

High Purity High Performance Point-of-Use Pressure Regulator

L25 Series

The Crown L25 Series Point-of-Use Pressure Regulator is designed to provide the optimum in performance and cleanliness for high purity semiconductor applications.

The L25 Series is capable of controlling pressure for intermediate flow rates at point of use applications.

The L25 Series is recommended for Chlorine(Cl₂) service and Nitrous Oxide(N₂O) service.

The L25 Series is manufactured, cleaned and tested to rigorous standards using the most advanced technology available. Assembly, testing and packaging of all Crown high purity products are completed in a state-of-the-art Class 10 Clean Tunnel.



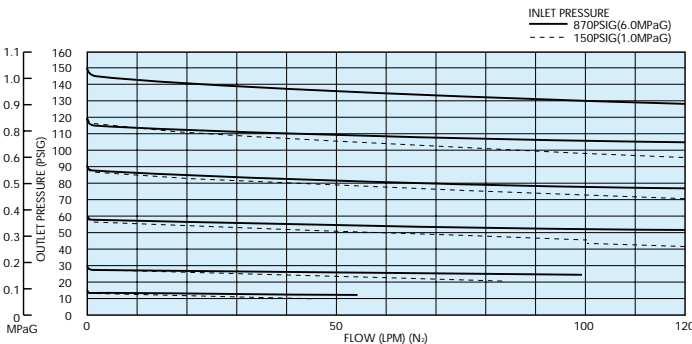
An ISO 9001 Certified Company

Features

- ▶ 1/4 " High Purity, High Performance and Point-of-Use Pressure Regulator for intermediate flow rates at point-of-use applications.
- ▶ 1/4 " Male Face Seal(Standard). Other connections available.
- ▶ True metal to metal diaphragm to body seals.
- ▶ Standard " Free Poppet " design. Optional " Tied Diaphragm " design for positive shutoff also available.
- ▶ 316L Stainless Steel construction or Hastelloy® C-22 available.
- ▶ 32 μ in. (0.80 μ m) Ra finishes are standard. 7 μ in. (0.18 μ m) Ra full internal electropolish available as option.
- ▶ Delivers precise and stable pressure control by square load spring.
- ▶ Seat Materials : Special fluoroplastics are recommended for Chlorine(Cl₂) service and Vespel® is recommended for Nitrous Oxide(N₂O) service.
- ▶ Certified Class 10 Clean Tunnel for cleaning, assembly, test and packaging operations.
- ▶ Cleaning is a multi-step process performed in a Class 100 clean room. Parts are initially cleaned ultrasonically with a wetting agent and then progressively with DI water. Cleaned parts are then blown dry with pure hot air prior to being baked completely dry in a vacuum oven.
- ▶ Each regulator is individually assembled, pressure tested, functionally tested, helium leak tested and particle tested.
- ▶ Final packaging includes double bagging with N₂ purge and vacuum sealing in a Class 10 Clean Tunnel.

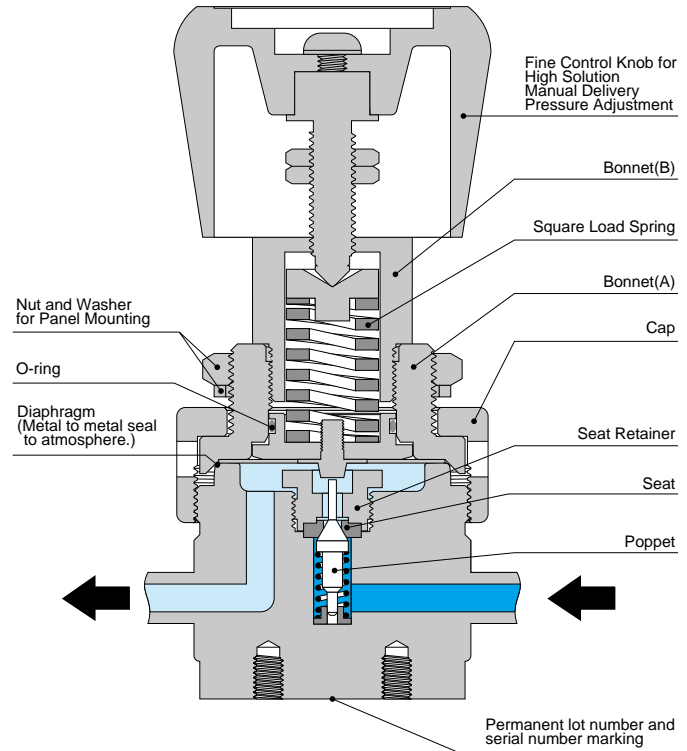
Flow characteristics

MODEL:L25

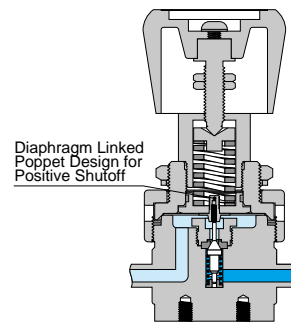


[NOTE] These tests were performed at ambient conditions.

Cross sectional drawing



Tied Diaphragm (Optional)



[NOTE]

1. No filter in this unit.
2. Avoid turning the control knob excessively.
3. Operating the Tied Diaphragm Type : In order to minimize premature wear of regulator's internal parts. Be sure not to close regulator while under pressure.
4. For purging at 870 PSIG (6 MPaG) and higher, operate the unit in consideration of changing the outlet pressure by the supply pressure effect.

Materials of construction

MODEL & TYPE	L25SS	L25SH	L25SS-Cl ₂	L25SS-N ₂ O	L25SS-CO
Wetted Parts					
Body	316L Stainless Steel				
Poppet & Seat Retainer	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel		
Diaphragm	Hastelloy® C-22				316L Stainless Steel
Seat	PCTFE	PCTFE	Special Fluoroplastics	Vespel®	PCTFE
Spring	316 Stainless Steel	Co-Ni Alloy	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel

Non-wetted Parts

Bonnet(A)	316 Stainless Steel
Bonnet(B)	Nickel Plated Brass
Cap	304 Stainless Steel
Control Knob	ABS Resin
O-ring	VITON®

Operating conditions

Inlet Pressure	Max.870 PSIG(Max. 6 MPaG)
Outlet Pressure	0 PSIG to 140 PSIG(0 MPaG to 0.99 MPaG)
Supply Pressure Effect	0.12 PSIG (0.0008 MPaG) per 14.5 PSIG (0.1 MPaG)
Proof Pressure	3,215 PSI (22.2 MPa)
Burst Pressure	8,575 PSI (59.2 MPa)
Temperature	-40 °F to +104 °F (-10 °C to +40 °C)

[NOTE]

1MPa = 10.2 kgf/cm² = 144.84 PSI

1MPa = 7504.36 mmHg = 295.4 inHg

Wetted surface finishes

Standard Ra (GRADE " B " & " C ")	32 μ in.(0.80 μ m) or less
Optional Ra (GRADE " A ")	7 μ in.(0.18 μ m) or less

Standard connections

1/4 "face to face length.....3.70 in.(94 mm)

1/4 "Tube stubs and other connections available as options.

[NOTE]

1. Any combination of Face Seal male and/or female fittings are available for inlet and outlet.
2. Size and configuration of pressure gauge port is 1/4 "Face Seal male.

Functional performance

Inboard Leakage	1x10 ⁻¹¹ Pa • m ³ /sec. He (1x10 ⁻¹⁰ atm • cc/sec. He)
Outboard Leakage	1x10 ⁻¹⁰ Pa • m ³ /sec. He (1x10 ⁻⁹ atm • cc/sec. He)
Leakage Across Seat	8x10 ⁻¹⁰ Pa • m ³ /sec. He (8x10 ⁻⁹ atm • cc/sec. He)
Certified Particle Counts	GRADE " A " : 0.3 μ m or less GRADE " B " : 0.5 μ m or less GRADE " C " : Not certified.
Internal Volume	4.67 cc (0.28 in ³) w/o fittings
Installation	Threaded holes on the rear surface or Panel mounting

Approximate weight

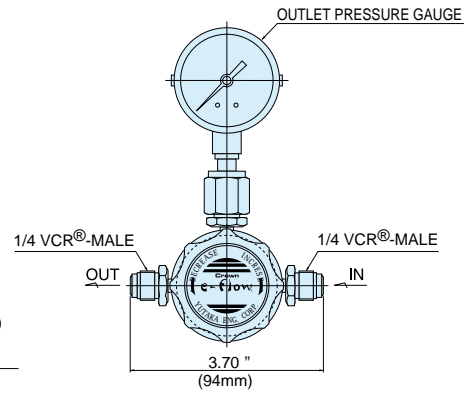
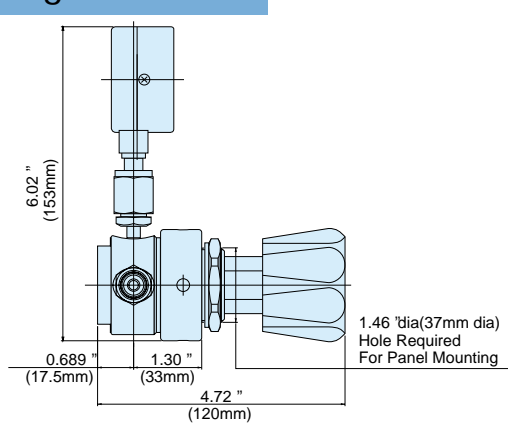
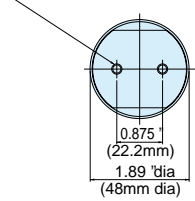
2 lbs.2 oz. (0.96kg)

Approvals

- ▶ An ISO 9001 certified quality system since 1996. The first Japanese high purity regulator manufacturer to receive ISO certification.
- ▶ MITI(Ministry of International Trade and Industry, Japanese Government) certified self-inspecting manufacturer of regulators, N-II fittings and gas heaters according to the Fifth Procedural Manual of the High Pressure Gas Safety Law(License No.MAB-472).
- ▶ MHW(Ministry of Health and Welfare, Japanese Government) certified medical equipment manufacturer (License No.(東用)No.2755).

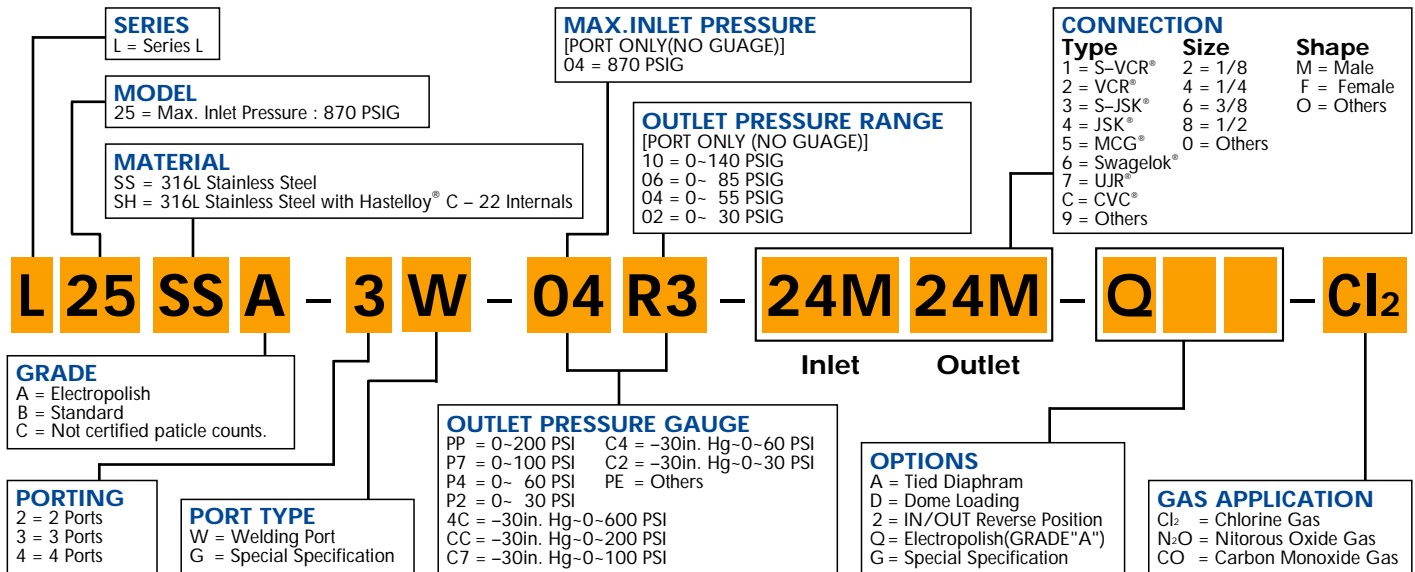
Outline drawing

Threaded holes for the rear surface installation.
2-M5X0.8-7.0mm(0.276in.)deep.



[NOTE] Dimensions are in inches and (mm) for reference only. Subject to change without notice.

Ordering information



[NOTE]

- ▶ Product availability and specifications contained herein are subject to change without notice. Consult local distributor or factory for potential revisions.
- ▶ Bonnet vent relief porting (Optional).
- ▶ Dome loading (Optional).
- ▶ Pressure Sensor available in place of pressure gauge.
- ▶ To complete ordering information, select "SS" or "SH" in the "MATERIAL" category.
- ▶ Seat Materials: Special fluoroplastics are recommended for Chlorine (Cl₂) service.
- ▶ Seat Materials: Vespel® is recommended for Nitrous Oxide (N₂O) service.
- ▶ Stainless steel internals are recommended for Carbon Monoxide (CO) or Nickel Carbonyl service.
- ▶ Crown/YUTAKA® and e-flow® are registered trademarks of YUTAKA ENGINEERING CORPORATION.

- ▶ Hastelloy® is a registered trademark of Haynes International, Inc.
- ▶ Vespel® and VITON® are registered trademarks of DuPont Company.
- ▶ S-VCR®, VCR® and Swagelok® are registered trademarks of Swagelok Marketing CO.
- ▶ S-JSK® and JSK® are registered trademarks of SANKO KOGYO CO., LTD.
- ▶ MCG® is a registered trademark of TOYOKO KAGAKU CO., LTD.
- ▶ UJR® is a registered trademark of Fujikin Incorporated.
- ▶ CVC® is a registered trademark of Benkan Corporation.
- ▶ When selecting a regulator, the total system design must be considered to assure safe, trouble-free regulator performance. Regulator function, materials compatibility, adequate ratings, proper installation, operation and maintenance are the responsibility of the system designer and user.
- ▶ Custom fittings, porting, testing and dimension options are also available upon customer request.
- ▶ Do not mix or interchange parts with those of other manufacturers.

For additional information on
Crown products contact :

An ISO 9001 Quality System Certified Company
MITI Certified Self-Inspecting Manufacturer (No. MAB-472)
MHW Certified Medical Equipment Manufacturer ((東用) No. 2755)

TOTAL ENGINEERING OF GAS REGULATING EQUIPMENT
YUTAKA ENGINEERING CORPORATION

ADDRESS : 5-17-5, KUGAHARA, OHTA-KU, TOKYO 146-0085, JAPAN
PHONE : 81-3-3753-1651
FAX : 81-3-3751-5177

High Purity High Performance Point-of-Use Pressure Regulator

L35 Series

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The L35 Series recommended for Chlorine(Cl₂) service and Nitrous Oxide(N₂O) service.

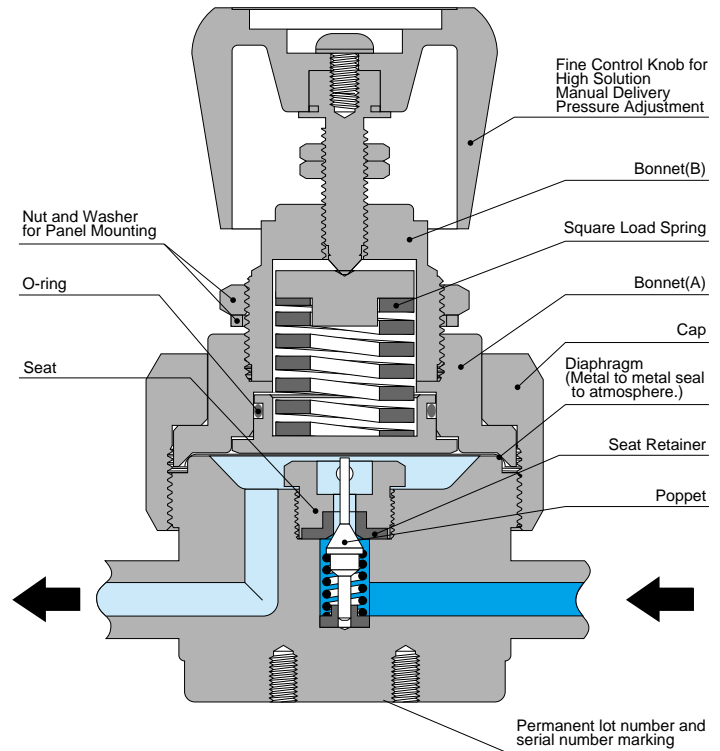
The L35 Series is manufactured, cleaned and tested to rigorous standards using the most advanced technology available. Assembly, testing and packaging of all Crown high purity products are completed in a state-of-the-art Class 10 Clean Tunnel.



Features

- ▶ 1/4" High Purity, High Performance and Point-of-Use Pressure Regulator for intermediate flow rates at point-of-use applications.
- ▶ 1/4" Male Face Seal(Standard). Other connections available.
- ▶ True metal to metal diaphragm to body seals.
- ▶ Standard " Free Poppet " design.
- ▶ 316L Stainless Steel construction or Hastelloy® C-22 available.
- ▶ 32 μ in.(0.80 μ m)Ra finishes(Standard). 7 μ in.(0.18 μ m) Ra full internal electropolished finishes(Optional).
- ▶ Delivers precise and stable pressure control by square load spring.
- ▶ Seat Materials: Special fluoroplastics are recommended for Chlorine(Cl₂) service and Vespel® is recommended for Nitrous Oxide(N₂O) service.
- ▶ Certified Class 10 Clean Tunnel for cleaning, assembly, test and packaging operations.
- ▶ Cleaning is a multi-step process performed in a Class 100 clean room. Parts are initially cleaned ultrasonically with a wetting agent and then progressively with DI water. Cleaned parts are then blown dry with pure hot air prior to being baked completely dry in a vacuum oven.
- ▶ Each regulator is individually assembled, pressure tested, functionally tested, helium leak tested and particle tested.
- ▶ Final packaging includes double bagging with N₂ purge and vacuum sealing in a Class 10 Clean Tunnel.

Cross sectional drawing

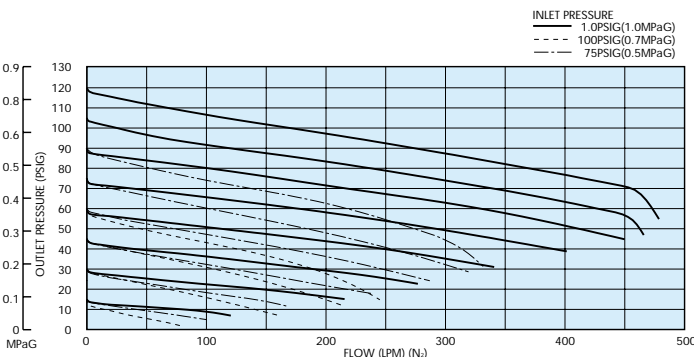


[NOTE]

1. No filter in this unit.
2. Avoid turning the control knob excessively.
3. For purging at 870 PSIG(6 MPaG) and higher, operate the unit in consideration of changing the outlet pressure by the supply pressure effect.

Flow characteristics

MODEL:L35



[NOTE] These tests were performed at ambient conditions.

Materials of construction

MODEL & TYPE	L35SS	L35SH	L35SS-Cl ₂	L35SS-N ₂ O	L35SS-CO
Wetted Parts					
Body	316L Stainless Steel				
Poppet & Seat Retainer	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel		
Diaphragm	Hastelloy® C-22				316L Stainless Steel
Seat	PTFE		Special Fluoroplastics	Vespel®	PTFE
Spring	316 Stainless Steel				

Non-wetted Parts

Bonnet(A)	304 Stainless Steel
Bonnet(B)	304 Stainless Steel
Cap	304 Stainless Steel
Control Knob	ABS Resin
O-ring	VITON®

Operating conditions

Inlet Pressure	Max.870 PSIG (Max. 6 MPaG)
Outlet Pressure	0 PSIG to 140 PSIG (0 MPaG to 0.99 MPaG)
Supply Pressure Effect	0.10 PSIG (0.0007 MPaG) per 14.5 PSIG (0.1 MPaG)
Proof Pressure	1,300 PSI (9.0 MPa)
Burst Pressure	8,575 PSI (59.2 MPa)
Temperature	-40 °F to +104 °F (-10 °C to +40 °C)

[NOTE]

1MPa = 10.2 kgf/cm² = 144.84 PSI

1MPa = 7504.36 mmHg = 295.4 inHg

Wetted surface finishes

Standard Ra (GRADE " B " & " C ")	32 μ in.(0.80 μ m) or less
Optional Ra (GRADE " A ")	7 μ in.(0.18 μ m) or less

Standard connections

1/4 " face to face length.....4.88 in.(124 mm)

1/4 " Tube stubs and other connections available as options.

[NOTE]

1. Any combination of Face Seal male and/or female fittings are available for inlet and outlet.
2. Size and configuration of pressure gauge port is 1/4 " Face Seal male.

Functional performance

Inboard Leakage	1x10 ⁻¹¹ Pa · m ³ /sec. He (1x10 ⁻¹⁰ atm · cc/sec. He)
Outboard Leakage	1x10 ⁻¹⁰ Pa · m ³ /sec. He (1x10 ⁻⁹ atm · cc/sec. He)
Leakage Across Seat	8x10 ⁻¹⁰ Pa · m ³ /sec. He (8x10 ⁻⁹ atm · cc/sec. He)
Certified Particle Counts	GRADE " A " : 0.3 μ m or less GRADE " B " : 0.5 μ m or less GRADE " C " : Not certified.
Internal Volume	11.3 cc (0.68 in ³) w/o fittings
Installation	Threaded holes on the rear surface or Panel mounting

Approximate weight

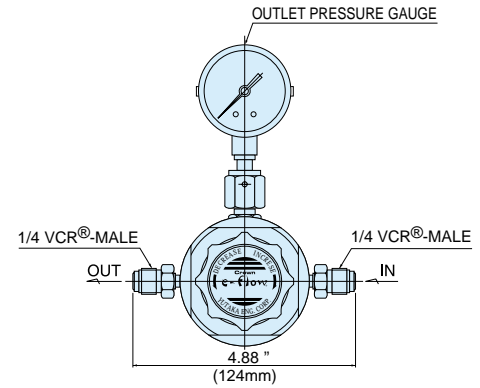
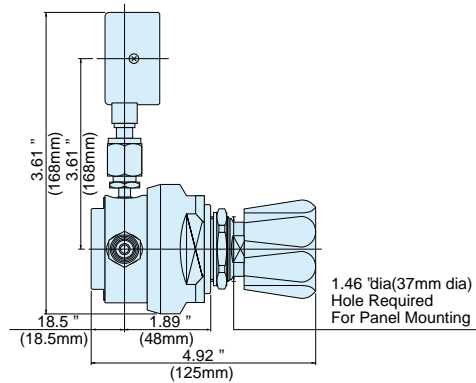
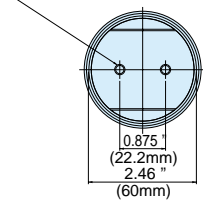
4 lbs.5 oz. (1.95kg)

Approvals

- ▶ An ISO 9001 certified quality system since 1996. The first Japanese high purity regulator manufacturer to receive ISO certification.
- ▶ MITI(Ministry of International Trade and Industry, Japanese Government) certified self-inspecting manufacturer of regulators, N-II fittings and gas heaters according to the Fifth Procedural Manual of the High Pressure Gas Safety Law(License No.MAB-472).
- ▶ MHW(Ministry of Health and Welfare, Japanese Government) certified medical equipment manufacturer (License No.(東用)No.2755).

Outline drawing

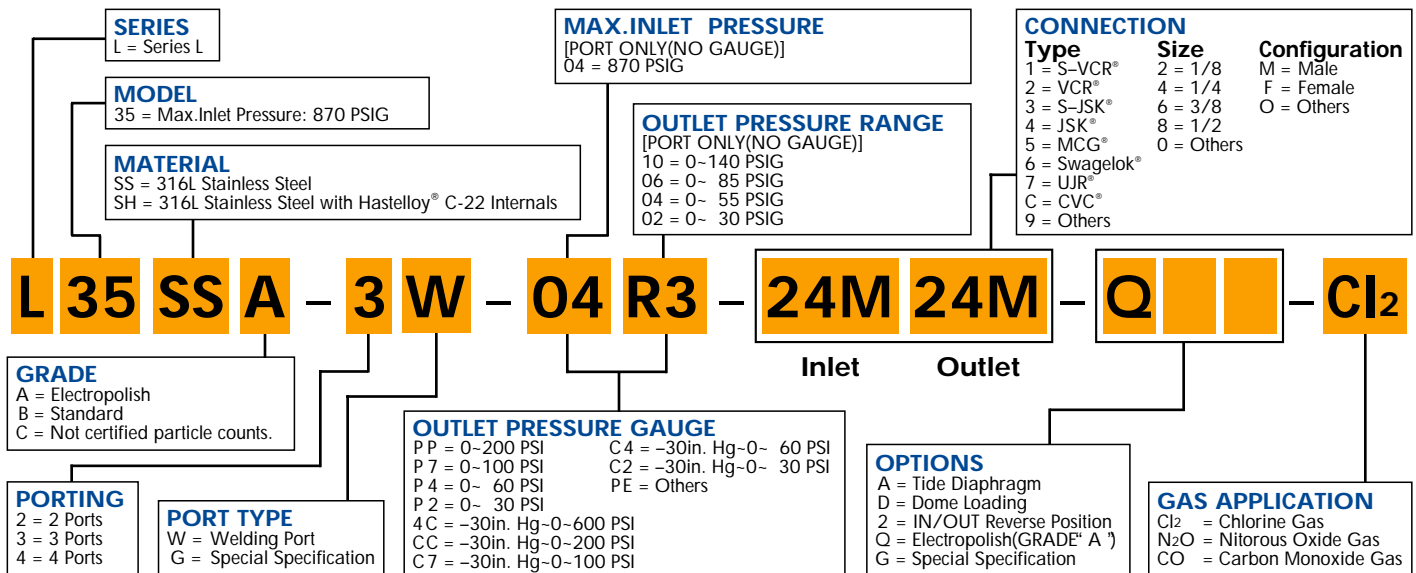
Threaded holes for the rear surface installation.
2-M5X0.8-7.0mm(0.276in.)deep.



[NOTE]

Dimensions are in inches and (mm) for reference only. Subject to change without notice.

Ordering information



[NOTE]

- ▶ Product availability and specifications contained herein are subject to change without notice. Consult local distributor or factory for potential revisions.
- ▶ Bonnet vent relief porting(Optional).
- ▶ Dome loading(Optional).
- ▶ Pressure Sensor available in place of pressure gauge.
- ▶ To complete ordering information, select "SS" or "SH" in the "MATERIAL" category.
- ▶ Seat Materials: Special fluoroplastics are recommended for Chlorine(Cl₂) service.
- ▶ Seat Materials: Vespel® is recommended for Nitrous Oxide(N₂O) service.
- ▶ Stainless steel internals are recommended for Carbon Monoxide(CO) or Nickel Carbonyl service.
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- ▶ UJR® is a registered trademark of Fujikin Incorporated.
- ▶ CVC® is a registered trademark of Benkan Corporation.
- ▶ When selecting a regulator, the total system design must be considered to assure safe, trouble-free regulator performance. Regulator function, materials compatibility, adequate ratings, proper installation, operation and maintenance are the responsibility of the system designer and user.
- ▶ Custom fittings, porting, testing and dimension options are also available upon customer request.
- ▶ Do not mix or interchange parts with those of other manufacturers.

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PHONE : 81-3-3753-1651
FAX : 81-3-3751-5177

Crown

e-flow®

for high purity process

High Purity High Performance High Flow Pressure Regulator

LH1 Series

The Crown LH1 Series High Flow Rate Pressure Regulator is designed to provide the optimum in performance and cleanliness for high purity semiconductor applications.

The LH1 Series is capable of controlling pressure for high flow rates at point of use applications.

The LH1 Series is manufactured, cleaned and tested to rigorous standards using the most advanced technology available.

Assembly, testing and packaging of all Crown high purity products are completed in a state-of-the-art Class 10 Clean Tunnel.



An ISO 9001 Certified Company

 **YUTAKA®**

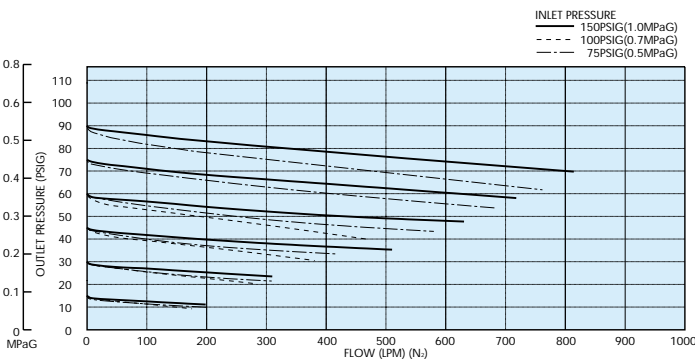


Features

- ▶ 3/8 "and 1/2 "High Purity, High Performance and High Flow Pressure Regulator for high flow rates at point of use applications.
- ▶ 3/8 "and 1/2 "Male Face Seal(Standard). Other connections available.
- ▶ True metal to metal diaphragm to body seals.
- ▶ Standard " Free Poppet " design.
- ▶ 316L Stainless Steel construction or Hastelloy® C-22 available.
- ▶ 32 μ in.(0.80 μ m)Ra finishes(Standard). 7 μ in.(0.18 μ m)Ra full internal electropolished finishes(Optional).
- ▶ Delivers precise and stable pressure control by square load spring.
- ▶ Certified Class 10 Clean Tunnel for cleaning, assembly, test and packaging operations.
- ▶ Cleaning is a multi-step process performed in a Class 100 clean room. Parts are initially cleaned ultrasonically with a wetting agent and then progressively with DI water. Cleaned parts are then blown dry with pure hot air prior to being baked completely dry in a vacuum oven.
- ▶ Each regulator is individually assembled, pressure tested, functionally tested, helium leak tested and particle tested.
- ▶ Final packaging includes double bagging with N₂ purge and vacuum sealing in a Class 10 Clean Tunnel.

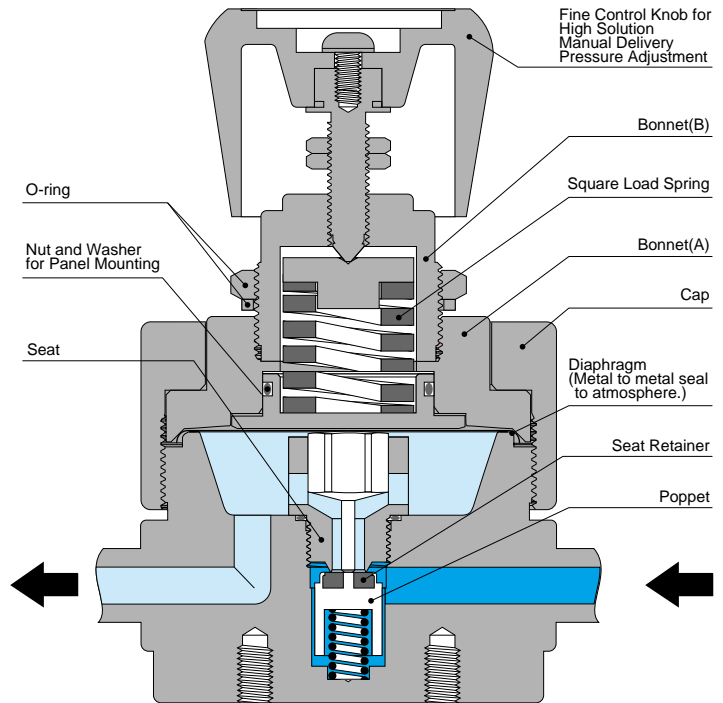
Flow characteristics

MODEL:LH1



[NOTE] These tests were performed at ambient conditions.

Cross sectional drawing



[NOTE]

1. No filter in this unit.
2. Avoid turning the control knob excessively.
3. For purging at 870 PSIG(6 MPaG) and higher, operate the unit in consideration of changing the outlet pressure by the supply pressure effect.

Materials of construction

MODEL & TYPE	LH1SS	LH1SH	LH1SS-CO
Wetted Parts			
Body	316L Stainless Steel		
Poppet & Seat Retainer	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel
Diaphragm	Hastelloy® C-22		316L Stainless Steel
Seat	PTFE		
Spring	316 Stainless Steel		

Non-wetted Parts

Bonnet(A)	304 Stainless Steel
Bonnet(B)	304 Stainless Steel
Cap	304 Stainless Steel
Control Knob	ABS Resin
O-ring	VITON®

Operating conditions

Inlet Pressure	Max.870 PSIG (Max. 6 MPaG)
Outlet Pressure	0 PSIG to 140 PSIG (0 MPaG to 0.99 MPaG)
Supply Pressure Effect	0.28 PSIG (0.0019 MPaG) per 14.5 PSIG (0.1 MPaG)
Proof Pressure	1,300 PSI (9.0 MPa)
Burst Pressure	8,575 PSI (59.2 MPa)
Temperature	-40 °F to +104 °F (-10 °C to +40 °C)

[NOTE]

1MPa = 10.2 kgf/cm² = 144.84 PSI

1MPa = 7504.36 mmHg = 295.4 inHg

Wetted surface finishes

Standard Ra (GRADE“ B ”&“ C ”)	32 μ in.(0.80 μ m) or less
Optional Ra (GRADE“ A ”)	7 μ in.(0.18 μ m) or less

Standard connections

3/8 "and 1/2 "face to face length.....6.38 in.(162 mm)
3/8 "and 1/2 "Tube stubs and other connections available as options.

[NOTE]

1. Any combination of Face Seal male and/or female fittings are available for inlet and outlet.
2. Size and configuration of pressure gauge port is 1/4 "Face Seal male.

Functional performance

Inboard Leakage	1x10 ⁻¹¹ Pa · m ³ /sec. He (1x10 ⁻¹⁰ atm · cc/sec. He)
Outboard Leakage	1x10 ⁻¹⁰ Pa · m ³ /sec. He (1x10 ⁻⁹ atm · cc/sec. He)
Leakage Across Seat	8x10 ⁻¹⁰ Pa · m ³ /sec. He (8x10 ⁻⁹ atm · cc/sec. He)
Certified Particle Counts	GRADE“ A ”: 0.3 μ m or less GRADE“ B ”: 0.5 μ m or less GRADE“ C ”: Not certified.
Internal Volume	32.3 cc (1.95 in ³) w/o fittings
Installation	Threaded holes on the rear surface or Panel mounting

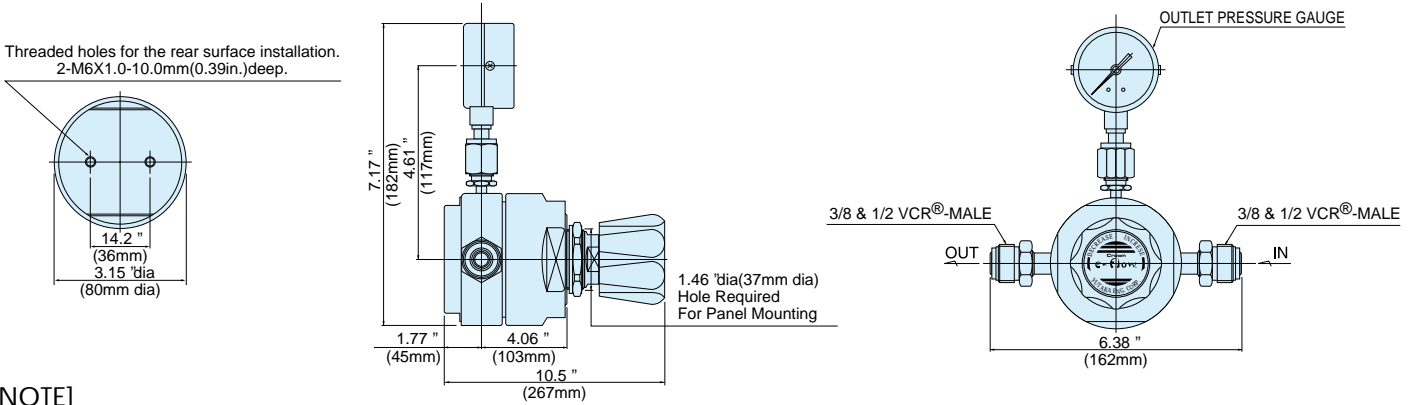
Approximate weight

6 lbs.5 oz. (2.87kg)

Approvals

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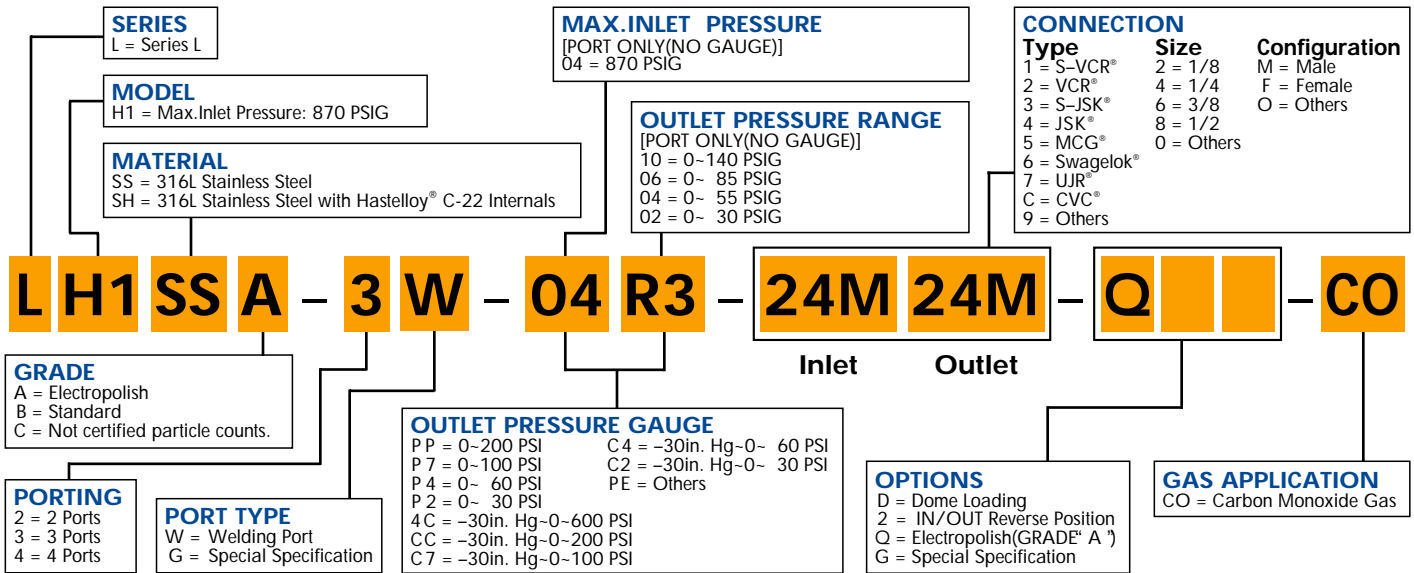
Outline drawing



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TOTAL ENGINEERING OF GAS REGULATING EQUIPMENT
YUTAKA ENGINEERING CORPORATION

ADDRESS : 5-17-5, KUGAHARA, OHTA-KU, TOKYO 146-0085, JAPAN
PHONE : 81-3-3753-1651
FAX : 81-3-3751-5177

Crown

e-flow
for high purity process

High Performance Point-of-Use Pressure Regulator

R25 Series

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 **YUTAKA**[®]

An ISO 9001 Certified Company

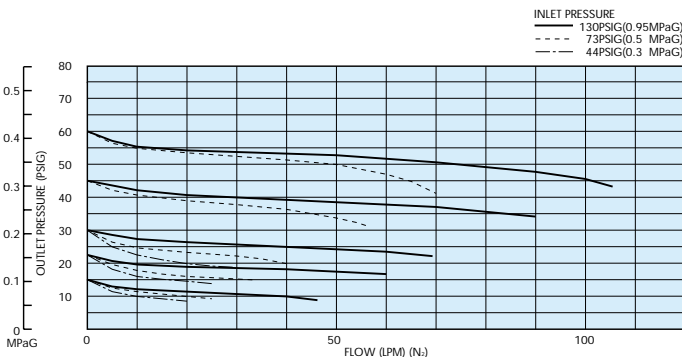


Features

- ▶ 1/4" High Performance and Point-of-Use Pressure Regulator for intermediate flow rates at point-of-use applications.
- ▶ 1/4" Male Face Seal (Standard). Other connections available.
- ▶ Standard "Free Poppet" design. Optional "Tied Diaphragm" design for positive shutoff also available.
- ▶ 316L Stainless Steel construction or Hastelloy® C-22 available.
- ▶ 32 μm. (0.80 μm) Ra finishes are standard. 7 μm. (0.18 μm) Ra full internal electropolish available as option.
- ▶ Delivers precise and stable pressure control by square load spring.
- ▶ Seat Materials : Special fluoroplastics are recommended for Chlorine (Cl₂) service and Vespel® is recommended for Nitrous Oxide (N₂O) service.
- ▶ Certified Class 10 Clean Tunnel for cleaning, assembly, test and packaging operations.
- ▶ Cleaning is a multi-step process performed in a Class 100 clean room. Parts are initially cleaned ultrasonically with a wetting agent and then progressively with DI water. Cleaned parts are then blown dry with pure hot air prior to being baked completely dry in a vacuum oven.
- ▶ Each regulator is individually assembled, pressure tested, functionally tested, helium leak tested and particle tested.
- ▶ Final packaging includes double bagging with N₂ purge and vacuum sealing in a Class 10 Clean Tunnel.

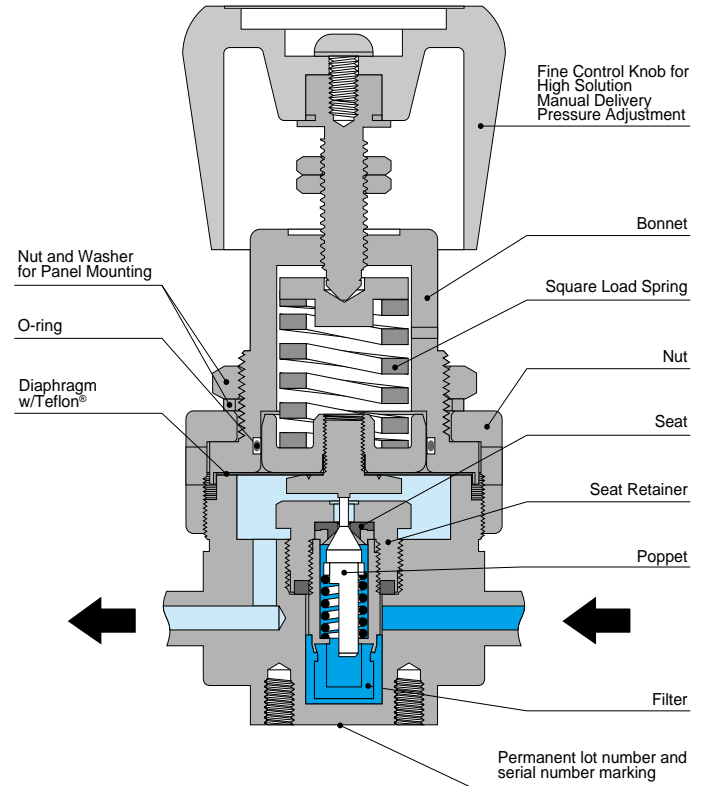
Flow characteristics

MODEL:R25

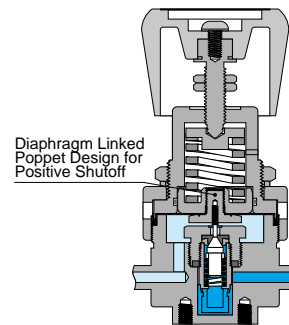


[NOTE] These tests were performed at ambient conditions.

Cross sectional drawing



Tied Diaphragm (Optional)



[NOTE]

1. Avoid turning the control knob excessively.
2. Operating the Tied Diaphragm Type : In order to minimize premature wear of regulator's internal parts. Be sure not to close regulator while under pressure.
3. For purging at 870 PSIG (6 MPaG) and higher, operate the unit in consideration of changing the outlet pressure by the supply pressure linked effect.

Materials of construction

MODEL & TYPE	R25SS	R25SH	R25SS-Cl ₂	R25SS-N ₂ O	R25SS-CO
Wetted Parts					
Body	316L Stainless Steel				
Poppet	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel		
Diaphragm	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel		
Seat	PTFE		Special Fluoroplastics	Vespel®	PTFE
Spring	316 Stainless Steel				

Non-wetted Parts

Bonnet	Nickel Plated Brass
Nut	304 Stainless Steel
Control Knob	ABS Resin
O-ring	VITON®

Operating conditions

Inlet Pressure	Max.870 PSIG(Max. 6 MPaG)
Outlet Pressure	0 PSIG to 140 PSIG(0 MPaG to 0.99 MPaG)
Supply Pressure Effect	0.27 PSIG (0.00178 MPaG) per 14.5 PSIG (0.1 MPaG)
Proof Pressure	3,215 PSI (22.2 MPa)
Burst Pressure	8,575 PSI (59.2 MPa)
Temperature	-40 °F to +104 °F (-10 °C to +40 °C)

[NOTE]

1MPa = 10.2 kgf/cm² = 144.84 PSI

1MPa = 7504.36 mmHg = 295.4 inHg

Wetted surface finishes

Standard Ra (GRADE " B " & " C ")	32 μ in.(0.80 μ m) or less
Optional Ra (GRADE " A ")	7 μ in.(0.18 μ m) or less

Standard connections

1/4 "Face Seal Male to Face Seal Male length
.....3.23 in.(82 mm)

1/4 "Tube stubs and other connections available as options.

[NOTE]

1. Any combination of Face Seal male and/or female fittings are available for inlet and outlet.
2. Size and configuration of pressure gauge port is 1/4 "Face Seal male.

Functional performance

Inboard Leakage	1x10 ⁻¹¹ Pa · m ³ /sec. He (1x10 ⁻¹⁰ atm · cc/sec. He)
Outboard Leakage	1x10 ⁻¹⁰ Pa · m ³ /sec. He (1x10 ⁻⁹ atm · cc/sec. He)
Leakage Across Seat	8x10 ⁻¹⁰ Pa · m ³ /sec. He (8x10 ⁻⁹ atm · cc/sec. He)
Certified Particle Counts	GRADE " A " : 0.3 μ m or less GRADE " B " : 0.5 μ m or less GRADE " C " : Not certified.
Internal Volume	4.67 cc (0.28 in ³) w/o fittings
Installation	Threaded holes on the rear surface or Panel mounting

Approximate weight

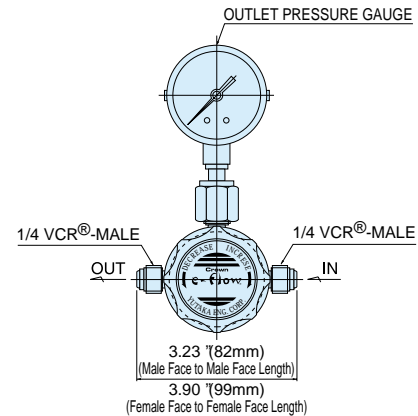
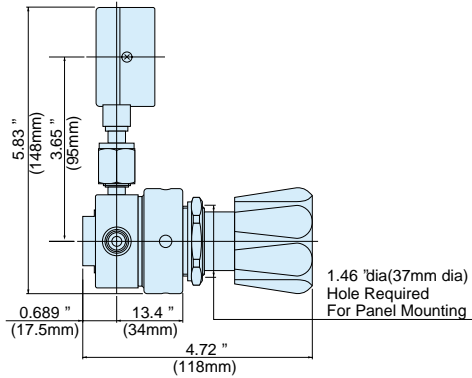
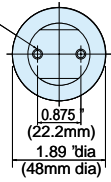
2 lbs.2 oz. (0.96kg)

Approvals

- ▶ An ISO 9001 certified quality system since 1996. The first Japanese high purity regulator manufacturer to receive ISO certification.
- ▶ MITI(Ministry of International Trade and Industry, Japanese Government) certified self-inspecting manufacturer of regulators, N-II fittings and gas heaters according to the Fifth Procedural Manual of the High Pressure Gas Safety Law(License No.MAB-472).
- ▶ MHW(Ministry of Health and Welfare, Japanese Government) certified medical equipment manufacturer (License No.(東用)No.2755).

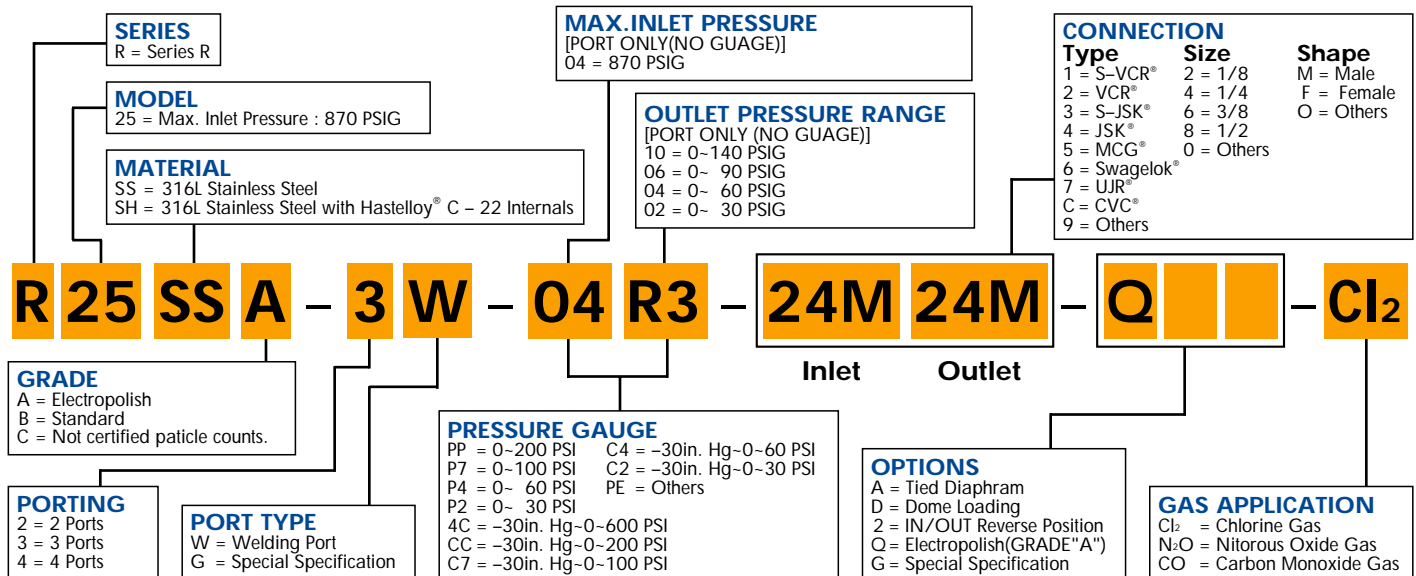
Outline drawing

Threaded holes for the rear surface installation.
2-M5X0.8-7.0mm(0.276in.)deep.



[NOTE] Dimensions are in inches and (mm) for reference only. Subject to change without notice.

Ordering information



[NOTE]

- ▶ Product availability and specifications contained herein are subject to change without notice. Consult local distributor or factory for potential revisions.
- ▶ Bonnet vent relief porting(Optional).
- ▶ Dome loading(Optional).
- ▶ Pressure Sensor available in place of pressure gauge.
- ▶ To complete ordering information, select "SS" or "SH" in the "MATERIAL" category.
- ▶ Seat Materials : Special fluoroplastics are recommended for Chlorine(Cl₂) service.
- ▶ Seat Materials : Vespel® is recommended for Nitrous Oxide(N₂O) service.
- ▶ Stainless steel internals are recommended for Carbon Monoxide(CO) or Nickel Carbonyl service.
- ▶ Crown/YUTAKA® and e-flow® are registered trademarks of YUTAKA ENGINEERING CORPORATION.

- ▶ Hastelloy® is a registered trademark of Haynes International, Inc.
- ▶ Vespel® and VITON® are registered trademarks of DuPont Company.
- ▶ S-VCR®, VCR® and Swagelok® are registered trademarks of Swagelok Marketing CO.
- ▶ S-JSK® and JSK® are registered trademarks of SANKO KOGYO CO., LTD.
- ▶ MCC® is a registered trademark of TOYOKO KAGAKU CO., LTD.
- ▶ UJR® is a registered trademark of Fujikin Incorporated.
- ▶ CVC® is a registered trademark of Benkan Corporation.
- ▶ When selecting a regulator, the total system design must be considered to assure safe, trouble-free regulator performance. Regulator function, materials compatibility, adequate ratings, proper installation, operation and maintenance are the responsibility of the system designer and user.
- ▶ Custom fittings, porting, testing and dimension options are also available upon customer request.
- ▶ Do not mix or interchange parts with those of other manufacturers.

For additional information on
Crown products contact :

An ISO 9001 Quality System Certified Company
MITI Certified Self-Inspecting Manufacturer(No.MAB-472)
MHW Certified Medical Equipment Manufacturer((東用)No.2755)

TOTAL ENGINEERING OF GAS REGULATING EQUIPMENT
YUTAKA ENGINEERING CORPORATION

ADDRESS : 5-17-5, KUGAHARA, OHTA-KU, TOKYO 146-0085, JAPAN
PHONE : 81-3-3753-1651
FAX : 81-3-3751-5177

Crown

e-flow®

for high purity process

High Performance Point-of-Use Pressure Regulator

R35 Series

The Crown R35 Series Point-of-Use Pressure Regulator is designed to provide the optimum in performance and cleanliness for high purity semiconductor applications.

The R35 Series is capable of controlling pressure for intermediate flow rates at point of use applications.

The R35 Series recommended for Chlorine(Cl₂) service and Nitrous Oxide(N₂O) service.

The R35 Series is manufactured, cleaned and tested to rigorous standards using the most advanced technology available.

Assembly, testing and packaging of all Crown high purity products are completed in a state-of-the-art Class 10 Clean Tunnel.



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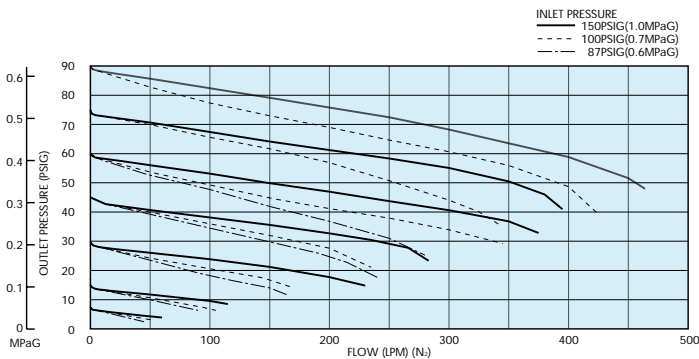


Features

- ▶ 1/4" High Performance and Point-of-Use Pressure Regulator for intermediate flow rates at point-of-use applications.
- ▶ 1/4" Male Face Seal(Standard). Other connections available.
- ▶ " Free Poppet " design.
- ▶ 316L Stainless Steel construction or Hastelloy® C-22 available.
- ▶ 32 μ in.(0.80 μ m)Ra finishes(Standard). 7 μ in.(0.18 μ m) Ra full internal electropolished finishes(Optional).
- ▶ Delivers precise and stable pressure control by square load spring.
- ▶ Seat Materials: Special fluoroplastics are recommended for Chlorine(Cl₂) service and Vespel® is recommended for Nitrous Oxide(N₂O) service.
- ▶ Certified Class 10 Clean Tunnel for cleaning, assembly, test and packaging operations.
- ▶ Cleaning is a multi-step process performed in a Class 100 clean room. Parts are initially cleaned ultrasonically with a wetting agent and then progressively with DI water. Cleaned parts are then blown dry with pure hot air prior to being baked completely dry in a vacuum oven.
- ▶ Each regulator is individually assembled, pressure tested, functionally tested, helium leak tested and particle tested.
- ▶ Final packaging includes double bagging with N₂ purge and vacuum sealing in a Class 10 Clean Tunnel.

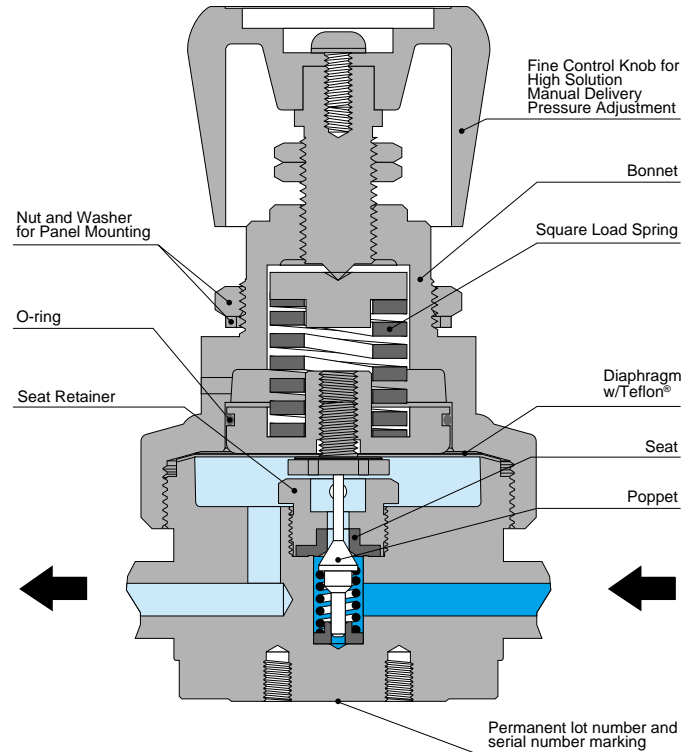
Flow characteristics

MODEL:R35



[NOTE] These tests were performed at ambient conditions.

Cross sectional drawing



[NOTE]

1. No filter in this unit.
2. Avoid turning the control knob excessively.
3. For purging at 870 PSIG(6 MPaG) and higher, operate the unit in consideration of changing the outlet pressure by the supply pressure effect.

Materials of construction

MODEL & TYPE	R35SS	R35SH	R35SS-Cl ₂	R35SS-N ₂ O	R35SS-CO
Wetted Parts					
Body	316L Stainless Steel				
Poppet & Seat Retainer	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel		
Diaphragm	316L Stainless Steel	Hastelloy® C-22	316L Stainless Steel		
Seat	PTFE		Special Fluoroplastics	Vespel®	PTFE
Spring	316 Stainless Steel				

Non-wetted Parts

Bonnet	Brass Nickel Plated
Control Knob	ABS Resin
O-ring	VITON®

Operating conditions

Inlet Pressure	Max.870 PSIG (Max. 6 MPaG)
Outlet Pressure	0 PSIG to 140 PSIG (0 MPaG to 0.99 MPaG)
Supply Pressure Effect	0.10 PSIG (0.0007 MPaG) per 14.5 PSIG (0.1 MPaG)
Proof Pressure	1,300 PSI (9.0 MPa)
Burst Pressure	8,575 PSI (59.2 MPa)
Temperature	-40 °F to +104 °F (-10 °C to +40 °C)

[NOTE]

1MPa = 10.2 kgf/cm² = 144.84 PSI

1MPa = 7504.36 mmHg = 295.4 inHg

Wetted surface finishes

Standard Ra (GRADE " B " & " C ")	32 μ in.(0.80 μ m) or less
Optional Ra (GRADE " A ")	7 μ in.(0.18 μ m) or less

Standard connections

1/4 "Face Seal Male to Face Seal Male length
.....4.09 in.(104 mm)

1/4 "Tube stubs and other connections available as options.

[NOTE]

1. Any combination of Face Seal male and/or female fittings are available for inlet and outlet.
2. Size and configuration of pressure gauge port is 1/4 "Face Seal male.

Functional performance

Inboard Leakage	1x10 ⁻¹¹ Pa · m ³ /sec. He (1x10 ⁻¹⁰ atm · cc/sec. He)
Outboard Leakage	1x10 ⁻¹⁰ Pa · m ³ /sec. He (1x10 ⁻⁹ atm · cc/sec. He)
Leakage Across Seat	8x10 ⁻¹⁰ Pa · m ³ /sec. He (8x10 ⁻⁹ atm · cc/sec. He)
Certified Particle Counts	GRADE " A " : 0.3 μ m or less GRADE " B " : 0.5 μ m or less GRADE " C " : Not certified.
Internal Volume	15.5 cc (0.93 in ³) w/o fittings
Installation	Threaded holes on the rear surface or Panel mounting

Approximate weight

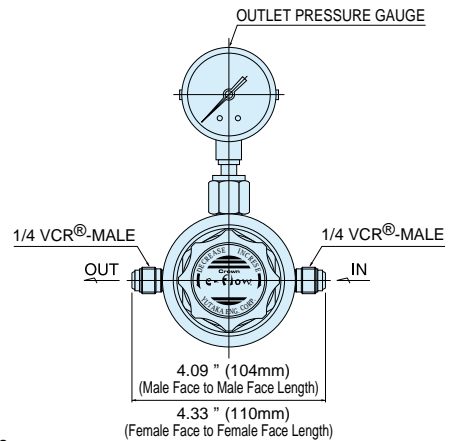
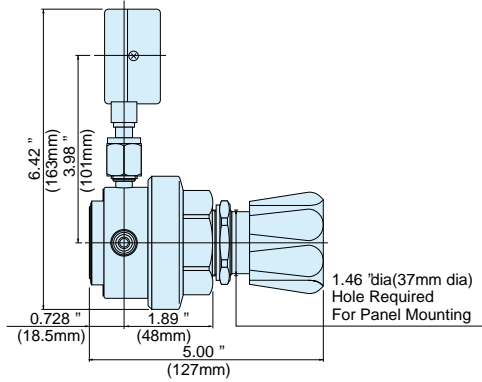
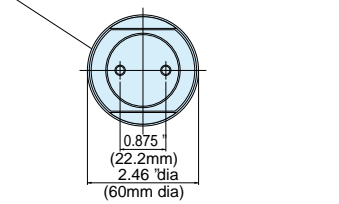
4 lbs.5 oz. (1.95kg)

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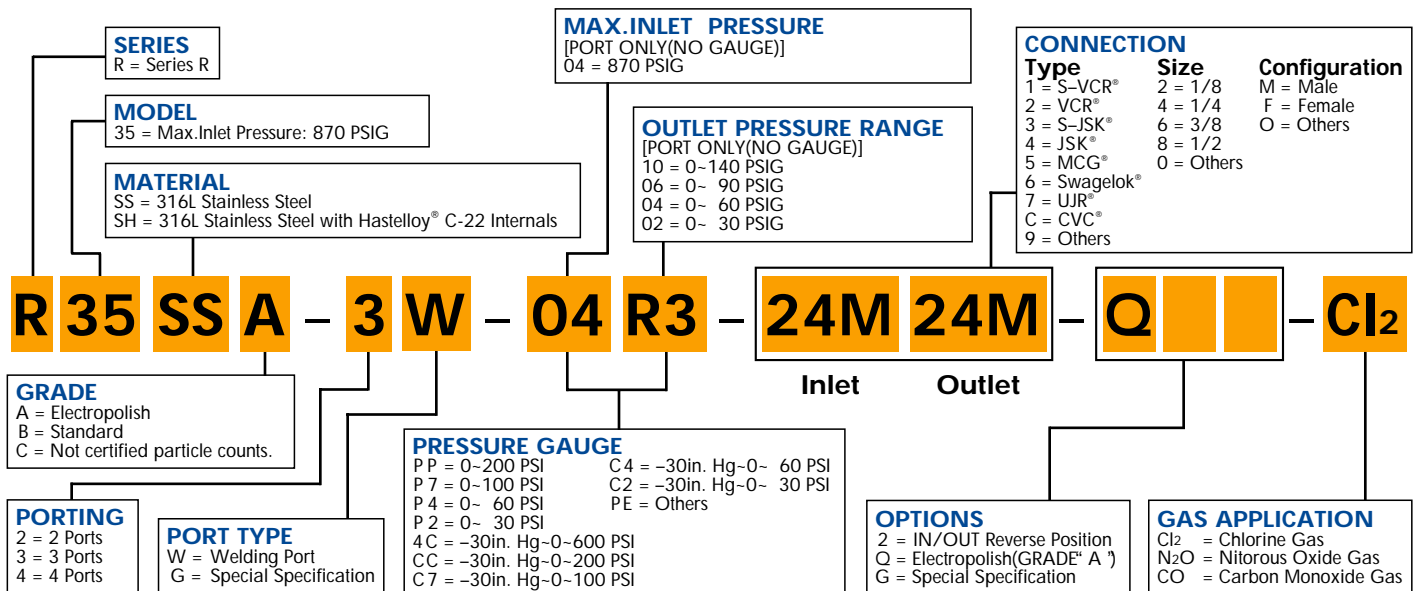
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