CIRCLE SEAL CONTROLS

HP500 Series

High Pressure Popoff and Inline Relief Valves
150 to 575 psig (10 – 40 bar)

Inline version

Features

- Very accurate cracking pressure
- Zero leakage up to 95% of cracking pressure
- 100% seat leakage tested
- Tamper-proof adjustment
- PED certifications and CE marking available for most models

Applications

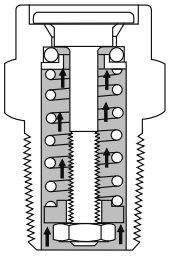
- System overpressure protection
- Storage tanks
- Freon® recovery systems
- Medical equipment
- Refrigeration & heating equipment
- Measuring & dispensing pumps
- Communications equipment
- Process control instruments
- R & D pilot plants

Technical Data

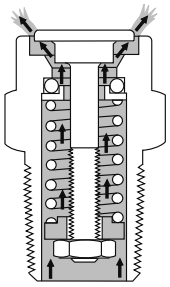
Body Construction Materials	Brass, 316 stainless steel
O-ring Materials	Buna N, ethylene propylene, neoprene, silicone, and Viton®
Spring Material	17-7 PH stainless steel
Poppet	Brass, 316 stainless steel
Shroud	Brass, 316 stainless steel
Operating Pressure	• ¼″ pipe: 150 to 575 psig (10 to 40 bar) • ½″ pipe: 150 to 450 psig (10 to 31 bar)
Temperature Range	–65° F to +350° F (–54° C to +177° C) *Based on O-ring & body material, see "How to Order"*
Connection Sizes	¼″ to ½″ male and female pipe

Note: Proper filtration is recommended to prevent damage to sealing surfaces.

How it Works



Closed
The specially-designed poppet seals on the elastomeric O-ring. The increasing pressure within the valve seals tightly against the poppet and prevents leakage to 95% of the cracking pressure. The metal-to-metal stop, on the low pressure side, supports the spring load and prevents seal deformations.



Open
The excess pressure is vented instantly when the system pressure overcomes the spring force and opens the poppet. Large flow passages, at the inlet and at the poppet opening, assure minimum pressure rise.

Reseating
Repeated, positive reseating occurs at better than 90% of the cracking pressure when the spring action retracts the poppet, reestablishing the seal between the elastomeric O-ring and the poppet shoulder.

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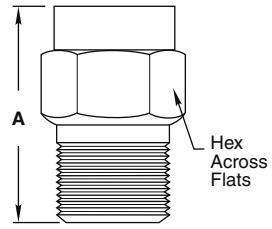
HP500 Series

Dimensions

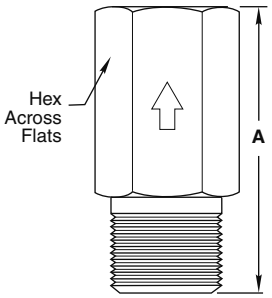
Popoff



Vent to Atmosphere, Male Pipe Thread

Dash No.	Size	A	Hex
–2M	¼″	1.17	0.625
–4M	½″	1.91	1.000

Inline



Inline, Male/Female Pipe Thread

Dash No.	Size	A	Hex
–2MP	¼″	1.92	0.750
–4MP	½″	2.63	1.125

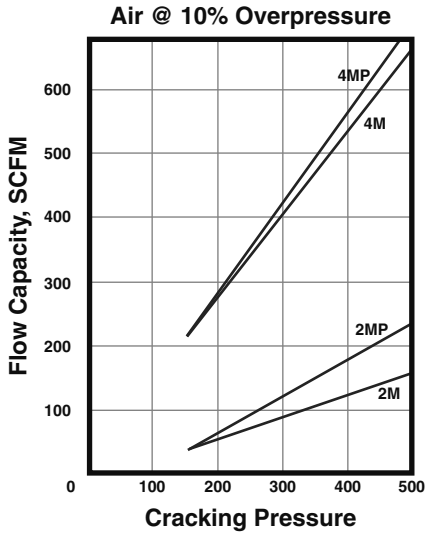
Replacement Springs: ¼″

Range	–2M/–2MP
150–175	10262–40PH
176–275	10262–90PH
276–374	10262–120PH
375–450	10262–175PH
451–575	10262–500PH

Replacement Springs: ½″

Range	–4M/–4MP
150–250	10462–175PH
251–350	10462–300PH
351–450	10462–400PH

Flow Curves



How to Order

HP5 59 B – 2 M – 150

O-RING MATERIAL & TEMPERATURE

- **24** Silicone, –70° F to +450° F (-57°C to +232°C)
- **32** Viton®, –20° F to +400° F (-29°C to +204°C)
- **33** Neoprene, –40° F to +300° F (-40°C to +149°C)
- **59** Buna N, –65° F to +275° F (-54°C to +135°C)
- **62** Ethylene propylene, –65° F to +300° F (-54°C to +149°C)

BODY MATERIAL

- **B** Brass†
- **T1** 316 stainless steel

CRACKING PRESSURE*

Specify cracking pressure setting in psig (150 – 575 psig)

CONNECTIONS–INLET/OUTLET

- **M** Popoff male pipe
- **MP** Inline male pipe by female pipe

VALVE SIZE

Pipe sizes in ⅛″ increments

- **2** ¼″
- **4** ½″*

* *Maximum cracking pressure is 450 psig for ½″ valve sizes.*

† *For PED applications, brass bodies are limited to a maximum temperature use of +100° F (+38° C)*

To specify PED certification, add PED prefix to the part number.

Please consult your Circle Seal Controls Distributor or our factory for information on special connections, materials, sizes, o-rings, operating pressures and temperature ranges.

Cracking Pressure

Tolerance: ±5%

Initial crack may be higher than cracking pressure tolerance due to inherent characteristics of seals.

Flow at cracking pressure for elastomeric seals is 5cc/min.

Leakage: Ascending pressure 0 up to 95% of cracking pressure

Reseal pressure: 90% of cracking pressure

Leakage at reseal pressure: Zero

For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.

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