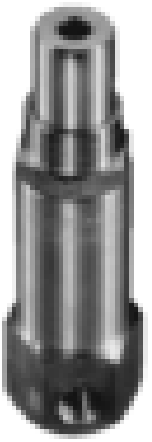
CIRCLE SEAL CONTROLS

5300 Series

Relief Valves

400 to 10,500 psig (28 – 724 bar)



Features

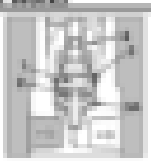
- Zero leakage up to 95% of cracking pressure
- No chatter or squeal
- Positive reseat at a high percentage of cracking pressure
- No pressure rise with no leaving flow
- Externally adjustable
- PED certifications and CE marking available for most models

Technical Data

Body/Construction Materials	Brass, 303 or 316 stainless steel
O-ring Materials	Buna-N, temperature and fluid*
Poppet Materials	– Liquid service: 440C steel – Gas service to 300 psig: PC TFE – Gas service over 300 psig: TFE/PEEK, "Hinged"*
Retainer Bore	303 stainless steel
Seat Material	17-4 PH stainless steel
Spring Material	17-7 PH stainless steel
Backup Rings	PEEK
Operating Pressure	400 to 10,500 psig (28 to 724 bar) specify cracking pressure
Proof Pressure	– Brass: 15,000 psig (1034 bar) – Stainless steel: 15,000 psig (1034 bar) – Liquid: 15,000 psig
Burst Pressure	– Brass: over 30,000 psig (2068 bar) – Stainless steel: over 30,000 psig (2068 bar)
Temperature Range	-40° F to +450° F (-40° C to +177° C) Based on O-ring & body material, see "How to Order"
Connection Sizes	– ¼" to ½" female pipe – ¼" to ½" female tube

Note: Poppet flutation is recommended to prevent damage to sealing surfaces.

How It Works



Closed

At the cracking pressure, the poppet (1) is downward against the seat (2). As long as the pressure is less than the cracking pressure, the poppet remains in contact with the seat. The pressure acting on the poppet area (A) is balanced by the force of the spring (3) and the pressure acting on the area (B). As pressure increases, the force of the spring (3) is overcome and the poppet (1) moves up. The pressure acting on the area (B) is now greater than the force of the spring (3) and the poppet (1) is held down against the seat (2). The pressure acting on the area (A