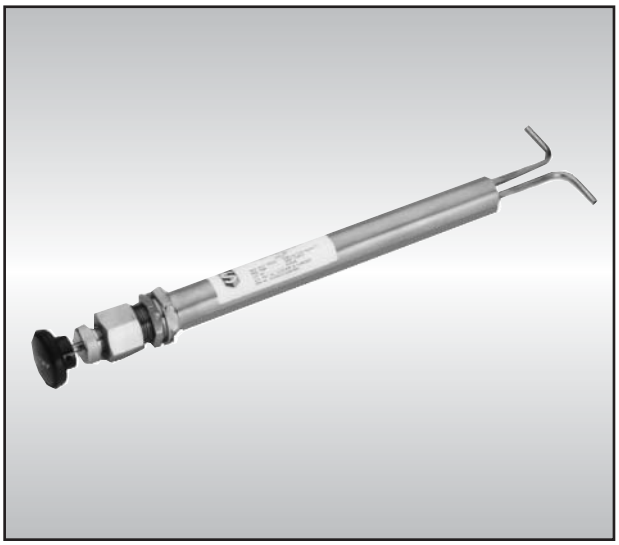


VREL®
VARIABLE PRESSURE REDUCING ELEMENT

Eliminate Sample Pressure Reduction Problems

U.S. Patent No. 5,333,648

- No Valve/Regulator Erosion or Wire Drawing
- Fine Flow Control
- Fully Retractable Rods Assure Easy Online Purging

Chemical analysis of water and steam samples in modern Power Generation Plants requires precise control of flow and pressure. High pressure reduction presents unique sampling problems for the system designer.

The Sentry VREL® is a valve specifically designed to solve unique high pressure sampling problems.

Industry Standard

The VREL® is the industry standard for samples greater than 500 psig (34.5 BARG), according to the Annual Book of ASTM Standards, ASTM Designation: D-1192-94.

The adjustable rod-in-tube type design allows for variable pressure drop and flow control. The VREL® is also cleanable in place. Both of these design factors provide the advantages needed for consistent sample conditioning.

Cleanable In Place

Since corrosion products, scale, and other foreign matter often find their way into sample lines, plugging of the pressure reduction valve is common. This is particularly true of Labyrinth type (Drag) valves, and diaphragm operated high pressure regulators.

If these valves plug, the sample line must be shut down while the valve is removed for cleaning or replacement. If the Sentry VREL® plugs with solids, the rods can be fully retracted and the obstruction blown free without disconnecting any lines. The analyzer can be returned to service in minutes by operating personnel.

Adjustable

When source pressures change, such as at startup and shutdown, the Sentry VREL® can be easily adjusted to allow continuous monitoring under all pressure conditions.

No Erosion

Since pressure is reduced gradually over the length of the inserted rod rather than across a valve seat, the VREL® does not wear in normal service.

Features

- New extended body design eliminates possibility of bent tubes.
- Rated at 5000 psig (345 barg).
- Flows from 150 milliliters per minute up to 4 liters per minute at pressure drops ranging up to 5000 psig (345 barg)
- Standard end connections: 1/4" O.D. bare tube ends. Optional end connections include special 37° fittings which can be disconnected or socket weld fittings.

Construction & Operation

The VREL® consists of two stainless steel tubes joined to a large tube or barrel. A tapered rod assembly is provided and inserted into precision holes in the barrel. The high pressure fluid enters, flows past one rod, turns and flows past the other rod, then out. Pressure drop is a function of the length of the rods inserted into the barrel.

The pressure is reduced smoothly under laminar flow conditions, minimizing dissociation of any components through discontinuous pressure drops. The rod position is controlled externally by turning the knob, and can be adjusted while the sample is flowing. If blockage occurs, the rods can be retracted so that system pressure can blow the solid matter through.

SPECIFICATIONS

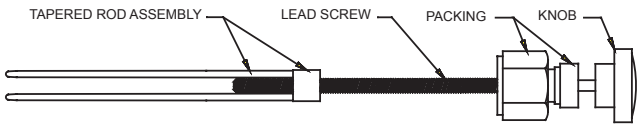
Wetted Materials: 316 Stainless Steel

Weight: 4 lbs. (2kg)

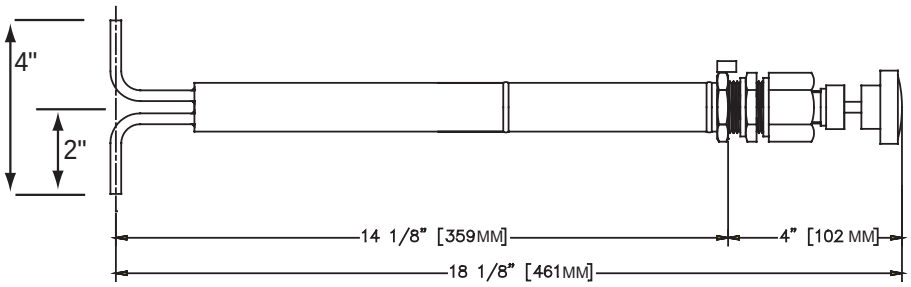
Ratings: 5000 psig at 300°F (345 barg at 149°C)

For detailed dimensional data and application information, see Bulletin SPD 5.6.2

Note: The VREL® is not a shut off valve, minimum flow which can be obtained is approximately 150 cc/min.



TAPERED ROB AND LEAD SCREW ASSEMBLY



VREL® PART NUMBERS

1/4" Plain Ends:	7-00744A
1/4" Socket Weld:	7-00747A
3/8" Socket Weld:	7-00748A
1/2" Socket Weld:	7-00749A
1/4" 37°F Fitting:	7-00745A
3/8" 37°F Fitting:	7-00746A

SPARE PARTS:

Handle & Rod Kit:	6-02302E
Seal Kit:	6-02302C

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