

5300 Series

Relief Valves

400 to 10,500 psig (28 – 724 bar)



Features

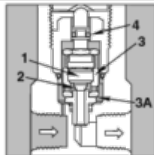
Zero leakage up to 95% of cracking pressure
No chatter or squeal
Positive reseal at a high percentage of cracking pressure
No pressure rise with increasing flow
Externally adjustable
PED certifications and CE marking available for most models

Technical Data

Body Construction Materials	Brass, 303 or 316 stainless steel
O-ring Materials	Buna N, neoprene, and Viton®
Poppet Materials	<ul style="list-style-type: none"> • Liquid service: CRES 440C • Gas service to 3074 psi: PCTFE • Gas service above 3074 psi: Polyimide (VespeI®)
Retainer Stem	303 stainless steel
Seat Material	17-4 PH stainless steel
Spring Material	17-7 PH stainless steel
Backup Rings	PTFE
Operating Pressure	400 to 10,500 psig (28 to 724 bar); specify cracking pressure
Proof Pressure	<ul style="list-style-type: none"> • Gas: 4500 psig (PCTFE); 10,500 psig (Polyimide) • Liquid: 16,000 psig
Burst Pressure	<ul style="list-style-type: none"> • Brass: over 30,000 psig (2068 bar) • Stainless steel: over 40,000 psig (2758 bar)
Temperature Range	<ul style="list-style-type: none"> • -65° F to +350° F (-54° C to +177° F) <i>Based on O-ring & body material, see "How to Order"</i>
Connection Sizes	<ul style="list-style-type: none"> • ¼" to ½" female pipe • ¼" to 1" female tube

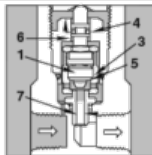
Note: Proper filtration is recommended to prevent damage to sealing surfaces.

How it Works



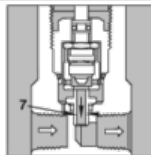
Closed

In the closed position, the poppet (1) is impressed against the orifice (2) by the spring and seals of the orifice. This impression is limited by the poppet retainer (3) which bottoms on the shoulder of the orifice nozzle unit at point 3A. As system pressure rises, pressure within the poppet retainer and above the poppet increases, effecting further sealing efficiency. As pressure rises above normal operating pressure, the poppet retainer (3) moves upward overcoming breakaway friction of the O-ring seal (4) before the preset cracking pressure is reached. This insures extremely precise cracking pressure accuracy.



Cracking

When system pressure rises above the cracking pressure, the force at area 6 is increased and overcomes the preset spring force, permitting the poppet retainer (3) to continue its upward movement and lift the poppet (1) away from the orifice (5), permitting flow through the orifice passage (7).



Open

Under conditions of flow, back pressure in the orifice nozzle (7) reduces the effective downward force on the poppet, which allows the poppet retainer unit to open further, providing increased flow with little or no increase in pressure. Where the valve is used as a sequence or priority valve, the downstream pressure buildup permits the poppet to open fully, allowing flow with minimum pressure drop.

relief valves

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