



## APPLICATION NOTE

### Variable Pressure Reducing Element (VREL®)

U.S. Patent No. RE37,153

#### VREL®

The Variable Pressure Reducing Element (VREL®) is used to reduce the pressure and control the flow of high-pressure liquid samples.

#### What it is

The VREL® is an adjustable rod-in-tube pressure reducing device. The pressure of the incoming sample is reduced as the liquid is forced to travel through the narrow gap between the tapered rod and the rod opening. Because the work is done over the entire length of the rod, localized wear is held to a minimum. The result is a very long service life compared with devices in which the pressure drop is taken over a very short distance (fixed orifice, pressure regulator, etc.). Other devices erode frequently causing function loss and down time.

#### How it works

With a VREL®, the flow or pressure drop can be changed while the sample is flowing by adjusting the position of the rods. Turning the handle moves the rods in or out on the lead screw. If sample flow is blocked, the rods can be fully retracted to allow sample pressure to blow the dirt through. The sample line never needs to be shut off or the VREL® disassembled to accomplish this. This is very important as the operator tries to get critical samples while boiler pressure is rising or falling during startup or shutdown.

The tapered rod will give flow rates from 150 milliliters per minute up to 4 liters per minute at pressure drops up to 5000 psig (345 BARG).

#### ⚠ WARNING

It is solely the responsibility of the end-user, through its own analysis and testing, to select products and materials suitable for their specific application requirements, ensure they are properly installed, safely applied, properly maintained, and limit their use to their intended purpose. Improper selection, installation, or use may result in personal injury or property damage.

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