

# Calibrated Leak Orifices

APPLICATION BULLETIN #137A

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## Specifying Orifice Value for Sentinel C-20, B-21, or I-21 Instruments

The accuracy of the orifice flow value is  $\pm 1\%$  or  $\pm 0.1$  sccm, whichever is greater

The manufacturing range for orifices is:

- When specified as integral component of Sentinel C-20, B-21, or I-21 instrument  
  
0 to +10% of the specified leak rate or +0.2 sccm, whichever is greater
- When specified as separate item on an order  
  
 $\pm 1\%$  of the specified flow rate or  $\pm 0.1$  sccm, whichever is greater

### Calibration Check

If it is desired to always see the Reject light when the orifice is added to the test part, there are several tolerances that must be added together to determine the specified value of the orifice.

Parameters required to define the orifice value:

- Reject leak rate
- Gage R&R tolerance of the system for the application
- Method for supplying the orifice (specified within instrument or ordered as a separate item)

### Specifying orifice value for Calibration Check

Defining the orifice value depends on how the orifice is being supplied.

#### Component of instrument

Specified orifice value = Reject leak rate +  $\frac{1}{2}$  (Gage R&R tolerance for the application) + 1% of reject rate (or +0.1 sccm, whichever is greater) for orifice accuracy tolerance

#### Ordered as a Separate Item

Specified orifice value = Reject leak rate +  $\frac{1}{2}$  (Gage R&R tolerance for the application) + 1% of reject rate (or +0.1 sccm, whichever is greater) for manufacturing tolerance + 1% of reject rate (or +0.1 sccm, whichever is greater) for orifice accuracy tolerance



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