

# Sanitary Turbine Flowmeters

*Accurate, Versatile,  
and Economical*

## *Description*

Flow Technology's sanitary turbine flowmeters provide accuracy, versatility and economy in measuring a wide variety of food, beverage and pharmaceutical products. Flow Technology's more than 30 years experience enables the company to produce an extremely durable sanitary turbine flowmeter with a repeatability of  $\pm 0.1\%$ .

The SA Series Sanitary Turbine Flowmeters feature 316 stainless steel construction and have a smooth finish, which is designed to eliminate cracks and crevices where bacteria breed.

Standard flowmeters are available in sizes from 1/2" to 2" with sanitary clamps. Flow rates range from 0.1 to 250 gallons per minute (0.38 to 946 LPM).

Typical applications include measuring or batch controlling water, WFI, USP water, deionized water, vaccines, clean pharmaceuticals, milk, cream, vegetable oil, wine, beer, spirits, soft drinks, juices (without pulp) and any other clean, consumable liquid.



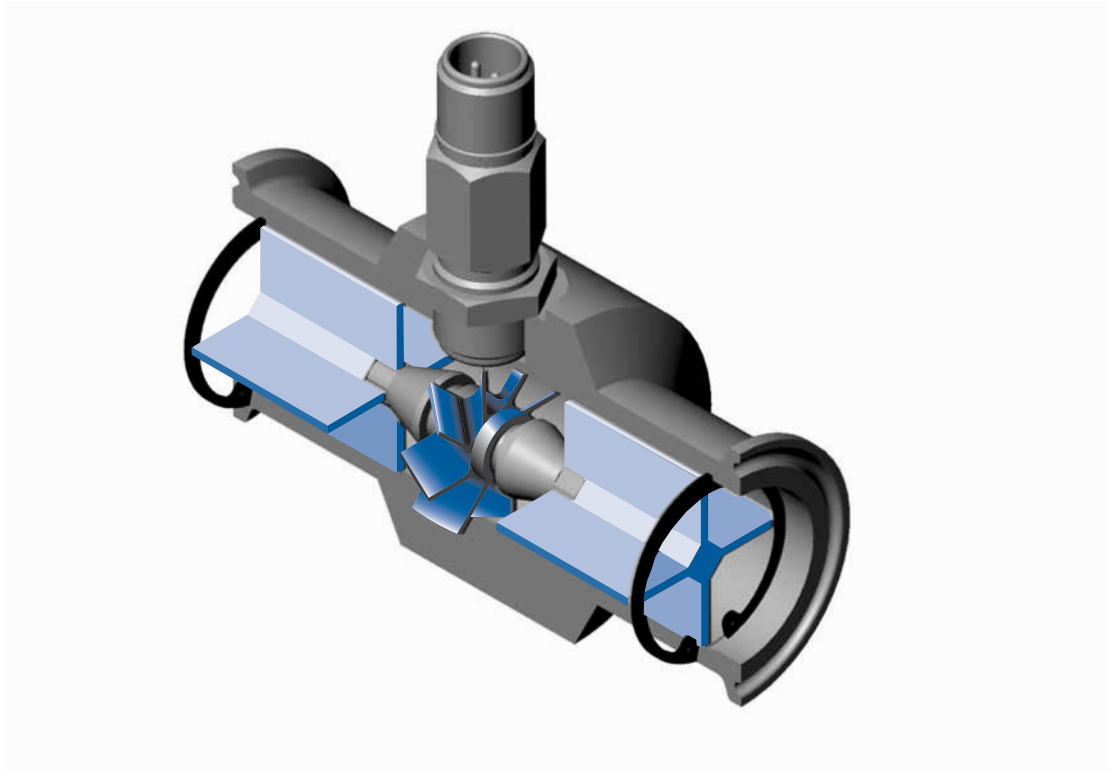
*Sanitary Turbine Flowmeters*  
Stainless Steel Construction

## *Features*

- Available in sizes from 1/2" to 2" with sanitary clamp
- Flow rates from 0.1 to 250 gallons per minute (GPM)
- Temperature ranges up to 350° F (177° C)
- 316 stainless steel construction
- Magnetic or modulated carrier (RF) pickoffs available
- Exceptional repeatability of  $\pm 0.1\%$
- NIST traceable calibrations
- Withstands clean-in-place (CIP) and sterilize-in-place (SIP) processes
- Compatible with all Flow Technology electronics
- Ceramic bearings for long life

# Flowmeter Cut-Away

SA-24



## Specifications

<b>Repeatability</b>	±0.1% of reading
<b>Linearity</b>	±0.5% of reading over the normal 10:1 flow range Note: SA4-8 is ±2% of reading
<b>Maximum Particle Size</b>	100 microns
<b>Response Time</b>	5–10 mS to step change
<b>Pressure Drop</b>	Less than 10 psi for max. flow in water
<b>Max. Pressure</b>	250 psig/17.2 bar g
<b>Max. Temperature</b>	350° F (177° C)
<b>Frequency Range</b>	20–2000 Hz typical (depends on model)

<b>Sanitary Clamps</b>	
T1	3/4" clamp/0.98" O.D.
T2	1-1/2" clamp/1.98" O.D.
T3	2" clamp/2.51" O.D.

### Tapered End Fittings

The I.D. of the Flow Technology sanitary meters are designed with a taper in the end fitting to provide a smooth transition from the meter bore to standard size mating tubing. The standard "Tapered to Line Size" is provided in the "Model Numbering System" chart.

### Pickoff Coil

Magnetic

*Transmission distance:* 300 ft. (91 meters) without pre-amplifier

*DC coil resistance:* 2275 ohms, nominal

*Minimum output voltage:* 10 mV

Modulated Carrier

*Transmission distance:* 30 ft. (9 meters) maximum to carrier amplifier

*DC coil resistance:* 12 ohms, nominal

### Pickoff Electronic Mating Connections

MS Connector

*2-pin, standard pickoff:* 15-89515-101

*3-pin, amplified pickoff:* 15-89515-102

Threaded Connection with Leads

*Junction Box*

*with Terminal:* 73-31836-105

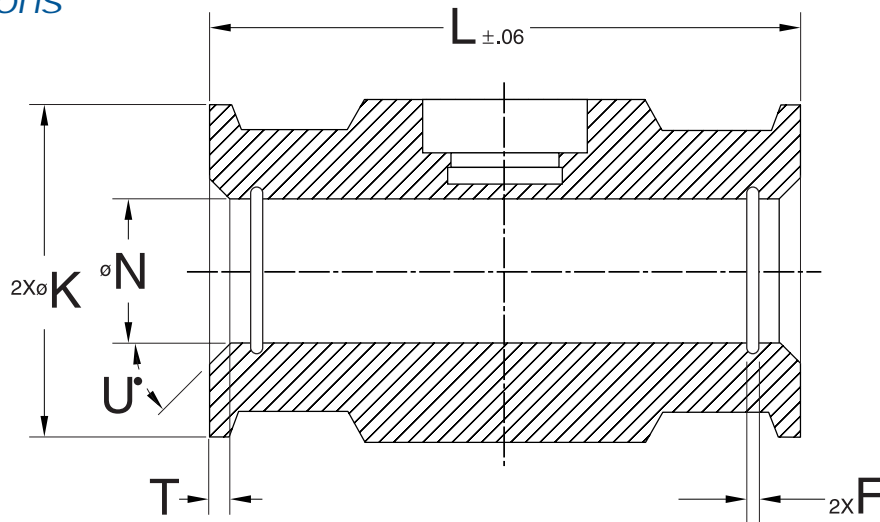
### SIP Considerations

Dynamic steaming of 5 minutes or less is recommended for maximum life expectancy

### Surface Finish

Bore	25 Ra
Internals	30 Ra

## Dimensions



## Standard Configuration

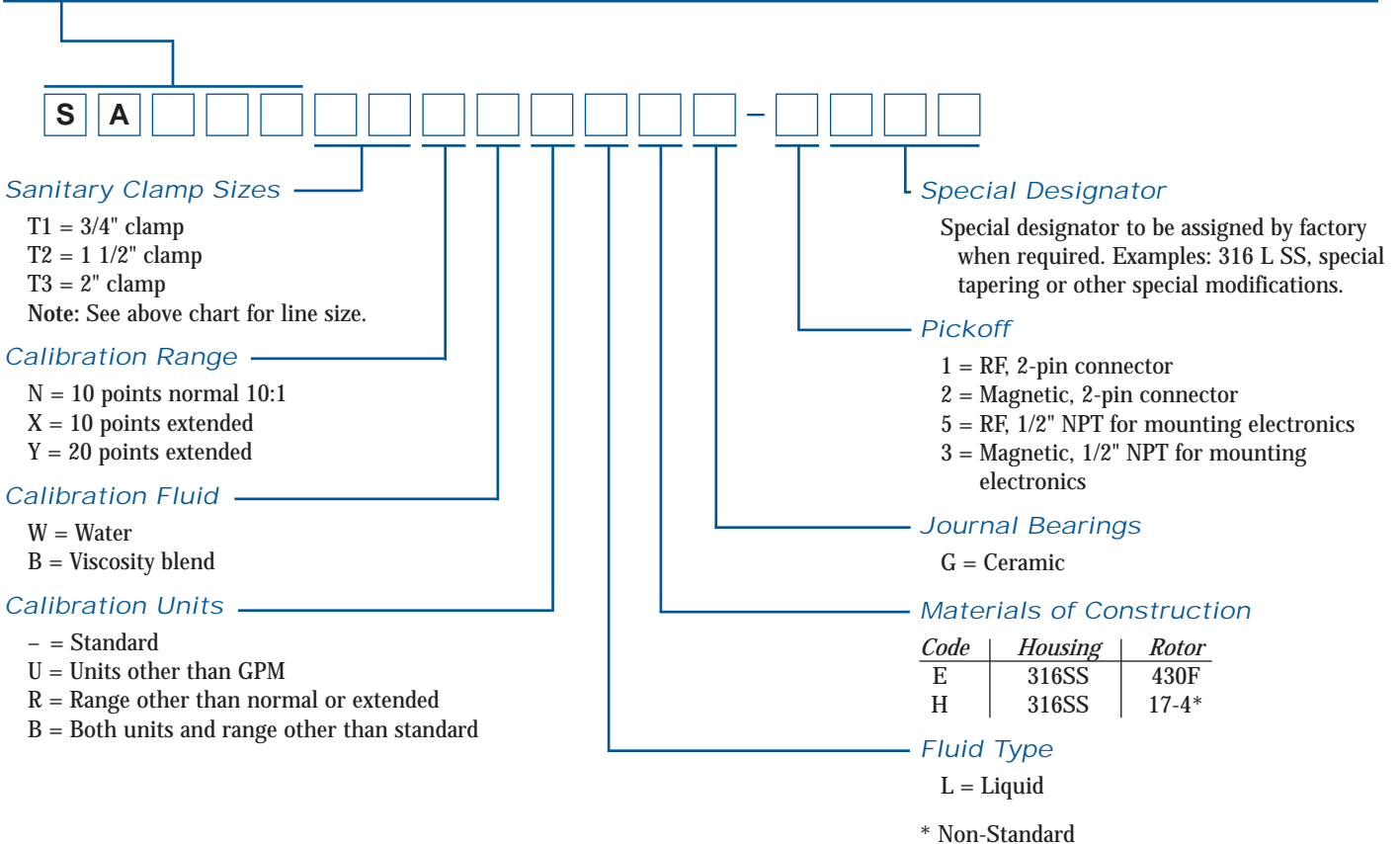
<b>U</b>	45°	45°	45°	45°	50°	45°	50°	45°	45°	
<b>T</b>	.039	.012	.092	.187	.130	.012	.157	.030	.059	
<b>N</b>	.036	.009	.089	.184	.127	.009	.154	.027	.056	
<b>K</b>	Ø.302	Ø.372	Ø.442	Ø.504	Ø.565	Ø.862	Ø1.002	Ø1.317	Ø1.753	
<b>L</b>	Ø.300	Ø.370	Ø.440	Ø.502	Ø.563	Ø.860	Ø1.000	Ø1.315	Ø1.751	
<b>F</b>	2.450	2.450	2.450	3.250	3.250	3.56	4.060	4.590	6.060	
<b>K</b>	Ø.988	Ø.988	Ø.988	Ø1.988	Ø1.988	Ø1.988	Ø1.988	Ø1.988	Ø2.520	
<b>F</b>	Ø.980	Ø.980	Ø.980	Ø1.980	Ø1.980	Ø1.980	Ø1.980	Ø1.980	Ø2.512	
<b>F</b>	.037	.037	.037	.035	.035	.045	.049	.052	.072	
<b>F</b>	.035	.035	.035	.030	.030	.037	.044	.048	.068	
<b>Used On</b>	SA4-8	SA6-8	SA-08	SA-10	SA-12	SA-16	SA-20	SA-24	SA-332	
<b>Line Size</b>	.5"		.75"		1"			1.5"		2"
<b>Clamp Size</b>	.75"			1.5"				2"		
<b>Code</b>	T1			T2				T3		

## Optional Configuration

<b>U</b>	45°	45°	60°	60°	60°	60°	60°	60°	
<b>T</b>	.030	.030	.166	.144	.126	.150	.110	.163	
<b>N</b>	.026	.026	.163	.141	.134	.147	.107	.160	
<b>K</b>	Ø.504	Ø.565	Ø.302	Ø.372	Ø.442	Ø.862	Ø1.002	Ø1.317	
<b>L</b>	Ø.502	Ø.563	Ø.300	Ø.370	Ø.440	Ø.860	Ø1.000	Ø1.315	
<b>F</b>	3.25	3.25	2.450	2.450	2.450	3.56	4.06	4.59	
<b>K</b>	Ø.988	Ø.988	Ø1.988	Ø1.988	Ø1.988	Ø2.520	Ø2.520	Ø2.520	
<b>F</b>	Ø.980	Ø.980	Ø1.980	Ø1.980	Ø1.980	Ø2.512	Ø2.512	Ø2.512	
<b>F</b>	.035	.035	.037	.037	.037	.045	.049	.052	
<b>F</b>	.030	.030	.035	.035	.035	.037	.044	.048	
<b>Used On</b>	SA-10	SA-12	SA4-8	SA6-8	SA-08	SA-16	SA-20	SA-24	
<b>Line Size</b>	.75"		1"			2"			
<b>Clamp Size</b>	.75"		1.5"			2"			
<b>Code</b>	T1		T2			T3			

## Model Numbering System

Basic Model No.	Clamp		Tapered to Line Size	Meter I.D. In.	Normal 10:1 Size Flow Range				Extended Flow Range				Nominal Max Freq.
	Standard	Optional			GPM MIN MAX		LPM MIN MAX		RF GPM LPM	MAG GPM LPM	All GPM LPM		Hz
<b>SA4-8</b>	T1 = .75"	T2 = 1.5"	.5" 1.0"	0.30 0.30	.25 2.50	.95 9.50	.10 .38	.12 .45	3 11	2000			
<b>SA6-8</b>	T1 = .75"	T2 = 1.5"	.5" 1.0"	0.37 0.37	.50 5.00	1.90 19.00	.15 .57	.20 .76	5 19	2100			
<b>SA-08</b>	T1 = .75"	T2 = 1.5"	.75" 1.0"	0.44 0.44	1.00 10.00	3.80 38.00	.25 .95	.3 1.1	10 38	2000			
<b>SA-10</b>	T2 = 1.5"	T1 = .75"	1.0" .75"	0.50 0.50	1.25 12.50	4.70 47.0	.30 1.10	.4 1.5	15 57	2000			
<b>SA-12</b>	T2 = 1.5"	T1 = .75"	1.0" .75"	0.56 0.56	2 20	7.60 76.0	.50 1.90	.5 1.9	25 95	2000			
<b>SA-16</b>	T2 = 1.5"	T3 = 2.0"	1.0" 2.0"	0.86 0.86	5 50	19 190	1.0 3.8	1.0 3.8	60 227	2000			
<b>SA-20</b>	T2 = 1.5"	T3 = 2.0"	1.5" 2.0"	1.00 1.00	9 90	34 340	1.0 3.8	1.5 5.7	100 380	1950			
<b>SA-24</b>	T2 = 1.5"	T3 = 2.0"	1.5" 2.0"	1.32 1.32	15 150	57 570	1.6 6.1	2.5 9.5	160 606	1500			
<b>SA-32</b>	T3 = 2.0"	-	2.0"	1.75	22 225	83 830	2.5 9.5	3.5 13.2	250 946	1300			



Specifications are for reference only and are subject to change without notice.

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