

# 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

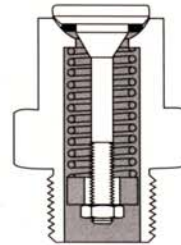
#### Pressure Ratings

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

#### Temperature Range

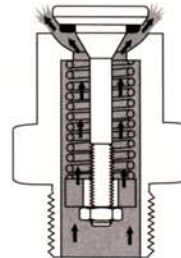
- 320°F to +400°F; -196°C to +204°C
- Based on O-Ring Material, See Page 2

### How It Works



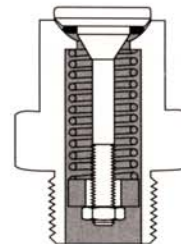
#### CLOSED

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.**

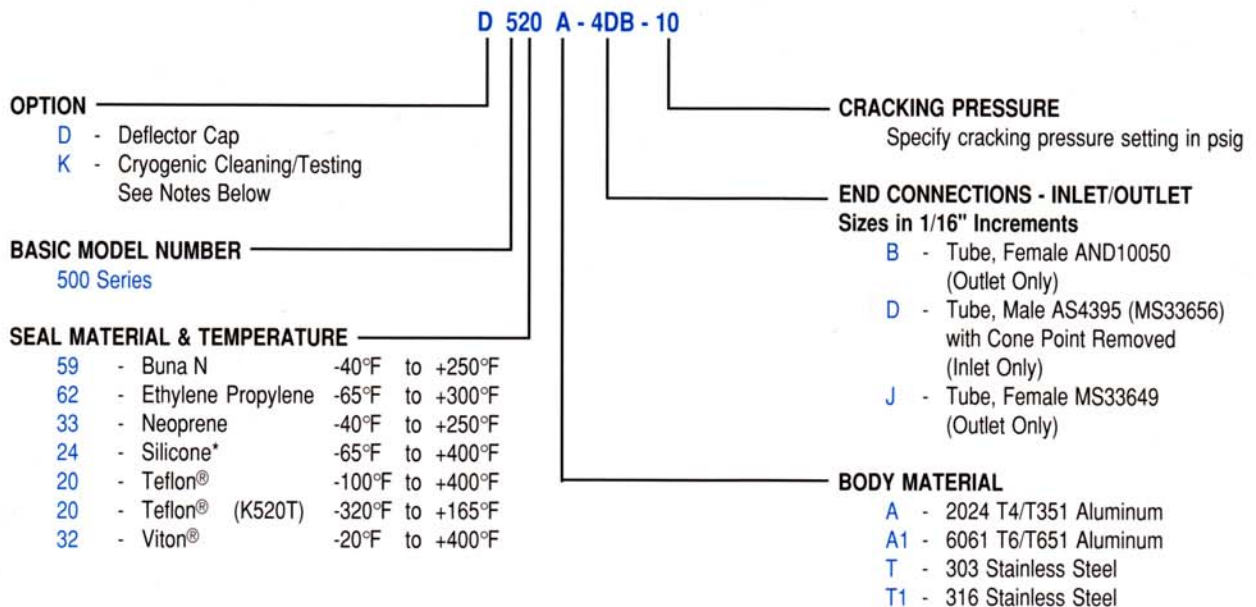
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.5 - 150 PSI

## How To Order



**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.

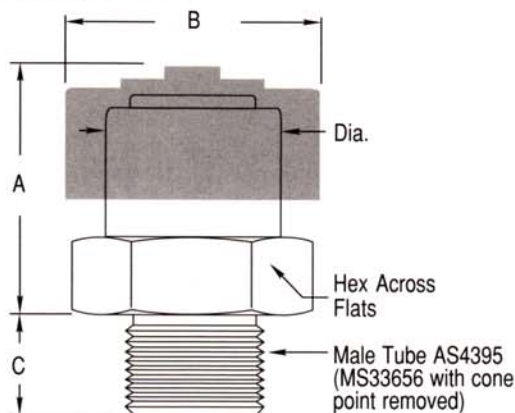
\* Not available over 74.9 PSI

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

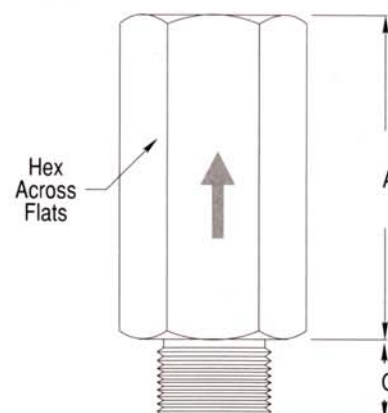
**VENT TO ATMOSPHERE**



**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%

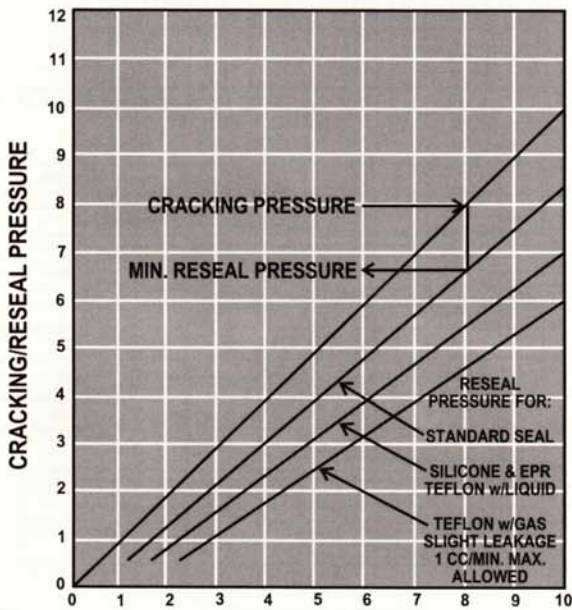
Cracking pressure on initial crack may be higher than cracking pressure tolerance due to inherent characteristics of seals.  
 (Consult Factory)

#### LEAKAGE Ascending Pressure

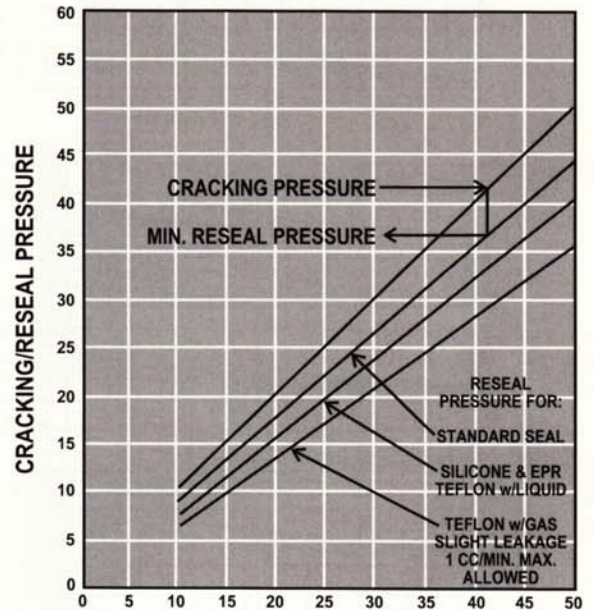
Standard Seals ..... 0 to 95% of C.P.  
 Silicone (524) & EPR (562) ..... 0 to 80% of cracking pressure.  
 Teflon® (520) ..... 1 cc/min. to reseal pressure.  
 10 cc/min. max. with gas from reseal to cracking pressure.

#### LEAKAGE at Reseal Pressure

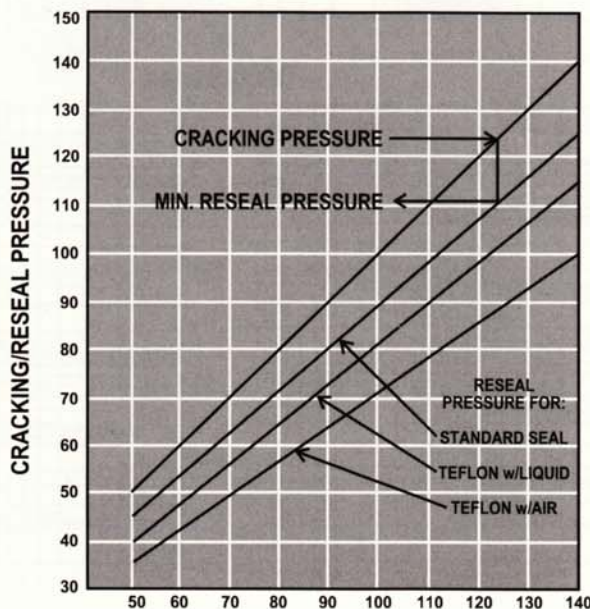
All elastomeric seals zero. Teflon® (Consult Factory).



CRACKING PRESSURE - PSI



CRACKING PRESSURE - PSI



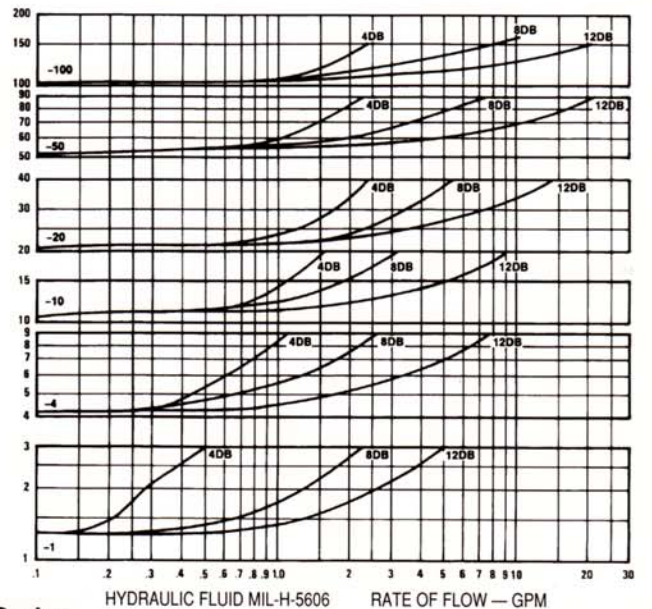
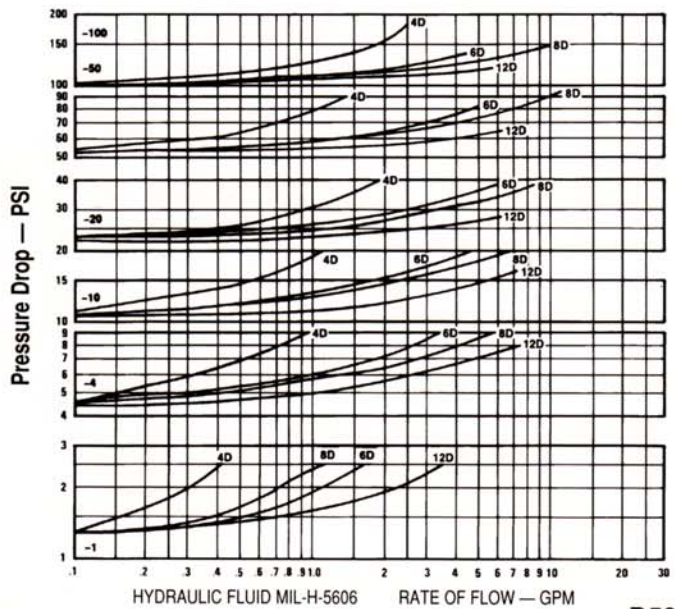
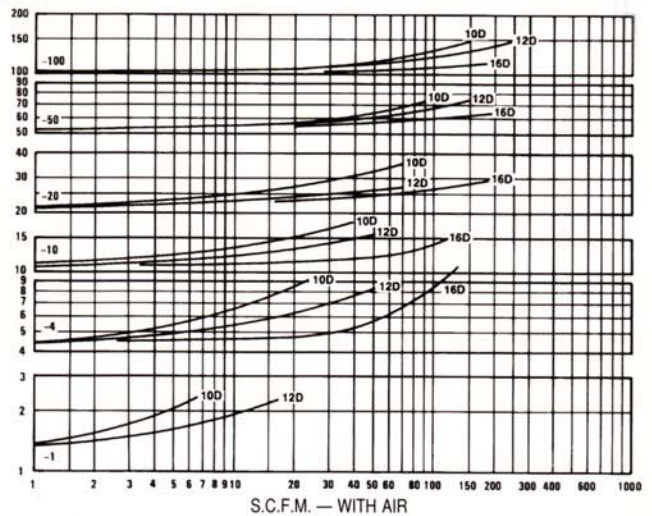
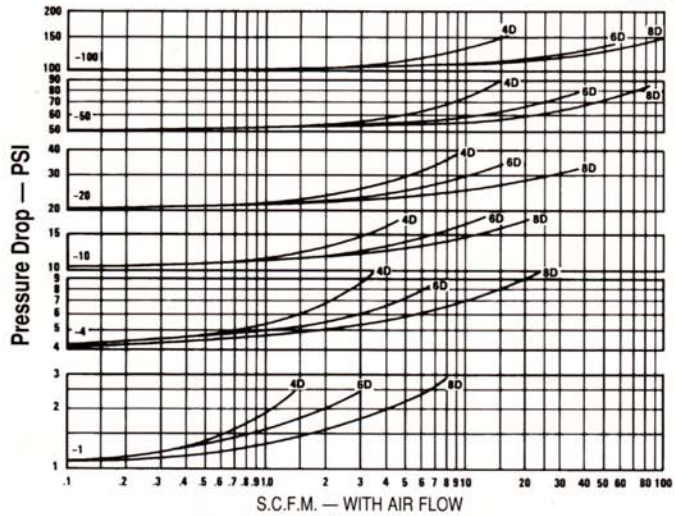
CRACKING PRESSURE - PSI

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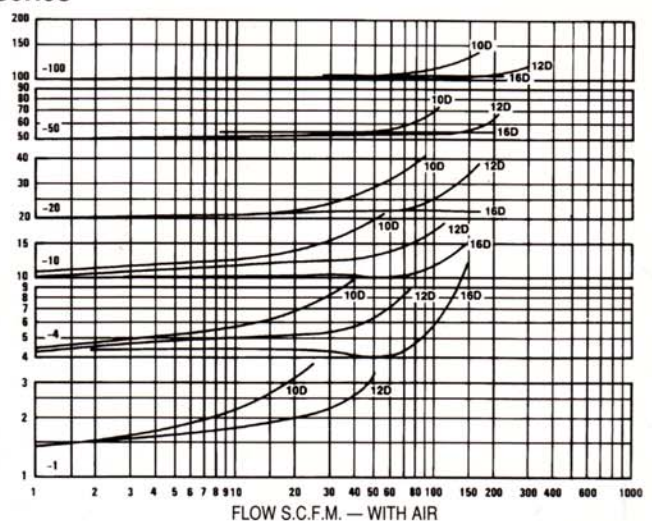
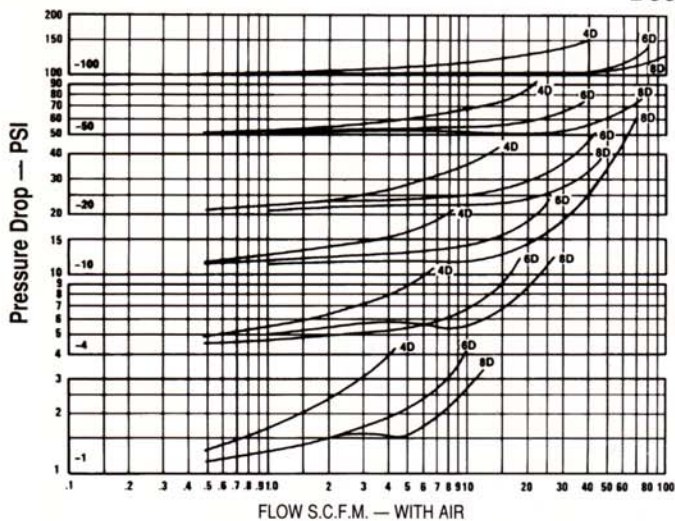
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## Typical Flow Curves

### 500 Series



### D500 Series



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