

V-Cone Flowmeter Solves Test Separator Problems for the Oil & Gas Industry.

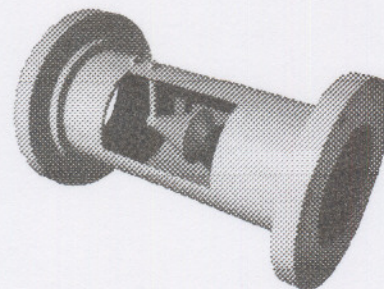
Test separator applications and its problems

Test separators are normally used when a platform utilizes more than one well and field at the same time. In this case, it is important to continuously monitor oil/condensate, water and gas being produced in each well on platforms.

However, in the gas metering section of a test separator, liquid "carry over" is a well-known problem, especially when new wells are put on stream. Occasionally, when the well stream flow exceeds the capacity of the test separator, water, oil, agitated solids and other debris are carried over into the metering devices. As a result of this harsh treatment, orifice and conventional turbine meters have sometimes been found buckled or damaged – even relocated somewhere downstream of the process.

Other common problems with conventional meters include wax/asphaltene build-up, sand/cavitation erosion and grease ingress/deposition from upstream valve lubrication. They contribute to inaccurate measurement, which in turn, leads to an increase in total cost of ownership of the system.

Also, when a well-test is being performed, there's usually higher than normal flow regimes/velocities and greater separator performance error due to meter over-ranging. Generally, plate changes are needed on orifice-designed measurement systems to cope with the turndown. But this can be time consuming, risky and costly when removing plates under system pressure.



- Little or no upstream straight pipe run requirements
- Accuracy of up to $\pm 0.5\%$ and $\pm 0.1\%$ repeatability
- Low head loss
- Easy installation – ideal retrofit!
- Little to no maintenance

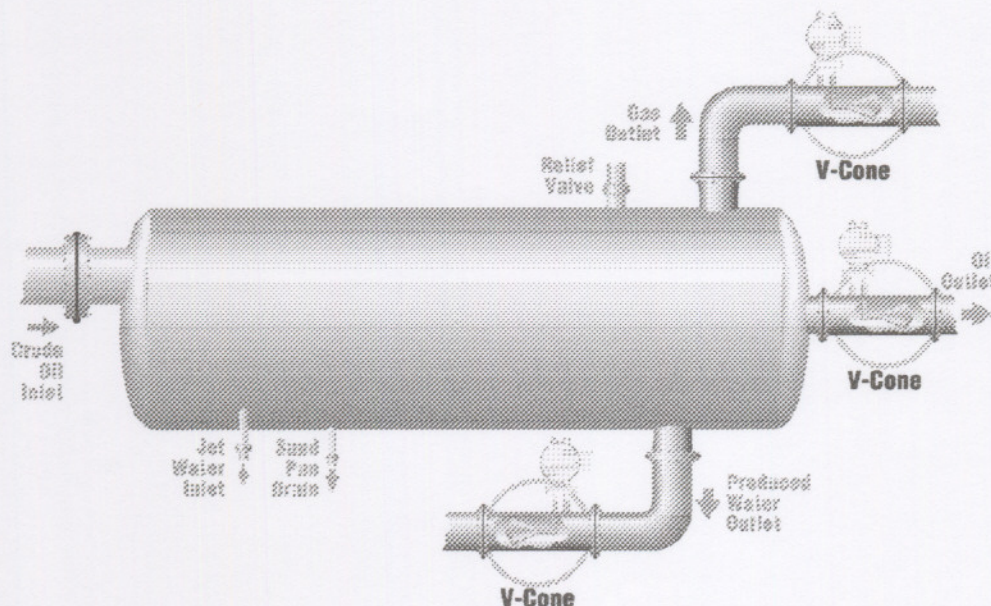
Measures:

- Wet gas, abrasive and disturbed flows
- Flow for anti-surge control in compressor stations
- Output from separators (gas, oil and water)
- Flow in gas injection systems
- Contaminated water (sand, oil, paraffins, and other hydrocarbon types)



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V-Cone installation on a typical test separator application.



Lastly, these heavy and bulky installations can incur weight and space penalties, a major consideration for today's offshore platforms.

Why the V-Cone Flowmeter is Ideal for Test Separator Applications

McCrometer's patented V-Cone flowmeter offers an advanced, differential pressure flow technology that acts as its own flow conditioner.

This unique design enables the V-Cone flowmeter to provide outstanding performance without the up or downstream pipe runs usually required by other types of flowmeters. This reduced straight pipe run requirement results in significant space savings, especially on offshore platforms. It also makes the V-Cone a simple to install retrofit.

The V-Cone flowmeter can efficiently handle wet gas and offer higher accuracy and stability than most other flowmeters. There are no build-up problems with the V-Cone, unlike with other flowmeters including the orifice plate.

Additionally, when two V-Cone flowmeters were placed in parallel on a test separator gas run, the flowmeters can, and in some cases, cover the range of more than 10 orifice plates.

The V-Cone provides an accuracy of up to $\pm 0.5\%$ and repeatability of $\pm 0.1\%$. It comes in sizes for line diameters from 1/2-inch to over 120-inches. It handles flow turndowns in excess of 10:1 with high pressure applications available (corrosion resistant models in most materials as required).



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