

VORTEX FLOWMETER SIZING GUIDE



Instructions for Sizing Vortex Meters for Steam Flow

1. Set 100% quality opposite flow rate (lb/hr).
2. Set the cursor at actual steam quality.
3. Move the slide to bring the actual steam pressure (center scale) under cursor line.
4. **Do not move the slide again;** move the cursor to bring the cursor arrow over the steam pressure on lower scale.
NOTE: Read meter size between MIN and MAX limits on cursor. If the MAX cursor line extends into the blue overrange region, then the limits must be read between the end of the overrange (blue scale) and the MIN line on the cursor.

5. Select the smallest meter size that falls between the MAX and MIN lines on the cursor. This will allow the most flow rangeability for the meter.
6. Example:
Steam at 75 psig, 90% quality, and 20000 lb/hr
Select a 6" meter
The 4" meter is positioned within the blue overrange region. This means the steam velocity through the meter would be beyond the acceptable range. Even though the 4" meter is within the MAX line, select a 6" meter.

Instructions for Sizing Vortex Meters for Gas Flow

1. Set flowing pressure psig, opposite flowing temperature, °F, in the upper right-hand window.
2. Opposite Specific Gravity on the slide, read Flowing Density in lb/ft³. This density is needed to set the cursor in step 5 so **make note** of this number.
3. Opposite arrow head on upper density ratio scale, read the Density Ratio.
NOTE: There are two Density Ratio scales, for this step read the number on the slide scale.
4. Using the fixed Density Ratio scale, move the slider until the flow rate (scfh) is opposite the Density Ratio noted in step 3. **Do not move the slide again.**
5. Referring to the bottom scale on the rule (Flowing Density), move the cursor and set the arrow head over the Density noted in step 2. **Do not move the cursor again.**
NOTE: Between the MAX and MIN lines on the cursor read meter

size. If the MAX line on the cursor extends into the blue overrange region, then the meter size must be read between the end of the overrange region (blue scale) and the MIN line on the cursor.

6. Select the smallest meter size that falls between the MAX and MIN lines on the cursor. This will allow the most flow rangeability for the meter.
7. Example: Natural Gas at 50 psig and 100°F.

Spec. Grav. 0.8 and 100000 scfh.

Calculate

Flowing Density 0.25

Density Ratio 4.0

Select 3" Meter

The 2" meter positioned within the (blue) overrange region. This means the gas velocity through the meter would be above the acceptable range. Even though the 2" meter is within the MAX, MIN line, select a 3" meter.

(SEE OTHER SIDE FOR STEAM FLOW)