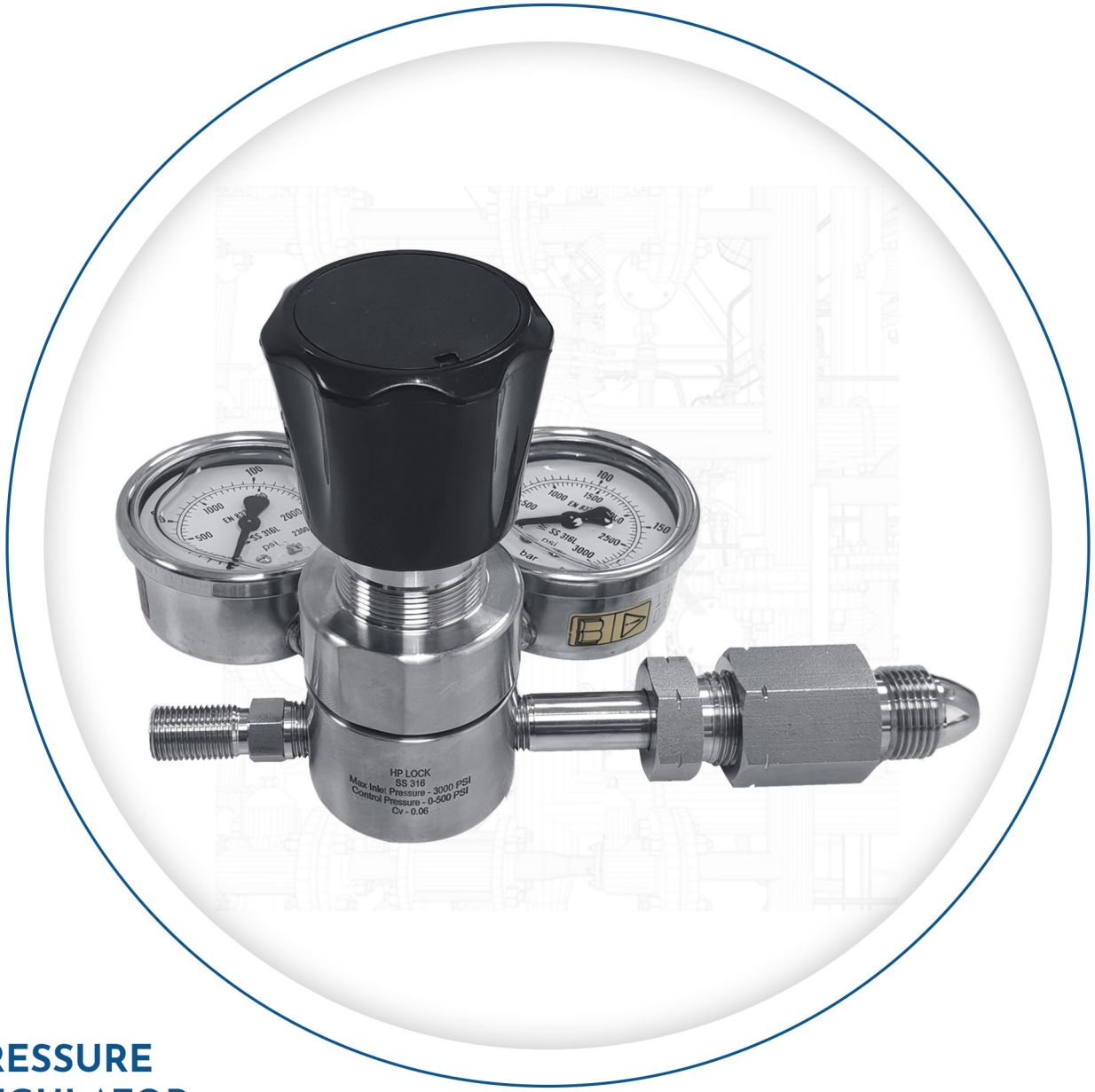




# HP VALVES & FITTINGS INDIA PRIVATE LIMITED

Field Instruments



## PRESSURE REGULATOR

SERVING WORLD WIDE



## ABOUT US

HP VALVES & FITTINGS INDIA PRIVATE LIMITED, was established in the year of 2000, We are Integrated Management System (IMS) Certified Company (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018) by TUV Nord Group for the scope of Design, Manufacture, Testing and Supply of Instrumentation Valves & Fittings i.e. Tube Fittings, Pipe Fittings, Sealant Injection Grease Fittings, Manifold Valves, Needle Valves, Ball Valves, Check Valves, Globe Valves, Gate Valves, Relief Valves, Air Filter Regulators, Pressure Regulators, Air Headers, Condensate Pot, Syphon, Instrument Hook - Up and Custom Build / Specialized

### Our Brand Name : HPLOCK / HPLOK / HP / HP INDIA

Mr. S. Harichandran – Managing Director, founder of this business with an aim to become a leader in this Field of Instrumentation System Solutions.

He has wide experience of 25 years in this field. With his sharp business acumen and constant efforts, he has earned a reputation for his business. Our aims towards achieving the highest level of business efficiency with integrity and honesty in order to create benchmark globally in quality of valves and fittings industry .

## WHY HP?

- ◆ Our Performance Meets your Expectations
- ◆ Focus on Consistent quality compliance
- ◆ Follow International codes & standards which ensures
- ◆ Recognition in the market
- ◆ Competitive cost effectiveness
- ◆ Continuous on our R&D Process
- ◆ Flexibility in design
- ◆ Quality and traceability on our products.
- ◆ Fully computerized inventory system
- ◆ Stringent quality control checks
- ◆ Dedicated Professional and expert workforce
- ◆ Timely delivery & Product durability
- ◆ Service 24 x 7
- ◆ Customized solutions

## FACILITIES

To ensure the timely and efficient accessibility of premium quality products, we have established with,

- Latest Modern Machineries.
- Modern Inspection Equipments.
- 8 Axis Multi Axis Machining Centre
- In-House Research & Development Centre
- Latest Design Applications
- In-House state of the art lab facility
- Industry 4.0 Shop Floor Digitization
- In-House Sophisticated Testing Facilities like low emission, Vaccum Test, Cryogenic Test, High Pressure Hydro & High Pressure Gas Test

## INTERNATIONAL CODES & STANDARDS

We are following below latest codes & standards for Design & Materials,

### FOR DESIGN



### FOR MATERIAL



## PRESSURE REGULATORS

HP regulators are designed specifically for critical service in analytical instrumentation. All regulator models are supplied with stainless steel cartridge. We offer several distinct models with a variety of process connections, spring ranges, pressure ranges and materials to satisfy the most demanding instrument applications.

### PRINCIPLE OF OPERATION

Regulators reduce the pressure of a gas or liquid from a source, such as a cylinder or compressor, to a lower value needed by a device, such as an analyzer. A pressure regulator provides better resolution and control when its inlet and control range pressures closely match the pressure requirements of the fluid handling system. Resolution is the number of handle turns needed to adjust a regulator from its lowest to highest outlet pressure setting. Control is the ability of the regulator to hold a given outlet pressure set point.

### PRESSURE REDUCING REGULATORS

Pressure-reducing regulators control outlet pressure by balancing an adjustable spring force against the forces caused by inlet and outlet pressures. The spring force is adjusted by turning the stem/handle, which sets the desired outlet pressure.

As inlet pressure decreases, the force balance changes. To compensate, outlet pressure will increase. This supply- pressure effect (SPE) is a function of the design and type of regulator. If a regulator is subjected to fluctuating inlet pressure, and outlet pressure variations are not desirable, a two-stage regulator is available.

### SUPPLY PRESSURE EFFECT

Supply-pressure effect (SPE) or dependency is a ratio describing the change in outlet pressure per 100 psi (6.8 bar) change in inlet pressure. In other words, for every 100 psi (6.8 bar) drop in inlet pressure, the outlet pressure will increase by X psi. X is the SPE. For standard pressure reducing regulators, the outlet pressure increases as supply pressure decreases. The opposite is true as supply pressure increases. This effect can also be realized on system startup or shutdown.

The regulator should be set to the “off” position before turning the supply pressure on or off to prevent over pressurization of regulator diaphragms, outlet pressure gauges, or other equipment downstream. When selecting an anti-tamper model, it is important to make sure that SPE will not cause excessive over pressurization on opening and closing of the supply pressure.

### Testing

Every HPVF pressure regulator is pressure tested with nitrogen.

### Types of Regulators

1. Compact, Piston-Sensing.
2. Gas Cylinder Changeover Regulator.
3. High-Pressure Piston-Sensing – Pressure Reducing Regulators.

**Do not use the regulator as a shutoff device.**

## 1. Compact, Piston-Sensing Type – Pressure Reducing Regulators

This a compact, piston-sensing pressure regulator with a short stroke to minimize wear in high-cycling applications.

### Features

- Low internal volume
- Fully contained piston
- High-flow, dual-gauze type filter in inlet ports

### Technical Data

- Maximum Inlet Pressure- 3600 psig (248 bar)
- Pressure Control Ranges- 0 to 10 psig (0.68 bar) -through 0 to 1500 psig (103 bar)
- Flow Coefficient (Cv)- 0.06 and 0.20  
0.02 and 0.50 also available



**HPPR601**

### Maximum Operating Temperature

- 176°F (80°C) with PCTFE seat
- 392°F (200°C) with PEEK seat

### Weight

1.0 lb (0.45 kg)

### Ports

- Inlet Ports with 1/8 in. female NPT
- Outlet Ports with 1/8 in. female NPT
- Gauge Ports with 1/8 in. female NPT

## Supply-Pressure Effect

Flow Coefficient (Cv)	Pressure Control Range	
	Up to 250 psig (17.2 bar)	500 psig (34.4 bar) and Higher
	Supply Pressure Effect, %	
0.02	0.4	2.6
0.06	1.3	8.6
0.2	2.1	14.5
0.5	3	22.6

## Materials of Construction

Component	Material
Thumb wheel handle	Anodized aluminum
Knob handle, cover	Nylon with 316 SS insert
Spring button	Zinc-plated steel
Spring stabilizer	301 SS
Range spring	316 SS or zinc-plated steel, depending on configuration
Stem, stem nut, body cap, panel nuts	316 SS
Non-wetted lubricant	Hydrocarbon-based
Body, seat retainer, piston, filter	316 SS
Piston seal	Fluorocarbon FKM or Kalrez®
Seat	PCTFE or PEEK
Poppet	S17400 SS
Poppet spring	302 SS
Filter carrier	PTFE
Wetted lubricant	PTFE-based

## 2. Gas Cylinder Changeover Regulator

This a two-stage gas delivery system that ensures continuous flow of gases in critical applications. When one supply drops below the changeover pressure, the selector regulator automatically switches the gas feed from the depleted supply to an alternate supply. The automatic operation of this regulator eliminates costly system downtime and maintenance expense of continuously monitoring the gas supply.



### Features

- Convoluted, non-perforated diaphragm for strength and improved pressure response
- Metal-to-metal diaphragm seals on all stages
- Supply-pressure effect of approximately 0.01 %
- Bracket mount

### Technical Data

Maximum Inlet Pressure - 4351 psig (300 bar) with PEEK seat and 3600 psig (248 bar)  
 \* Cylinder Connections and Hose accessories may limit inlet pressure ratings.  
 Pressure Control Ranges - 0 to 10 psig (0.68 bar) through 0 to 500 psig (34.4 bar)  
 Nominal Changeover Pressures - 100, 250, and 500 psig (6.8, 17.2, and 34.4 bar)  
 Flow Coefficient (Cv ) - 0.06

### Maximum Operating Temperature

176°F (80°C) with PCTFE seat  
 392°F (200°C) with PEEK seat  
 212°F (100°C) with PEEK seat and maximum inlet pressure greater than 3600 psig (248 bar)

Weight - 7.25 lb (3.3 kg).

### Ports

Inlet Ports with 1/4 in. female NPT  
 Outlet Ports with 1/4 in. female NPT  
 Gauge Ports with 1/4 in. female NPT

### Supply-Pressure Effect

Flow Coefficient (Cv )	Pressure Control Range	
	Up to 100 psig (6.8 bar)	250 psig (17.2 bar) and Higher
	Supply Pressure Effect, %	
0.06	0.01	0.02

## Materials of Construction

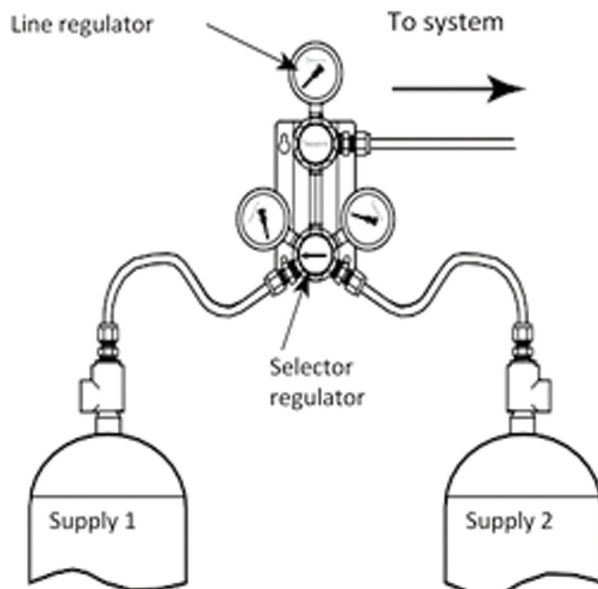
Component	Material
Interstage fitting	316 SS
	with PTFE tape
Line-regulator mounting block	Aluminum
Line-regulators mounting screws, mounting bracket	316 SS

## Operation

This regulator can be ordered to switch from one supply to another at one of three different inlet pressures 100, 250, and 500 psig (6.8, 17.2, and 34.4 bar) called changeover pressures.

The selector regulator (first stage) is factory-set to reduce the supply pressure to the nominal changeover pressure ordered. The line regulator (second stage) can be adjusted with the handle to achieve the required system pressure. This two-stage arrangement minimizes the supply-pressure effect caused by depleting gas supplies (cylinders, tank farm, etc.).

When one supply drops below the changeover pressure, the selector regulator automatically switches the gas feed from the depleted supply to an alternate supply. If both supplies drop below the changeover pressure, the assembly functions as a single-stage regulator, depleting both supplies at the same time. See the Approximate Supply Depletion Pressures table at right for pressures at which this occurs.



## Similar Items



### 3. High-Pressure Piston-Sensing – Pressure Reducing Regulators

The HP regulator provides control of supply pressures up to 10,000 psig(689 bar). The self-venting capability enables downstream pressure reduction in closed-loop systems.



**HPPR603**

#### Features

- Thrust roller bearing eases operation
- Panel-mounting configuration available
- High-flow, dual-gauze type filter in inlet ports

#### Ports

- Inlet Ports with 1/4 in. female NPT
- Outlet Ports with 1/4 in. female NPT
- Gauge Ports with 1/4 in. female NPT

#### Technical Data

- Maximum Inlet Pressure** - 10,000 psig (689 bar)
- Pressure Control Ranges** - 0 to 500 psig (34.4 bar) through 100 to 10,000 psig (6.8 to 689 bar)
- Flow Coefficient (Cv)** - 0.06 and 0.25
- Maximum Operating Temperature** - 212°F (100°C)
- Weight** - 5.7 lb (2.6 kg)

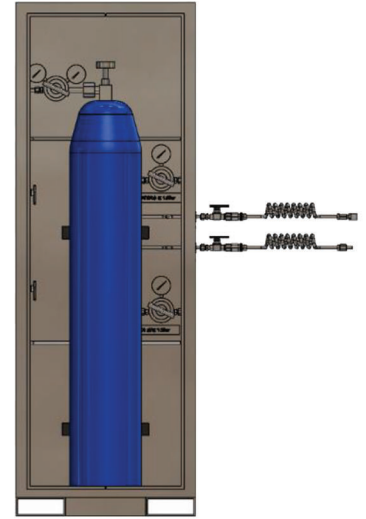
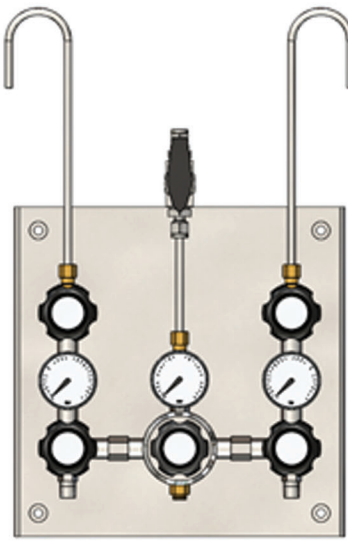
#### Supply-Pressure Effect

Component	Material
Interstage fitting	316 SS
	with PTFE tape
Line-regulator mounting block	Aluminum
Line-regulators mounting screws, mounting bracket	316 SS

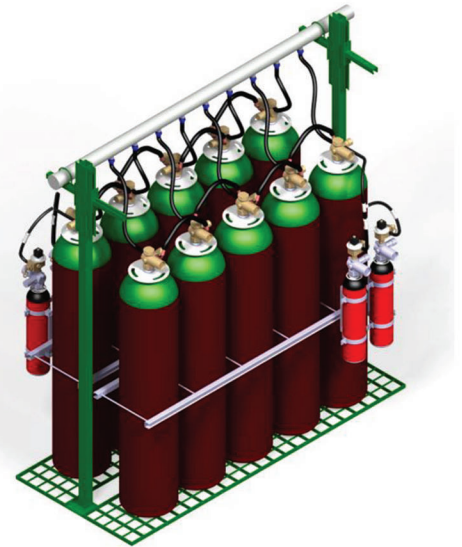
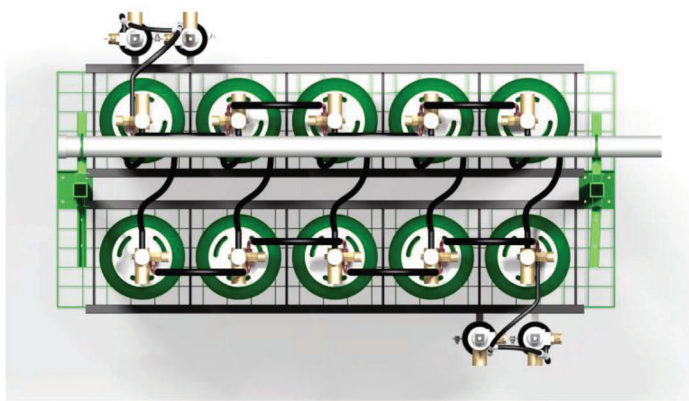
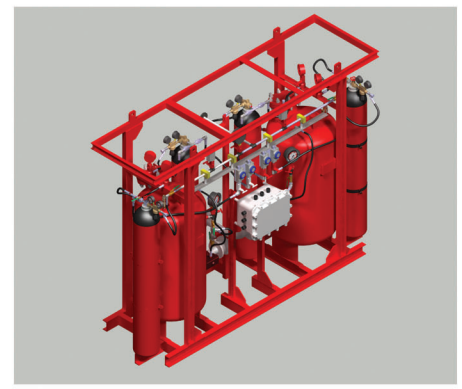
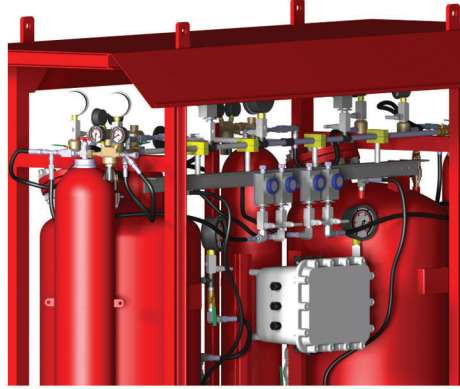
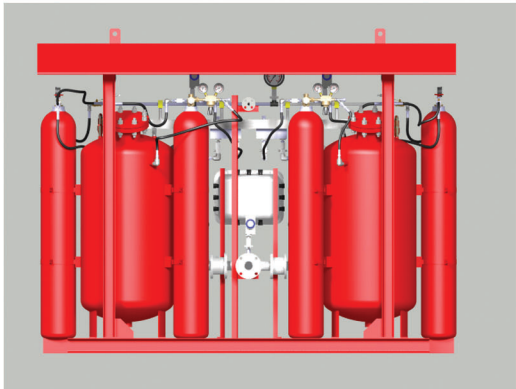
#### Materials of Construction

Component	Material
Knob handle, cover	Nylon with 316 SS insert
Spring buttons, upper spring button set screw, knob handle retainer, vent screw, stem nuts, body cap	316 SS
Vent screw spring	302 SS
Vent rod	431 SS
Stem	CZ114 bronze
Thrust roller bearing	Hardened carbon steel
Range spring	Chrome vanadium steel
Piston seal backup ring	PTFE
Non wetted lubricant	Hydrocarbon-based
Body, seat retainer, filter, piston, piston guide, self-vent seat retainer	316 SS
Seat, self-vent seat	PEEK
Poppet, self-vent poppet	S17400 SS
Poppet spring	Alloy X-750
Poppet damper, filter carrier	PTFE
Self-vent poppet spring	302 SS
Body seal, piston seal	Fluorocarbon FKM
Wetted lubricant	PTFE-based

# ASSEMBLY KIT



# APPLICATIONS



## HP VALVES & FITTINGS INDIA PRIVATE LIMITED

Instrumentation Valves & Fittings and Sealant Injection Grease Fittings

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