

500 SERIES

.5-150 PSIG



ADJUSTABLE POPOFF & INLINE RELIEF VALVES

Features

- Zero-Leak to 95% of Cracking Pressure
- Factory Preset to Customer Requirements
- Accurate Set Pressure
- Wide Range of Cracking Pressures
- Tamper Proof Adjustment
- Maintenance Free Service
- 100% Tested

Technical Data

Materials of Construction

Body	—	2024-T4/T351 or 6061-T6/T651 Aluminum, 303 or 316 Stainless Steel
O-Rings	—	Buna N, Ethylene Propylene, Neoprene, Silicone, Teflon® or Viton®
Spring	—	302 Stainless Steel or 17-7PH Stainless Steel

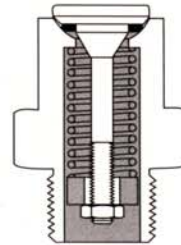
Pressure Ratings

Operating Pressure	—	Vacuum to 200 PSIG
Inline Valve:		
Proof Pressure	—	400 PSIG (28 BAR)
Burst Pressure	—	Above 500 PSIG (34 BAR)

Temperature Range

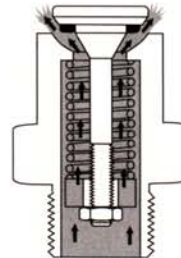
-320°F to +400°F; -196°C to +204°C
Based on O-Ring Material, See Page 2

How It Works



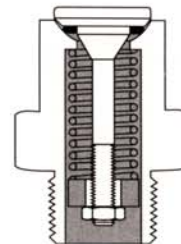
CLOSED

Resilient seal design prevents leakage. Sealing efficiency increases with increased pressure up to cracking pressure. Metal to metal seat on low pressure side supports spring load and prevents sticking.



OPEN

When system pressure overcomes spring force, poppet opens momentarily exposing variable orifice between poppet and body to pass increasing flow with minimum pressure rise without blowdown.



RESEALING

Resilient seal automatically establishes line of contact with spherical seat. Seal provides dead tight reseal very close to cracking pressure.

Valve Sizes

1/4" to 1-1/2"



CIRCLE SEAL CONTROLS, INC.

A Subsidiary of Watts Industries, Inc. • World Class Valves
Certified to ISO 9001

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.5 - 150 PSI

How To Order

D 520 A - 4DB - 10

OPTION

- D - Deflector Cap
- K - Cryogenic Cleaning/Testing
See Notes Below

BASIC MODEL NUMBER

500 Series

SEAL MATERIAL & TEMPERATURE

59	- Buna N	-40°F to +250°F
62	- Ethylene Propylene	-65°F to +300°F
33	- Neoprene	-40°F to +250°F
24	- Silicone*	-65°F to +400°F
20	- Teflon®	-100°F to +400°F
20	- Teflon® (K520T)	-320°F to +165°F
32	- Viton®	-20°F to +400°F

CRACKING PRESSURE

Specify cracking pressure setting in psig

END CONNECTIONS - INLET/OUTLET

Sizes in 1/16" Increments

- B - Tube, Female AND10050 (Outlet Only)
- D - Tube, Male AS4395 (MS33656) with Cone Point Removed (Inlet Only)
- J - Tube, Female MS33649 (Outlet Only)

BODY MATERIAL

- A - 2024 T4/T351 Aluminum
- A1 - 6061 T6/T651 Aluminum
- T - 303 Stainless Steel
- T1 - 316 Stainless Steel

Notes:

D — Prefixed Part Number is supplied with a cap which diverts high pressure blasts from personnel and instruments, increases flow capacity and serves as a rain and dust shield.

NOT RECOMMENDED FOR CRACKING PRESSURES BELOW 2 PSI.

K — Cryogenic service (stainless steel valves only). Specially manufactured, cleaned and tested for cryogenic temperatures.

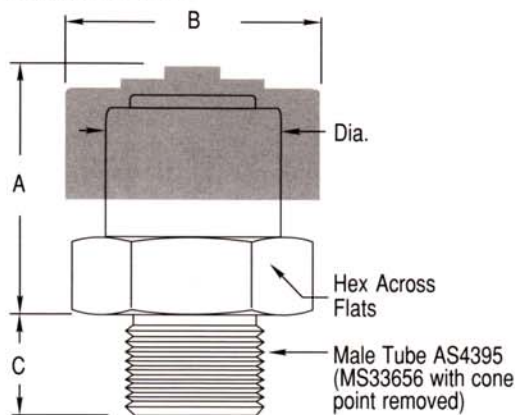
* Not available over 74.9 PSI

Teflon® and Viton® are registered trademarks of DuPont.

Please consult your Circle Seal Controls Representative or our factory for information on special connections, operating pressures, temperature ranges and materials.

Dimensions

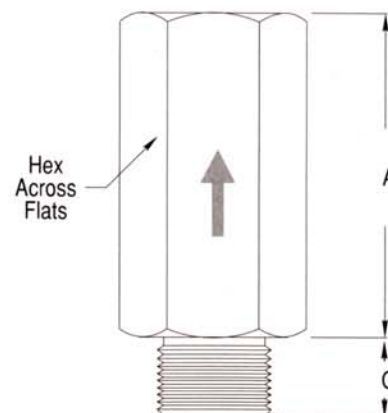
VENT TO ATMOSPHERE



Vent To Atmosphere Dimensions

Tube Size	Male	A		Dia.	B		C
		Max	Hex		Max	Max	
1/4"	4D	.78	.62	.50	.63	.38	
3/8"	6D	1.02	.81	.62	.90	.38	
1/2"	8D	1.03	1.00	.75	1.21	.42	
3/4"	12D	1.76	1.37	1.12	1.45	.57	
1"	16D	2.56	1.50	1.44	1.89	.61	
1-1/2"	24D	4.08	2.12	2.00	2.77	.72	

INLINE



Inline Dimensions

Tube Size	Male & Female	A	Hex	C
1/4"	4DB	1.41	.69	.36
3/8"	6DB	1.91	.81	.36
1/2"	8DB	2.05	1.00	.41
3/4"	12DB	3.32	1.50	.55
1"	16DB	4.20	1.75	.60

Reseal Characteristics

CRACKING PRESSURE

Standard Seals & Silicone 5 cc/min.
 Teflon® 0.02 scfm

CRACKING PRESSURE TOLERANCE..... ±5%

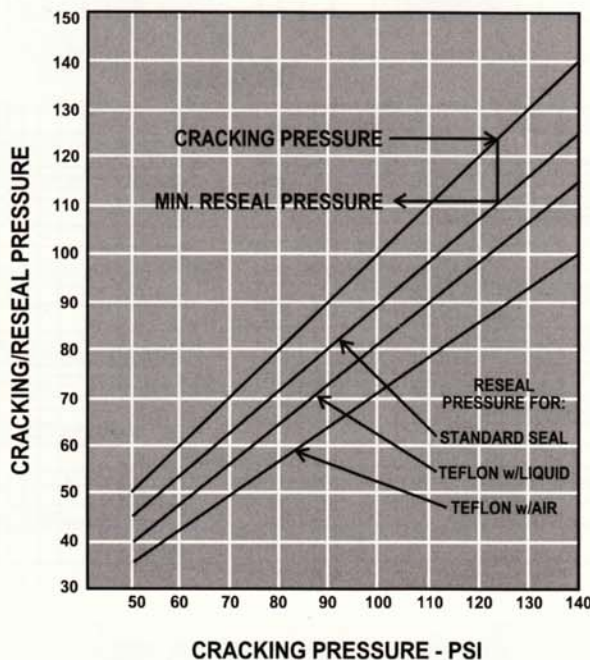
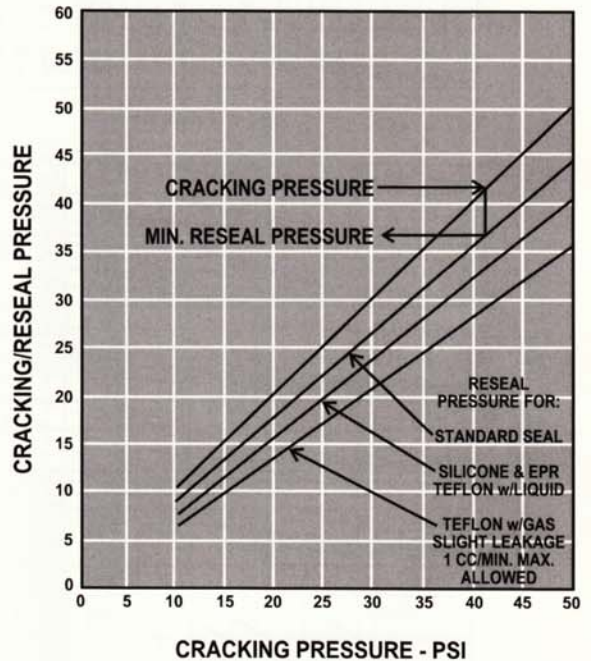
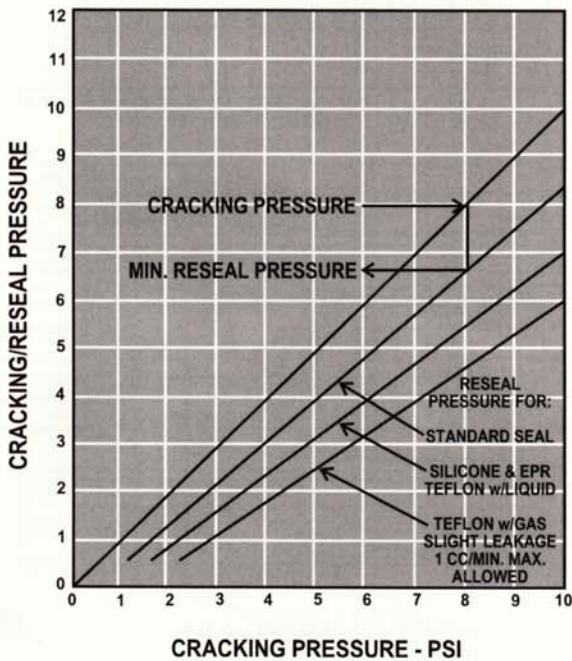
Cracking pressure on initial crack may be higher than cracking pressure tolerance due to inherent characteristics of seals.
 (Consult Factory)

LEAKAGE Ascending Pressure

Standard Seals 0 to 95% of C.P.
 Silicone (524) & EPR (562) 0 to 80% of cracking pressure.
 Teflon® (520) 1 cc/min. to reseal pressure.
 10 cc/min. max. with gas from reseal to cracking pressure.

LEAKAGE at Reseal Pressure

All elastomeric seals zero. Teflon® (Consult Factory).

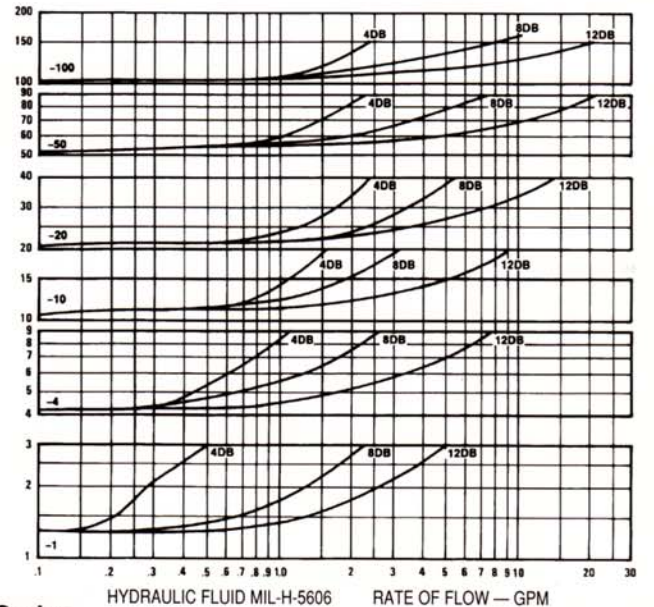
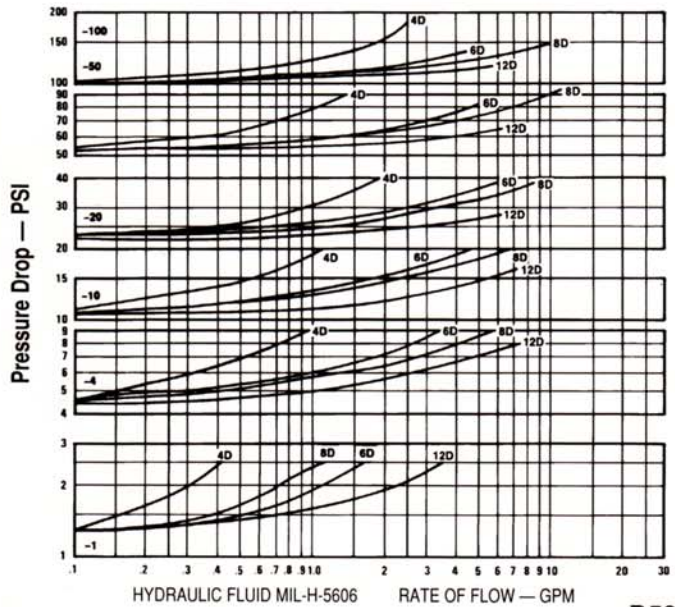
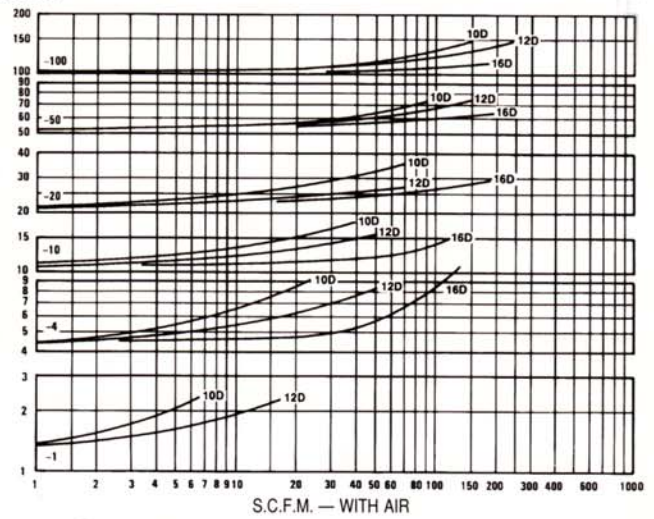
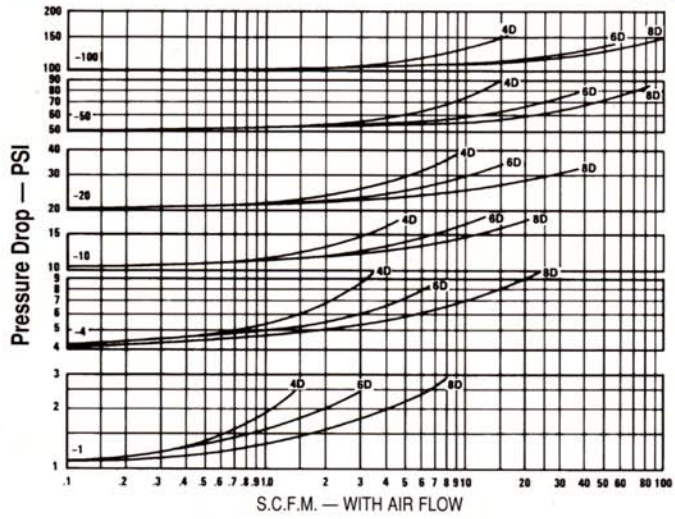


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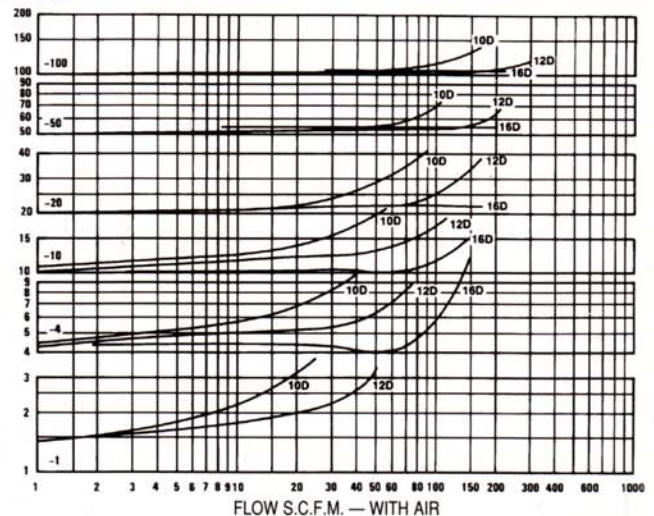
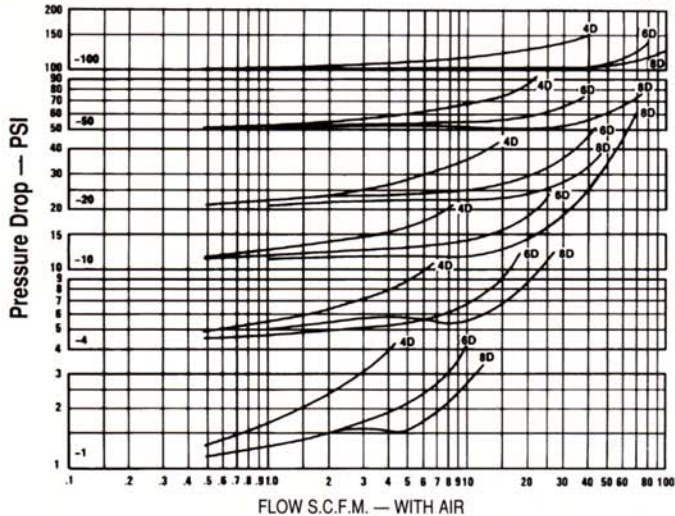
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Typical Flow Curves

500 Series



D500 Series



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