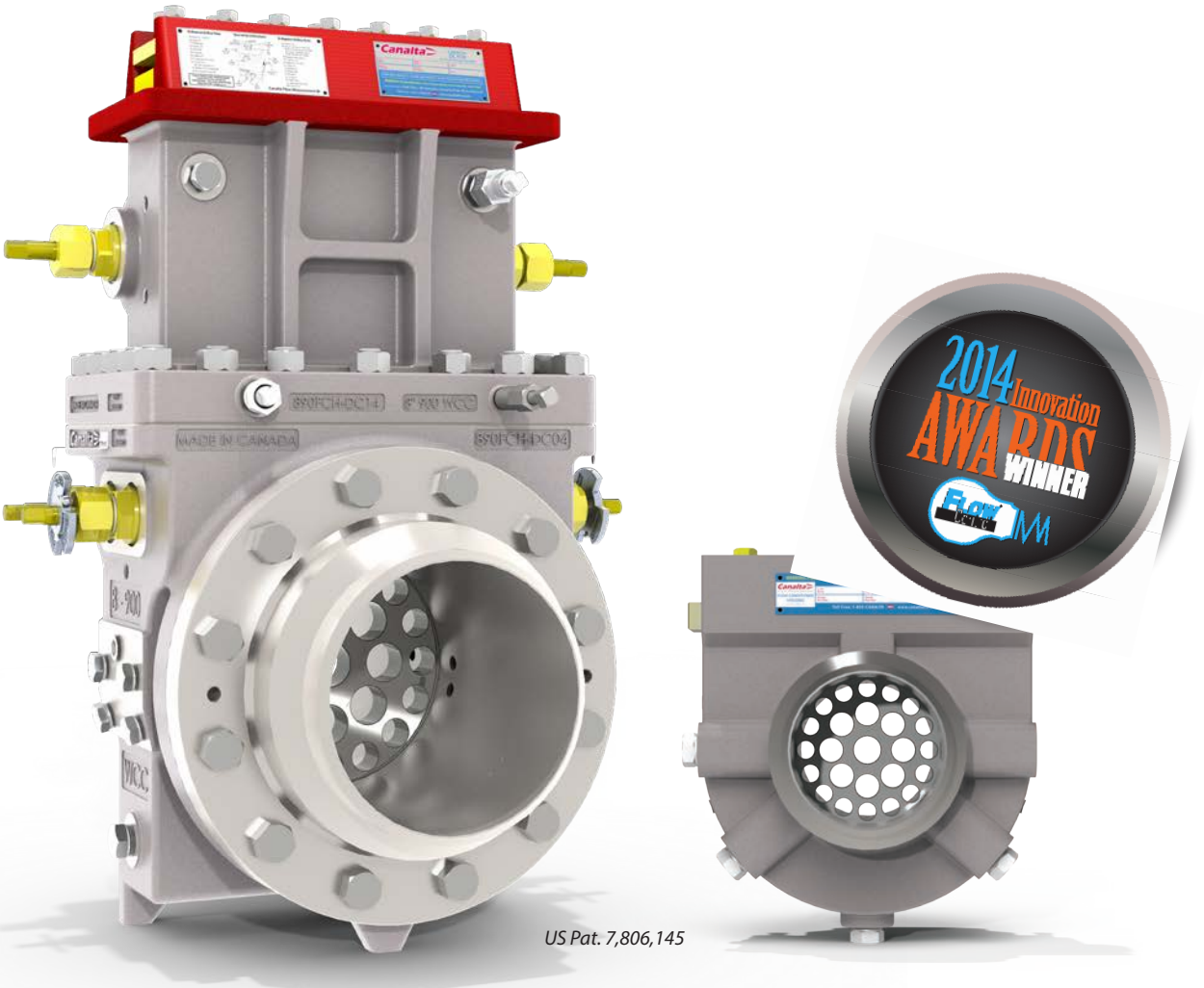
Canalta

Flow Measurement



US Pat. 7,806,145

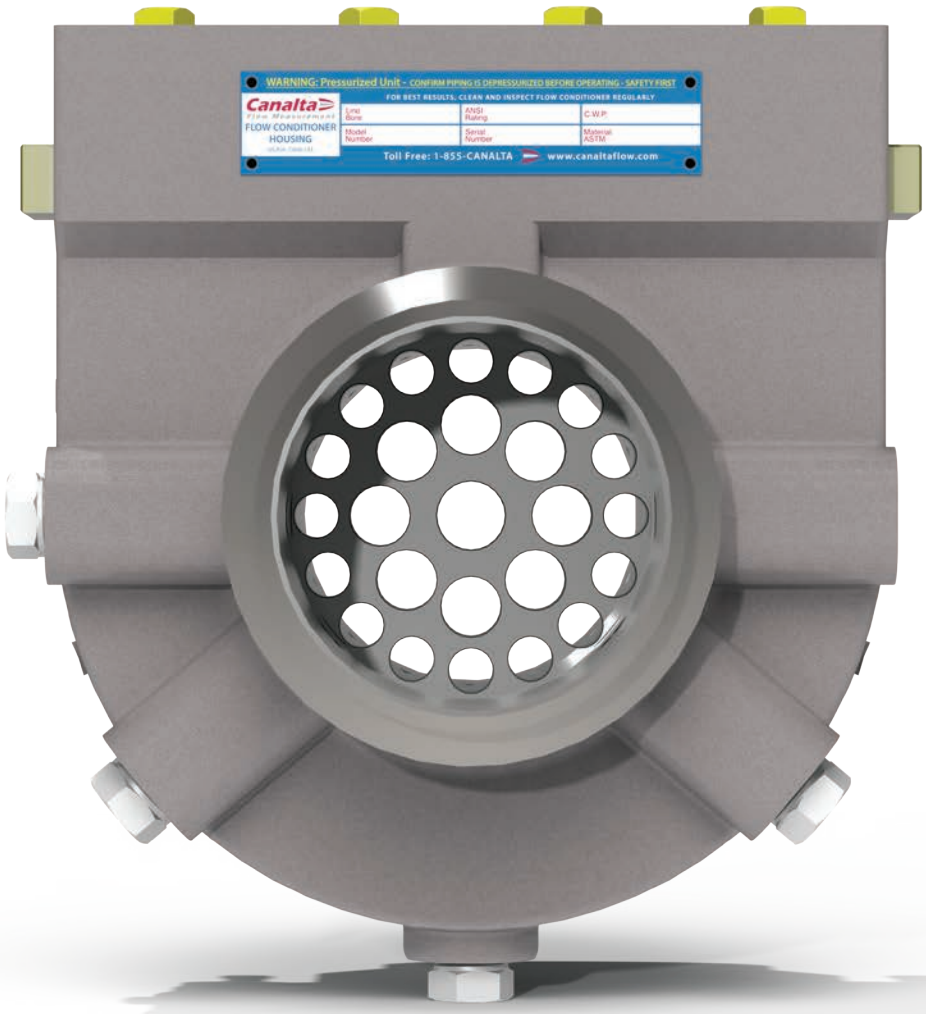
THE CONTOUR™ FCH

FLOW CONDITIONER HOUSING

Call Us Toll Free: 1-855-CANALTA
An ISO 9001:2015 registered company

Phone: 403.342.4494
Email: sales@canaltaflow.com
www.canaltaflow.com

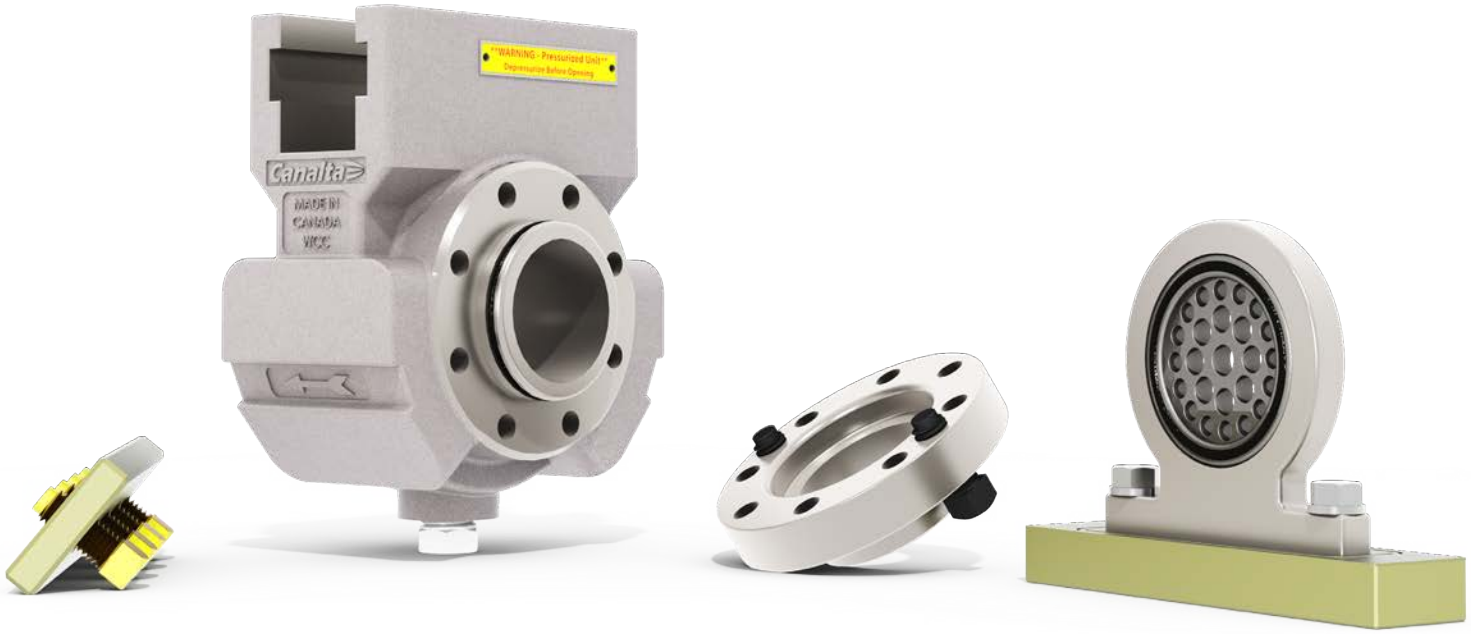
- Effective in all flow measurement applications where flow profile is critical for accuracy.
- Available with a variety of flow conditioner geometries, including Zanker, Contour™ K5, Spearman and others.
- Maintains flow conditioner alignment and positioning despite replacement or debris impact.
- Prevents bypass leakage.
- Allows for easy flow conditioner inspection, removal and replacement.
- Effective in both retrofits and new projects.
- Available in sizes 2" - 12" NPS.
- Can be fitted for standard or extreme corrosive service.



Canalta's Contour™ FCH Flow Conditioner Housing brings the ease, safety and practicality of inspecting and changing an orifice plate to the flow conditioner.

The Contour™ FCH provides a convenient flow conditioning plate carrier and standards compliant housing* to replace problematic flange or pin mountings. Critical flow conditioner alignment and positioning are maintained despite debris impact, and specially designed flow conditioner plates prevent bypass leakage. Inspections of the flow conditioning plate are easily performed without breaking apart the flow line, saving time and cost.

Both single and dual chamber configurations are available, incorporating a body-integral flange to reduce weight, footprint and cost. A selection of flow conditioner geometries are being produced for use in the Contour™ FCH, including Zanker, Contour™ K5 and other popular, non-proprietary designs.

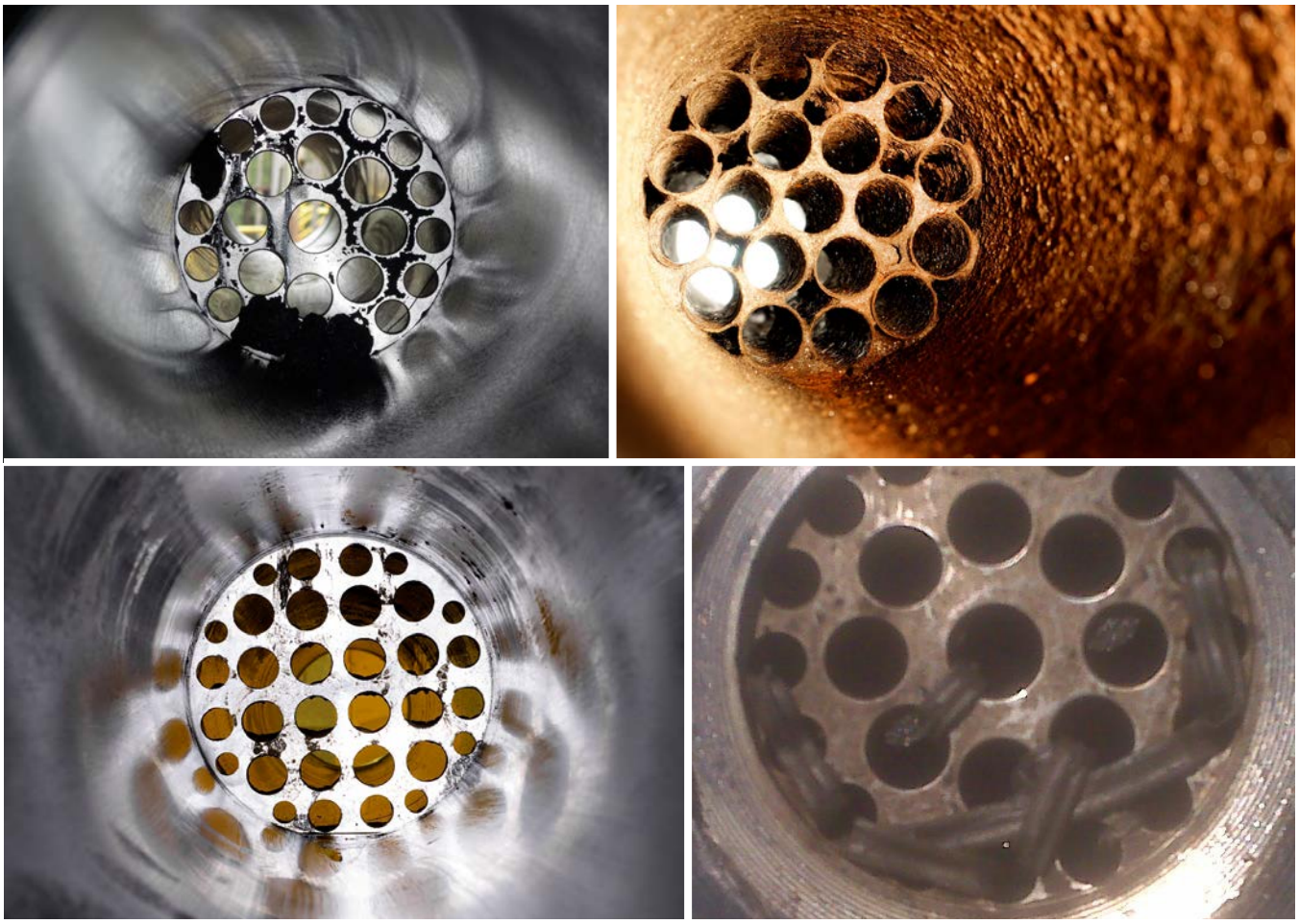


Canalta's Contour™ FCH combines easy access to the flow conditioner with reduced weight, size and cost compared to standard orifice fitting bodies.

*Standards compliance depends on many factors. Certain options available on the Contour™ FCH may not meet all standards in all jurisdictions. Please contact Canalta Flow Measurement directly for any questions regarding your Canalta meter run.

For years, flow conditioners and tube bundle straightening vanes were either line mounted directly inside the pipe bore, or installed between two flanges. Fouling and clogging from compressor oils, ice buildup and other foreign debris produces noticeable degradation to the flow profile ahead of the measurement element. Inspecting and cleaning these flow conditioners however, has often meant shutting in a compressor, depressurizing and breaking apart the flow line for access. For larger sizes, this also involves the use of cranes, additional personnel and additional time.

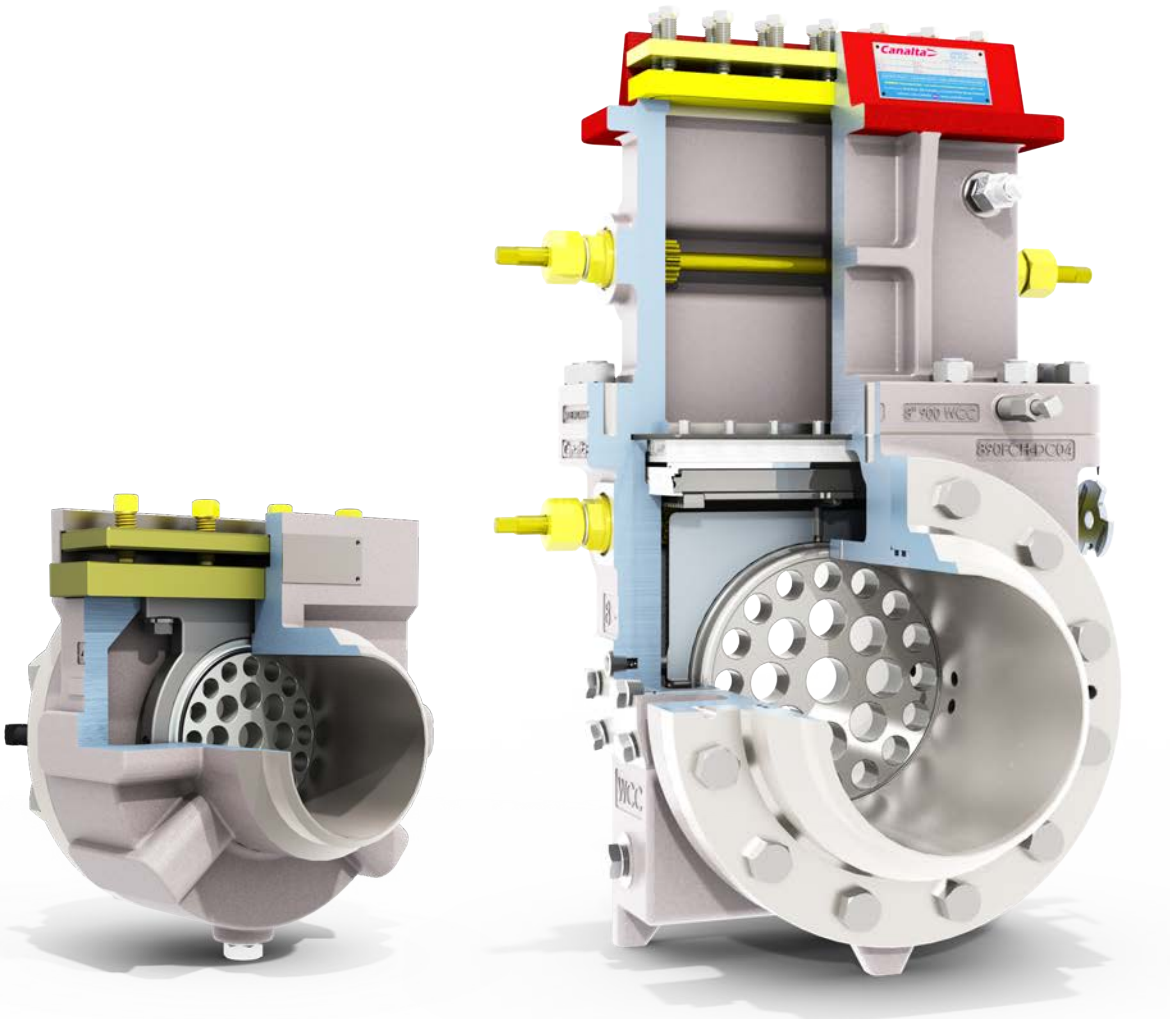
Canalta's Contour™ FCH changes the game entirely and makes regular flow conditioner inspections and maintenance in real world operating scenarios both practical and, crucially, cost effective. Operating on the same principles as an orifice fitting, these units eliminate the need for heavy lifting, breaking apart the flow line and, with dual chamber models of the Contour™ FCH, they eliminate the need for shutting in and depressurizing the flow line. In many cases, flow conditioner inspections and maintenance can be performed in minutes by a single field technician, rather than hours by a team of technicians with heavy equipment.



A variety of dirty, damaged and blocked flow conditioning devices. The effectiveness of each of these devices is reduced, allowing upstream piping effects to reduce measurement accuracy.

While Canalta's Contour™ FCH helps operators maintain measurement system accuracy in the long term by allowing for regular inspections and maintenance, these units also include key improvements to flow conditioner performance itself. For instance, the Contour™ FCH utilizes flow conditioning plates that incorporate a non-protruding HNBR seal around the downstream face to prevent bypass leakage. This directly improves upon line mounted pin-style flow conditioners and straightening vanes that are necessarily smaller in diameter than the line I.D. and, therefore, allow for considerable bypass leakage.

For the first time, the Contour™ FCH also ensures optimum flow conditioner alignment in the flow line. The carrier itself positions the flow conditioner perfectly concentric to the flow, resulting in flow profile symmetry. Set pins in the plate carrier correspond to shallow cuts in the outer plate surface, ensuring proper orientation of the plate geometry to the flow line. In addition, the structural makeup of the Contour™ FCH places the flow conditioner perfectly perpendicular to the flow direction. And unlike line and flange mounted flow conditioners, operators using the Contour™ FCH can be assured that proper alignment is re-achieved after flow conditioner change-out over and over again.



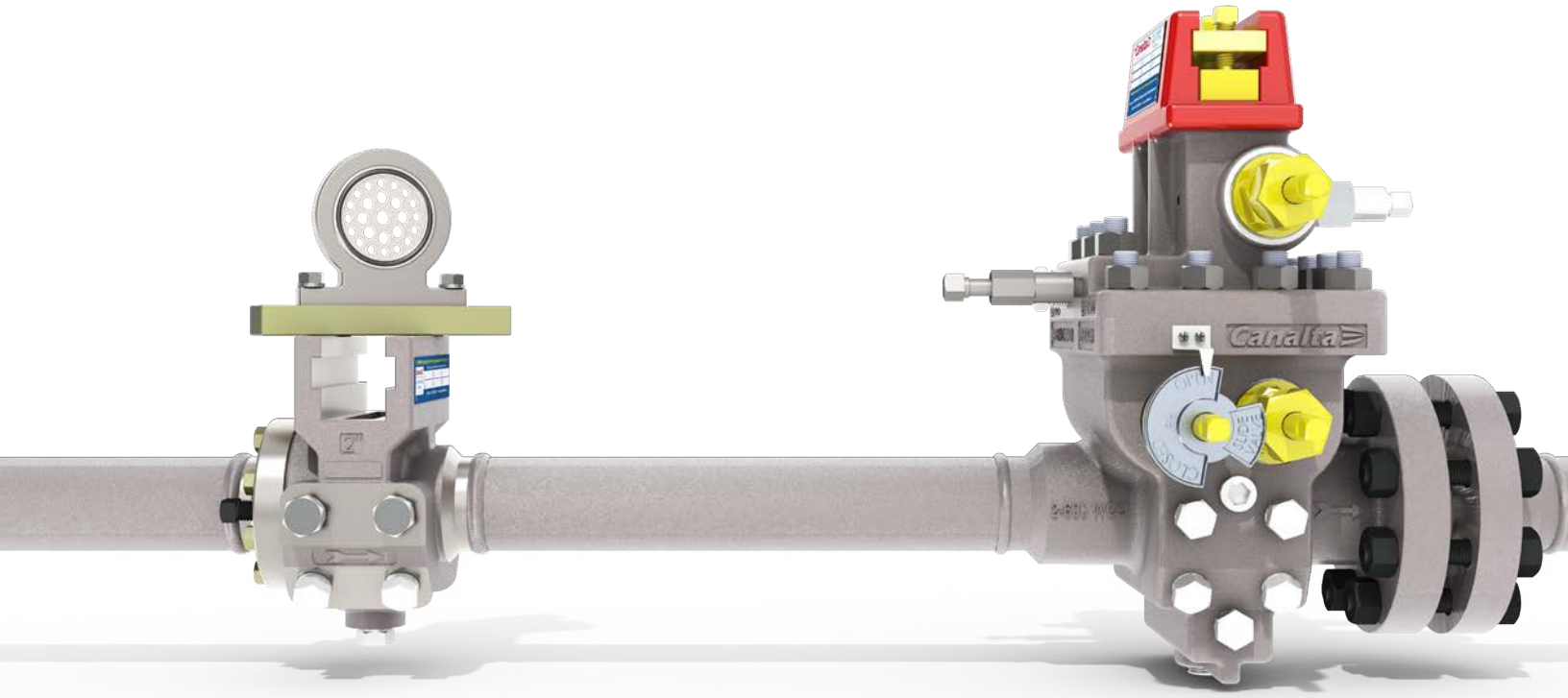
Cutaway views of the single and dual chamber Contour™ FCH Flow Conditioner Housings.

Flow measurement technicians will inevitably face abnormally high or low measurement readings, be they in differential pressure, ultrasonic or turbine based installations. Such readings require site assessments and corrective action to preserve metering accuracy.

Suspicion that there is a problem with the flow conditioner will, in the case of line and flange mounted units, result in the measurement site being shut in, in some cases including compressors and wells. A team of field technicians with equipment will travel to the site, shut everything in, bleed the line down, break it apart and extract the flow conditioner. Once maintenance has been performed on the flow conditioner, it is replaced, flanges are reconnected and everything is brought back online. Though the actual cleaning or replacement of the flow conditioner may only take a few minutes, the associated procedures of blocking in, depressurizing, breaking apart, reconnecting and bringing the metering site back online may take upwards of eight hours or more.

With a dual chamber Contour™ FCH installed, orifice plate inspection and maintenance can be carried out by a single field technician in minutes rather than hours, without depressurizing or breaking apart the line. Labor, downtime, travel and equipment usage are all saved while at the same time improving the performance of the flow conditioner.

Canalta estimates that on an 8" line, this represents a cost savings of nearly $6,000 *for every flow conditioner inspection or cleaning*, not including the value of deferred gas resulting from the downtime. In most cases the Contour™ FCH Flow Conditioner Housing has paid for itself after only three visits by field technicians.



Meter run with single chamber Contour™ FCH and Canalta Dual Chamber Orifice Fitting.

Design	Flow Conditioner Housings supplied in Canada are built in accordance with the ABSA Quality Control Program. In compliance with ASME 16.34, ASTM specifications, NACE MR-0175:2003, AGA-3 and ISO-5167 latest editions. Dual and Single Chamber configurations available.
Body Materials	A216 WCB, A216 WCC, A352 LCC, A358 CF8M, A995 Gr4A, A995 Gr6A, Custom
Internal Parts	Carbon Steel, Stainless Steel, Duplex, Custom
Sizes and ANSI Class	2" through 12" 150# through 900# ANSI
U/S D/S Connections	Upstream: weldneck integral flange Downstream: weldneck Custom configurations available upon request.
Internal Bore Sizes	40, 60, 80, 100, 120, 160 and custom sizes
Line Bore I.D. Tolerance	In conformance with AGA-3 and ISO-5167 Latest Editions
Tap Connections	Standard with no drilled tap connections per AGA-3. 2 and 4 each side available upon request.
Sealing Compounds	HNBR O-rings standard, exotic materials and gaskets available
Operating Temperature	Standard at -20° to 100° F, optional -40° to 1200° F
Plate Geometries	Contour™ K5+, Contour™ Z+, Custom or other geometries available

Canalta's Contour™ FCH Flow Conditioner Housing lineup utilizes a newly designed flow conditioning plate. These isolating flow conditioners incorporate a non-protruding HNBR seal around the downstream face to prevent bypass leakage and protect the integrity of the flow profile. Available in a variety of plate geometries, including Contour™ K5, Zanker, Spearman and others.

Canalta
Flow Measurement

Corporate Head Office / Canada	**(+1) 403 342 4494**
United States	**(+1) 940 898 0800**
Argentina	**(+54) 9 11 3272 2377**
United Kingdom	**(+44) 0 1842 768350**
India	**(+91) 96004 57368**
Singgapore	**(+65) 06316 4965**

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