

# METHANE FROM FLARING TOOLKIT



## Cone Flow Meter

How do I measure flow? > Cone Flow Meter

A Cone or V-Cone flow meter is a differential pressure device.

An obstruction in the pipe (i.e., a reduction in the cross-sectional area available to the flow) causes an increase in the velocity of the flowing fluid and a corresponding reduction in its pressure.

### How it Works

As the fluid approaches the V-Cone flow meter, it will have a pressure of  $P_1$ .

As the fluid flows past the constricted area of the V-Cone its velocity increases and its pressure drops to  $P_2$ . Both  $P_1$  and  $P_2$  are measured at the V-Cone flow meter's taps using a differential pressure transducer.

The differential pressure ( $Dp$ ) measured at the V-Cone flow meter will increase and decrease with the flow velocity.

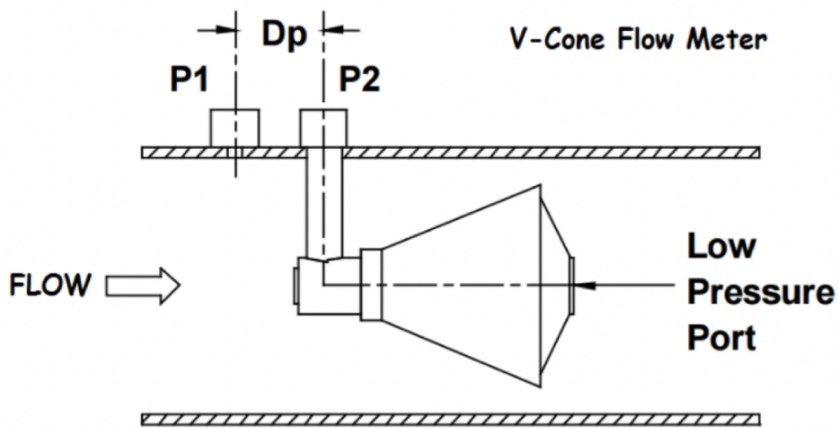


Figure 1: Principles of a cone flow meter

#### Advantages

- ✓ Well proven, simple, and robust metering principle
- ✓ Lower sensitivity than orifice plates and venturi tubes to installation effects
- ✓ Does not require significant lengths of straight pipe to be installed upstream

#### Limitations

- ✗ Not suited for low flow velocities
- ✗ V-cone presents a significant restriction to flow in the flare system
- ✗ Results in a high permanent pressure drop
- ✗ Limited turndown ratio, typically 4:1
- ✗ Lack of design standards

Go Deeper

## [To follow](#)

### Case study

No case study available at this time.

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### How do I measure flow?



Flow: [Ultrasonic & Sonar Clamp-on Flow Meters](#)



[Vortex Flow Meter](#)



Flow: [Coriolis Flow Meter](#)



Flow: [Ultrasonic Flow Meter](#)



[L2F Optical Flow Meter](#)