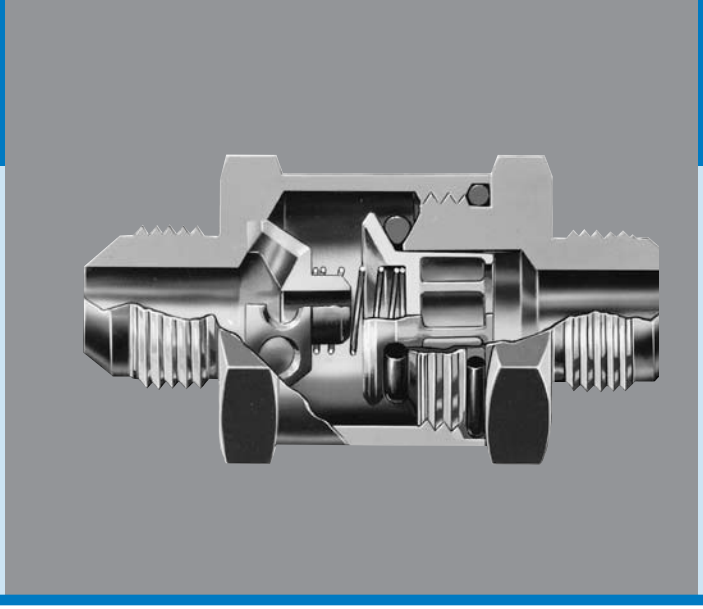


800 SERIES

0 to 600 PSI

LOW PRESSURE CHECK VALVES

Features

- Zero Leakage At Any Pressure
- Low Cracking Pressure
- Excellent Flow Characteristics
- 100% Reliability
- Compatible With Most Fluids
- Easily Installed

Technical Data

Materials of Construction

Body – 2024-T4/T351 or 6061-T6/T651 Aluminum, 303 or 316 Stainless Steel

O-Rings – Buna N, Neoprene, Silicone, or Viton®

Pressure Ratings

Operating Pressure

Tube Connections – 0 to 600 PSI (41 BAR)
Hose Connections – 0 to 200 PSI (14 BAR)

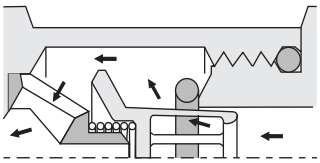
Burst Pressure

Tube Connections – Over 1,500 PSI (103 BAR)
Hose Connections – Over 500 PSI (34 BAR)

Cracking Pressure

8″ H_2O Maximum Standard
Minimum 2″ H_2O, Maximum 56″ H_2O Special

How It Works

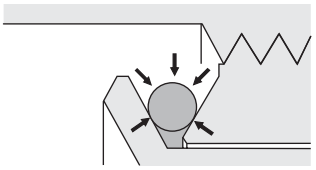


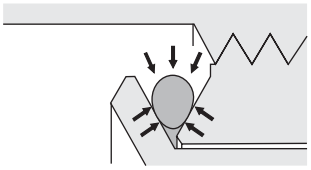
OPEN

Full flow passages and streamlined internal configuration provide pressure drop comparable to aircraft swing check valves.

CLOSING

The floating O-ring automatically establishes line contact with the conical metal surfaces of the poppet and the seat to cushion closing and insure perfect sealing at zero pressure differential.





CLOSED

The conical sealing faces exert light tension on the I.D. of the O-ring to insure smooth sealing surface; pressure on the O.D. of the O-ring increases sealing efficiency as pressure increases. The O-ring automatically adjusts for swell in aircraft fluids.

Temperature Range

–80° F to +450° F; –62° C to +232° C
Based On O-Ring Material, See Page 2

Valve Sizes

3/16″ to 1-1/2″

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800 SERIES
0 to 600 PSI

How To Order

8 69 A - 4TT (L) - 3

BASIC MODEL NUMBER
800 Series

O-RING MATERIAL & TEMPERATURE RANGE

16	-	Buna N	–65° F to +275° F
59	-	Buna N	–65° F to +275° F
69	-	Buna N	–65° F to +180° F
64	-	Fluorosilicone	–80° F to +350° F
53	-	Neoprene	–40° F to +300° F
24	-	Silicone	–70° F to +450° F
32	-	Viton®	–20° F to +400° F

MATERIAL

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

CRACKING PRESSURE*
8″ H_2O Standard
Specify 2″ H_2O Min. to 56″ H_2O Max.

SPECIAL CHARACTERISTIC
(L) - Lockwire

CONNECTION
Sizes in 1/16″ Increments

T	-	Male Tube, AS4395 (MS33656)
B	-	Female Tube, AND10050
D	-	Male Tube, AS4395 (MS33656) with Cone Point Removed
E	-	Flareless Male Tube, MS33514
H	-	Hose, AND10058 MS33658
J	-	Female Tube, MS33649
U	-	Bulkhead, MS33657

* NOTE: For cracking pressure less than 8″ H_2O, cracking pressure tolerance is Max.; for higher cracking pressure, cracking pressure tolerance is ±10% with gas, or +15 -40% with jet fuels. Cracking pressures over 56″ H_2O should not be specified without consulting factory.

The poppet and end piece are hard anodized as standard.

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

Viton® is a registered trademark of DuPont.

Operating Characteristics

Dead Tight Sealing at Any Pressure — Will hold air or fuel pressure indefinitely with zero leakage – even at back pressure as low as 1″ H_2O.

Low Cracking Pressure — 8″ H_2O maximum on standard production models of 800 Series check valves. Lower cracking pressures available on customer's special order.

Excellent Flow Characteristics — Easy flow path and full ports offer minimum restriction to flow. Pressure drops are comparable to flapper (swing check) type valves.

100% Reliability — O-Ring seal automatically establishes perfect line-of-contact sealing; floating O-Ring cushions closing shock, preventing wear or damage to metal parts of valve. Not affected by normal "G" loads or vibration.

Adaptable To Most Fluids — Can be supplied for use with any of the fluids and gases used in aircraft, missiles, and rockets. Normal O-Ring swell is compensated automatically by the natural designed-in positioning of metal parts.

Construction Details

Circle Seal 800 Series Check Valves are manufactured with two-piece bodies, which are sealed with a synthetic O-Ring seal to prevent external leakage.

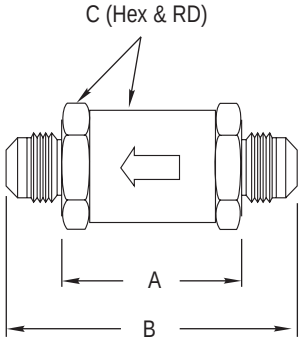
The 8800 Series is identical to the 800 Series except that body length and weights are reduced.

The 8500 Series is identical to the 8800 Series except that the body gasket is 1100-H14 Aluminum for use in systems with high temperatures or with liquids and gases which would cause excessive swell or shrinkage to an elastomeric compound. The 8500 Series is recommended where Teflon® is required as the O-ring material.

End Connections, Dimensions & Weights

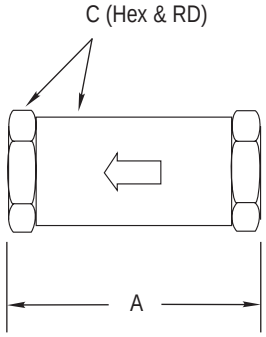
MALE TUBE INLET & OUTLET AS4395 (MS 33656)

Dash No.	Tube Size	A ±0.30	B (ref.)	C +.005 -.015	Weights (lbs.)
3TT	3/16″	1.00	1.96	.75	.04
4TT	1/4″	1.78	2.87	1.00	.12
6TT	3/8″	1.67	2.78	1.00	.11
8TT	1/2″	1.56	2.88	1.25	.15
10TT	5/8″	2.42	3.94	1.25	.30
12TT	3/4″	2.27	4.00	1.50	.31
16TT	1″	2.96	4.78	1.87	.58
20TT	1-1/4″	2.96	4.87	2.50	.97
24TT	1-1/2″	3.05	5.22	2.75	1.02



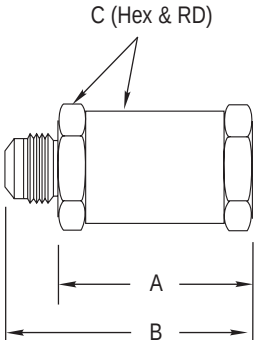
FEMALE TUBE INLET & OUTLET (AND10050)

Dash No.	Tube Size	A ±0.30	B (ref.)	C +.005 -.015	Weights (lbs.)
4BB	1/4″	2.03	—	1.00	.12
6BB	3/8″	2.03	—	1.00	.11
8BB	1/2″	2.60	—	1.25	.15
12BB	3/4″	3.50	—	1.50	.32
16BB	1″	3.92	—	1.87	.58



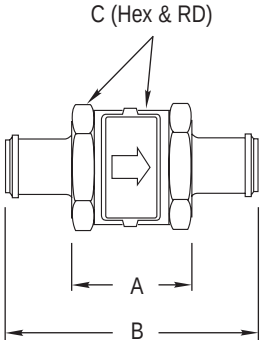
MALE TUBE INLET (MS33656)
FEMALE TUBE OUTLET (AND10050)

Dash No.	Tube Size	A ±0.30	B (ref.)	C +.005 -.015	Weights (lbs.)
4TB	1/4″	1.73	2.28	1.00	.11
6TB	3/8″	1.73	2.29	1.00	.10
8TB	1/2″	2.06	2.72	1.25	.17
12TB	3/4″	2.72	3.58	1.50	.29
16TB	1″	2.93	3.84	1.87	.64



FEMALE TUBE INLET (AND10050)
MALE TUBE OUTLET AS4395 (MS33656)

Dash No.	Tube Size	A ±0.30	B (ref.)	C +.005 -.015	Weights (lbs.)
4BT	1/4″	2.09	2.64	1.00	.13
6BT	3/8″	1.98	2.53	1.00	.12
8BT	1/2″	2.10	2.76	1.25	.17
12BT	3/4″	3.05	3.91	1.50	.34
16BT	1″	3.96	4.87	1.87	.47

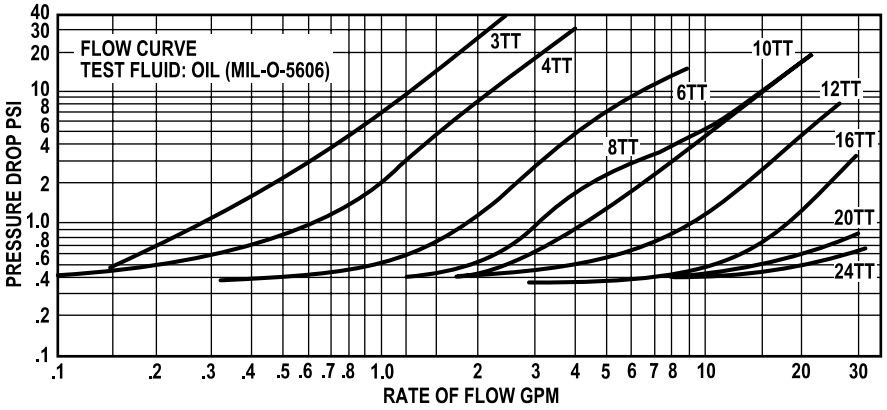


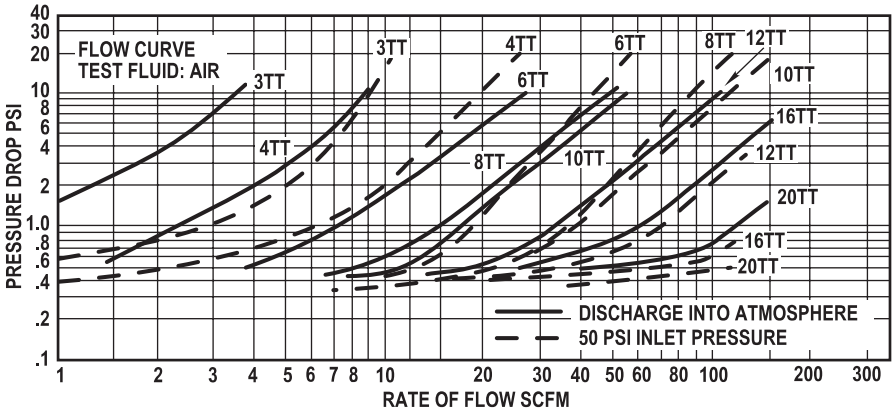
HOSE CONNECTIONS INLET & OUTLET (AND10058)

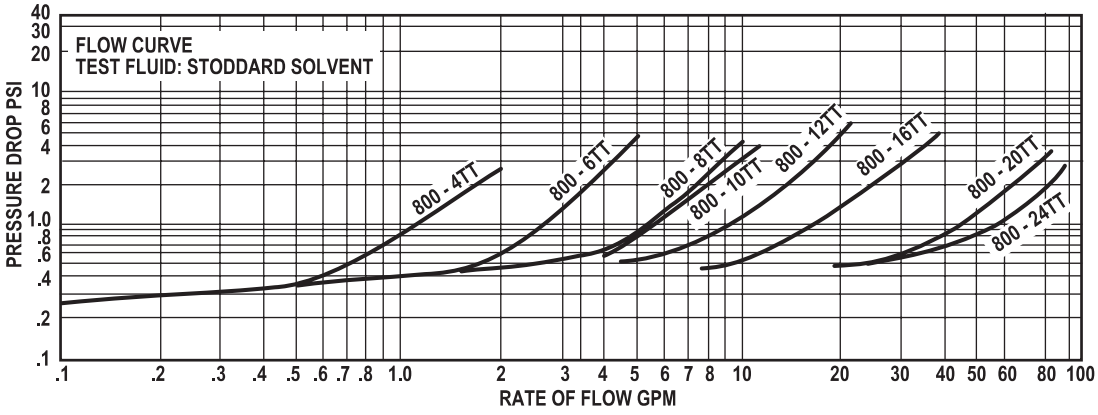
Dash No.	Tube Size	A ±0.30	B (ref.)	C +.005 -.015	Weights (lbs.)
24HH	1-1/2″	2.09	2.64	1.00	.13

Dimensions in inches.

Flow Curves







Note: Pressure drop curves are based on approximately 8″ H_2O cracking pressure. Where lower (special) cracking pressure is used, pressure drop will be lower in the low flow rate range.

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