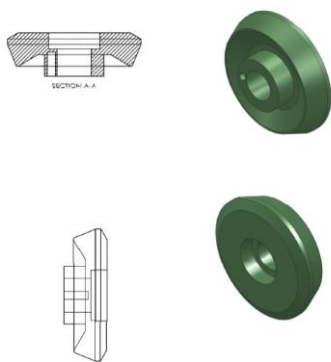
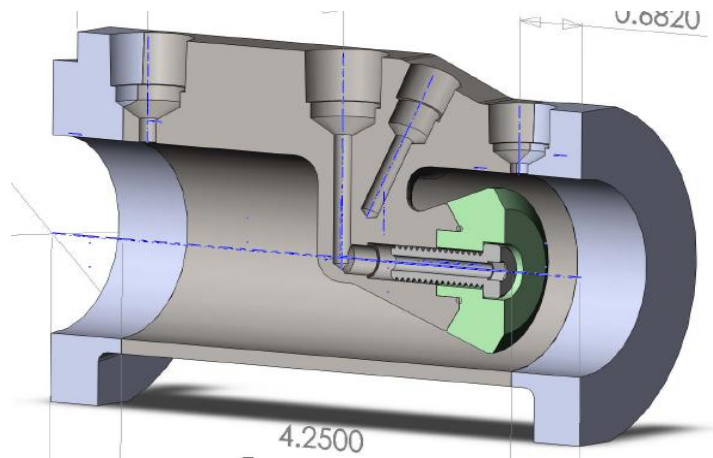


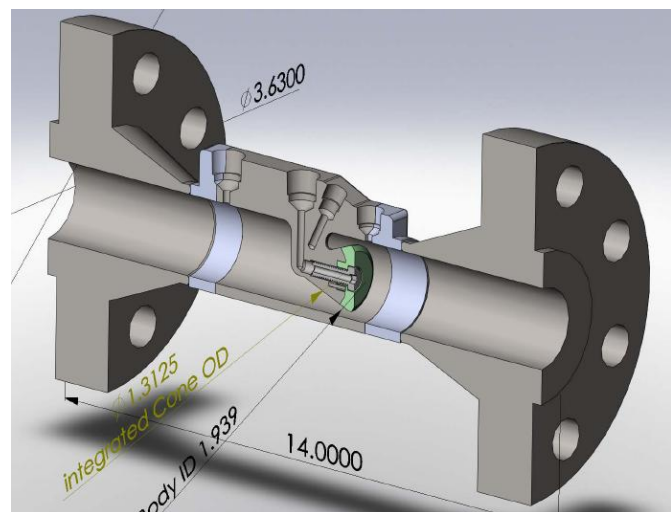
## SmartCone® Patent No. 8,201,457

The SmartCone® meter by Dynamic Flow Computers is a differential pressure device for measuring flowing fluids. This device measures flowing condition temperature and pressures of the fluids and has a second low-pressure port to provide self-checking capabilities. All measuring points are incorporated within the meter body. This meter combined with the Dynamic Flow Computer can output flow rate, total flow for actual condition and standard conditions, and alarm the user when failure is indicated by the secondary pressure port.



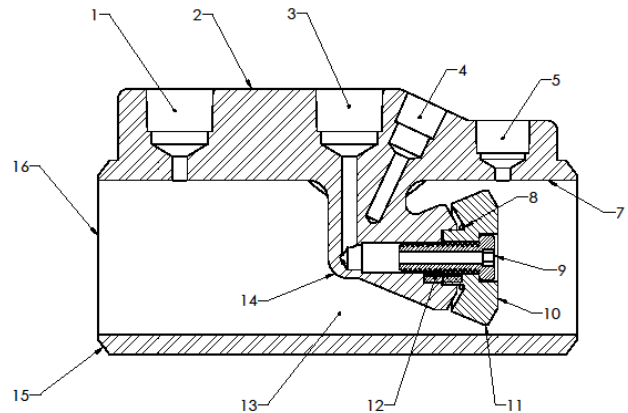
The annular flow path between the pipe wall and the cone can be altered by attaching a discrete number of self-aligning and self-centering Area Ratio Changers (ARC - highlighted in green). Multiple aligning surfaces of the ARC maintain the concentricity of the attached ARC to the integrated cone with the axis of the meter. Positive sealing between the integral cone and the ARC exists to eliminate leaks and unintended disassembly of the ARC. The flow coefficient of each ARC is established as a function of Reynolds number and a unique discharge coefficient for each line size within accuracy limit of +/- 0.5% or better. Individually calibrated meters can achieve an accuracy limit of better than +/-0.25% over a limited operating range.

The meter body is investment-cast to achieve tight dimensional tolerances and surface finish. The critical dimensions of the ARC diameters and mating surfaces of the ARC are machined. The ARC edge holding the annular space between the ARC and pipe wall is machined parallel to the pipe wall to achieve precise alignment and reduce the effect of possible erosion over the life of the meter from debris in the flowing stream. Another advantage of the cast meter body and the integrated support and base cone is to eliminate miss-alignment of the cone assembly axis with respect to the pipe axis over time. Dropping of the cone assembly over time can affect the performance and reproducibility of the meter. Each nominal meter size is uniquely designed operating conditions up to ANSI 1500 rating.



## Technical Specifications

- This meter with a Dynamic Flow Computer can achieve a range ability of 10:1 without the requiring use of stacked differential pressure transmitters
- Maximum differential pressure: up to 400 inches of water column (100 kPa)
- Maximum pressure drop at 400"H<sub>2</sub>O (100 kPa)
  - For the largest ARC is ~10 psi (75 kPa)
  - For the smallest ARC (integral cone) is ~6 psi (50 kPa)
- The discharge coefficient and expansibility equations are built-in the flow computer
- Piping Installation: 5 pipe diameters upstream and 2 pipe diameters downstream, from respective face of the meter
- 100 ohm Platinum RTD in the meter body
- Repeatability: ±0.1% of full scale or better
- End Connections: Wafer or Flanged
- Material: All metal parts are stainless steel
- Area ratios: Three specific area ratios
- Applicable fluids: All liquids and gases compatible with stainless steel and neoprene seal
- Differential Pressure Tabs are ½" NPT
- For special applications please contact our office



1	HIGH PRESSURE PORT
2	MULTI-PORT MANIFOLD CONNECTION
3	LOW PRESSURE PORT
4	TEMPERATURE PORT
5	DIAGNOSTIC PORT
6	ARC ALIGNMENT SURFACE
7	PIPE SCHEDULE DRIVEN DIAMETER
8	O-RING OR GASKET
9	RETAINING BOLT AND PRESSURE CONNECTION PORT
10	AREA RATIO CHANGER
11	CONE TERMINATION POINT (FLATS)
12	ANTI-ROTATIONAL PIN OR OTHER DEVICE
13	DIE CAST BODY
14	INTEGRATED CONE AND SUPPORT ASSEMBLY
15	WELD PREP BEVEL
16	WELD PREP, WAFER OR INTEGRATED FLANGE END CONNECTION



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