

VE Retractable Probe (RVE) Technical Data Sheet

VE Technology® Retractable Sample Probe

The VE Retractable sample probe is revolutionary within the gas industry. The unique, patented design ensures that it is not only the safest sample probe on the market, but the only option for fast, accurate and most importantly, representative sampling.

The primary function of a sample probe is to extract a representative sample from a source stream for your chosen analysis. The structure must be strong enough to withstand process conditions, typically involving high pressure and fast flowing fluid, containing particulates and other contaminants, but also be able to extract and transport the sample in a way that does not alter its chemical identity or state. Several products are available that can accommodate some of the industrial conditions anticipated, but none have purpose-built solutions that are able to excel in all respects, without compromise. The VE sample probe is a product that fulfils all these needs, using novel and patented methods to excel where others are forced to compromise

Designed to be inserted and retracted at full pipeline pressure the RVE probe is perfect for hot tap installs, sample points on pigable lines and numerous other applications.

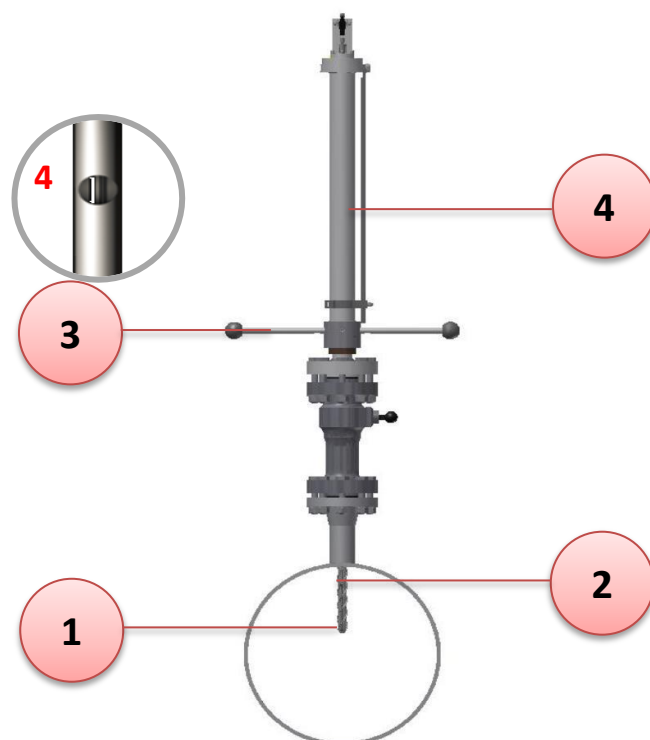
The patented helical strake design allows much longer unsupported lengths, to achieve central 1/3 sampling on practically any pipeline.

The VE Technology sample probe is the first module of a complete kit of innovative sampling products, designed and developed in-house to bring customers new levels of safety and performance – without any compromise on either.



ISO 10715 section 3.1:

“The main function of sampling is to take an adequate sample that is representative of the gas.”



Above: VE Technology® Retractable.

Benefits

- 1) **The aerodynamic electropolished probe tip** actively rejects particulates, acting as a primary filter for the sample system, maintaining a clean sample pathway and a representative sample. The aerodynamic tip minimises flow disturbance at the point of sample, eliminating the risk of pressure drop, potential aerosol formation or re-circulation at the very point of sample extraction, ensuring a sample representative of the main flow and not a modified composition created by the probe itself.
- 2) **The Patented helical strakes** eliminate vortex induced vibrations (and the need for wake calculations). This allows significantly longer probes to be used in significantly higher velocity/pressure applications. Limited only by bending and pressure loads, probes have been supplied for use up to 100m/s and 1.8m unsupported lengths at full process pressure.
- 3) **The RVE can be fully inserted/retracted**, without the need to have a pipeline shut down. Essential for locations subject to pigging and adding significant operational benefits over typical fixed probes or retractable probes where only the internal pathway can be removed.
- 4) **Electropolished 2mm sample pathway**, eliminates dead legs, changes in cross section, threads/flanges, rough surfaces or any other flow disturbance. Ensuring a fully representative sample.

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Operating Conditions	<p>Pipeline pressure – 100 barg as standard, extended ranges available</p> <p>Pipeline velocity – 25 m/s as standard, extended ranges available</p> <p>Pipeline diameter (for central 1/3" sampling) – up to 48"/1200mm, extended ranges available</p> <p>*A reduction in any of the above limits would allow an increase in other factors</p>
Climatic Conditions	<p>Permissible ambient temperature: -30°C to 100°C (-22°F to 212°F), extended ranges available</p>
Welding	<p>Weld procedures – ASME IX (others by request)</p> <p>Welders qualification – ASME IX (others by request)</p> <p>Welding inspection – ASME V (others by request)</p>
Connections	<p>Process connection – 1.5" or larger N.B. flange Raised Face or Ring Type Joint with dimensions to ANSI B16.5. Other connections available by request</p> <p>Outlet connection – 1.8" O.D. Tube fitting</p>
Materials	<p>Wetted by the sample – 1/8" O.D, 2mm ID Stainless steel tube ASTM A269 316L, electropolished as standard. SilcoNert™ coated and NACE approved available on request</p> <p>Housing –316 Stainless steel, NACE approved available on request</p> <p>Gas wetted bearings - carbon loaded PTFE (not in contact with sampled gas)</p> <p>Gas seal - Fabric reinforced Nitrile Rubber (not in contact with sampled gas)</p> <p>Non wetted bearing guides - Glass filled PTFE</p> <p>Running nut - Bronze</p>
Conformity	<p>The combination of volumes and pressures fall outside the requirements of the European "Pressure Equipment Directive" (PED 97/23/EC) and therefore the standard VE probe cannot bear the CE marking. The pressure multiplied by the volume lies within the SEP envelope</p> <p>The VE probe is designed using Sound Engineering Practice (SEP) and is based upon ASME B31.3 - 2012</p> <p>Certification - Material certificates for the pressure retaining parts are available to BSEN10204 3.1 – others by request</p>
Testing	<p>Assembly pressure tested to 150 barg</p> <p>Assembly leak tested to 100 barg</p> <p>Option functional testing at operating pressure available by request</p>
Standard Options	<p>Sampling tube – SilcoNert™ surfaces for ultra-fast response and ultra-accurate measurements</p> <p>Valves - SilcoNert™ surfaces for ultra-fast response and ultra-accurate measurements</p> <p>Special materials – All sample wetted parts/housing available with special materials</p> <p>Valve arrangement – Fully integrated DBB, validation and back flush valve arrangement integrated on to the head of the probe</p> <p>Process version – Fully integrated process DBB on head of probe (full fire safe and pressure rating approval to ASME/NORSOK standards)</p> <p>Security – Primary isolation valve and DBB handle locking arrangement</p>
Installation	<p>User instructions - Please see IOM 006 for installation, operation, maintenance and removal instructions</p>

The following Patent Numbers apply to the VE Probe :

UK Patent No: GB2433122

US Patent No: US8424396

Others pending



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