



High Purity Gas Pressure Regulator



Features

- 100% Helium leak tested
- 100% Clean room welded and assembled
- 100% DI water Cleaned
- Full line of high to low and low to high pressure control features.



SINGLE STAGE REGULATORS - LOW PRESSURE

Model	Size	Material	Hastelloy Internal	Tied Diaphragm	Inlet Pressure	Outlet Pressure	Leak Rate (atm cc/sec)	Cv	Grade
RG1	1/4"	S SH DH	○		600 PSIG	1~250 PSIG	1.0E-9	0.2	BA EP
RG2	3/8" 1/2"	S SH D DH	○		1000 PSIG 600 PSIG	1~150 PSIG	1.0E-9	0.5	BA EP
PRG1	1/4" 3/8" 1/2"	S SH DH	○	●	1000 PSIG 600 PSIG	1~150 PSIG	1.0E-9	0.15	BA EP
PRG2	1/4" 3/8" 1/2"	S SH DH	○	●	1000 PSIG 600 PSIG	1~150 PSIG	1.0E-9	0.5	BA EP

SINGLE STAGE REGULATORS - HIGH PRESSURE

Model	Size	Material	Hastelloy Internal	Tied Diaphragm	Inlet Pressure	Outlet Pressure	Leak Rate (atm cc/sec)	Cv	Grade
RG1	1/4"	S SH DH	○		3500 PSIG	1~250 PSIG	1.0E-9	0.06	BA EP
RG2	3/8" 1/2"	S SH D DH	○		3500 PSIG	1~150 PSIG	1.0E-9	0.5	BA EP
PRG1	1/4" 3/8" 1/2"	S SH DH	○	●	3500 PSIG	1~150 PSIG	1.0E-9	0.06	BA EP
PRG2	1/4" 3/8" 1/2"	S SH DH	○	●	3500 PSIG	1~150 PSIG	1.0E-9	0.5	BA EP

DOUBLE STAGE REGULATORS - HIGH PRESSURE

Model	Size	Material	Hastelloy Internal	Tied Diaphragm	Inlet Pressure	Outlet Pressure	Leak Rate (atm cc/sec)	Cv	Grade
TRG	1/4"	S SH DH	○		3500 PSIG	1~150 PSIG	1.0E-9	0.06	BA EP

SINGLE STAGE REGULATORS - MICRO REGULATORS

Model	Size	Material	Hastelloy Internal	Tied Diaphragm	Inlet Pressure	Outlet Pressure	Leak Rate (atm cc/sec)	Cv	Grade
MRG3	1/4" 3/8"	S SH DH	○		150 PSIG	1~100 PSIG	1.0E-9	0.06	BA EP
BRG3	1/4" 3/8"	S SH DH	○		150 PSIG	1~100 PSIG	1.0E-9	0.06	BA EP
MRG4	1/4" 1.12" 1.5"	S SH DH HH	○		150 PSIG	1~100 PSIG	1.0E-9	0.08	BA EP
MRG5	1/4"	S SH DH	○		500 PSIG	1~100 PSIG	1.0E-9	0.1	BA EP

SINGLE STAGE REGULATORS - HIGH FLOW

Model	Size	Material	Hastelloy Internal	Tied Diaphragm	Inlet Pressure	Outlet Pressure	Leak Rate (atm cc/sec)	Cv	Grade
HFRG	1/4"~1/2"	S D			500 PSIG	1~150 PSIG	2.0E-8	0.85	BA EP
HFRG2	1/4"~3/4"	S D			250 PSIG	1~100 PSIG	1.0E-9	1.6	BA EP
HFRG3	3/8"~1" 15A~25A	S D			500 PSIG	1~100 PSIG	1.0E-9	1.0	BA EP
HFRG4	1/2" 3/4" 1"	S D			300 PSIG	1~150 PSIG	2.0E-8	5.0	BA EP
AHFRG	15A~50A	S D			300 PSIG	1~130 PSIG	2.0E-8	8.0	BA EP

CROSSOVER BOARD

Model	Size	Material	Hastelloy Internal	Tied Diaphragm	Inlet Pressure	Outlet Pressure	Leak Rate (atm cc/sec)	Cv	Grade
CORG	1/4"	S			3500 PSIG	1~150 PSIG	2.0E-8	0.06	BA

LEGEND

○	Standard
●	Optional

GRADE

BA	10 RA µin
EP	Electropolishing 5 RA µin

MATERIAL

Division	Body	Wetted parts	Valve spring	Seat	Diaphragm
S	316L Stainless Steel	316L Stainless Steel	SUS316L-WPA	PCTFE PFA PI	HASTELLOY C-22
SH	316L Stainless Steel	HASTELLOY C-22	INCONEL 750		
D	316L Stainless Steel VAR	316L Stainless Steel VAR	SUS316L-WPA		
DH	316L Stainless Steel VAR	HASTELLOY C-22	INCONEL 750		

RG1 Series



Ultra High Purity Regulator

- Designed for point-of-use medium flow to be used in process gas cabinets for gas companies, equipment manufactures and semiconductor manufacturers.
- Precise control of gas pressure at or near the process tool for flow rates of up to 250 SLPM at 300 PSIG inlet.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Fluid Media

All gases corrosive or non-corrosive or those requiring high purity regulation compatible with materials of construction. For other media, consult with factory.

Pressure Rating (Per criteria of ANSI / ASME B31.3.)

Max. rated inlet pressure	3500 or 600 PSIG (241 or 41 bar)
Outlet pressure ranges	1-30, 1-60, 1-100, 1-150 or 1-250 PSIG (.1-2.1, .1-4.1, .1-6.9, .1-10.3 or .1-17.3bar)
Design proof pressure	150% of Maximum rated pressure

Materials in Contact with Media

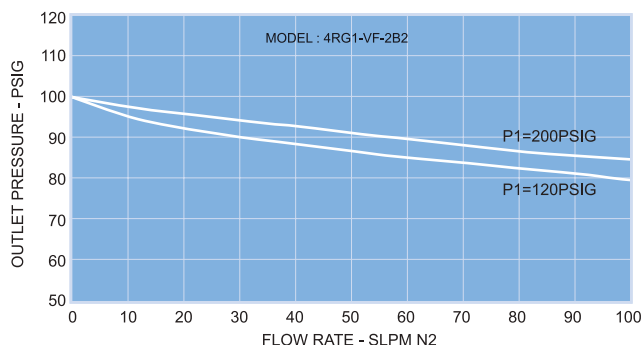
Body	316L Stainless Steel with BA, Electropolish
Seat	PCTFE (PI optional for 3500 PSIG model only)
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22 / Inconel 750

Other Parameters

Flow coefficient	Cv = 0.06 (3500 PSIG model), Cv = 0.2 (600 PSIG model)	
Certified maximum inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He	
Internal surface finish	10Ra or 5Ra microinch (.25 or .13 micrometer)	
Operating temperature	PCTFE seat	-15°F to +176°F (-26°C to +80°C)
	PI seat	-15°F to +350°F (-26°C to +177°C)
Weight (w/o gauges)	2.0lbs. (0.9kg)	

Flow Curves

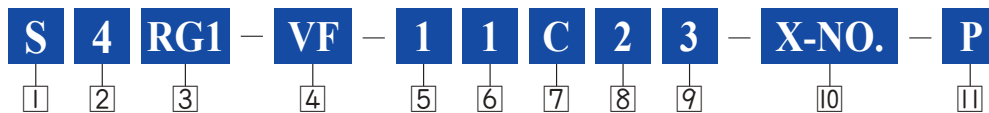
REGULATOR DISCHARGE CHARACTERISTICS CURVES



MATERIAL

Wetted Parts	RG1 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel Hastelloy C-22
Main Valve	316L Stainless Steel Hastelloy C-22
Valve Spring	SUS316-WPA Inconel 750
Valve Bush	316L Stainless Steel Hastelloy C-22
Seat	PCTFE (Option : PI)
Diaphragm	Hastelloy C-22

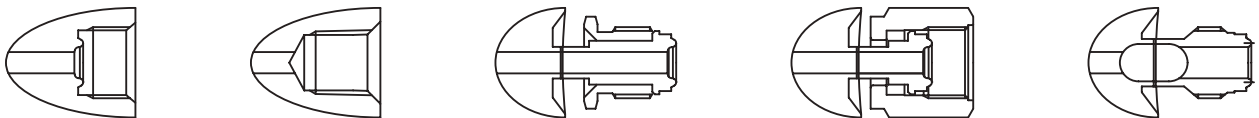
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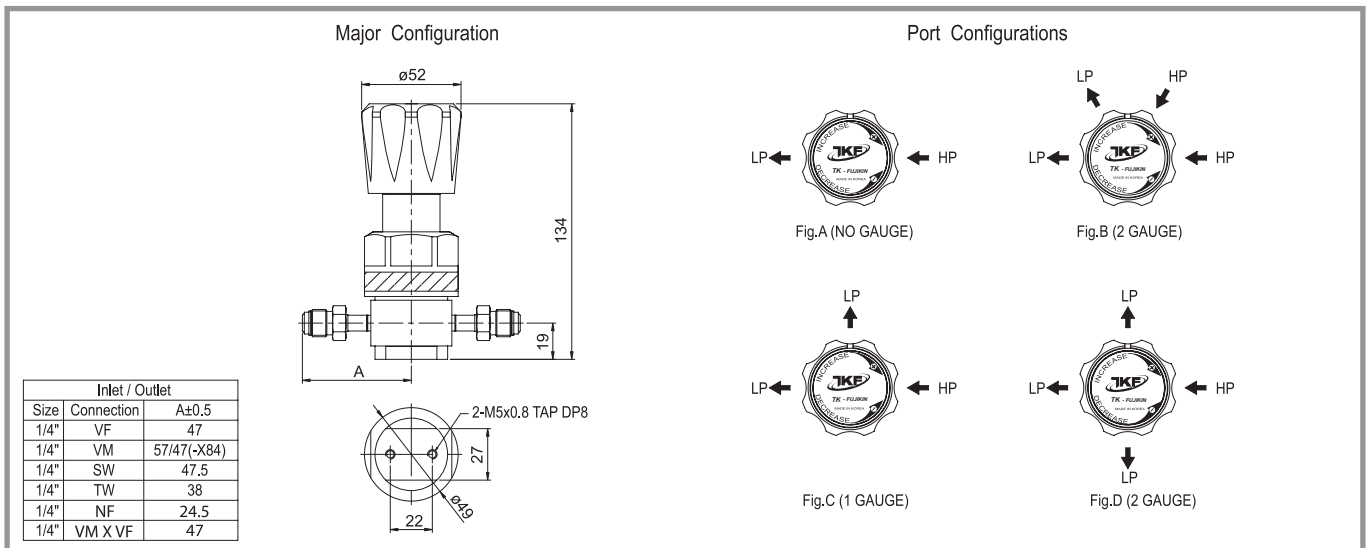
1 Material	S = 316L Stainless steel	SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals
2 Connection Size	4 = 1/4"	
3 Product	RG1 Series	
4 Connection Type	NF = Female NPT Thread SW = Compression Lok Fitting TW = Tube Butt Weld	VF = Female Type Face Seal VM = Male Type Face Seal VMF = Fixed Male Type Face Seal
5 Maximum Inlet Pressure	1 = 3500 PSIG	2 = 600 PSIG
6 Maximum Range of Inlet Gauge	1 = 600 PSIG 2 = 1000 PSIG 3 = 3500 PSIG	4 = 4000 PSIG Blank = No Gauge
7 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B) H = 1/4" Female Face Seal (Fig. D)	I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig. B) O = 1/4" Female NPT Thread (Fig. C) P = 1/4" Female NPT Thread (Fig. D)
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG 2 = 1 ~ 100 PSIG	3 = 1 ~ 250 PSIG 4 = 1 ~ 150 PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG 3 = 160 PSIG	4 = 200 PSIG 5 = 300 PSIG Blank = No Gauge
10 User Option	Customization (※Standard : Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in) PX = Electropolishing (5 Ra μ in)	

Gauge Port Information

1/4" INTERNAL FACE SEAL 1/4" FEMALE NPT THREAD 1/4" MALE FACE SEAL 1/4" FEMALE FACE SEAL 1/4" FIXED MALE FACE SEAL



Port Configuration



RG2 Series



Ultra High Purity Regulator

- Designed for point-of-use high flow to be used in process gas cabinets for gas companies, equipment manufactures and semiconductor manufacturers.
- The RG2 provides precise control of process gas pressure at or near the tool for flow rates of up to 600 SLPM at 300 PSIG inlet.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Fluid Media

All gases corrosive or non-corrosive or those requiring high purity regulation compatible with materials of construction. For other media, consult with factory.

Pressure Rating (Per criteria of ANSI / ASME B31.3.)

Max. rated inlet pressure	600, 1000, 3500 PSIG (41, 69, 241 bar)
Outlet pressure ranges	1-30, 1-60, 1-100 and 1-150 PSIG (.1-2.1, .1-4.1, .1-6.9 and .1-10.3bar)
Design proof pressure	150% of Maximum rated pressure

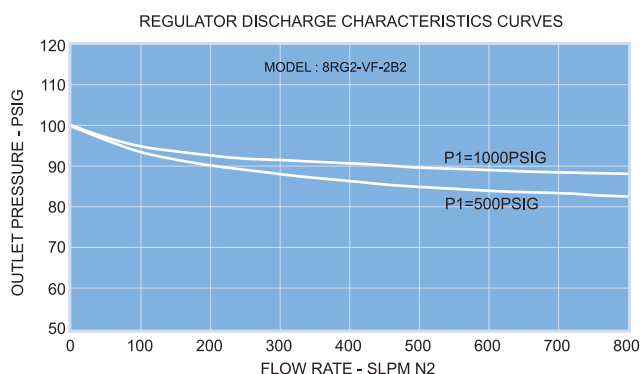
Materials in Contact with Media

Body	316L Stainless Steel with BA, Electropolish
Seat	3500 PSIG - PI / 1000 PSIG - PCTFE, 600 PSIG - PFA
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22 / Inconel 750

Other Parameters

Flow coefficient	Cv = 0.5	
Certified maximum inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He	
Internal surface finish	10Ra or 5Ra microinch (.25 or .13 micrometer)	
Operating temperature	PCTFE seat	-15°F to + 200°F (-26°C to +93°C)
	PI seat	-15°F to + 350°F (-26°C to +149°C)
Weight (w/o gauges)	3.5lbs. (1.6kg)	

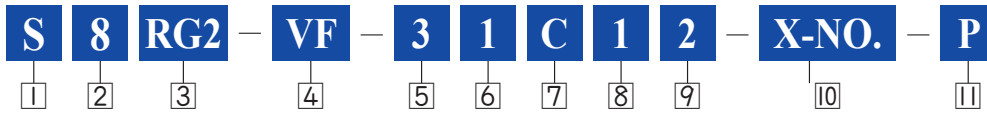
Flow Curves



MATERIAL

Wetted Parts	RG2 Series
Body	316L Stainless Steel
Main Valve	316L Stainless Steel
Valve Spring	SUS316-WPA Inconel 750
Seat	PFA PCTFE PI
Diaphragm	Hastelloy C-22

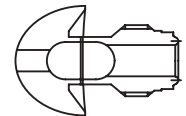
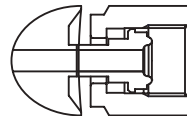
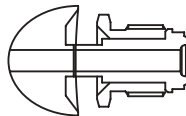
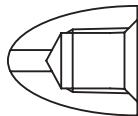
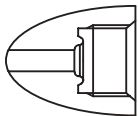
Ordering Information



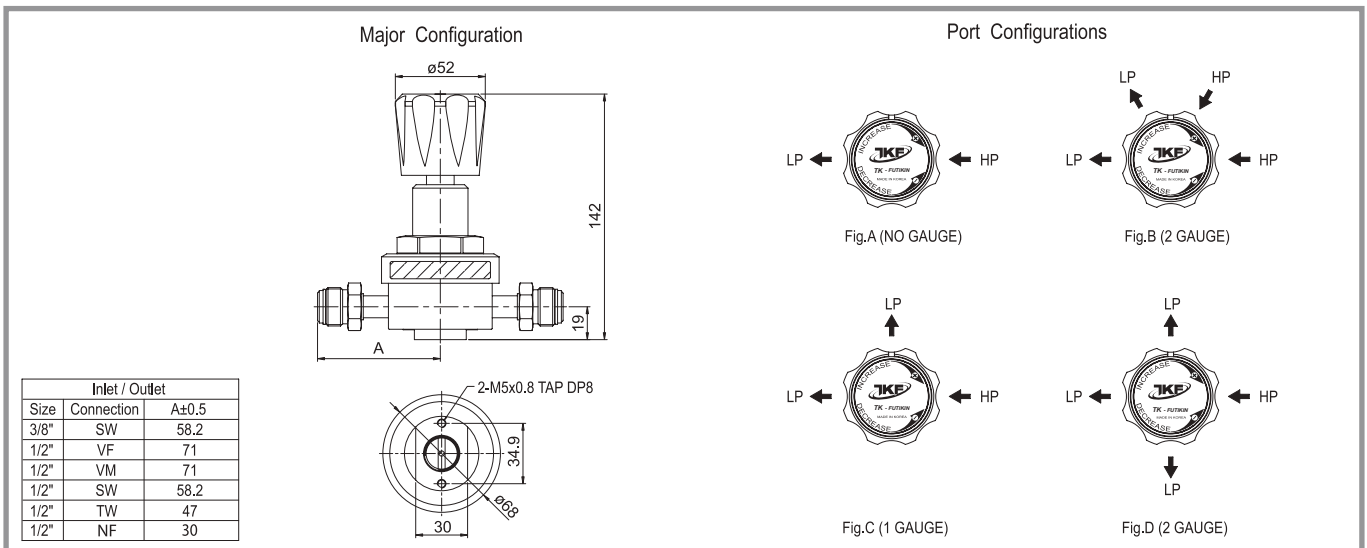
1 Material	S = 316L Stainless steel D = 316L Stainless steel VAR	SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals
2 Connection Size	6 = 3/8" 8 = 1/2"	
3 Product	RG2 Series	
4 Connection Type	NF = Female NPT Thread SW = Compression Lok Fitting TW = Tube Butt Weld	VF = Female Type Face Seal VM = Male Type Face Seal VMF = Fixed Male Type Face Seal
5 Maximum Inlet Pressure	1 = 3500 PSIG 2 = 1000 PSIG	3 = 600 PSIG
6 Maximum Range of Inlet Gauge	1 = 600 PSIG 2 = 1000 PSIG 3 = 3500 PSIG	4 = 4000 PSIG Blank = No Gauge
7 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B) H = 1/4" Female Face Seal (Fig. D)	I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig. B) O = 1/4" Female NPT Thread (Fig. C) P = 1/4" Female NPT Thread (Fig. D)
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG	2 = 1 ~ 100 PSIG 3 = 1 ~ 150 PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG	3 = 160 PSIG 4 = 200 PSIG Blank = No Gauge
10 User Option	Customization (※Standard : Blank)	
11 Grade	Blank = BA Standard (10 Ra μin) P = Electropolishing (5 Ra μin) PX = Electropolishing (5 Ra μin)	

Gauge Port Information

1/4" INTERNAL FACE SEAL 1/4" FEMALE NPT THREAD 1/4" MALE FACE SEAL 1/4" FEMALE FACE SEAL 1/4" FIXED MALE FACE SEAL



Port Configuration



PRG1 Series (Tied Diaphragm)



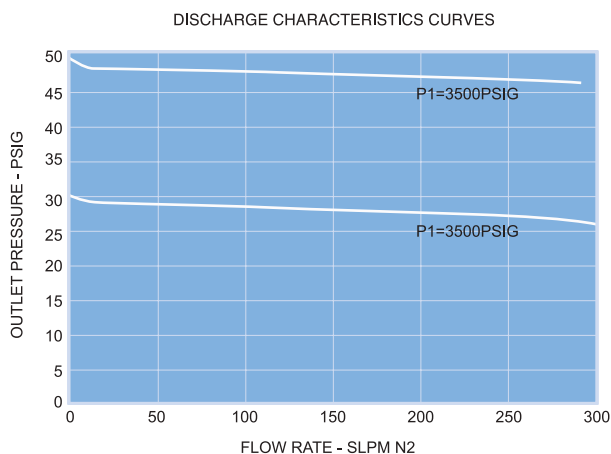
Positive Shutoff Seal Regulator

- No internal springs and threadless design to minimize particle entrapment areas.
- Positive shutoff seal reduces pressure creep.
- Metal to metal diaphragm seal enhances leak tight integrity.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating		
Max. rated inlet pressure	600, 1000, 3500 PSIG	
Outlet pressure ranges	1-30, 1-60, 1-100 or 1-150 PSIG	
Design proof pressure	150% of Maximum rated pressure	
Materials in Contact with Media		
Body	316L Stainless Steel / Hastelloy C-22	
Seat	PCTFE (PI optional for 3,500 PSIG model only)	
Diaphragm	Hastelloy C-22	
Gas contact parts	316L Stainless Steel / Hastelloy C-22	
Other Parameters		
Flow coefficient	3500 PSIG Inlet : Cv = 0.06 600, 1000 PSIG Inlet : Cv = 0.15	
Operating temperature	PCTFE seat	-40°F to +65°C
	PI seat	-26°F to +149°C
Inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He	
Weight (w/o gauges)	2.0lbs. (0.9kg)	

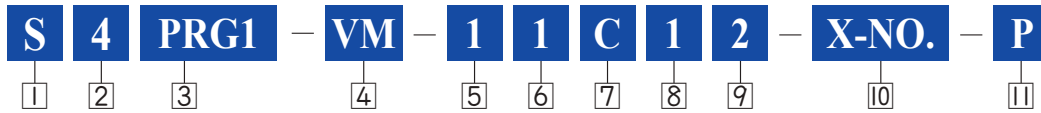
Flow Curves



MATERIAL

Wetted Parts	PRG1 Series
Body	316L Stainless Steel
Main Valve	316L Stainless Steel Hastelloy C-22
Seat	PCTFE (Option : PI)
Diaphragm	Hastelloy C-22

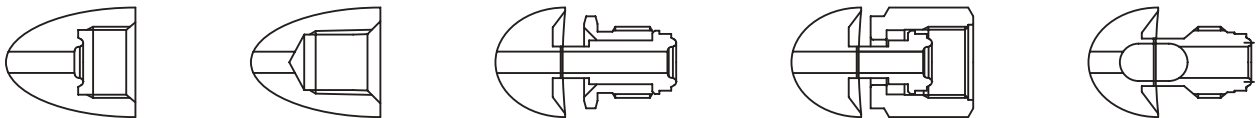
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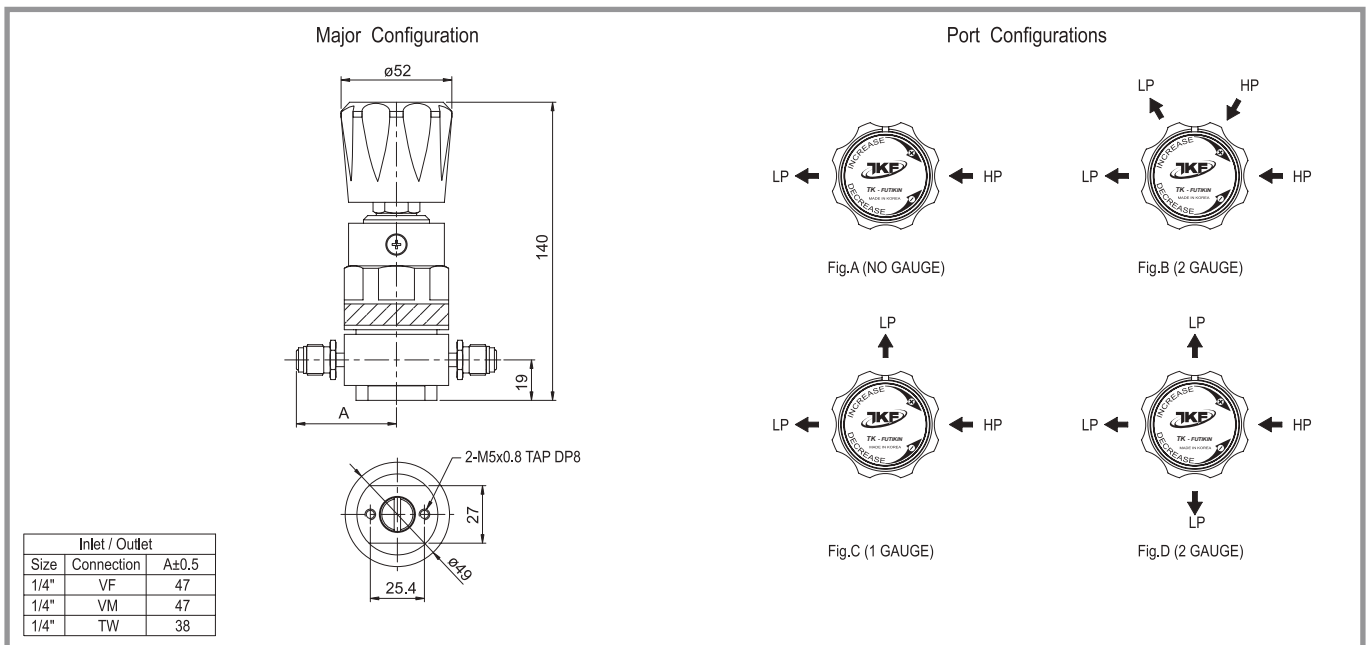
1 Material	S = 316L Stainless steel	SH = 316L Stain less steel with Hastelloy internals DH = 316L Stain less steel VAR with Hastelloy internals
2 Connection Size	4 = 1/4" 6 = 3/8"	8 = 1/2"
3 Product	PRG1 Series	
4 Connection Type	NF = Female NPT Thread TW = Tube Butt Weld	VF = Female Type Face Seal VM = Male Type Face Seal
5 Maximum Inlet Pressure	1 = 3500 PSIG 2 = 1000 PSIG	3 = 600 PSIG
6 Maximum Range of Inlet Gauge	1 = 600 PSIG 2 = 1000 PSIG	3 = 3500 PSIG Blank = No Gauge
7 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B) H = 1/4" Female Face Seal (Fig. D)	I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig.B) O = 1/4" Female NPT Thread (Fig.C) P = 1/4" Female NPT Thread (Fig.D)
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG	2 = 1 ~ 100 PSIG 3 = 1 ~ 150 PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG	3 = 160 PSIG Blank = No Gauge
10 User Option	Customization (※Standard : Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in) PX = Electropolishing (5 Ra μ in)	

Gauge Port Informaiton

1/4" INTERNAL FACE SEAL 1/4" FEMALE NPT THREAD 1/4" MALE FACE SEAL 1/4" FEMALE FACE SEAL 1/4" FIXED MALE FACE SEAL



Port Configuration



PRG2 Series (Tied Diaphragm)



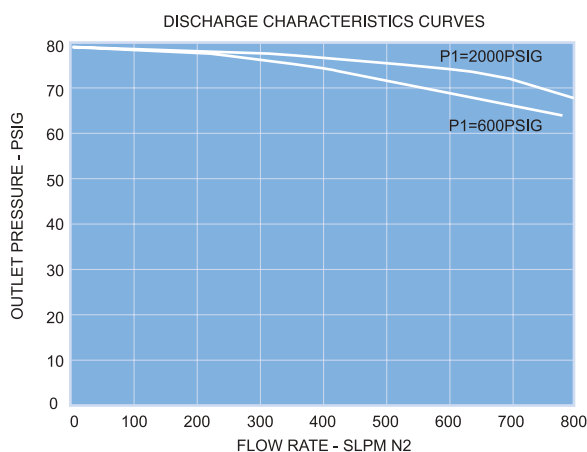
Positive Shutoff Seal Regulator

- No internal springs and threadless design to minimize particle entrapment areas.
- Metal to metal diaphragm seal enhances leak tight integrity.
- A strong mechanical link between the diaphragm and the valve stem prevents pressure creep.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating		
Max. rated inlet pressure	600, 1000, 3500 PSIG	
Outlet pressure ranges	1-30, 1-60, 1-100 or 1-150 PSIG	
Design proof pressure	150% of Maximum rated pressure	
Materials in Contact with Media		
Body	316L Stainless Steel	
Seat	3500 PSIG - PI / 1000 PSIG & 600 PSIG - PCTFE	
Diaphragm	Hastelloy C-22	
Gas contact parts	316L Stainless Steel / Hastelloy C-22	
Other Parameters		
Flow coefficient	Cv = 0.5	
Operating temperature	PCTFE seat	-44°C to +71°C
	PI seat	-26°C to +149°C
Inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He	
Weight (w/o gauges)	2.7lbs. (1.2kg)	

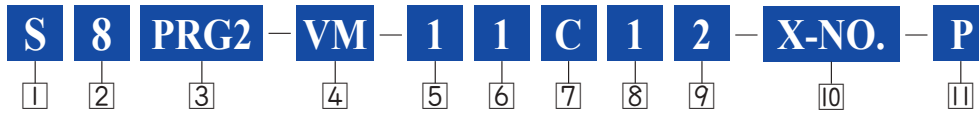
Flow Curves



MATERIAL

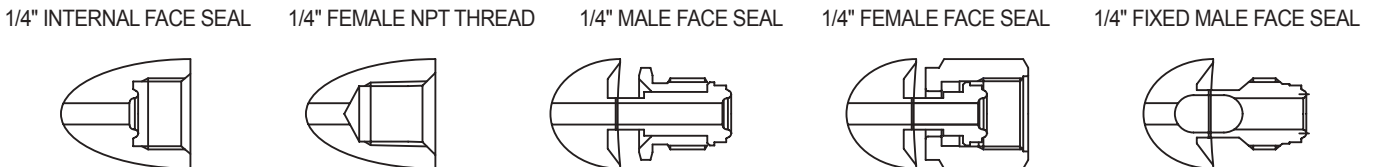
Wetted Parts	PRG2 Series
Body	316L Stainless Steel
Main Valve	316L Stainless Steel Hastelloy C-22
Seat	PFA PCTFE PI
Diaphragm	316L Stainless Steel Hastelloy C-22

Ordering Information

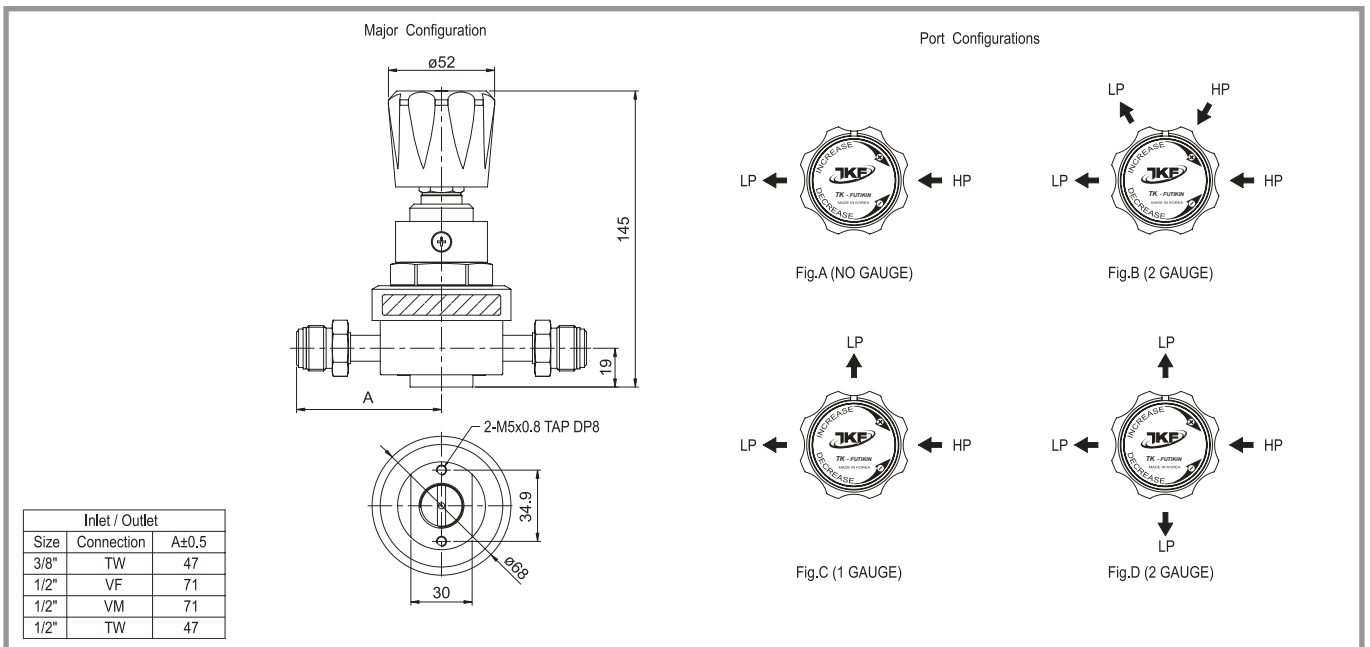


1 Material	S = 316L Stainless steel	SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals
2 Connection Size	6 = 3/8"	8 = 1/2"
3 Product	PRG2 Series	
4 Connection Type	NF = Female NPT Thread TW = Tube Butt Weld	VF = Female Type Face Seal VM = Male Type Face Seal
5 Maximum Inlet Pressure	1 = 3500 PSIG 2 = 1000 PSIG	3 = 600 PSIG
6 Maximum Range of Inlet Gauge	1 = 600 PSIG 2 = 1000 PSIG	3 = 3500 PSIG Blank = No Gauge
7 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B) H = 1/4" Female Face Seal (Fig. D)	I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig. B) O = 1/4" Female NPT Thread (Fig. C) P = 1/4" Female NPT Thread (Fig. D)
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG	2 = 1 ~ 100 PSIG 3 = 1 ~ 150 PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG	3 = 160 PSIG Blank = No Gauge
10 User Option	Customization (※Standard : Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in) PX = Electropolishing (5 Ra μ in)	

Gauge Port Information



Port Configuration



TRG Series



Ultra High Purity Regulator

- Designed for point-of-use medium flow to be used in process gas cabinets for gas companies, equipment manufactures and semiconductor manufacturers.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment.
- Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

All gases corrosive or non-corrosive or those requiring high purity regulation compatible with materials of construction. For other media, consult with factory.

Per criteria of ANSI / ASME B31.3.

Max. rated inlet pressure	3500 PSIG (241bar)
Outlet pressure ranges	1-30, 1-60, 1-100, 1-150 PSIG (0.1, 2.1, 0.1- 4.1, 0.1- 6.9, 0.1-10.3 bar)
Design proof pressure	150% of Maximum rated pressure

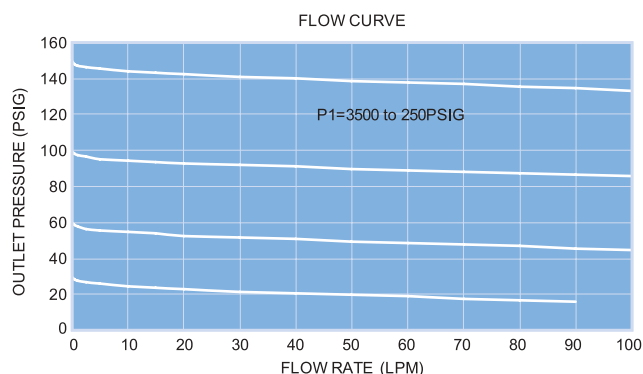
Materials in Contact with Media

Body	316L Stainless Steel with BA, Electropolish
Seat	PCTFE
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22 / Inconel 750

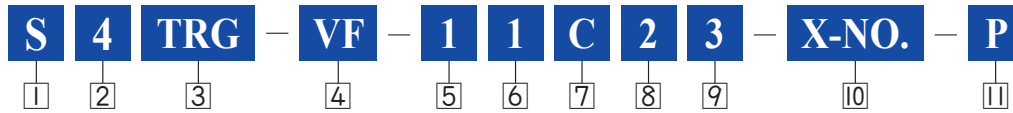
Other Parameters

Flow coefficient	Cv=0.06
Certified maximum inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He
Internal surface finish	10Ra or 5Ra microinck (.25 or .13 micrometer)
Operating temperature	PCTFE seat -15°F to +176°F (-26°C to +80°C)
Weight (w/o gauges)	3.5 lbs. (1.6kg)

Flow Curves

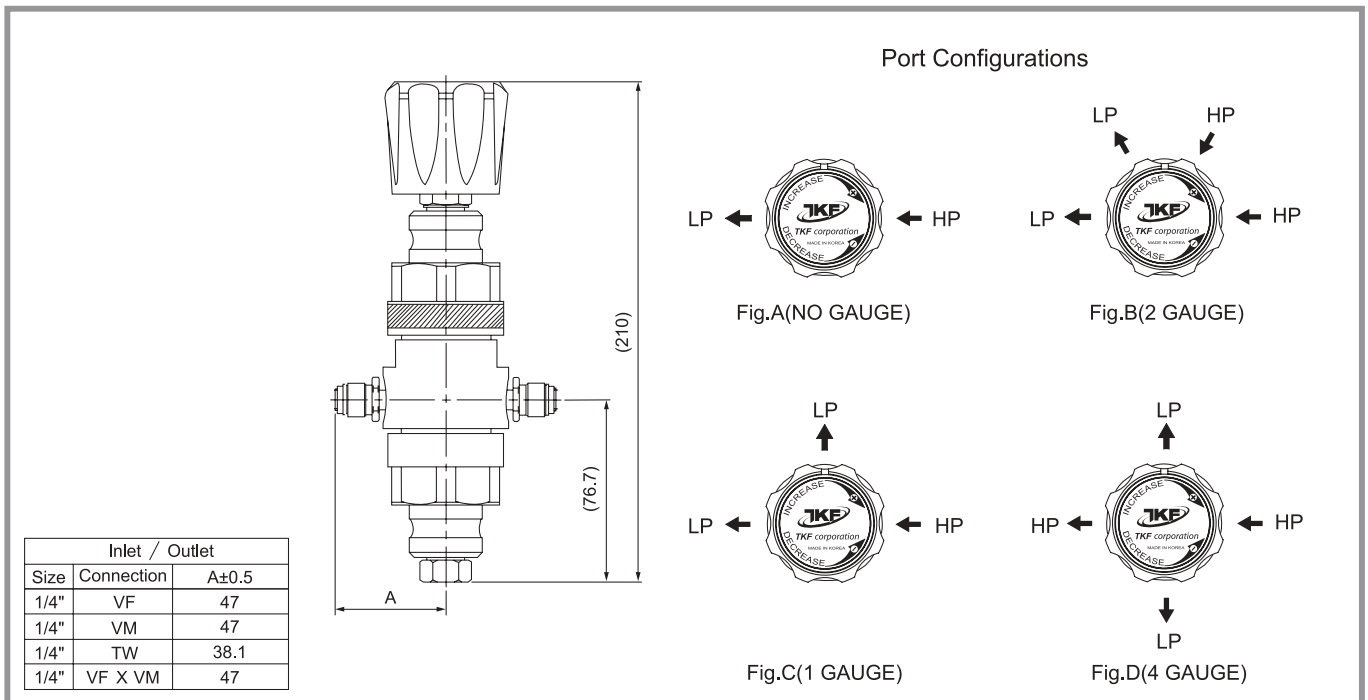


Ordering Information



1 Material	S = 316L Stainless steel SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals		
2 Connection Size	4 = 1/4"		
3 Product	TRG Series		
4 Connection Type	VF = Female Type Face Seal TW = Tube Butt Weld VM = Male Type Face Seal VF x VM = Female Type Face Seal x Male Type Face Seal		
5 Maximum Inlet Pressure	1 = 3500 PSIG		
6 Maximum Range of Inlet Gauge	1 = 4000 PSIG Blank = No Gauge		
7 Gauge Port Configuration	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B) </td> <td style="width: 50%; border: none;"> I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig.B) </td> </tr> </table>	A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B)	I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig.B)
A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B)	I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (Fig.B)		
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG 2 = 1 ~ 100 PSIG 3 = 1 ~ 150 PSIG		
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG 3 = 150 PSIG 4 = 200 PSIG Blank = No Gauge		
10 User Option	Customization (※Standard : Blank)		
11 Grade	Blank = BA Standard (10 Ra μ in) P (PX) = Electropolishing (5 Ra μ in)		

Port Configuration



BRG3 Series



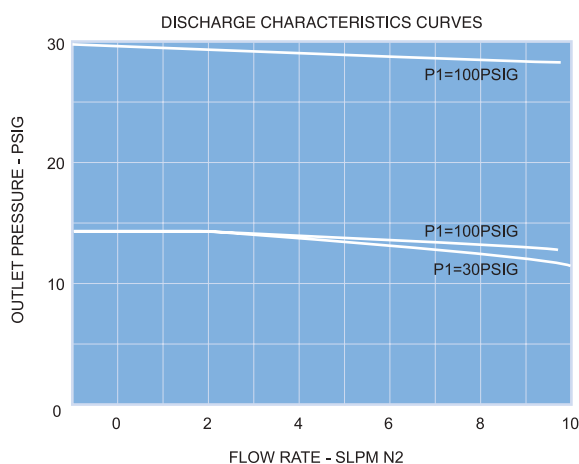
Mircro Block Regulator

- Compact size
- High performance with low hysteresis.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating	Per criteria of ANSI / ASME B31.3.
Max. rated inlet pressure	150 PSIG
Outlet pressure	1-30, 1-60, 1-100 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PCTFE
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22 / Inconel 750
Other Parameters	
Flow coefficient	Cv = 0.06
PCTFE seat	-40°C to +71°C
Inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He
Weight (w/o gauges)	1.2lbs. (530kg)

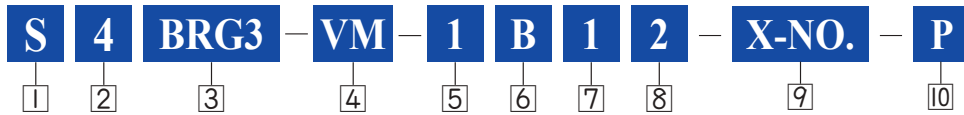
Flow Curves



MATERIAL

Wetted Parts	BRG3 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel Hastelloy C-22
Main Valve	316L Stainless Steel Hastelloy C-22
Valve Spring	SUS316-WPA Inconel 750
Seat	PCTFE
Diaphragm	Hastelloy C-22

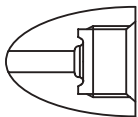
Ordering Information



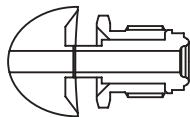
1 Material	S = 316L Stainless steel SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals
2 Connection Size	4 = 1/4" 6 = 3/8"
3 Product	BRG3 Series
4 Connection Type	TW = Tube Butt Weld VF = Female Type Face Seal VM = Male Type Face Seal VMF = Fixed Male Type Face Seal
5 Maximum Inlet Pressure	1 = 150 PSIG
6 Gauge Port Configuration	A = No Gauge Port B = 1/4" Internal Face Seal C = 1/4" Male Face Seal D = 1/4" Female Face Seal E = 1/4" Fixed Male Face Seal
7 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG 2 = 1 ~ 100 PSIG
8 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG Blank = No Gauge
9 User Option	Customization (※Standard : Blank)
10 Grade	Blank = BA Standard (10 Ra μin) P = Electropolishing (5 Ra μin) PX = Electropolishing (5 Ra μin)

Gauge Port Information

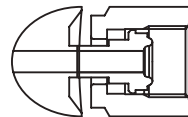
1/4" INTERNAL FACE SEAL



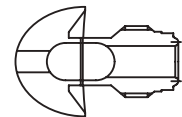
1/4" MALE FACE SEAL



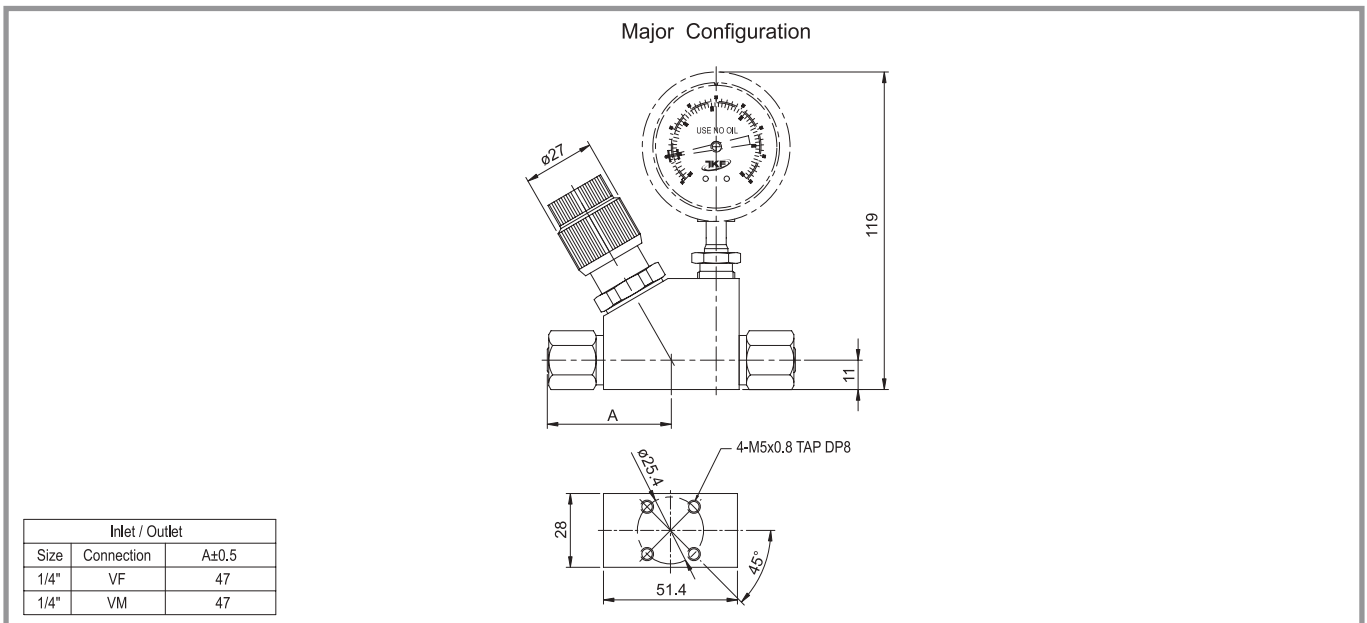
1/4" FEMALE FACE SEAL



1/4" FIXED MALE FACE SEAL



Port Configuration



MRG3 Series



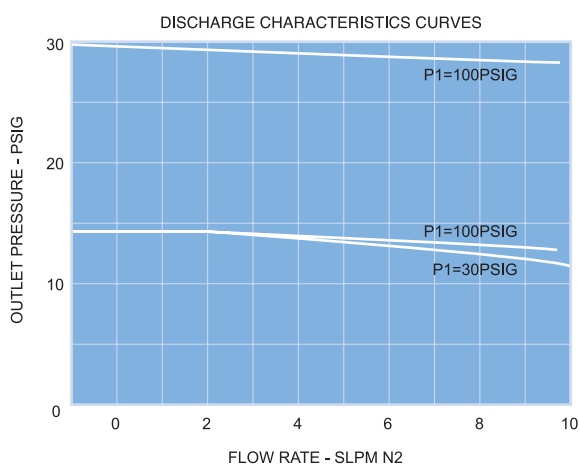
Micro Regulator

- Compact size
- High performance with low hysteresis.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating	
Max. rated inlet pressure	150 PSIG
Outlet pressure	1-30, 1-60, 1-100 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PCTFE
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22 / Inconel 750
Other Parameters	
Flow coefficient	Cv = 0.06
Temperature	-40°C to +71°C
Inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He
Weight (w/o gauges)	0.82lbs. (370g)

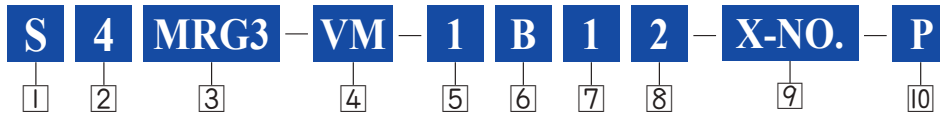
Flow Curves



MATERIAL

Wetted Parts	MRG3 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel Hastelloy C-22
Main Valve	316L Stainless Steel Hastelloy C-22
Valve Spring	SUS316-WPA Inconel 750
Seat	PCTFE
Diaphragm	Hastelloy C-22

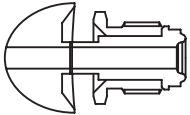
Ordering Information



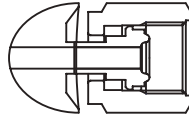
1 Material	S = 316L Stainless steel SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals
2 Connection Size	4 = 1/4" 6 = 3/8"
3 Product	MRG3 Series
4 Connection Type	TW = Tube Butt Weld VF = Female Type Face Seal VM = Male Type Face Seal VMF = Fixed Male Type Face Seal
5 Maximum Inlet Pressure	1 = 150 PSIG
6 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Male Face Seal (Fig. B) C = 1/4" Female Face Seal (Fig. B) D = 1/4" Fixed Male Face Seal (Fig. B)
7 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG 2 = 1 ~ 100 PSIG
8 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG Blank = No Gauge
9 User Option	Customization (※Standard : Blank)
10 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in) PX = Electropolishing (5 Ra μ in)

Gauge Port Information

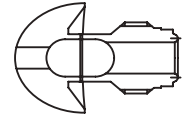
1/4" MALE FACE SEAL



1/4" FEMALE FACE SEAL



1/4" FIXED MALE FACE SEAL



Port Configuration

Major Configuration

Port Configurations

Fig.A (NO GAUGE)

Fig.B (1 GAUGE)

Inlet / Outlet		
Size	Connection	A \pm 0.5
1/4"	VF	35.3
1/4"	VM	35.3
1/4"	SW	35.7

MRG4 Series

Micro Regulator

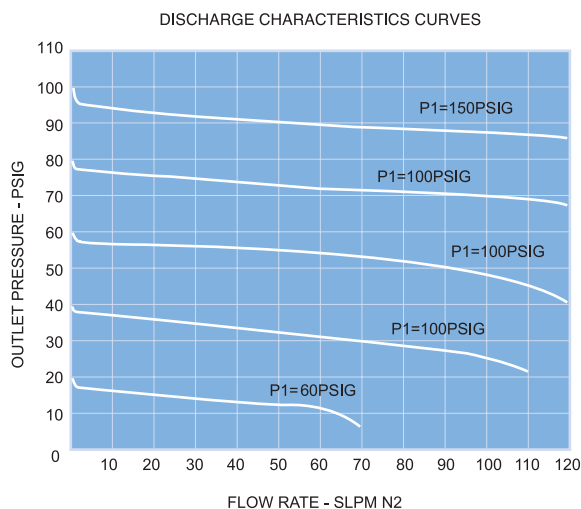


- Compact size
- High performance with low hysteresis.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating	
Max. rated inlet pressure	150 PSIG
Outlet pressure	3-30, 3-60, 3-100 or 1-150 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel with BA, Electropolish
Seat	PCTFE
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22 / Inconel 750
Other Parameters	
Flow coefficient	Cv = 0.08
Temperature	-40°C to +71°C
Inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He

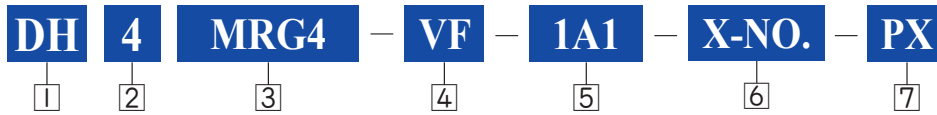
Flow Curves



MATERIAL

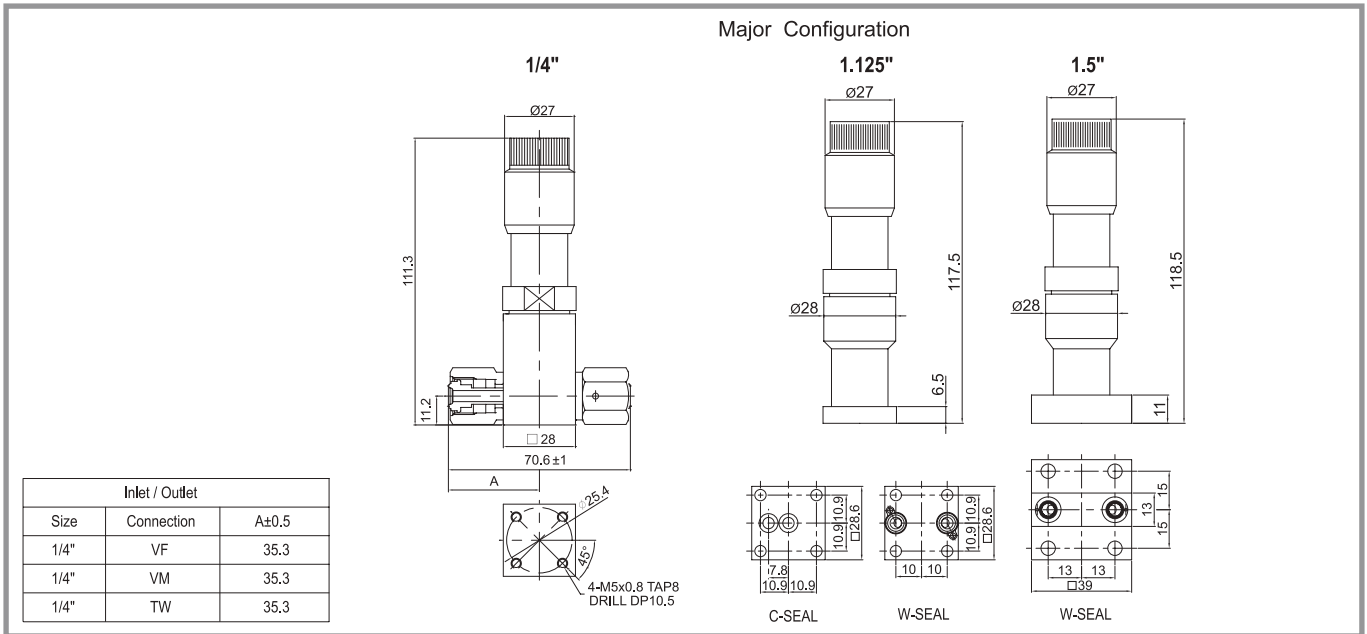
Wetted Parts	MRG4 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel Hastelloy
Main Valve	316L Stainless Steel Hastelloy
Valve Spring	SUS316-WPA Inconel 750
Seat	PCTFE
Diaphragm	Hastelloy C-22

Ordering Information



1 Material	S = 316L Stainless steel SH = 316L Stainless steel with Hastelloy internals HH = Hastelloy DH = 316L Stainless steel VAR with Hastelloy internals
2 Size	4 = 1/4" 11 = 1.125" 15 = 1.5"
3 Product	MRG4 Series
4 Connection Type	VM = Male Type Face Seal VF = Female Type Face Seal TW = Tube Butt Weld 2W = W-Seal 2C = C-Seal
5 Outlet Pressure Range	1A0 = 3-30PSIG 1A1 = 3-60PSIG 1A2 = 3-100PSIG
6 User Option	Customization (※Standard : Blank)
7 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in) PX = Electropolishing (5 Ra μ in)

Port Configuration



MRG5 Series



Micro Regulator

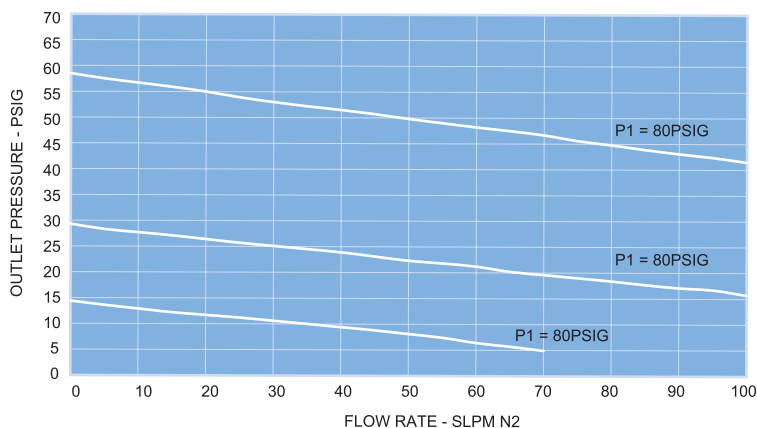
- Compact size
- High performance with low hysteresis.
- All internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment. Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating	
Max. rated inlet pressure	500 PSIG
Outlet pressure	1-30, 1-60, 1-100 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PCTFE
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel / Hastelloy C-22
Other Parameters	
Flow coefficient	Cv = 0.1
Temperature	-40°C to +71°C
Inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He
Weight (w/o gauges)	0.82lbs. (370g)

Flow Curves

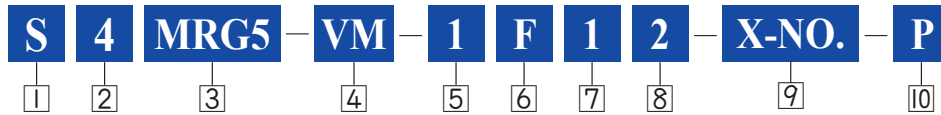
REGULATOR DISCHARGE CHARACTERISTICS CURVE



MATERIAL

Wetted Parts	MRG5 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel Hastelloy C-22
Main Valve	316L Stainless Steel Hastelloy C-22
Valve Spring	SUS316-WPA Inconel 750
Seat	PCTFE
Diaphragm	Hastelloy C-22

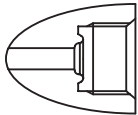
Ordering Information



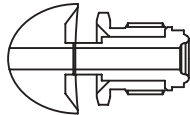
1 Material	S = 316L Stainless steel SH = 316L Stainless steel with Hastelloy internals DH = 316L Stainless steel VAR with Hastelloy internals
2 Connection Size	4 = 1/4"
3 Product	MRG5 Series
4 Connection Type	TW = Tube Butt Weld VF = Female Type Face Seal VM = Male Type Face Seal VMF = Fixed Male Type Face Seal
5 Maximum Inlet Pressure	1 = 500 PSIG
6 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Male Face Seal (Fig. B) C = 1/4" Female Face Seal (Fig. B) D = 1/4" Fixed Male Face Seal (Fig. B) E = 1/4" Internal Face Seal (Fig. C) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Female Face Seal (Fig. C) H = 1/4" Fixed Male Face Seal (Fig. C)
7 Outlet Pressure Range	0 = 1~ 30 PSIG 1 = 1~ 60 PSIG 2 = 1~100 PSIG
8 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG Blank = No Gauge
9 User Option	Customization (*Standard : Blank)
10 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in) PX = Electropolishing (5 Ra μ in)

Gauge Port Informaiton

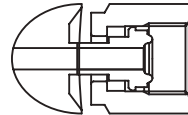
1/4" INTERNAL FACE SEAL



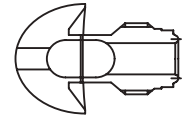
1/4" MALE FACE SEAL



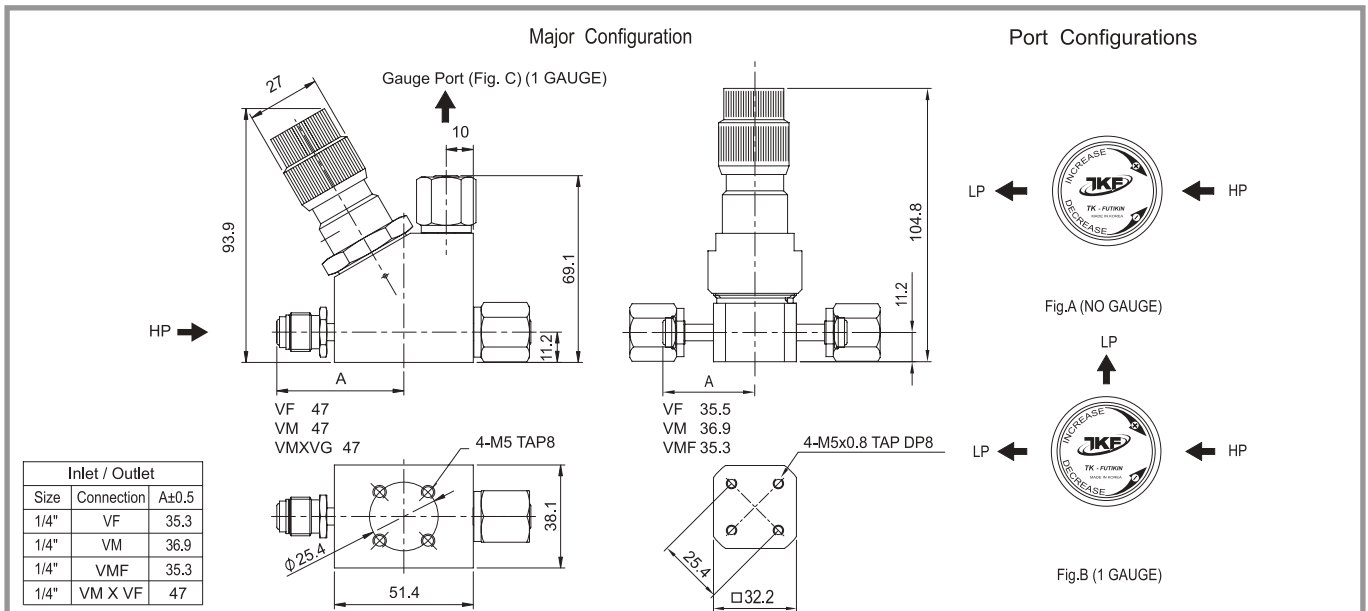
1/4" FEMALE FACE SEAL



1/4" FIXED MALE FACE SEAL



Port Configuration



HFRG Series

High Flow Regulator



- A regulator for the control of high purity, corrosive, toxic, flammable and inert gases at high flow rate and low pressure.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Fluid Media

A regulator for the control of high purity, corrosive, toxic, flammable and inert gases at high flow rate and low pressure.

Pressure Rating (Per criteria of ANSI / ASME B31.3.)

Max. rated inlet pressure	200, 500 PSIG
Outlet pressure ranges	1-30, 2-75 and 5-150 PSIG
Design proof pressure	150% of Maximum rated pressure

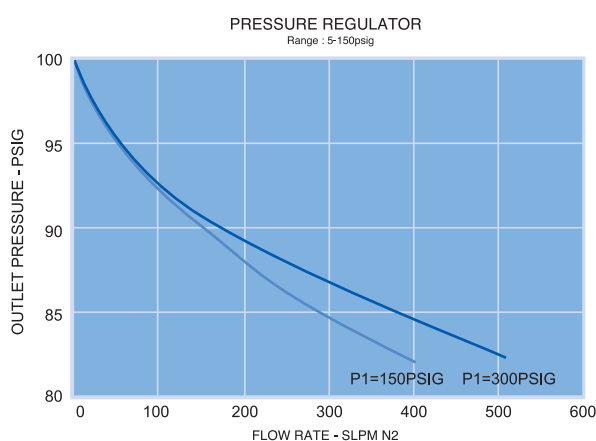
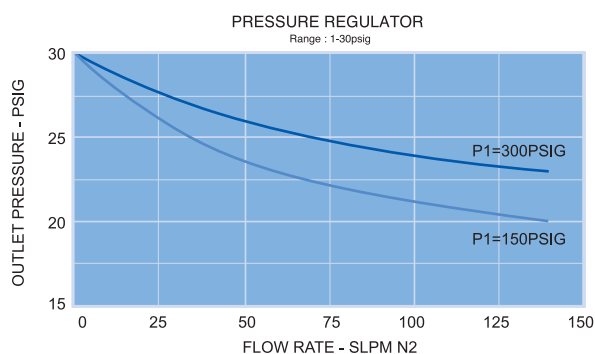
Materials in Contact with Media

Body	316L Stainless Steel
Seat	FKM
Diaphragm	PTFE
Gas contact parts	316L Stainless Steel with BA, Electropolish

Other Parameters

Flow coefficient	Cv = 0.85
Inboard leak rate	2×10^{-8} scc / sec He
Temperature	-15°F to +165°F (-26°C to +73°C)

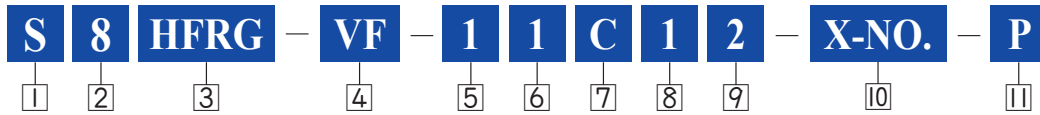
Flow Curves



MATERIAL

Wetted Parts	HFRG Series
Body	316L Stainless Steel
Main Valve	316L Stainless Steel
Valve Spring	316L Stainless Steel
Seat	FKM
Diaphragm	PTFE

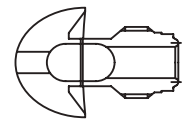
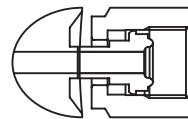
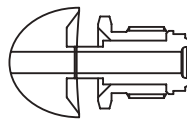
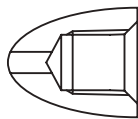
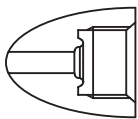
Ordering Information



1 Material	S = 316L Stainless steel D = 316L Stainless steel VAR	
2 Connection Size	4 = 1/4" 6 = 3/8" 8 = 1/2"	
3 Product	HFRG SERIES	
4 Connection Type	NF = Female NPT Thread SW = Compression Lok Fitting TW = Tube Butt Weld	VF = Female Type Face Seal VM = Male Type Face Seal VMF = Fixed Male Type Face Seal
5 Maximum Inlet Pressure	1 = 500 PSIG 2 = 200 PSIG	
6 Maximum Range of Inlet Gauge	1 = 300 PSIG 2 = 600 PSIG Blank = No Gauge	
7 Gauge Port Configuration	A = NONE (fig. A) B = 1/4" Internal Face Seal (fig. C) C = 1/4" Internal Face Seal (fig. B) D = 1/4" Internal Face Seal (fig. D) E = 1/4" Male Face Seal (fig. D) F = 1/4" Male Face Seal (fig. C) G = 1/4" Male Face Seal (fig. B) H = 1/4" Female Face Seal (fig. D)	I = 1/4" Female Face Seal (fig. C) J = 1/4" Female Face Seal (fig. B) K = 1/4" Fixed Male Face Seal (fig. B) L = 1/4" Fixed Male Face Seal (fig. C) M = 1/4" Fixed Male Face Seal (fig. D) N = 1/4" Female NPT Thread (fig. B) O = 1/4" Female NPT Thread (fig. C) P = 1/4" Female NPT Thread (fig. D)
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 2 ~ 75 PSIG 2 = 5 ~ 150 PSIG	
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 100 PSIG 2 = 160 PSIG 3 = 60 PSIG Blank = No Gauge	
10 User Option	Customization (※Standard:Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in)	

Gauge Port Information

1/4" INTERNAL FACE SEAL 1/4" FEMALE NPT THREAD 1/4" MALE FACE SEAL 1/4" FEMALE FACE SEAL 1/4" FIXED MALE FACE SEAL



Port Configuration

Major Configuration

Inlet / Outlet		
Size	Connection	A \pm 0.5
1/4"	VM	54.5
1/4"	VF	54.5
1/4"	SW	52.5
1/4"	TW	47.5
1/4"	NF	30
3/8"	TW	63.5
3/8"	SW	58.2
1/2"	VF	64.5
1/2"	VM	63.5
1/2"	SW	58.2
1/2"	TW	63.5
1/2"	NF	35

Port Configurations

Fig.A (NO GAUGE)

Fig.B (2 GAUGE)

Fig.C (1 GAUGE)

Fig.D (2 GAUGE)

HFRG2 Series



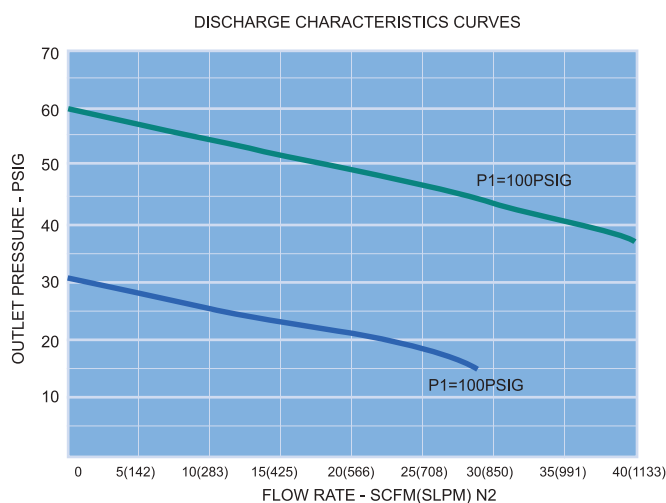
High Flow Regulator

- A regulator for the control of high purity, corrosive, toxic, flammable and inert gases at high flow rate and low pressure.
- Metal to metal diaphragm seals provide enhances leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure Rating	
Max. rated inlet pressure	150 or 250 PSIG
Outlet pressure ranges	1-30, 1-60, 1-100 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PFA
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel
Other Parameters	
Flow coefficient	Cv = 1.6
Certified maximum inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He
Internal Surface Finish	5 Ra or 10 Ra microinch
Operating temperature	PFA® seat : -15°F to 200°F (-26°C to 93°C)
Weight (w/o gauges)	3.5lbs. (1.6kg)

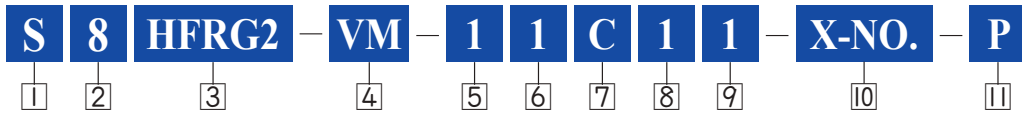
Flow Curves



MATERIAL

Wetted Parts	HFRG2 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel
Main Valve	316L Stainless Steel
Valve Spring	SUS316L-WPA
Seat	PFA
Diaphragm	Hastelloy C-22

Ordering Information



1 Material	S = 316L Stainless steel D = 316L Stainless steel VAR	
2 Connection Size	4 = 1/4" 6 = 3/8" 8 = 1/2" 12 = 3/4"	
3 Product	HFRG2 SERIES	
4 Connection Type	TW = Tube Butt Weld VF = Female Type Face Seal VM = Male Type Face Seal	VMF = Fixed Male Type Face Seal SW = Compression Lok Fitting VCO = VCO Type Face Seal
5 Maximum Inlet Pressure	1 = 250 PSIG 2 = 150 PSIG	
6 Maximum Range of Inlet Gauge	1 = 200 PSIG 2 = 300 PSIG Blank = No Gauge	
7 Gauge Port Configuration	A = NONE (fig. A) B = 1/4" Internal Face Seal (fig. C) C = 1/4" Internal Face Seal (fig. B) D = 1/4" Internal Face Seal (fig. D) E = 1/4" Male Face Seal (fig. D) F = 1/4" Male Face Seal (fig. C) G = 1/4" Male Face Seal (fig. B) H = 1/4" Female Face Seal (fig. D)	I = 1/4" Female Face Seal (fig. C) J = 1/4" Female Face Seal (fig. B) K = 1/4" Fixed Male Face Seal (fig. B) L = 1/4" Fixed Male Face Seal (fig. C) M = 1/4" Fixed Male Face Seal (fig. D) N = 1/4" Female NPT Thread (fig. B) O = 1/4" Female NPT Thread (fig. C) P = 1/4" Female NPT Thread (fig. D)
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG 2 = 1 ~ 100 PSIG	
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG	3 = 160 PSIG Blank = No Gauge
10 User Option	Customization (※Standard:Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in)	

Gauge Port Information

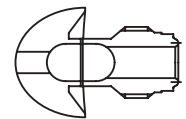
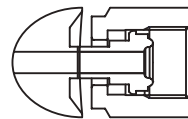
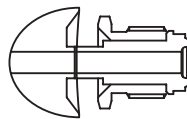
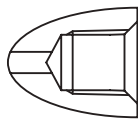
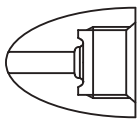
1/4" INTERNAL FACE SEAL

1/4" FEMALE NPT THREAD

1/4" MALE FACE SEAL

1/4" FEMALE FACE SEAL

1/4" FIXED MALE FACE SEAL



Port Configuration

Major Configuration

Inlet / Outlet		
Size	Connection	A±0.5
1/4"	VMF	50.4
1/4"	VF	52
1/4"	VM	52
1/4"	SW	52.5
1/2"	VF	71
1/2"	VM	71
1/2"	SW	58.2
1/2"	TW	47
1/2"	VCO	57
3/4"	TW	71
3/4"	VM	71
3/4"	VF	71
3/4"	SW	65

Port Configurations

Fig.A (NO GAUGE)

Fig.B (2 GAUGE)

Fig.C (1 GAUGE)

Fig.D (2 GAUGE)

HFRG3 Series



High Flow Regulator

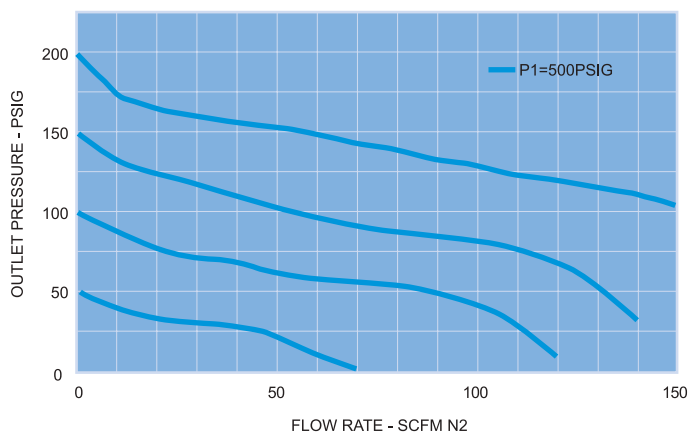
- A regulator for the control of high purity, corrosive, toxic, flammable and inert gases at high flow rate.
- Metal to metal diaphragm seals provide enhances leak tight integrity.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.

Specifications

Pressure (Rating per criteria of ANSI/ASME B31.3)	
Max. rated inlet pressure	500 PSIG
Outlet pressure ranges	1-25, 1-50, 1-100, 1-150 & 1-200 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PFA
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel
Other Parameters	
Flow coefficient	Cv = 1.0
Certified maximum inboard leak rate	1 x 10 ⁻⁹ atm cc / sec He
Leakage	internal : bubble-tight
Operating temperature	-15°F to 165°F (-26°C to 74°C)
Weight (w/o gauges)	3.7lbs. (1.7kg)

Flow Curves

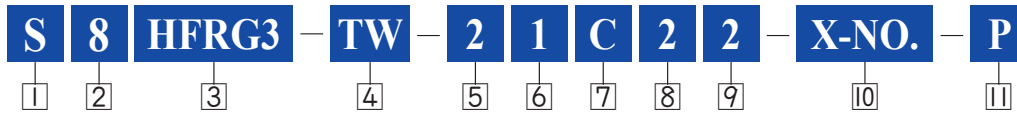
DISCHARGE CHARACTERISTICS CURVES



MATERIAL

Wetted Parts	HFRG3 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel
Main Valve	316L Stainless Steel
Valve Spring	316L Stainless Steel
Seat	PFA
Diaphragm	Hastelloy C-22

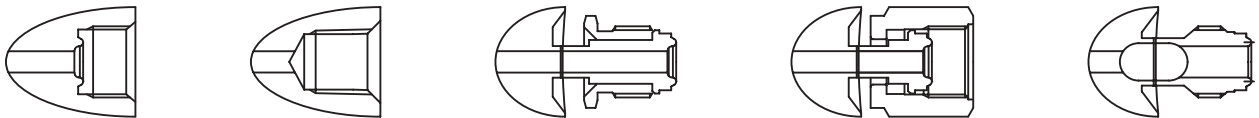
Ordering Information



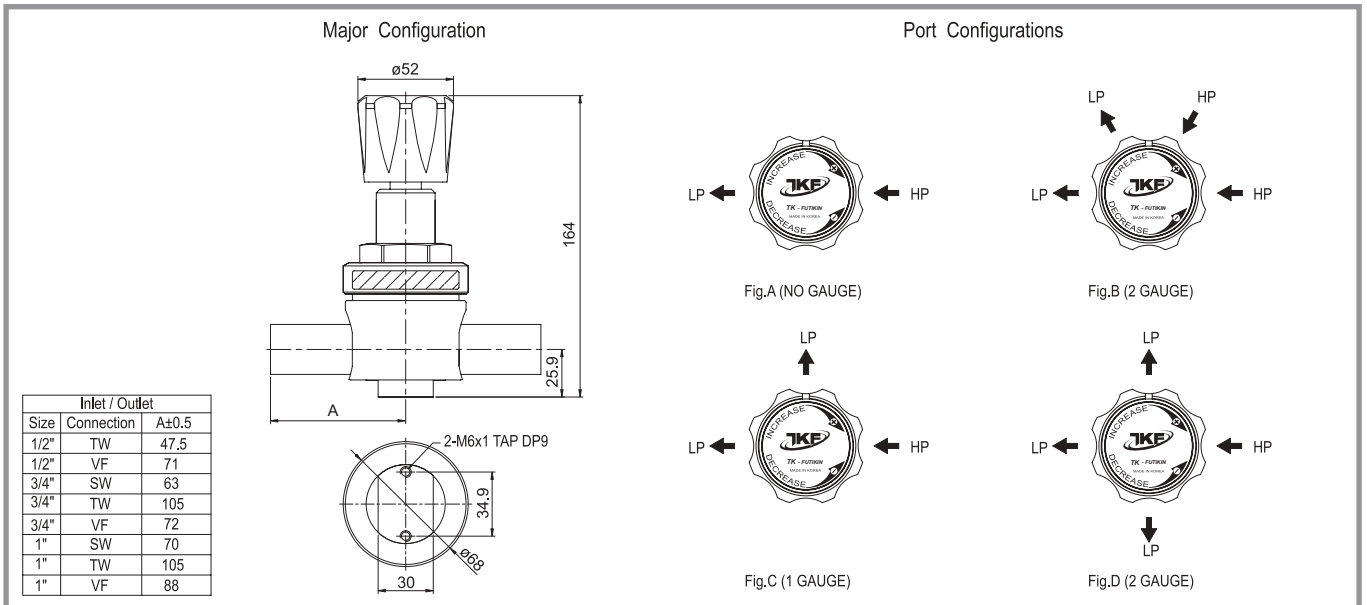
1 Material	S = 316L Stainless steel	D = 316L Stainless steel VAR
2 Connection Size	6 = 3/8" (NPT) 8 = 1/2" (NPT) 12 = 3/4" (TUBE) 8 = 1/2" (TUBE)	16 = 1" (TUBE) 15A 20A 25A
3 Product	HFRG3 SERIES	
4 Connection Type	NF = Female NPT Thread TW = Tube Butt Weld VF = Female Type Face Seal	VM = Male Type Face Seal SW = Compression Lok Fitting
5 Maximum Inlet Pressure	2 = 500PSIG	
6 Maximum Range of Inlet Gauge	1 = 600 PSIG	Blank = No Gauge
7 Gauge Port Configuration	A = NONE (fig. A) B = 1/4" Internal Face Seal (fig. C) C = 1/4" Internal Face Seal (fig. B) D = 1/4" Internal Face Seal (fig. D) E = 1/4" Male Face Seal (fig. D) F = 1/4" Male Face Seal (fig. C) G = 1/4" Male Face Seal (fig. B) H = 1/4" Female Face Seal (fig. D)	I = 1/4" Female Face Seal (fig. C) J = 1/4" Female Face Seal (fig. B) K = 1/4" Fixed Male Face Seal (fig. B) L = 1/4" Fixed Male Face Seal (fig. C) M = 1/4" Fixed Male Face Seal (fig. D) N = 1/4" Female NPT Thread (fig. B) O = 1/4" Female NPT Thread (fig. C) P = 1/4" Female NPT Thread (fig. D)
8 Outlet Pressure Range	0 = 1 ~ 25PSIG 1 = 1 ~ 50PSIG 2 = 1 ~ 100PSI	3 = 1 ~ 150PSIG 4 = 1 ~ 200PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 160 PSIG 3 = 200 PSIG	4 = 300 PSIG 5 = 100 PSIG Blank = No Gauge
10 User Option	Customization (*Standard:Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in)	P = Electropolishing (5 Ra μ in)

Gauge Port Informaiton

1/4" INTERNAL FACE SEAL 1/4" FEMALE NPT THREAD 1/4" MALE FACE SEAL 1/4" FEMALE FACE SEAL 1/4" FIXED MALE FACE SEAL



Port Configuration



HFRG4 Series



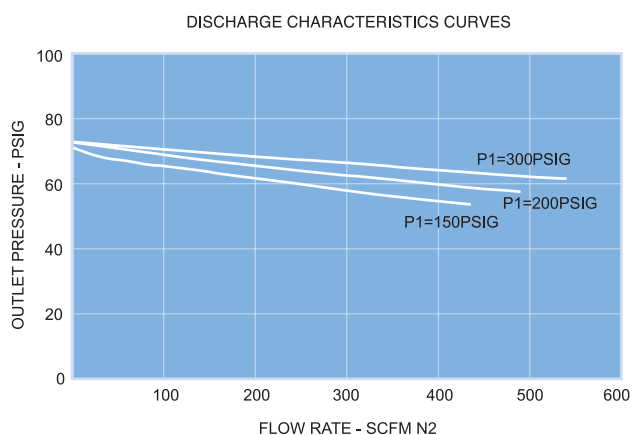
High Flow Regulator

- A regulator for the control of high purity, corrosive, toxic, flammable and inert gases at high flow rate and low pressure.
- Every step of assembly, welding, testing and final cleaning finished in Class 100 Cleanrooms.
- Low droop and High flow.

Specifications

Pressure Rating	
Max. rated inlet pressure	300 PSIG
Outlet pressure	1-30, 1-60, 1-100 or 1-150 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	FKM
Diaphragm	PTFE
Gas contact parts	316L Stainless Steel
Other Parameters	
Flow coefficient	1/2" = Cv2.0, 3/4" = Cv3.0, 1" = Cv5.0
Temperature	PTFE : -44°C to + 71°C
Inboard leak rate	2×10^{-8} atm cc / sec He
Weight (w/o gauges)	15lbs. (6.8kg)

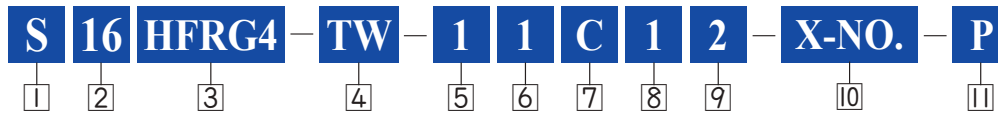
Flow Curves



MATERIAL

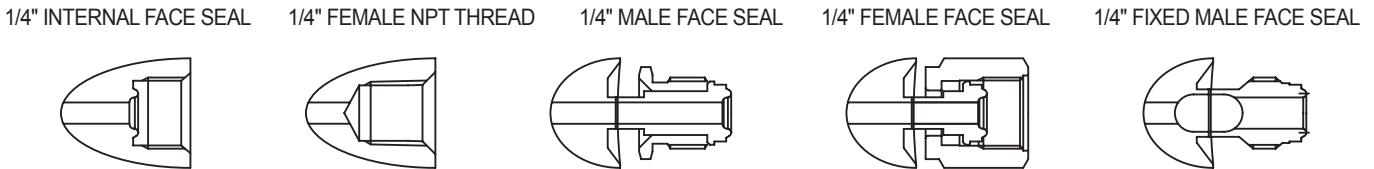
Wetted Parts	HFRG4 Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel
Main Valve	316L Stainless Steel FKM
Valve Spring	316L Stainless Steel
Seat	FKM
Diaphragm	PTFE

Ordering Information

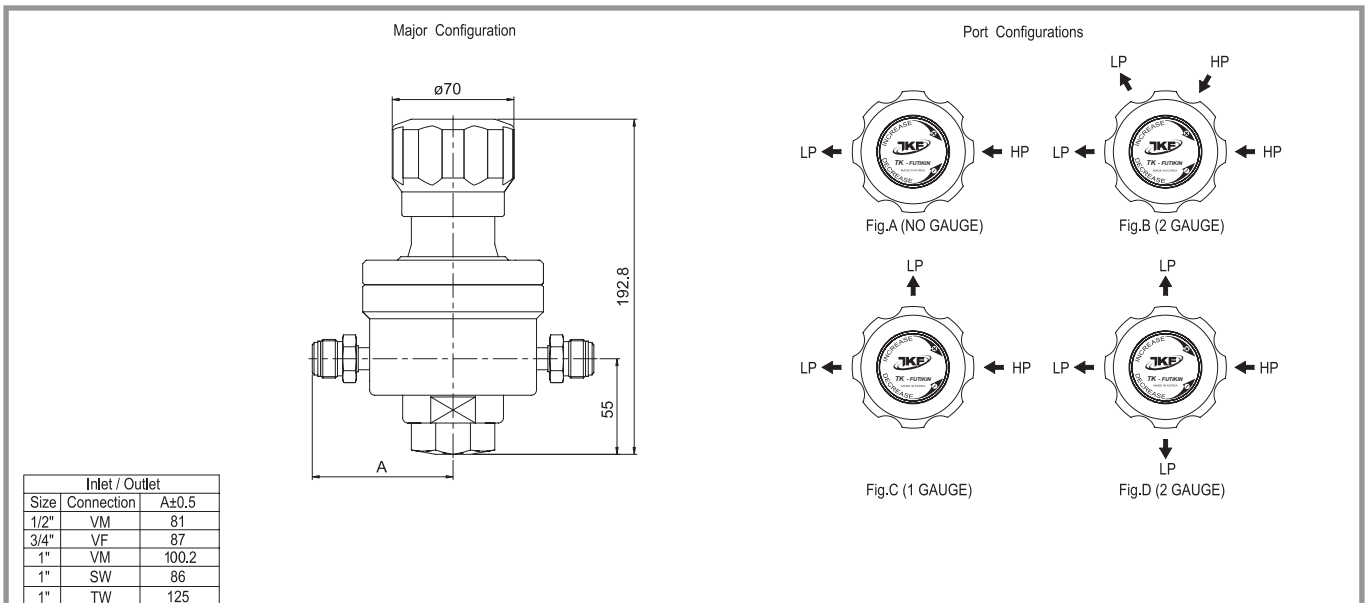


1 Material	S = 316L Stainless steel D = 316L Stainless steel VAR	
2 Connection Size	8 = 1/2" 12 = 3/4" 16 = 1"	
3 Product	HFRG4 SERIES	
4 Connection Type	TW = Tube Butt Weld VF = Female Type Face Seal VM=Male Type Face Seal	
5 Maximum Inlet Pressure	1 = 300 PSIG	
6 Maximum Range of Inlet Gauge	1 = 300 PSIG Blank = No Gauge	
7 Gauge Port Configuration	A = No Gauge Port (Fig. A) B = 1/4" Internal Face Seal (Fig. C) C = 1/4" Internal Face Seal (Fig. B) D = 1/4" Internal Face Seal (Fig. D) E = 1/4" Male Face Seal (Fig. D) F = 1/4" Male Face Seal (Fig. C) G = 1/4" Male Face Seal (Fig. B) H = 1/4" Female Face Seal (Fig. D) I = 1/4" Female Face Seal (Fig. C) J = 1/4" Female Face Seal (Fig. B) K = 1/4" Fixed Male Face Seal (Fig. B) L = 1/4" Fixed Male Face Seal (Fig. C) M = 1/4" Fixed Male Face Seal (Fig. D) N = 1/4" Female NPT Thread (fig. B) O = 1/4" Female NPT Thread (fig. C) P = 1/4" Female NPT Thread (fig. D)	
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG	2 = 1 ~ 100 PSIG 3 = 1 ~ 150 PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG	3 = 160 PSIG Blank = No Gauge
10 User Option	Customization (※Standard : Blank)	
11 Grade	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in)	

Gauge Port Informaiton



Port Configuration



AHFRG Series



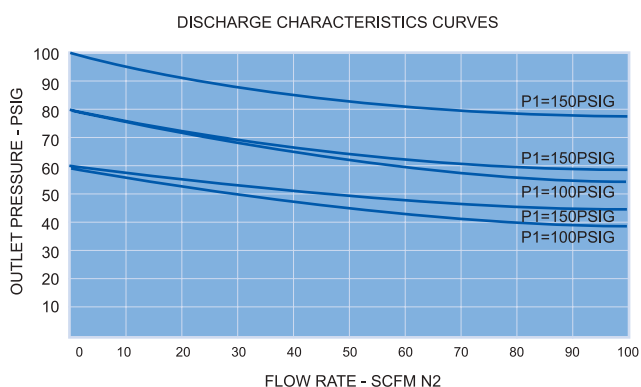
A size High Flow Regulator

- Internal surfaces are finished with 10Ra or 5Ra to ensure minimal particle generation and entrapment.
- Every step of assembly, welding, testing and final cleaning finished in class 100 cleanrooms.
- High flow.

Specifications

Pressure Rating	
Pressure rating per criteria of ANSI/ASME B31.3 Maximum rated inlet pressure	300 PSIG (21.1 kg/cm ²)
Maximum outlet pressure	130 PSIG (9.1 kg/cm ²)
Design proof pressure	150% of maximum rated pressure
Design burst pressure	400% of maximum operating pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PTFE
Diaphragm	316L Stainless Steel
Gas contact parts	316L Stainless Steel
Other Parameters	
Inboard leak rate	2 x 10 ⁻⁸ atm cc / sec He
Operating temperature	-20°F to +150°F (-29°C to +65°C)
Flow coefficient	Cv = 8.0

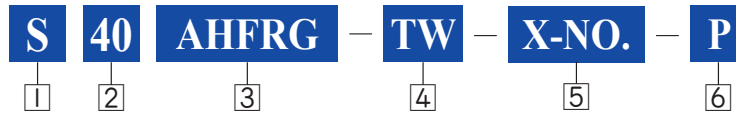
Flow Curves



MATERIAL

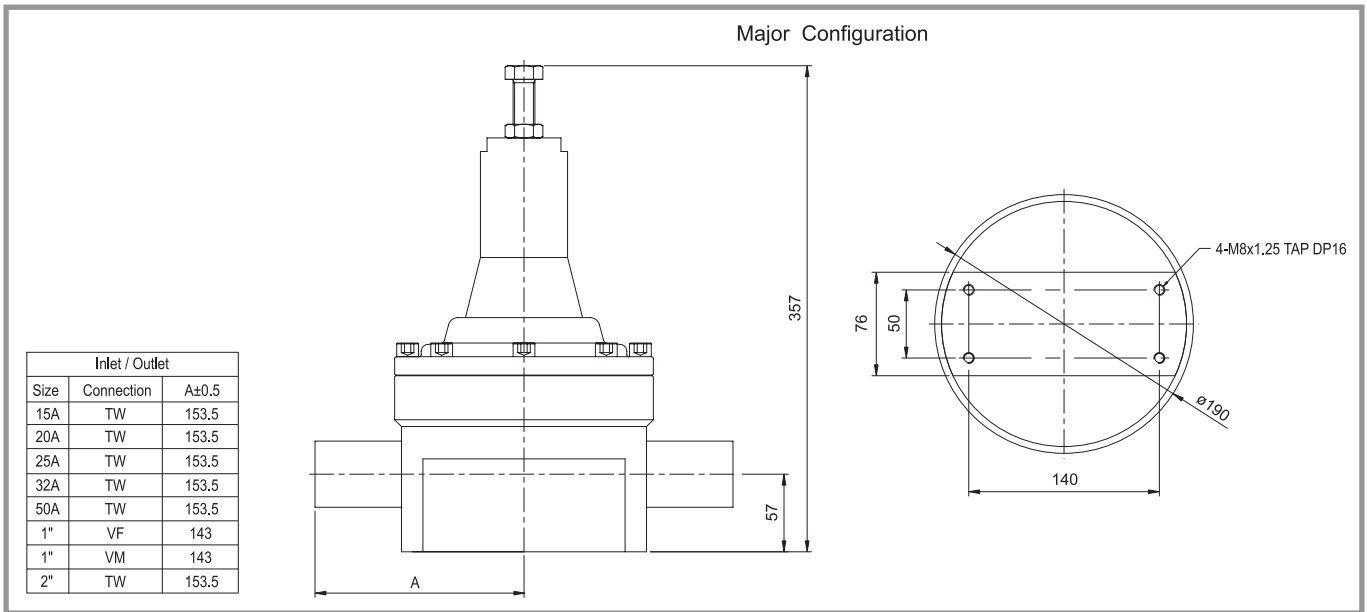
Wetted Parts	AHFRG Series
Body	316L Stainless Steel
Seat Holder	316L Stainless Steel
Main Valve	316L Stainless Steel
Valve Spring	316L Stainless Steel
Seat	PTFE
Diaphragm	316L Stainless Steel

Ordering Information



1 Material	S = 316L Stainless steel D = 316L Stainless steel VAR
2 Connection Size	15 = 15A 20 = 20A 25 = 25A 40 = 40A 50 = 50A T24 = 1-1/2" T32 = 2" For other sizes, please consult factory.
3 Product	AHFRG Series
4 Connection Type	TW = Tube Butt Weld
5 Outlet Pressure Range	Customization (※Standard : Blank)
6 Gauge	Blank = BA Standard (10 Ra μ in) P = Electropolishing (5 Ra μ in)

Port Configuration



CORG Series (Crossover Board)

Crossover Board Regulator

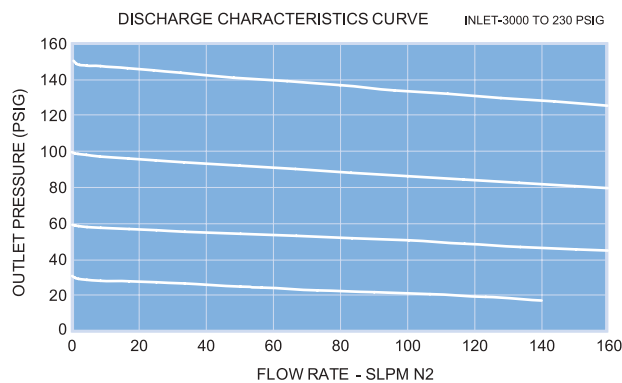


- Max inlet pressure 3500 psig, outlet pressure 150 psig.
- Metal-to-metal diaphragm seals provide enhanced leak tight integrity.
- Constant Gas Supply.
- Panel Mounting Bracket standard.

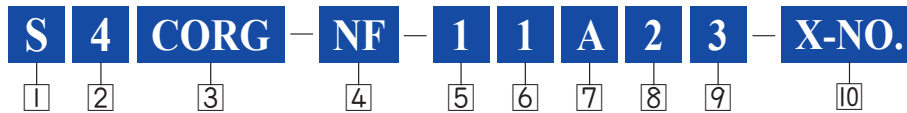
Specifications

Pressure Rating	Per criteria of ANSI / ASME B31.3.
Maximum rated inlet pressure	3500 PSIG (241.3 bar)
Outlet pressure ranges	1-30, 1-60, 1-100, 1-150 PSIG
Design proof pressure	150% of Maximum rated pressure
Materials in Contact with Media	
Body	316L Stainless Steel
Seat	PCTFE
Diaphragm	Hastelloy C-22
Gas contact parts	316L Stainless Steel
Other Parameters	
Flow coefficient	Cv = 0.06
Certified maximum inboard leak rate	2×10^{-8} atm cc / sec He
Internal surface finish	-10Ra microinch (.25 micrometer)
Operating temperature	-15°F to +165°F (-26°C to +74°C)
Weight (w/o gauges)	2.7lbs. (3.5kg)

Flow Curves

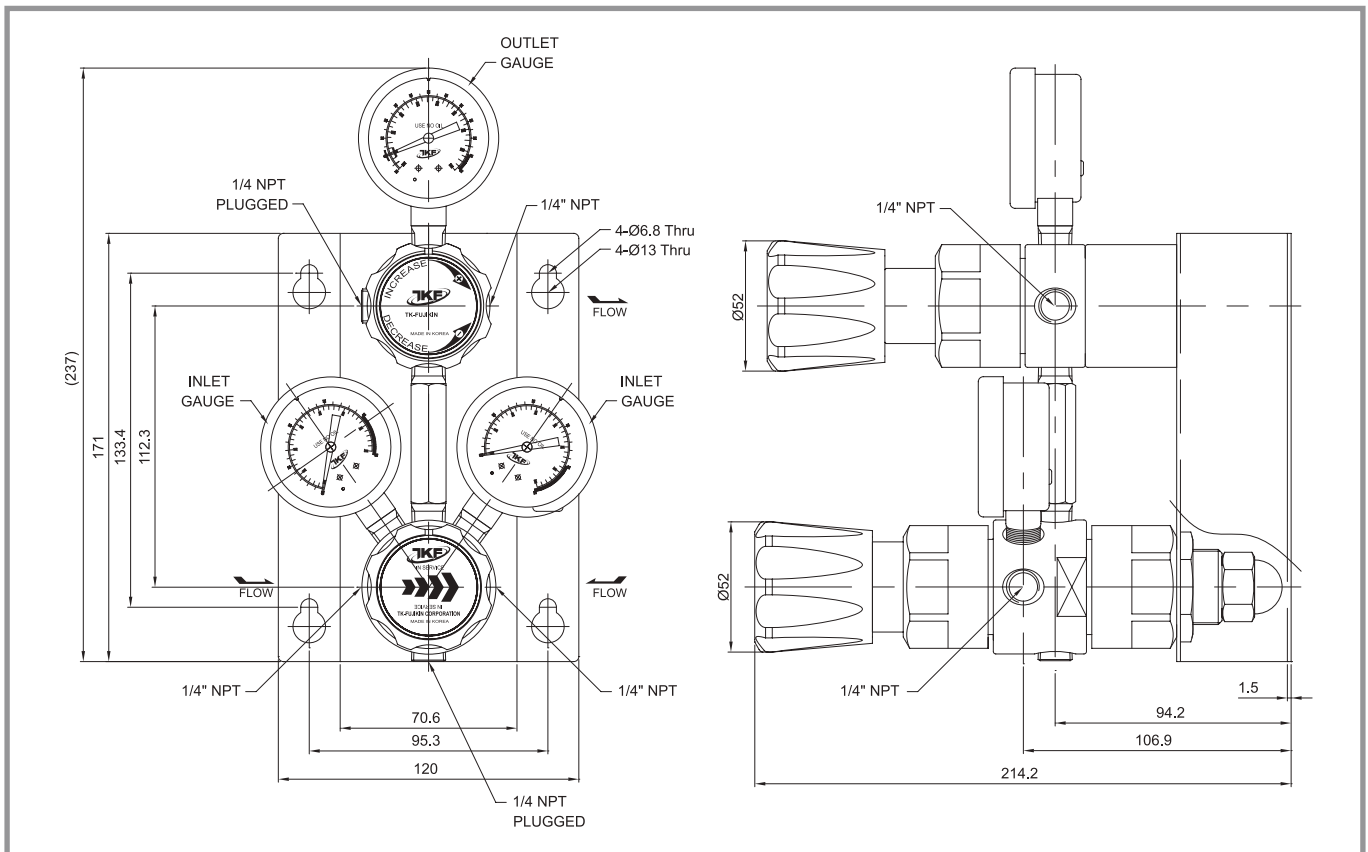


Ordering Information



1 Material	S = 316L Stainless steel
2 Connection Size	4 = 1/4"
3 Product	CORG SERIES
4 Connection Type	NF = Female NPT Thread
5 Maximum Inlet Pressure	1 = 3500 PSIG
6 Maximum Range of Inlet Gauge	1 = 3500 PSIG 2 = 4000 PSIG
7 Gauge Port Configuration	A = 1/4" Female NPT Thread
8 Outlet Pressure Range	0 = 1 ~ 30 PSIG 1 = 1 ~ 60 PSIG 2 = 1 ~ 100 PSIG 3 = 1 ~ 150 PSIG
9 Maximum Range of Outlet Gauge	0 = 30 PSIG 1 = 60 PSIG 2 = 100 PSIG 3 = 160 PSIG 4 = 200 PSIG
10 User Option	Customization (*Standard:Blank)

Port Configuration



MEMO



High Purity Gas Pressure **Regulator**

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requirement with most reliable and cost-effective solution is our business.*



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