Regulators - Pressure Reducing

DPH161979X012

Specifications

For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

Maximum Inlet Pressure
300 psig / 20.7 bar

Outlet Pressure Ranges
0-20, 0-50, 0-100, 0-150, 0-250 psig
0-1.4, 0-3.4, 0-6.9, 0-10.3, 0-17.2 bar

Design Proof Pressure
150% of rated pressure

Leakage
Bubble-tight

Operating Temperature
-20°F to 300°F / -28°C to 148°C

Flow Capacity
1/2" Port Size: C_V = 2.5
3/4" Port Size: C_V = 3.5
1 and 1-1/2" Port Size: C_V = 5.0

MEDIA CONTACT MATERIALS

Body
316L Stainless Steel

Diaphragm
PTFE

Seat, Valve
Ethylene Propylene

O-Rings
Ethylene Propylene

Valve Spring
Cobalt Chrome Nickel Alloy (Eligiloy®)

Remaining Parts
316 Stainless Steel

OTHER

Internal Surface Finish
20 R_a, 30 R_a microinch / 0.63, 0.80 micrometer

Connections
Sanitary Fittings
Tube Ends
High Purity Internal Connections (H.P.I.C.) (gauge port only)

Cleaning
CGA 4.1 and ASTM G93 Clean Service Certificate of Conformance available

Weight
16 lbs / 7 kg

VCR® is a registered trademark of Cajon Co.
Gylon® is a registered trademark of Garlock, Inc.
Elgiloy® is a registered trademark of Elgiloy Specialty Metals.

TESCOM PH-1600 Series is part of our Pharmpure™ product line. This high purity, high flow single-stage regulator offers a compact, USP Class VI and BPE compliant design suitable for biotech and pharmaceutical applications. This regulator provides gas flows up to 400 SCFM / 11,320 SLPM. Its Gylon® diaphragm ensures gas purity and integrity.

Applications

- Clean steam for sanitization
- Vessel headspace pressurization

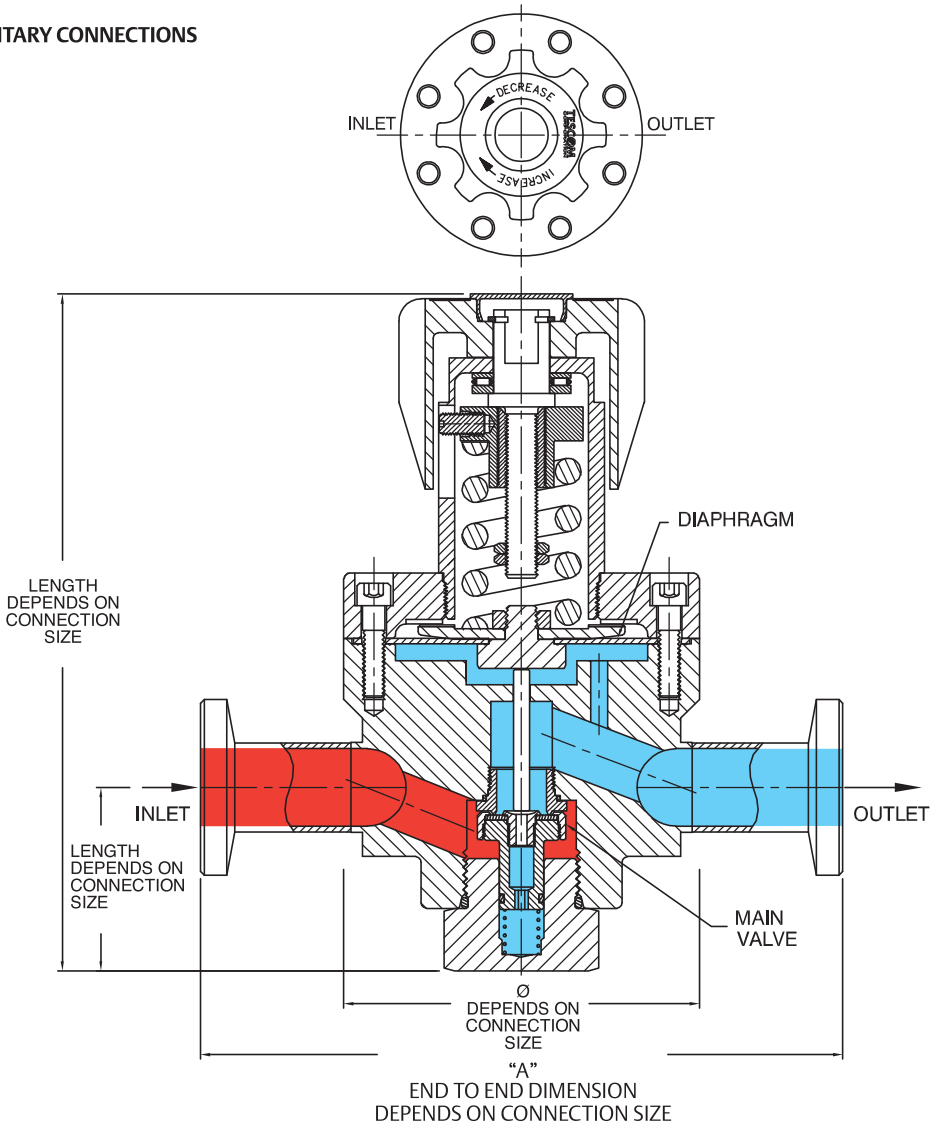
Features and Benefits

- Up to C_V = 5.0 flow capacity
- Gylon® diaphragm
- Low droop, high flow
- Five outlet pressure ranges
- Accurately regulates pressures up to 250 psig / 17.2 bar
- Welded sanitary connections and tube ends are available
- Soft goods USP Class VI compliant
- BPE 2009 compliant design

PH-1600 SERIES

PH-1600 Series Regulator Drawing

SHOWN WITH SANITARY CONNECTIONS

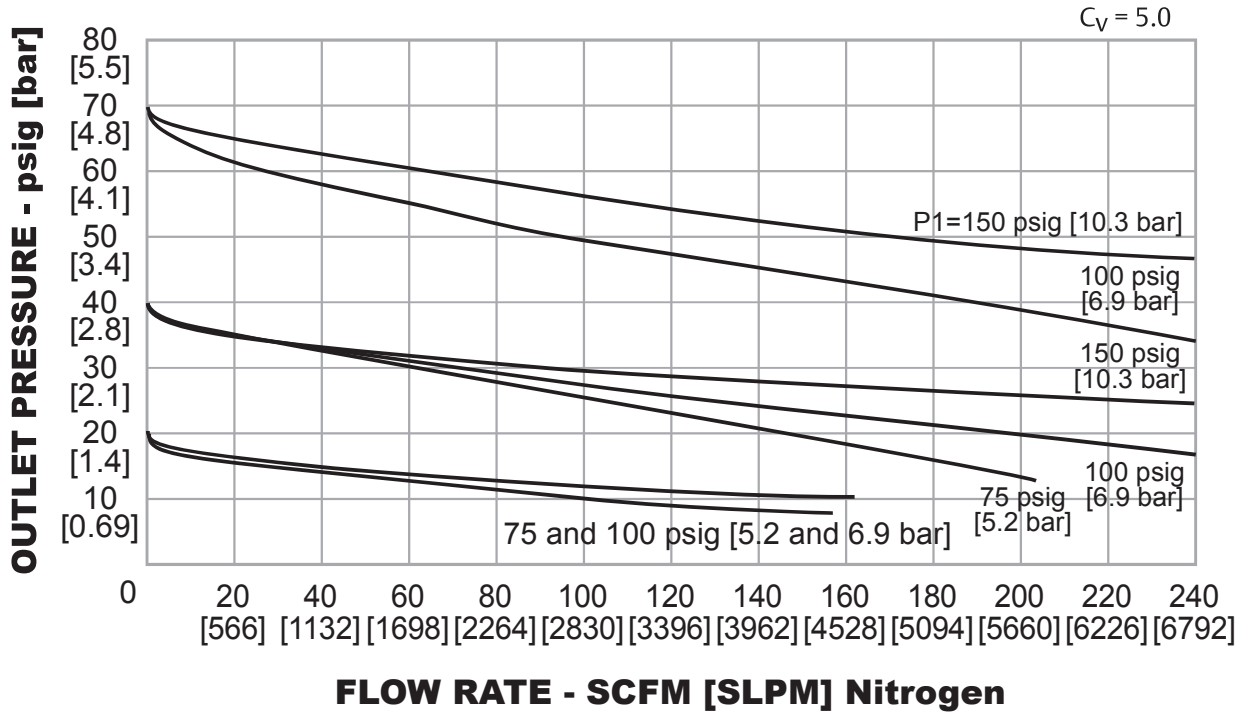


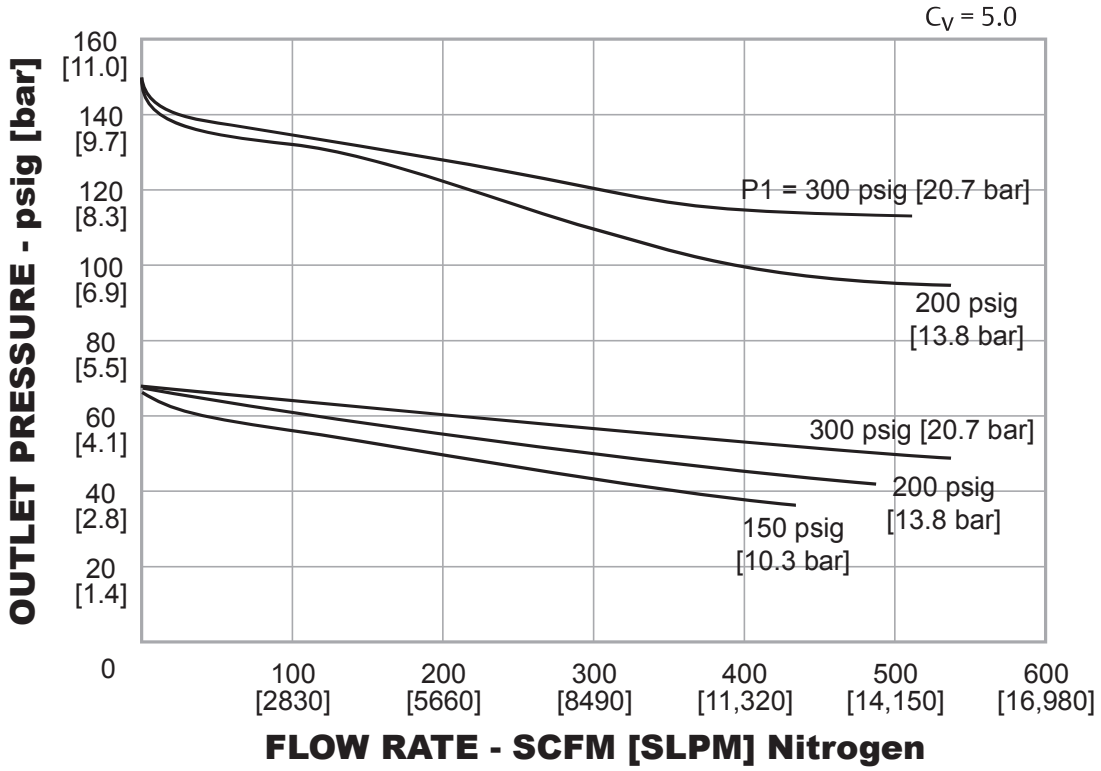
PART NUMBER	DIMENSION "A"	PART NUMBER	DIMENSION "A"
PH16XXXXXXAAX	7.25 / 7.13	PH16XXXXXX66X	9.91 / 9.79
PH16XXXXXXBBX	7.25 / 7.13	PH16XXXXXX77X	9.91 / 9.79
PH16XXXXXXCCX	7.25 / 7.13	PH16XXXXXX88X	9.91 / 9.79
PH16XXXXXXDDX	7.19 / 7.07	PH16XXXXXXWWX	9.91 / 9.79

All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

PH-1600 Series Regulator Flow Charts

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on www.tescom.com.





Note: Flow curves shown with 1" ports. Smaller ports will limit the maximum flow reached. Additional flow curves are available, please consult TESCOM.

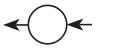
PH-1600 SERIES

PH-1600 Series Regulator Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

								INLET	OUTLET	GAUGE
PH16	**H**	**A**	**1**	**G**	**N**	**B**	**A**	**D**	**D**	**9**

BASIC SERIES	LOAD TYPE	BODY MATERIAL / BODY SURFACE FINISH	OUTLET PRESSURE	SOFT GOODS	VENT SEAT	CERTIFICATE OF CONFORMANCE	GAUGE PORT CONFIGURATION	INLET, OUTLET AND GAUGE PORTS
PH16	**D –** Dome load **H –** Spring load, handknob **W –** Spring load, wrench adjust	**A –** 316L Stainless Steel / 20 R_a SFV1 **C –** 316L Stainless Steel / 30 R_a SFV3	**0 –** 0-20 psig 0-1.4 bar **1 –** 0-50 psig 0-3.4 bar **2 –** 0-100 psig 0-6.9 bar **3 –** 0-150 psig 0-10.3 bar **5 –** 0-250 psig 0-17.2 bar	**G – Diaphragm:** PTFE **O-rings:** E.P. **Seat:** E.P.	**N –** Non-Venting	**A –** None **B –** Clean Service Certificate	**A –** No gauge ports  **D –** One outlet gauge at 90° 	**A** – 1/2" Sanitary[1] **B** – 3/4" Sanitary[2] **C** – 1" Sanitary **D** – 1-1/2" Sanitary **6** – 1/2" Tube[1] **7** – 3/4" Tube[2] **8** – 1" Tube **W** – 1-1/2" Tube **Y** – 1/4" HPIC **9** – None

1. Port size limits regulator to $C_V = 2.5$
2. Port size limits regulator to $C_V = 3.5$

Regulators - Pressure Reducing

DPH221972X012

Specifications

For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

Maximum Inlet Pressure
150 psig / 10.3 bar

Outlet Pressure Ranges
Spring (handknob)
0-10, 0-25, 0-50, and 0-100 psig
0-0.69, 0-1.7, 0-3.4, and 0-6.9 bar
Spring Bias and Dome
0-100 psig / 0-6.9 bar *(See Part Number Selector for more details)*

Design Proof Pressure
150% maximum rated

Leakage
Internal: Bubble-tight
External: designed to meet < 2 x 10^{-8} atm cc/sec He

Operating Temperature (media only)
Teflon® Seat: -40°F to 165°F / -40°C to 74°C
PEEK-OPTIMA® or PEEK-Classix® Seat: -40°F to 400°F / -40°C to 204°C

Flow Capacity
C_V = 0.06, 0.15, and 0.24

MEDIA CONTACT MATERIALS

Body
316L Stainless Steel

Seat
PTFE, PEEK-OPTIMA®, PEEK-Classix®

Friction Sleeve
Inner: PTFE
Outer: 316 Stainless Steel

Valve Guide
316 Stainless Steel

Diaphragm
316 Stainless Steel

Seat Retainer
Nitronic 60

Remaining Parts
316 Stainless Steel

OTHER

Connections
Sanitary Fittings
Tube Ends
High Purity Internal Connections (H.P.I.C.) (gauge port only)

Cleaning
CGA 4.1 and ASTM G93, Clean Service Certificate of Conformance available

Weight (approximately)
2.0 lbs / 0.9 kg

Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.
PEEK-OPTIMA® is a registered trademark of Invibio Ltd.
PEEK-Classix® is a registered trademark of Invibio Ltd.

TESCOM PH-2200 Series is part of our Pharmpure™ product line. This high purity single-stage regulator offers a compact, USP Class VI and BPE compliant design suitable for specialty, corrosive, and pyrophoric gases of < 5 SCFM / 142 SLPM. Diffusion-resistant metal diaphragm seal ensures gas purity and integrity.

Applications

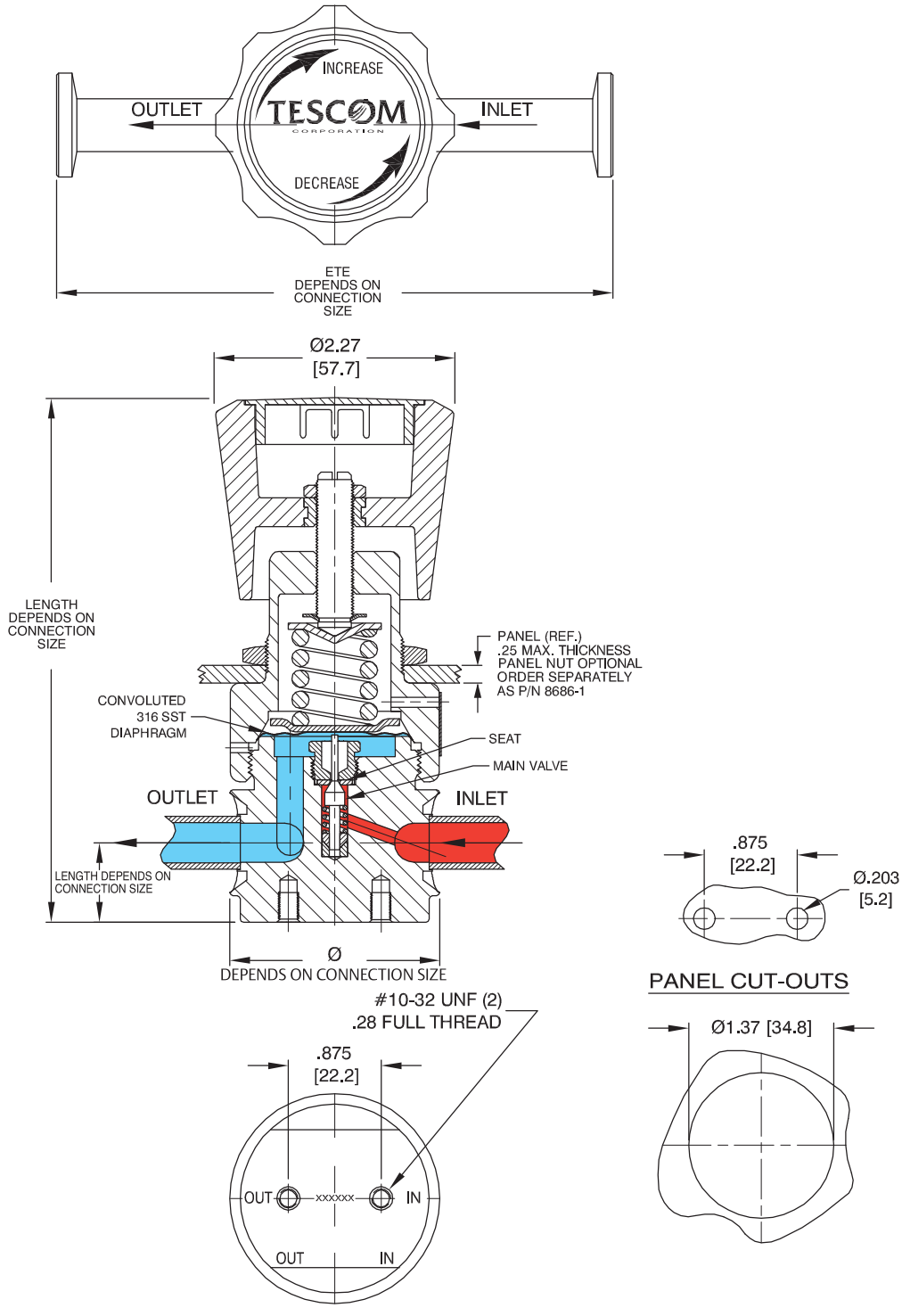
- Sparge gases
- Clean steam for sanitization
- Transfer panels
- Low flow specialty gas

Features and Benefits

- 316L Stainless Steel barstock regulator body design
- FDA/USP compliant designs are available
- Clean Service Certification of Compliance is available: Includes actual material certification, weld records, and bill of materials
- 15 or 32 R_a microinch / 0.38 or 0.81 micrometer body surface finish is standard
- Precise pressure control
- Gauge port is available
- ASME BPE 2009 compliant design

PH-2200 SERIES

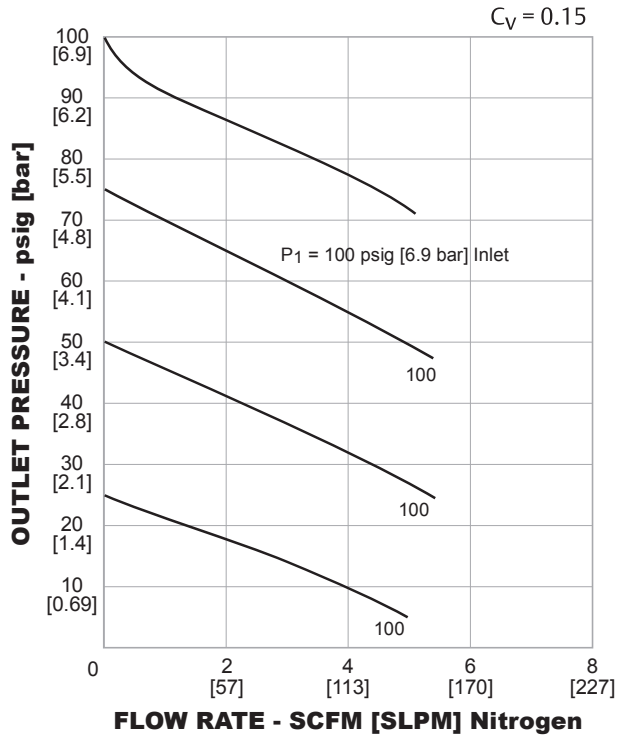
PH-2200 Series Regulator Drawing

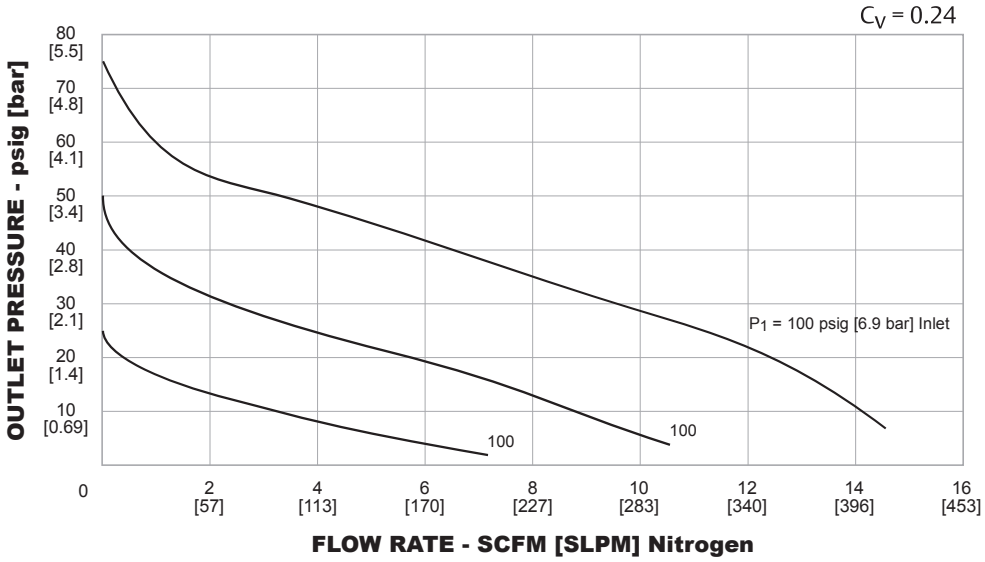


All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

PH-2200 Series Regulator Flow Charts

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on www.tescom.com.



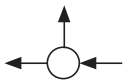


PH-2200 SERIES

PH-2200 Series Regulator Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

PH-22	A				2		8	8	1	0	B
BASIC SERIES	**BODY MATERIAL**	**BODY SURFACE FINISH**	**SEAT MATERIAL**	**VALVE SPRING**	**LOAD TYPE**	**OUTLET PRESSURE**	**INLET AND OUTLET PORT TYPE**	**INLET AND OUTLET PORT SIZE WALL THICKNESS**	**FLOW CAPACITY**	**GAUGE PORT OPTIONS**	**CERTIFICATE OF CONFORMANCE**
PH-22	**A –** 316L Stainless Steel	15 R_a	PTFE	316 Stainless Steel	**0 –** Spring	0-10 psig 0-0.69 bar	**8 –** Sanitary	**6 –** 3/8" (Tube Only) 0.375" OD x 0.035" wall	**1 –** C_V = 0.06	**0 –** No gauge ports	**A –** None
	B – 316L Stainless Steel	15 R_a	Arlon® (PEEK)	Cobalt Chrome Nickel Alloy (Eligiloy®)	**1 –** Spring	0-25 psig 0-1.7 bar	**9 –** Tube	**8 –** 1/2" 0.500" OD x 0.065" wall	**2 –** C_V = 0.15		**B –** Clean Service Certification
	C – 316L Stainless Steel	32 R_a	PTFE	316 Stainless Steel	**2 –** Spring	0-50 psig 0-3.4 bar			**4 –** C_V = 0.24	**2 –** One 1/4" HPIC outlet gauge port at 90°	
	D – 316L Stainless Steel	32 R_a	Arlon® (PEEK)	Cobalt Chrome Nickel Alloy (Eligiloy®)	**3 –** Spring	0-100 psig 0-6.9 bar					
					4 – Spring Bias 0-50 psig / 0-3.4 bar Spring Bias Pressure	0-100 psig 0-6.9 bar					
					5 – Spring Bias 0-100 psig / 0-6.9 bar Spring Bias Pressure	0-100 psig 0-6.9 bar					
					6 – Dome	0-100 psig 0-6.9 bar					

Regulators - Pressure Reducing

DPH321978X012

Specifications

For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

Maximum Inlet Pressure
500 psig / 34.5 bar

Outlet Pressure Ranges
0-25, 0-50, 0-100, 0-150 psig / 0-1.7, 0-3.4, 0-6.9, 0-10.3 bar

Design Proof Pressure
150% maximum rated

Leakage
Internal: ANSI Class VI Shutoff
External: designed to meet < 2 x 10^{-8} atm cc/sec He

Operating Temperature (media only)
Teflon® Seat: -40°F to 165°F / -40°C to 74°C
PEEK-OPTIMA® or PEEK-Classix® Seat: -40°F to 400°F / -40°C to 204°C

Flow Capacity
C_V = 1.8, 1.0

MEDIA CONTACT MATERIALS

Body
316L Stainless Steel

Seat
PTFE, PEEK-OPTIMA®, PEEK-Classix®

O-Ring
Ethylene Propylene

Diaphragm
316 Stainless Steel

Seat Retainer
Nitronic 60

Remaining Parts
316 Stainless Steel

OTHER

Connections
Sanitary Fittings
Tube Ends
High Purity Internal Connections (H.P.I.C.) (gauge port only)

Cleaning
CGA 4.1 and ASTM G93, Clean Service Certificate of Compliance available

Weight (approximately)
3.5 lbs / 1.6 kg

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PEEK-OPTIMA® is a registered trademark of Invibio Ltd.
PEEK-Classix® is a registered trademark of Invibio Ltd.

TESCOM PH-3200 Series is part of our Pharmpure™ product line. This high purity high flow single-stage regulator offers a compact, USP Class VI and BPE compliant design suitable for biotech and pharmaceutical applications. This regulator offers gas flows of 5-50 SCFM / 142-1416 SLPM. Diffusion-resistant metal-to-metal diaphragm seal ensures gas purity and integrity.

Applications

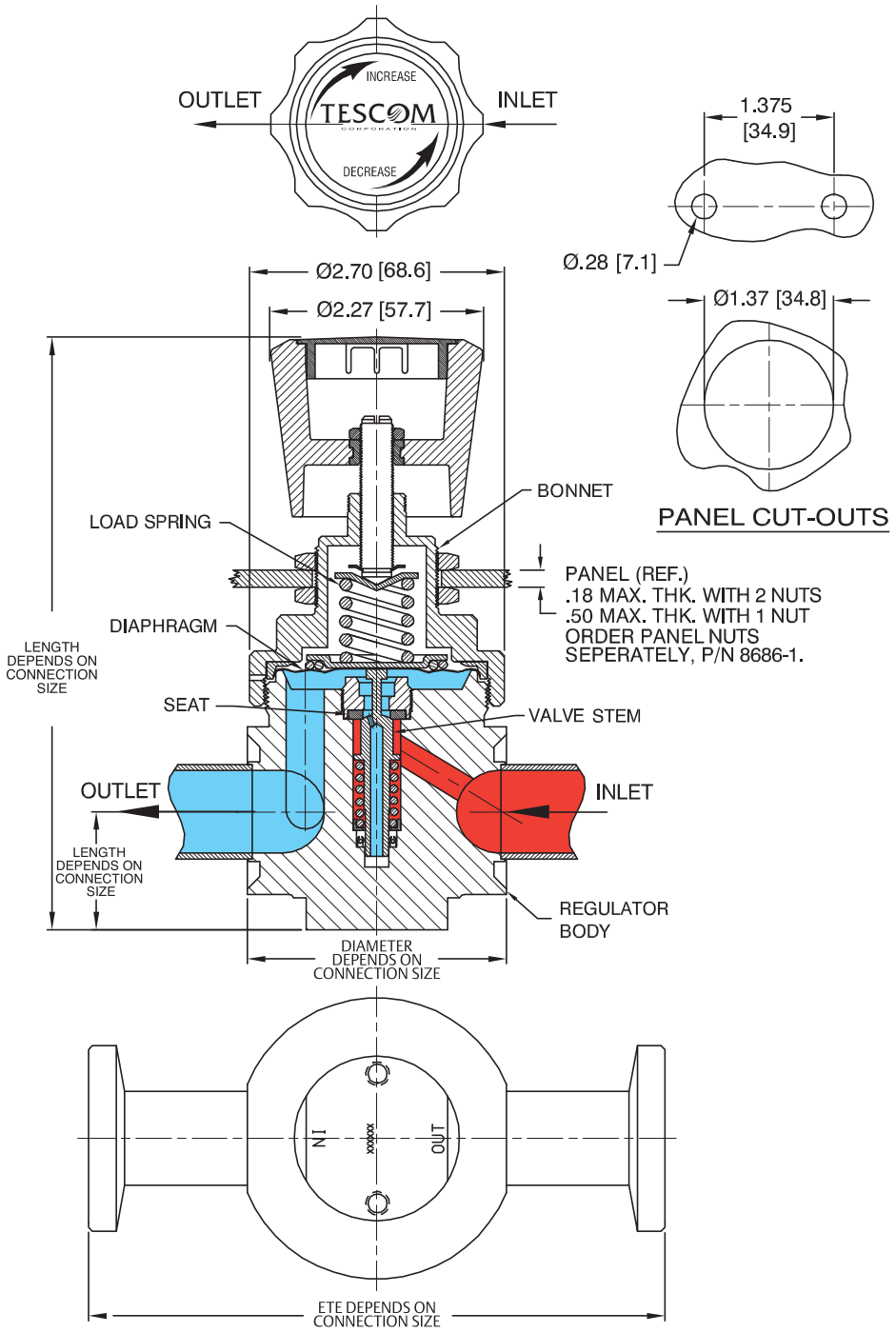
- Sparge gases
- Clean steam for sanitization
- Transfer panels

Features and Benefits

- 316L Stainless Steel barstock regulator body design
- FDA/USP compliant designs are available
- Clean Service Certification of Compliance is available: Includes actual material certification, weld records, and bill of materials
- 15 or 32 R_a microinch / 0.38 or 0.81 micrometer body surface finish standard
- Precise pressure control
- Gauge port is available
- ASME BPE 2009 compliant design

PH-3200 SERIES

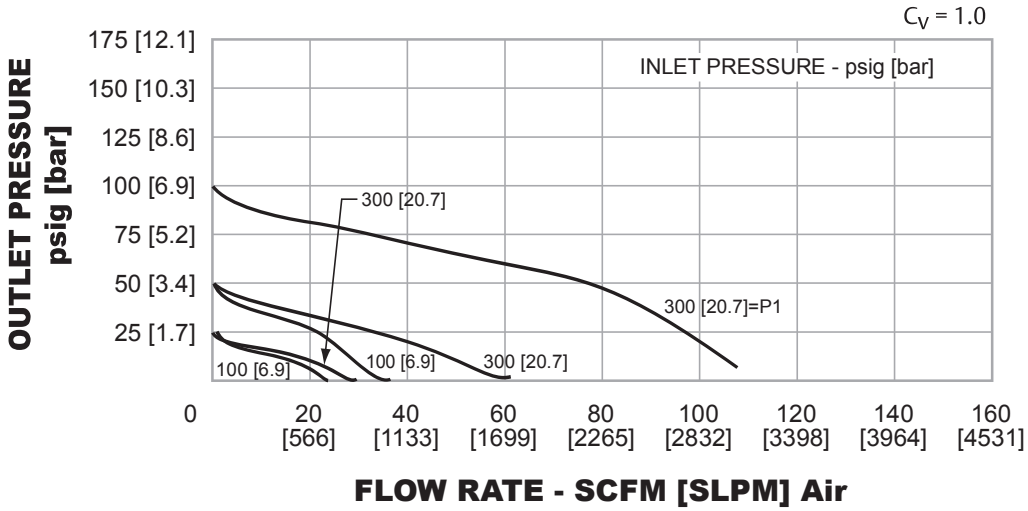
PH-3200 Series Regulator Drawing

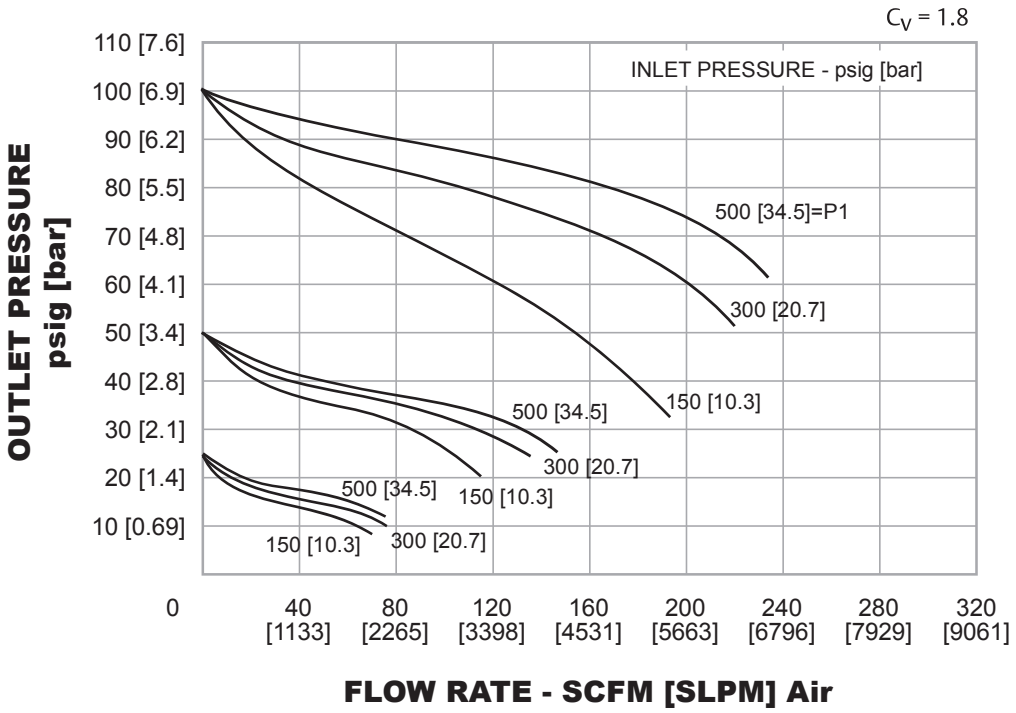


All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

PH-3200 Series Regulator Flow Charts

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on www.tescom.com.



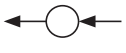
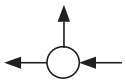


PH-3200 SERIES

PH-3200 Series Regulator Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

PH-32	A				0		8	08	3	0	B
BASIC SERIES	**BODY MATERIAL**	**BODY SURFACE FINISH**	**SEAT MATERIAL**	**SEAL MATERIAL**	**LOAD TYPE**	**OUTLET PRESSURE**	**INLET AND OUTLET PORT TYPE**	**INLET AND OUTLET PORT SIZE WALL THICKNESS**	**FLOW CAPACITY**	**GAUGE PORT OPTIONS**	**CERTIFICATE OF CONFORMANCE**
PH-32	**A –** 316L Stainless Steel	15 R_a	PTFE	E.P. O-Ring	**0 –** Spring	0-25 psig 0-1.7 bar	**8 –** Sanitary	**08 –** 1/2" 0.500" OD x 0.065" wall	**2 –** C_V = 1.8	**0 –** No gauge ports 	**A –** None
	B – 316L Stainless Steel	15 R_a	PEEK	E.P. O-Ring	**1 –** Spring	0-50 psig 0-3.4 bar	**9 –** Tube	**12 –** 3/4" 0.750" OD x 0.065" wall	**3 –** C_V = 1.0	**1 –** One 3/4" sanitary outlet gauge port at 90°	**B –** Clean Service Certification
	C – 316L Stainless Steel	32 R_a	PTFE	E.P. O-Ring	**2 –** Spring	0-100 psig 0-6.9 bar				**2 –** One 1/4" HPIC outlet gauge port at 90° 	
	D – 316L Stainless Steel	32 R_a	PEEK	E.P. O-Ring	**3 –** Spring	0-150 psig 0-10.3 bar					