GAS AND LIQUID CONTROL TECHNOLOGY WITH DRASTAR

DRASTAR

DRASTAR CO,.LTD

고객의 가치를 창조하는 기술, 드라스타가 추구하는 이념 입니다.

1996년 창립 이래, 어느덧 창립 20주년을 맞이하게 되었고, 고객 여러분의 성원에 힘입어 거듭 성장해 왔습니다.

지난 20여년 동안 인재와 기술을 기초로 한 최고 품질의 신기술 연구를 통해 기술확보와 함께 국내 및 해외에서 선도적인 역활을 담당하였다고 자부합니다. 당사는 앞으로 더욱 연구와 개발에 힘쓸 것이며, 최고의 제품으로 고객의 요구를 만족하도록 노력하겠습니다. 드라스타가 개발한 모든 제품은 모든 사업에 다 적용되며, 무한한 가능성으로 여러분께 다가가겠습니다. 이제 드라스타의 제품을 세계 어디에서나 접할 수 있습니다. 고객의 가치와 만족을 더욱 풍요롭게 하는 기술, 드라스타가 레귤레이터 산업의 미래를 만들어가겠습니다.

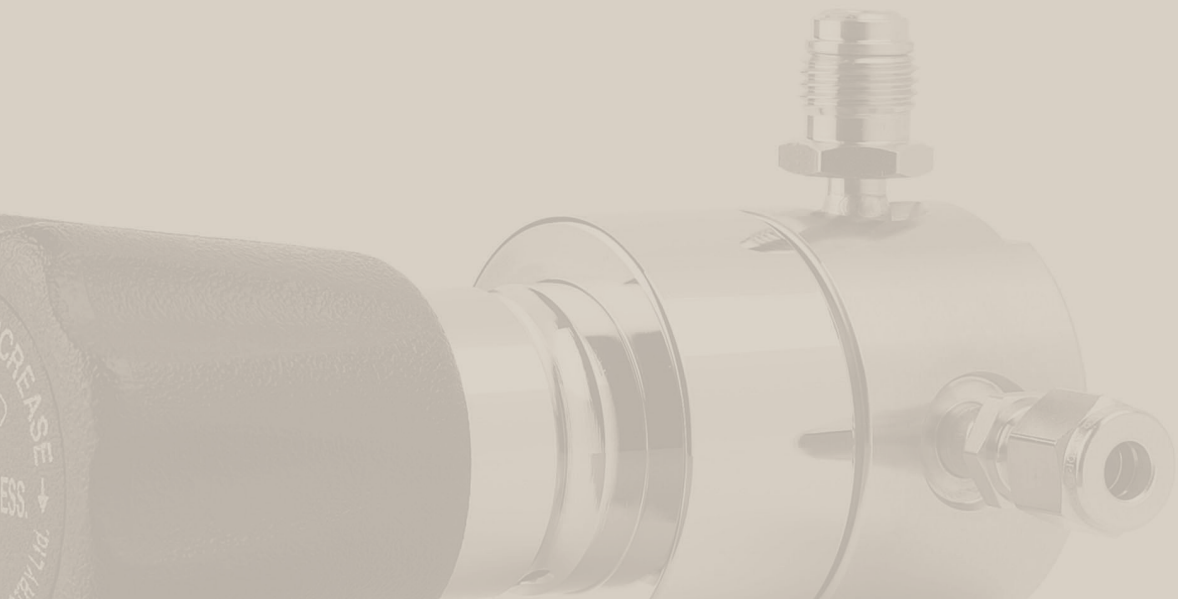
언제나 여러분의 가정에 행복이 가득하길 기원합니다.

대표이사 윤 승 찬

Technology that creates customer value, It' s the Motto DRASTAR pursues.

We, DRASTAR Co.,Ltd have found the company on June,1996 and have grown for 20 years. we always try to lead the market with the newest products and the best quality by continuous developments of Technology even before the customers wants to have them. Our products will be available to every Industry with unlimited possibilities. Now you' ll be able to encounter DRASTAR products wherever you are. Technology that further enriches customer satisfaction,DRASTAR builds the future of Regulator Industry.

President **Seung-Chan, Yun**



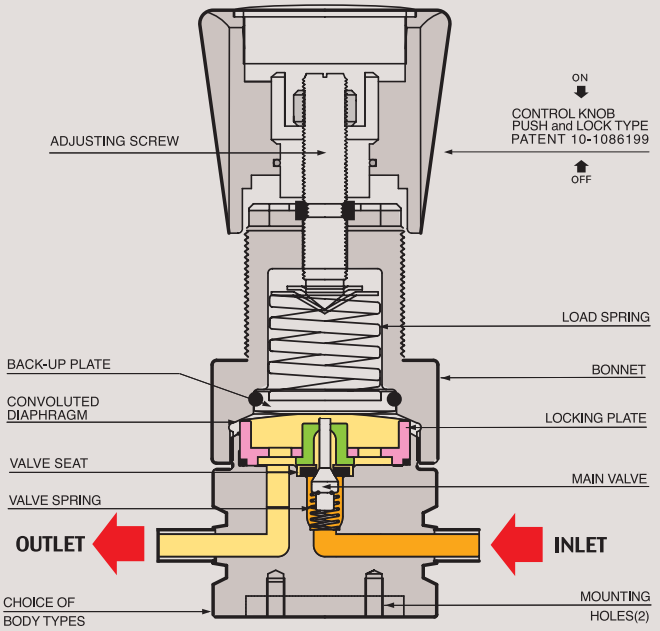
DRA100 SERIES

ULTRA-HIGH PURITY

Pressure Reducing Regulator

DRA100 SERIES

FUNCTIONAL SCHEMATIC



ULTRA-HIGH PURITY / PRESSURE REDUCING REGULATOR

DRA100 SERIES(VCR Type Regulator)

DRA100 시리즈는 초고순도 반도체 제조용 특수 가스 라인, Bulk Gas Line, 기타 설비 라인 등에 사용하도록 고안된 Pressure Reducing Regulator입니다. 반도체 생산 hook-up 라인 등에 사용되도록 내부 표면은 B. A. 급에서 E. P 10 Ra, 5 Ra 급까지 처리하였습니다. DRASTAR 만의 Locking-Plate Seal 방식을 개발하여 특허 출원을 하였으며, 특허(10-0753280) 출원한 Locking-Plate 방식이 적용된 제품입니다. DRA100 시리즈는 조립, 용접, 실험과 세정까지의 모든 공정은 100-class와 10-class 크린룸에서 모든 작업이 이루어집니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

DRA 100 Series is the pressure reducing regulator designed to use at the special manufacturing line of ultra-high pure semi-conductors, bulk gas lines, and other facility lines. In order to use at the semi-conductor hook-up line, etc., regulator' s internal surface is treated to the level of E.P. 10Ra, 5Ra under B. A. grade. A special locking-plate system which DRASTAR has developed and applied for patent (patent no. 10-0753280) is used for the regulator. All the process assembly, welding, testing and washing of this DRA 100 series is carried out and thoroughly managed in the 100-class and 10-class clean room. DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

Features

- VCR Type Regulator
- available for semiconductor applications
- Internal surfaces B. A. grade to E. P. 10 Ra, 5 Ra
- All performed in class 100 and class 10 clean-rooms
- Threadless type
- Locking-Plate Seal system(Patent No : 10-0753280)

권장 사항

각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

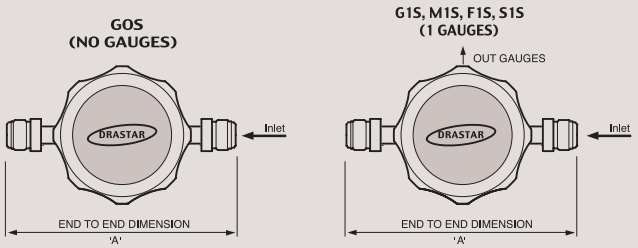
Recommendations

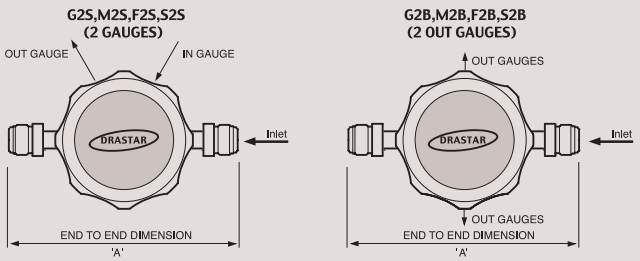
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

INSTALLATION DIMENSIONS

METRIC EQUIVALENTS ARE IN PARENTHESES

■ **GAUGE PORT OPTIONS**





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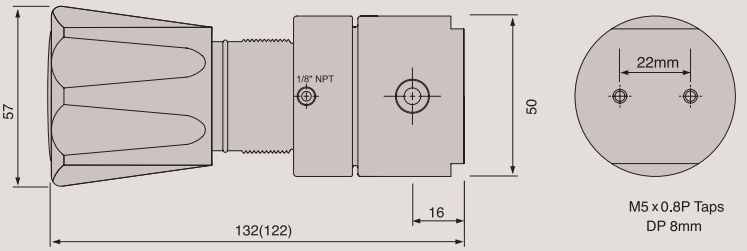

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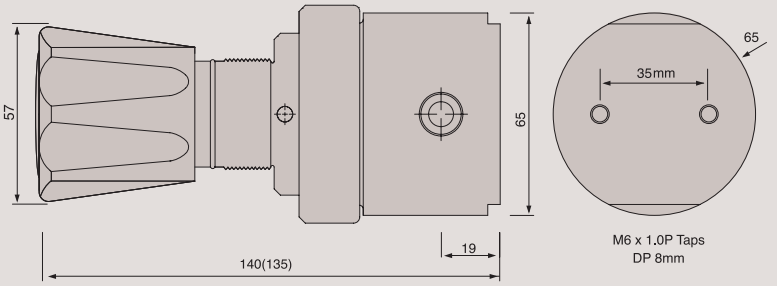


ORDERING INFORMATION

DRA100 - A 025 S - H P S - 4MS - G0S

BASIS SERIES

BODY MATERIAL

A = 316L Bright Annealed	B.A
B = 316L Electropolish	10Ra
C = 316L Intemal Electropolish	10Ra
D = 316L Electropolish VAR(P.E.P)	10Ra
E = 316L Electropolish VAR(P.E.P)	5Ra

OUTLET PRESSURE RANGE

025 = 1-25psi (.1-1.7bar)
050 = 1-50psi (.1-3.5bar)
100 = 1-100psi (.1-7bar)
250 = 1-250psi (.2-17bar)

DIAPHRAGM MATERIAL

S = STS 316L
H = Hastelloy-C

MAX. INLET PRESSURE

H = 3500psi(238bar)
L = 600psi(41bar)

SEAT MATERIAL

P = PCTFE
T = Teflon
V = Vespel

GAUGE PORTS OPTIONS

G0S = None	0	F1S = 1/4″ Femle Sw.	1
G1S = 1/4″ H.P.I.C	1	F2S = 1/4″ Femle Sw.	2
G2S = 1/4″ H.P.I.C	2	F2B = 1/4″ Femle Sw.	2
G2B = 1/4″ H.P.I.C	2	S1S = 1/4″ Fixed Male	1
M1S = 1/4″ Male Sw.	1	S2S = 1/4″ Fixed Male	2
M2S = 1/4″ Male Sw.	2	S2B = 1/4″ Fixed Male	2
M2B = 1/4″ Male Sw.	2		

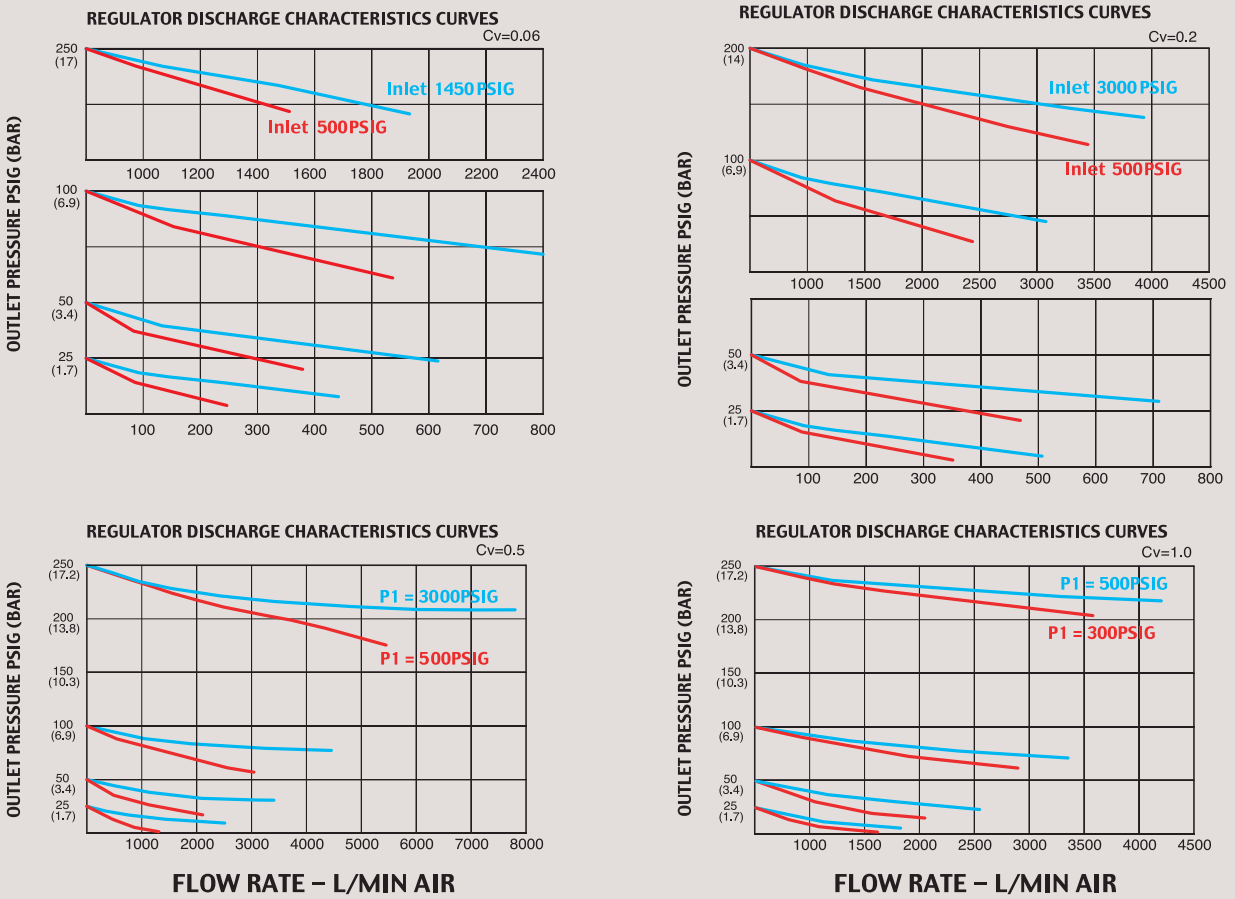
INLET / OUTLET PORTS SIZE — **Type "A" ±1.0mm**

4HP = 1/4″ H.P.I.C	
4MS & 4FS = 1/4″ Male, Female Sw.	94mm
4FL & 4ML = 1/4″ Male, Female Sw.	00mm
8MS & 8FS = 3/8″ Male, Female Sw.	120mm
8FL & 8ML = 3/8″ Male, Female Sw.	000mm
2MS & 2FS = 1/2″ Male, Female Sw.	140mm
2FL & 2ML = 1/2″ Male, Female Sw.	000mm
3MS & 3FS = 3/4″ Male, Female Sw.	160mm
3FL & 3ML = 3/4″ Male, Female Sw.	000mm
4IMF = In 1/4″ Male Out 1/4″ Female	94mm
4IFM = In 1/4″ Female Out 1/4″ Male	94mm
2IMF = In 1/2″ Male Out 1/2″ Female	140mm
2IFM = In 1/2″ Female Out 1/2″ Male	140mm
2IMFL = In 1/2″ Male Out 1/2″ Female	000mm
2IFML = In 1/2″ Female Out 1/2″ Male	000mm
4TS = 1/4″ Tube Stubs	94mm
8TS = 3/8″ Tube Stubs	94mm
2TS = 1/2″ Tube Stubs	120mm
3TS = 3/4″ Tube Stubs	120mm

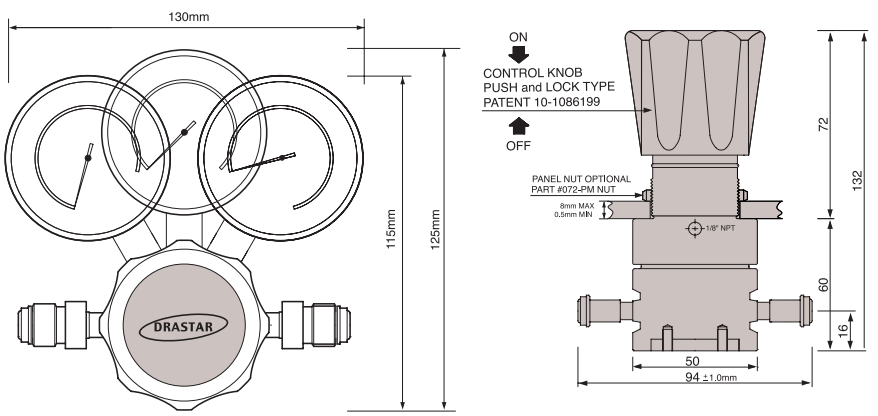
FLOW CAPACITY

S = Cv 0.06 Standard (Inlet 3000psi) (1/4″)
O = Cv 0.2 Optional (Inlet 500psi) (1/4″)
Cv 0.2 Standard (3/8″)
S = Cv 0.5 Standard (1/2″)
O = Cv 1.0 Optional
S = Cv 1.2 Standard (3/4″)

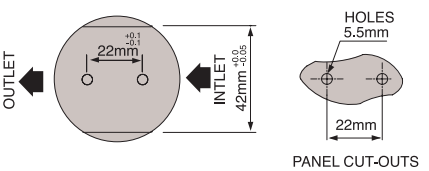
FLOW CHART



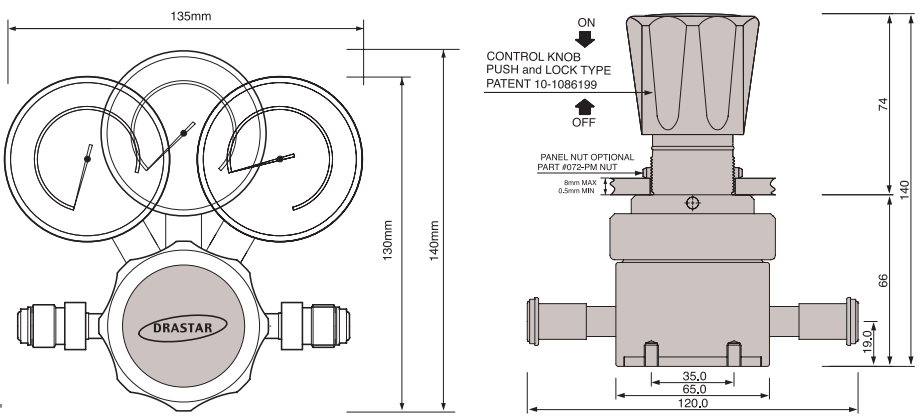
DRA100 Series 1/4″



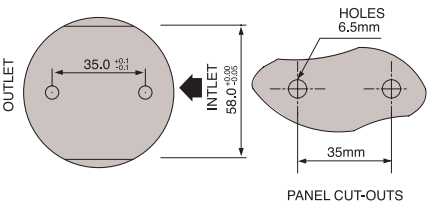
DRA100 Series 1/4″ & 3/8″

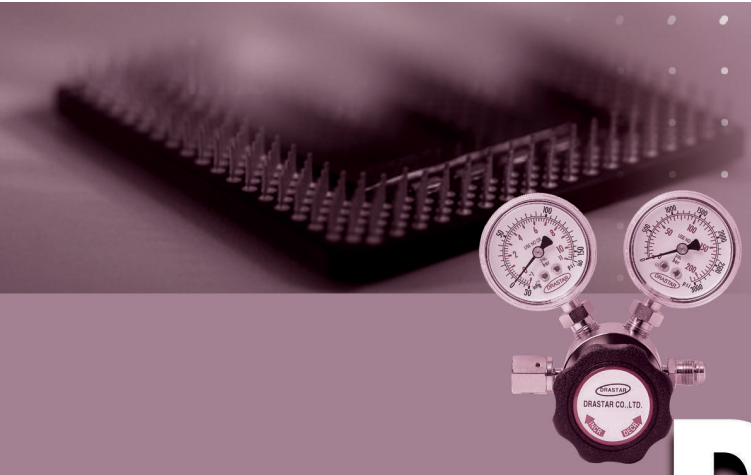


DRA100 Series 1/2″



DRA100 Series 1/2″ & 4/3″





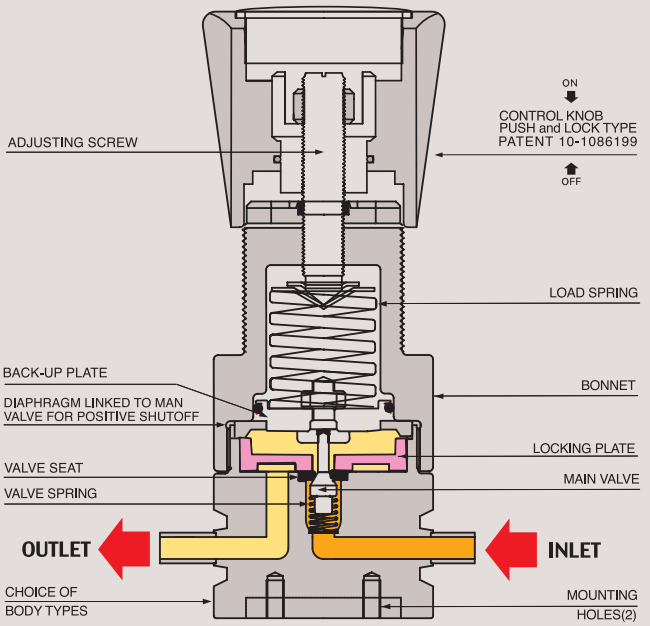
DRA200 SERIES

ULTRA-HIGH PURITY

Positive Shutoff Regulator

DRA200 SERIES

FUNCTIONAL SCHEMATIC



ULTRA-HIGH PURITY POSITIVE SHUTOFF REGULATOR

DRA200 SERIES(Tied Diaphragm Regulator)

DRA200(Tied type) 시리즈는 초고순도 반도체 제조용 Gas Cabinet, 특수 가스 라인, Valve Manifold Boxes, 기타 연구실 등에 사용하도록 고안된 Tied Diaphragm Pressure Reducing Regulator입니다. Tied type은 다이아프램과 메인 밸브를 연결시켜 이물질이 밸브 시트에 형성되더라도 압력 누설이 되지 않도록 최고의 안전성을 겸비한 방식으로 설계 고안된 제품입니다.
특히 독성 가스, 발화성 가스, 고부식성 가스등으로 다이아프램을 파열로 부터 안전하게 보호하는 데 유용하며, 특허(10-0753280) 출원한 Locking-Plate 방식이 적용된 제품입니다. DRA200 시리즈는 이물질 발생을 방지하기 위해 DI water 세정과 E. P 10 Ra, 5 Ra급으로 내부표면을 처리하였습니다. DRA200시리즈는 조립, 용접, 실험과 세정까지의 모든 공정은 100-class와 10-class 크린룸에서 모든 작업이 이루어집니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다.
조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

DRA200 (tied type) series is the tied-diaphragm pressure reducing regulator designed to use for gas cabinet for manufacturing the ultra-high pure semi-conductor, special gas line, valve manifold boxes, other laboratory, etc. Tied-diaphragm type regulator connects the diaphragm and main valve together which prevents pressure loss and so maximizes safety of the regulator. Specially, this model is very useful to protect the diaphragm from toxic gas, ignition gas, high-corrosive gases, etc., and patent-applied locking plate system is adopted (patent no. 10-0753280), too. In order to prevent generation of impurities, it is washed in DI water and the internal surface is treated to the grade of E.P. 10 Ra and 5 Ra. All processes of assembly, welding, testing and washing of DRA200 series are carried out and thoroughly managed in the 100-class and 10-class clean room. DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

Features

- Tied Diaphragm design for positive shut-off
- All semiconductor gas industry
- For toxic gas
- For pyrophoric gas
- For high corrosive gas
- For protecting the diaphragm from rupturing
- Locking-Plate Seal system(Patent No : 10-0753280)

권장 사항

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Recommendations to Use

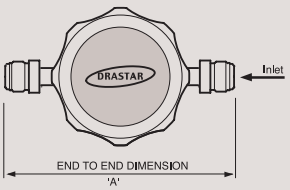
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

INSTALLATION DIMENSIONS

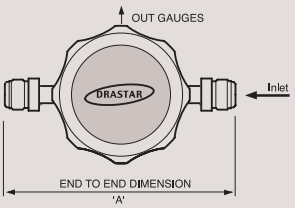
METRIC EQUIVALENTS ARE IN PARENTHESES

- **GAUGE PORT OPTIONS**

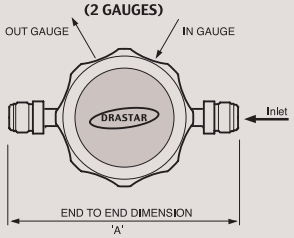
G0S (NO GAUGES)



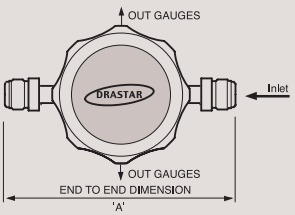
G1S, M1S, F1S, S1S (1 GAUGES)



G2S,M2S,F2S,S2S (2 GAUGES)



G2B,M2B,F2B,S2B (2 OUT GAUGES)



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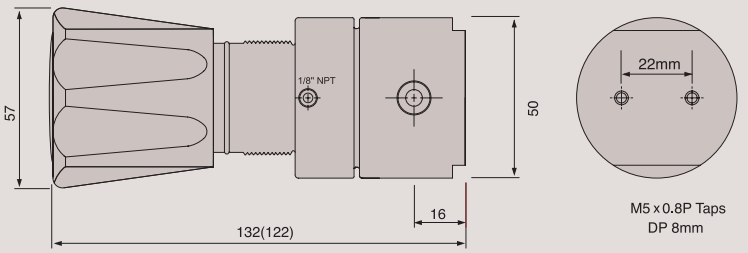

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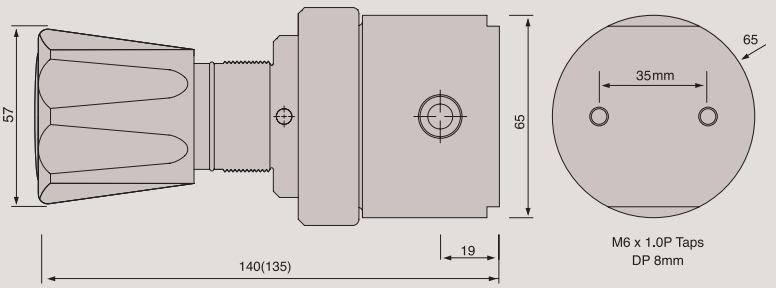


ORDERING INFORMATION

DRA200 - A 025 S - H P S - 4MS - G0S

BASIS SERIES

BODY MATERIAL

A = 316L Bright Annealed	B.A
B = 316L Electropolish	10Ra
C = 316L Internal Electropolish	10Ra
D = 316L Electropolish VAR(P.E.P)	10Ra
E = 316L Electropolish VAR(P.E.P)	5Ra

OUTLET PRESSURE RANGE

025 = 1-25psi (.1-1.7bar)
050 = 1-50psi (.1-3.5bar)
100 = 1-100psi (.1-7bar)
250 = 1-250psi (.2-17bar)

DIAPHRAGM MATERIAL

S = STS 316L
H = Hastelloy-C

MAX. INLET PRESSURE

H = 3500psi(238bar)
L = 600psi(41bar)

SEAT MATERIAL

P = PCTFE
T = Teflon
V = Vespel

GAUGE PORTS OPTIONS

G0S = None	0	F1S = 1/4″ Femle Sw.	1
G1S = 1/4″ H.P.I.C	1	F2S = 1/4″ Femle Sw.	2
G2S = 1/4″ H.P.I.C	2	F2B = 1/4″ Femle Sw.	2
G2B = 1/4″ H.P.I.C	2	S1S = 1/4″ Fixed Male	1
M1S = 1/4″ Male Sw.	1	S2S = 1/4″ Fixed Male	2
M2S = 1/4″ Male Sw.	2	S2B = 1/4″ Fixed Male	2
M2B = 1/4″ Male Sw.	2		

Gauge Ports

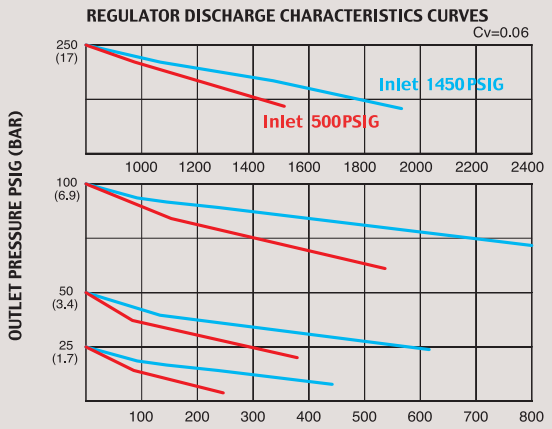
INLET / OUTLET PORTS SIZE — **Type "A" ±1.0mm**

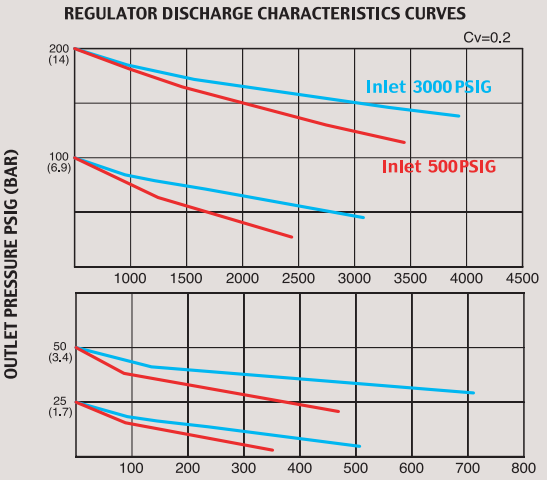
4HP = 1/4″ H.P.I.C	
4MS & 4FS = 1/4″ Male, Female Sw.	94mm
4FL & 4ML = 1/4″ Male, Female Sw.	00mm
8MS & 8FS = 3/8″ Male, Female Sw.	120mm
8FL & 8ML = 3/8″ Male, Female Sw.	000mm
2MS & 2FS = 1/2″ Male, Female Sw.	140mm
2FL & 2ML = 1/2″ Male, Female Sw.	000mm
3MS & 3FS = 3/4″ Male, Female Sw.	160mm
3FL & 3ML = 3/4″ Male, Female Sw.	000mm
4IMF = In 1/4″ Male Out 1/4″ Female	94mm
4IFM = In 1/4″ Female Out 1/4″ Male	94mm
2IMF = In 1/2″ Male Out 1/2″ Female	140mm
2IFM = In 1/2″ Female Out 1/2″ Male	140mm
2IMFL = In 1/2″ Male Out 1/2″ Female	000mm
2IFML = In 1/2″ Female Out 1/2″ Male	000mm
4TS = 1/4″ Tube Stubs	94mm
8TS = 3/8″ Tube Stubs	94mm
2TS = 1/2″ Tube Stubs	120mm
3TS = 3/4″ Tube Stubs	120mm

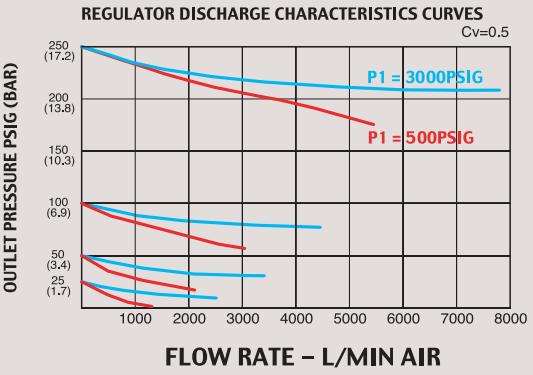
FLOW CAPACITY

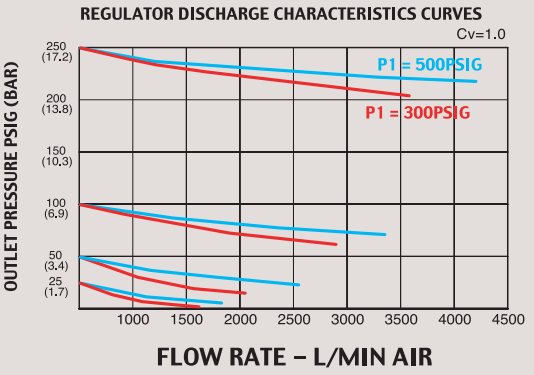
S = Cv 0.06 Standard (Inlet 3000psi) (1/4″)
O = Cv 0.2 Optional (Inlet 500psi) (1/4″)
S = Cv 0.2 Optional (3/8″)
S = Cv 0.5 Optional (1/2″)
O = Cv 1.0 Optional (1/2″)
S = Cv 1.2 Standard (3/4″)

FLOW CHART

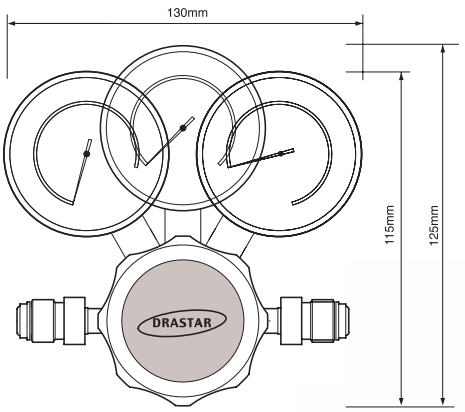


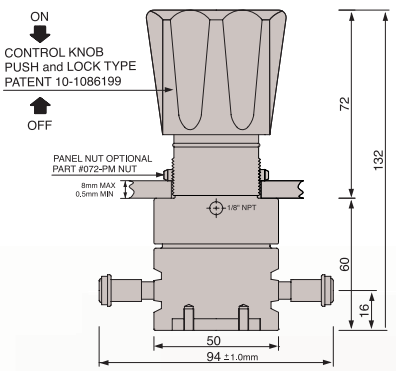




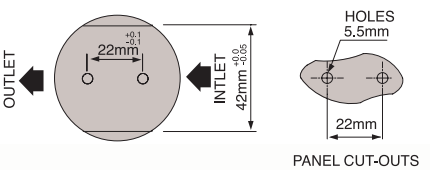


DRA200 Series 1/4″

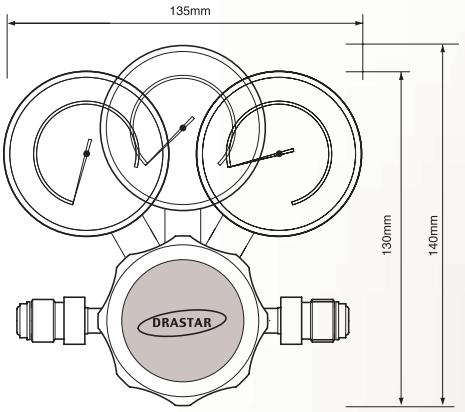


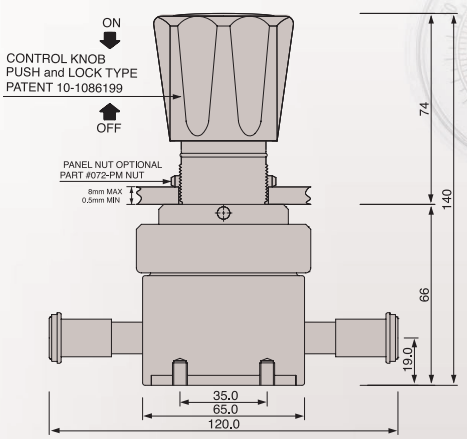


DRA200 Series 1/4″ & 3/8″

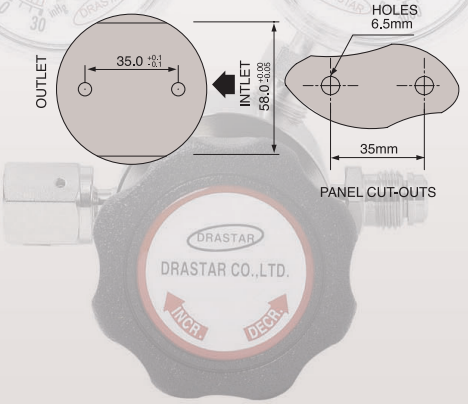


DRA200 Series 1/2″





DRA200 Series 1/2″ & 4/3″



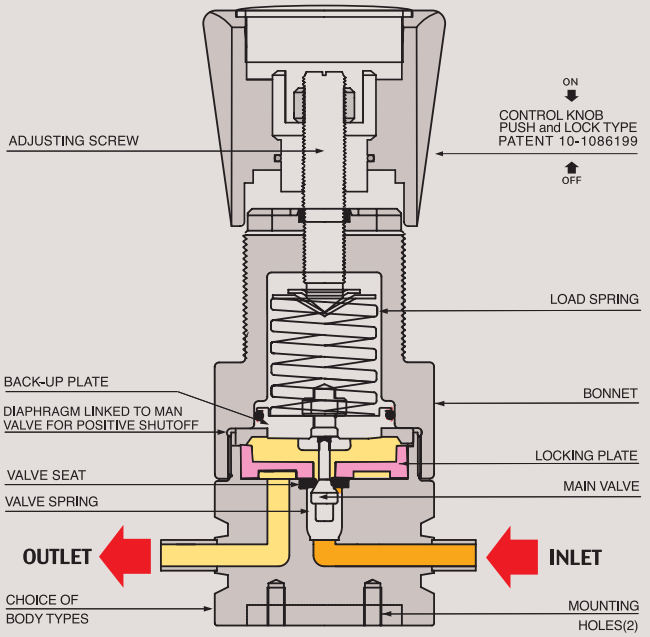
DRA300 SERIES

Positive Seal / ULTRA-HIGH PURITY

Springless Reducing Regulator

DRA300 SERIES

FUNCTIONAL SCHEMATIC



POSITIVE SEAL / ULTRA-HIGH PURITY

DRA300 SERIES(Springless Reducing Regulator)

DRA300(Springless type) 시리즈는 "초고순도 반도체 제조용 Gas Cabinet, 특수 가스 라인, Valve Manifold Boxes, 기타 연구실" 등에 사용하도록 고안된 Springless 타입의 Pressure Regulator입니다. Springless type은 기존방식의 스프링을 완전히 제거하고, 웨이브형상의 판 스프링(특허10-1191514)을 사용함으로써, 일반적인 스프링타입의 결점(장기간 사용시 누적피로로 발생하는 스프링 자체 Particle ; 이물질이 발생함)을 완벽하게 보완함으로써 원천적으로 제품 내부의 이물질이 발생하지 못하도록 함으로, User들에게 더욱 초 고순도/청정을 필요로 하는 곳에 더욱 적합한 제품입니다. 또한 DRA300 시리즈는 모델에 따라 316L VAR(Double melt VAR)를 사용함으로 부식가스에 사용하기에 더욱 적합한 제품입니다.

다이아프램과 몸체간의 경계 면에 Material to Material Sealing 되어 있고, 10 Ra 또는 5 Ra 의 microinch 단위의 정밀 Electro Polish를 함으로써, 초정밀 표면처리 되어있습니다. 그리고 다이아프램과 메인 밸브를 연결시켜 (Tied 타입 적용) 이물질이 밸브 시트에 형성되더라도 압력 누설이 되지 않도록 최고의 안전성을 겸비한 방식으로 설계 고안된 제품입니다. 특히 독성 가스, 발화성 가스, 고부식성 가스 등으로 다이아프램의 파열로부터 안전하게 보호하는 데 유용하며, DRA300 시리즈는 이물질 발생을 방지하기 위해 DI water 세정과 E.P 10 Ra, 5 Ra급으로 내부표면을 처리하였습니다. DRA300시리즈는 조립, 용접, 실험과 세정까지의 모든 공정은 100-class와 10-class 크린룸에서 모든 작업이 이루어집니다.

모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상을 완전히 해결한 드라스타 만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타 만의 특허 10-1086199 Push and Lock 타입의 레귤레이터 입니다.

DRA300 series is the Springless Reducing Regulator designed to use for gas cabinet for manufacturing the ultra high pure semi-conductor,special gas line, valve manifold boxes other laboratory,etc. It has no conventional spring and adopts "flat-wave ring spring" (patent 10-1191514) to shuf off particle that may be generated from spring itself so that it can be more affordable for Ultra high purity application..

Its optional material as 316L VAR (Double melt VAR) and more suitable to corrosive Gas using application.

In order to prevent generation of impurities, it is washed in DI water and the internal surface is treated to the grade of E.P. 10 Ra and 5 Ra. All processes of assembly, welding, testing and washing of DRA300 series are carried out and thoroughly managed in the 100-class and 10-class clean room. DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

Features

- Tied Diaphragm design for positive shut-off
- All semiconductor gas industry
- For toxic gas
- For pyrophoric gas
- For high corrosive gas
- For protecting the diaphragm from rupturing
- Locking-Plate Seal system(Patent No : 10-0753280)

권장 사항

각 제품들은 최고의 안전성과 쉬운 작동법을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다. 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

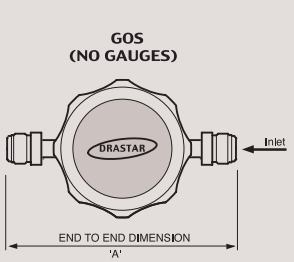
Recommendations to Use

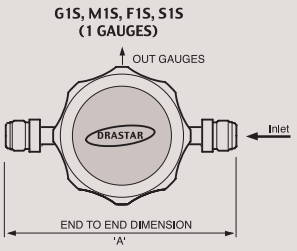
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

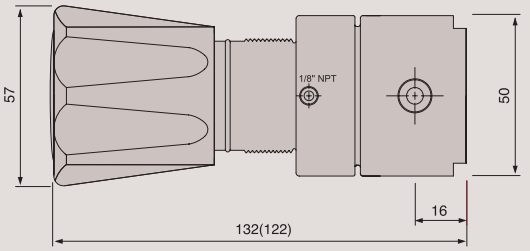
INSTALLATION DIMENSIONS

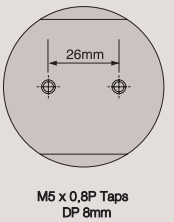
▪ GAUGE PORT OPTIONS

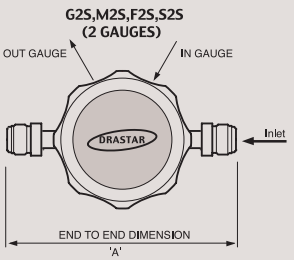
1/4″

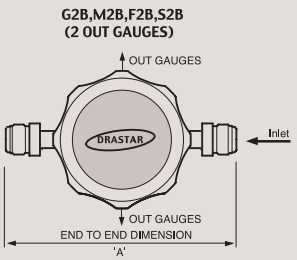




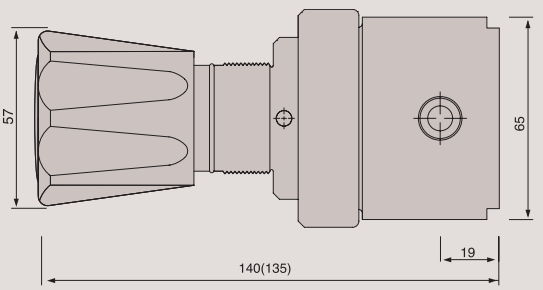


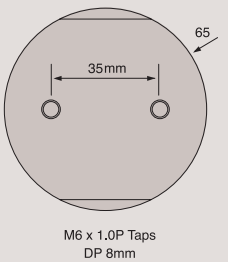






1/2″





ORDERING INFORMATION

DRA300 - D 025 S - H P S - 4MS - G0S

BASIS SERIES

BODY MATERIAL

A = 316L Bright Annealed	B.A
B = 316L Electropolish	10Ra
C = 316L Internal Electropolish	10Ra
D = 316L Electropolish VAR(P.E.P)	10Ra
E = 316L Electropolish VAR(P.E.P)	5Ra

OUTLET PRESSURE RANGE
025 = 1-25psi (.1-1.7bar)
050 = 1-50psi (.1-3.5bar)
100 = 1-100psi (.1-7bar)
250 = 1-250psi (.2-17bar)

DIAPHRAGM MATERIAL
S = STS 316L
H = Hastelloy-C

MAX. INLET PRESSURE
H = 3500psi(238bar)
L = 600psi(41bar)

SEAT MATERIAL
P = PCTFE
T = Teflon
V = Vespel

GAUGE PORTS OPTIONS

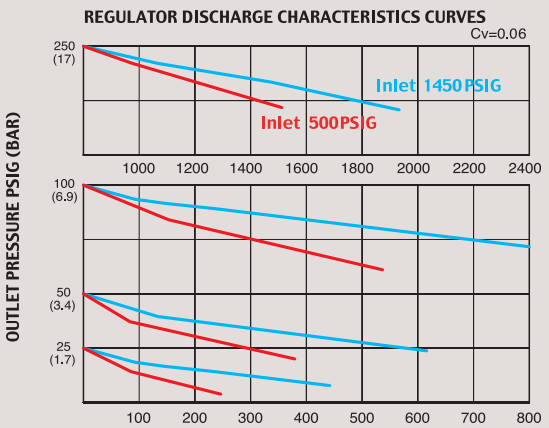
G0S = None	0	F1S = 1/4″ Femle Sw.	1
G1S = 1/4″ H.P.I.C	1	F2S = 1/4″ Femle Sw.	2
G2S = 1/4″ H.P.I.C	2	F2B = 1/4″ Femle Sw.	2
G2B = 1/4″ H.P.I.C	2	S1S = 1/4″ Fixed Male	1
M1S = 1/4″ Male Sw.	1	S2S = 1/4″ Fixed Male	2
M2S = 1/4″ Male Sw.	2	S2B = 1/4″ Fixed Male	2
M2B = 1/4″ Male Sw.	2		

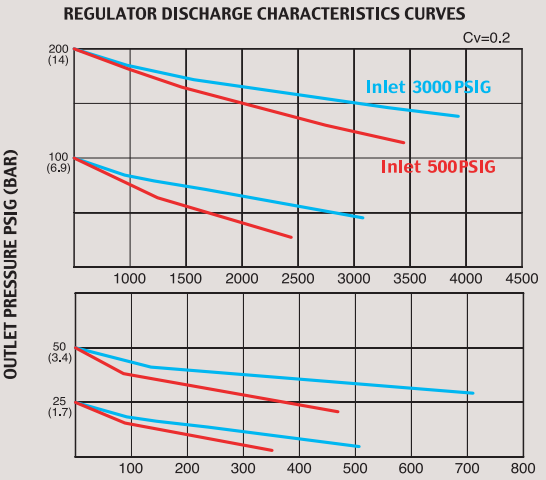
INLET / OUTLET PORTS SIZE — **Type "A" ±1.0mm**

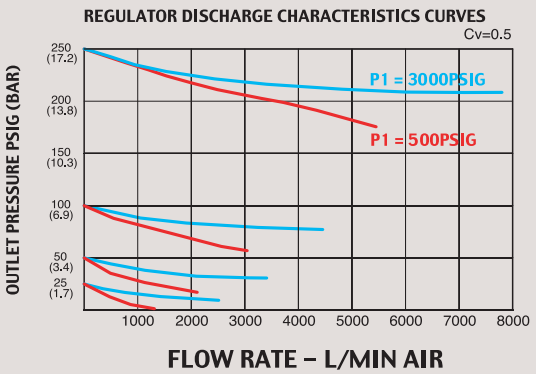
4HP = 1/4″ H.P.I.C	
4MS & 4FS = 1/4″ Male, Female Sw.	94mm
4FL & 4ML = 1/4″ Male, Female Sw.	00mm
8MS & 8FS = 3/8″ Male, Female Sw.	120mm
8FL & 8ML = 3/8″ Male, Female Sw.	000mm
2MS & 2FS = 1/2″ Male, Female Sw.	140mm
2FL & 2ML = 1/2″ Male, Female Sw.	000mm
3MS & 3FS = 3/4″ Male, Female Sw.	160mm
3FL & 3ML = 3/4″ Male, Female Sw.	000mm
4IMF = In 1/4″ Male Out 1/4″ Female	94mm
4IFM = In 1/4″ Female Out 1/4″ Male	94mm
2IMF = In 1/2″ Male Out 1/2″ Female	140mm
2IFM = In 1/2″ Female Out 1/2″ Male	140mm
2IMFL = In 1/2″ Male Out 1/2″ Female	000mm
2IFML = In 1/2″ Female Out 1/2v Male	000mm
4TS = 1/4″ Tube Stubs	94mm
8TS = 3/8″ Tube Stubs	94mm
2TS = 1/2″ Tube Stubs	120mm
3TS = 3/4″ Tube Stubs	120mm

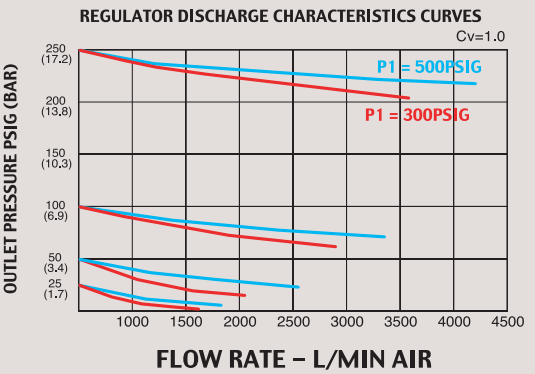
FLOW CAPACITY
S = Cv 0.06 Standard (Inlet 3000psi) (1/4″)
O = Cv 0.2 Optional (Inlet 500psi) (1/4″)
S = Cv 0.2 Optional (3/8″)
S = Cv 0.5 Optional (1/2″)
O = Cv 1.0 Optional (1/2″)
S = Cv 1.2 Standard (3/4″)

FLOW CHART

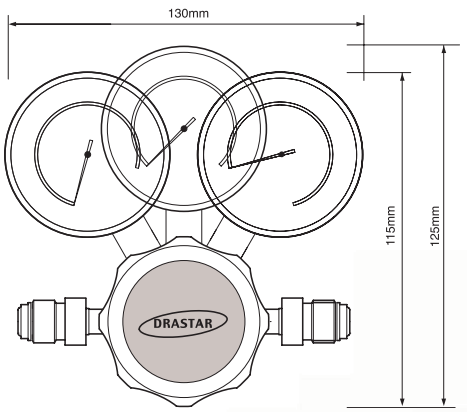




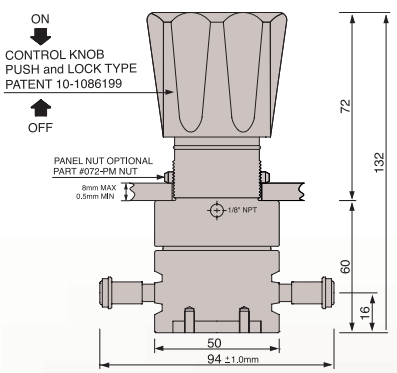


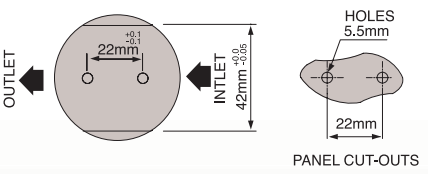


DRA300 Series 1/4″

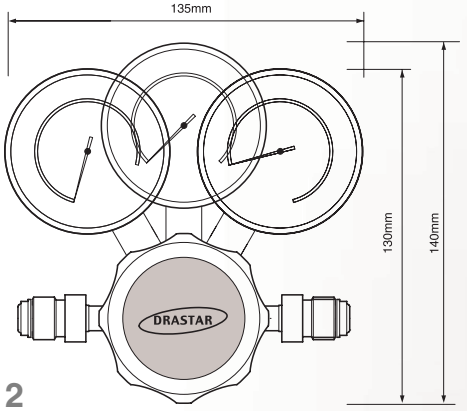


DRA300 Series 1/4″ & 3/8″

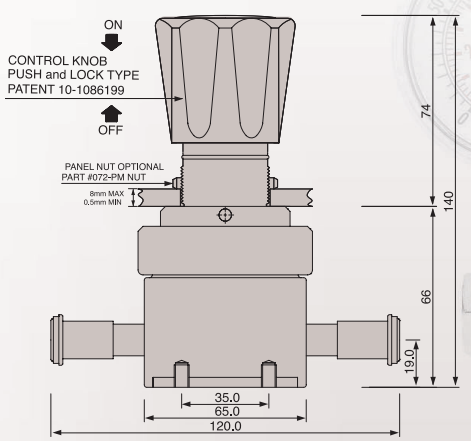


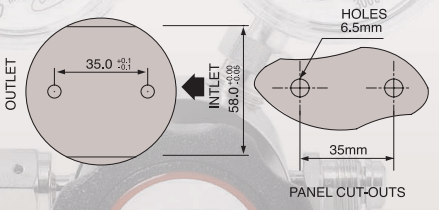


DRA300 Series 1/2″



DRA300 Series 1/2″ & 4/3″

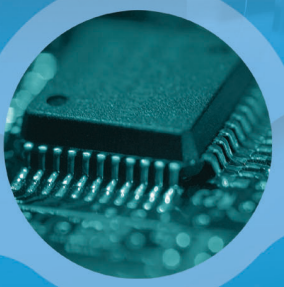


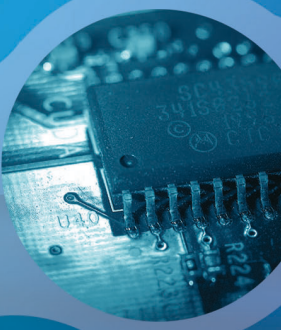


DRA 700 SERIES

ULTRA-HIGH PURITY

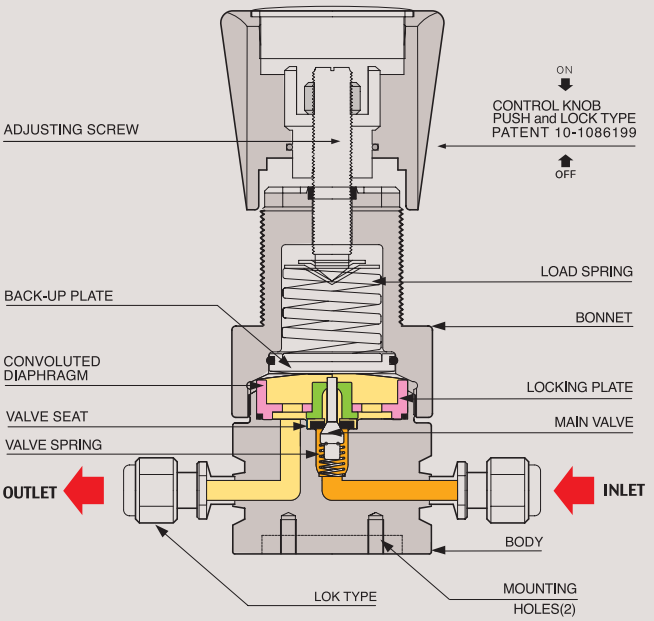
Economical Regulator





DRA700 SERIES

FUNCTIONAL SCHEMATIC



ULTRA HIGH PURITY B. A. MICROINCH INTERNAL FINISHES

DRA 700 SERIES(Lok Type Regulator)

DRA700 시리즈는 Hook-up Line, Bulk Gas Line, 고순도 가스등에 사용하기에 최적의 성능과 세정을 구현한 경제적인 모델의 Pressure Reducing Regulator입니다. 반도체 생산 라인 등에 사용하기에 적합한 제품이며 내부 표면은 B. A. 급으로 처리하였습니다. 특허(10-0753280) 출원한 Locking-Plate 방식이 적용된 제품입니다. DRA700 시리즈는 조립, 용접, 실험과 세정까지의 모든 공정은 1000-class와 100-class 크린룸에서 이루어집니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

DRA700 Series is the economical model of pressure reducing regulator which is suitable to use for the hook-up line, bulk gas line and high-purity gases and realizes the optimal performance and washing. It is suitable to use at the semi-conductor production line. Internal surface is processed to the grade of B. A. Patent-applied locking-plate system is also used to this model. All processes of assembly, welding, testing and washing of DRA700 series are carried out and thoroughly managed in the 1000-class and 100-class clean room. DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

Features

- Lok Type Regulator
- suitable for the hook-up line of semiconductor process
- Internal surfaces B. A. grade
- All performed in class 1000 and class 100 clean-rooms
- Locking-Plate Seal system(Patent No : 10-0753280)

권장 사항

각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

Recommendations to Use

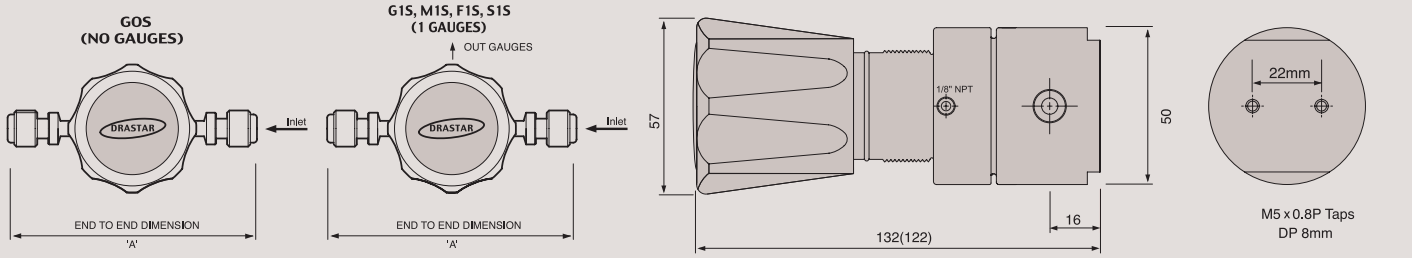
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25%~75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

INSTALLATION DIMENSIONS

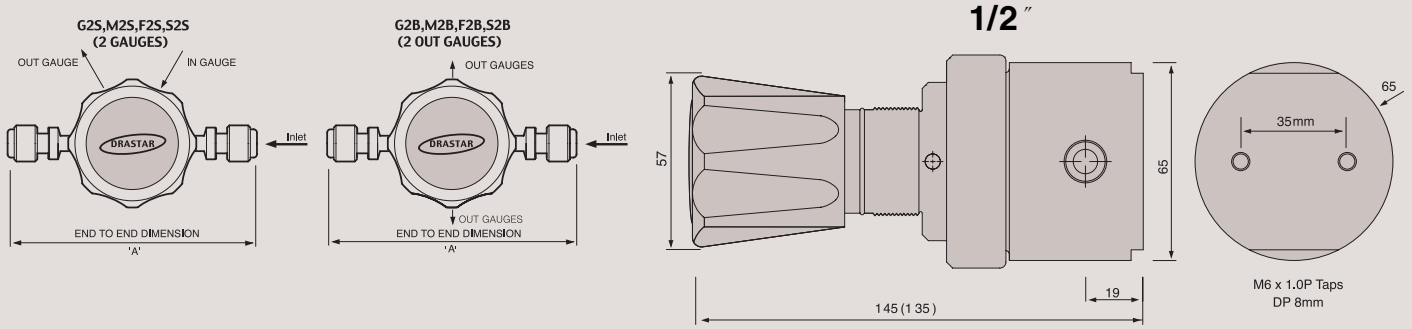
METRIC EQUIVALENTS ARE IN PARENTHESES

▪ GAUGE PORT OPTIONS

1/4″



1/2″



ORDERING INFORMATION

DRA700 - A 025 - H P S - 4L - G0S

BASIS SERIES

BODY MATERIAL
A = 316L Bright Annealed B.A 15Ra

OUTLET PRESSURE RANGE
025 = 1-25psi (.1-1.7bar)
050 = 1-50psi (.1-3.5bar)
100 = 1-100psi (.1-7bar)
250 = 1-250psi (.2-17bar)

MAX. INLET PRESSURE
H = 3500psi(238bar)
L = 600psi(41bar)

SEAT MATERIAL
P = PCTFE
T = Teflon

GAUGE PORTS OPTIONS — **Gauge Ports**

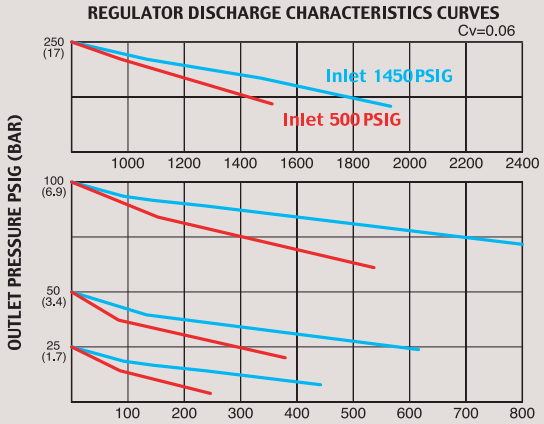
G0S = None	0
G1S = 1/4″ H.P.I.C	1
G2S = 1/4″ H.P.I.C	2
G2B = 1/4″ H.P.I.C	2
M1S = 1/4″ Male Sw.	1
M2S = 1/4″ Male Sw.	2
M2B = 1/4″ Male Sw.	2
F1S = 1/4″ Femle Sw.	1
F2S = 1/4″ Femle Sw.	2
F2B = 1/4″ Femle Sw.	2

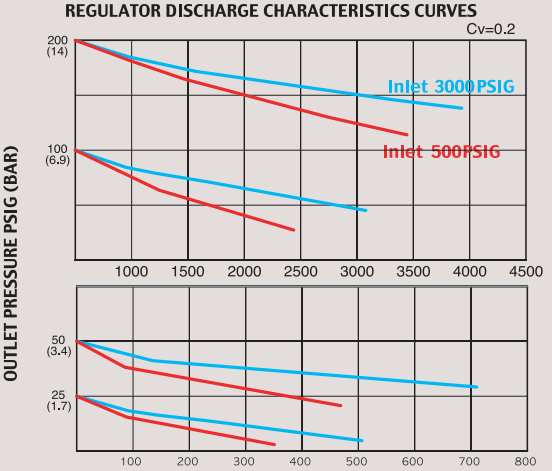
INLET / OUTLET PORTS SIZE — **Type "A" ±3.0mm**

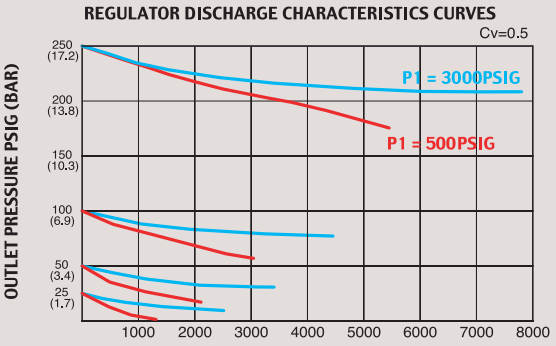
4L = 1/4″ Lock	105mm
8L = 3/8″ Lock	115mm
2L = 1/2″ Lock	150mm
3L = 3/4″ Lock	150mm

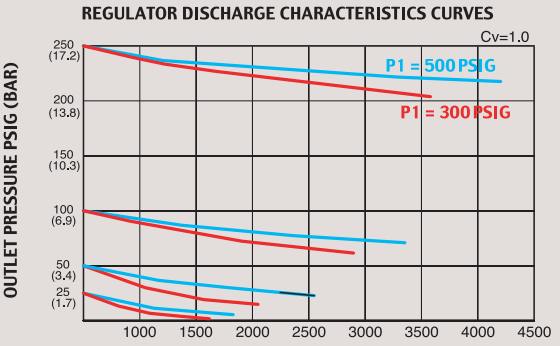
FLOW CAPACITY
S = Cv 0.06 Standard (Inlet 3000psi) (1/4″)
O = Cv 0.2 Optional (Inlet 500psi) (1/4″)
S = Cv 0.2 Optional (3/8″)
S = Cv 0.5 Optional (1/2″)
O = Cv 1.0 Optional (1/2″)
S = Cv 1.2 Standard (3/4″)

FLOW CHART





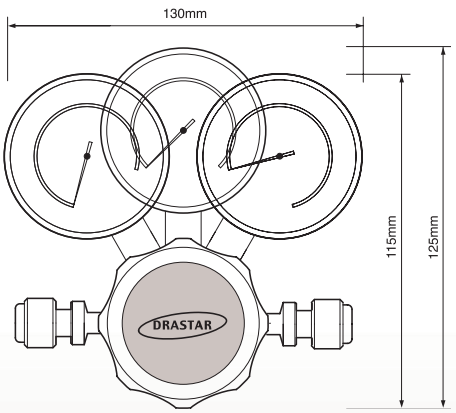


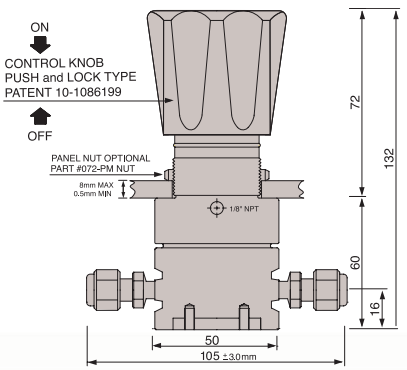


FLOW RATE – L/MIN AIR

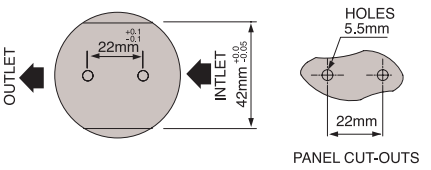
FLOW RATE – L/MIN AIR

DRA700 Series 1/4″

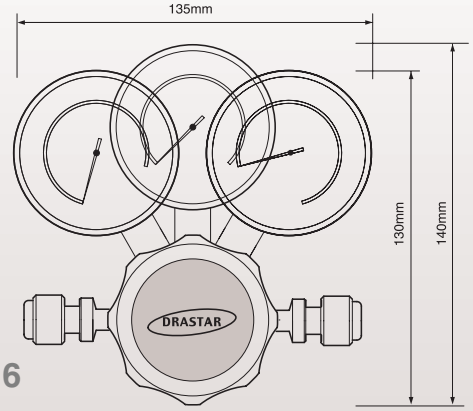




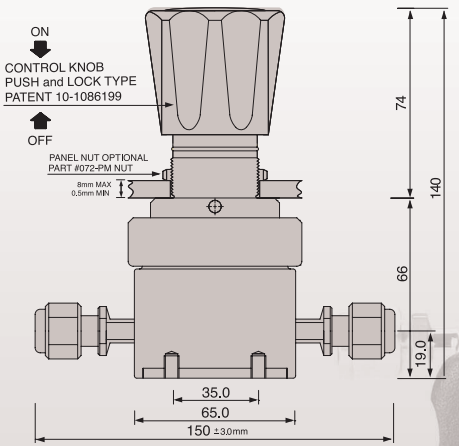
DRA700 Series 1/4″ & 3/8″

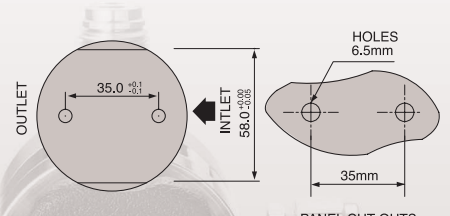


DRA700 Series 1/2″



DRA700 Series 1/2″ & 4/3″





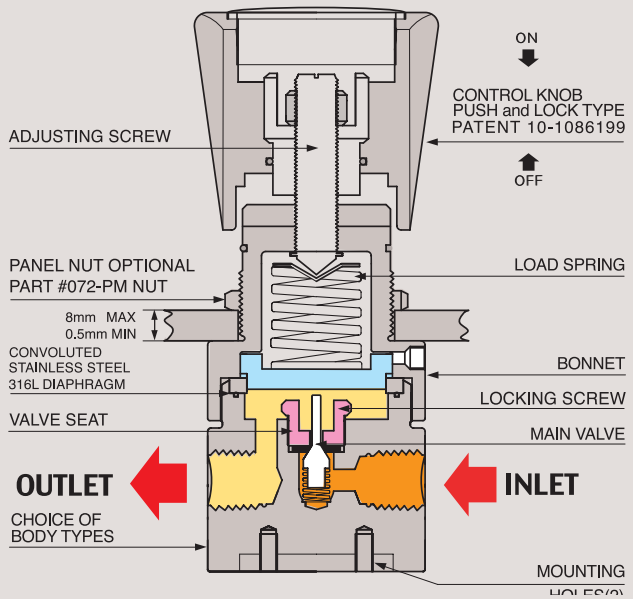
072 SERIES

GAS and LIQUID PRECISION CONTROL

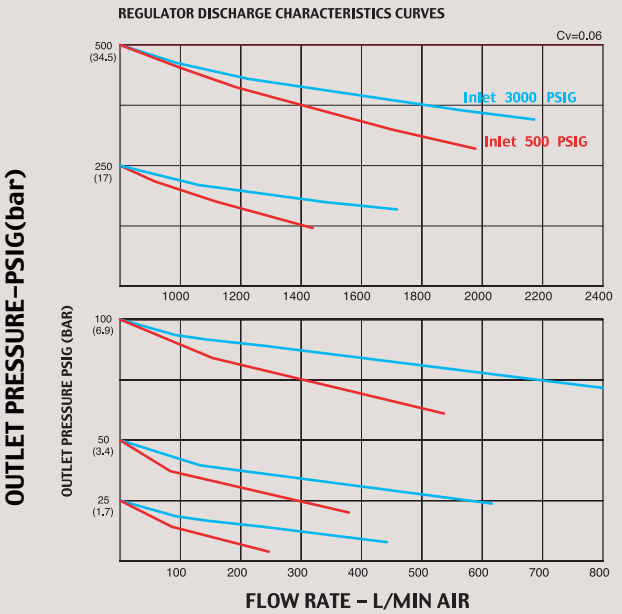
Pressure Reducing Regulator

This is revision by Jan of 2016

FUNCTIONAL SCHEMATIC



FLOW CHART



GAS AND LIQUID PRESSURE REDUCING REGULATOR

072 SERIES

072 시리즈는 정밀 산업에서 가장 많이 필요로 하고 가장 많이 사용되는 1/4″ NPT type Pressure Reducing Regulator입니다, 본체와 내부의 모든 부품은 Stainless steel 316L로 이루어졌으며, Bulk Gas Line, 실험실, 분석용 특수 가스, 또는 고순도 가스, 믹싱용 가스, 그리고 부식성 가스와 액체 등에서 모두 사용할 수 있도록 제작 설계 되었습니다. 사용 용도에 따라 3-ports 또는 4-ports를 선택하여 사용 할 수 있도록 하였습니다. 입구 압력은 3500psig(241bar)이고 Outlet working pressure 각각의 모델에 따라 최대 500psig(35bar)까지 사용할 수 있습니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값의 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

072 Series gas regulators are specially designed to regulate the high-corrosive gas and liquid and suitable for semi-conductor equipment production line where the special gases are used and liquid line. As the product' s body and all internal parts are made of stainless steel 316L 072S Series, they can be also used for ultra-pure six-nine(99.9999) gases. 3-ports or 4-ports 1/4″ FNPT can be connected to this 072S Series.DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

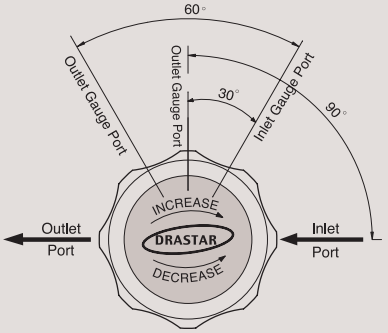
SPECIFICATIONS

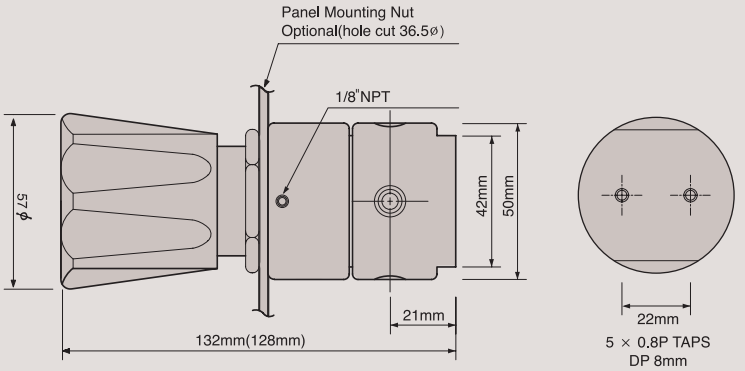
Ports	1/4″ NPT type 072X-0000L-1S, 3-ports 072X-0000C-1S, 4-ports
Leak Rate Certification	to 2x10^{-8} atm cc/sec Helium available.
Body Materials	072S-0000-1S / Stainless steel 316L 072B-0000-1S / Brass
Bonnet Material	Nickel Plated Brass / Stainless steel 316L
Diaphragm	Stainless steel 316L
Main Valve	Stainless steel 316L
Valve Spring	Stainless steel 316L
Valve Seat	Teflon® (Kel-F, Polyimide, etc.. Optional)
Inlet Pressure Ranges	072X-0000-1S, 3,500psig (238bar) 072X-0000-1S-5, 500psig (35bar)
Outlet Pressure Ranges	25(1.7bar), 50(3.4bar), 100(7bar), 250(17bar), 500psig(35bar)
Self-Venting	072X-0000-1S-V, Optional
Operating Temperature	-40°C - +70°C(-40°F - +160°F) (standard) 072x-0000-1S-H1, +120°C (Optional) 072x-0000-1S-H2, +250°C (Optional)
Flow Capacity	Cv=0.06 (Cv=0.2 etc.. Optional)
Standard Optional	CGA, Inlet and Outlet Gauges, etc..

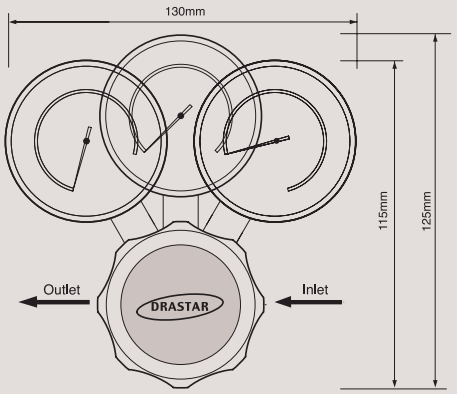
INSTALLATION DIMENSIONS

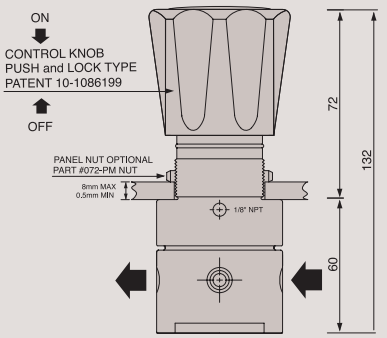
METRIC EQUIVALENTS ARE IN PARENTHESES

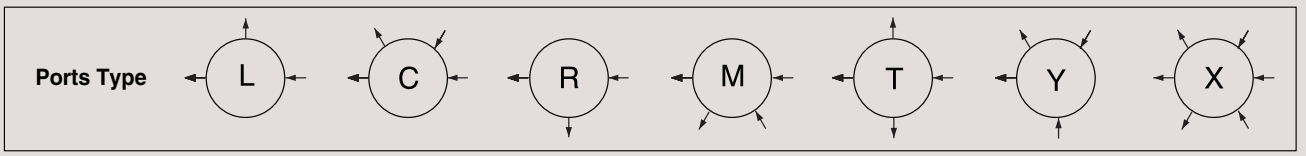
■ GAUGE PORT OPTIONS











Features

- Precision control of 1/4″ NPT type Regulator
- Suitable for the research labs, industrial control
- Inlet 3500 or 500psig
- Outlet 25psig(1.7bar), 50psig(3.5bar), 100psig(7bar), 250psig(17bar),500psig(35bar)
- Panel mounting nut option
- W072S-0000x-1O / W MODEL IS ONLY TYPE for LIQUID or WATER

권장 사항

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Recommendations

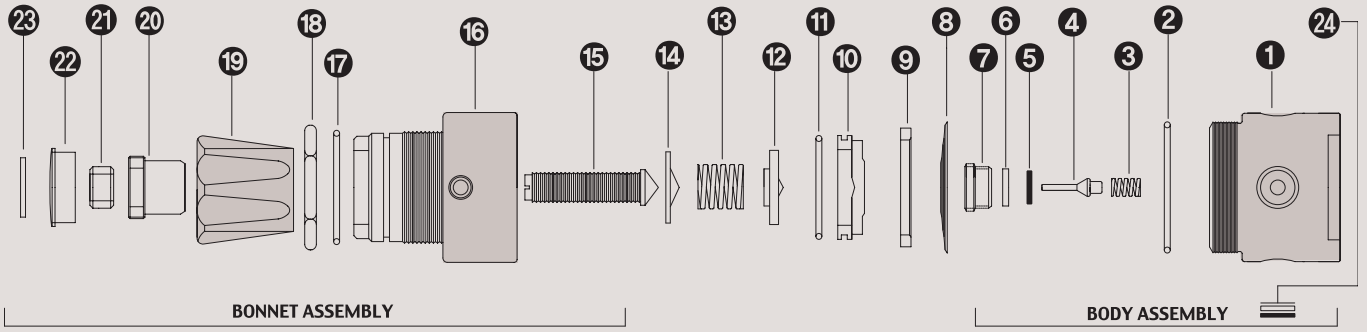
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

ORDERING INFORMATION

W 072 S - 0025 L - 1S H - 5 - V - H1

W MODEL	BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	PORT TYPE	FLOW CAPACITY	DIAPHRAGM MATERIAL	INLET PRESSURE	SELF VENTING	HIGH TEMPE-RATURE
W model is only type for Liquid or Water	Standard Inlet Pressure 3500psig (238 bar)	B = Brass S = Stainless Steel 316L	0025 = 25psi(1.7bar) 0050 = 50psi(3.5bar) 0100 = 100psi(7bar) 0250 = 250psi(17bar) 0500 = 500psi(35bar)	L = 3-Ports C = 4-Ports R = 3-Ports M = 4-Ports T = 4-Ports Y = 4-Ports X = 6-Ports	1 = 1/4″ NPT type 1S = Cv 0.06 Standard 1O = Cv 0.2 Optional	STS 316L Standard H = Hastelloy-C Optional	5 = Inlet 500psi(35bar) Optional	V = Self-Venting Optional	H1 = 120° C H2 = 250° C Optional

072 SERIES PART LIST



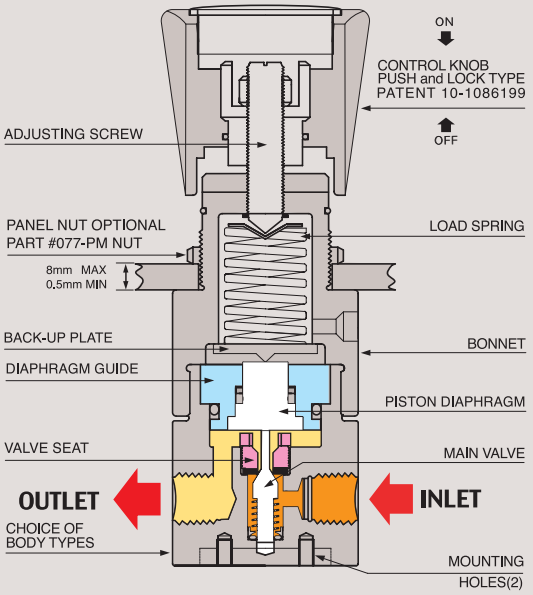
STANDARD MODEL SERIES

Item No.	Description	Part No.	Model Application
01	Body	072-02-01	02-01 Stainless Steel 316L body / 02-02 Brass body
02	Boby O-Ring	072-02-00	All Model Same
03	Valve Spring	072-04-01	04-01 STS 316L / 04-03 Hastelloy-C-22 / 04-04 Monel
04	Main Valve	072-06-01	06-01 STS 316L / 06-03 Hastelloy-C-22 / 06-04 Monel
05	Valve Seat	072-10-01	10-01 PFA / 10-05 Vespel / 10-06 Peek
06	Valve Seat Cartridge	072-08-01	08-01 Stainless Steel 316L / 08-02 Brass
07	Locking Screw	072-12-01	All Model Same
08	Diaphragm	072-16-01	16-01 STS 316L / 16-02 Hastelloy C-22
09	Diaphragm Plate	072-22-02	All Model Same
10	Back-up Plate	072-26-03	All Model Same
11	Back-up Plate O-Ring	072-28-01	All Model Same
12	Spring Plate	072-30-01	All Model Same
13	Load Spring	072-38-01	11-01 25psi / 11-02 50psi / 11-03 100psi / 11-05 250psi / 11-07 500psi
14	Pivot	072-40-01	All Model Same
15	Adjusting Screw	072-42-01	All Model Same
16	Bonnet	072-44-02	44-01 Stainless steel 316L / 44-02 Brass
17	Push & Lock O-Ring	072-46-01	All Model Same
18	Panel mount Nut	072-48-01	All Model Same
19	Control Knob	072-50-01	50-01 ABS / 50-04 Aluminum Control knob
20	Push & Lock Handle nut	072-52-01	All Model Same
21	Locking Nut	072-54-01	All Model Same
22	Name Cap	072-56-01	56-01 ABS
23	Name Cap Plate	072-58-01	58-01 25psi/58-02 50psi/58-03 100psi/58-04 200psi/58-06 350psi/58-07 500psi
24	Filter Assembly	072-60-01	All Model Same

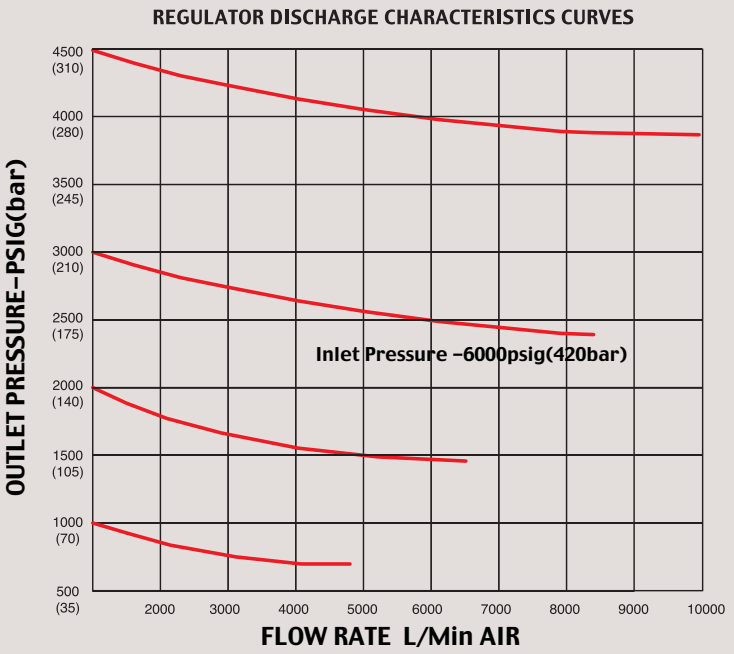
082 SERIES

HIGH-PRESSURE REGULATOR

FUNCTIONAL SCHEMATIC



FLOW CHART



HIGH-PRESSURE REGULATOR

082 SERIES

082 시리즈는 고압가스와 액체 등에서도 안전하고 안정적으로 사용할 수 있도록 드라스타만의 Piston- Diaphragm 방식을 개발하여 더욱 더 안전하게 사용할 수 있습니다, 본체와 내부의 모든 부품은 Stainless steel 316L로 이루어져 부식성 가스 또는 액체 등에서 안심하고 사용할 수 있도록 하였으며, 입구 압력은 6000psig〈420bar〉이고 출구 압력은 최대 3000psi 〈210bar〉 까지 사용 할 수 있으며 1/4″ NPT type 4-Ports Regulator입니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

082 Series gas regulators are specially designed to regulate the high pressure gases safely. As the product' s body and all internal parts are made of stainless steel 316L(082S Series) that is strong for corrosiveness and liquid and brass (082B Series), they can be also used for ultra-pure six-nine(99.9999) gases. As these models can be connected by 4-ports 1/4″ FNPT, they are suitable for semi-conductor equipment production line and ultra-precision plumbing line. max. inlet pressure is 6000 psig(420 bar) and outlet pressure, 1000 psi(70 bar), 2000 psi(140 bar), and 3000 psi(210 bar).DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from

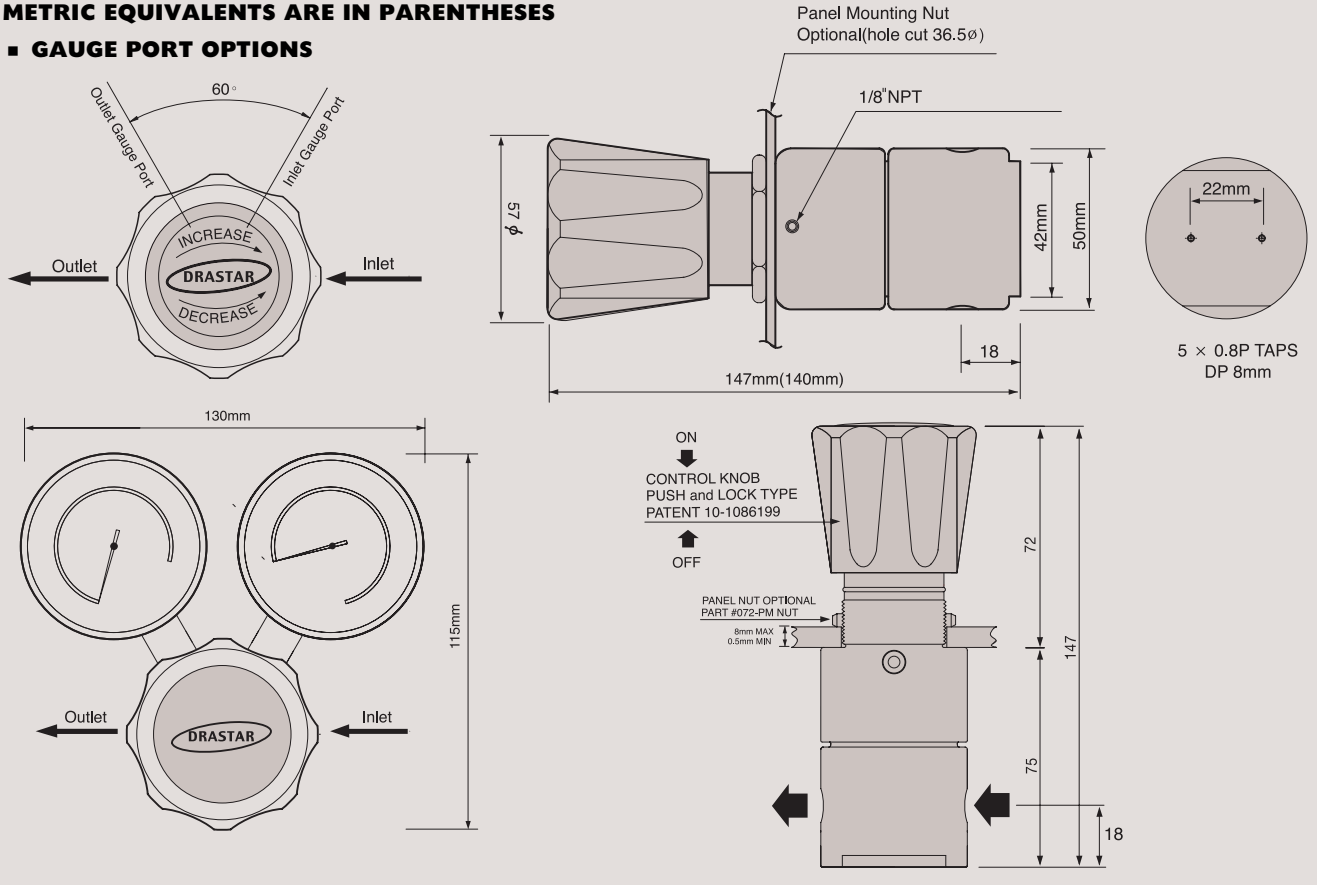
SPECIFICATIONS

Ports	1/4″ 4-ports NPT type
Leak Rate Certification	to 2x10^{-8} atm cc/sec Helium available.
Body Materials	082S-0000-1S / Stainless steel 316L 082B-0000-1S / Brass
Bonnet Materia	Nickel Plated Forged Brass / Stainless steel 316L
Main Valve	Stainless steel 316L
Valve Spring	Stainless steel 316L
Valve Seat	Teflon® (Kel-F, Polyimide, etc.. Optional)
Inlet Pressure Range	6,000psig(420bar)
Outlet Pressure Ranges	1000(70bar), 2000(140bar), 3000psig(210bar), 4500psig(310bar)
Self-Venting	082X-0000-1S-V, Optional
Operating Temperature	-40°C - +70°C(-40°F - +160°F) (standard) 082S-0000-1S-H1, +120°C (Optional) 082S-0000-1S-H2, +250°C (Optional)
Flow Capacity	Cv=0.06 (Cv=0.2 etc.. Optional)
Standard Optional	CGA, Inlet and Outlet Gauges, etc..

INSTALLATION DIMENSIONS

METRIC EQUIVALENTS ARE IN PARENTHESES

■ GAUGE PORT OPTIONS



outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

Features

- Piston- Diaphragm Type Regulator of 1/4″ NPT Type
- Suitable for the High-Pressure Regulator
- Inlet 6000psig(420bar)
- Outlet 1000(70bar), 2000(140bar), 3000(210bar)psig, 4500(310bar)
- Panel mounting nut option

권장 사항

각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

Recommendations

Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

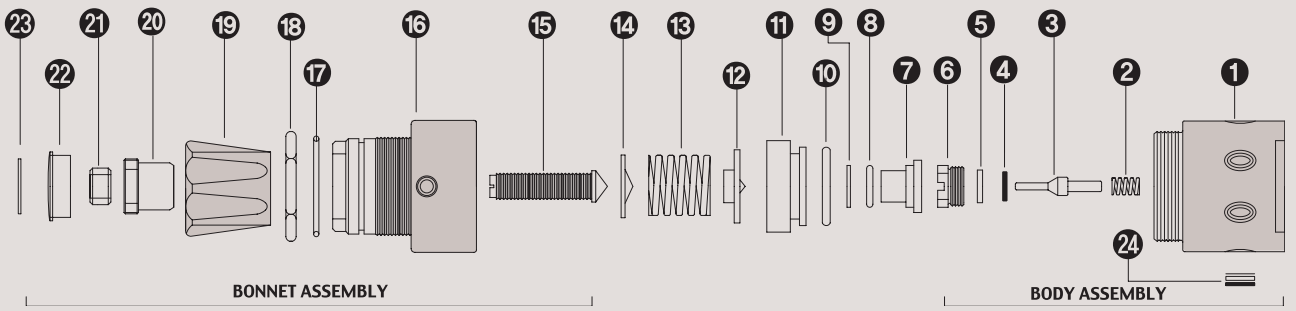
ORDERING INFORMATION

082 S - 1000 - 1S H - V - H1

BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	FLOW CAPACITY	DIAPHRAGM MATERIAL	SELF VENTING	HIGH TEMPE-RATURE
Standard Inlet Pressure 6000psig (420 bar)	B = Brass S = Stainless Steel 316L	1000 = 10-1000psi (7-70bar) 2000 = 20-2000psi (15-140bar) 3000 = 30-3000psi (20-210bar) 4500 = 30-4500psi (30-310bar)	1 = 1/4″ Female NPT 1S = Cv 0.06 Standard 1O = Cv 0.2 Optional	STS 316L Standard H = Hastelloy-C Optional	V = Self-Venting Optional	H1 = 120° C H2 = 250° C Optional

This is revision by Jan of 2016

082 SERIES PART LIST



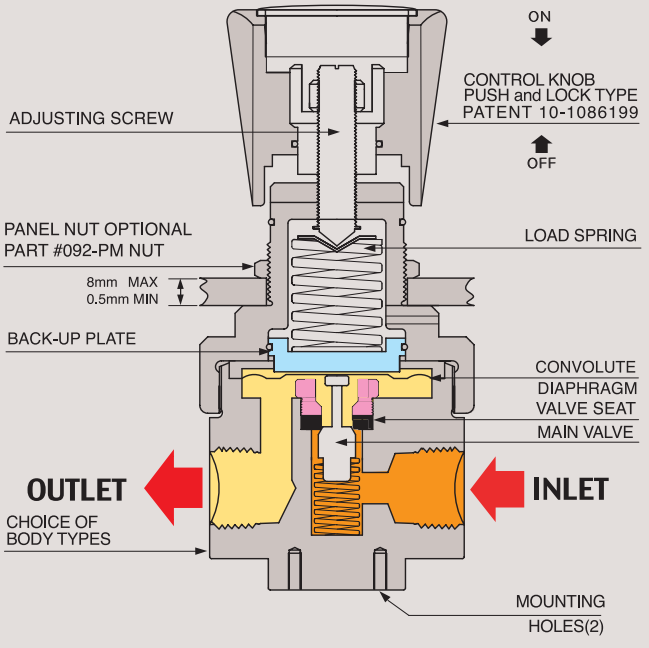
STANDARD MODEL SERIES

Item No.	Description	Part No.	Model Application
01	Body	082-02-01	02-01 Stainless Steel 316L / 02-02 Brass Body / 02-03 Monel
02	Valve Spring	082-04-01	04-01 STS 316L / 04-03 Hastelloy C-22 / 04-04 Monel
03	Main Valve	082-06-01	06-01 STS 316L / 06-03 Hastelloy C-275 / 04-04 Monel
04	Valve Seat	082-10-01	10-01 PFA / 10-05 Vespel / 10-06 Peek
05	Valve Seat Cartridge	082-08-01	All Model Same
06	Locking Screw	082-12-01	All Model Same
07	Piston Diaphragm	082-18-01	All Model Same
08	Piston Diaphragm O-ring	082-18-00	All Model Same
09	Diaphragm Teflon Ring	082-18-00	All Model Same
10	Diaphragm Guide O-ring	082-18-00	All Model Same
11	Piston Diaphragm Guide	082-20-01	20-01 Series Stainless steel 316L / 20-02 Brass
12	Spring Plate	082-30-01	All Model Same
13	Load Spring	082-38-01	38-08 1000psi / 38-09 2000psi / 38-10 3000psi / 38-11 4500psi
14	Pivot	082-40-01	All Model Same
15	Adijusting Screw	082-42-01	All Model Same
16	Bonnet	082-44-02	44-02 Brass / 44-01 Stainless steel 304 Bonnet Optional
17	Push & Lock O-Ring	082-46-01	All Model Same
18	Panel mount Nut	082-48-01	All Model Same
19	Control Knob	082-50-01	50-01 ABS / 50-04 Aluminum Control knob Optional)
20	Push & Lock Handle nut	082-52-01	All Model Same
21	Locking Nut	082-54-01	All Model Same
22	Name Cap	082-56-01	56-01 ABS
23	Name Cap Plate	082-58-07	58-08 1000psi / 58-09 2000psi / 58-10 3000psi / 58-11 4500psi
24	Filter Assembly	082-60-02	All Model Same

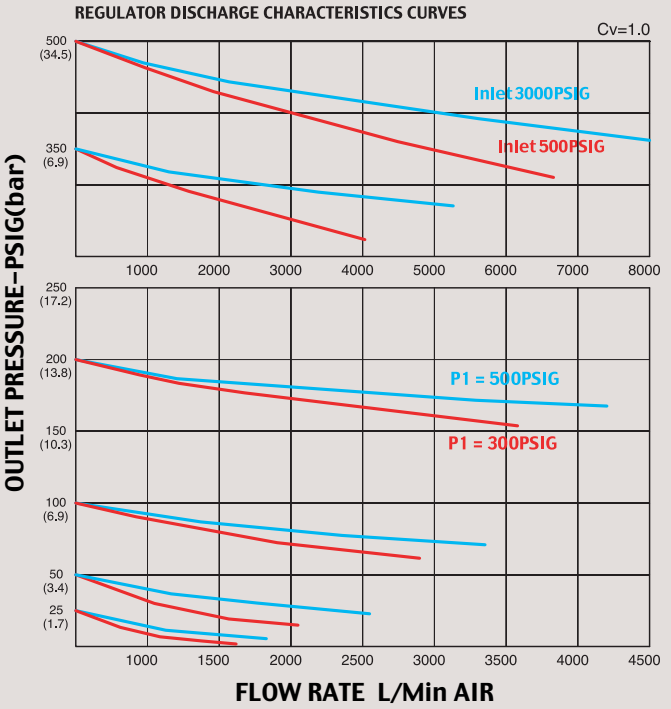
092 SERIES

HIGH-FLOW REGULATOR

FUNCTIONAL SCHEMATIC



FLOW CHART



HIGH-FLOW REDUCING REGULATOR

092 SERIES

092시리즈는 정밀 배관 라인에서 고유량의 부식성 가스와 액체 등을 조절할 수 있도록 고안된 1/2″ NPT 타입 Regulator입니다. 본체와 내부의 모든 부품은 Stainless steel 316L로서 산업 전반의 부식성 가스, 고순도 가스와 액체 등에 강한 특성을 나타냅니다. 입구 압력은 3500psig(241bar) or 500psi(35bar)이고 출구 압력은 각각의 모델에 따라 최대 350psig(24bar)까지 사용할 수 있도록 제작 설계 되였습니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

092 Series gas and liquid regulators are specially designed to regulate the mass-flow of gases and liquid such as semi-conductor equipment production line and ultra-precision plumbing line with 1/2″ FNPT, etc. As the product' s body and all internal parts are made of stainless steel 316L that is strong for corrosiveness and liquid, they can be used for ultra-pure six-nine (99.9999) gases, corrosive gases, and liquids. Accordingly, special regard was paid to utmost safety and easy operation of the regulators.DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

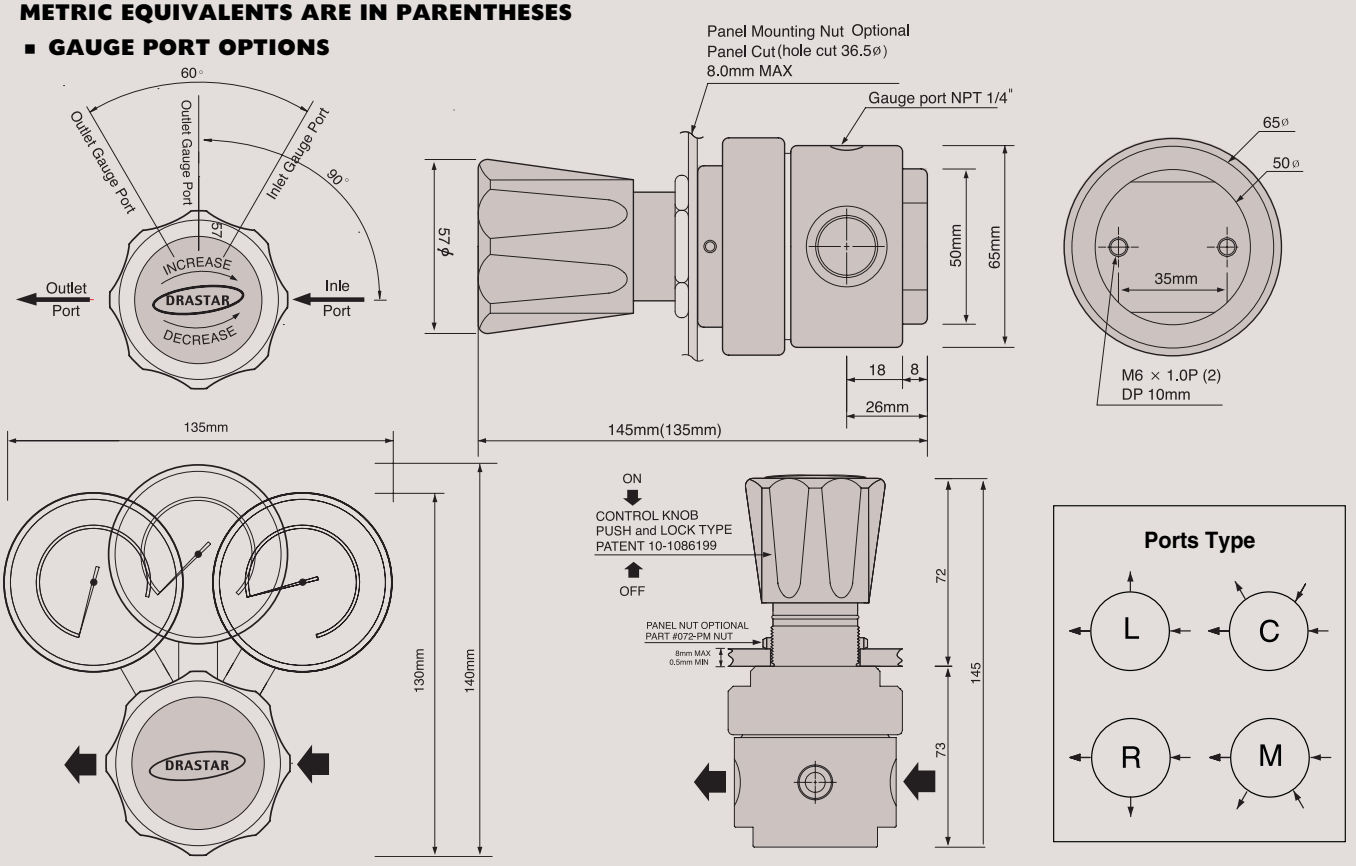
SPECIFICATIONS

Ports	1/2″ NPT type Gauge Ports 1/4″ NPT
Leak Rate Certification	to $2x10^{-8}$ atm cc/sec Helium available.
Body Material	Stainless steel 316L
Bonnet Material	Nickel Plated Forged Brass/stainless steel 316L
Diaphragm	Stainless steel 316L
Main Valve	Stainless steel 316L
Valve Spring	Stainless steel 316L
Valve Seat	Teflon® (Kel-F, Polyimide, etc.. Optional)
Inlet Pressure Ranges	092-0000-1S, 3,500psig (238bar) 092-0000-1S-5, 500psig (35bar)
Outlet Pressure Ranges	25(1.7bar), 50(3.5bar), 100(7bar), 200(14bar), 350psig(24bar)
Self-Venting	092-0000-1S-V Optional
Operating Temperature	-40° C - +70° C(-40° F - +160° F) (standard) 092-0000-1S-H1, +120° C (Optional) 092-0000-1S-H2, +250° C (Optional)
Flow Capacity	Cv=1.0 (Cv=1.2 Optional)

INSTALLATION DIMENSIONS

METRIC EQUIVALENTS ARE IN PARENTHESES

■ GAUGE PORT OPTIONS



Features

- Suitable for the High-Flow Regulator of 1/2″ NPT Type
- Body and all internal parts are Stainless steel 316L
- Inlet 3500psig(241bar) or 500psi(35bar)
- Outlet 25psig(1.7bar), 50psig(3.5bar), 100psig(7bar), 200psig(14bar), 350psig(24bar)
- Panel mounting nut option
- W092-0000-1S / W MODEL IS ONLY TYPE for LIQUID or WATER

권장 사항

각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

Recommendations to Use

Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

ORDERING INFORMATION

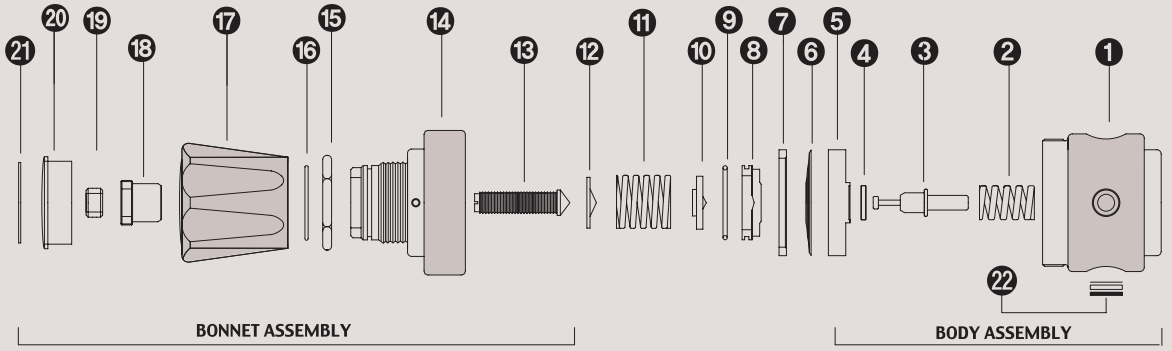
W 092 - 0025 L - 1S H - 5 - V - H1

W MODEL	BASIS SERIES NUMBER	OUTLET PRESSURE RANGE	PORT TYPE	FLOW CAPACITY	DIAPHRAGM MATERIAL	INLET PRESSURE	SELF VENTING	HIGH TEMPE-RATURE
W model is only type for Liquid or Water	Standard Inlet Pressure 3500psig (238 bar) Body : STS 316L Only	0025 = 25psi(1.7bar) 0050 = 50psi(3.5bar) 0100 = 100psi(7bar) 0200 = 200psi(14bar) 0350 = 350psi(24bar) 0500 = 500psi(34bar)	L = 3-Ports C = 4-Ports R = 3-Ports M = 4-Ports	1 = 1/2″ Female NPT 1S = Cv 1.0 Standard	STS 316L Standard H = Hastelloy-C Optional	5 = Inlet 500psi(35bar) Optional	V = Self-Venting Optional	H1 = 120° C H2 = 250° C H3 = 500° C Optional

※ For Gas 500PSIG Case : MUST use W Model Only

This is revision by Jan of 2016

092 SERIES PART LIST



STANDARD MODEL SERIES

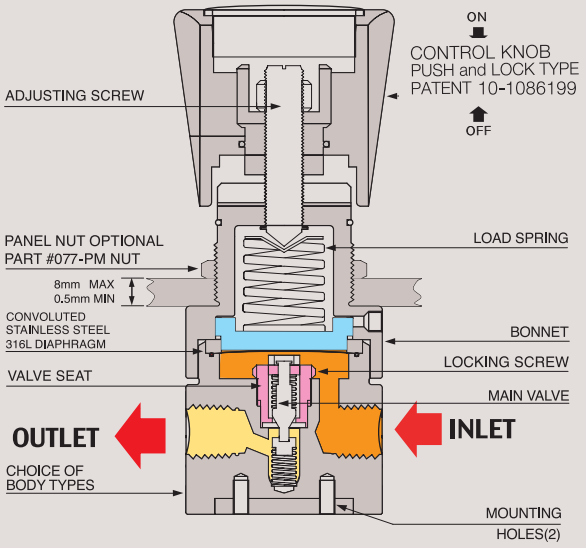
Item No.	Description	Part No.	Model Application
01	Body	092-02-01	02-01 Stainless steel 316L
02	Valve spring	092-04-01	All Model Same
03	Main Valve	092-06-01	All Model Same
04	Valve Seat	092-10-01	All Model Same
05	Locking Plate	092-14-01	All Model Same
06	Diaphragm	092-16-01	16-01 STS 316L / 16-02 Hastelloy C-22
07	Diaphragm Plate	092-22-01	All Model Same
08	Back-up Plate	092-26-01	All Model Same
09	Back-up Plate O-ring	092-26-00	All Model Same
10	Spring Plate	092-30-01	All Model Same
11	Load Spring	092-38-01	38-01 25psi/38-02 50psi/38-03 100psi/38-04 200psi/38-06 350psi/38-07 500psi
12	Pivot	092-40-01	All Model Same
13	Adjusting Screw	092-42-01	All Model Same
14	Bonnet	092-44-02	44-01 STS 316L / 44-02 Brass
15	Panel mount Nut	092-48-01	All Model Same
16	Push & Lock O-Ring	092-46-01	All Model Same
17	Control Knob	092-50-01	50-01 ABS / 50-04 Aluminum Control knob
18	Push & Lock Handle nut	092-52-01	All Model Same
19	Locking Nut	092-54-01	All Model Same
20	Name Cap	092-56-01	All Model Same
21	Name Cap Plate	092-58-01	58-01 25psi/58-02 50psi/58-03 100psi/58-04 200psi/58-06 350psi/58-07 500psi
22	Filter Assembly	092-60-03	All Model Same

077 SERIES

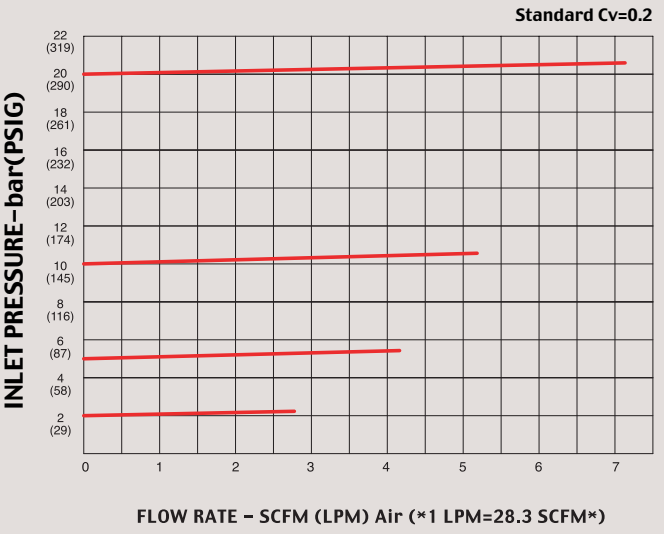
Back Pressure Regulator

This is revision by Jan of 2016

FUNCTIONAL SCHEMATIC



FLOW CHART



FLOW RATE L/Min AIR

BACK PRESSURE REGULATOR

077 SERIES

077 시리즈는 back-pressure regulator로서 물, 케미칼, Liquid 또는 가스등을 사용하기에 적합한 제품이며 배관 사이즈는 NPT 1/4″ 전용 레귤레이터 입니다 Body 의 재질은 모델에 따라 Brass or Stainless steel 316L로 이루어졌으며 각 모델에 따라 Working pressure 0.2~25bar(362psi)까지 폭넓게 사용할 수 있습니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스배관 라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상를 완전히 해결한 드라스타만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타만의 특허 10-1086199 Push and Lock 타입의 레귤레이터입니다.

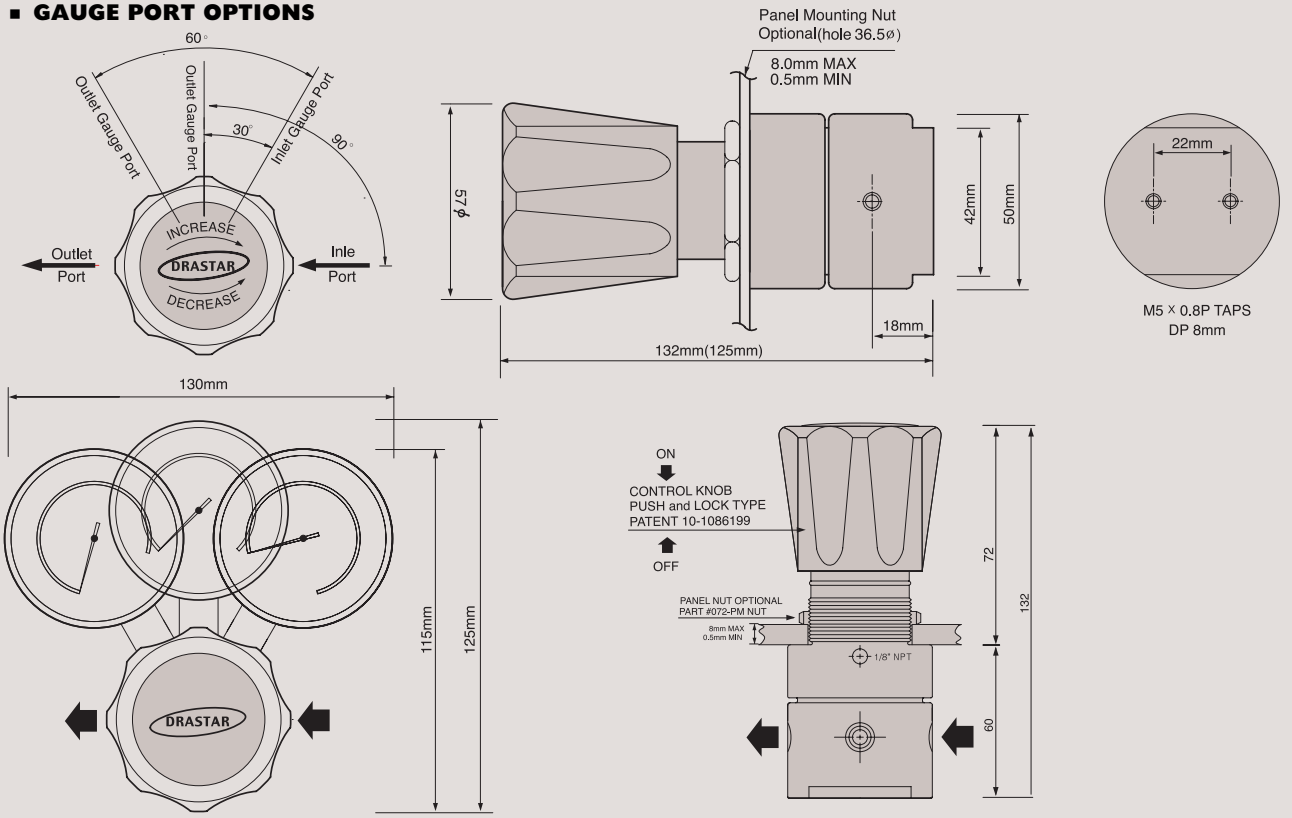
077 Series is the back-pressure type regulator suitable for water, chemical, liquid, gas, etc. and uses NPT 1/4″ pipe exclusively. Regulator body is made of brass or stainless steel 316L and has the wide range of working pressure of 0.2 ~ 25 bar (362psi) by model. DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents the self-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline. You can prevent the self-changing of pre-set value just by pushing the handle and reset the value freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199).

SPECIFICATIONS

Ports	077S-000-2NP4 2-ports NPT 1/4″ 077S-000-3NP4 3-ports
Leak Rate Certification	to $2x10^{-8}$ atm cc/sec Helium available.
Body Materials	077S-000-xNP4 / Stainless steel 316L 077B-000-xNP4 / Brass
Bonnet Material	Nickel Plated Brass / (Stainless steel 316L Optional)
Diaphragm	Stainless steel 316L
Main Valve	Stainless steel 316L
Valve Spring	Stainless steel 316L
Valve Seat	Teflon (Kel-F, Polyimide, etc.. Optional)
Inlet Pressure Ranges	2bar(30psig), 5bar(72psig) 10bar(145psig), 25bar(362psig)
Operating Temperature	-40°C - +70°C (standard) 077S-000-xNP4-H1, +120°C (Optional) 077S-000-xNP4-H2, +250°C (Optional)
Flow Capacity	Cv=0.2 (Standard)

INSTALLATION DIMENSIONS
METRIC EQUIVALENTS ARE IN PARENTHESES

■ GAUGE PORT OPTIONS



Features

- Precision control of 1/4″ NPT Type Back Pressure Regulator
- Suitable for the research labs, industrial control
- Control 2bar(30psig), 5bar(72psig) 10bar(145psig), 25bar(362psig)
- Panel mounting NUT (#077-PM nut) option
- W077S-000-XNP4 W MODEL IS ONLY TYPE for LIQUID or WATER

권장 사항

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Recommendations

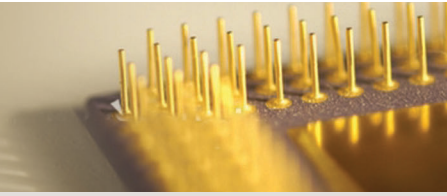
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

ORDERING INFORMATION

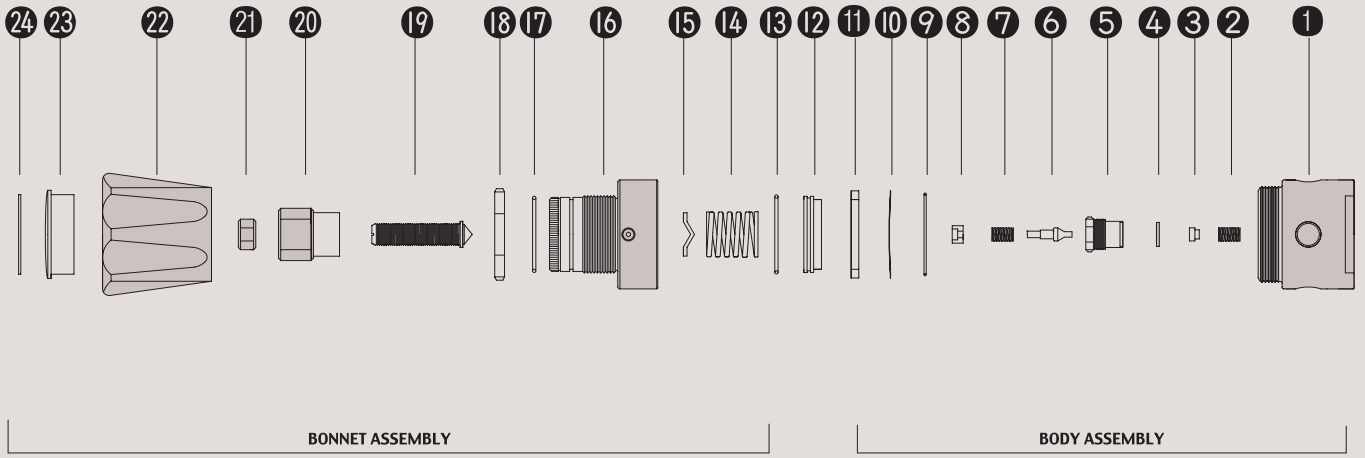
W 077 S - 002 - 2 NP4 - H - H1

W MODEL	BASIS SERIES NUMBER	BODY MATERIAL	CONTROLLED PRESSURE RANGE	PORTS	INLET OUTLET PORTS SIZE	DIAPHRAGM MATERIAL	HIGH TEMPE-RATURE
W model is only type for Liquid or Water	077 Series	B = Brass S = Stainless Steel 316L	002 = 2bar (30psi) 005 = 5bar (72psi) 010 = 10bar (145psi) 025 = 25bar (362psi)	2 = 2-Ports 3 = 3-Ports 4 = 4-Ports	NP4 = 1/4″ NPT Cv = 0.2 Standard	STS 316L Standard H = Hastelloy-C Optional	H1 = 120° C H2 = 250° C H3 = 500° C Optional

This is revision by Jan of 2016



077 SERIES PART LIST



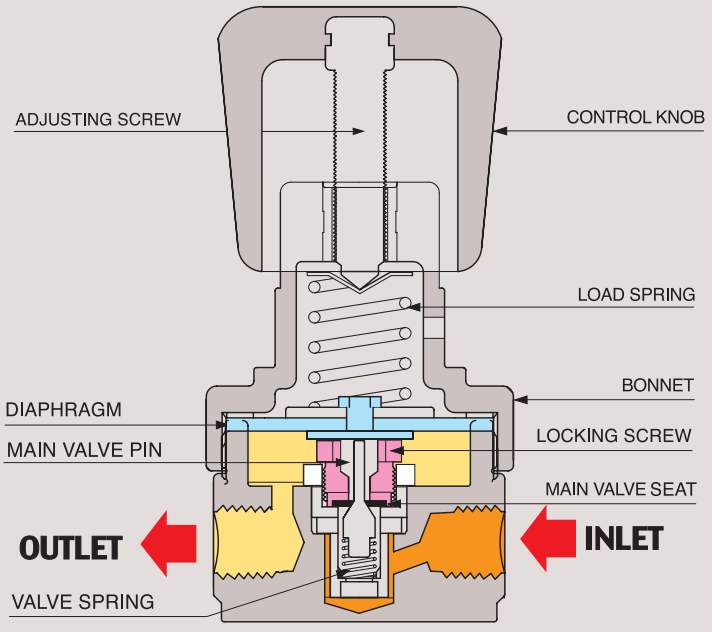
STANDARD MODEL SERIES

Item No.	Description	Part No.	Model Application
01	Body	077-01-01	077-01-1 Stainless Steel 316L body / 077-01-02 Brass body
02	Low Valve Spring	077-02	All Model Same
03	Sprimg Locking Plate	077-03	All Model Same
04	Valve Seat	077-04	077-04-01 2bar, 5bar, 10bar, 25bar
05	Valve Seat Locking Screw	077-05	All Model Same
06	Main Valve	077-06	All Model Same
07	Valve Sprimg	077-07	All Model Same
08	Valve Sprimg 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, 25bar
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, 25bar

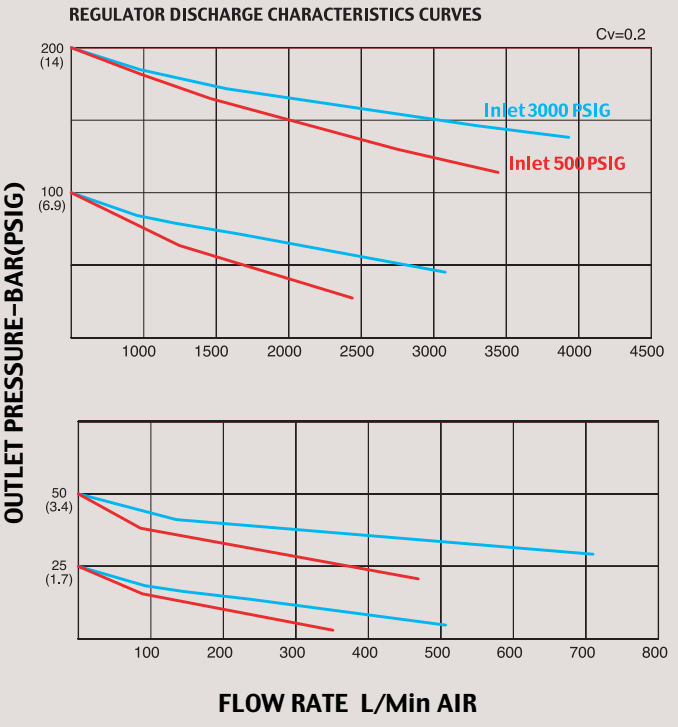
DR60 SERIES

GENERAL GAS REGULATOR

FUNCTIONAL SCHEMATIC



FLOW CHART



GENERAL GAS REGULATOR

DR60 SERIES

DR60 시리즈의 바디 재질은 Nickel Plated Forged Brass이며 가장 일반적인 산업용 가스를 사용하기에 가장 이상적인 Gas Regulator입니다. 산업용 일반 배관 등에 적합하도록 설계되였으며, 3-ports 또는 4-ports 1/4″ NPT 타입으로 이루어져 있습니다. 내부의 부품은 sts or brass를 사용하였으며 Valve seat는Teflon를 사용하여 내구성이 뛰어나며 다이아후렘은 특수고무를 사용하였습니다. Inlet과 Outlet Gauge가 기본으로 조립된 제품입니다.

DR60 Series are the industrial gas regulators,applicable to oxygen and non-corrosive gases. Available for general pipeworks and cylinder equipments. They are designed and produced for the customers to use them easily and expediently with ultimate safety. Special rubber is used for its internal diaphragm and inlet and outlet gauge are assembled as standard.

Recommendations to Use

Each regulator is designed and manufactured taking into full consideration of safety and easy operation. However, for doubled safety and use of the regulators most effectively, it is strongly recommended to use each regulator within the range of 25% ~ 75% of its working pressure. It is also recommended to use within this range for most smooth operation and extension of products life.

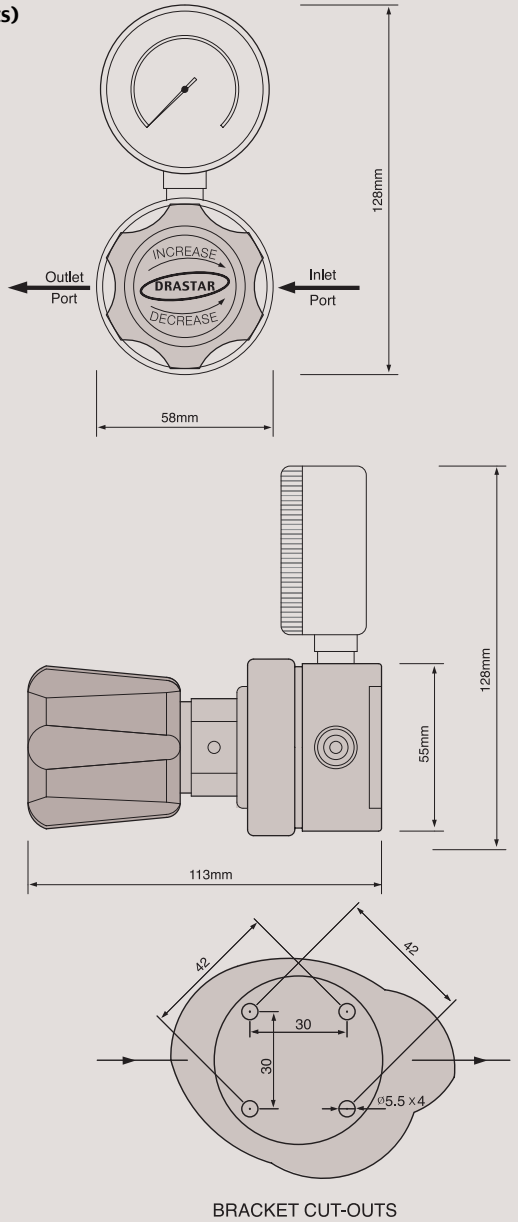
SPECIFICATIONS

Ports	1/4″ NPT type DR60-A000-1 3-ports DR60-A000-2 4-ports
Body Material	Nickel Plated Forged Brass
Bonnet Material	Zinc(Zn) Casting Nickel Plated
Diaphragm	Particular of Synthetic Rubber
Valve Seat	Teflon®
Valve Spring	Stainless steel
Inlet Pressure Ranges	DR60-A000-1, 3500psig (238bar) DR60-B000-1, 500psig (35bar)
Outlet Pressure Ranges	25(1.7bar), 50(3.4bar), 100(7bar), 200psig(14bar)
Flow Cappacity	CV=0.2 (standard)
Operating Temperature	-40°C - +70°C(-40°F - +160°F) (standard)
Standard Optional	CGA, Inlet and Outlet Gauges, etc..

INSTALLATION DIMENSIONS METRIC EQUIVALENTS ARE IN PARENTHESES

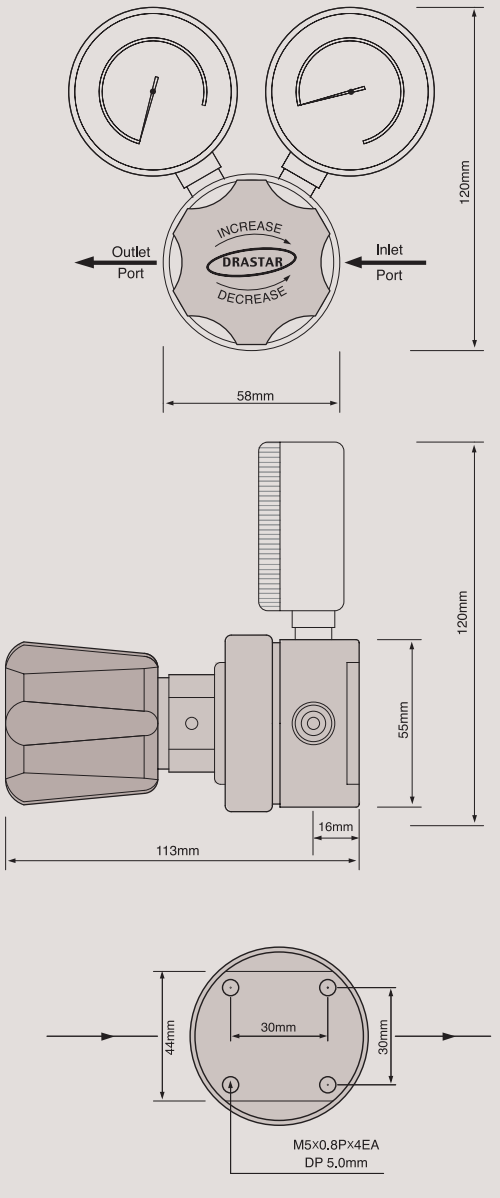
▪ GAUGE PORT OPTIONS

MODEL DR60-A025-1
(3-Ports)



BRACKET CUT-OUTS

MODEL DR60-A025-2
(4-Ports)

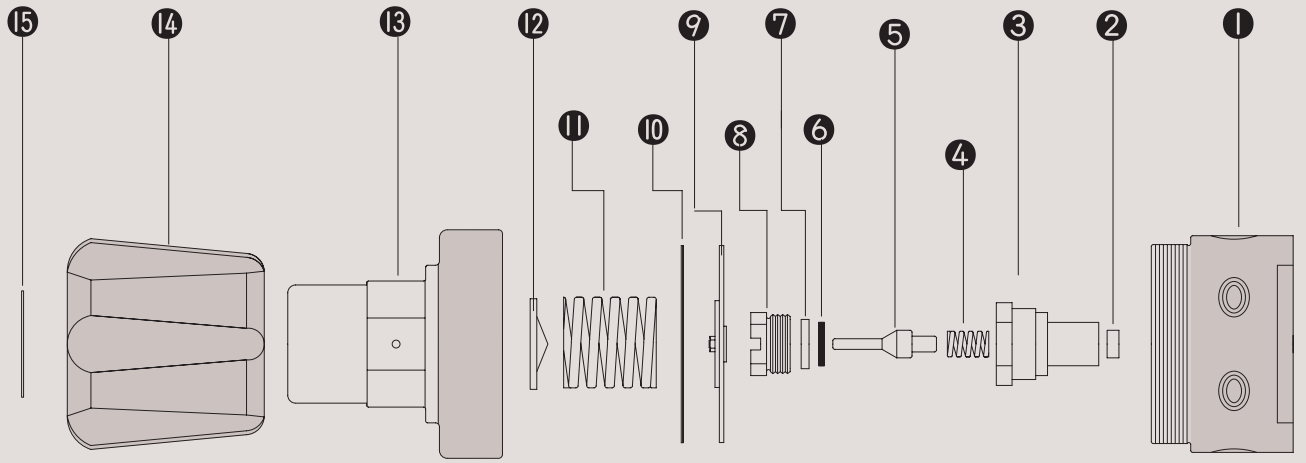


ORDERING INFORMATION

DR60	-	A	025	-	1

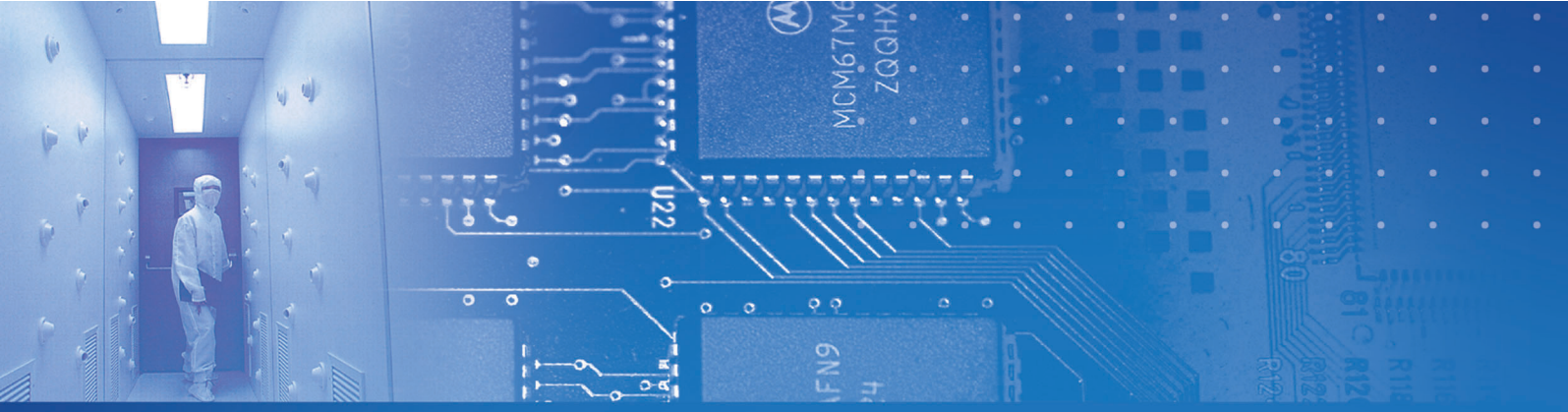
BASIS SERIESNUMBER	MAX. INLET PRESSURE	OUTLET PRESSURE RANGES	INLET OUTLET PORTS SIZE
DR60 Series	A = 3500psi(238bar) B = 500psi(35bar)	025 = 1-25psig (.1-1.7bar) 050 = 1-50psig (.1-3.5bar) 100 = 1-100psig (.1-7bar) 200 = 1-200psig (.2-14bar)	1 = 3-Ports 2 = 4-Ports 1/4″ NPT Type

DR60 SERIES PART LIST



STANDARD MODEL SERIES

Item No.	Description	Part No.	Model Application
01	Body	DR60-02-02	02-02 Brass
02	Cartridge Filter	DR60-62-01	All Model Same
03	Cartridge	DR60-66-01	All Model Same
04	ValveSpring	DR60-04-02	04-01 STS 304
05	Main Valve	DR60-06-01	06-01 STS 316L
06	Valve Seat	DR60-10-01	10-01 PFA
07	Valve Seat Cartridge	DR60-08-01	All Model Same
08	Loocking Screw	DR60-12-03	All Model Same
09	Diaphragm Assembly	DR60-16-04	16-04 NBR / 16-05 EPDM
10	Gasket	DR60-16-00	All Model Same
11	Load Spring	DR60-38-01	38-01 25psi / 38-02 50psi / 38-03 100psi / 38-04 200psi
12	Pivot	DR60-40-01	All Model Same
13	Bonnet	DR60-44-03	All Model Same
14	Control Knob	DR60-50-03	All Model Same
15	Name Plate	DR60-56-00	All Model Same



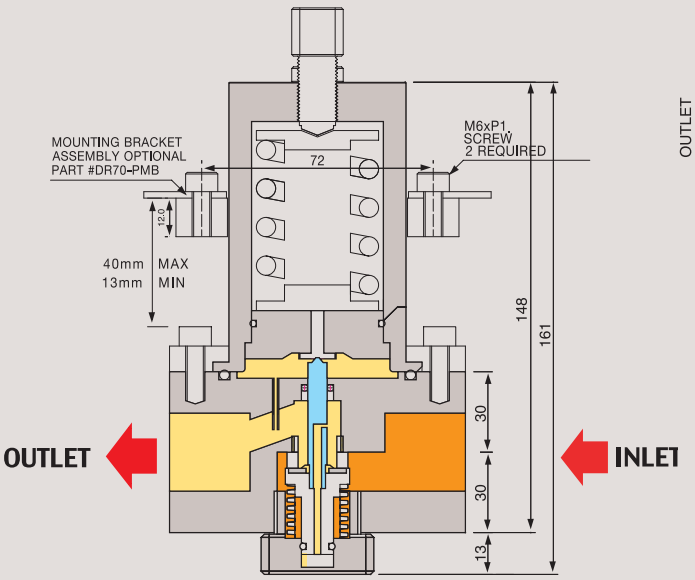
DR70 SERIES

HIGH-FLOW and HIGH PRESSURE Regulator

Drop-prevention function Built-in

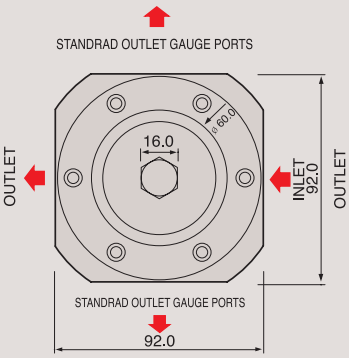
FUNCTIONAL SCHEMATIC

■ BOLT CONTROL TYPE (DR701 SERIES)

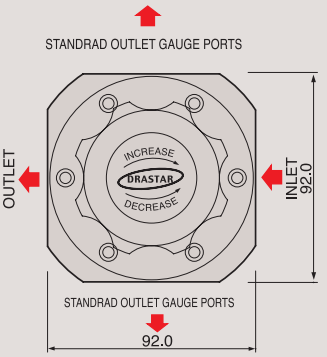


INSTALLATION DIMENSIONS

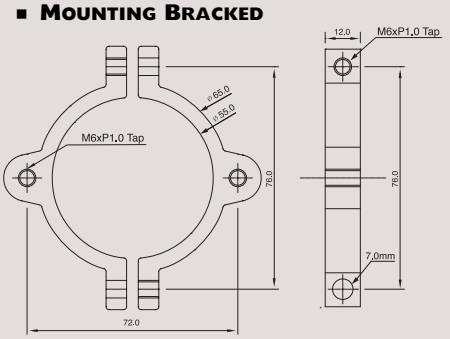
■ BOLT CONTROL



■ KNOB CONTROL TYPE



■ MOUNTING BRACKED



HIGH-FLOW AND HIGH PRESSURE

DR70 SERIES

DR70 시리즈는 물, 케미칼, Liquid 또는 가스등 많은 유량을 필요로 하는 배관라인등에 가장 적합한 제품이며 배관 사이즈는 NPT or BSP 3/4, 1″ 까지 선택하여 사용 가능하며 제품의 장점은 자체적으로 DROP를 완전히 보정해주기(잡아주기) 때문에 P1의 압력 변화가 크다하여도 P2의 압력(조정 또는 셋팅압력)은 변화없이 안정적으로 정밀하게 유지시켜 주는 레귤레이터 입니다. Body 의 재질은 모델에 따라 Brass and Stainless steel 316L로 이루어졌으며 입구 압력은 Brass 250bar(3625psi) Stainless steel 350bar(5076psi)까지 폭넓게 사용 가능하며 각각의 모델에 따라 Outlet Working pressure 0.5~55bar(780psi)까지 사용할 수 있습니다.

DR70 Series is a regulator most suitable for pipeline application where high flow of water, chemical, liquid, gas, etc. is requested. NPT or BSP 3/4″ and up to 1″ pipe can be selectively used to this series. The self-correction function of DROP built in this regulator enables to keep the P2 pressure (adjusted or setting pressure) stable and constant without impact from P1 if it faces big pressure differences at P1. Regulator body is made of brass or stainless steel 316L and has the wide range of inlet pressure up to 250bar (3,625psi) for brass body and 350bar (5,076psi) for stainless steel body respectively by model. Outlet working pressure has the range of 0.5~55bar(780psi) by model.

Features

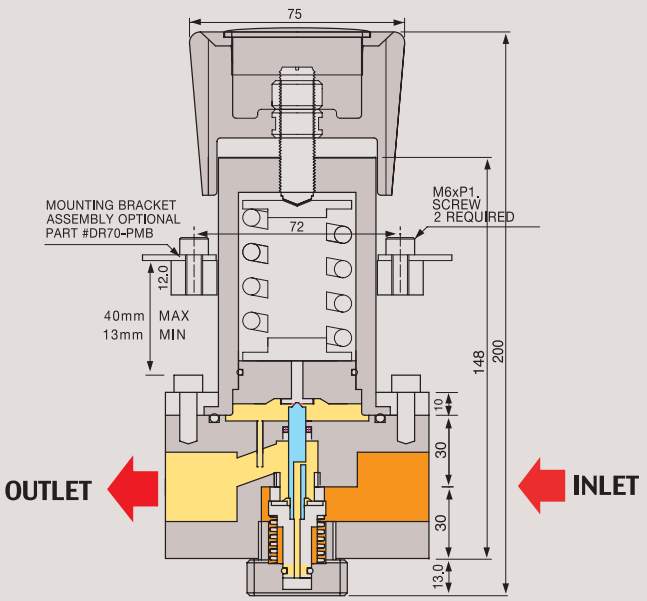
- Precision control of NPT or BSP 3/4″ 1″ Type Regulators
- Drop-prevention function Built-in.
- Suitable for the research labs, industrial control
- Outlet 10bar(145psig), 25bar(362psig), 50bar(725psig), 70bar(1015psig)
- Panel mounting Bracket #DR70-PMB option
- Outlet 150bar(2100psig), 250bar(3600psig), 350bar(5000psig): SH Model

권장 사항

각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각의 모델에 따라 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다. 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

FUNCTIONAL SCHEMATIC

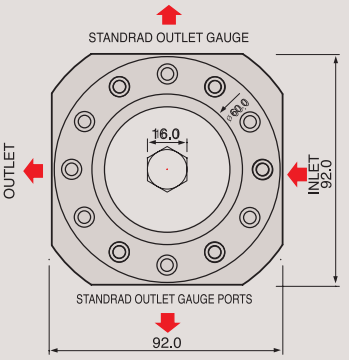
■ **KNOB CONTROL TYPE (DR702 SERIES)**



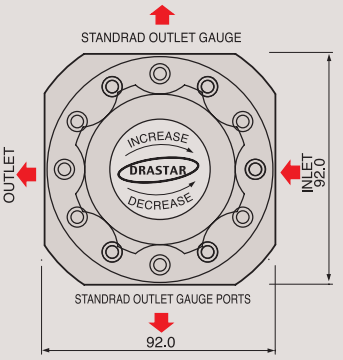
INSTALLATION DIMENSIONS

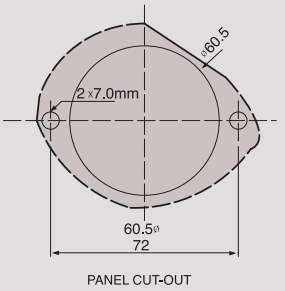
(For SH Type - 12pcs Bolts)

■ **BOLT CONTROL**



■ **KNOB CONTROL TYPE**





Recommendations

Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

주의

크린라인이 아닌 일반 라인에 사용 할 경우 필터링(gas 7㎛~15㎛, water 15㎛~80㎛)은 필수이며, 그렇지 않으면 바로 고장의 원인이됩니다.
모든 제품의 필터링하여 사용하면 A/S 비용 절감과 함께 제품의 수명연장에 많은 도움이됩니다

Caution

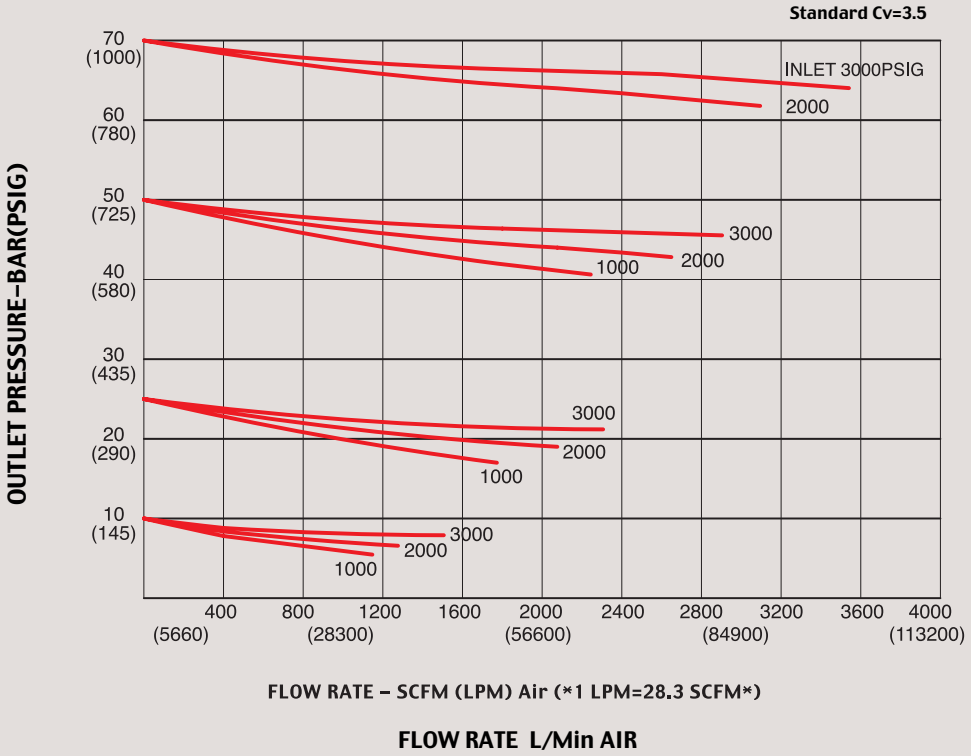
Filtering (Gas 7㎛~15㎛, water 15㎛~80㎛) is a Must for General gas application such as Non-high purity gas. Otherwise, it may cause a breakdown to the regulator. It is strongly recommended to install filter for prolong product life time and enable saving maintenance expense.

ORDERING INFORMATION

DR702 - S P - 010 - NP 2 - V - H1

BASIS SERIES NUMBER	BODY MATERIAL	VALVE SEAT	CONTROLLED PRESSURE RANGE	INLET OUTLET PORTS	INLET OUTLET PORTS SIZE	SELF VENTING	HIGH TEMPE-RATURE
DR701 = Bolt Control DR702 = Knob Control	S = STS 316L 200bar (3000psi) B = BRASS 150bar (1500psi) SH = STS 316L 420bar (6000psi)	P = Teflon V = Vespel	010 = 10bar (145psi) 025 = 25bar (362psi) 050 = 50bar (725psi) 070 = 70bar (1000psi) SH Model Only 150 = 150bar (2100psi) 250 = 250bar (3600psi) 350 = 350bar (5000psi)	NP = NPT BS = BSP	2 = 3/4″ 3 = 1″	V = Self-Venting Optional	H1 = 120° C H2 = 250° C H3 = 500° C Optional

FLOW CHART

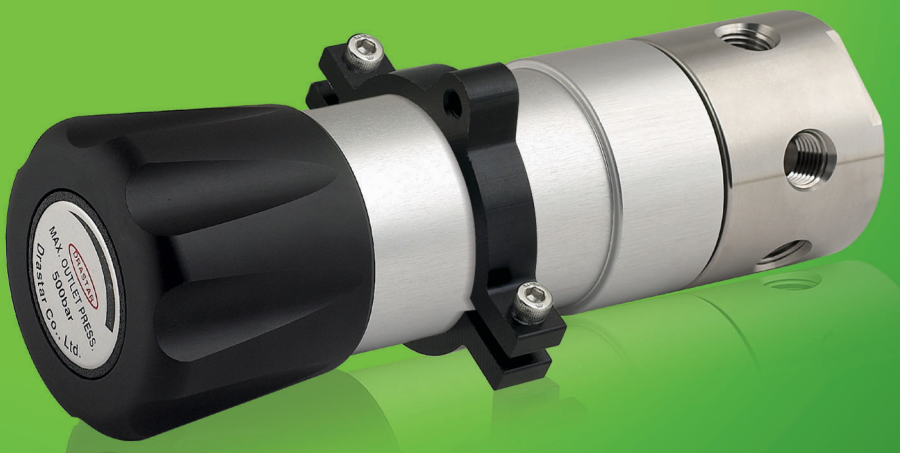


SPECIFICATIONS

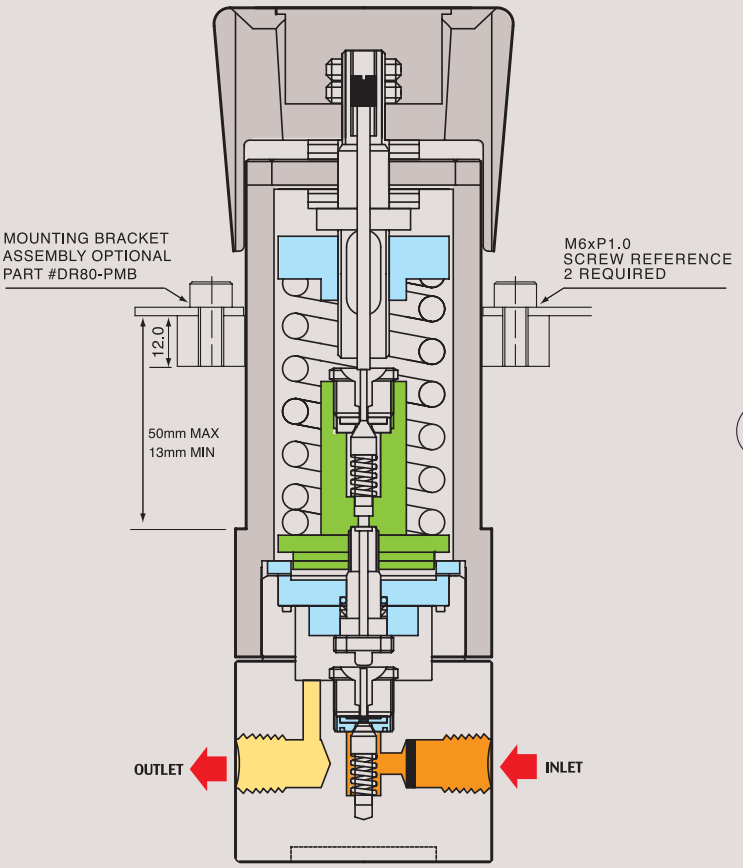
Ports	DR70x-SP-010 -NP2 3/4″ NPT DR70x-SP-010 -BS2 3/4″ BSP DR70x-SP-010 -NP3 1″ NPT DR70x-SP-010 -BS3 1″ BSP
Leak Rate Certification	to $2x10^{-8}$ atm cc/sec Helium available.
Body Materials	DR70x-BP-010 -NP2 Brass DR70x-SP-010 -NP2 Stainless steel 316L
Bonnet Material	Nickel Plated Brass / Stainless steel 316L(Optional)
Main Valve	Stainless steel 316L
Valve Spring	Stainless steel 316L(Optional)
Valve Seat	DR70x-SV-010 -NP2 VESPEL DR70x-SP-010 -NP2 TEFLON
Outlet Pressure Ranges	10bar(145psig), 25bar(362psig) 50bar(725psig), 70bar(1015psig)
Operating Temperature	-30℃ ~ +60℃ VITON / -40℃ ~ +70℃ TEFLON (standard)
Flow Capacity	Cv= 3.5 (Standard)

DR80 SERIES

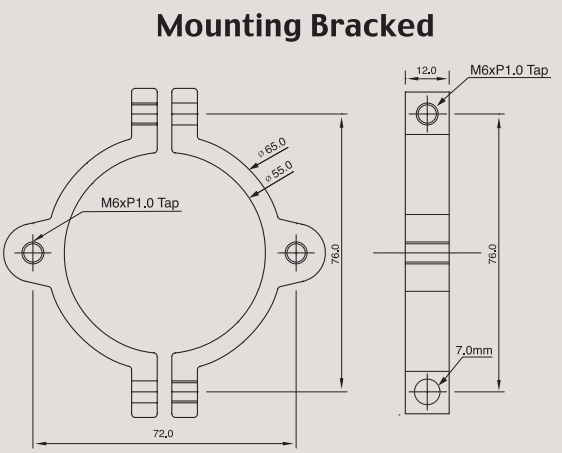
ULTRA HIGH-PRESSURE REGULATOR



FUNCTIONAL SCHEMATIC



INSTALLATION DIMENSIONS



ULTRA HIGH-PRESSURE REGULATOR

DR80 SERIES

DR80 시리즈는 고압가스와 액체 등에서도 안전하고 안정적으로 사용할 수 있도록 드라스타만의 Piston-Diaphragm 방식을 개발하여 더욱 더 안전하게 사용할 수 있습니다. 본체와 내부의 모든 부품은 Stainless steel 316L로 이루어져 부식성 가스 또는 액체 등에서 안심하고 사용할 수 있도록 하였으며 입구압력은 420bar~Max 700bar 이고 출구 압력은 최대 700bar 까지 사용 할 수 있으며 1/4″, 3/8″ NPT type Regulator입니다.

DR80 Series gas Regulators are specially designed to regulate the Ultra High Pressure gases safely. As the product's body and all internal parts are made of stainless steel 316L(088 Series) that is strong for corrosiveness and Liquid and They can be also used for ultra pure six-nine(99.9999) gases. As these models can be connected by 1/4″, 3/8″ FNPT, They are suitable for ultra-precision plumbing line.
Max. outlet pressure as 10000 psig(710 bar).

Features

- Piston- Diaphragm Type Regulator of 1/4″ NPT Type
- Suitable for the High-Pressure Regulator

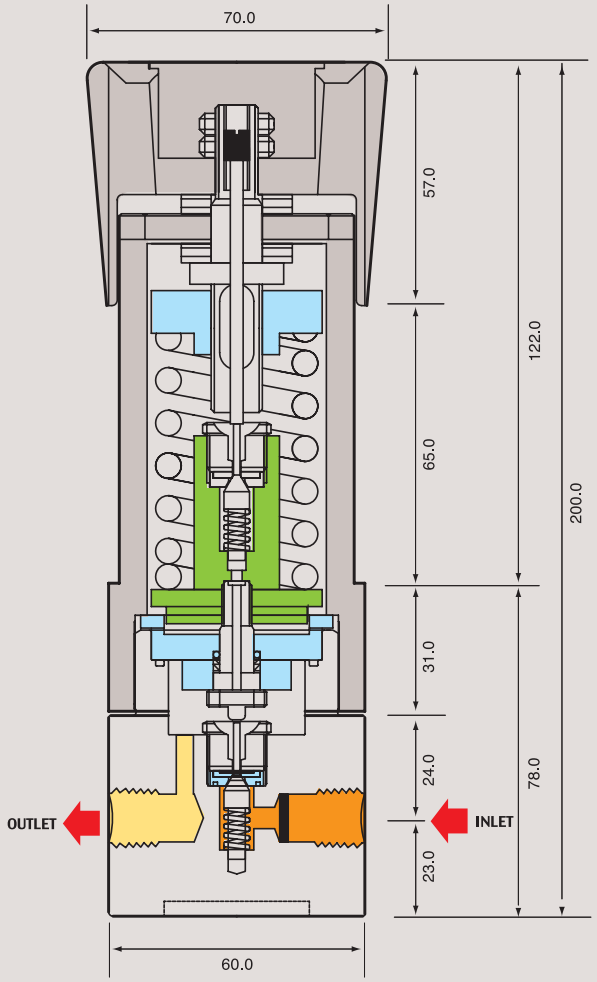
권장 사항

각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25% ~ 75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

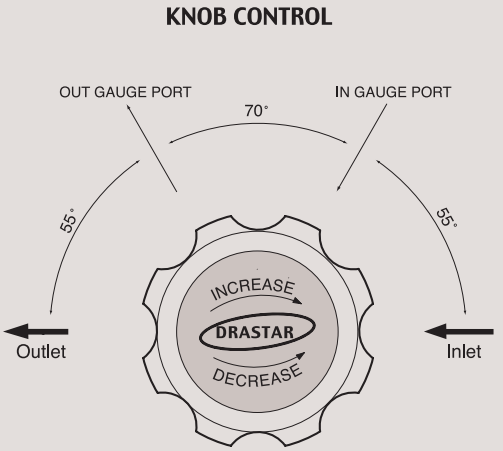
Recommendations

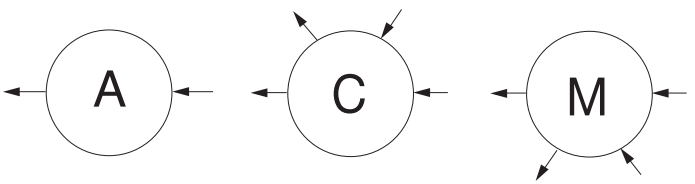
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However in order to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

FUNCTIONAL SCHEMATIC



INSTALLATION DIMENSIONS



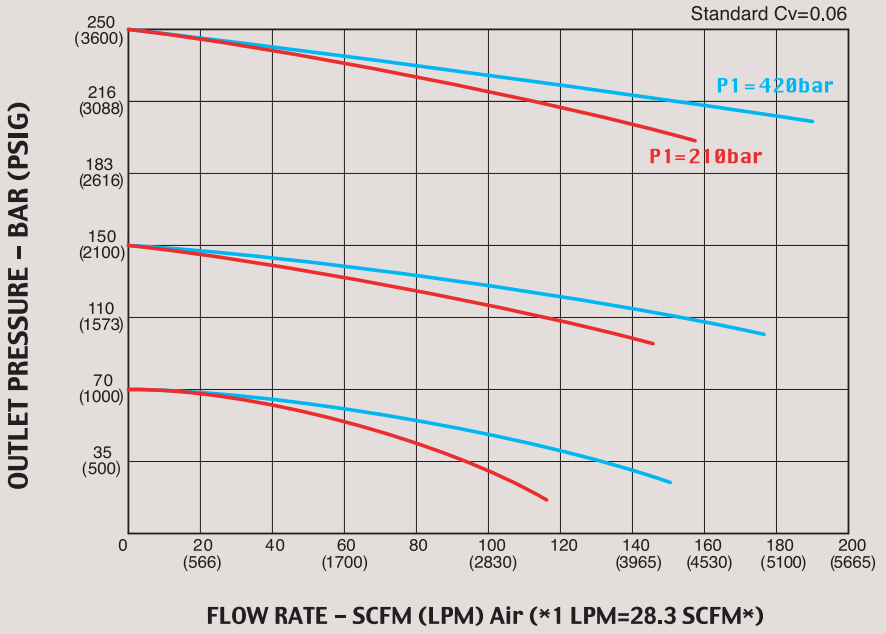
Ports Type	

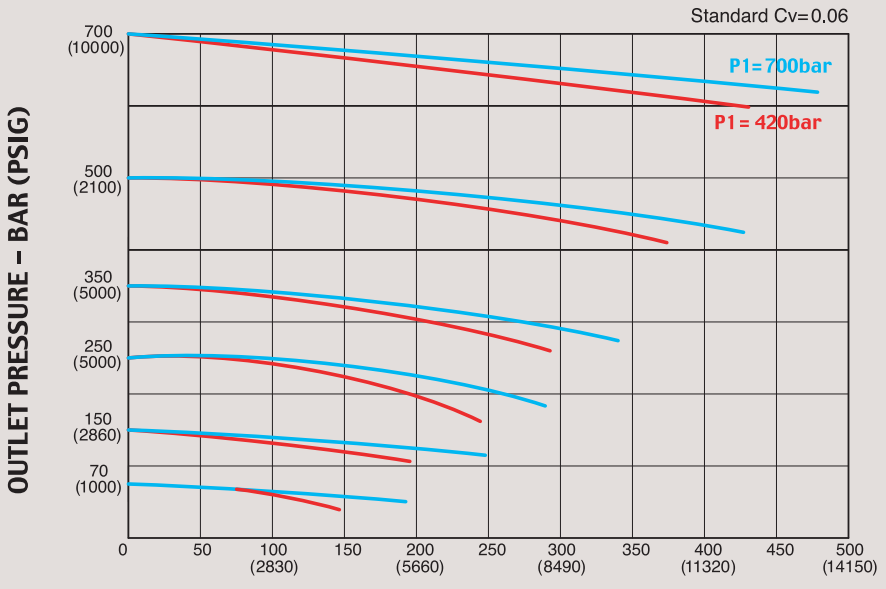
ORDERING INFORMATION

DR80 – B S – 070 A – 1 S – V

BASIS SERIES	INLET PRESSURE	BODY MATERIAL	CONTROLLED PRESS. RANGES	PORT TYPE NPTF	IN & OUT PORTS SIZE	FLOW CAPACITY	SELF VENTING
DR80	A-420bar(6,000psig) B-700bar(10,000psig)	S-STS 316L B-BRASS 420bar Max. Inlet	070 - 70bar (1,000psig) 150 - 150bar (2,100psig) 250 - 250bar (3,600psig) 350 - 350bar (5,000psig) 500 - 500bar (7,200psig) 700 - 700bar(10,000psig)	A = 2Ports C = 4Ports M = 4Ports	1 = 1/4″ 2 = 3/8″	S = 0.06 O = 0.2	V=SELF -VENTING

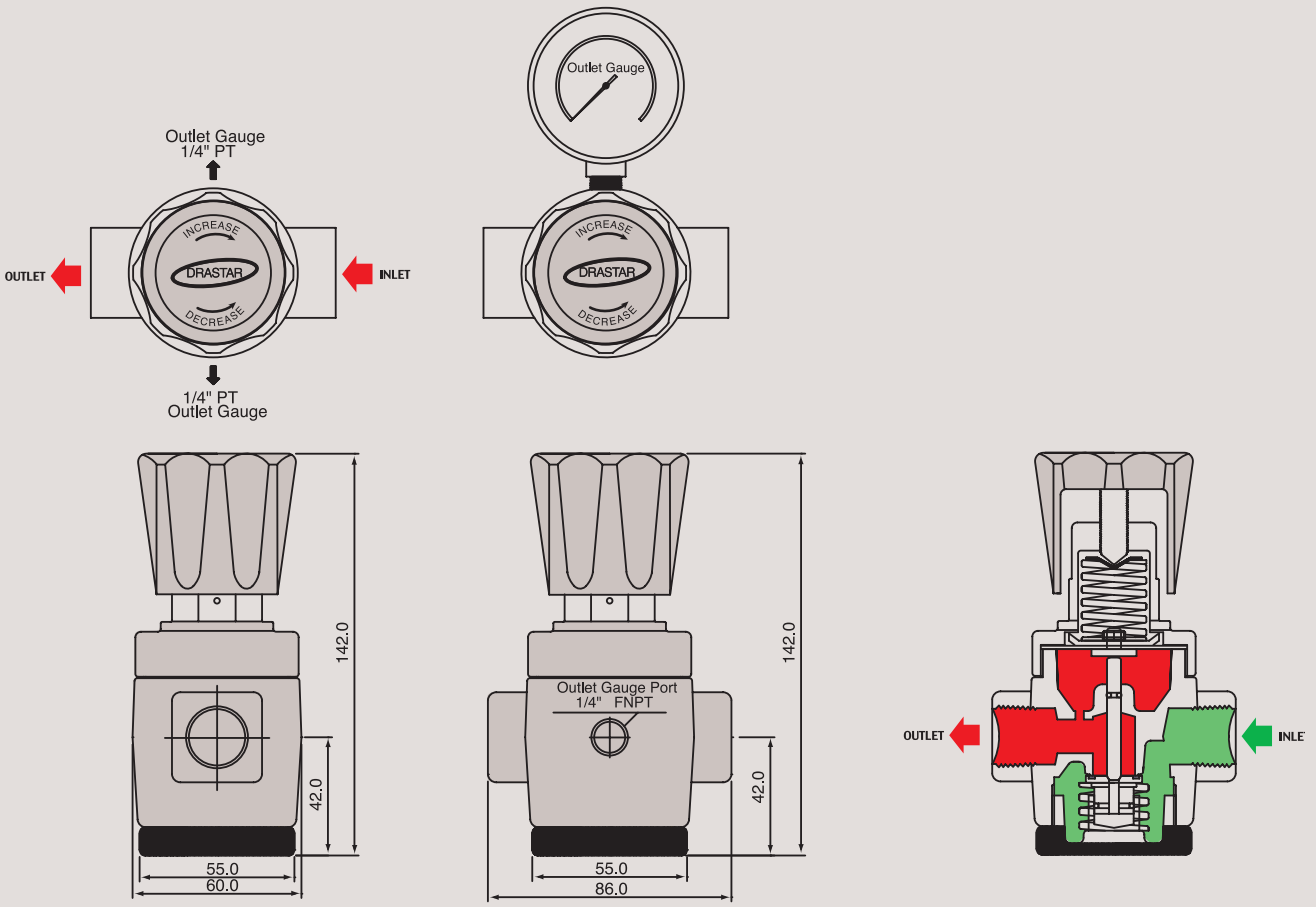
FLOW CHART


Standard Cv=0.06
P1=420bar
P1=210bar
OUTLET PRESSURE – BAR (PSIG)
250 (3600)
216 (3088)
183 (2616)
150 (2100)
110 (1573)
70 (1000)
35 (500)
0
20 (566)
40
60 (1700)
80
100 (2830)
120
140 (3965)
160 (4530)
180 (5100)
200 (5665)
FLOW RATE – SCFM (LPM) Air (*1 LPM=28.3 SCFM*)


Standard Cv=0.06
P1=700bar
P1=420bar
OUTLET PRESSURE – BAR (PSIG)
700 (10000)
500 (2100)
350 (5000)
250 (5000)
150 (2860)
70 (1000)
0
50
100 (2830)
150
200 (5660)
250
300 (8490)
350
400 (11320)
450
500 (14150)

DR90 SERIES

Water Line and Gas Pressure Reducing Regulators



WATER LINE AND GAS PRESSURE REDUCING REGULATORS

DR90 SERIES

DR90 시리즈의 바디 제질은 Stainless steel 304 or Nickel Plated Forged Brass이며 가장 일반적인 산업용 가스, 에어라인 또는 물라인등 사용하기에 가장 이상적인 레귤레이터 입니다. 산업용 가스 및 물라인등 일반 배관 등에 적합하도록 설계되였으며, 3-ports PT 3/8″, 1/2″, 3/4″, 1″ 타입으로 이루어져 있습니다. 내부의 부품은 Stainless steel or Brass를 사용하였으며 Valve seat는 Viton를 사용하여 가스와 물등을 사용하여도 내구성이 뛰어나 안전하며, 다이아후렘은 Viton 또는 특수고무를 사용하였습니다. 입구 압력은 최대 35bar (500psig)이고 Outlet Pressure 각 모델에 따라 0.2~최대 15bar (217psig)까지 사용하기에 더욱 적합한 제품입니다.

DR90 Series is specially designed to use General Industrial gas, Airline or Water Line application with Stainless steel 304 or Nickel Plated Forged Brass body material. It has various types, such as 3-port PT 3/8″, 2/1″, 3/4″, 1″. parts material as Stainless Steel or Brass, Viton for Valve seat and Viton or Special Rubber for Diaphragm. With this, it can be used for Gas and water application with stability. Inlet pressure upto 35bar (500psig) and outlet working pressure has the range of 0.2~15 bar(Max) by model.

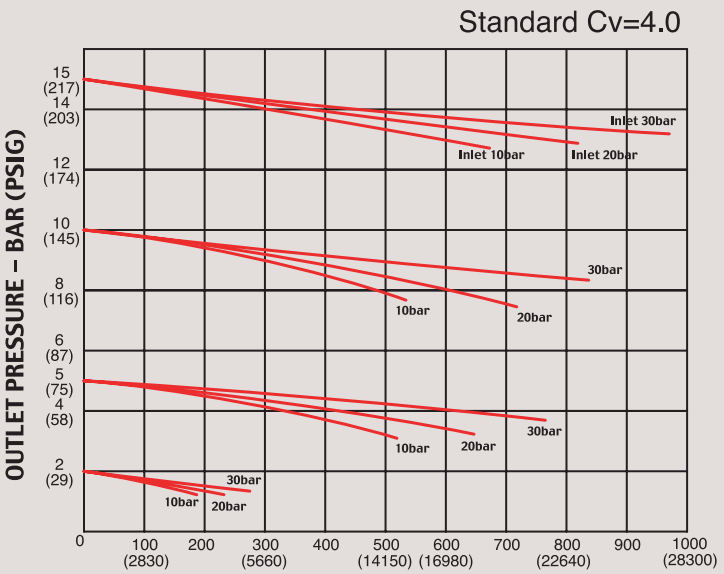
권장사항

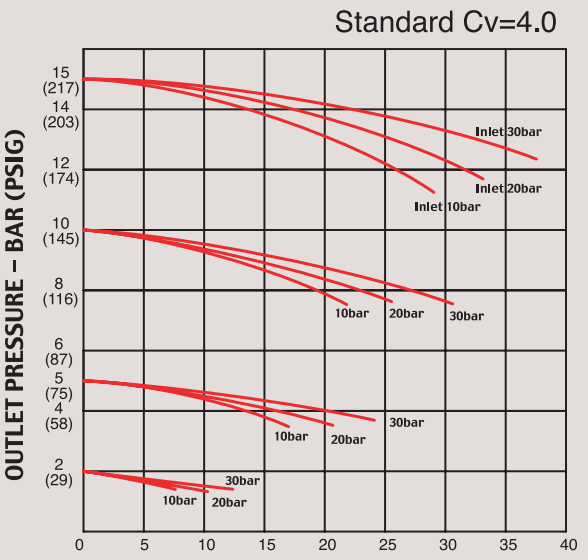
각 제품들은 최고의 안전성과 쉬운 조작성을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제 사용 압력을 각각 모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 모델에 따라 범위 내에서 사용하기를 적극 권장합니다.

Recommendations

Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However inorder to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

FLOW CHART





ORDERING INFORMATION

DR90 – S 005 – PT8

BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	INLET AND OUTLET PORTS SIZE
DR90 Series DR901 = Bolt Control DR902 = Knob Control Inlet Pressure Max. 35bar(500psi)	S = STS 304 B = Brass	005 = 5bar(72psi) 010 = 10bar(145psi) 015 = 15bar(217psi)	PT8 = 3/8″ PT2 = 1/2″ PT3 = 3/4″ PT1 = 1″

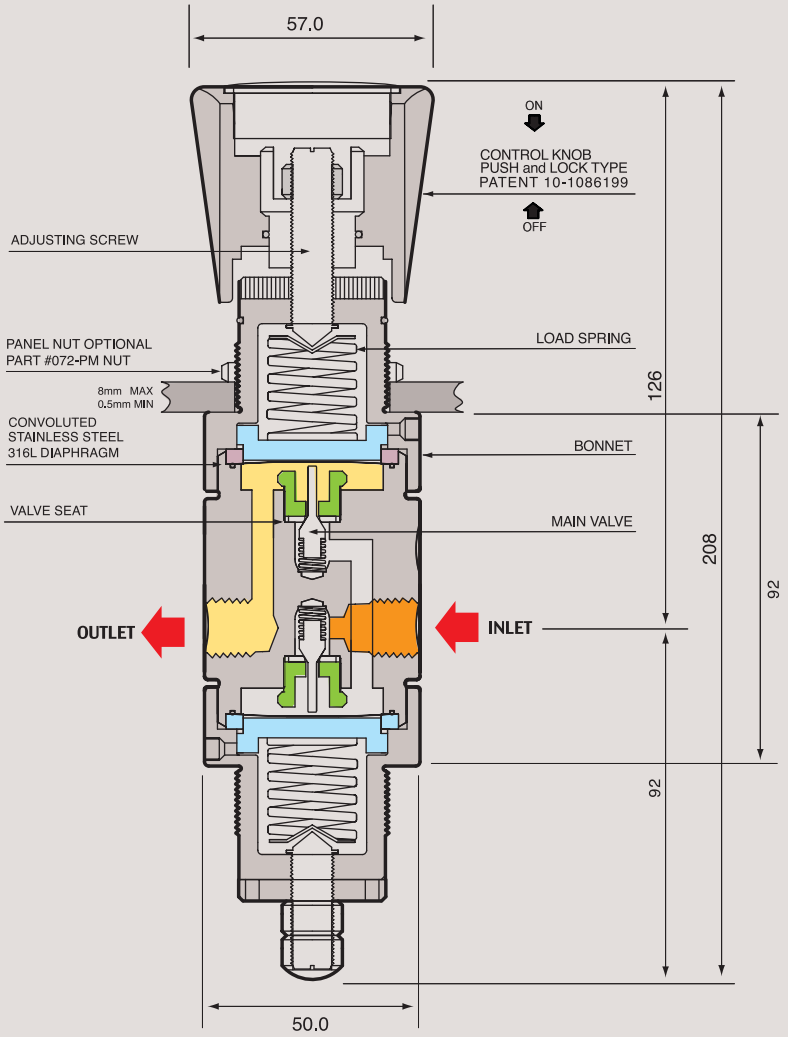
SPECIFICATIONS

Ports	DR90x-S000-PT8 3/8″ Female PT DR90x-S000-PT2 1/2″ Female PT DR90x-S000-PT3 3/4″ Female PT DR90x-S000-PT1 1″ Female PT
Leak Rate Certification	to 2 x 10-6 atm cc/sec Helium available
Body Materials	DR90x-S000-PTx Stainless steel 304 DR90x-B000-PTx Nickel Plated Forged Brass
Bonnet Material	Zinc(Zn) Casting Nickel Plated
Diaphragm	Particular of Synthetic Rubber
Main Valve	Stainless steel
Valve Spring	Stainless steel
Valve Seat	Viton
Inlet Pressure Ranges	35bar(500psi)
Outlet Pressure Ranges	DR90x-x005-PTx 5bar(72psi) DR90x-x010-PTx 10bar(145psi) DR90x-x020-PTx 20bar(290psi)
Operating Temperature	-40°C ~ +70°C (-40°F ~ +165°F) Standard
Flow Capacity	3/8″, 1/2″ Cv = 4.0 Standard 3/4″, 1″ Cv = 5.0 StandardStandard Optional
Standard Optional	Outlet Gauge

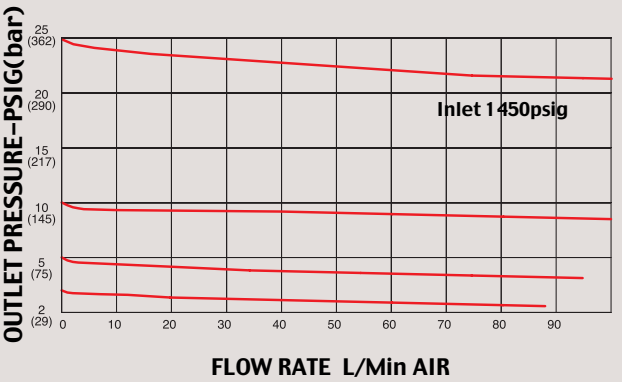
2000 SERIES

Two Stage Pressure Regulator

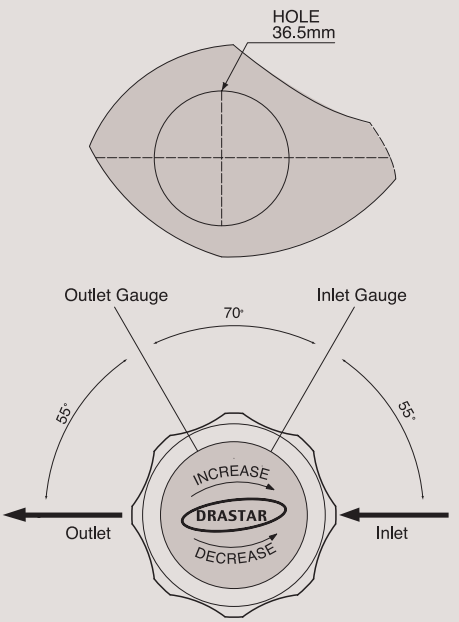
FUNCTIONAL SCHEMATIC



FLOW CHART



PANEL CUT-OUT



2000 SERIES

2000 시리즈는 고압가스를 저압에서 안정적으로 사용할 수 있도록 고안된 Two Stage Reducing Regulator 시리즈입니다 본체와 내부의 모든 부품은 Stainless Steel 316L로 이루어져있어 부식성 가스 또는 고순도 가스를 편리하고 안심하게 사용 할 수 있도록 설계하였으며 사용 압력은 Inlet 250bar이며 Outlet 20bar까지 사용하기에 더욱 적합한 제품입니다. 모든 DRASTAR Regulators는 외부적인 진동과 가스라인의 미세 진동 등으로 인하여 초기 셋팅 값이 스스로 변하는 현상을 완전히 해결한 드라스타 만의 Push and Lock 타입의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 조절 손잡이를 누르면 셋팅값이 변하는 것을 방지하며, 손잡이를 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타 만의 특허 10-1086199 Push and Lock 타입의 레귤레이터 입니다.

2000series Twostage reducing Gas regulators are specially designed to regulate high pressure gas to use in low pressure status.As the product' s body and all internal parts
Are made of stainless steel 316L that is strong for corrosiveness and high purity application.Max inlet pressure is 250 bar and outlet pressure can be used upto 20 bar.
DRASTAR regulators are designed and manufactured for easier operation by equipping with the DRASTAR' s own developed push and lock type handle which completely prevents theself-change of pre-set value which can be caused by the vibration from outside or minute vibration at the gas pipeline.

You can prevent the self-changing of pre-set value just by pushing the handle and reset thevalue freely by drawing the handle. DRASTAR has created and applied patent for this push and lock system for DRASTAR regulators (patent number 10-1086199)

권장 사항
각 제품들은 최고의 안전성과 쉬운 작동법을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제사용 압력을 각각모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

Recommendations
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However inorder to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

SPECIFICATIONS

Connections	NPT 1/4″ Female (inlet, outlet and gauge ports)
Maximum Rated Inlet Pressure	250bar (3500psig)
Outlet Pressure Ranges	0-2bar, 0-5bar, 0-10bar, 0-20bar
Design Proof Pressure	150% of maximum rated pressure
certified maximum Inboard Leak Rate	2x10-8 atm cc/sec Helium
Body Materials	316L Stainless Steel
Bonnet Material	Nickel Plated Brass or 316L Stainless Steel (Optional)
Diaphragm	316L Stainless Steel or Hastelloy-C (Optional)
Main Valve	316L Stainless Steel or Hastelloy-C (Optional)
Valve Seat	Teflon
Operating Temperature	-40℃ to +75℃
Flow Capacity	Cv = 0.06
Decaying Inlet Characteristic	(0.05 change/100psig inlet pressure)

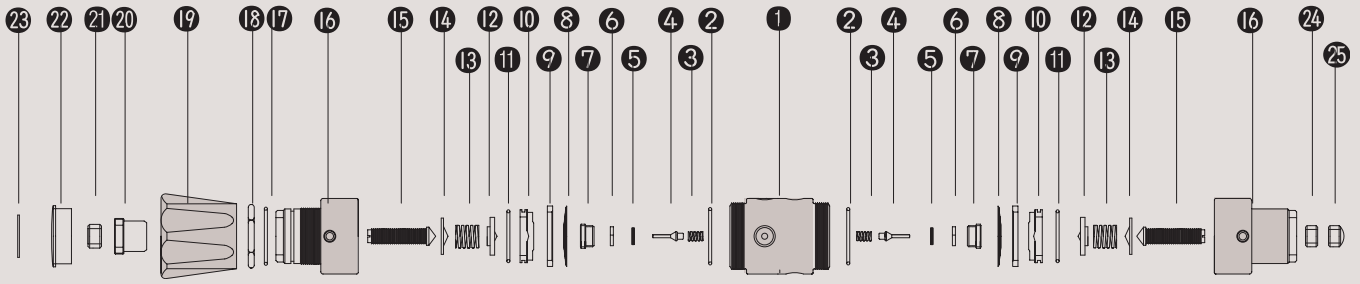
ORDERING INFORMATION

2000 S - 002 - NP4 - S H

BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	INLET AND OUTLET PORTS SIZE	FLOW CAPACITY	DIAPHRAGM MATERIAL
Standard Inlet Pressure 3500PSIG (238 bar)	B = Brass S = Stainless Steel 316L	002 = 1-2bar 1-29PSIG 005 = 1-5bar 1-75PSIG 010 = 1-10bar 1-145PSIG 025 = 1-25bar 1-360PSIG	NP4 = 1/4″ NPT	S = Cv 0.06 Standard O = Cv 0.2 Optional	STS 316L Standard H = Hastelloy-C Optional

This is revision by Jan of 2016

2000 SERIES PART LIST

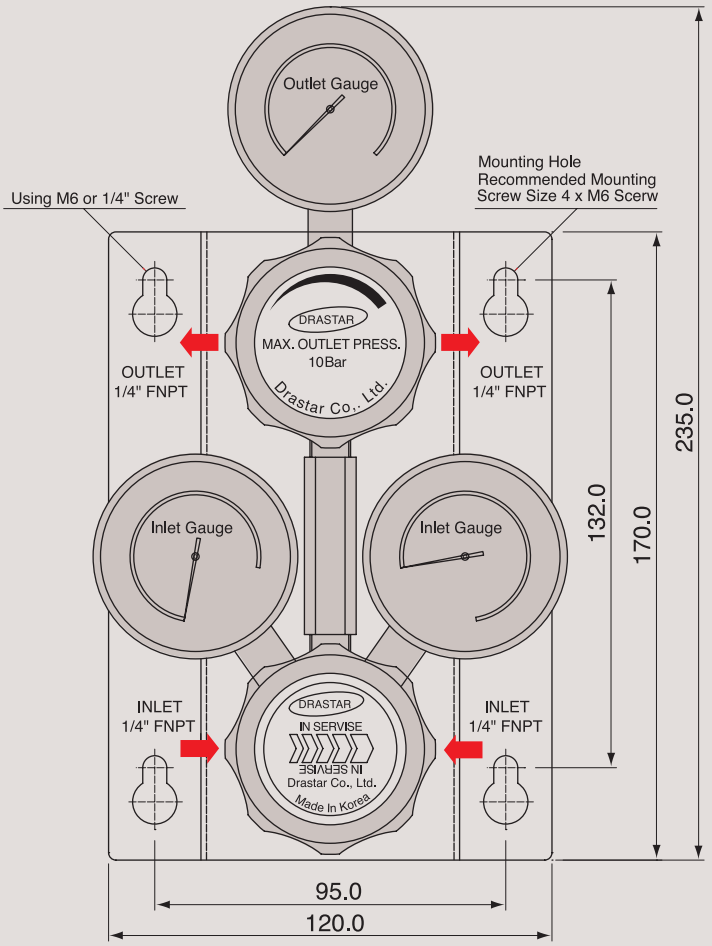


STANDARD MODEL SERIES

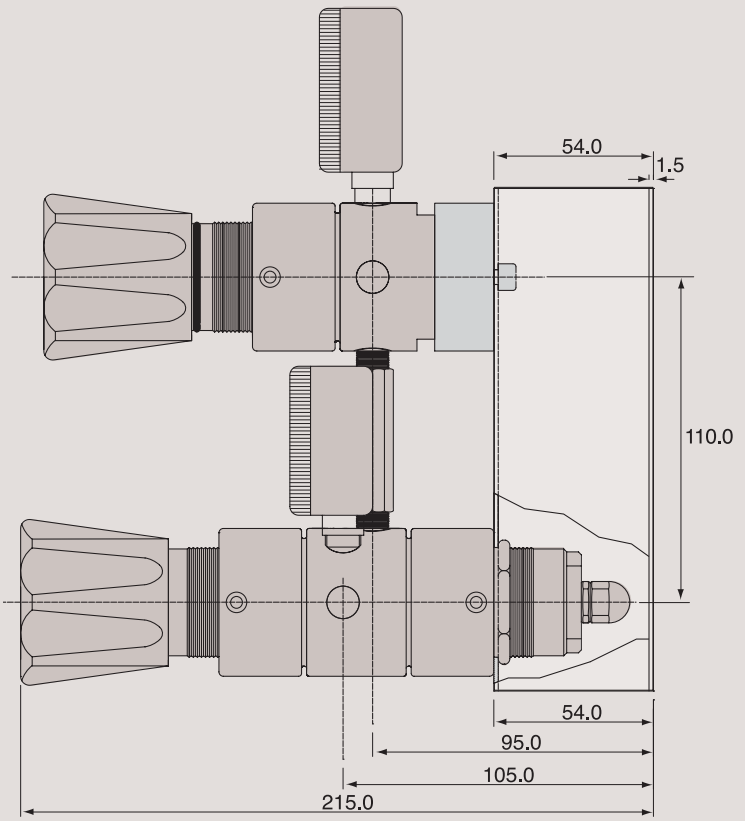
Item No.	Description	Prat No.	Model Application
01	Body	2000-02-01	02-01 Stainless Steel 316L body / 02-02 Brass body
02	Body O-Ring	2000-02-00	All Model Same
03	Valve Spring	2000-04-01	04-01 STS 316L / 04-03 Hastelloy-C-22 / 04-04 Monel
04	Main Valve	2000-06-01	06-01 STS 316L / 06-03 Hastelloy-C-22 / 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, 59-04 25bar
24	1st Bonnet Locking Nut	2000-	All Model Same
25	1st Bonnet Cap Nut	2000-	All Model Same

Automatic Changeover Regulator & System

FUNCTIONAL SCHEMATIC



INSTALLATION DIMENSIONS



AUTOMATIC CHANGEOVER REGULATORS AND SYSTEMS

AC700 시리즈는 두개의 고압가스 실린더의 유체흐름공급을 중단 없이 지속적으로 보다 더 정밀하고 안정적으로 사용할 수 있도록 고안된 오토체인져 시스템 시리즈입니다, 본 시스템은 Changeover와 레귤레이터를 셋트로 구성되였으며 Wall Mounting 장착을 하도록 되어있고, Mounting 브라켓은 기본형입니다. 모델에 따라 본체 및 내부의 모든 부품은 Stainless Steel 316L(AC700S)로 이루어져있으며, 실린더 가스, Bulk Gas Line, 실험실, 분석용 특수 가스, 또는 고순도 가스, 믹싱용 가스, 그리고 각종 부식성 가스등에서 모두 사용할 수 있도록 제작 설계 되었습니다. 사용 압력은 Inlet 250bar이며 Outlet 최대 20bar까지 사용하기에 더욱 적합한 제품입니다.

또한 외부적인 진동과 가스라인의 미세 진동 등으로 인하여 초기 셋팅 값이 미세하게 조금씩 변하는 현상을 완전히 해결한 드라스타 만의 Push and Lock 타입(특허 1086199출원)의 조절 손잡이를 적용하여 사용하기에 더욱 편리합니다. 원하는 압력를 셋팅 후 손잡이를 누르면

셋팅값이 변하는 것을 완전히 방지하며, 손잡이를 다시 앞으로 당기면 자유롭게 원하는 압력으로 다시 셋팅 할 수 있는 드라스타 만의 특허 출원한 Push and Lock 타입의 레귤레이터 입니다.

AC700 Series is specially designed to provide continuous gas flow from two high pressure sources.
They are complete high purity changeover system which combines the changeover regulator and a line regulator into a compact wall mount system for specialty, corrosive gases.
Diffusion-resistant meal diaphragm seal ensures gas purity and integrity. Mounting Bracket is standard and Internal parts are stainless steel 316L(AC700S) and suitable for cylinder gas,Bulk gas line, mixed gas or other corrosive gases. Inlet pressure 250 bar and outlet pressure upto 20 Bar as Max.

권장 사항
각 제품들은 최고의 안전성과 쉬운 작동법을 고려하여 제작되었습니다. 그러나 가장 안전하고 효율적인 Regulator 사용을 위해서는 실제사용 압력을 각각모델의 사용 압력에 25%~75% 이내에서 사용하면 가장 이상적인 압력을 사용할 수 있습니다, 정밀하고 원활한 동작과 제품의 수명 연장을 위해서는 위의 범위 내에서 사용하기를 적극 권장합니다.

Recommendations
Each product is manufactured since being taken into consideration of the best safety and easy manipulation. However inorder to use the regulator in most safe and effective way, you are recommended to use the actual pressure within the range of its 25% ~ 75%. For making precise, smooth movement and to prolong product life, strongly recommended to make a use within above mentioned range.

ORDERING INFORMATION

AC700 S - 002 - 1 S H

BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	INLET AND OUTLET PORTS SIZE	FLOW CAPACITY	DIAPHRAGM MATERIAL
Standard Inlet Pressure 3500PSIG (238 bar)	S = Stainless Steel 316L B = Brass	002 = 1-2bar (1-29PSIG) 005 = 1-5bar (1-75PSIG) 010 = 1-10bar (1-145PSIG) 020 = 1-20bar (1-290PSIG)	NP4 = 1/4″ NPT	S = Cv 0.06 Standard O = Cv 0.2 Optional	H = Hastelloy-C Optional

REGULATOR

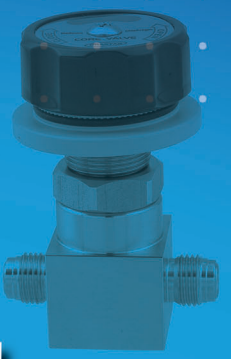
7000 S - 10 - 1 S H

BASIS SERIES NUMBER	BODY MATERIAL	OUTLET PRESSURE RANGE	INLET AND OUTLET PORTS SIZE	FLOW CAPACITY	DIAPHRAGM MATERIAL
Standard Inlet Pressure 3500PSIG (238 bar)	B = Brass S = Stainless Steel 316L	010 = 1-10bar (1-145PSIG)	NP4 = 1/4″ NPT	S = Cv 0.06 Standard O = Cv 0.2 Optional	STS316 Standard H = Hastelloy-C Optional

This is revision by Jan of 2016

SPECIFICATIONS

Ports	1/4″ Female NPT
Leak Rate Certification	to 2 x 10-8 atm cc/sec Helium available.
Body Materials	AC700S-002-1S Stainless steel 316L
	AC700B-002-1S Nickel Plated Brass
Bonnet Material	Nickel Plated Brass (Stainless steel 316L Optional)
Diaphragm	AC700S-002-1S Stainless steel 316L
	AC700S-002-1SH Hastelloy-C22 Optional
Main Valve	Stainless steel 316L
Valve Spring	Stainless steel 316L
Valve Seat	Teflon (Kel-F, Polyimide, etc.. Optional)
Inlet Pressure Ranges	AC700 Series Only 3500psi(238bar)
Outlet Pressure Ranges	AC700x-002-1S 2bar (30psi)
	AC700x-005-1S 5bar (72psi)
	AC700x-010-1S 10bar (145psi)
	AC700x-020-1S 20bar (290psi)
Operating Temperature	-40° C ~ +70° C (-40° F ~ +165° F) Standard
	AC700x-0xx-1S-H1 +120° C Optional
	AC700x-0xx-1S-H2 +250° C Optional
	+250° C ~ +540° C (+328° F ~ +1000° F) Optional
Flow Capacity	AC700x-002-1S Cv=0.06 Standard
	AC700x-002-1O Cv=0.2 Optional
Standard Optional	



Core Valve

Manifolds Diaphragm & Bellows valve

CORE VALVE

This is revision by Jan of 2016

Features

- Combined Diaphragm valve and Bellows valve with one body.
- Handle with OPEN/CLOSE indicator for Visual confirm.
- Pull & Lock handle system for Knob self-change prevention.
- Minimum dead space & Maximum flow capacity
- Excellent chemical resistance and long cycle life
- Working pressure 20 ~ 750Bar
- Installation for Panel-mount or Bottom-mount
- D.I water cleaned, assembler tested and packaged In a certified clean room.

CORE VALVE

코어밸브는 기존의 다이아후램밸브, 벨로우즈밸브, 니들밸브의 장점만을 하나로 통합하여 만든 새로운 특허 10-0031174 개념의 밸브이며, 기존밸브와 달라 미세 정밀조절이 가능하고, 조절핸들 락장치 Pull & Lock 특허 10-1370537가 내장되어 조절후에 조절핸들이 돌아가는 것을 사전에 방지해 주는 신제품입니다. 특히 작동하기 쉽고 20bar~최대 750bar 고압과 정밀 배관라인에 사용하기에 적합한 제품입니다.

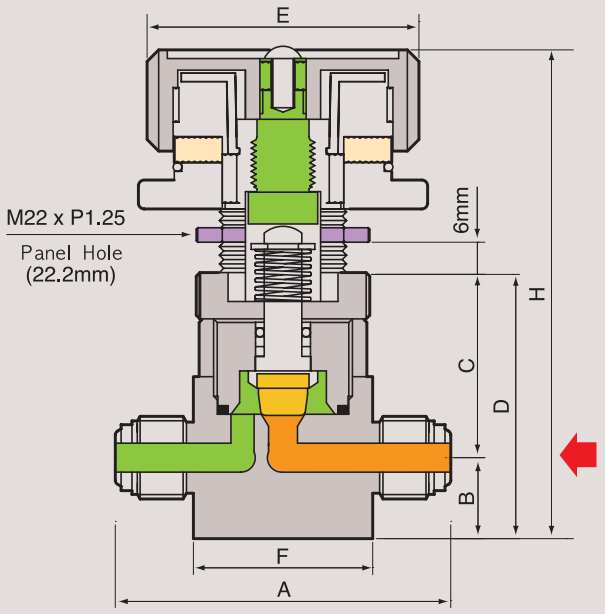
Core Valve is specially designed to combine Diaphragm valve, Bellows valve and needle valve as a new concept with Patent 10-0031174.
It enable micro control and built-in “Knob Lock device” (pull & lock:Patent 10-1370537) that prevents knob-self change. Easy to operate and suitable for High pressure and High Purity pipeline application with outlet pressure as 20 bar ~ Max 750 bar.

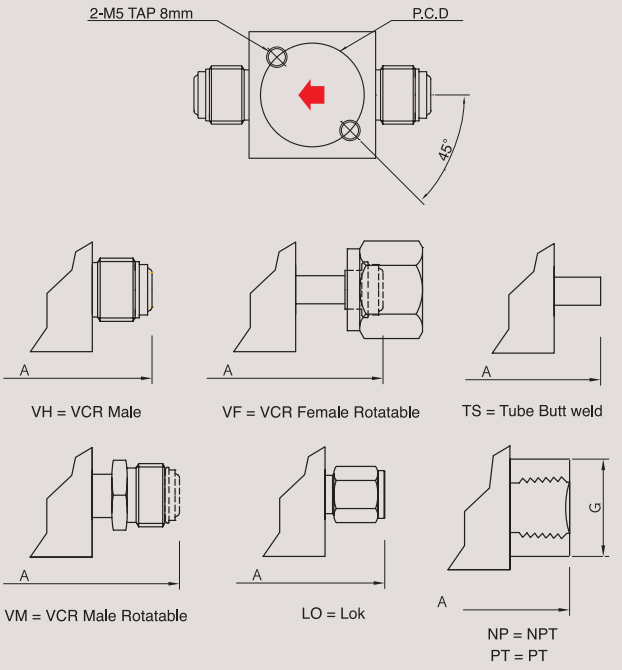
SPECIFICATIONS

Ports Size	1/4″	1/2″	3/4″
Cv Value	0.4	1.2	2.8
Grade	A.P(Ry ≤ 25μm), B.A(Ry ≤3.0μm), E.P(Ry ≤0.7μm)		
Seat Material (DISK)	PCTFE / Vespel		
Body Material	Stainless Steel 316L or Stainless Steel 316L Double melt		
Handle Material	Aluminum		
Max. Working Pressure Range	20, 50, 250, 500, 750(Bar)		
Operating Temperate	-40 °C + 70° C Standard, +250° C, +500° C Optional		

INSTALLATION DIMENSIONS

METEIC EQUIVALENTS ARE IN PARENTHESES





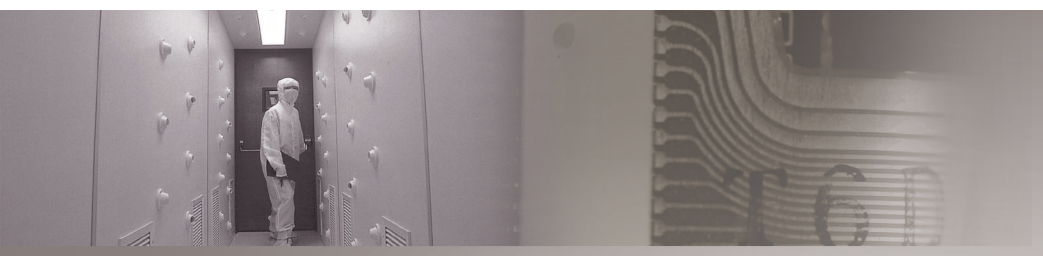
ORDERING INFORMATION

DV	S	-	020	-	VH	-	AP	4

BASIS SERIES NUMBER	BODY MATERIAL	WORKING PRESSURE	CONNECTION	BODY POLISHING	BODY SIZE
20, 25bar PCTFE 250, 500 750bar Vespel	S-STS 316L Single melt D=STS 316L Double melt	020 - 20bar 050 - 50bar 250 - 250bar 500 - 500bar 750 - 750bar	VH = VCR Male VM = VCR Male Rotatable VF = VCR Female Rotatable TS = Tube Butt weld LO = Lok NP = NPT PT = PT	AP = A,P (Ry≤25㎛) Machining Finish BA = B,A (Ry≤3.0㎛) Machining Finish EP = E,P (Ry≤0.7㎛) Electro Polishing Finish	4 = 1/4″ 8 = 3/8″ 2 = 1/2″ 3 = 3/4″

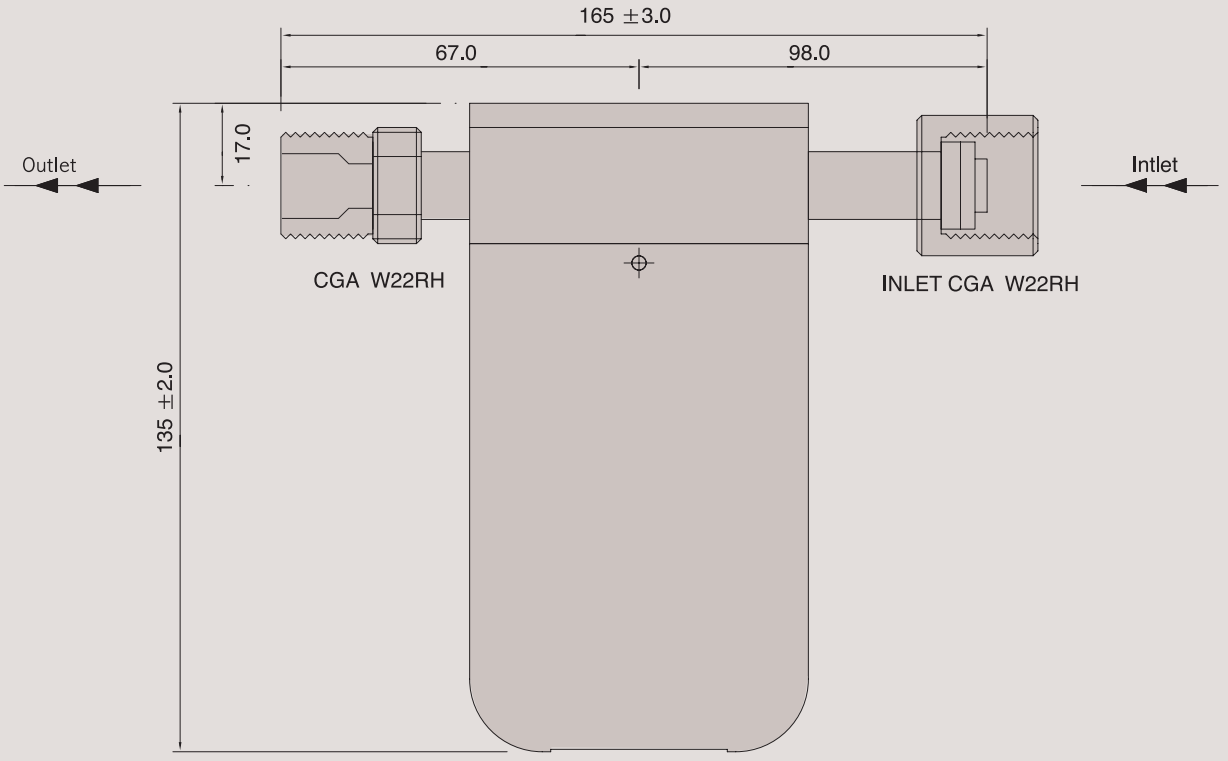
STANDARD MODEL SERIES

MODEL	SIZE	A	B	C	D	E	F	G	H	P.C.D
VH=VCR Male	1/4″	58	14	33.5	47.5	45	31	-	87	25.4
	1/2″	A	16	C	D	45	38	-	H	28
	3/4″	A	22	C	D	45	-	-	H	28
VM=VCR Male Rotatable	1/4″	70.5	14	33.5	47.5	45	31	-	87	25.4
	1/2″	A	16	C	D	45	38	-	H	28
	3/4″	A	22	C	D	45	-	-	H	28
VF=VCR Femaie Rotatable	1/4″	77.8	14	33.5	47.5	45	31	-	87	25.4
	1/2″	A	16	C	D	45	38	-	H	28
	3/4″	A	22	C	D	45	-	-	H	28
TS = Tube Butt wide	1/4″	40	14	33.5	47.5	45	31	6.25	87	25.4
	1/2″	A	16	C	D	45	38	12.7	H	28
	3/4″	A	22	C	D	45	-	19.05	H	28
LO = Lok	1/4″	66	14	33.5	47.5	45	31	-	87	25.4
	1/2″	A	16	C	D	45	38	-	H	28
	3/4″	A	22	C	D	45	-	-	H	28
NP = NPT PT=PT	1/4″	58	14	33.5	47.5	45	31	22	87	25.4
	1/2″	A	16	C	D	45	38	-	H	28
	3/4″	A	22	C	D	45	-	-	H	28



DRH Gas Heater Series

FUNCTIONAL SCHEMATIC



DHR GAS HEATER SERIES

DRH 가스히터시리즈는 식품산업, 연구산업, 의료 및 일반산업에서 가장 많이 필요로 하고 가장 많이 사용되는 가스 히터시리즈입니다, 본체와 내부의 모든 부품은 모델에 따라 Brass or Stainless steel 316L로 이루어졌으며 Co2 gas, N2 gas, O2 gas, or SO2 gas등 실험실, 분석용 특수 가스, 또는 고순도 가스, 믹싱용 가스, 그리고 부식성 가스와 액체 등에서 모두 사용할 수 있도록 제작 설계되었습니다. 사용 용도에 따라 AC 220V 50/60Hz 200W~800W 까지 선택하여 사용 할 수 있도록 하였습니다. 입구 압력은 최대 3500psig(250bar)까지 사용할 수 있습니다.

DRH series is the Gas Heater that is the most useful to Food Industry , R & D and Medical Industry application. It has stainless steel 316L Material or Brass one depends on user°Øs demand and it is designed for CO2, O2, SO2,Analytical special gas, High purity gas, Mixed gas, corrosive gas or Liquid application. You can select power range from 200W to 800W (AC 220V 50/60 Hz) and Max Inlet pressure upto 3500 psig (250 Bar).

절대주의
화상 및 감전사고의 위험이있는 제품입니다 각별히 주의하여 사용하시길 바라며, 접지된 콘센트 및 누전차단기를 꼭 사용하시길 바랍니다, 또한 잘못사용하면 감전으로인하여 사망 또는 중상 및 화상의 위험있는 제품입니다 절대 주의하시길 바랍니다.

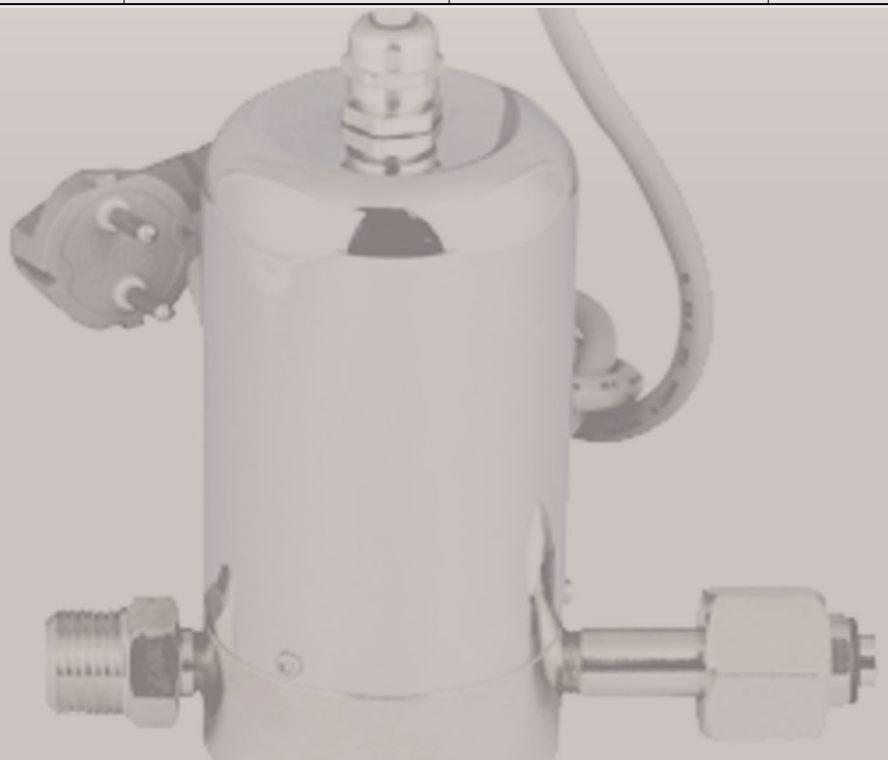
Caution
One may get a Burn or electric shock and is requested caution/attention. A grounded Outlet and Electric Leakage Breaker is requested. Worst case, one will lose his life or get serious Burn and kindly take a caution/attention.

SPECIFICATIONS

Ports	1/4" Female NPT CGA320, CGA540, W22RH, W23RH etc...Optional
Leak Rate Certification	to 2x10-8 atm cc/sec Helium available.
Body Materials	DRH-B000 Nickel Plated Brass DRH-S000 Stainless steel 316L
Bonnet Material	Steel Nickel Plated (Stainless steel Optional)
Rated voltage Single-phase	AC 220V 50/60Hz
Power Consumption	DRH-B200 200W DRH-B400 400W DRH-B600 600W DRH-B800 800W
Weight	2.8kg
Flow Capacity	Cv=3.5 Standard
Standard Optional	CGA etc..

ORDERING INFORMATION

DRH	-	B	200	-	0
BASIS SERIES NUMBER		BODY MATERIAL	AC 220V 50/60Hz		INLET AND OUTLET PORTS SIZE
Standard Inlet Pressure 3500PSIG (238 bar)		B = Brass S = Stainless Steel 316L	200 = 200W 400 = 400W 600 = 600W 800 = 800W		0 = 1/4" Female NPT 1 = W22 RH(Co2) 2 = W22 RH(N2) 3 = W23 RH(O2)



Flow Calculations

this section is for computing gas and liquid flow through regulators and valves.

C_V
Flow coefficient for regulators and valves that expresses flow capabilities of a unit at full open condition. For liquids, this coefficient is defined as the flow of water at 60F/16°C in gallons per minute at a pressure drop of one psig. For gases, this coefficient is defined as the flow of air at standard conditions in standard cubic feet per minute for each psig of inlet pressure.

S_L
Specific gravity of liquids relative to water, both at standard temperature of 60° F/16°C. (Specific gravity of water = 1.0 at 60°F/16°C.)

S_g
Specific gravity of a gas relative to air; equals the ratio of the molecular weight of the gas to that of air. (Specific gravity of air = 1.0 at 60°F/16°C.)

P
Line pressure (psig).

P_1
Inlet pressure expressed in psig.

P_2
Outlet pressure expressed in psig.

ΔP
Differiential pressure ($P_1 - P_2$).

psia
Absolute pressure which is gauge pressure (psig) plus 14.7 (atmospheric pressure).

Q_L
Liquid flow in gallons per minute (GPM).

GASEOUS FLOW FORMULAS

a. $C_v = \frac{Q_g \times 2\sqrt{S_g}}{P_1}$ Use when P_1 equals or is greater than $2 \times P_2$. (Referred to as critical flow)

Example: Determine C_v required for a regulator when inlet pressure (P_1)is equal or greater than two times outlet pressure (P_2) and the following items are known:

Given:

P_1 = 1000 psig
P_2 = 400 psig
Q_g = 400SCFM
S_g = 1.0 (assume air in this example)

$$C_v = \frac{Q_g \times 2\sqrt{S_g}}{P_1} = \frac{400 \times 2}{1000} = .8C_v$$

* *Caution: When sizing components for flow applications, attention must also be directed to the size of plumbing. When flow requirements are at low pressures, the plumbing may be the flow limiting item rather than the regulator or valve.*

b. $C_v = \frac{Q_g \times \sqrt{S_g}}{\sqrt{\Delta P \times P_2}}$ Use when P_1 is less than $2 \times P_2$ or P_2 is greater than one-half of inlet pressure.

Note: This is referred to as sub-critical flow.

Example: Determine maximum flow capability through the same regulator (example in a.) using the C_v factor when the following conditions exist:

Given:

P_1 = 1000 psig
P_2 = 600 psig
C_v = 0.8
S_g = 1.0 (assume air in this example)

Solve formula for Q_g:

$$Q_g = \frac{C_v\sqrt{\Delta P \times P_2}}{\sqrt{S_g}}$$

$$= \frac{.8\sqrt{1000-600 \times 600}}{\sqrt{1}} = \frac{392}{1}$$

$$Q_g = \underline{\underline{392}}$$

LIQUID FLOW FORMULAS

$$C_v = \frac{Q_L\sqrt{S_L}}{\sqrt{\Delta P}} \quad \therefore \quad Q_L = \frac{C_v\sqrt{\Delta P}}{\sqrt{S_L}}$$

Example: Determine liquid flow (assume water) through a regulator in gallons per minute with the following conditions:

Given:

P_1 = 1000 psig
P_2 = 600 psig
S_L = 1.0
C_v = .08

$$Q_L = \frac{C_v\sqrt{\Delta P}}{\sqrt{S_L}} = \frac{0.08\sqrt{1000-600}}{\sqrt{1}} = \frac{0.08\times 20}{1}$$

$$= \underline{\underline{1.6\text{GPM (Water)}}}$$

CONVERT FLOW FROM CFM TO SCFM

$$Q_g = \frac{Q\times P}{14.7}$$

Example: convert gas flow expressed in cubic feet per minute (CFM) to units of standard cubic feet per minute (SCFM).

Given:

Q = 20 CFM
P = 294 psig

$$Q_g = \frac{Q\times P}{14.7} = \frac{20\ \text{CFM}\times 294\ \text{psig}}{14.7\ \text{psig}}$$

$$= \underline{\underline{400\ \text{SCFM}}}$$

CONVERT MASS FLOW TO VOLUME FLOW (SCFM) OF AIR

$$Q_g(\text{Air}) = \frac{M(\text{any gas})\times 13.36}{S_g(\text{any gas})\times\sqrt{\frac{1}{S_g(\text{any gas})}}}$$

Example: Convert mass flow (lb/min) of any gas to volume flow (SCFM) of air

Given: M(He) = 1 lb. min, S_g(He) = .138

$$Q_g = \frac{M\times 13.36}{S_g\times\sqrt{\frac{1}{S_g}}} = \frac{1\times 13.36}{.138\times\sqrt{\frac{1}{.138}}}$$

$$= \underline{\underline{35.96\ \text{SCFM (Air)}}}$$

Media Tables

A. Approximate multipliers to use when converting flow(GPM) of water to various liquids:

Crude Oil	1.015 to 1.11
Gasoline	1.15
Hydraulic Oil-Mineral Base	1.12
Hydraulic Oil-Phosphate Ester Base	95
Hydraulic Oil-Standard Mil 5606	1.10
Hydraulic Oil-Water Glycol Base	98
Kerosene	1.10
Water	1.00

Example: Determine maximum flow of kerosene throught a regilator if maximum water flow capability is 5 GPM.

Kerosene flow = 5GPM(water) 1.10 (kerosene multiplier)
= 5.5 GPM

B. Approximate multipliers to use when converting flow (GPM) of air to various gases:

Air	1.000
Ammonia	1.295
Argon	852
Arsine	609
Carbon Dioxide	810
Helium	2.690
Hydrogen	3.790
Hydrogen Chloride	888
Nitrogen	1.015
Oygen	951
Silane	915

Examples: Determining maximum flow of helium through a regulator if the maximum air flow capability is 300 SCFM.

Helium flow = 300 SCFM (air) × 2.69 (helium multiplier)
= 807 SCFM

Air flow = $\frac{25\ \text{SCFM}}{2.69}$ = 9.3 SCFM of HE

C. Approximate specific gravities (S) for various liquids:

Crude Oil	81 to .97
Gasoline	75
Hydraulic Oil-Mineral Base	80
Hydraulic Oil-Phosphate Ester Base	1.10
Hydraulic Oil-Standard Mil 5606	83
Hydraulic Oil-Water Glycol Base	1.05
Kerosene	82
Water	1.00

To convert the flow from water (specific gravity of 1.0) to a liquid having a specific gravity other than 1.0 use the following formula:

$$Q_L\,(\text{any liquid}) = Q_L\,(\text{water}) \sqrt{\frac{1}{S_L\,(\textit{any liquid})}}$$

D. Approximate specific gravities (S) for various gases:

Air	1.000
Ammonia	596
Argon	1.379
Arsine	2.695
Carbon Dioxide	1.529
Helium	138
Hydrogen	070
Hydrogen Chloride	1.268
Nitrogen	967
Oygen	1.105
Silane	1.195

To convert the flow from air (specific gravity of 1.0) to a gas having a specific gravity other than 1.0 use the following formula:

$$Q_g\,(\text{any gas}) = Q_g\,(\text{air}) \sqrt{\frac{1}{S_g\,(\text{any gas})}}$$

제품의 안전, 설치 & 작동 시 유의점

- 본 사용 설명서를 읽고 충분히 숙지하기 전까지는 선택, 설치, 사용 혹은 Regulator나 혹은 부속품들을 정비하려 하지 마십시오.
- 본 정보는 설치 후 제품 유지와 조작방법을 제공한다.
- 숙련되지 않은 사람에게 설치, 사용 혹은 본 Regulator나 혹은 부속품 정비를 허락하지 마십시오.

1. 사용하는 가스가 무엇인지 파악하시기 바랍니다.
   사용되는 원천압력(Inlet), 출구압력(Outlet)-현 사용 압력 / 최대 압력 여부, 유량이 얼마인지 파악하십시오.

2. 모든 시리즈는 Outlet 최대 사용 압력이 각 모델의 85% 이상 넘으면 안됩니다.

3. Regulator 사용시 안정적 유량이 중요하다. 이유는 급격한 유량의 변화는 다이아후렘 누적피로로 인하여 깨짐의 주요원인이 됩니다.

4. 바디 재료는 가스의 순도에 영향을 미칩니다. 가스의 순도에 영향을 끼치지 않는 바디를 사용하길 권합니다.

5. 가스를 서로 혼합하여 압축을 가하면 격렬한 반응과 폭발을 일으키므로 모든 고압 가스 용기 또는 Regulator은 서로 혼용을 해서 사용하면 안 됩니다.

6. CGA 나사산 타입에 따른 구분
   좌나사:위험한 가스들(실란, 모노실란, 수소, 메탄, 오일가스, 석탄가스, 클로로메틸, 클로로에틸, 가연성가스, 압축가스, 가연성 액화가스등..)

7. 주의:크린라인이 아닌 일반 라인에 사용 할 경우 필터링(gas 7㎛~15㎛, water 15㎛~80㎛)은 필수이며, 그렇지 않으면 바로 고장의 원인이됩니다. 모든 제품의 필터링하여 사용하면 A/S 비용 절감과 함께 제품의 수명연장에 많은 도움이됩니다

8. 제품의 안전한 사용을 위해, 최대 압력의 25%~75% 이내에서 사용을 적극 권장 합니다.

9. Regulator, 밸브 혹은 부속품의 최대 압력 비율보다 더 큰 압력을 제공하는 근원을 Regulator, 밸브 혹은 부속품에 접속시키지 마십시오.

10. 만약 Regulator 혹은 밸브가 누출하거나 혹은 기계고장 시 즉시 서비스를 받도록 하십시오.

11. 제조자의 허가 없이 기기를 고치거나 부속품을 추가하지 마십시오.

12. 시스템 정비에 갑작스러운 압력, 충격 혹은 유체의 급격한 변화 등을 피하도록 시스템에 서서히 압력을 조정하십시오.

13. 귀사 장비의 정기적인 검사와 정비는 지속적이고 안전한 기계조작을 위해 필요합니다.

14. 사용자는 원료의 적합성 확인을 위해 표준 작업 조건에 따라 테스트해야만 합니다.

15. 많은 가스가 질식을 야기 시킬 수 있습니다. 환기가 잘되는 구역을 만드시기 바랍니다. 산소의 부족을 직원에게 알릴 수 있는 안전장치를 제공하십시오.

16. 절대 본 Regulator 혹은 부속품에 윤활유 혹은 오일을 사용하지 마십시오. 〈제조자에 의해 허가되지 않은 부품을 첨부하거나 기계 수리를 하지 마십시오.〉

제품 보증 기간

A/S 보증 기간은 1년이며 제품 하자 발생 시 A/S 또는 1:1 무상 교환이 원칙입니다. 보증과 배상은 이 명시된 보증에서 어떤 제품 즉 사고로 손상된 것, 남용, 악용, 또는 (주)드라스타의 공인된 개인에 의해서가 아닌 다른 어떤 방법으로 변경, 바꾸어진 것에는 적용되지 않는 것으로 규정한다.
자사 제품의 조립부품 매뉴얼, 부품 리스트는 우리 홈페이지에서 정보를 얻으실 수 있습니다.

Instructions for Safe Installation and Operation

- This Instructions is to provide how to maintain and operate of the DRASTAR Gas Regulators.
- Do NOT try to select, install, use, nor repair this regulator before you carefully read and aware this instructions. Also, it is NOT allowed any unskilled or unauthorized personnel to install, use or repair the regulators or any of their parts.
- Selection of unsuitable product, improper installation, repair, abuse, misapplication, and/or overuse of the gas regulator or any of its parts may cause death, serious personnel injury and/or damages to your property.
- Before use the gas regulators, it is strongly recommended to check the followings:

1. Types and specifications of gases to use; inlet pressure, outlet pressure, current working pressure, max. pressure, flow rate, etc.
2. For all regulators, maximum outlet pressure for working shall not exceed 75% of the equipment's designed limit, i.e. use the 100psi regulators within 0~75psi range.
3. For gas regulators, stable flow rate is very critical. Exponential change of flow rate cause a break of diaphragm.
4. The regulator and body material of it may affect the purity of gases. So, it is very desirable to choose and use the proper regulator with the right material for body not affecting the purity of gases as the manufacturer recommended.
5. It is recommended NOT to use the regulator for mixed or different gases different from the gas that initially flowed in; use only the gas that you used. (If you mix-use some gas such as Toxic Gas can bring a violent reaction and/or explosion which can be lead to a serious injury to person.
6. Caution for thread type;
   The counterclockwise thread type is suitable for dangerous gases such as hydrogen, methane, oil gas, coal gas, chloro-methyl, chloro-ethyl, combustible compressed gas, and combustible liquidated gas, etc.
7. Caution : Filtering (Gas 7㎛~15㎛, water 15㎛~80㎛) is a Must for General gas application such as Non-high purity gas. Otherwise, it may cause a breakdown to the regulator. It is strongly recommended to install filter for prolong product life time and enable saving maintenance expense.
8. For safety, it is strongly recommended to use the regulators within the range of 25% ~ 75% of maximum pressure.
9. Do NOT connect any inlet source with higher pressure than regulator, valve, and/or any parts of it.
10. In case that any leaks found or the regulator is out of order, immediately stop using the regulator and get maintenance.
11. Without manufacturer's prior permission, do NOT repair and/or alter any parts of the regulator.
12. At the time of maintenance, do not apply any sudden pressure, shocks, and/or exponential change of flow rate to the system, but adjust the pressure slightly and gradually.
13. Please check, inspect and maintain the regulator regularly by the skilled personnel in order to keep the regulator's optimum operation without trouble.
14. Before using the regulator, please recheck the inlet sources and the working environment and/or conditions, etc. to ensure the most safe and compatible operation of the regulator.
15. As the regulator is used in a mass flow of gases, it may suffocate personnel(s). Please prepare some ventilation area and alarm system to give notice for lack of oxygen.
16. Never feed any lubricant oil or any other oil to the regulator or any of its parts.

Product Warranty

DRASTAR warrants to the party that purchases productsfrom DRASTAR and warranty period as 1 year from the date of delivery of the products and remedy as repair or 1:1 replacement.
This warranty does not apply to any product which has been damaged by accident,abuse,misuse and modification.

One can download "assembly manual, PartList" from Drastar website.

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