

# 3500/6000 PSI High Temperature 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 500 °F
- Accuracy ±2% full scale
- Repeatability ±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

**Seals:** Viton®

**Scale Support:** T316 SS

**Scale:** Polyimide

**Retaining Ring:** T316 SS

**Retaining Spring:** T316 SS

**Indicator:** Nickel-plated Carbon Steel

**Internal Magnet:** Teflon® Coated Alnico 8

**Bumper:** 2011 - T3 Anodized Aluminum

**Guard:** Cylindrical Pyrex® Glass

**End Caps:** 2011 - T3 Anodized Aluminum

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

**TEMPERATURE RANGE:** -20 to 400 °F (-29 to 205 °C) Continuous

400 to 500 °F (205 to 260 °C) Intermittent

For detailed "Pressure vs. Temperature" correlation information, see page 26.

### 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 3/4" to 1-1/2" series) 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 57.

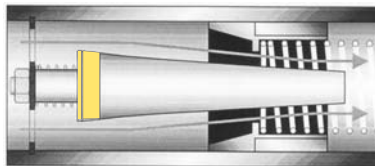
**ACCURACY:** ±2% of full scale

**REPEATABILITY:** ±1%

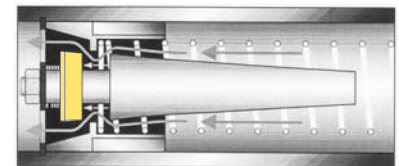
### REVERSE FLOW BY-PASS OPTION:

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, which allows the fluid to flow freely in the reverse direction.



Normal Flow Direction



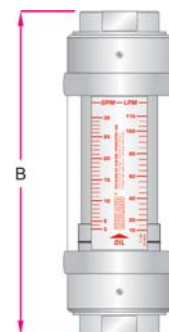
Reverse Flow By-Pass

### DIMENSIONS:

A	B	C	D
NOMINAL PORT SIZE	LENGTH in (mm)	WIDTH in (mm)	FLATS in (mm)
1/4 (SAE 6)	6.60 (168)	2.01 (53)	1.25 (32)
1/2 (SAE 10)	6.60 (168)	2.01 (53)	1.25 (32)
3/4 (SAE 12)	7.20 (183)	2.48 (63)	1.50 (38)
1 (SAE 16)	7.20 (183)	2.48 (63)	1.50 (38)
1-1/4 (SAE 20)	12.20 (310)	4.20 (105)	2.75 (70)
1-1/2 (SAE 24)	12.20 (310)	4.20 (105)	2.75 (70)

**NOTE:** Dimensions for 1-1/2" Code 62 can be found on page 72.

Weights for all sizes can be found on page 73.



Pyrex is a registered trademark of Corning, Inc.

Teflon is a registered trademark of E.I. duPont de Nemours & Co.

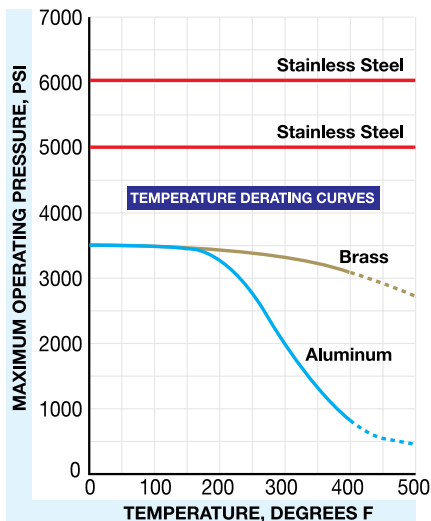
Viton is a registered trademark of DuPont Dow Elastomers

# 3500/6000 PSI High Temperature Flow Meters For Water-based Fluids (Water/Oil Emulsions)

## ORDERING INFORMATION:

NOMINAL PORT SIZE	FLOW RANGE		PRESSURE DROP			MODEL NUMBER <i>(see example below)</i>			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
<b>1/4 SAE 6</b>	0.1 - 1.0	0.5 - 3.75	4.0 (.28)	9.0 (.62)		H212 * - 010 - HT	H213 * - 010 - HT	H214 * - 010 - HT	A	B	6000 PSI	Not Available
	0.2 - 2.0	1.0 - 7.5	6.0 (.41)	13 (.90)		H212 * - 020 - HT	H213 * - 020 - HT	H214 * - 020 - HT				
<b>1/2 SAE 10</b>	0.1 - 1.0	0.5 - 3.75	2.0 (.14)	2.75 (.19)	5.2 (.36)	H612 * - 001 - HT	H613 * - 001 - HT	H614 * - 001 - HT	A	B	6000 PSI	HR
	0.2 - 2.0	1.0 - 7.5	2.0 (.14)	3.0 (.21)	9.6 (.66)	H612 * - 002 - HT	H613 * - 002 - HT	H614 * - 002 - HT				
	0.5 - 5.0	2 - 19	3.0 (.21)	6.0 (.41)	4.8 (.33)	H612 * - 005 - HT	H613 * - 005 - HT	H614 * - 005 - HT				
	1 - 10	5 - 38	4.0 (.28)	9.5 (.66)	23.0 (1.6)	H612 * - 010 - HT	H613 * - 010 - HT	H614 * - 010 - HT				
	1 - 15	4 - 56	6.5 (.45)	18.5 (1.3)	55.2 (3.8)	H612 * - 015 - HT	H613 * - 015 - HT	H614 * - 015 - HT				
<b>3/4 SAE 12</b>	0.2 - 2.0	1 - 7.5	1.0 (.07)	2.0 (.14)	2.9 (.20)	H712 * - 002 - HT	H713 * - 002 - HT	H714 * - 002 - HT	A	B	5000 PSI	HR
	0.5 - 5.0	2 - 19	2.5 (.17)	3.5 (.24)	5.3 (.37)	H712 * - 005 - HT	H713 * - 005 - HT	H714 * - 005 - HT				
	1 - 10	5 - 38	3.5 (.24)	9.0 (.62)	8.8 (.61)	H712 * - 010 - HT	H713 * - 010 - HT	H714 * - 010 - HT				
	2 - 20	10 - 76	4.0 (.28)	9.0 (.62)	18.0 (1.24)	H712 * - 020 - HT	H713 * - 020 - HT	H714 * - 020 - HT				
	3 - 30	10 - 115	7.0 (.48)	16.5 (1.1)	45.1 (3.11)	H712 * - 030 - HT	H713 * - 030 - HT	H714 * - 030 - HT				
<b>1 SAE 16</b>	0.2 - 2.0	1 - 7.5	1.0 (.07)	2.0 (.14)	2.9 (.20)	H782 * - 002 - HT	H783 * - 002 - HT	H784 * - 002 - HT	A	B	5000 PSI	HR
	0.5 - 5.0	2 - 19	2.5 (.17)	3.5 (.24)	5.3 (.37)	H782 * - 005 - HT	H783 * - 005 - HT	H784 * - 005 - HT				
	1 - 10	5 - 38	3.5 (.24)	9.0 (.62)	8.8 (.61)	H782 * - 010 - HT	H783 * - 010 - HT	H784 * - 010 - HT				
	2 - 20	10 - 76	4.0 (.28)	9.0 (.62)	18.0 (1.24)	H782 * - 020 - HT	H783 * - 020 - HT	H784 * - 020 - HT				
	3 - 30	10 - 115	7.0 (.48)	16.5 (1.1)	45.1 (3.11)	H782 * - 030 - HT	H783 * - 030 - HT	H784 * - 030 - HT				
	4 - 40	15 - 150	9.0 (.62)	24 (1.7)	87.5 (6.04)	H782 * - 040 - HT	H783 * - 040 - HT	H784 * - 040 - HT				
	5 - 50	20 - 190	12.5 (.86)	34 (2.3)	150 (10.4)	H782 * - 050 - HT	H783 * - 050 - HT	H784 * - 050 - HT				
<b>1-1/4 SAE 20</b>	3 - 30	10 - 110	3.0 (.21)	4.0 (.28)	4.8 (.33)	H812 * - 030 - HT	H813 * - 030 - HT	H814 * - 030 - HT	A	B	5000 PSI	HR
	5 - 50	20 - 190	3.5 (.24)	7.0 (.48)	12.5 (.86)	H812 * - 050 - HT	H813 * - 050 - HT	H814 * - 050 - HT				
	10 - 75	40 - 280	5.0 (.35)	10.5 (.72)	31.9 (2.2)	H812 * - 075 - HT	H813 * - 075 - HT	H814 * - 075 - HT				
	10 - 100	50 - 380	6.5 (.45)	15 (1.0)	39.0 (2.7)	H812 * - 100 - HT	H813 * - 100 - HT	H814 * - 100 - HT				
	10 - 150	50 - 560	10.5 (.72)	27.5 (1.9)	110 (7.6)	H812 * - 150 - HT	H813 * - 150 - HT	H814 * - 150 - HT				
<b>1-1/2 SAE 24</b>	3 - 30	10 - 110	3.0 (.21)	4.0 (.28)	4.8 (.33)	H882 * - 030 - HT	H883 * - 030 - HT	H884 * - 030 - HT	A	B	5000 PSI	HR
	5 - 50	20 - 190	3.5 (.24)	7.0 (.48)	12.5 (.86)	H882 * - 050 - HT	H883 * - 050 - HT	H884 * - 050 - HT				
	10 - 75	40 - 280	5.0 (.35)	10.5 (.72)	31.9 (2.2)	H882 * - 075 - HT	H883 * - 075 - HT	H884 * - 075 - HT				
	10 - 100	50 - 380	6.5 (.45)	15.0 (1.0)	39.0 (2.7)	H882 * - 100 - HT	H883 * - 100 - HT	H884 * - 100 - HT				
	10 - 150	50 - 560	10.5 (.72)	27.5 (1.9)	110 (7.6)	H882 * - 150 - HT	H883 * - 150 - HT	H884 * - 150 - HT				
<b>1-1/2 Code 62</b>	3 - 30	10 - 110	3.0 (.21)	4.0 (.28)	4.8 (.33)	H818 * - 030 - HT			A	B	5000 PSI	HR
	5 - 50	20 - 190	3.5 (.24)	7.0 (.48)	12.5 (.86)	H818 * - 050 - HT						
	10 - 75	40 - 280	5.0 (.35)	10.5 (.72)	31.9 (2.2)	H818 * - 075 - HT						
	10 - 100	50 - 380	6.5 (.45)	15 (1.0)	39.0 (2.7)	H818 * - 100 - HT						
	10 - 150	50 - 560	10.5 (.72)	27.5 (1.9)	110 (7.6)	H818 * - 150 - HT						

(example) H 713 A - 030 - HR



**NOTE:** HT suffix represents standard high temperature configuration. For reverse flow high temperature, replace HT with HR suffix.

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

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