using a 1.5" Socket and Large Torque Wrench.
10. Screw Adjustment Bolt and Nut into Spring Chamber.

SETTING/TESTING: Generant's BPR should be reset by turning down the adjustment screw beyond desired set point, pressurizing the inlet to the desired set pressure, and then slowly backing out the Adjustment Screw (CCW) until the valve begins to open and flow. Tighten the Adjustment Screw Nut to secure set pressure. See EN-FR-175, BPR Field Re-setting User Instructions, for more detailed set and test instructions.



System certificate K-0206681/01

Issued	2022-08-19	Page	1 of 1
First Issue	2016-08-12	Expiry Date	2025-08-11
Replaces	QS /19102285	Previous Expiry	2022-08-11
		Recertification	2022-08-08

ISO 9001: 2015

With this certificate Kiwa confirms that the management system implemented by

GENERANT COMPANY INC.

meets the requirements of ISO 9001: 2015 for the scope:

Design, Production and Sales of Pressure Relief Devices, Pressure Regulators, Pressure & Flow Controls and Fluid Handling Accessories for Industrial and General Applications.

Ben De Graeve
KIWA Belgium nv

*This certificate consists of 1 page.
Publication of this certificate is allowed.*

CERTIFICATE

509/150819

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