



HRG

CLEAN GAS REGULATOR



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QUICK SELECTION GUIDE

GASES PRESSURE REDUCING LINE - HRG

Application	Pressure Stage	inlet pressure	outlet pressure	Cv	series	See Page
Line regulating	Single	175-600 psi (12-40 bar)	0,3 - 44 psi (20-3000 mbar)	0.091	HRG3SL	21
		175-4350 psi (12-300 bar)	3-725 psi (0.2 bar- 50 bar)	0.08	HRG5SL	11
	Dual	3300-4350 psi (230-300 bar)	7.25-150 psi (0.2-10.5 bar)	0.06	HRG5DL	17
Cylinder regulating	Single	175-4350 psi (12-300 bar)	3-2900 psi (0.5-200 bar)	0.091	HRG5SC	29
	Dual	3300-4350 psi (230-300 bar)	3-145 psi (0.2-10.5 bar)	0.06	HRG5DC	33
Point of use regulating	Single	175-600 psi (12-40 bar)	1.45-150 psi (0.1-10.5 bar)	0.0106	HRG4SL	25
Panels	Single	3300-4350 psi (200-300 bar)	7.25-2900 psi (0.5-200 bar)	0.091	HRG5SA	37
	Dual	3300-4350 psi (200-300 bar)	3-150 psi (0.2-10.5 bar)	0.06	HRG5DA	43

GENERAL

The HRG regulators product line for high purity gas applications (HRG) is designed and manufactured to meet the highest quality market demand. Product line has been tried and tested to market standards and regulations and is in service at customers' site for several years.

The HRG line product range includes:

- Cylinder pressure regulators
- Line pressure regulators
- Point of use regulators
- Gas panels (Manifolds)

The HRG regulators are perfect for high quality pure-gas distribution systems in terms of purity, pressure stability and operational safety. These regulators can be used in a wide range of applications with inert, flammable and oxidizing gases and gas mixtures.

UCT Fluid Solutions regulators' assemblies are manufactured with top-quality materials and components to ensure corrosion resistance, long life expectancy and accurate outlet pressure. They are designed and manufactured to comply with gas purity 6.0, and are tested for leak rate and safety. FKM and EPDM O-rings are available to suit different types of gases.

Patented spring damping system and encapsulated valve design, guarantee excellent control characteristics and long life cycle of our pressure regulators.

The regulator is suitable for variable industries from food and drug sector to semi-conductor sector. Where there is an accuracy problem, you can trust UCT Fluid Solutions regulators.

HRG Regulators are suitable for diverse industrial segments:

- Analytical systems
- Gas chromatography
- Atomic-Adsorption-Spectrometry
- Exhaust-gas measurement for environmental control
- Chemical process technology
- Laser technology
- Pharmaceutical industry
- Petrochemical industry
- Food / pharm industries
- Semiconductor technology
- Fiber optical industry

Quality / Testing

Strict supervision and control of material quality, electro-polishing and multistage surface cleaning processes, along with high grade raw materials (316L body, Hastelloy inner parts) make the HRG5S series extremely corrosion resistant. Minimal leakage rates avoid any gas contamination and increase the safety for the operators.

Tests performed to the HRG series:

- Type test of stainless steel pressure reducers for pressure relief.
- Type test of stainless steel shut-off valves according to ISO 10297.
- Electrostatic chargeability of plastic components tested according to EN 13463-1
- Each manufactured item undergoes extensive testing, including:
 - Pressure Helium leak test
 - Seat leakage helium leak test
 - Helium leak test against atmosphere
 - Test of functionality of each item

All pressure gauges are as per EN 837 standard.

Adjusting knobs are ATEX compliant.

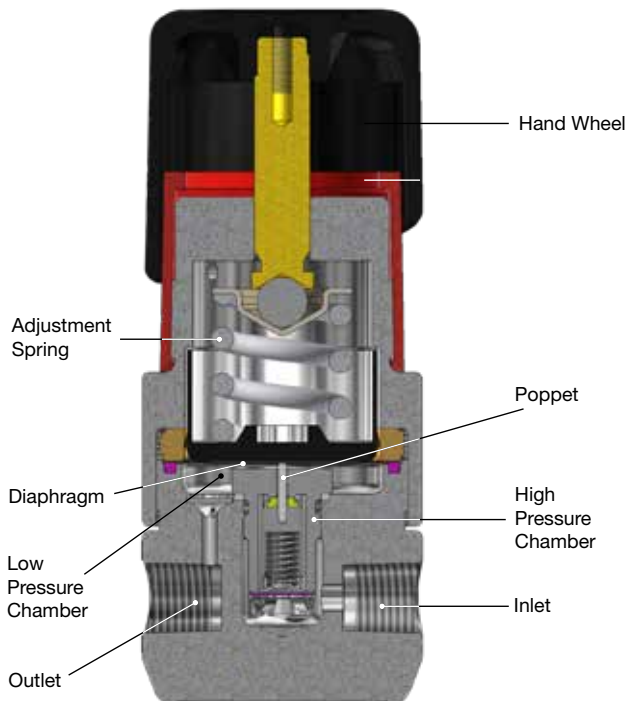
PRESSURE REGULATOR FUNDAMENTALS

TYPE OF REGULATORS

SINGLE-STAGE REGULATORS

High pressure gases enter through the inlet of the regulator to the high-pressure chamber. When the hand wheel is turned clockwise, it compresses the spring and creates a force on the diaphragm, which pushes the regulator's poppet open. This releases the gas into the low-pressure chamber, exerting an opposing force on the diaphragm which then closes the passage.

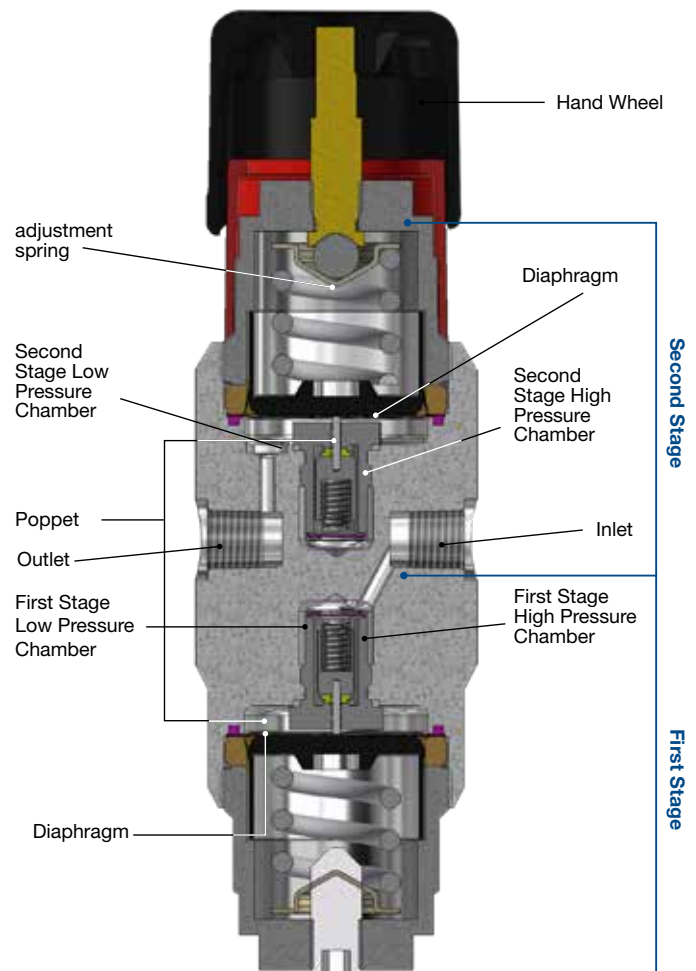
Equilibrium is reached, when the spring force on the diaphragm is equal to the opposing force of the gas in the low-pressure chamber. In a single-stage regulator, delivery pressure increases as cylinder pressure falls, because there is less gas pressure exerted on the diaphragm. Thus, frequent adjustment of the control knob is required to maintain a constant delivery pressure. Therefore, a two-stage regulator is recommended for applications requiring constant outlet pressure.



DUAL-STAGE REGULATORS

A dual-stage regulator functions like two single-stage regulators connected in line. The first stage reduces the inlet pressure to a preset intermediate pressure. By adjusting the control knob the second stage reduces the intermediate pressure to the desired delivery pressure. Like the single-stage regulator, outlet pressure from the first stage of the two-stage regulator rises as cylinder pressure decreases.

However, the second-stage of the dual-stage regulator regulates, according to the preset level entered with the control knob, the point of use pressure as desired. Thus, delivery pressure remains constant even as the cylinder pressure lowers, eliminating the need for frequent control knob adjustment needed for a single-stage regulator.



PRESSURE RELIEF SEAT GASES COMPATIBILITY (STAINLESS STEEL)*

FKM

Suitable Gases

(including their mixtures)

- ✓ High Purity
- ✓ Inert
- ✓ Flammable
- ✓ Oxidizing
- ✓ Corrosive (in doubt ask)
- ✓ Toxic (in doubt ask)

Not Suitable Gases

(including their mixtures)

- ✗ Not for O₂
- ✗ Not for CO₂, N₂O
- ✗ Not for NH₃, N₂O, H₂S

EPDM

Suitable Gases

(including their mixtures)

- ✓ High Purity
- ✓ Inert
- ✓ Flammable
- ✓ Oxidizing
- ✓ Corrosive (in doubt ask)
- ✓ Toxic (in doubt ask)
- ✓ Use for CO₂, N₂O
- ✓ Use for NH₃, N₂O, H₂S

Not Suitable Gases

(including their mixtures)

- ✗ Not for O₂, CH₄

*For O₂, please select brass chrome plated regulator

GASES SELECTION TABLE

GasType	Formula Chemical	UCT Code	DIN 477		BS341		CGA	NEN	Compatible Seat Material	
			up to 200 bar	up to 300 bar	up to 200 bar	up to 300 bar			EPDM	FKM
Ammonia	NH3	AB	6		10		240	RU4	v	X
Argon	Ar	A	6	54	3	30	580	RU3	v	v
Carbon Dioxide	CO2	C	6		8		320	RU1	v	X
Carbon Monoxide	CO	AE	5		4		350	LU4	v	v
Chlorine	Cl2	AF	8		6,14		660	RU4	X	v
Ethane	C2H6	AG	1		4		350	LU1	X	v
Ethylene	C2H4	AH	1		4		350	LU1	X	v
Hellium	He	AI	6	54	3	30	580	RU3	v	v
Hydrogen	H2	AJ	1	57	4	38	350	LU1	v	v
Hydrogen Chloride	HCl	AK	8		6,14		330	RU4	v	v
Hydrogen Sulfide	H2S	AL	5		15		330	LU4	v	X
Krypton	Kr	AN	6		3		580	RU3	v	v
Mathane	CH4	AM	1		4		350	LU1	X	v
Neon	Ne	AU	6		3		580	RU3	v	v
Nitrogen	N2	AW	10	54	3	30	580	RU3	v	v
Nitrous Oxide	N2O	AX	11				660	RU1	!	X
Oxygen	O2	O	9	59	3	32	540	RI2	v	v
Propane	C3H8	PR	1		5		510	LU1	X	v
Sulfur Dioxide	SO2	BC	7		10,16		660	RU4	v	X
Sulfur Hexafluoride	SF6	BB	6		6		590	RU1	v	v
Xenon	Xe	BE	6		3		580	RU3	v	v
*Fluoromethane	CH3F	FLM	4							
*(Test Gases (DIN 477-14		TG	14							
Upon special request*										

CYLINDER CONNECTIONS ACCORDING TO DIN477-1, WRENCH CONNECTION, 230 BAR (Outlet NPT 1/4" male)

Type	Material	Threads
DIN1 W	Brass chrome plated	W 21,8 × 1/14" LH
DIN1 W	Stainless steel	W 21,8 × 1/14" LH
DIN5 W	Stainless steel	W 1" × 1/8" LH
DIN6 W	Brass chrome plated	W 21,8 × 1/14"
DIN6 W	Stainless steel	W 21,8 × 1/14"
DIN7 W	Stainless steel	W R 5/8"
DIN8 W	Stainless steel	W 1" × 1/8"
DIN9 W	Brass chrome plated	G 3/4"
DIN9 W	Stainless steel	G 3/4"
DIN10 W	Brass chrome plated	W 24,32 × 1/14"
DIN10 W	Stainless steel	W 24,32 × 1/14"
DIN11 W	Stainless steel	R 3/8"
DIN13 W	Brass chrome plated	R 5/8"
DIN13 W	Stainless steel	R 5/8"
DIN14 W	Stainless steel	M 19 × 1,5

CYLINDER CONNECTIONS ACCORDING TO DIN477-1, WRENCH CONNECTION, 300 BAR (Outlet NPT 1/4" male)

Type	Material	Threads
DIN54 W	Stainless steel	W30 x2 - Ø15,9/ 20,1
DIN54 W	Brass chrome plated	W30 x2 - Ø15,9/ 20,1
DIN56 W	Stainless steel	W30 x2 - Ø16,6/ 19,4
DIN56 W	Brass chrome plated	W30 x2 - Ø16,6/ 19,4
DIN57 W	Stainless steel	W30 x2LH - Ø15,2/ 20,8
DIN57 W	Brass chrome plated	W30 x2LH - Ø15,2/ 20,8
DIN59 W	Stainless steel	W30 x2 - Ø17,3/ 18,7
DIN59 W	Brass chrome plated	W30 x2 - Ø17,3/ 18,7



REGULATOR SELECTING CONSIDERATIONS:

1. Single/Dual stage:

Single-stage pressure regulators reduce the cylinder pressure to the delivery or outlet pressure in one step.

Two-stage pressure regulators reduce the cylinder pressure to a working level in two steps.

Generally, a single-stage regulator is good for short duration applications; a two-stage regulator is better for long duration applications, such as gas chromatography.

2. Inlet/Outlet pressure range:

Each type of regulator has a different available pressure range:

- Cylinder pressure: 2900-4350 psi (230 or 300 bar)
- Line pressure: 175- 2900 psi (12-230 bar)

Pick the correct inlet pressure according to your gas cylinder pressure.

Regulator type (defined by outlet and purging)

- Outlet configuration (tube fitting, shut-off valve and more)
- Panel assembled regulators (also available with manual or semi-automatic switchover system)
- Purging

3. Body material:

- SS - Stainless Steel
- Brass chrome plated

4. Purge configuration:

- Process gas purge system.
- External gas purge system.

5. Cv (Kv/.0.85) and Kv factors*

- HRGC5S – Cv = 0.091, Kv=0.077
- HRGC5D – Cv= 0.06, Kv= 0.051
- HRGL5S – Cv= 0.106, Kv= 0.09

*Cv

The flow coefficient of a regulator/ valve is a relative measure of it's efficiency at allowing fluid flow. It describes the relationship between the pressure drop across an orifice, valve or other assembly and the corresponding flow rate.

Kv is defined the flow rate in cubic meters per hour [m³/h] of water at a temperature of 16° celsius with a pressure drop across the valve of 1 bar.

Cv is defined as the flow rate in US Gallons per minute [gpm] of water at a temperature of 60° fahrenheit with a pressure drop across the valve of 1 psi.





HRG5SL

SINGLE STAGE LINE PRESSURE REGULATOR SERIES
UP TO 20 m³/h



GENERAL

The HRG5SL is a single stage inline regulator of the 20 m³/h series. This series reduces line pressure to give a lower supply of pressure.

Through its compact design this regulator is especially well suited for analytical or chemical apparatuses / processes applications. A wide spectrum of applications available through the 4-port or 6-port-configuration.

Special Features

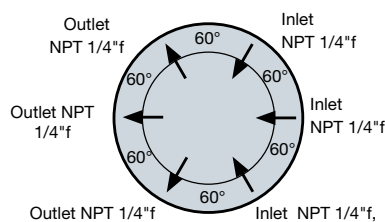
- Compact design (Ø55mm)
- Sub atmospheric-pressure regulation

FEATURES

- **BODY MATERIAL** Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- **SEAL MATERIAL** PCTFE, FKM, EPDM and more.
- **INNER PARTS** Pressure regulator unit with integrated mesh filter from 10 µm mesh opening at inlet and 100 µm at outlet.
- **DIAPHRAGM** Good material protection against burst and corrosion due to diaphragm material Hastelloy.
- **GUARANTEED LEAKAGE RATES** < 1×10⁻⁹ mbar l/s Helium (body). < 5×10⁻⁶ mbar l/s Helium (seat).
- **WORKING TEMPERATURES** -13 °F to 158 ° (-25 °C to +70 °C)
- **PURITY** ≤ 6.0
- **INLET** pressure min-max psi (bar)
- **OUTLET** pressure min-max psi (bar)

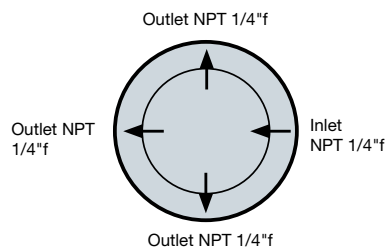
CONNECTIONS 6-PORT-VERSION

(Frontal View)



CONNECTIONS 4-PORT-VERSION

(Frontal View)



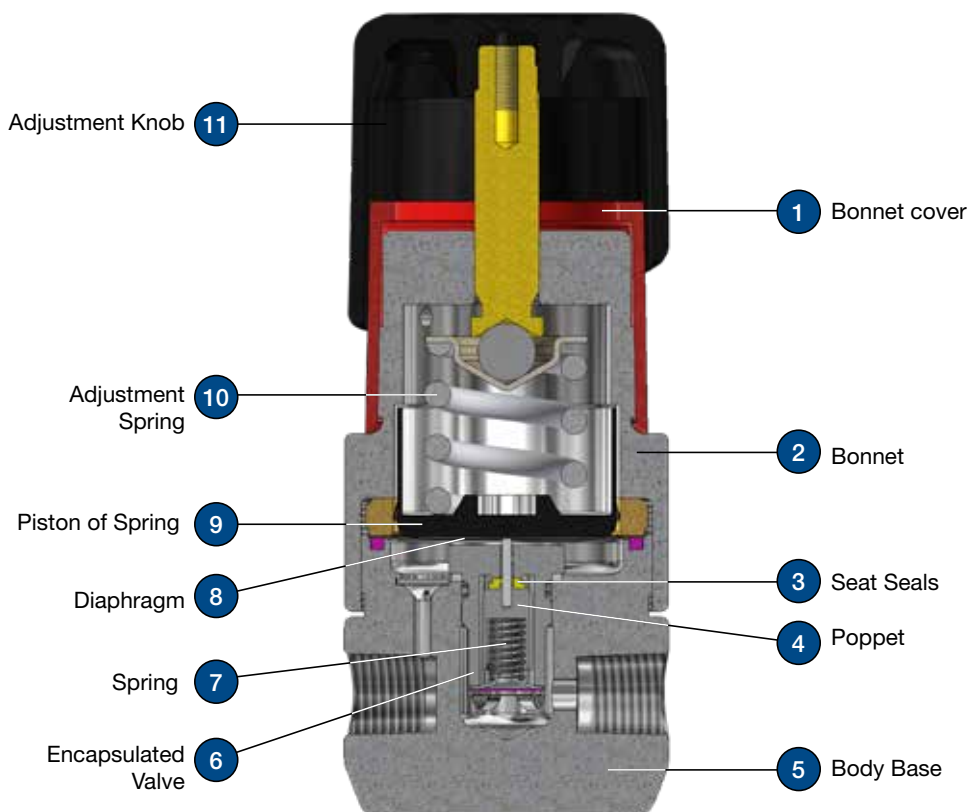
Notes:

Default process inlet direction is right to left.
Default connection is Female NPT 1/4".

HRG5SL SINGLE STAGE PRESSURE REGULATOR 5 SERIES

MATERIALS OF CONSTRUCTION

#	Description	Material	#	Description	Material
1	Bonnet cover	ABS	5	Body base	Stainless steel 316L (1.4404) specially cleaned and electro-polished / Brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
2	Bonnet	316L (1.4404) specially cleaned and electro-polished / Brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.	6	Encapsulated valve	Same material as the body
3	Seat seal	PCTFE/ FKM, EPDM. dependent on gas specification and purity requirements.	7	Spring	Stainless Steel
4	Poppet	Stainless Steel (1.4404)	8	Diaphragm	Hastelloy
		Brass (CuZn38Pb1,5F)	9	Piston of Spring	Aluminum
			10	Adjustment spring	CuBe2 F930
			11	Adjustment knob	PA6+30%GF



G1 Model

4 port, outlet pressure gauge



GF Model

4 port, outlet pressure gauge
outlet relief valve



G2 Model

6 port, inlet & outlet pressure gauges



GV Model

6 port, inlet & outlet pressure gauges, outlet relief valve



HRG5SL SINGLE STAGE PRESSURE REGULATOR 5 SERIES

HOW TO ORDER:

HRG5SL - D		1L	G2	S	H	-	M	M	F
Series				Body Material			Inlet connection	Outlet connection	Seat Material for Relief valve
Inlet pressure psi (bar)		Outlet pressure bar		S SST 316			X LK 4 mm	X LK 4 mm	F FKM
K 175 (12)		1C* 0.2-2 ABS		C Chrome plated-Brass			L LK 6 mm	L LK 6 mm	E EPDM
		1G* 0.2-3 ABS		*For C- chrome plated Brass check inlet/outlet options with your sales rep.			M LK 8 mm	M LK 8 mm	
		1E* 0.2-1 bar		Diaphragm			J LK 10 mm	J LK 10 mm	*To choose seat material, please refer to gases selection table page 7
		1F** 0.2-2 bar		H Hastelloy C-22			K LK 12 mm	K LK 12 mm	
				Configuration			N LK 1/8"	N LK 1/8"	
P 725 (50)		1E** 0.2-2 bar		G1 4 port outlet pressure gauge			O LK 1/4"	O LK 1/4"	
D 3300 (230)		1F 0.2-3 bar		GF 4 port outlet pressure gauge outlet relief valve			D LK 1/2"	D LK 1/2"	
E 4350 (300)		1I 0.5-6 bar		GO 6 port no gauges		P 1/4" Female NPT	P 1/4" Female NPT		
		1K 1-10 bar		G2 6 port inlet & outlet pressure gauges		W 1/4" FBSPP	W 1/4" FBSPP		
		1L 1-14 bar		GV 6 port inlet & outlet pressure gauges outlet relief valve		V 3/8" FBSPP	V 3/8" FBSPP		
		1M*** 2.5-28 bar							
		1N*** 2.5-50 bar							
		10*** 10-100 bar							
		20*** 10-200 bar							

(*) only with inlet options K
 (**) only with inlet options K or P
 (***) only with inlet options D or E

:Change text to
Seat Material for Relief Valve

Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.





HRG5DL

DUAL STAGE LINE REGULATOR SERIES
UP TO 20 m³/h



GENERAL

The HRG5DL is a Dual stage inline regulator of the 20 m³/h series. This series reduces line pressure to give a lower supply of pressure. The dual-stage design ensures the uniformity of the downstream pressure irrespectively of the upstream pressure. A broad application spectrum is available through the availability multiple inlet/outlet connections.

Adding a contact gauge (accessories) in conjunction with an alarm box (accessories) can facilitate the monitoring of gas reserves.

This model is available in 6 port configuration only.

Special Features

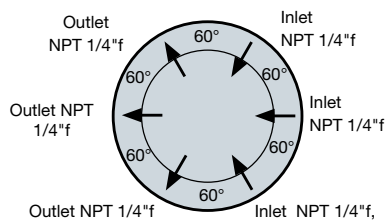
- Compact design (Ø55mm)
- Precise pressure allocation
- Uniform downstream pressure
- Stable gas supply

FEATURES

- **BODY MATERIAL** Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- **SEAL MATERIAL** PCTFE, FKM, EPDM and more.
- **INNER PARTS** Pressure regulator unit with integrated mesh filter from 10 µm mesh opening at inlet and 100 µm at outlet.
- **DIAPHRAGM** Good material protection against burst and corrosion due to diaphragm material Hastelloy.
- **GUARANTEED LEAKAGE RATES** < 1×10⁻⁹ mbar l/s Helium (body). < 1×10⁻⁶ mbar l/s Helium (seat).
- **WORKING TEMPERATURES** -13 °F to 158 ° (-25 °C to +70 °C)
- **PURITY** ≤ 6.0
- **INLET** pressure min-max psi (bar)
- **OUTLET** pressure min-max psi (bar)

CONNECTIONS 6-PORT-VERSION

(Frontal View)



Notes:

Default process inlet direction is right to left.
Default connection is Female NPT 1/4".

HRG5DL DUAL STAGE LINE PRESSURE REGULATOR

CONFIGURATION OPTION

G0

No gauges | No relief valve



G2

2 gauges



GV

2 gauges | relief valve



HRG5DL SINGLE STAGE PRESSURE REGULATOR 5 SERIES

HOW TO ORDER:

HRG5DL		-	D	1B		G2		S		H		M		M		F	
Series								Body Material				Inlet Connection		Outlet Connection		Seat Material for Relief valve	
Inlet pressure psi (bar)				Inlet pressure psi (bar)													
D	2900 (230)			1C	0.2-2 ABS			S	SST 316			X	LK 4 mm	X	LK 4 mm	F	FKM
E	3450 (300)			1G	0.2-3 ABS			C	Chrome platedBrass			L	LK 6 mm	L	LK 6 mm	E	EPDM
				1B	0.2-1 bar			Diaphragm				M	LK 8 mm	M	LK 8 mm	* For other gases please refer to gases selection table page 7	
				1E	0.2-2 bar			H	Hastelloy C-22			J	LK 10 mm	J	LK 10 mm		
				1F	0.2-3 bar			Configuration				K	LK 12 mm	K	LK 12 mm		
				1I	0.5-6 bar			GO	6 port no gauges			N	LK 1/8"	N	LK 1/8"		
				1K	1-10 bar			G2	6 port inlet & outlet pressure gauges			O	LK 1/4"	O	LK 1/4"		
				1L	1-14 bar			GV	6 port inlet & outlet pressure gauges outlet relief valve			D	LK 1/2"	D	LK 1/2"		
												P	1/4" Female NPT	P	1/4" Female NPT		
												W	1/4" FBSP	W	1/4" FBSP		
												V	3/8" FBSP	V	3/8" FBSP		

* For other gases please refer to gases selection table page 7

HRG3SL

SINGLE STAGE LINE REGULATOR SERIES
UP TO 5 M³/H



HRG3SL SINGLE STAGE LINE REGULATOR SERIES LOW DOWNSTREAM MODEL

GENERAL

The HRG3SL is a single stage inline regulator for low downstream flow, of the 5 m³/H series.

This series is unique due to its fine adjustment of the downstream pressure.

Available in 4-port or 6-port-configuration.

Special Features

- Large housing diameter (Ø100mm)
- Large metal diaphragm
- Very fine adjustment

FEATURES

- **BODY MATERIAL** Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- **SEAL MATERIAL**, FKM (Brass), EPDM
- **DIAPHRAGM** Good protection against burst and corrosion due to diaphragm material Hastelloy.
- **PERFORMANCE DATA** See chart chapter at the end of this catalog, for different performance data please contact UCT Fluid Solutions.
- **GUARANTEED LEAKAGE RATES** < 1×10⁻⁹ mbar l/s Helium (body). < 1×10⁻⁶ mbar l/s Helium (seat).
- **WORKING TEMPERATURES** -25 °C to +70 °C / -13 °F to 158 °
- **PURITY** ≤ 6.0
- **CYLINDER / INLET CONNECTIONS** Compliant with national standards: DIN 477 and other connections as US-Norm CGA, British Standard BS etc. are available upon request.

NOTES:

Default process inlet direction is right to left. Default connection is Female NPT ¼".

Bottom connection view:

HRG3SL SINGLE STAGE LINE REGULATOR SERIES LOW DOWNSTREAM MODEL

CONFIGURATION OPTION

G1

4 port | outlet pressure gauge



G2

6 port | inlet & outlet pressure gauge



HOW TO ORDER:

HRG3SL -		L		2W		G1		S		H		M		M		F	
Series		Inlet pressure psi (bar)		Outlet pressure psi (mbar)		Body Material		Diaphragm		Inlet Connection		Outlet Connection		Seat Material for Relief valve			
K	175 (12)	2W	0.3-3.6 (20-250)	S	SST 316	L	LK 6 mm	L	LK 6 mm	F	FKM	* For other gases please refer to gases selection table page 7					
		2Y	2.2-7.25 (150-500)	C	Chrome plated Brass	M	LK 8 mm	M	LK 8 mm	E	EPDM						
		2X	1.45-19 (100-1300)	Diaphragm		J	LK 10 mm	J	LK 10 mm								
		2Y	2.2+2.75 (150-500)	H	Hastelloy C-22	K	LK 12 mm	K	LK 12 mm								
		2Z	2.2-44 (150-3000)	Configuration		N	LK 1/8"	N	LK 1/8"								
G1	4 port outlet pressure gauges	O	LK 1/4"	O	LK 1/4"												
G2	6 port inlet & outlet pressure gauges	P	1/4" Female NPT	P	1/4" Female NPT												





HRG4SP

SINGLE STAGE POINT OF USE REGULATOR
UP TO 20 m³/h



GENERAL

The HRG4SP is a single stage point of use regulator series.

This series has a wide range of variations and configurations and is ideal for laboratory applications.

Through its compact design this regulator is especially well suited for analytical or chemical apparatuses / processes applications. A wide spectrum of applications available through the 4-port or 6-port configuration.

Special Features

- ECD compatible
- Modular design for lab systems (wide range of assembly possibilities)
- Gas type specific color indication labels according to EN 13792
- Analysis version available
- Assembly configuration for wall, plate, suspended and bench mounting.

FEATURES

- **BODY MATERIAL** Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- **SEAL MATERIAL** PCTFE, FKM, EPDM and more.
- **INNER PARTS** Pressure regulator unit with integrated mesh filter from 10 µm mesh opening at inlet and 100 µm at outlet.
- **DIAPHRAGM** Good material protection against burst and corrosion due to diaphragm material Hastelloy.
- **GUARANTEED LEAKAGE RATES** < 1×10⁻⁹ mbar l/s Helium (body). < 1×10⁻⁶ mbar l/s Helium (seat).
- **WORKING TEMPERATURES** -13 °F to 158 ° (-25 °C to +70 °C)
- **PURITY** ≤ 6.0
- **INLET** pressure min-max psi (bar)
- **OUTLET** pressure min-max psi (bar)

HRG4SP SINGLE STAGE POINT OF USE REGULATOR

CONFIGURATION OPTION

SG

4 port | outlet pressure gauge



WM

4 port | outlet pressure gauge | shut off valve
| wall mounted



PA

4 port | outlet pressure gauge | shut
off valve | plate mounted



BV

4 port | outlet pressure gauge | shut off valve
bench mounted



HRG4SP

HOW TO ORDER:

* available in brass chrome plated for acetylene with flame arrestor
**for exhaust gas measurement "Automotive" (also available with inlet 40 bar)



HRG5SC

SINGLE STAGE CYLINDER REGULATOR SERIES
UP TO 20 M³/h



GENERAL

The HRG5SC is a single stage cylinder regulator. This series reduces pressure from the cylinder to the line. Standard models arrive with a 100µm mesh filter at the outlet to protect the line

Special Features

- Sub atmospheric-pressure regulation
- Wide variety of fitting and connection types
- Hastelloy / Elgiloy diaphragms
- 100 µm Mesh filters to keep cleanliness in tact
- Cylinder connections are gas specific according to international standards
- All cylinder regulators are 6-port
- 1/4" Female NPT as standard threaded outlet
- Venting pipes can be directly fitted

Basic configuration is HRG5SC-OF which includes 2 gauges and a relief valve

FEATURES

- **BODY MATERIAL** Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- **SEAL MATERIAL** PCTFE, FKM, EPDM and more.
- **INNER PARTS** Pressure regulator unit with integrated mesh filter from 10 µm mesh opening at inlet and 100 µm at outlet.
- **DIAPHRAGM** Good material protection against burst and corrosion due to diaphragm material Hastelloy.
- **GUARANTEED LEAKAGE RATES** < 1×10⁻⁹ mbar l/s Helium (body). < 1×10⁻⁶ mbar l/s Helium (seat).
- **WORKING TEMPERATURES** -13 °F to 158 ° (-25 °C to +70 °C)
- **PURITY** ≤ 6.0
- **INLET** pressure min-max psi (bar)
- **OUTLET** pressure min-max psi (bar)
- **CYLINDER / INLET CONNECTIONS** Compliant with national standards: DIN 477 and other connections as US-Norm CGA, British Standard BS etc. are available upon request.

HRG5SC SINGLE STAGE CYLINDER REGULATOR SERIES

CONFIGURATION OPTION

WW

Outlet relief valve | no gauges



OF

Outlet relief valve



OS

Outlet relief valve | Outlet shut-off valve



OM

Outlet relief valve | Outlet metering valve



EP

Outlet relief valve | External gas purge



EV

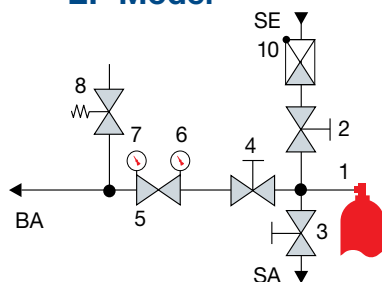
Outlet relief valve | Outlet shut-off valve | External gas purge



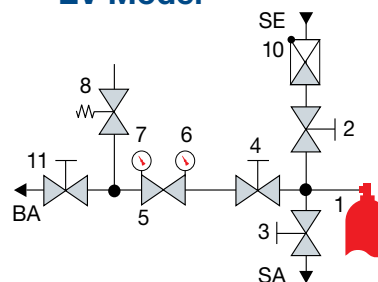
Flow Schematic

- 1 Cylinder connection
- 2 Purge inlet valve
- 3 Purge outlet valve
- 4 Upstream shut-off valve
- 5 Cylinder pressure regulator
- 6 Upstream pressure gauge
- 7 Downstream pressure gauge
- 8 Relief valve
- 10 Check valve
- 11 Downstream shut-off valve
- BA Process gas outlet
- SE Purge inlet
- SA Purge outlet

EP Model



EV Model



HRG5SC SINGLE STAGE CYLINDER REGULATOR 5 SERIES

HOW TO ORDER:

HRG5SC -		D	1L		SG		S	H		M		M		F	
Series		Inlet pressure psi (bar)		Outlet pressure psi (mbar)		Configuration		Body Material		Inlet Connection		Inlet Connection			
K	175 (12)	1C	3-30 abc (0.2-2 abs)	1G	3-45 abs (0.2+3 abs)	OF	2 gauge outlet relief valve	D**	DIN 477	X	LK 4 mm	O	LK 1/4"	D	LK 1/2"
				1B	2.9-14.5 (0.2-2)	OS	2 gauge outlet relief valve shut off valve			A	LK 6 mm		P		1/4" Female NPT
				1E	2.9-29 (0.2-2)	OM	2 gauge outlet relief valve metering valve			R	LK 8 mm		W		1/4" FBSP
				P	725 (50)	1E	2.9-29 (0.2-2)			EP	2 gauge outlet relief valve External purge		B		LK 10 mm
1L	15-200 (1-14)	EV	2 gauge outlet relief valve shut-off valve External purge					S	BS	Seat Material for Relief valve	F	FKM			
		1I	7-85 (0.5-6)					WW	outlet relief valve		E	EPDM			
								1K	14.5-145 (1-10)		Diaphragm				
				1F	3-45 (0.2-3)	H	Hastelloy C-22								
1M	36.6-406 (2.5-28)														
		1N	37-720 (2.5-50)												
						10(*)	1450 (10+100)								
				20(*)	145-2900 (10-200)										

* For other connection types, please check with your sales rep.

**Please refer to cylinder connection table page 8

*To choose seat material please refer to gases selection table page 7

* For other connection types, please check with your sales rep.
**Please refer to cylinder connection table page 8

*To choose seat material please refer to gases selection table page 7

* Not possible with OM configuration



HRG5DC

DUAL STAGE CYLINDER PRESSURE REGULATOR SERIES
UP TO 20 m³/h



GENERAL

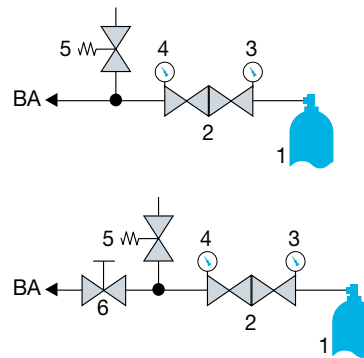
The HRG5DC is a dual stage cylinder regulator. it allows to control a low downstream pressure. The different configurations allow the addition of shut-off valve, metering valve and different purging options.

Special Features

- Sub atmospheric-pressure regulation
- Wide variety of fitting and connection types
- Hastelloy / Elgiloy diaphragms
- $\phi 100 \mu\text{m}$ Mesh filters to keep cleanliness in tact
- Cylinder connections are gas specific according to international standards
- All cylinder regulators are 6-port
- $\frac{1}{4}$ " Female NPT as standard threaded outlet
- Venting pipes can be directly fitted

FLOW SCHEMATIC

1. Cylinder connection
 2. Pressure regulator
 3. Upstream pressure gauge
 4. Downstream pressure gauge
 5. Relief valve
 6. Downstream shut-off valve (type 16)
- BA. Process gas outlet



HRG5DC DUAL STAGE CYLINDER PREESURE REGULATOR SERIES

CONFIGURATION OPTION

WW

Outlet relief valve | no gauges



OF

Outlet relief valve



OS

Outlet relief valve | Outlet shut-off valve



OM

Outlet relief valve | Outlet metering valve



EP

Outlet relief valve | External gas purge



EV

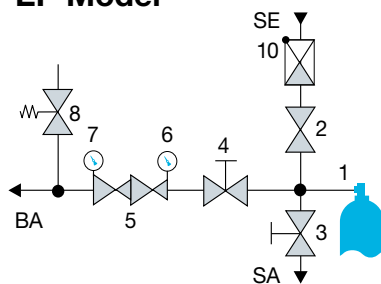
Outlet relief valve | Outlet shut-off valve | External gas purge



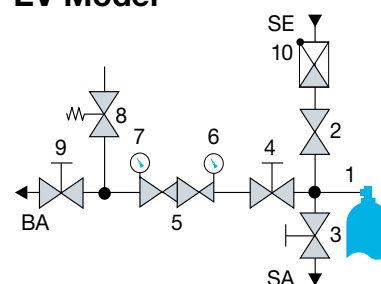
Flow Schematic

- 1 Cylinder connection
- 2 Purge inlet valve
- 3 Purge outlet valve
- 4 Upstream shut-off valve
- 5 Cylinder pressure regulator
- 6 Upstream pressure gauge
- 7 Downstream pressure gauge
- 8 Relief valve
- 9 Downstream shut-o valve (only type -27)
- 10 Check valve
- BA Process gas outlet
- SE Purge inlet
- SA Purge outlet

EP Model



EV Model



HRG5DC DUAL STAGE CYLINDER PREESURE REGULATOR SERIES

HOW TO ORDER:

HRG5DC		-	D	1L	SG		S	H	M	M	F
Series		Inlet pressure psi (bar)		Outlet pressure psi (mbar)		Configuration		Inlet Connection		Inlet Connection	
D	3300 (230)	1C	3-30 abc (0.2-2 abs)	OF	2 gauge outlet relief valve		D**	DIN 477	X	LK 4 mm	
E	4350 (300)	1G	3-45 abs (0.2+3 abs)	OS	2 gauge outlet relief valve shut off valve		A	ANSI	L	LK 6 mm	
		1B	2.9-14.5 (0.2-2)	OM	2 gauge outlet relief valve metering valve		R	AFNOR	M	LK 8 mm	
		1E	2.9-29 (0.2-2)	EP	2 gauge outlet relief valve External purge		B	NBN	J	LK 10 mm	
		1F	3-45 (0.2-3)	EV	2 gauge outlet relief valve shut-off valve External purge		S	BS	K	LK 12 mm	
		1I	7-85 (0.5-6)	WW	outlet relief valve		E	NEN	N	LK 1/8"	
		1K	14.5-145 (1-10)	Body Material		* For other connection types, please check with your sales rep. **Please refer to cylinder connection table page 8		O		LK 1/4"	
		1L	15-200 (1-14)	Diaphragm				D		LK 1/2"	
				H		Hastelloy C-22		P		1/4" Female NPT	
								W		1/4" FBSP	
								V		3/3" FBSP	
								Seat Material for Relief valve			
								F		FKM	
								E		EPDM	

* For chrome plated Brass ,check
inlet/outlet options with your
sales rep.

*To choose seat material
please refer to gases
selection table page 7



HRG5SA

SINGLE STAGE GAS SUPPLY PANELS
UP TO 20 m³/h



GENERAL

The HRG5SA is a Single stage regulator series of panel assembled regulators, that are often installed in the cylinder stock area, near the point of use. The assembly is mounted onto a stainless-steel panel and consists of a pressure regulator, inlet and outlet pressure gauges and relief valve.

This series reduces the cylinder pressure to a lower line pressure that is flowed through the piping system to the point of use.

Special Features

- Compact design.
- Separated mounting of ground plate.
- Easy mounting to ground plate.
- Designed for easy maintenance and replacement of gauges.
- Hastelloy / Elgiloy diaphragms.

Standard configuration includes a relief valve, other available configurations may include pressure gauges, process purge, external gas purge and a shut off valve.

FEATURES

- BODY MATERIAL Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- SEAL MATERIAL PCTFE, FKM, EPDM, etc., dependent on gas specification and purity requirements.
- INNER PARTS Pressure regulator unit with integrated mesh filter from 10 µm mesh opening at inlet and 100 µm at outlet. Option for Hastelloy inner parts
- DIAPHRAGM Good protection against burst and corrosion due to diaphragm material Hastelloy.
- GUARANTEED LEAKAGE RATES $< 1 \times 10^{-9}$ mbar l/s Helium (body). $< 1 \times 10^{-6}$ mbar l/s Helium (seat).
- WORKING TEMPERATURES -25 °C to +70 °C / -13 °F to 158 °
- PURITY ≤ 6.0

HRG5SA SINGLE STAGE GAS SUPPLY PANELS

SINGLE STAGE / ONE SOURCE SUPPLY PANEL WITH EXTERNAL GAS PURGING ASSEMBLY

This external gas purging assembly design offers the following advantages:

- Purging the residual gas in the system before the cylinder, improves personnel safety levels.
- Maintaining gas purity by purging the atmospheric air which has penetrated the system while exchanging cylinders.
- Purging with dry inert gas reduces humidity and extends the expected live span when corrosive gases are used.

SINGLE STAGE/TWO SOURCES SUPPLY PANEL WITH MANUAL CHANGE OVER SYSTEM

The assembled manifold panel enables a continuous gas supply. Its main advantage is the ability to quickly change over to the reserve cylinder therefore providing uninterrupted gas supply.

Standard application for these assemblies are gas supply systems (both centralized or decentralized) for highly sensitive analytical devices. The changeover system offers the following advantages:

1. Continuous gas supply even during the cylinder exchange process.
2. Fast manual switch-over to the reserve side.
3. Optional contact pressure gauges to monitor leaks in case of gas supply failure
4. Process gas purging (model MG)
5. Connection for 2x1 cylinders (can be upgraded to 2x4 cylinders)

SINGLE STAGE/TWO SOURCES SUPPLY PANEL WITH SEMIAUTOMATIC CHANGE OVER SYSTEM

The semi-automatic change over panel assembly, controls the changeover between two sources. This is achieved by two integrated pressure regulators (preset to slightly different delivery pressure levels), connected at their outlet ports.

The pressure decreases in the active cylinder (or bundle) below the preset level, activates a semi-automatic switch that switches over to the full cylinder. Moving the lever towards the full bank allows to disconnect and replace the empty cylinders without interruption to the gas flow.

Adding a contact gauge in conjunction with an alarm box (accessories) facilitates the monitoring of gas reserves. Advantages:

- Uninterrupted gas supply with semi-automatic Indicator for active cylinder
- Alarm signal with contact gauges (optional) for pressure drops
- Can be upgraded to max. 2x4 cylinders

CONFIGURATION OPTION

WW

Single source | Assembled panel with inlet and outlet pressure gauges | relief valve



PW

Assembled inlet and outlet pressure gauges | relief valve | process purging valve



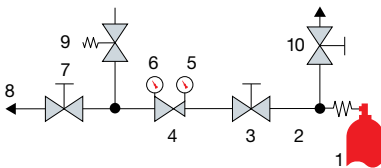
PS

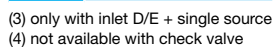
Assembled inlet and outlet pressure gauges | relief valve | process purging valve | shut-off valve



FLOW SCHEMATIC

1. Cylinder connection
2. Coil/Hose
3. Inlet shut off valve)
4. Pressure regulator - Single-stage
5. Upstream pressure gauge
6. Downstream pressure gauge
7. Process gas outlet shut-off valve
8. Process gas outlet
9. Relief valve
10. Purge outlet valve







HRG5DA

DUAL STAGE GAS SUPPLY PANELS
UP TO 20 m³/h



GENERAL

The HRG5SA is a Single stage regulator series of panel assembled regulators, that are often installed in the cylinder stock area, near the point of use. The assembly is mounted onto a stainless-steel panel and consists of a pressure regulator, inlet and outlet pressure gauges and relief valve.

This series reduces the cylinder pressure to a lower line pressure that is flowed through the piping system to the point of use.

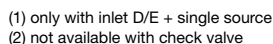
Special Features

- Compact design.
- Separated mounting of ground plate.
- Easy mounting to ground plate.
- Designed for easy maintenance and replacement of gauges.
- Hastelloy / Elgiloy diaphragms.

Standard configuration includes a relief valve, other available configurations may include pressure gauges, process purge, external gas purge and a shut off valve.

FEATURES

- **BODY MATERIAL** Stainless steel 316L (1.4404) specially cleaned and electro-polished or brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated.
- **SEAL MATERIAL** PCTFE, FKM, EPDM, etc., dependent on gas specification and purity requirements.
- **INNER PARTS** Pressure regulator unit with integrated mesh filter from 10 µm mesh opening at inlet and 100 µm at outlet.
Option for Hastelloy inner parts
- **DIAPHRAGM** Good protection against burst and corrosion due to diaphragm material Hastelloy.
- **GUARANTEED LEAKAGE RATES** $< 1 \times 10^{-9}$ mbar l/s Helium (body). $< 1 \times 10^{-6}$ mbar l/s Helium (seat).
- **WORKING TEMPERATURES** -25 °C to +70 °C / -13 °F to 158 °
- **PURITY** ≤ 6.0







ACCESSORIES

SINGLE STAGE GAS SUPPLY PANELS



GENERAL

The 2-Port-purge block consists of a cylinder connection, check valve, purge gas inlet and purge gas outlet shut-off valves. The 3-Port-configuration also includes a process gas shut-off valve. The regular routine surface cleansing and ensuing quality control minimizes the potential of contamination. The triple valve block is used for external gas purging of high purity or corrosive gases and ensures continued of gas purity during the cylinder switch over. This purge unit guarantees the necessary safety when toxic gases are used. The benefit of these purge blocks with its wide range of applications lies in the optimum safety for the application and for the operator.

TECHNICAL DATA

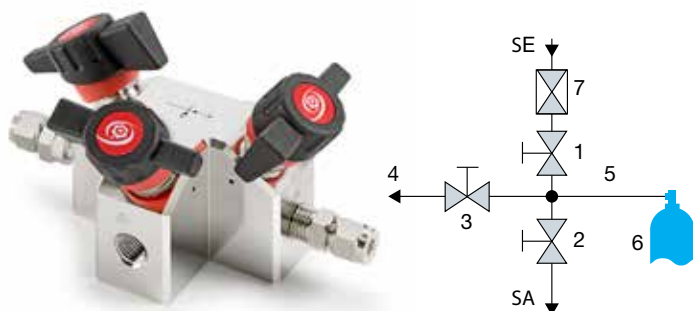
Body:	Stainless steel 1.4404 specially cleaned and electro-polished or Brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated
Diaphragm:	Elgiloy
Body seals:	PCTFE
Nominal width:	DN 5
KV-value:	0.15
Weight:	approx. 1.0 kg (2-port), 1.4 kg (3-port)
Dimensions:	PE2: approx. 80×90×150 mm PE3: approx. 120×90×150 mm
Inlet- and outlet filters:	100 µm mesh
Purge gas inlet:	check valve, tube fitting 6 mm
Purge gas outlet:	NPT 1/4" f, optional tube fitting
Inlet:	Cylinder connection DIN 477 longer cylinder connections optional
Outlet:	NPT 1/4" f, optional tube fitting

FEATURES

- For pure gases and gas mixtures, no oxygen
- purity max. 6.0
- 2- or 3-port version
- for manual purging
- nominal pressure 230 bar / 3300 psi
- Maintaining gas purity near to the gas source
- No contact between the process gas and the ambient air
- Quick operation of shut-off valve with only quarter turn
- Clearly visible open/closed position
- Optimum purge conditions
- Wide range of applications
- Inlet- and outlet filters

FLOW SCHEMATIC

1. Purge gas inlet shut-off
 2. Purge gas outlet shut-off valve
 3. Shut-off valve
 4. Process gas outlet
 5. Cylinder connection
 6. Gas cylinder
 7. Check valve
- SE. Purge Inlet
SA. Purge outlet



HRGA ACCESSORIES HRGA PEG PURGE BLOCK

HOW TO ORDER

HRGA	PE2	-	D	S	D	-	A
Series	Model		Pressure	Material	Inlet Connection		End Connection Table
	PE2 Purge Block 2 Outlets		D 230 bar (3300 psi)	S stainless steel	D DIN)		L LK 6mm
	PE3 Purge Block 3 Outlets			C brass chrome-plated	A ANSI		M LK 8mm
					F AFNOR		N LK 1/8"
					N NBN		O LK 1/4"
					S BS 341		P 1/4" FNPT
					C* CGA		
					E NEN		
					U UNI		

*Please specify gas

Warning!

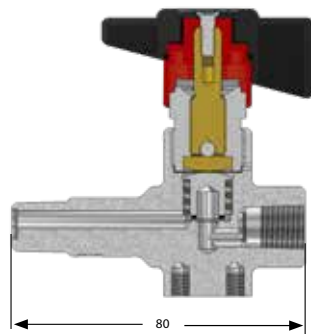
The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

GENERAL

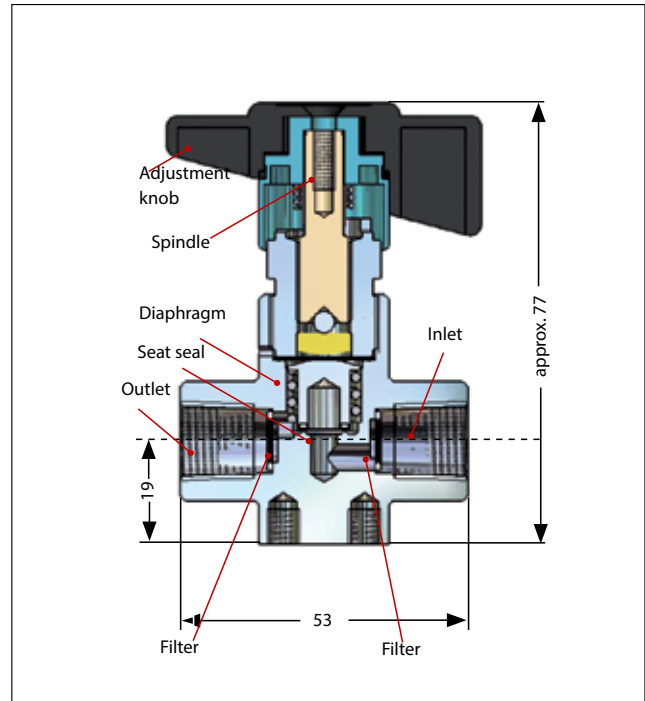
The diaphragm valve HRADSV is characterized through its outstanding functional safety and high leak-tightness. The open/closed position on the valve is achieved through a 90°-turn of the handle (with a click into the end position). As a line shut-off in a centralized high purity gas supply. As a system component in high and low-pressure areas.

- For inert, reactive, flammable and oxidizing gases and gas mixtures,
- Purity max. 6.0,
- Inlet pressure: HRGADSV-D: 230 bar/ 3300 psi
HRGADSV-E: 300 bar /4350 psi
HRGADSVL-E: 300 bar /4350 psi*

Body:	Stainless steel 1.4404 specially cleaned and electro-polished or Brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated
Diaphragm:	Elgiloy
Body seals:	PCTFE
Nominal width:	DN 5
KV-value:	0.15
Weight:	approx. 1.0 kg (2-port), 1.4 kg (3-port)
Dimensions:	PE2: approx. 80×90×150 mm PE3: approx. 120×90×150 mm
Inlet- and outlet filters:	100 µm mesh
Purge gas inlet:	check valve, tube fitting 6 mm
Purge gas outlet:	NPT 1/4"f, optional tube fitting
Inlet:	Cylinder connection DIN 477 longer cylinder connections optional
Outlet:	NPT 1/4"f, optional tube fitting



* HRGADSVL-E: diaphragm shut-off valve Long Extantion



DSVL Type



DSV Type

HRGA ACCESSORIES HRGADSV DIAPHRAGM SHUT-OFF VALVE

HOW TO ORDER

HRGA		DSV		-	D		S		-	D		-	A	
Series		Model		Pressure		Material		Inlet Connection		Outlet Connection				
	DSV	Diaphragm Shut-Off Valves		D	230 bar (3300 psi)	S	stainless steel	N	1/4" NPT f	N	1/4" NPT f			
	DSVL	Diaphragm Shut-Off Valves Long Extantion		E	300 bar (4350 psi)	C	brass chrome-plated	M	1/4" NPT m	M	1/4" NPT m			
										6	CL6			
										8	CL8			
										10	CL10			
										12	CL12			

*Please specify gas

Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

GENERAL

The regulating valve HRGADRV has a very good regulating characteristic and is very finely adjustable both by greater as also by lesser flow rate values. As a system component in low pressure areas. As accessory for cylinder and point-of-use regulators for fine adjustment of the gas flow. As system element in apparatus and analytical equipment.

TECHNICAL DATA

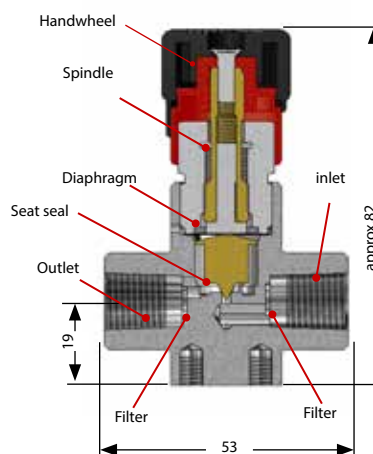
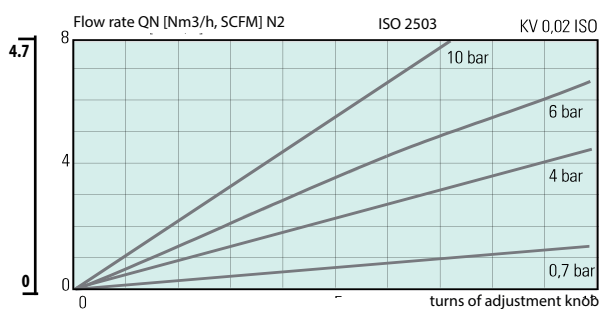
Body:	Stainless steel 1.4404 specially cleaned and electro-polished or Brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated
Diaphragm:	Elgiloy
Body seals:	hardened stainless steel cone
Leakage rate:	< 1×10 ⁻⁶ mbar l/s Helium (seats), < 1×10 ⁻⁹ mbar l/s Helium (outboard)
Dimensions (w×h×d):	approx. 53×82×40 mm
Nominal width:	DN 2
Working temperature:	-25° to 70°C / -13 °F to 158 °F
Kv-value:	0.02
Inlet/outlet filter:	100 µm mesh SS
Vacuum capable:	yes
Weight:	approx. 280 g
Filter:	100 µm mesh on inlet and outlet, SS
Vacuum capable:	yes
Operation:	adjustment knob with approx. 10 turns
Weight:	approx. 280 g
inlet/Outlet:	NPT 1/4" f, optional tube fitting



FEATURES

- Very fine gas flow adjustment
- Wide flow rate range for high and low-pressure applications
- Hardened stainless steel cone for a longer life span
- High leak tightness through appropriate diaphragm construction
- Very easily purged

PERFORMANCE DATA



HRGA ACCESSORIES HRGADRV DIAPHRAGM REGULATING VALVE

HOW TO ORDER

HRGA	DRV	-	C	S	D	-	A
Series	Model		Pressure	Material	Inlet Connection		Outlet Connection
	DRV Diaphragm Regulating Valves		C 50 bar (720 psi)	S stainless steel	N 1/4" NPTF		N 1/4" NPTF
			F 40 bar* (600 psi)	C brass chrome-plated	6 CL6		6 CL6
					8 CL8		8 CL8
					10 CL10		10 CL10
					12 CL12		12 CL12

*For Oxygen only

*Please specify gas

Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

GENERAL

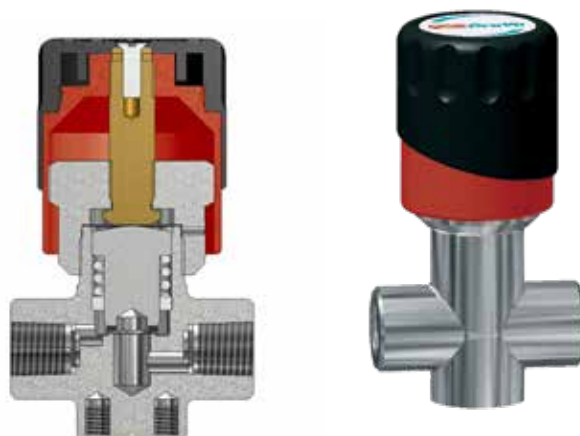
The diaphragm valve HRGADSL with shut-off function enables the easy shutoff of the gas flow with the turn of an adjustment knob. The valve is particularly suitable as system component for applications in low pressure areas for high gas flow.

FEATURES

- Higher flow rates
- Leakage rate less than 1×10^{-8} mbar l/sec
- Gas wetted surfaces are specially cleaned and diffusion tight

TECHNICAL DATA

Body:	Stainless steel 1.4404 specially cleaned and electro-polished or Brass CW614 (CuZn39Pb3) specially cleaned, nickel-plated and chrome-plated
Diaphragm:	Hastelloy C
Body seals:	PCTFE
Leakage rate:	< 1×10^{-6} mbar l/s Helium (seats), < 1×10^{-9} mbar l/s Helium (outboard)
Dimensions (w×h×d):	approx. 53×100×42 mm
Nominal width:	DN 8 NPT 3/8 DN5 NPT 1/4
Working temperature:	-25° to 70°C / -13 °F to 158 °F
Kv-value:	0.5
Inlet/outlet filter:	100 µm mesh SS
Weight:	approx. 280 g
Inlet Filter:	100 µm mesh on inlet and outlet, SS
Vacuum capable:	yes
Weight:	approx. 380 g
inlet/Outlet:	NPT 1/4" f (SS, BC) or G3/8" f (SS, B)



HOW TO ORDER

HRGA		DSL		-		F		S		D		-		A	
Series		Model		Pressure		Material		Inlet connection		Outlet connection					
DSL		Diaphragm Shut-Off Valve Low Pressure		F		40 bar (600 psi)		S		N		1/4" NPT f		N	
						C		brass chrome-plated		6		CL6		6	
						B		Brass		8		CL8		8	
										10		CL10		10	
										12		CL12		12	

*Please specify gas

Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.



HRGA ACCESSORIES HRGAPSV (HRG4SP) SHUT-OFF VALVES

GENERAL

These valves can be combined in many ways with the numerous components of the lab system in particular with the pressure regulator HRG4SP. These regulating valves are characterized by their outstanding operational reliability and extreme leak-tightness. They have very good regulating characteristics and allow for exact delivery for both very small as very large amounts of gas.

TECHNICAL DATA

Body	Stainless steel 1.4301 specially cleaned and electro-polished or brass 2.0401.26 specially cleaned, nickel-plated and chrome-plated
Diaphragm:	Hastelloy
Body seals:	hardened stainless steel cone
Seat seals:	PCTFE
Leakage rate:	< 1×10 ⁻⁶ mbar l/s Helium (seat) < 1×10 ⁻⁹ mbar l/s Helium (outboard)
Vacuum capable:	yes
Nominal width:	DN 5
Kv-value:	< 0.2
Working temperature:	-25 °C to 70 °C / -13 °F to 158 °F
Weight:	approx. 500 g
Inlet - Outlet:	1: G1/4" f - G3/8" m 2: G3/8" f - G3/8" m

FEATURES

- Very fine flow rate adjustment
- Hardened stainless steel cone for a longer life span
- Gas type specific identification according to EN 13792
- Very easily purged

Sied Inlet



Back Inlet



HOW TO ORDER

HRGA	PSV	-	F	S	B	L	-	V
Series	Model		Pressure	Material	Inlet Location	Inlet Connection		Outlet Connection
	PSV		F	S	B	L		V
	(Hrg4sp) Shut-Off Valves		40 bar (600 psi)	stainless steel	Back	CL6		C 3/8 F
				C	S	CL8		W
						V		
						W		

*Please specify

Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

GENERAL

Contact gauge with inductive contact (KI), for visual and acoustic warning of low gas supply pressure and to monitor the cylinder pressures; for inert, combustible, oxidizing and corrosive gases and gas mixtures, nominal pressure maximum 300 bar. These pressure measuring instruments have a robust chrome nickel steel/copper-zinc-alloy housing in accordance with DIN 16063. When the gas cylinder is empty and by sinking cylinder pressure an inductive contact switch is activated.

The switch point, i.e. the pressure level at which the signal should be triggered is freely adjustable within a sector of 45° (at 315 bar types e.g. 38 bar). To set the switch point the pressure level marking is simply adjusted to the desired switch point. Panel and manifolds can be fitted out with contact gauges as an option. Contact gauges combine the advantages of a local display with the demand for an electric signal transmission. This allows for - in conjunction with special signal boxes - the optical and acoustic warning signal by low gas supply pressure or the monitoring of the line pressure with freely adjustable threshold.



FEATURES

Measuring element:	Bourbon tube
Diameter:	50 mm
Design:	Chemical-safety version DIN 16063
Housing:	CrNi-steel/copper-zinc-alloy
Measuring element:	CrNi-steel 1.4571, circular form/copper-zinc-alloy
Inspection glass:	Polycarbonate
Accuracy:	Class 2.5 (DIN 16005)
Wrench size:	14 mm
Nominal pressure:	230 bar/ 300 bar
Display range:	see gauge scale
Threshold:	Freely adjustable in marked range (45° of the display range from p = 0 originating)
Gas suitability:	All gases
inlet/Outlet:	NPT 1/4" f (SS, BC) or G3/8" f (SS, B)
Contact:	inductive slit sensor (in accordance with NAMUR)
Working temperature:	ambient: -25°C to +70°C measuring medium maximum +100°C
Protection class:	II 2 G EEx ia IIC T6, PTB 99 ATEX 2219 X
Switching hysteresis:	+/- 5 % (SEW)
Control behavior:	Contact type 1 (I1), contact of low impedance with increasing pressure
Dimensions (Ø×d×h):	50×35×70 mm
Connection:	NPT 1/4" m outside thread

HOW TO ORDER

STAINLESS STEEL:

- 1. DMP50-LN1/4N-EP315D-LC6
- 1. DMP50-LN1/4N-EP400D-LC6

BRASS:

- 1. DMPB50-LN1/4N-EP315D-LC6
- 1. DMPB50-LN1/4N-EP400D-LC6

Warning!

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GENERAL

The gas management signal box HRASBD is a fault indicating unit and can monitor up to ten electrical circuits for deviation from the norm. An integrated lamp and signal horn allow for testing the correct operation of the instrument. If one or more alarm signals are triggered (e.g. gas failure) an acoustic (buzzing noise) and an optical signal (red LED) are emitted for each channel.

The acoustic signal is acknowledged by pressing a button, the optical signal does not switch off until all malfunctions have been remedied. The instrument is equipped with a collective alarm to notify a main central office, a control unit or an external signaling device. Any equipment is possible for use as a signal transmitter if it has either a mechanical contact or an inductive contact in accordance with DIN 19234 NAMUR.

The HRASBD is used for all kinds of alarm signaling, predominantly for monitoring gas supply or metered flow in gas applications. Monitoring of gas supply can be done by controlling the upstream or downstream pressure (using contact gauges), the weight of the bottle or through monitoring rupture disks, dependent upon model for as many as 10 cylinders simultaneously. Flowswitches, floaters or mass flow controllers are suitable as signal transmitters for the monitoring of metered flow. In connection with these new IT relay stations individual faults can be passed on by SMS or fax. For every individual alarm you can program an individual text or an SMS and a separate target number.



HOW TO ORDER:

Series	Model	Signals	Ec Protection	Power Supply
HRGA	SBD	O2N	EX	230
	Diaphragm Shut-Off Valve Low Pressure	2 Channles	0 with out	230 230V 50Hz
		04N 4 Channles	EX With	110 110V 60Hz
		06N 6 Channles		
		10N 10 Channles		

TECHNICAL DATA

CONNECTION LOAD

Power supply:	230V AC, 50Hz, 5VA; 110V AC, 60Hz
Fuse:	3.15 mA slow-blow
Note:	defective fuses may only be replaced by the manufacturer

INLETS

Signal transmitter:	zero potential, mechanical contacts, initiators comply with DIN 19234 (NAMUR)
Effective direction:	NC (normally closed)
Connection system:	2 wires
Signal transmitter supply:	10 V max. throughout the instrument, 10 mA max. (short circuit proof)
Max. load/circuit:	330 mH/ 4.0 µF (EEx ib IIC); 1000 mH/30.0 µF (EEx ib IIB)
Cabel monitoring:	Short circuit I> 6 mA, cable break I<80 µA

(optional):

Connection cross section:	2.5 mm² max.
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OUTLET (COLLECTIVE ALARM)

Alarm output:	2* relay output (1 change over contact)
Contact load:	max. 230 V ~, 50 Hz, 100 VA max. 48 V , 1A

INTERNAL ALARM EQUIPMENT

Signal lamp:	LED green 5 mm
Acoustic alarm:	Piezo buzzer, f = 3.3 kHz
Collective alarm:	via zero potential break contact

AMBIENT CONDITIONS

Ambient temperature:	max. 40 °C
Humidity:	0 – 95 % rel. humidity, not condensing

DESIGN

Housing:	Polystyrene colour similar to RAL 7035 (light grey)
Protection category:	IP 54
Dimensions (w×h×d):	200×160×60 mm
Installation position:	upright

