CIRCLE SEAL CONTROLS, INC.

2300 Series

0 to 10000 psig Check Valve

Features

- Designed for high pressure service
- Resilient o-ring
- Single piece design

Benefits

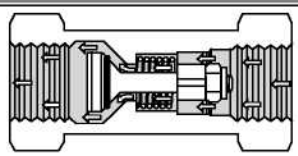
- Less susceptible to contamination damage
- Zero leakage at normal back pressure
- Automatic compensation for wear
- Cushioned, quiet closing

Technical Data

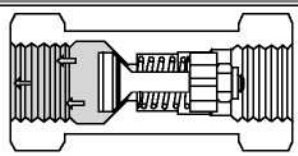
Body Construction Materials	Aluminum, brass, 303 stainless steel, or 17-4 PH stainless steel
O-ring Materials	Buna N, ethylene propylene, neoprene, Teflon® and Viton®
Operating Pressure	• Aluminum: 0 to 5000 psig (345 bar) *(for temperatures under 250° F)* • Brass: 0 to 5000 psig (345 bar) • 303 stainless steel: 0 to 7500 psig (517 bar) • 17-4 PH stainless steel: 0 to 10000 psig (690 bar)
Proof Pressure	• Aluminum: 7500 psig (517 bar) • Brass: 7500 psig (517 bar) • 303 stainless steel: 11,250 psig (776 bar) • 17-4 PH stainless steel: 15000 psig (1,034 bar)
Rated Burst Pressure	• Aluminum: 12500 psig (862 bar) • Brass: 12500 psig (862 bar) • 303 stainless steel: 18,750 psig (1,293 bar) • 17-4 PH stainless steel: 25000 psig (1,724 bar)
Temperature Range	–100° F to +400° F (–73° C to +204° C) *Based on o-ring & body material, see "How to Order"*
Connection Sizes	⅛" to 1"

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

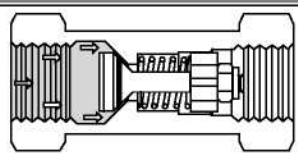
How it Works



Open
Flow passes smoothly over poppet head with minimum turbulence.



Closing
O-ring automatically establishes line of contact with conical seat to cushion closing and insure perfect sealing.



Closed
O-ring only seals. Full pressure is carried by metal-to-metal seat. Increasing pressure increases sealing efficiency.

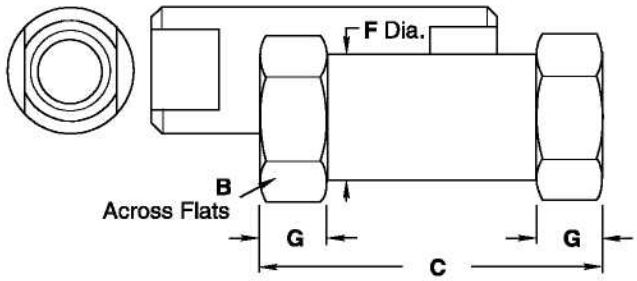
check valves

2300 Series

End Connection & Dimensions (Inches)

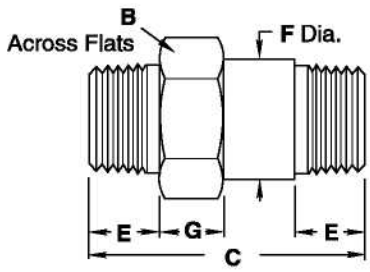
–PP: Female / Female Pipe

Dash No.	Pipe Size	B Hex	C	F	G
–1PP	⅛″	0.625	1.50	0.59	0.31
–2PP	¼″	0.813	2.00	0.77	0.41
–3PP	⅜″	1.000	2.35	0.95	0.50
–4PP	½″	1.250	2.89	1.19	0.56
–6PP	¾″	1.500	3.30	1.43	0.69



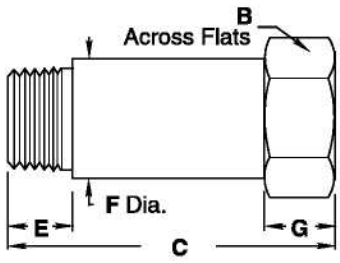
–MM: Male / Male Pipe

Dash No.	Pipe Size	B Hex	C	E	F Dia.	G
–2MM	¼″	0.625	1.82	0.60	0.59	0.31
–3MM	⅜″	0.813	2.21	0.61	0.77	0.41
–4MM	½″	1.000	2.75	0.79	0.95	0.50
–6MM	¾″	1.250	3.03	0.80	1.19	0.56
–8MM	1″	1.500	3.67	0.99	1.43	0.69



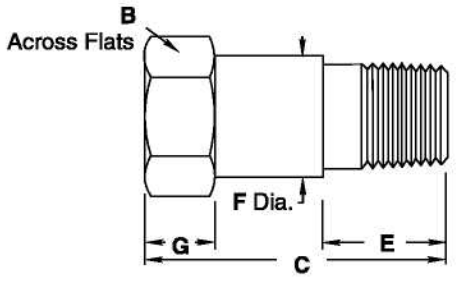
–MP: Male / Female Pipe

Dash No.	Pipe Size	B Hex	C	E	F Dia.	G
–1MP	⅛″	0.625	1.46	0.40	0.59	0.31
–2MP	¼″	0.813	1.67	0.60	0.77	0.41
–3MP	⅜″	1.000	2.07	0.61	0.95	0.50
–4MP	½″	1.250	2.56	0.79	1.19	0.56
–6MP	¾″	1.500	2.88	0.80	1.43	0.69



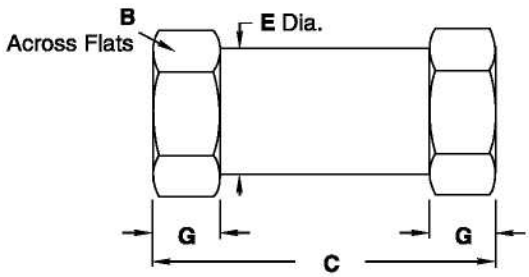
2300 Series

End Connection & Dimensions (Inches)



–PM: Female / Male Pipe

Dash No.	Pipe Size	B Hex	C	E	F Dia.	G
–2PM	¼″	0.813	1.93	0.60	0.77	0.41
–3PM	⅜″	1.000	2.26	0.61	0.95	0.50
–4PM	½″	1.250	2.89	0.79	1.19	0.56



–BB: Female / Female Tube

Dash No.	Tube Size	B Hex	C	E Dia.	G
–4BB	¼″	0.688	2.00	0.66	0.24
–6BB	⅜″	0.813	2.40	0.77	0.41
–8BB	½″	1.250	3.34	1.19	0.56
–10BB	⅝″	1.250	3.53	1.19	0.56
–12BB	¾″	1.500	4.15	1.43	0.69

2300 Series

How to Order

23 49 R – 2 PP – 7

O-RING MATERIAL, TEMPERATURE & STANDARD CRACKING RANGE

- **62** EPR, –65° F to +300° F, 0.5–1.5 psig
- **49** Buna N, –65° F to +250° F, 2–5 psig
- **59** Buna N, –65° F to +275° F, 0.5–1.5 psig
- **33** Neoprene, –40° F to +240° F, 2–5 psig
- **20** Teflon®, –100° F to +400° F, 5 psig
- **32** Viton®, –20° F to +400° F, 0.5–1.5 psig

BODY MATERIAL

- **A** 2024–T4/T351 aluminum†
- **B** Brass†
- **R** 17-4 PH stainless steel
- **T** 303 stainless steel

CRACKING PRESSURE

Call out dash number if not standard*

- **7** 7 psig

CONNECTIONS

- **P** Female pipe, NPT
- **M** Male pipe, NPT
- **B** Female tube, AND10050
- **S** British taper, male pipe
- **X** British taper, female pipe

CONNECTION SIZE

Pipe sizes in ⅛″ increments
Tube sizes in 1⁄16″ increments

* *Standard based on seal material*

† *For PED applications, brass bodies are limited to a maximum temperature of +100° F (+38° C), aluminum bodies are limited to a maximum temperature of +200° F (+93° C)*

Note: Vacuum service may require special lubricants.
AND10050 connections not normally recommended for 10000 psi service unless special fitting seals are used.

Please consult Circle Seal Controls or your local distributor for information on special connections, o-rings, operating pressures and temperature ranges.

Leakage

2362, 2332, 2359 Series	zero @ 1 psig to proof
2333, 2349 Series	zero @ 3 psig to proof
2320 Series	zero @ 75 psig to proof

For cracking pressures less than standard, consult factory for leakage rates

Special Cracking Pressures

Valves with special springs can be furnished to order

- Minimum cracking pressure available: 0.5 psig
- Maximum cracking pressure available: 30 psig

When ordering a cracking pressure less than the maximum indicated for a specific o-ring, indicate the exact maximum cracking pressure in the part number (i.e. 2349R–2PP–3). If higher cracking pressure than the maximum shown is desired, cracking pressure tolerance is ±20%.

Flow Rates

Valve size						
	Tube	–4BB	–6BB	—	–8BB, –10BB	–12BB
	Pipe	–1PP	–2PP	–3PP	–4PP	–6PP
Cv (Maximum)		0.31	0.76	1.78	2.82	5.11

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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