

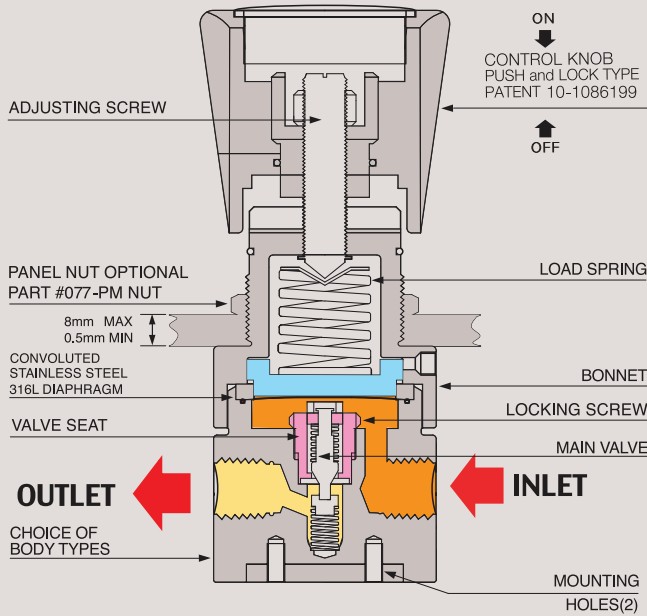


077 S E R I E S

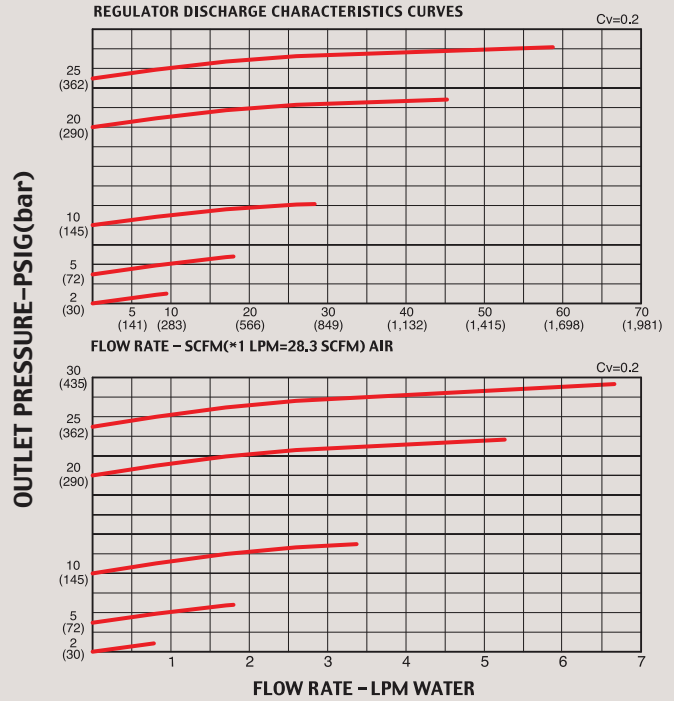
Relief / Backpressure Reducing Regulators



FUNCTIONAL SCHEMATIC



FLOW CHART



077 Backpressure Low Pressure

Relief / Backpressure NPT 1/4"

- 077시리즈는 Relief / Back Pressure Regulator로서 물, 케미칼, Liquid 또는 가스 등의 저 압력 (Low Pressure) 조정에 적합한 제품이며 배관 사이즈는 NPT 1/4" 전용으로 Cv=0.2 입니다.
- Body의 재질은 Stainless Steel 316L로 이루어졌으며 모델에 따라 0.3 bar (5psig)에서 20bar(290psig)까지back pressure를 폭넓게 조절할 수 있습니다.
- 사용 중 가스라인이나 외부의 미세 진동 등으로 인하여 초기 압력 셋팅 값이 미세하게 변동하는 현상을 완전히 해결한 당사 Push and Lock 조절 손잡이 (당사 특허 #10-1086199)를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 (lock) 압력 셋팅 값이 변하는 것을 완전히 방지할 수 있고, 손잡이를 앞으로 당기면 (unlock) 자유롭게 원하는 압력으로 다시 셋팅 할 수 있습니다.
- ※ 주의 : 크린라인이 아닌 일반 라인에 사용 할 경우 반드시 필터링(gas 7 μ m~15 μ m, water 15 μ m~80 μ m)을 하여야 하며, 그렇지 않을 경우 바로 고장의 원인이 됩니다. 모든 제품은 필터링하여 사용하면 A/S 비용 절감과 제품의 수명연장에 많은 도움이 됩니다.
- ※ Caution: Filtering (gas 7 μ m~15 μ m, water 15 μ m~80 μ m) is a MUST to use in the general gas application other than high purity gases. Otherwise, it may cause a failure to the regulators. It is strongly recommended to install filter for extension of life span and saving the maintenance expense.

Specifications

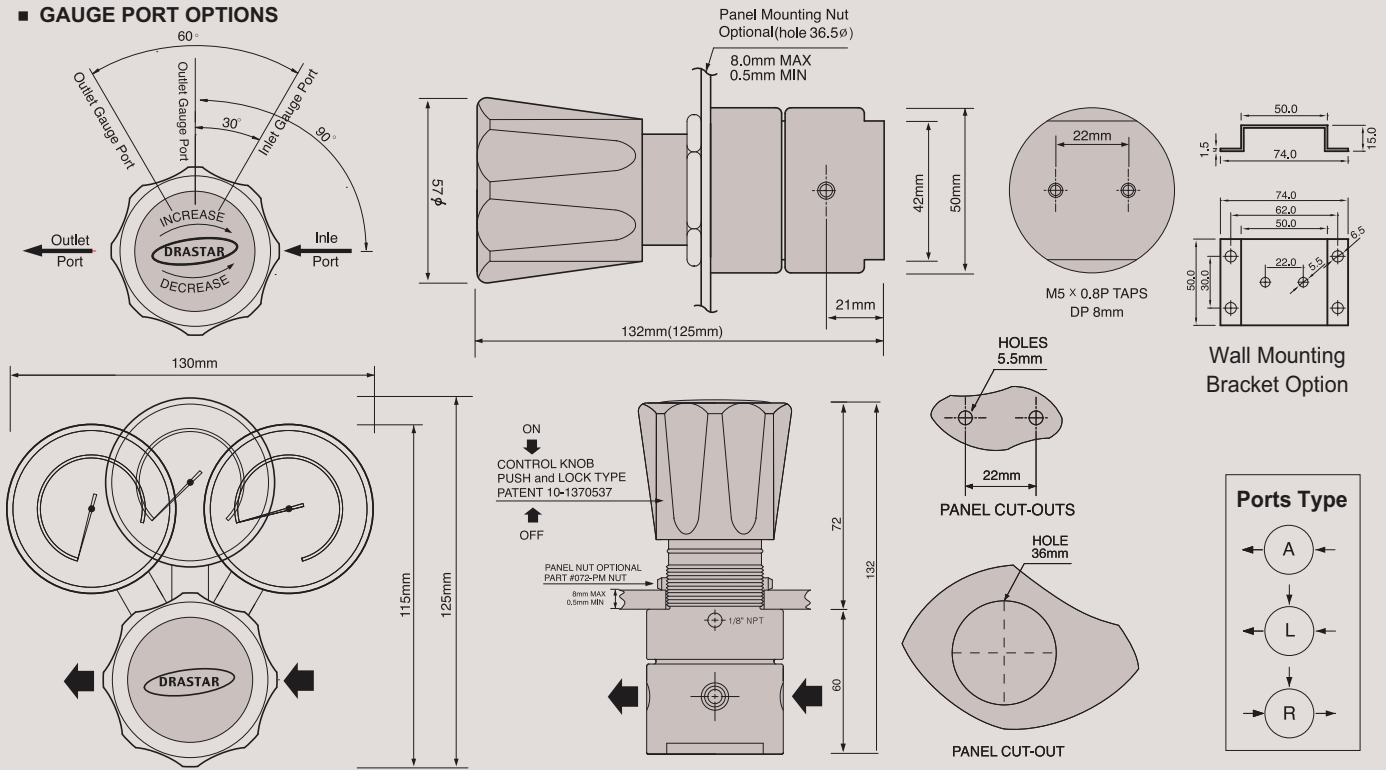
In/Outlet Port Size	1/4" FNPT / Gauge port: 1/4" NPT
Body	Stainless Steel 316L
Bonnet	Nickel Plated Brass (Standard) / Stainless Steel (Option)
Diaphragm	Stainless Steel 316L / Hastelloy C (Option)
Main Valve	Stainless Steel 316L
Valve Spring	Stainless Steel 316L
Valve Seat	Teflon (Kel-F, Polyimide, etc.: optional)
Controlled Pressure Range	2bar(30psig), 5bar(72psig) 10bar(145psig), 20bar(290psig)
Design Proof Pressure	150% of maximum rated
Leakage	to 2x10 ⁻⁸ atmcc/secHeliumavailable
Operating Temperature	-40°C to +70°C(-40°F to +160°F) (Standard) H1 option: up to +120°C (Optional) H2 option: up to +250°C (Optional)
Flow Capacity	Cv = 0.2
Weight	Approx. 1.0kgs

REFERENCE

Contents in the catalogue including specifications, performance data, etc. can be changed without prior notice in the course of continuous upgrading and improvement of the products.
 사양서와 성능데이터 등 카다록에 있는 내용은 당사 제품의 지속적인 업그레이드 및 개선의 과정에서 사전 예고 없이 변경될 수 있습니다.

INSTALLATION DIMENSIONS
METRIC EQUIVALENTS ARE IN PARENTHESES

■ GAUGE PORT OPTIONS



077 Series is a 1/4" NPT type relief/back-pressure regulator suitable for water, chemical, liquid, gas, etc. Regulator's body is made of brass or stainless steel 316L (077S) and 077 Series can be used for very low pressure of 0.3bar (5psig) up to 20 bar (290 psig).

With DRASTAR's patented (patent #10-1086199) "push and lock type handle", you can operate it easily and stably; "locking" by pushing down the handle will prevent any slight change of pre-set pressure value, which could possibly be caused by any vibration from gas pipeline or ambient applications and the other way "unlocking" by pulling it back enables you to adjust the pressure value freely again.

Features & Applications

- 1/4" NPT type back-pressure regulator
- Push and lock type handle (DRASTAR patent #10-1086199) mounted
- Controlled pressure ranges: 0.2bar~2bar, 0.5bar~5bar, 1bar~10bar, 2bar~20bar
- Panel mounting nut or wall mounting bracket as option
- Design proof pressure: 150% of maximum rated
- Applicable for water, chemical, liquid, gas, etc.

※ DRASTAR's all pressure regulators are assembled, cleaned, inspected, and packed in clean-room equipped with clean bench, helium detector, particle counter, ultrasonic cleaner, ultrapure water system, vacuum packaging machine, etc. through oxygen cleaning procedure in compliance with process and regulations indicated in CGA 4.1. and or ASTM G-93 and are free of any grease or oils.

ORDERING INFORMATION

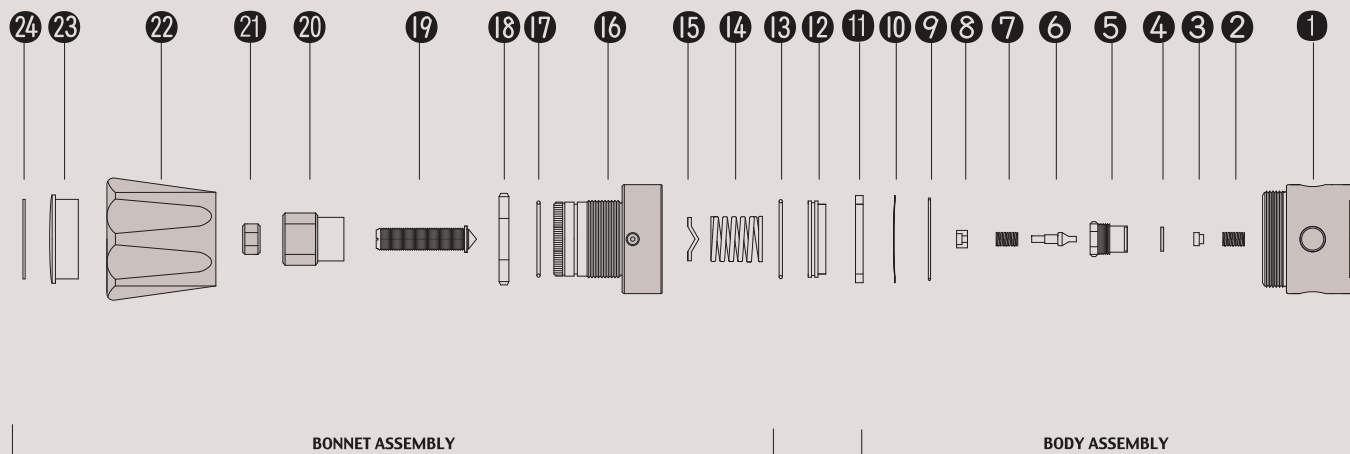
(W)077 S - 002 A - 1S - H - H1

BASIS SERIES NUMBER	BODY MATERIAL	CONTROLLED PRESSURE RANGE	PORTS	INLET OUTLET PORTS SIZE	DIAPHRAGM MATERIAL	HIGH TEMPERATURE
077 Series	S = Stainless Steel 316L	002 = 2bar (30psi) 005 = 5bar (72psi) 010 = 10bar (145psi) 020 = 20bar (290psi)	A = 2-Ports L = 3-Ports C = 4-Ports R = 3-Ports M = 4-Ports Previous 2 = 2-Ports 3 = 3-Ports	1 = 1/4" NPT S = Cv 0.2 Standard Previous NP4 = 1/4" NPT	STS 316L Standard H = Hastelloy-C Optional	H1 = +120°C H2 = +250°C H3 = +320°C Optional

※ Note : 1) (W) model is only for liquid and water.



077 SERIES PART LIST



STANDARD MODEL SERIES

Item No.	Description	Part No.	Model Application
01	Body	077-01-01	077-01-1 Stainless Steel 316L body
02	Low Valve Spring	077-02	All Model Same
03	Spring Locking Plate	077-03	All Model Same
04	Valve Seat	077-04	077-04-01 2bar, 5bar, 10bar, 20bar
05	Valve Seat Locking Screw	077-05	All Model Same
06	Main Valve	077-06	All Model Same
07	Valve Spring	077-07	All Model Same
08	Valve Spring Locking Plate	077-08	All Model Same
09	O-Ring	077-09	All Model Same
10	STS316L Diaphragm	077-10	All Model Same
11	Locking Ring	077-11	All Model Same
12	Back-up Plate	077-12	All Model Same
13	O-Ring	077-13	All Model Same
14	Load Spring	077-14	077-32-01 2bar, 5bar, 10bar, 20bar
15	Pivot	077-15	All Model Same
16	Bonnet	077-16	All Model Same (077-40-03, Stainless steel 316L Bonnet Optional)
17	O-Ring	077-17	All Model Same
18	Panel mount Nut	077-18	All Model Same
19	Adjusting Screw	077-19	All Model Same
20	Push and Lock Slide	077-20	All Model Same
21	Locking Nut	077-21	All Model Same
22	Control Knob	077-22	All Model Same
23	Name Cap	077-23	All Model Same
24	Name Cap Plate	077-24	077-48-01 2bar, 5bar, 10bar, 20bar



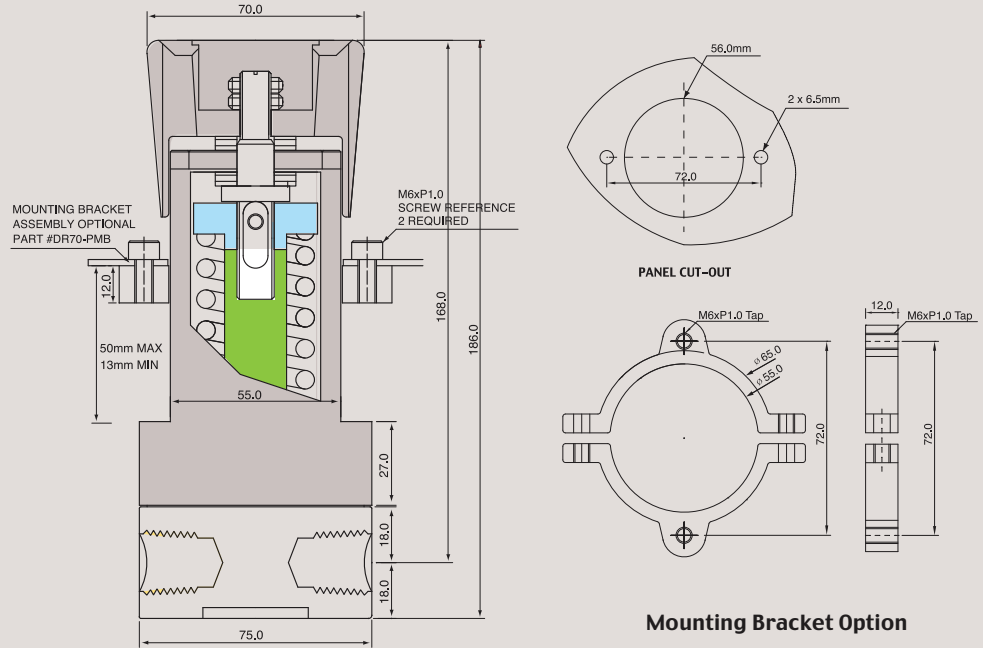
088 SERIES



Relief / Backpressure Reducing Regulators



INSTALLATION DIMENSIONS



088 Backpressure High pressure

Relief / Backpressure NPT 1/4", 1/2"

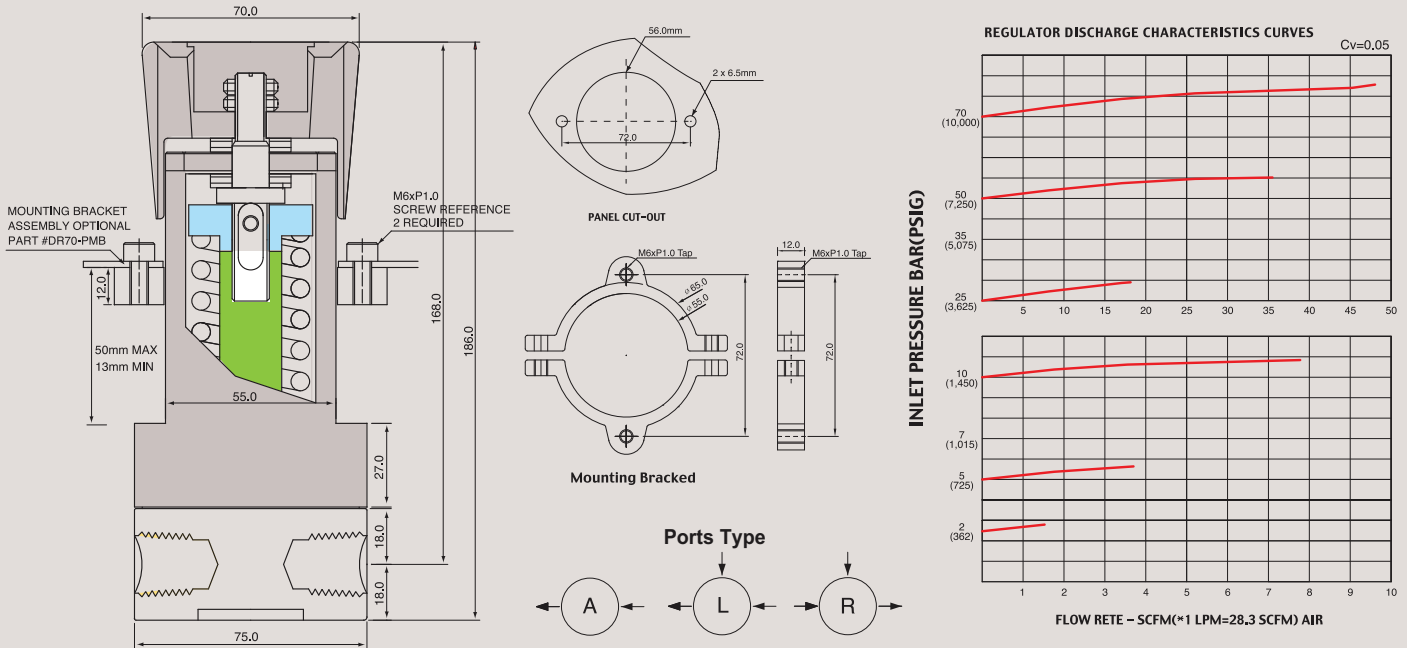
- 088시리즈는 $C_v=0.05$ 또는 0.6으로 초 고압 전용 Relief / Back Pressure Regulator로서 물, 케미칼, Liquid 또는 가스 등을 사용하기에 적합한 제품입니다.
- Body의 재질은 Stainless Steel 316L로 이루어졌으며 출구압력은 모델에 따라 5bar(72psig)에서 최대 700bar(10,000psig)의 초 고압까지 폭넓게 사용 할 수 있습니다.

* 주의 : 크린라인이 아닌 일반 라인에 사용 할 경우 반드시 필터링(gas $7\mu m \sim 15\mu m$, water $15\mu m \sim 80\mu m$)을 하여야 하며, 그렇지 않을 경우 바로 고장의 원인이 됩니다. 모든 제품은 필터링하여 사용하면 A/S 비용 절감과 제품의 수명연장에 많은 도움이 됩니다.

Specifications

In/Outlet Port Size	1/4" FNPT / 1/2" FNPT / Gauge port: 1/4" NPT
Body	Stainless Steel 316L
Bonnet	Aluminum #2024 (Standard) / Stainless Steel (Option)
Diaphragm	Stainless Steel 316L
Main Valve	Stainless Steel 316L
Valve Spring	Stainless Steel 316L
Valve Seat	Teflon (Kel-F, Polyimide, etc.: optional)
Outlet Pressure Range	25bar(362psig), 50bar(725psig), 100bar(1450psig), 250bar(3600psig), 500bar(7250psig), 700bar(10,000psig)
Design Proof Pressure	150% of maximum rated
Leakage	to 2×10^{-8} atmcc/sec Helium available
Operating Temperature	-40°C to +70°C (-40°F to +160°F) (Standard) H1 option: up to +120°C (Optional) H2 option: up to +250°C (Optional)
Flow Capacity	$C_v = 0.05$ (Standard) / 0.6 (Option)
Other Options	CGA, Pressure Gauges, etc.
Weight	Approx. 2.6kgs

FLOW CHART



088 Series is a 1/4" and 1/2" NPT type back-pressure regulator suitable for water, chemical, liquid, gas, etc. Having Cv=0.05 or 0.6 and made of stainless steel 316L, 088 Series is specially suitable for high pressure from 5bar (72psig) up to max 700 bar (10,000psig).

Features & Applications

- 1/4" or 1/2" NPT back-pressure regulator suitable for high pressure
- Controlled pressure ranges: 0.5bar~25bar, 0.5bar~50bar, 10bar~100bar, 20bar~250bar, 30bar~500bar, 40bar~700bar
- Wall mounting bracket option
- Design proof pressure: 150% of maximum rated
- Applicable for water, chemical, liquid, gas, etc.

※ DRASTAR' s all pressure regulators are assembled, cleaned, inspected, and packed in clean-room equipped with clean bench, helium detector, particle counter, ultrasonic cleaner, ultrapure water system, vacuum packaging machine, etc. through oxygen cleaning procedure in compliance with process and regulations indicated in CGA 4.1. and or ASTM G-93 and are free of any grease or oils.

※ **Caution:** Filtering (gas 7 μ m ~ 15 μ m, water 15 μ m ~ 80 μ m) is a MUST to use in the general gas application other than high purity gases. Otherwise, it may cause a failure to the regulators. It is strongly recommended to install filter for extension of life span and saving the maintenance expense.

ORDERING INFORMATION

088 S - 025 A - 2 S - H1

BASIS SERIES NUMBER	BODY MATERIAL	CONTROLLED PRESSURE RANGE	PORTS TYPE F NPT	IN/OUTLET PORTS SIZE	FLOW CAPACITY	VALVE SEAT	HIGH TEMPERATURE
088 Series	S = Stainless Steel 316L	025 = 25bar (362psi) 050 = 50bar (725psi) 100 = 100bar (1,450psi) 250 = 250bar (3,625psi) 500 = 500bar (7,250psi) 700 = 700bar (10,000psi)	A = 2 Ports L = 3 Ports R = 3 Ports	1 = 1/4" NPT 2 = 1/2" NPT	S = Cv 0.05 Standard O = Cv 0.6 Optional	PCTFE Standard P=PEEK V=Vespel Optional	H1 = +120° C H2 = +250° C H3 = +320° C Optional





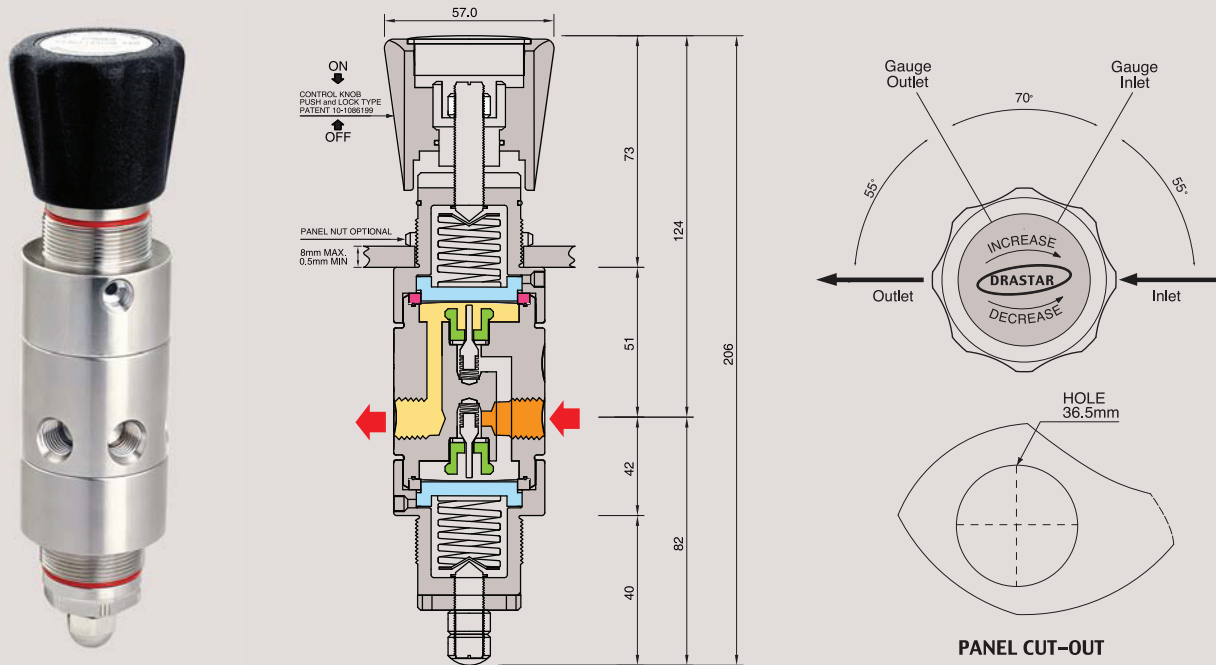
2000 S E R I E S



Dual-Stage Low Pressure Regulators



FUNCTIONAL SCHEMATIC



Two Stage Low Pressure NPT type (1/4")

2000시리즈는 고압가스 실린더를 저압에서 보다 더 정밀하고 안정적으로 사용할 수 있도록 고안된 Two Stage (2단 감압 타입) 레귤레이터 시리즈입니다.

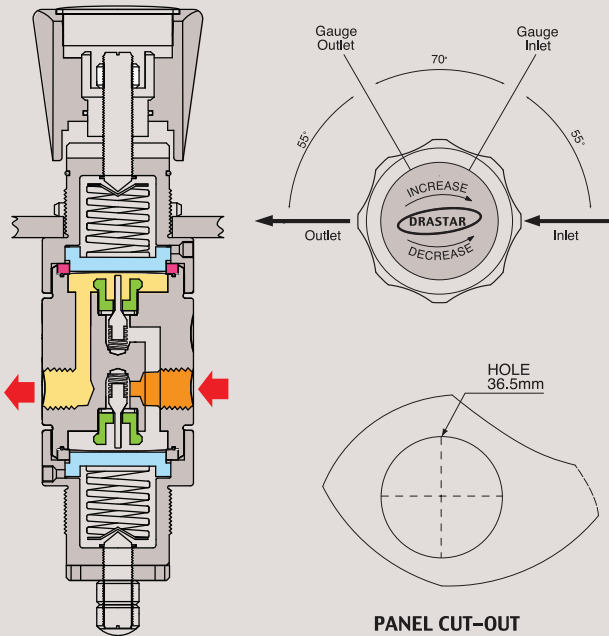
- 모델에 따라 본체와 내부의 모든 부품은 Stainless Steel 316L로 이루어져 있으며, 실린더 가스, Bulk Gas Line, 실험실, 분석용 특수 가스, 또는 고순도 가스, 믹싱용 가스, 그리고 각종 부식성 가스 등에서 모두 사용할 수 있도록 설계, 제작 되었습니다.
- 입구압력은 250bar(3600psig), 출구압력은 20bar(290psig)까지 사용하기에 적합한 제품입니다.

2000 Series is a 1/4" NPT type two stage low pressure reducing regulator specially designed to regulate the high pressure gas cylinder to low pressure applications more accurately and safely. Max inlet pressure is 250bar(3600psig) and outlet pressure ranges from 0.3bar(5psig) up to 20bar(290psig).

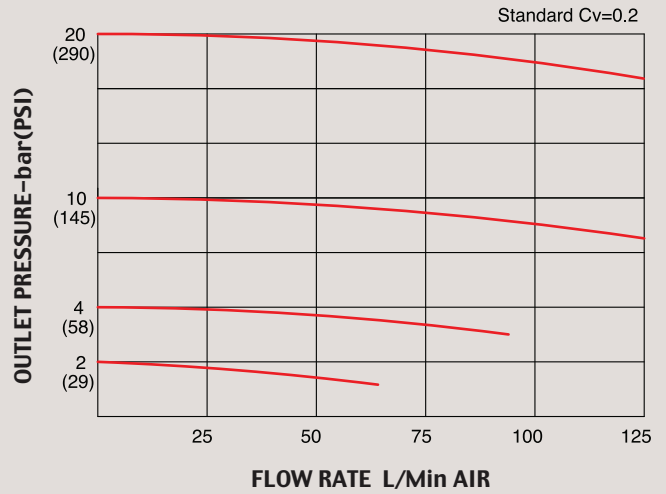
※ 사용 중 가스라인이나 외부의 미세 진동 등으로 인하여 초기 압력 셋팅 값이 미세하게 변동하는 현상을 완전히 해결한 당사 Push and Lock 조절 손잡이 (당사 특허 #10-1086199)를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 (lock) 압력 셋팅 값이 변하는 것을 완전히 방지할 수 있고, 손잡이를 앞으로 당기면(unlock) 자유롭게 원하는 압력으로 다시 셋팅 할 수 있습니다.

Specifications

In/Outlet Port Size	1/4" FNPT / Gauge port: 1/4" NPT
Body	Stainless Steel 316L / Nickel Plated Brass
Bonnet	Nickel Plated Brass (Standard) / Stainless Steel (Option)
Diaphragm	Stainless Steel 316L / Hastelloy C (optional)
Main Valve	Stainless Steel 316L / Hastelloy C (optional)
Valve Spring	Stainless Steel 316L
Valve Seat	Teflon
Maximum Inlet Pressure	250bar (3,600 psig)
Outlet Pressure Range	2bar (29psig), 5bar (75psig), 10bar (145psig), 20bar(290psig)
Design Proof Pressure	150% of maximum rated
Leakage	to 2x10 ⁻⁶ atmcc/secHeliumavailable
Operating Temperature	-40°C to +70°C(-40°F to +160°F) (Standard)
Flow Capacity	Cv = 0.06 (Standard), 0.2 (Option)
Weight	Approx. 1.6kgs



FLOW CHART



With DRASTAR's patented (patent #10-1086199) "push and lock type handle", you can operate it easily and stably; "locking" by pushing down the handle will prevent any slight change of pre-set pressure value, which could possibly be caused by any vibration from gas pipeline or ambient applications and the other way "unlocking" by pulling it back enables you to adjust the pressure value freely again.

Features & Applications

- 1/4" NPT type regulator
- Suitable for the high pressure labs, industrial control
- Inlet pressure is 250bar(3600psig) and outlet pressures are 2bar(30psig), 5bar(75psig), 10bar(145psig), 20bar(290psig)
- Panel mounting nut available as option
- Design proof pressure: 150% of maximum rated
- Applicable for cylinder gas, bulk gas line, research labs, analytical specialty gas, high purity gas, mixing gases, and corrosive gases.

※ DRASTAR's all pressure regulators are assembled, cleaned, inspected, and packed in clean-room equipped with clean bench, helium detector, particle counter, ultrasonic cleaner, ultrapure water system, vacuum packaging machine, etc. through oxygen cleaning procedure in compliance with process and regulations indicated in CGA 4.1. and or ASTM G-93 and are free of any grease or oils.

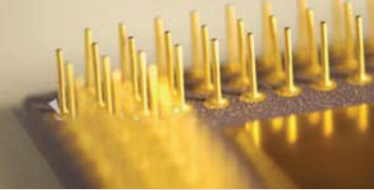
※ **Caution:** Filtering (gas 7 μ m~15 μ m, water 15 μ m~80 μ m) is a MUST to use in the general gas application other than high purity gases. Otherwise, it may cause a failure to the regulators. It is strongly recommended to install filter for extension of life span and saving the maintenance expense.

※ **주의:** 크린라인이 아닌 일반 라인에 사용 할 경우 반드시 필터링(gas 7 μ m~15 μ m, water 15 μ m~80 μ m)을 하여야 하며, 그렇지 않을 경우 바로 고장의 원인이 됩니다. 모든 제품은 필터링하여 사용하면 A/S 비용 절감과 제품의 수명연장에 많은 도움이 됩니다.

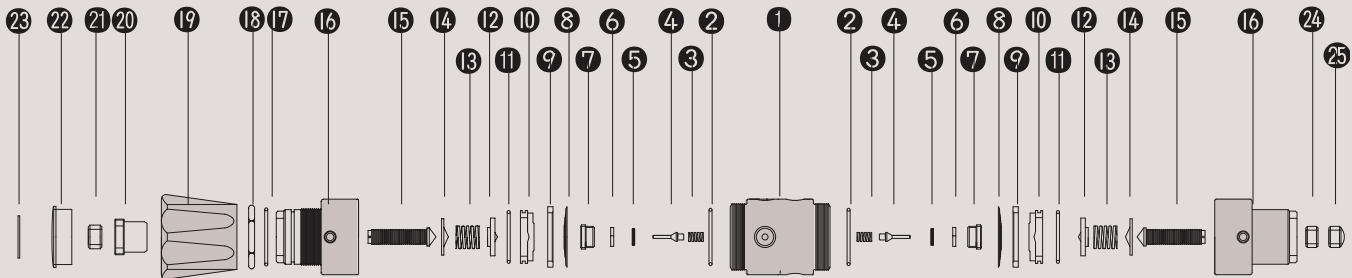
ORDERING INFORMATION

2000 S - 002 - 1 S H - V

BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	INLET AND OUTLET PORTS SIZE	FLOW CAPACITY	DIAPHRAGM MATERIAL	SELF - VENTING
Standard Inlet Pressure 250 bar (3600psig)	B = Brass S = Stainless Steel 316L	002 = .1-2bar (1-29psig) 005 = .1-5bar (5-75psig) 010 = .1-10bar (10-145psig) 020 = .1-20bar (20-290psig)	1 = 1/4" NPT Previous NP4 = NPT1/4"	S = Cv 0.06 Standard O = Cv 0.2 Optional	STS 316L Standard H = Hastelloy-C Optional	V = Self - venting Optional



2000 SERIES PART LIST



STANDARD MODEL SERIES

Item No.	Description	Part No.	Model Application
01	Body	2000-02-01	02-01 Stainless Steel 316L body / 02-02 Brass body
02	Body O-Ring	2000-02-00	All Model Same
03	Valve Spring	2000-04-01	04-01 STS 316L / 04-03 Hastelloy-C-22 / 04-04 Monel
04	Main Valve	2000-06-01	06-01 STS 316L / 06-03 Hastelloy-C-22 / 06-04 Monel
05	Valve Seat	2000-10-01	10-01 PFA / 10-05 Vespel / 10-06 Peek
06	Valve Seat Cartridge	2000-08-01	08-01 Stainless Steel 316L / 08-02 Brass
07	Locking Screw	2000-12-01	All Model Same
08	Diaphragm	2000-16-01	16-01 STS 316L / 16-02 Hastelloy C-22
09	Diaphragm Plate	2000-22-02	All Model Same
10	Back-up Plate	2000-26-03	All Model Same
11	Back-up Plate O-Ring	2000-28-01	All Model Same
12	Spring Plate	2000-30-01	All Model Same
13	Load Spring	2000-38-01	11-01 26psi / 11-02 50psi / 11-03 100psi / 11-05 250psi / 11-07 500psi
14	Pivot	2000-40-01	All Model Same
15	Adjusting Screw	2000-42-01	All Model Same
16	Bonnet	2000-44-02	02-01 Stainless Steel 316L / 44-02 Brass 1st. 44-03 STS316L 44-04 Brass
17	Push & Lock O-Ring	2000-46-01	All Model Same
18	Panel mount Nut	2000-48-01	All Model Same
19	Control Knob	2000-50-01	50-01 ABS / 50-04 Aluminum Control knob
20	Push & Lock Handle nut	2000-52-01	All Model Same
21	Locking Nut	2000-54-01	All Model Same
22	Name Cap	2000-56-01	56-01 ABS
23	Name Cap Plate	2000-58-01	59-01 2bar, 59-02 5bar, 59-03 10bar, 59-02 4bar, 59-04 20bar,
24	1st Bonnet Locking Nut	2000-	All Model Same
25	1st Bonnet Cap Nut	2000-	All Model Same

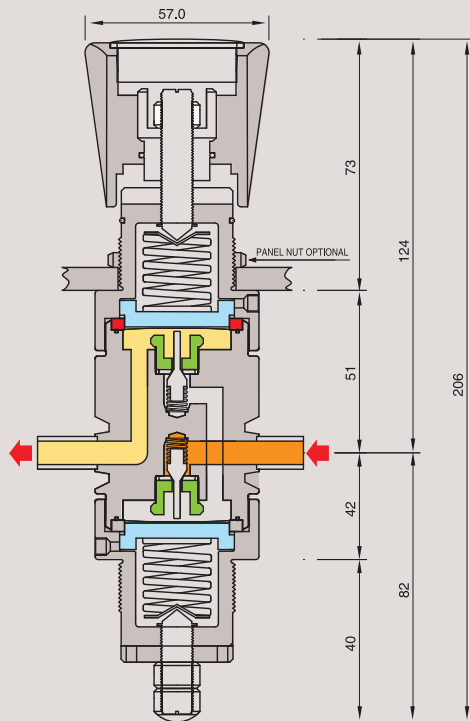


2200 S E R I E S

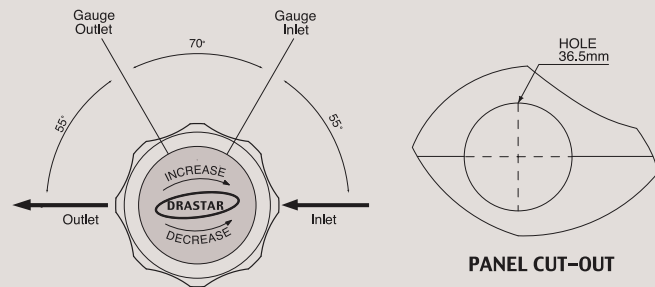
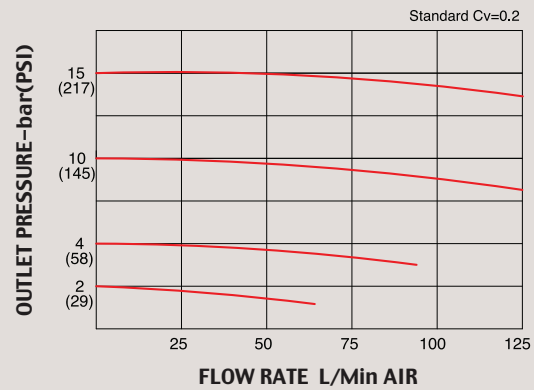
Dual-Stage Ultra High Purity
Pressure Reducing Regulators



FUNCTIONAL SCHEMATIC



FLOW CHART



UHP Dual-Stage Pressure Reducing Regulators (1/4")

2200 시리즈는 Two-Stage UHP (Ultra High Purity) 압력 조절기로서 Body는 STS 316L or 316L VAR (더블멜트)를 사용하였으며 반도체 제조용 가스설비, 고압 가스라인, Bulk 가스라인, 제약, 연구소 및 실험실 등에 사용할 수 있도록 설계되었습니다. E.P. (Electropolishing) 처리를 함으로써 부식성 가스 사용 환경에 더욱 적합한 제품입니다. 최대 압력은 250bar (3600psig), 출구압력은 모델에 따라 0.3bar (5psig)~최대 15bar (217psig)까지 사용 가능합니다.

2200 Series is a Two-Stage Ultra High Purity (U.H.P.) pressure reducing regulator constructed by STS316L or 316L VAR (double melt) for its body. It is designed suitable for semiconductor manufacturing line, high pressure gas line, bulk gas line, pharmaceutical line, various research institute and laboratories, etc. By electropolished (E.P.) surface treatment, 2200 series is also quite suitable for corrosive gas applications. Max inlet pressure is 250bar/3,600psig and outlet pressures from 0.3bar up to 15bar are available according to the model.

- All manufacturing processes such as cleaning, welding, assembly, testing, and packing of Drastar pressure regulators are performed in the class-100 and class-10 clean room.

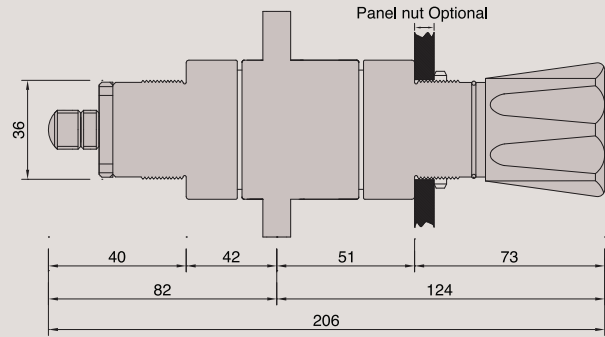
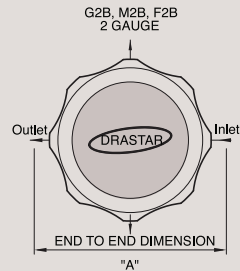
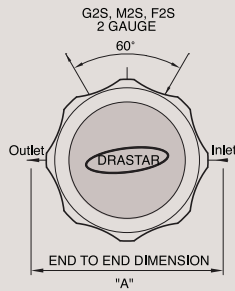
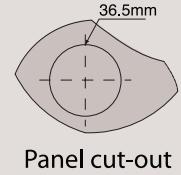
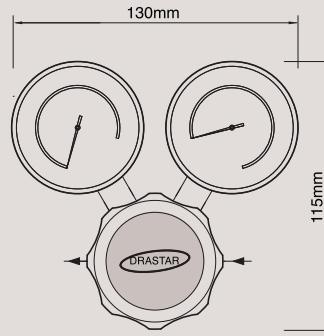
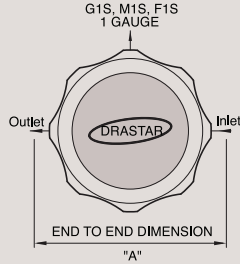
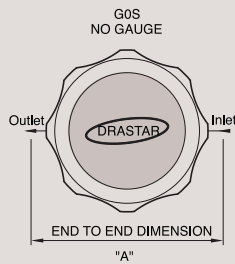
SPECIFICATIONS

Port Sizes	1/4" Male or Female VCR
Body	Stainless Steel 316L or 316L VAR E.P.
Bonnet	Brass
Diaphragm	Stainless Steel 316L or Hastelloy (Optional)
Main Valve	Stainless Steel 316L
Valve Spring	Stainless Steel 316L
Valve Seat	PCTFT or Teflon PFA
Maximum Inlet Pressure	250bar(3600psig)
Outlet Pressure Range	2bar, 4bar, 7bar, 10bar, 15bar
Design Proof Pressure	150% of maximum rated
Leakage _ Inboard	Diaphragm: to 1 x 10 ⁻⁹ atm cc/sec He Seat: to 4 x 10 ⁻⁹ atm cc/sec He
Decaying Inlet Characteristic	0.04 per 7bar
Operating Temperature	PFA: - 40° C to +70° C (-40° F to +160° F) (Standard) PCTFE: - 40° C to +60° C (Optional)
Flow Capacity	Cv=0.2 / Standard
Other Options	CGA, Inlet and Outlet Gauges, etc.
Weight	Approx. 1.8kgs

INSTALLATION DIMENSIONS

METRIC EQUIVALENTS ARE IN PARENTHESES

GAUGE PORT OPTIONS



* [DRAMSTAR Regulators are Oil-free]

DRAMSTAR's all pressure regulators are assembled, cleaned, inspected, and packed in clean-rooms equipped with clean bench, helium detector, particle counter, ultrasonic cleaner, ultrapure water system, vacuum packaging machine, etc. through oxygen cleaning procedure in compliance with process and regulations indicated in CGA 4.1. and or ASTM G-93 and are free of any grease or oils.

* **Caution:** Filtering (gas $7\mu\text{m}\sim 15\mu\text{m}$, water $15\mu\text{m}\sim 80\mu\text{m}$) is a MUST to use in the general gas application other than high purity gases. Otherwise, it may cause a failure to the regulators. It is strongly recommended to install filter for extension of life span and saving the maintenance expense.

ORDERING INFORMATION

2200 - A 002 S - HPS - 4FS - G0S

BASIS SERIES	GAUGE PORTS OPTIONS	Gauge Ports
BODY MATERIAL & SURFACE FINISH	G2S = 1/4" H.P.I.C	2
A = 316L B.A..... 25Ra	F2S = 1/4" Female Swivel	2
B = 316L E.P..... 10Ra	M2S = 1/4" Male Swivel	2
C = 316L E.P(P.E.P)..... 5Ra		
D = 316L VAR E.P..... 10Ra		
E = 316L VAR E.P(P.E.P).... 5Ra		
OUTLET PRESSURE RANGE	INLET / OUTLET PORTS SIZE	Type "A" ±1.0mm
002 = .1-2bar(1-29psi)	4HP = 1/4" H.P.I.C	
004 = .1-4bar(1-58psi)	4MS = 1/4" Male Swivel	94mm
007 = .2-7bar(5-100psi)	4FS = 1/4" Female Swivel	94mm
010 = .2-10bar(10-145psi)	4MSS = 1/4" Male Swivel	99mm
015 = .2-15bar(10-220psi)	4FHD = 1/4" Female Swivel	00mm
DIAPHRAGM MATERIAL	4FL = 1/4" Female Swivel	114mm
S = STS 316L	4ML = 1/4" Male Swivel	114mm
H = Hastelloy-C	4IMF = In Male/Out Female	94mm
MAX. INLET PRESSURE	4IFM = In Female/Out Male	94mm
H = 250bar(3600psi)	4TS = 1/4" Tube Stubs	94mm
	FLOW CAPACITY	
	S = Cv 0.2 Standard	
	SEAT MATERIAL	
	P = PCTFE	
	T = Teflon	
	V = Vespel	

2200 SERIES

