

3500/6000 PSI Flow Meters

For Water-based Fluids (Water/Oil Emulsions)

- Direct reading
- Install in any position
- 360° rotatable guard/scale
- Easier-to-read linear scale
- No flow straighteners or special piping required
- Relatively insensitive to shock and vibration
- Good viscosity stability
- Temperature up to 240 °F
- Accuracy $\pm 2\%$ full scale
- Repeatability $\pm 1\%$
- Special scales available
- Calibrated for 1.0 S.G.
- For 80/20 and other water/oil emulsions



SPECIFICATIONS:

MATERIALS:

2024 - T351 Anodized aluminum body, piston and cone

C360 Brass body, piston and cone[®]

T303 Stainless body, 2024 - T351 Anodized aluminum piston and cone

COMMON PARTS:

Spider Plate: T316 SS

Spring: T302 SS

Fasteners: T303 SS

Pressure Seals: Viton[®]

Guard: Polycarbonate

Retaining Ring: T316 SS

Retaining Spring: T316 SS

Indicator and Internal Magnet: PPS / Ceramic

Guard Seal / Bumper: Buna N

Scale Support: 6063 - T6 Aluminum

End Caps: Nylon ST

THREADS: SAE J1926/1, NPTF ANSI B2.2, BSPP ISO1179, **Code 61** and **Code 62:** SAE J518

TEMPERATURE RANGE: -20 to +240 °F (-29 to +116 °C) for higher temp. meters, see page 31.

PRESSURE RATING:

Aluminum / Brass Operating: 3,500 psi/241 bar max. (800 psi/55 bar max. for 3" series) with a 3:1 safety factor.

For High Cycle Applications: See page 7

Stainless Steel Operating: 6,000 psi/414 bar max. (5,000 psi/345 bar max. for ¾" to 1½" series and 4,000 psi/276 bar max. for code 62 flange) with a 3:1 safety factor.

For High Cycle Applications: See page 7

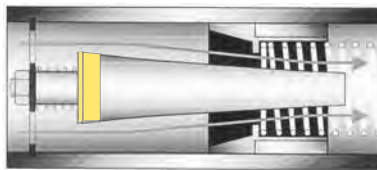
PRESSURE DROP: See Ordering Information Table, page 26.

For detailed differential pressure charts, see page 63.

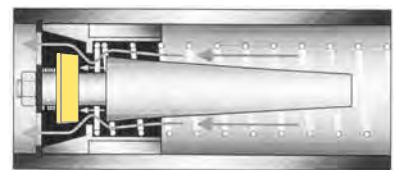
ACCURACY: $\pm 2\%$ of full scale, $\pm 7\%$ of full scale for ¼" meters **REPEATABILITY:** $\pm 1\%$

REVERSE FLOW BY-PASS OPTION: Features a two-piece cone that responds to flow in the primary flow direction in the same manner as the standard design.

Flow in the reverse direction causes the lower cone shuttle to shift, moving it below the sharp-edged piston orifice. This shift creates a gap which allows the fluid to flow freely in the reverse direction.



Normal Flow Direction



Reverse Flow By-Pass

DIMENSIONS:

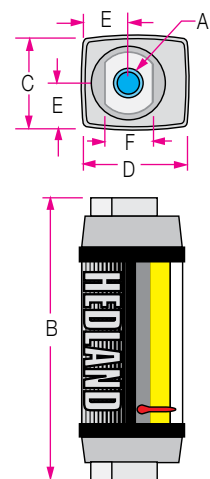
A	B	C	D	E	F
NOMINAL PORT SIZE	LENGTH in (mm)	WIDTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	FLATS in (mm)
¼ (SAE 6)	4.8 (122)	1.68 (43)	1.90 (48)	.84 (21)	.88 (22)
½ (SAE 10)	6.6 (168)	2.07 (53)	2.40 (61)	1.04 (26)	1.25 (32)
¾ (SAE 12)	7.2 (183)	2.48 (63)	2.85 (72)	1.24 (32)	1.50 (38)
1 (SAE 16)	7.2 (183)	2.48 (63)	2.85 (72)	1.24 (32)	1.75 (44)
1¼ (SAE 20)	12.2 (310)	4.12 (105)	4.72 (120)	2.06 (52)	2.75 (70)
1½ (SAE 24)	12.2 (310)	4.12 (105)	4.72 (120)	2.06 (52)	2.75 (70)

NOTE: Dimensions for 1½" Code 62, 3" and 3" Code 61 can be found on page 78.

Weights for all sizes can be found on page 79.

①3 inch models have Celcon[®] piston/piston ring

Celcon is a registered trademark of Hoechst Celanese Corp. Viton is a registered trademark of DuPont Dow Elastomers



3500/6000 PSI Flow Meters

For Water-based Fluids (Water/Oil Emulsions)

ORDERING INFORMATION:

NOMINAL PORT SIZE ^②	FLOW RANGE		PRESSURE DROP			MODEL NUMBER (see example below)			MATERIAL			OPTIONS
	GPM	LPM	50% FLOW PSI (BAR)	100% FLOW PSI (BAR)	REVERSE 100% FLOW PSI (BAR)	SAE	NPTF	BSPP ^③	ALUMINUM 3500 PSI	BRASS 3500 PSI	STAINLESS	REVERSE FLOW
¼" SAE 6	.02 - 0.2	0.1 - 0.75	3.5 (.24)	4.0 (.28)		H212 ★ - 002 - †	H213 ★ - 002 - †	H214 ★ -002 - †	A	B	S	Not Available
	.05 - 0.5	0.2 - 1.9	3.0 (.21)	5.0 (.35)		H212 ★ - 005 - †	H213 ★ - 005 - †	H214 ★ -005 - †				
	0.1 - 1.0	0.5 - 3.75	4.0 (.28)	9.0 (.62)		H212 ★ - 010 - †	H213 ★ - 010 - †	H214 ★ -010 - †				
	0.2 - 2.0	1 - 7.5	6.0 (.41)	13 (.90)		H212 ★ - 020 - †	H213 ★ - 020 - †	H214 ★ -020 - †				
½" SAE 10	0.1 - 1.0	0.5 - 3.75	2.0 (.14)	2.75 (.19)	5.2 (.36)	H612 ★ - 001 - †	H613 ★ - 001 - †	H614 ★ -001 - †	A	B	S	RF
	0.2 - 2.0	1 - 7.5	2.0 (.14)	3.0 (.21)	9.6 (.66)	H612 ★ - 002 - †	H613 ★ - 002 - †	H614 ★ -002 - †				
	0.5 - 5.0	2 - 19	3.0 (.21)	6.0 (.41)	4.8 (.33)	H612 ★ - 005 - †	H613 ★ - 005 - †	H614 ★ -005 - †				
	1 - 10	5 - 38	4.0 (.28)	9.5 (.66)	23.0 (1.6)	H612 ★ - 010 - †	H613 ★ - 010 - †	H614 ★ -010 - †				
	1 - 15	4 - 56	6.5 (.45)	18.5 (1.3)	55.2 (3.8)	H612 ★ - 015 - †	H613 ★ - 015 - †	H614 ★ -015 - †				
¾" SAE 12	0.2 - 2.0	1 - 7.5	1.0 (.07)	2.0 (.14)	2.9 (.20)	H712 ★ - 002 - †	H713 ★ - 002 - †	H714 ★ -002 - †	A	B	S	RF
	0.5 - 5.0	2 - 19	2.5 (.17)	3.5 (.24)	5.3 (.37)	H712 ★ - 005 - †	H713 ★ - 005 - †	H714 ★ -005 - †				
	1 - 10	5 - 38	3.5 (.24)	9.0 (.62)	8.8 (.61)	H712 ★ - 010 - †	H713 ★ - 010 - †	H714 ★ -010 - †				
	2 - 20	10 - 76	4.0 (.28)	9.0 (.62)	18.0 (1.24)	H712 ★ - 020 - †	H713 ★ - 020 - †	H714 ★ -020 - †				
	3 - 30	10 - 115	7.0 (.48)	16.5 (1.1)	45.1 (3.11)	H712 ★ - 030 - †	H713 ★ - 030 - †	H714 ★ -030 - †				
1" SAE 16	0.2 - 2.0	1 - 7.5	1.0 (.07)	2.0 (.14)	2.9 (.20)	H782 ★ - 002 - †	H783 ★ - 002 - †	H784 ★ -002 - †	A	B	S	RF
	0.5 - 5.0	2 - 19	2.5 (.17)	3.5 (.24)	5.3 (.37)	H782 ★ - 005 - †	H783 ★ - 005 - †	H784 ★ -005 - †				
	1 - 10	5 - 38	3.5 (.24)	9.0 (.62)	8.8 (.61)	H782 ★ - 010 - †	H783 ★ - 010 - †	H784 ★ -010 - †				
	2 - 20	10 - 76	4.0 (.28)	9.0 (.62)	18.0 (1.24)	H782 ★ - 020 - †	H783 ★ - 020 - †	H784 ★ -020 - †				
	3 - 30	10 - 115	7.0 (.48)	16.5 (1.1)	45.1 (3.11)	H782 ★ - 030 - †	H783 ★ - 030 - †	H784 ★ -030 - †				
	4 - 40	15 - 150	9.0 (.62)	24 (1.7)	87.5 (6.04)	H782 ★ - 040 - †	H783 ★ - 040 - †	H784 ★ -040 - †				
	5 - 50	20 - 190	12.5 (.86)	34 (2.3)	150 (10.4)	H782 ★ - 050 - †	H783 ★ - 050 - †	H784 ★ -050 - †				
1¼" SAE 20	3 - 30	10 - 110	3.0 (.21)	4.0 (.28)	4.8 (.33)	H812 ★ - 030 - †	H813 ★ - 030 - †	H814 ★ -030 - †	A	B	S	RF
	5 - 50	20 - 190	3.5 (.24)	7.0 (.48)	12.5 (.86)	H812 ★ - 050 - †	H813 ★ - 050 - †	H814 ★ -050 - †				
	10 - 75	40 - 280	5.0 (.35)	10.5 (.72)	31.9 (2.2)	H812 ★ - 075 - †	H813 ★ - 075 - †	H814 ★ -075 - †				
	10 - 100	50 - 380	6.5 (.45)	15.0 (1.0)	39.0 (2.7)	H812 ★ - 100 - †	H813 ★ - 100 - †	H814 ★ -100 - †				
	10 - 150	50 - 560	10.5 (.72)	27.5 (1.9)	110 (7.6)	H812 ★ - 150 - †	H813 ★ - 150 - †	H814 ★ -150 - †				
1½" SAE 24	3 - 30	10 - 110	3.0 (.21)	4.0 (.28)	4.8 (.33)	H882 ★ - 030 - †	H883 ★ - 030 - †	H884 ★ -030 - †	A	B	S	RF
	5 - 50	20 - 190	3.5 (.24)	7.0 (.48)	12.5 (.86)	H882 ★ - 050 - †	H883 ★ - 050 - †	H884 ★ -050 - †				
	10 - 75	40 - 280	5.0 (.35)	10.5 (.72)	31.9 (2.2)	H882 ★ - 075 - †	H883 ★ - 075 - †	H884 ★ -075 - †				
	10 - 100	50 - 380	6.5 (.45)	15.0 (1.0)	39.0 (2.7)	H882 ★ - 100 - †	H883 ★ - 100 - †	H884 ★ -100 - †				
	10 - 150	50 - 560	10.5 (.72)	27.5 (1.9)	110 (7.6)	H882 ★ - 150 - †	H883 ★ - 150 - †	H884 ★ -150 - †				
1½" Code 62	3 - 30	10 - 110	3.0 (.21)	4.0 (.28)	4.8 (.33)	H818 ★ - 030 - †			A	B	S	RF
	5 - 50	20 - 190	3.5 (.24)	7.0 (.48)	12.5 (.86)	H818 ★ - 050 - †						
	10 - 75	40 - 280	5.0 (.35)	10.5 (.72)	31.9 (2.2)	H818 ★ - 075 - †						
	10 - 100	50 - 380	6.5 (.45)	15.0 (1.0)	39.0 (2.7)	H818 ★ - 100 - †						
	10 - 150	50 - 560	10.5 (.72)	27.5 (1.9)	110 (7.6)	H818 ★ - 150 - †						
3"	20 - 180	50 - 650	11 (.76)	17 (1.1)		Not Available	H913 ★ - 180	H914 ★ -180	800 PSI		Not Available	
	20 - 275	100 - 1000	11 (.76)	18 (1.2)			H913 ★ - 275	H914 ★ -275	A	B		
3" Code 61	20 - 180	50 - 650	11 (.76)	17 (1.1)		H919 ★ - 180 H919 ★ - 275			800 PSI		Not Available	
	20 - 275	100 - 1000	11 (.76)	18 (1.2)			A	B				

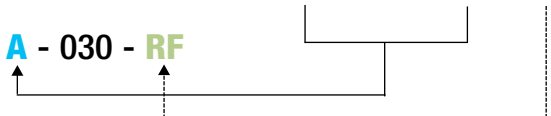
NOTE: **RF** option is not available
with standard brass flow meters.

② Fractional sizes apply to NPTF and BSPP.

③ 3 inch models have BSPT (BS21) threads

⚠ CAUTION: For emulsions with less than 20% oil, factory recommends the Brass body meter.

(example) H 713 **A** - 030 - **RF**



3500/6000 PSI Test Kits

For Water-based Fluids (Water/Oil Emulsions)

- Direct reading
- Install in any position
- 360° rotatable guard/scale
- Easier-to-read linear scale
- No flow straighteners or special piping required
- Relatively insensitive to shock and vibration
- Good viscosity stability
- Temperature up to 240 °F
- Accuracy $\pm 2\%$ full scale
- Repeatability $\pm 1\%$
- Special scales available
- Calibrated for 1.0 S.G.
- For 80/20 and other water/oil emulsions

SPECIFICATIONS:

MATERIALS:

2024 - T351 Anodized aluminum body, piston and cone

C360 Brass body, piston and cone

T303 Stainless body, 2024 - T351 Anodized aluminum piston and cone

COMMON PARTS:

Spider Plate: T316 SS

Spring: T302 SS

Fasteners: T303 SS

Pressure Seals: Viton®

Guard: Polycarbonate

Retaining Ring: T316 SS

Retaining Spring: T316 SS

Indicator and Internal Magnet: PPS / Ceramic

Guard Seal / Bumper: Buna N

Scale Support: 6063 - T6 Aluminum

End Caps: Nylon ST

THREADS: SAE J1926/1, NPTF ANSI B2.2, BSPP ISO1179

TEMPERATURE RANGE: -20 to +240 °F (-29 to +116 °C)

PRESSURE RATING:

Aluminum / Brass Operating: 3,500 psi/241 bar max. with a 3:1 safety factor.

For High Cycle Applications: See page 7

Stainless Steel Operating: 6,000 psi/414 bar max. (5,000 psi/345 bar max. for $\frac{3}{4}$ " series) with a 3:1 safety factor.

For High Cycle Applications: See page 7

PRESSURE DROP: See Ordering Information Table, page 28.

For detailed differential pressure charts, see page 63.

ACCURACY: $\pm 2\%$ of full scale

REPEATABILITY: $\pm 1\%$

PRESSURE GAUGE: Glycerin dampened, 0 - 3,500 psi / 0 - 240 bar pressure range available on aluminum and brass test kits.

Glycerin dampened, 0 - 6,000 psi / 0 - 400 bar pressure range available on stainless steel test kits.

LOAD VALVE: $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1" series - needle valve;

Produce ΔP up to 3,500 psi/241 bar PSID and 6,000 psi/414 bar PSID.

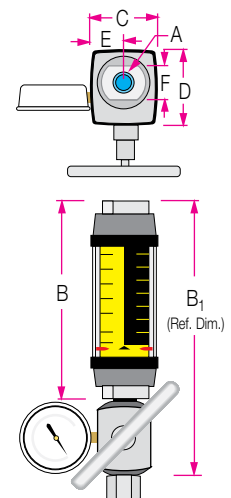


DIMENSIONS:

A	B	B ₁	C	D	E	F
NOMINAL PORT SIZE	LENGTH in (mm)	LENGTH in (mm)	WIDTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	FLATS in (mm)
$\frac{1}{2}$ (SAE 10)	6.6 (168)	10.3 (262)	2.07 (53)	2.40 (61)	1.04 (26)	1.25 (32)
$\frac{3}{4}$ (SAE 12)	7.2 (183)	11.3 (287)	2.48 (63)	2.85 (72)	1.24 (32)	1.50 (38)
1 (SAE 16)	7.2 (183)	11.3 (287)	2.48 (63)	2.85 (72)	1.24 (32)	1.75 (44)

NOTE: Weights for all sizes can be found on page 79.

SAE and BSPP Test Kits include inlet adapter.



Viton is a registered trademark of DuPont Dow Elastomers

3500/6000 PSI Test Kits

For Water-based Fluids (Water/Oil Emulsions)

ORDERING INFORMATION:

NOMINAL PORT SIZE ^①	FLOW RANGE		PRESSURE DROP			MODEL NUMBER (see example below)			MATERIAL			OPTIONS
	GPM	LPM	50% FLOW PSI (BAR)	100% FLOW PSI (BAR)	REVERSE 100% FLOW PSI (BAR)	SAE	NPTF	BSPP	ALUMINUM 3500 PSI	BRASS 3500 PSI	STAINLESS	REVERSE FLOW
½" SAE 10	0.1 - 1.0	0.5 - 3.75	3.0 (.21)	4.75 (.33)	7.2 (.50)	H612 * - 001 - TK	H613 * - 001 - TK	H614 * - 001 - TK	A	B	S	RT
	0.2 - 2.0	1 - 7.5	5.0 (.34)	9.0 (.62)	15.6 (1.1)	H612 * - 002 - TK	H613 * - 002 - TK	H614 * - 002 - TK				
	0.5 - 5.0	2 - 19	10.0 (.69)	26.0 (1.8)	24.8 (1.7)	H612 * - 005 - TK	H613 * - 005 - TK	H614 * - 005 - TK				
	1 - 10	5 - 38	24.0 (1.7)	71.5 (4.9)	85.0 (5.9)	H612 * - 010 - TK	H613 * - 010 - TK	H614 * - 010 - TK				
	1 - 15	4 - 56	39.0 (2.7)	155 (10.7)	210 (14.5)	H612 * - 015 - TK	H613 * - 015 - TK	H614 * - 015 - TK				
¾" SAE 12	0.2 - 2.0	1 - 7.5	1.5 (.10)	3.0 (.21)	3.9 (.27)	H712 * - 002 - TK	H713 * - 002 - TK	H714 * - 002 - TK	A	B	S	RT
	0.5 - 5.0	2 - 19	4.0 (.28)	6.5 (.45)	8.3 (.57)	H712 * - 005 - TK	H713 * - 005 - TK	H714 * - 005 - TK				
	1 - 10	5 - 38	6.5 (.45)	16.0 (1.1)	15.8 (1.1)	H712 * - 010 - TK	H713 * - 010 - TK	H714 * - 010 - TK				
	2 - 20	10 - 76	11.0 (.76)	26.0 (1.8)	35.0 (2.4)	H712 * - 020 - TK	H713 * - 020 - TK	H714 * - 020 - TK				
	3 - 30	10 - 115	18.0 (1.2)	47.5 (3.3)	76.1 (5.2)	H712 * - 030 - TK	H713 * - 030 - TK	H714 * - 030 - TK				
1" SAE 16	0.2 - 2.0	1 - 7.5	1.5 (.10)	3.0 (.21)	3.9 (.27)	H782 * - 002 - TK	H783 * - 002 - TK	H784 * - 002 - TK	A	B	S	RT
	0.5 - 5.0	2 - 19	4.0 (.28)	6.5 (.45)	8.3 (.57)	H782 * - 005 - TK	H783 * - 005 - TK	H784 * - 005 - TK				
	1 - 10	5 - 38	6.5 (.45)	16.0 (1.1)	15.8 (1.1)	H782 * - 010 - TK	H783 * - 010 - TK	H784 * - 010 - TK				
	2 - 20	10 - 76	11.0 (.76)	26.0 (1.8)	35.0 (2.4)	H782 * - 020 - TK	H783 * - 020 - TK	H784 * - 020 - TK				
	3 - 30	10 - 115	18.0 (1.2)	47.5 (3.3)	76.1 (5.2)	H782 * - 030 - TK	H783 * - 030 - TK	H784 * - 030 - TK				
	4 - 40	15 - 150	26.0 (1.8)	75.0 (5.2)	139 (9.6)	H782 * - 040 - TK	H783 * - 040 - TK	H784 * - 040 - TK				
	5 - 50	20 - 190	63.5 (4.4)	114 (7.9)	230 (15.9)	H782 * - 050 - TK	H783 * - 050 - TK	H784 * - 050 - TK				

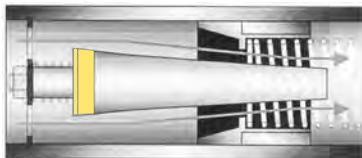
①Fractional sizes apply to NPTF and BSPP.

(example) H 713 **A** - 030 - **RT**

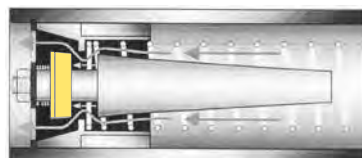
NOTE: TK suffix represents standard test kit configuration. For reverse flow by-pass test kit, replace TK suffix with RT suffix.

NOTE: RT option is not available with standard brass flow meters.

REVERSE FLOW BY-PASS OPTION: Features a two-piece cone that responds to flow in the primary flow direction in the same manner as the standard design. Flow in the reverse direction causes the lower cone shuttle to shift, moving it below the sharp-edged piston orifice. This shift creates a gap which allows the fluid to flow freely in the reverse direction.



Normal Flow Direction



Reverse Flow By-Pass

CAUTION: For emulsions with less than 20% oil, factory recommends the Brass body meter.

3500/5000 PSI Test Kits

For Water-based Fluids (Water/Oil Emulsions) (1-1/4" and 1-1/2")

- Direct reading
- Install in any position
- 360° rotatable guard/scale
- Easier-to-read linear scale
- No flow straighteners or special piping required
- Relatively insensitive to shock and vibration
- Good viscosity stability
- Temperature up to 240 °F
- Accuracy $\pm 2\%$ full scale
- Repeatability $\pm 1\%$
- Special scales available
- Calibrated for 1.0 S.G.
- For 80/20 and other water/oil emulsions



SPECIFICATIONS:

MATERIALS:

2024 - T351 Anodized aluminum body, piston and cone

T303 Stainless body, 2024 - T351 Anodized aluminum piston and cone

COMMON PARTS:	Retaining Ring: T316 SS
Spider Plate: T316 SS	Retaining Spring: T316 SS
Spring: T302 SS	Indicator and Internal Magnet: PPS / Ceramic
Fasteners: T303 SS	Guard Seal / Bumper: Buna N
Pressure Seals: Viton®	Scale Support: 6063 - T6 Aluminum
Guard: Polycarbonate	End Caps: Nylon ST

THREADS: NPT

TEMPERATURE RANGE: -20 to +240 °F (-29 to +116 °C)

PRESSURE RATING:

Aluminum / Operating: 3,500 psi/241 bar max. with a 3:1 safety factor.

For High Cycle Applications: See page 7

Stainless Steel Operating: 5,000 psi/345 bar max. with a 3:1 safety factor.

For High Cycle Applications: See page 7

PRESSURE DROP: See Ordering Information Table, page 30.

For detailed differential pressure charts, see page 57.

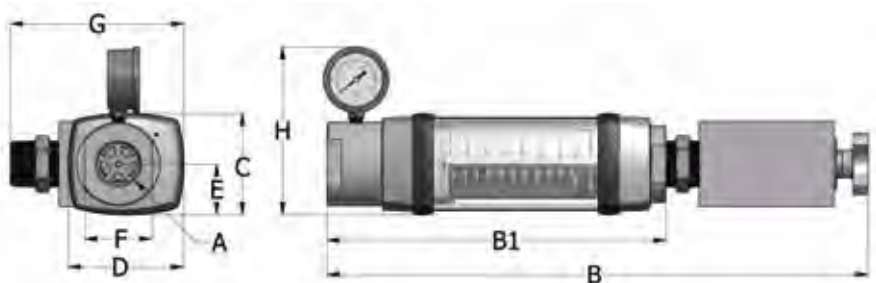
ACCURACY: $\pm 2\%$ of full scale

REPEATABILITY: $\pm 1\%$

PRESSURE GAUGE: Glycerin dampened, 0 - 3,500 psi / 0 - 240 bar pressure range available on aluminum test kits.

Glycerin dampened, 0 - 6,000 psi / 0 - 400 bar pressure range available on stainless steel test kits.

LOAD VALVE: Produce ΔP up to 3,500 psi/241 bar PSID and 5,000 psi/345 bar PSID.



DIMENSIONS:

A	B	B ₁	C	D	E	F	G	H
NOMINAL PORT SIZE	LENGTH in (mm)	LENGTH in (mm)	WIDTH in (mm)	DEPTH in (mm)	OFFSET in (mm)	FLATS in (mm)	DEPTH in (mm)	WIDTH in (mm)
1-1/4	22.1 (561)	13.9 (353)	4.15 (105)	4.75 (121)	2.08 (53)	2.75 (70)	7.1 (180)	6.9 (175)
1-1/2	22.1 (561)	13.9 (353)	4.15 (105)	4.75 (121)	2.08 (53)	2.75 (70)	7.1 (180)	6.9 (175)

NOTE: Weights for all sizes can be found on page 79.

Pressures above 7500 PSI will pop the rupture disc allowing fluid flow to continue. This is a fail safe mechanism.

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