ULTRA - HIGH PURITY / Positive Seal

POINT - OF - USE REGULATOR

HPGR-410s



Features

- Internally Springless & Threadless.
- Low Particle Entrapment.
- Diaphragm linked to main valve for positive shutoff.
- 360° positionable captured vent bonnet & adjustable stop to limitsoutlet.
- Maximum inlet pressure range : 3500 or 600Psig (241 or 41 barg).
- Outlet pressure range : 1-30,1-60,1-100,1-150Psig (1-2.1,1-4.2,1-7.0,1-10.5barg).

The HPGR-410 Series is Internal threadless and springless type, and minimized particle occurrence because of low internal volume. and is a high purity gas regulator designed to provide the optimum in performance and cleanliness for high purity delivery system in semiconductor applications. This regulator is suitable for applications involving gases that are non-corrosive and corrosive gas system, and is point-of-use regulator designed to be used in process gas cabinets for semiconductor manufacturing facilities.
The HPGR-410 Series is single stage regulator operated by a load spring which interacts with a control valve to control outlet pressure.
Metal-to-metal diaphragm to body seal provides enhanced leak integrity and positive sealing effect by bonnet seal & vent bonnet seal components.
The wetted surface are finished to 10 or 5Ra micro-inch to minimize the generation of particles.
Assembly, welding, testing and packing are performed in a class 10 cleanroom.

Hy-Lok

HY-LOK CORPORATION

ISO 14001 OHSAS 18001

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HPGR - 410Series

SPECIFICATION

FLUID MEDIA : All gases corrosive or non-corrosive for high purity system.
When using other media, Please Contactus.

PRESSURE RATING : Per criteria of ANSI/ASME B31.3

Maximum rated inlet pressure ---------- 3500 or 600Psig (241 or 41 barg)
Outlet pressure range ---------- 1-30, 1-60, 1-100, 1-150
(1-2.1, 1-4.2, 1-7.0, 1-10.5 barg)

DESIGN PROOF PRESSURE : 150% maximum operating

MATERIALS IN CONTACT WITH MEDIA :

Body ---------- 316L SS VOD / AOD / VIM (BA),
316L SS VIM / VAR (EP)
Valve seat ---------- 600 to 1000Psig - PCTFE, 3500Psig - Vespel®
Diaphragm ---------- Hastelloy C-22 / Elgiloy
Main valve, Bush, Spring, Seat holder ---------- 316 SS

OTHER PARAMETERS :

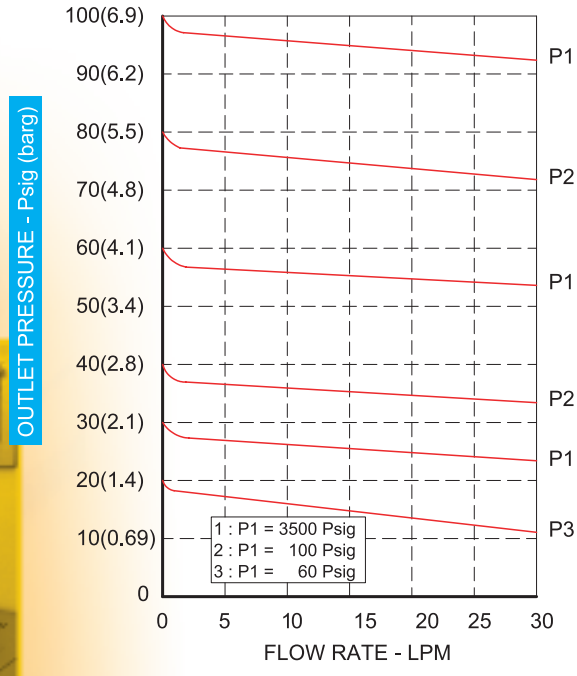
Flow capacity ---------- Cv = 0.06(3500 Psig), Cv = 0.15(600 Psig)
Certified maximum inboard leak rate ---------- $1x10^{-9}$ atm cc / sec He
Internal surface finish ---------- 10Ra or 5Ra microinch(0.25 or 0.13㎛)

OPERATING TEMPERATURE :

PCTFE Seat ---------- -40°F to +140°F (-40°C to +60°C)
Vepel® Seat ---------- -40°F to +350°F (-40°C to +177°C)

WEIGHT : 2.0lbs (0.9Kg)

FLOW CHART
REGULATOR DISCHARGE CHARACTERISTICS CURVES
P1 : Inlet Pressure



This characteristics curves Show the change or droop in two Different pressure as the flow rate Increase and the inlet pressure Decrease.



HPGR - 410Series

GAUGE PORT OPTIONS

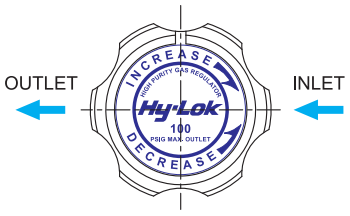


Fig.1(NO GAUGE)

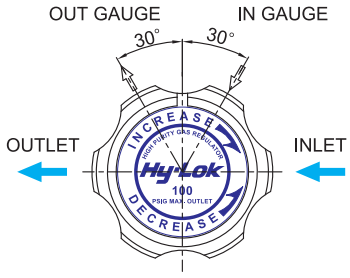


Fig.3(2 GAUGE)

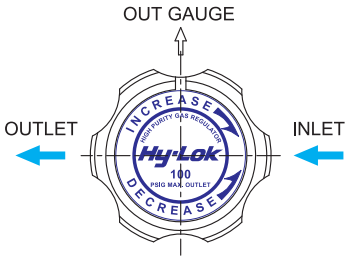


Fig.2(1 GAUGE)

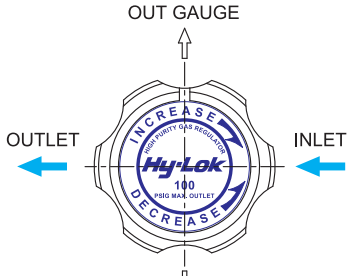


Fig.4 (2 GAUGES)

ORDERING INFORMATION

HPGR - 410 | 2 | 2 | P | ZF | B | - | H | - | VV6L

SERIES

INLET PRESSURE
1 : 600 Psig
2 : 3500 Psig

OUTLET PRESSURE
0 : 1-30 Psig (1-2.1barg)
1 : 1-60 Psig (1-4.1barg)
2 : 1-100 Psig (1-6.9 barg)
3 : 1-150 Psig (1-10.5 barg)

SEAL MATERIAL
P : PCTFE
V : Vespel®

INLET & OUTLET PORT
NF : Female NPT thread
TW : Tube Weld
ZM : ZCR male
ZF : ZCR female
HL : Hy-Lok
FM : Fixed male

BODY MATERIAL
SM6L : Single melting 316L SS
VV6L : Double melting 316L SS

GRADE
B : BA
H : Electropolish
S : Super Electropolish

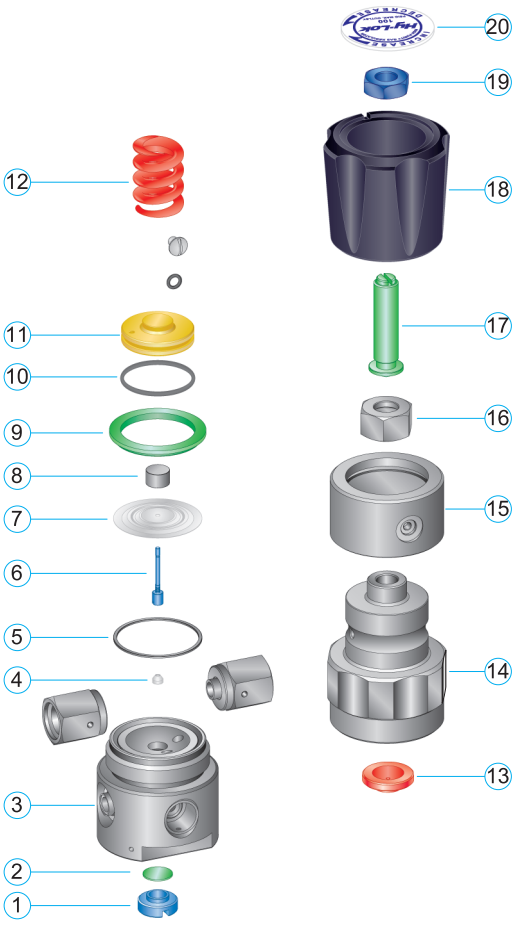
GAUGE PORT OPTION

A	: None	No gauge port (Fig.1)
B	: Internal Face Seal	1 Gauge (Fig.2)
C	: Internal Face Seal	2 Gauges (Fig.3)
D	: Internal Face Seal	2 Gauges (Fig.4)
E	: ZCR male	1 Gauge (Fig.2)
F	: ZCR male	2 Gauges (Fig.3)
G	: ZCR male	2 Gauges (Fig.4)
H	: ZCR Female	1 Gauge (Fig.2)
I	: ZCR Female	2 Gauges (Fig.3)
J	: ZCR Female	2 Gauges (Fig.4)
K	: Fixed male	1 Gauge (Fig.2)
L	: Fixed male	2 Gauges (Fig.3)
M	: Fixed male	2 Gauges (Fig.4)
N	: Female NPT thread	1 Gauge (Fig.2)
O	: Female NPT thread	2 Gauges (Fig.3)
P	: Female NPT thread	2 Gauges (Fig.4)



Hastelloy C-22® is a registered trademark of Haynes international, Inc.
Teflon® and Vespel® is a registered trademark of DuPont.
Viton® is a registered trademark of DuPoint Dow Elastomers.

HPGR - 410Series



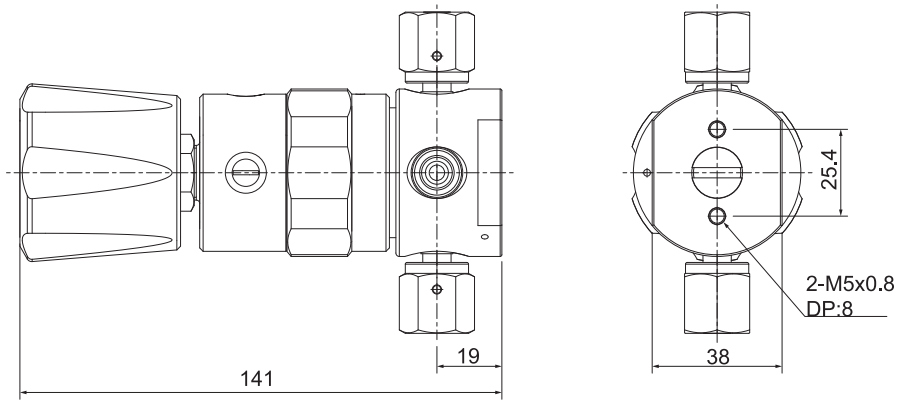
MATERIALS OF SPECIFICATION

No.	Description	Material / ASTM Specification
1	Push Bolt	Stainless Steel 304
*2	Body Bottom Seal	Type 316L / A479
*3	Body	Single / Double Vacuum Melt 316L / A479
*4	Seat	PCTFE
*5	Bonnet Seal Gasket	PTFE
*6	Main Valve	Type 316L / A479
*7	Diaphragm	Elgiloy®
8	Valve nut	Stainless Steel 304
9	Bonnet Ring	Stainless Steel 304
10	O-Ring	Viton®
11	Thrust pad	Stainless Steel 304
12	Load Spring	Stainless Steel 304
13	Con Washer	Brass / B16
14	Bonnet	Brass / B16
15	Vent Bonnet	Brass / B16
16	Bonnet Seal Nut	Brass / B16
17	Adjust Screw	Stainless Steel 304
18	Hand Wheel	Plastic
19	Hand Wheel Nut	Stainless Steel 304
20	Cap	Plastic

Wetted components listed in "*" marks.

ALL DIMENSION ARE REFERENCE ONLY

- All dimensions in mm



■ QUALITY SYSTEM CERTIFICATES

ISO 9001
CERTIFICATE NO.GQC 212

ASME SECT Ⅲ (MO)
CERTIFICATE NO. QSC 584

■ TYPE APPROVALS (for Hy-Lok Tube Fittings)

American Bureau Shipping
CERTIFICATE NO.00-BK50288-X

Lloyd's Register
CERTIFICATE NO.01/10075

GERMANISCHER LLOYD
CERTIFICATE NO.57798-91 HH

DET NORSKE VERITAS
CERTIFICATE NO.P-9100

ISO 9001 CERTIFIED

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