

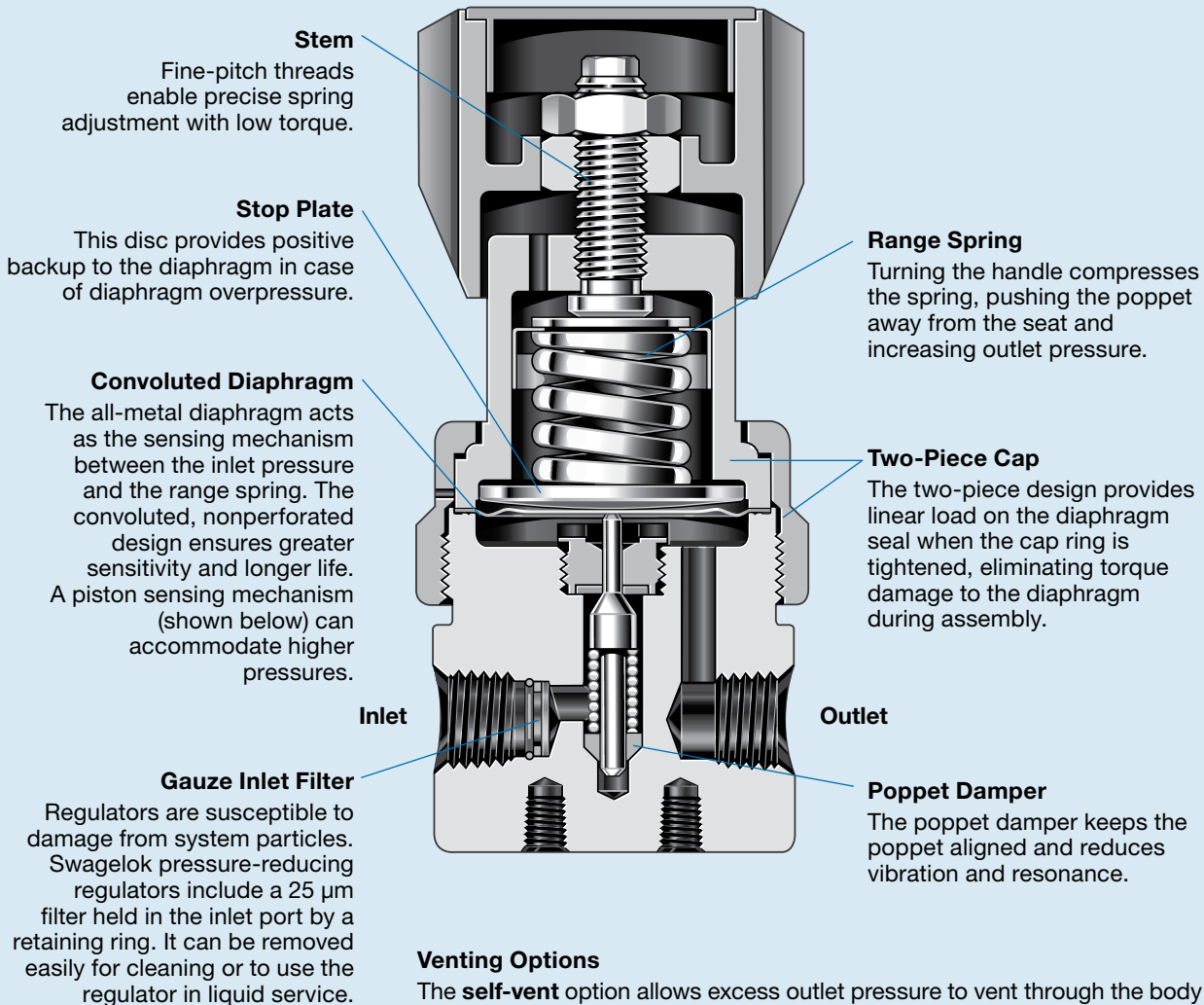
Pressure Regulators K Series

KPP1RWM422P20000



- Pressure-reducing models
- Back-pressure models
- Gas cylinder changeover model
- Vaporizing models

Swagelok® K Series Pressure Regulator Features



Retaining Ring



Filter

Filter Ring

Venting Options

The **self-vent** option allows excess outlet pressure to vent through the body cap. This can occur when downstream flow is suddenly reduced or when the handle is adjusted to a lower pressure with little or no flow downstream.

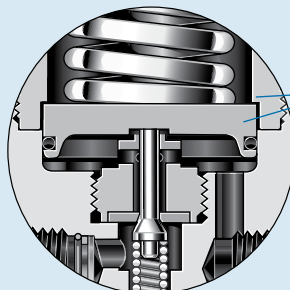
The **captured-vent** option includes a 1/8 in. female NPT connection and stem seal in the body cap^① to allow monitoring of the diaphragm or piston sensing mechanism. It also allows containment of hazardous gas or liquid media should a diaphragm or piston rupture.

Self-vent and captured-vent options can be ordered together so that hazardous gas or liquid media can be contained if vented.

^① The captured-vent port is in the bottom of the KHR series body.

Piston Sensing Mechanism

Piston sensing mechanisms typically are used to regulate higher pressures than a diaphragm can withstand. They are also more resistant to damage caused by pressure spikes and have a short stroke to maximize cycle life.



Fully-Contained Piston

The piston is contained by a shoulder in the regulator body cap to prevent piston blowout if the regulator outlet is overpressurized.

Medium- to High-Pressure Piston-Sensing, Pressure-Reducing Regulators (KPP Series)

The KPP series meets the demands of a wide range of gas or liquid applications in a lightweight, compact installation footprint. These features make the KPP pressure regulator an ideal pressure control solution within high-density OEM equipment.

Features

- Lightweight, compact design
- Live-loaded body seals
- Low internal volume
- High-flow, dual-gauze type filter positively retained in inlet port

Technical Data

Maximum Inlet Pressure

- 6000 psig (413 bar)

Pressure Control Ranges

- 0 to 1000 psig (68.9 bar) through 0 to 3600 psig (248 bar)

Flow Coefficient (C_v)

- 0.02 and 0.06

See page 48 for flow graphs.

Supply-Pressure Effect

Flow Coefficient (C_v)	Supply Pressure Effect, %
0.02	2.2
0.06	7.2

Maximum Operating Temperature

- 392°F (200°C) with 2000 psig (137 bar) maximum inlet pressure
- 212°F (100°C) with maximum inlet pressure greater than 2000 psig (137 bar)

Weight

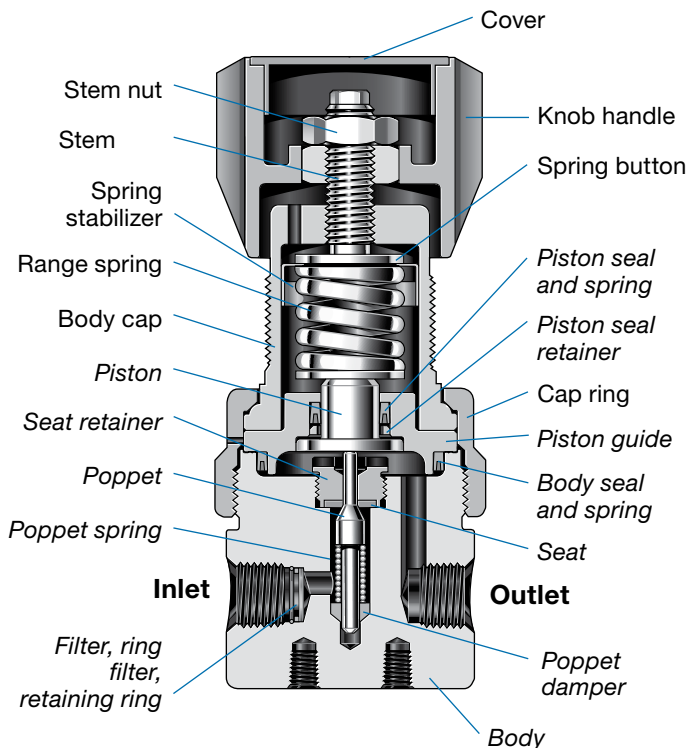
- 2.5 lb (1.2 kg)

Ports

- 1/4 in. female NPT inlet, outlet, and gauge ports



Materials of Construction



Component	Material
Knob handle, cover	Nylon with 316 SS insert
Spring button	316 SS (0 to 3000 and 0 to 3600 psig range) Zinc-plated steel (all other ranges) ^①
Spring stabilizer ^②	301 SS
Range spring	Zinc-plated steel
Stem, stem nut, cap ring, body cap, panel nuts ^③	316 SS
Nonwetted lubricant	Hydrocarbon-based
Body, seat retainer, filter, retaining ring, piston, piston guide	316 SS
Seat, piston seal retainer	PEEK
Poppet	S17400 SS
Poppet spring	Alloy X-750
Piston seal spring, body seal spring	Elgiloy
Poppet damper, filter ring, piston seal, body seal	PTFE
Wetted lubricant	PTFE-based

Wetted components listed in *italics*.

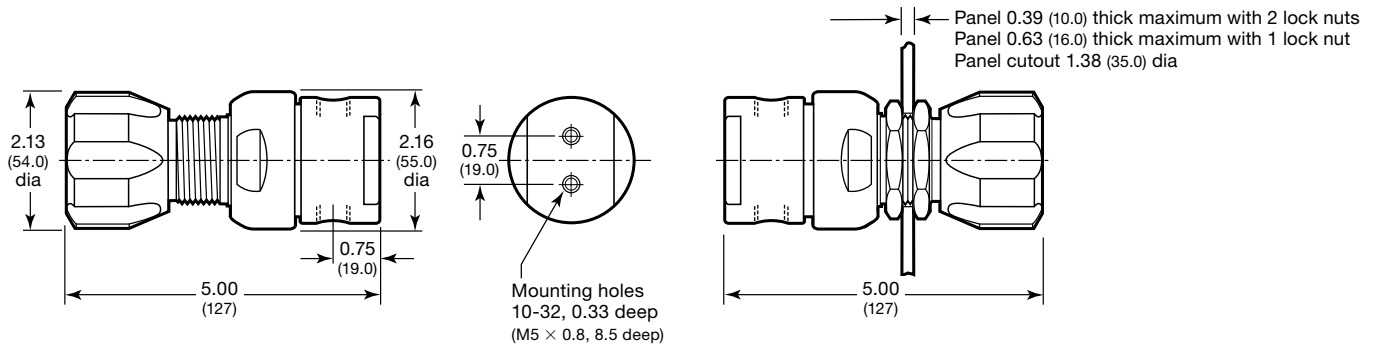
① 316 SS in regulators with 0 to 2000 psig (0 to 137 bar) control range with 6000 psig (413 bar) inlet pressure and regulators with 0 to 2000 psig (0 to 137 bar) control range, 4000 psig (275 bar) inlet pressure, and 0.06 C_v .

② Not included in regulators with 316 SS spring button.

③ Not shown.

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.



Ordering Information

Build a KPP series regulator ordering number by combining the designators in the sequence shown below.

4 5 6 7 8 9 10 11 12 13 14 15 16
KPP 1 R W M 4 2 2 P 2 0 0 0 0

4 Body Material

1 = 316 SS

A = 316 SS, ASTM G93 Level E-cleaned

5 Pressure Control Range

L = 0 to 1000 psig (0 to 68.9 bar)

M = 0 to 1500 psig (0 to 103 bar)

N = 0 to 2000 psig (0 to 137 bar)

P = 0 to 3000 psig (0 to 206 bar)^①

R = 0 to 3600 psig (0 to 248 bar)^①

^① Not available with 2000 psig (137 bar) maximum inlet pressure.

6 Maximum Inlet Pressure^①

N = 2000 psig (137 bar)

S = 4000 psig (275 bar)

W = 6000 psig (413 bar)

^① For better resolution and control, select a pressure that closely matches system pressure.

7 Port Configuration

A, B, C, E, F, H, K, L, M, N

See **Port Configurations**, page 52.

8 Ports

4 = 1/4 in. female NPT

9 Seat, Seal Material

2 = PEEK, PTFE

10 Flow Coefficient (C_v)

1 = 0.02

2 = 0.06

11 Sensing Mechanism, Vent

P = 316 SS piston, no vent

V = 316 SS piston, captured vent, no self vent

12 Handle, Mounting

2 = Knob

3 = 316 SS antitamper nut

6 = Knob, panel mount

7 = 316 SS antitamper nut, panel mount

For knob handle color options, see page 56.

13 Isolation Valves

0 = No valves

For isolation valve options, see page 54.

14 Cylinder Connections

0 = No connections

15 Gauges

0 = No gauges

For inlet and outlet gauge options, see page 54.

16 Options

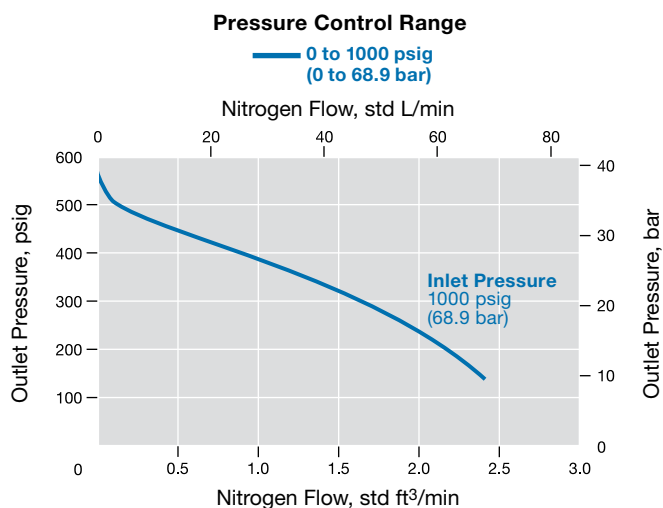
0 = No options

K Series Pressure-Reducing Regulator Flow Data

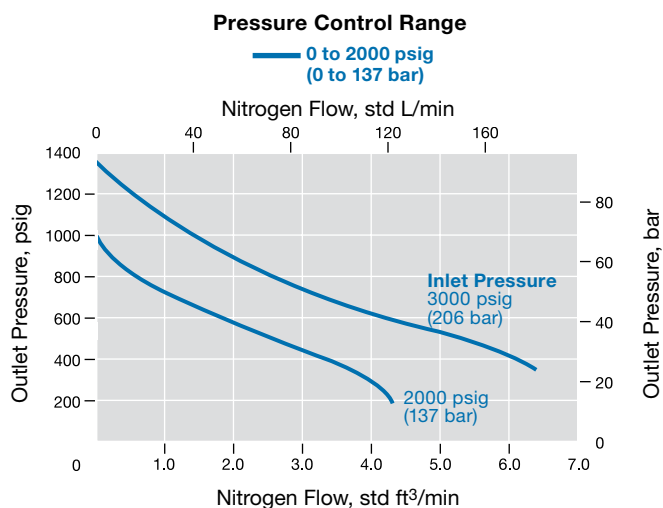
The graphs illustrate the change or “droop” in outlet pressures as the flow rate increases.

KPP Series

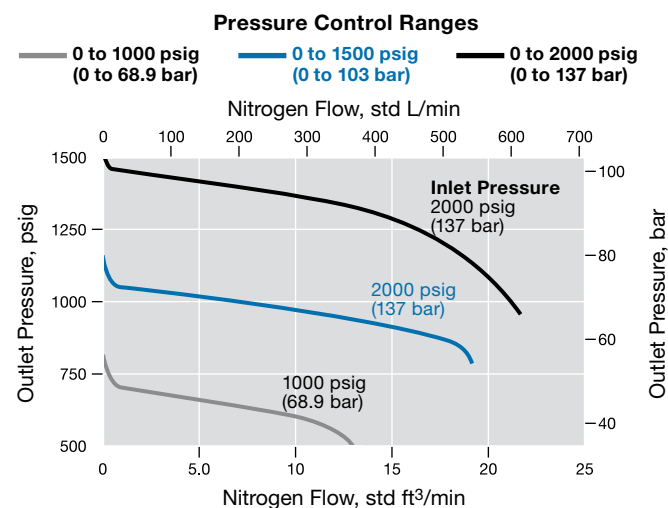
**Flow Coefficient 0.02;
Maximum Inlet Pressure 2000 psig (137 bar)**



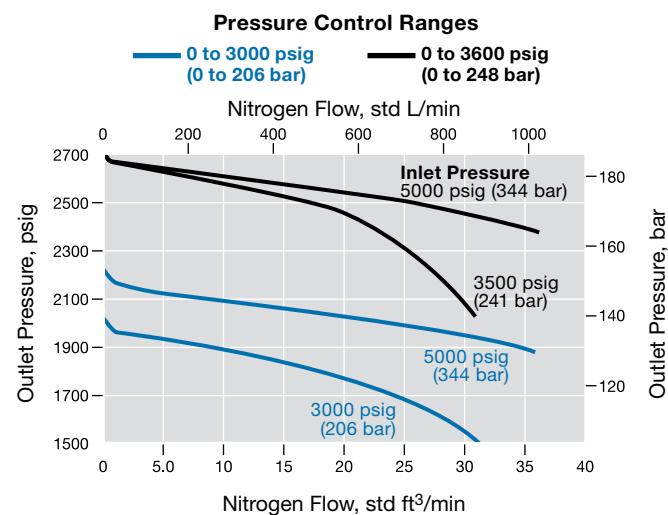
**Flow Coefficient 0.02;
Maximum Inlet Pressure 4000 psig (275 bar)**



**Flow Coefficient 0.06;
Maximum Inlet Pressure 2000 psig (137 bar)**



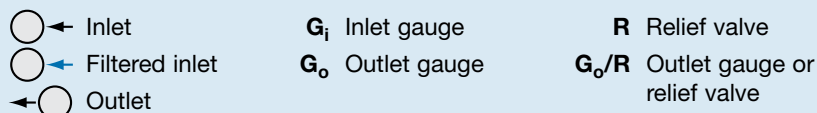
**Flow Coefficient 0.06;
Maximum Inlet Pressure 6000 psig (413 bar)**



Port Configurations

Port configurations are available as shown in the regulator ordering information pages. The symbols indicate the port location of *factory-assembled* accessories. For alternative accessory locations, contact your authorized Swagelok representative.

Port Configuration Symbols



Factory-assembled *cylinder connections* are placed on a filtered inlet port; *isolation valves* are placed on an outlet port 180° from the cylinder connection.

Select regulators are available on special order with additional port configurations. Contact your authorized Swagelok representative for more information.

Pressure-Reducing Regulators

Right-to-Left Flow

Configuration							
Designator	A	C	E	F	H	L	K

Left-to-Right Flow

Configuration					
Designator	A	B	E	M	N

Back-Pressure Regulators

Right-to-Left Flow

Configuration			
Designator	A	D	V

Left-to-Right Flow

Configuration		
Designator	A	G

MPC Port Configurations

Pressure Reducing

Configuration		
Designator	2-Port 5	3-Port 6

Back Pressure

Configuration		
Designator	2-Port 7	3-Port 8