

SONOZ SONIC NOZZLE FLOW METER

The SONIC NOZZLE, also known as a "Critical Flow Venturi" or "Critical Flow Nozzle" is accepted internationally as a flow measurement standard and flowmeter. Originally used by the aerospace industry, Sonic Nozzles are now utilized for many diverse applications in the automotive, energy and metrology industries. Sonic Nozzles can be used as a calibration standard for gas flowmeters or any flow measurement device. By design, Sonic Nozzles are a constant volumetric flowmeter. However, with the use of a regulated pressure supply, the Sonic Nozzle becomes a "state-of-the-art" mass flowmeter.



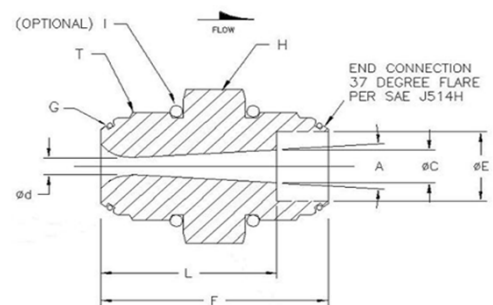
Sonic Nozzles are in accordance with both ASME and ISO standards. The geometry is such that the gas is accelerated along the circular arc converging section and then is expanded in a conical diverging section, which is designed for pressure recovery. In the throat, or minimum area point of the Sonic Nozzle, the gas velocity becomes equal to the speed of sound. At this point, gas velocity and density are maximized, and the mass flow rate is a function of the inlet pressure, inlet temperature, and the type of gas.

ADVANTAGES

- Internationally Recognized
- Mass Flow Varies Linearly with Inlet Pressure
- Minimal Upstream Piping Required
- Long Term Accuracy
- Excellent Repeatability
- No Moving Parts
- Differential Pressure Measurement Not Required
- Flow Rate Is Not Affected by Downstream Flow Disturbances
- Mass Flow is Constant with Varying Downstream Pressure

APPLICATIONS

- Calibration of Gas Flow Meters, Gas Flow Metering
- Calibration of Turbine Engine Component Gas Passages
- Calibration of Automotive Component Air Passages
- Measurement of Automotive Induction Air
- Automotive Emissions Testing
- Compressor Discharge Capacity Tests, Valve CV Tests



MOD.	d Throat diam. +/- 0,001	L nozzle length	C CFV exit diam.	E std fitting bore dia.	F an fitting length	Nom. tube fitting size	T threads MIL-S- 8879	H HEZ SIZE FLAT S	TUBE SIZE	D. TUBE I.D.	BETA RATIO d/D
SONOZ1	0.022	0.188	0.043	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.025
SONOZ2	0.031	0.265	0.061	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.036
SONOZ3	0.044	0.377	0.087	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.051
SONOZ4	0.063	0.539	0.124	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.072
SONOZ5	0.088	0.753	0.173	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.101
SONOZ6	0.125	1.070	0.246	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.144
SONOZ7	0.177	1.515	0.349	0.851	2.500	1"	1.313-12UN-2A	1.63	1"ODX0.065" WALL TBG	0.87	0.203
SONOZ8	0.250	2.140	0.492	1.320	3.000	1 1/2"	1.875-12UN-2A	2.00	1,5"ODX0.065"WALLTBG	1.37	0.182
SONOZ9	0.354	3.031	0.697	1.791	4.000	2"	2.500-12UN-2A	2.75	2"ODX0.065" WALL TBG	1.87	0.189
SONOZ10	0.500	4.281	0.985	-	4.281	2"	2.500-12UN-2A	2.75	3"SCH.10S PIPE SECTION	3.26	0.153
SONOZ11	0.707	6.053	1.392	-	6.053	2"	2.500-12UN-2A	2.75	3"SCH.10S PIPE SECTION	3.26	0.217

inches units



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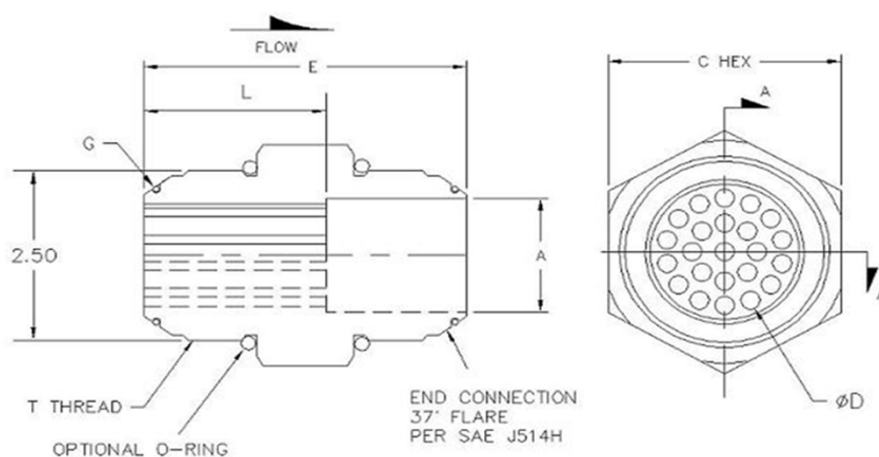
Mail: info@satema.it

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FLOW CONDITIONER STANDARD

MOD.	Line size	A	L	C HEX	E Overall length	D diameter	T an threads MIL-S-8879	O-RING
FC16	16	0.84	1.099	1.625	2.50	0.109	1-5/16 - 12 UN	2-020
FC24	24	1.312,000	1.718	2.000	3.00	0.172	1 - 7/8 - 12 UN	2-126
FC32	32	1.78	2.343	2.750	4.00	0.234	2 - 1/2 - 12 UN	2-134



INLET - OUTLET TUBE

TUBE SIZE X 0.65 WALL	LINE SIZE	SONIC NOZZLE A	INLET TUBE LENGTH	INLET TUBE DIA. NOM.	TEMP. TAP LOC.	EXIT TUBE LENGTH	EXIT PRESSURE TAP LOCATION	AN LEGTH	STRAIGHTENING LENGTH	INLET PRESSURE TAP LOCATION	INLET PRESSURE TAP LOCATION
		A - H	B	C	E	F	G	H	J	K	L
0,75	12	2.25	9	0.62	4	6.75	3.38	2.25	0.780	1.25	2.00
1"	16	2.50	10	0.87	5	5.50	2.80	2.50	1.099	1.63	2.50
1,5"	24	3.00	15	1.37	6	8.00	4.00	3.00	1.718	2.00	3.00
2"	32	4.00	20	1.87	7	12.00	6.00	4.00	2.343	2.75	3.50



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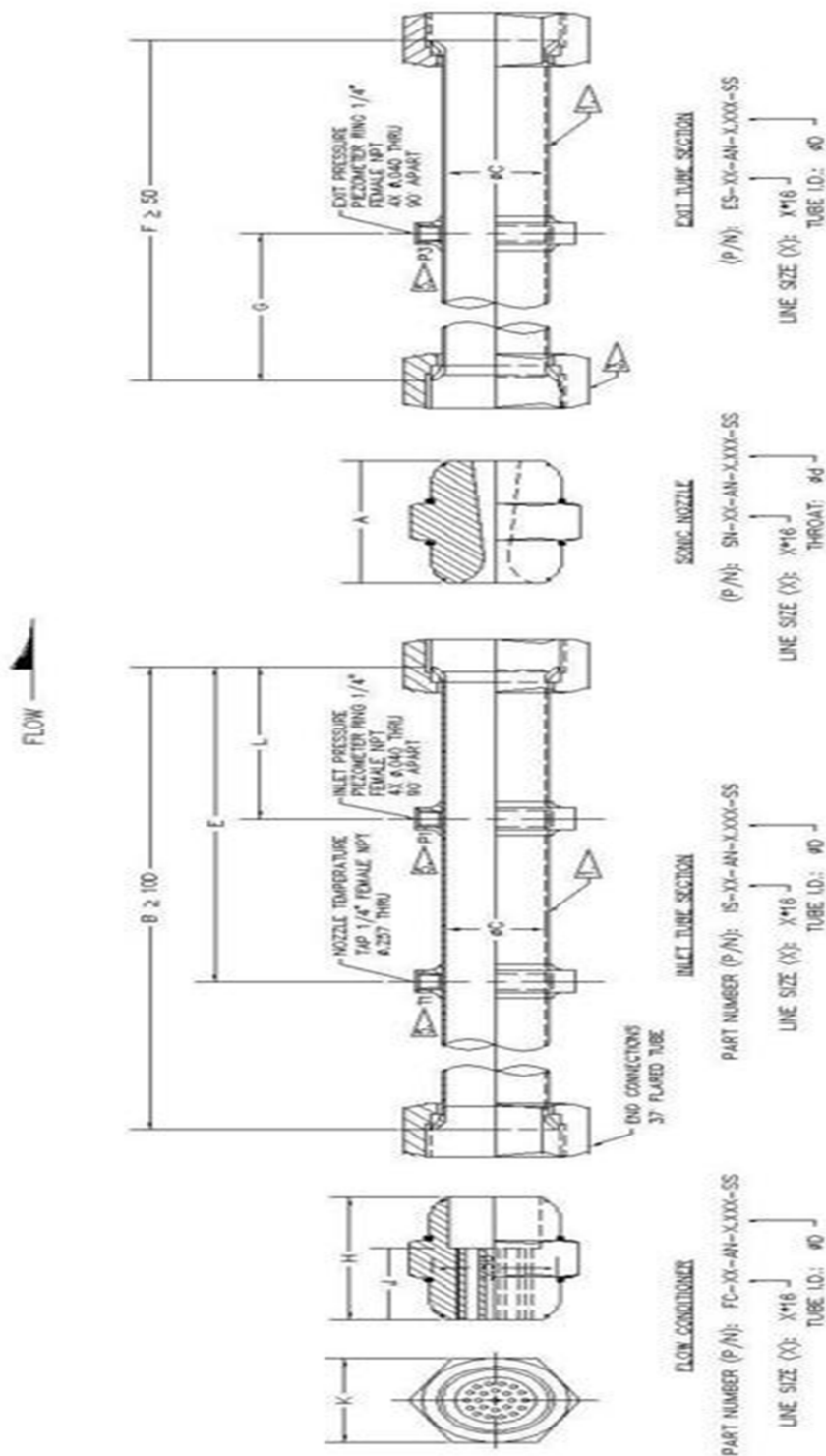
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