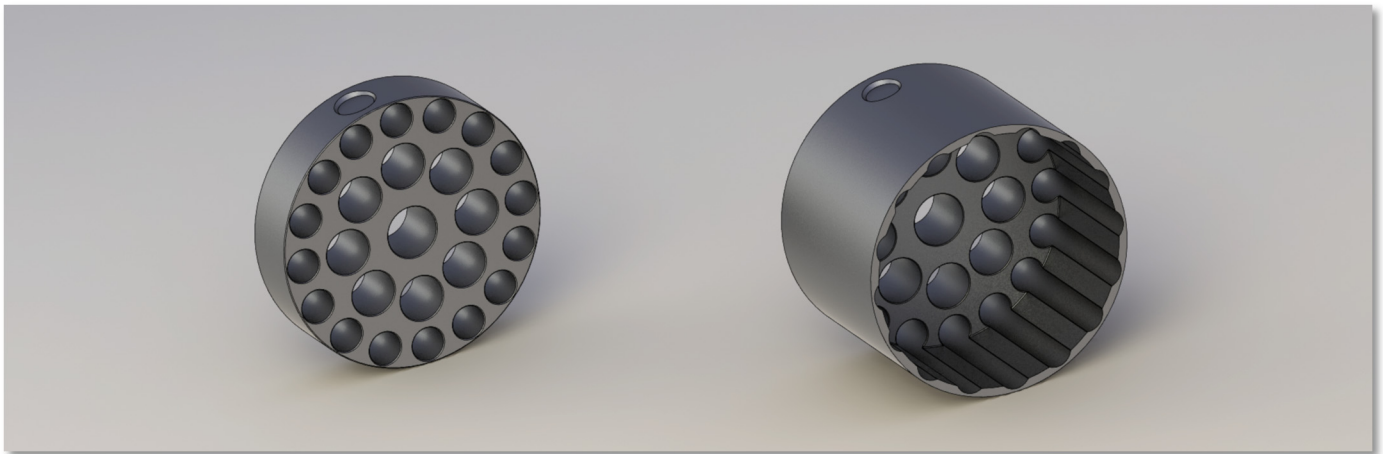


CPA Type C Flow Conditioner – Pin Style – TBR/TBRL

Quick Specifications

- The CPA TBR flow conditioner is applicable for all gas volumetric metering applications: Orifice, Ultrasonic, Venturi, Vortex, Turbine, Cone, etc.
- Uses a pinned installation method.
- Available in classic (TBR) and extra long (TBRL) designs.
- Available in 2" - 4" sizes, 316SS NACE MR0175.
- Eliminates swirl and provides a fully developed velocity flow profile.
- Detailed pressure drop calculations are available for all fluid applications.
- AGA 3 (2000) data available, CPA recommends a minimum 13D meter run length (5D upstream, 8D downstream).
- Comprehensive product and technical support from CPA's engineers.



CPA 13D Meter Run

The CPA TBR/TBRL can be used in meter run minimum lengths of 13D (5 internal pipe diameters upstream of the flow conditioner, and 8 internal pipe diameters downstream). At 13D the CPA generates a fully developed flow profile that falls within the ISO 5167 definition of fully developed pipe flow with minimal swirl. Please contact CPA for more information on using CPA flow conditioner in a 13D configuration.

CPA TBRL Installation

The CPA TBRL was designed so that the offset sleeve is installed on the upstream side of the flow conditioner. The flush face of the flow conditioner faces downstream towards the flow meter.

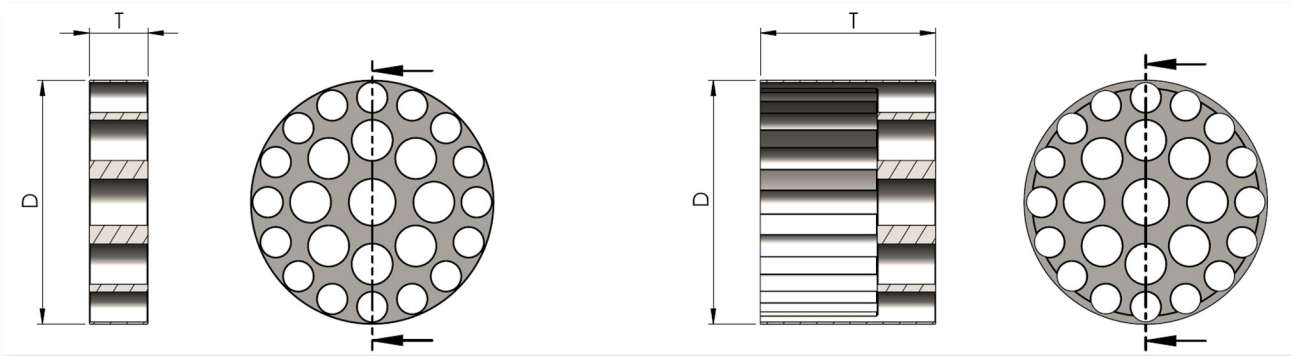
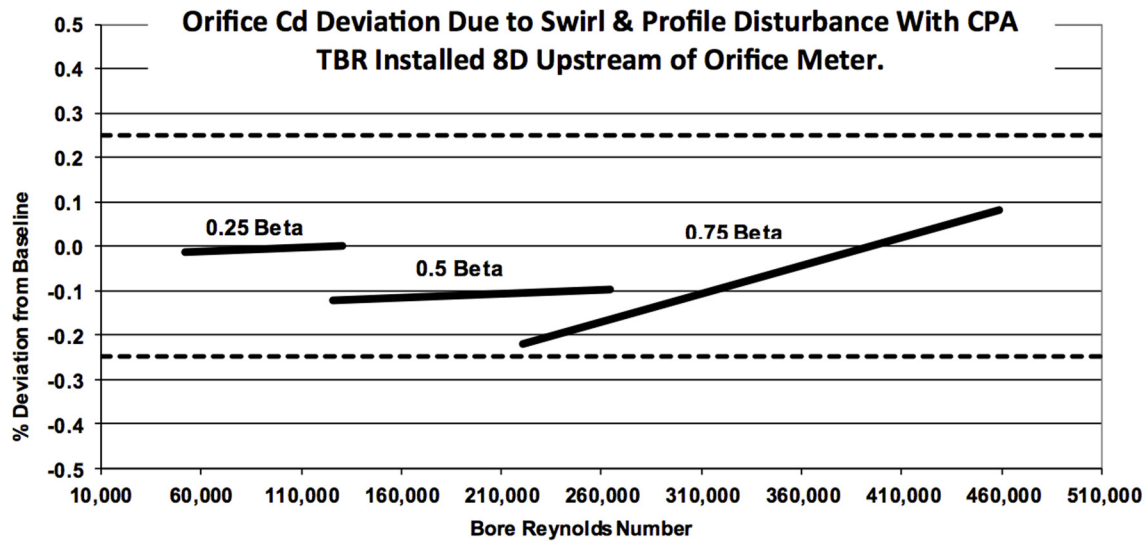


TBRL protected under Pat. D697581, D701939. Further patents pending.

WARNING: Inherent to the design of pinned style flow conditioners; proper pipe ID tolerances and careful installation must be followed. Pin style flow conditioners can still be dislodged due to impact from foreign objects or debris.

Installation Recommendations

CPA TBR and TBRL pin style flow conditioners are AGA3-2000 tested up to a beta ratio of 0.75 with a minimum meter run size of 13D. This requires a minimum of **8 internal pipe diameters** between the flow conditioner downstream face and the orifice plate and a minimum of **5 internal pipe diameters** upstream of the flow conditioner as measured from the upstream face.



Dimensional Specifications

Pipe Size		TBR		TBRL	
NPS	Schedule	Diameter (D)	Thickness (T)	Diameter (D)	Thickness (T)
2"	40	2.040	0.490	2.040	1.470
2"	80	1.912	0.490	1.912	1.470
3"	40	3.038	0.460	3.038	1.380
3"	80	2.870	0.435	2.870	1.305
4"	40	3.986	0.604	3.986	1.812
4"	80	3.786	0.574	3.786	1.722

All dimensions are in inches. Custom sizes are available; please contact CPA for more information!