Calibrated Orifices

WATER OR AIR FLOW

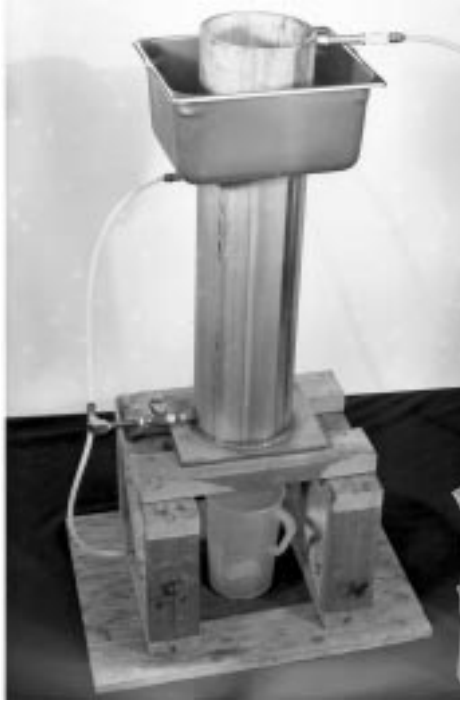
Air Flow

For flow standards or other critical uses, O'Keefe Controls Co. can provide measured air flow data for any of the standard precision orifice products. This optional service is available at a nominal charge and can be provided for pressure or vacuum flow conditions in the standard ranges listed below. A calibration sheet with measured data is provided for each orifice (see sample below).

Data is obtained using a digital mass flowmeter traceable to the National Institute of Standards Technology (NIST). Standard conditions are 70ºF and 14.7 psia (See photo page 45).

Air flow can be measured for any of the following conditions:

Pressure	0-5, 0-10, 0-20, 0-50, 0-100 psig
Vacuum	0-30" Hg
Flow	0-.002, 0-.01, 0-.02, 0-.05, 0-.1, 0-.2, 0-.5, 0-1, 0-2, 0-5, 0-10, 0-20, 0-50, 0-200 SLPM
Flow	0-.004, 0-.02, 0-.04, 0-.10, 0-.2, 0-.4, 0-1, 0-2, 0-4, 0-10, 0-20, 0-40, 0-100, 0-400 SCFH



C_v Measurement
Water at a constant height equivalent to 1 psig is used to determine the amount of water that passes through a test orifice in a measured time period. The C_v is calculated from the measured data.

Water Flow

Calibration of standard orifices using water flow is accomplished by measuring the quantity of water flowing through an orifice in a given time period at a specific inlet pressure.

The calibration procedure determines the water flow rate through the orifice and the corresponding C_V of the orifice is calculated. The C_V can then be used to predict the water flow rate at varying differential pressure conditions using the equation:

$$Q = C_V \sqrt{\Delta P}$$

For liquids other than water flow rate can also be predicted using the C_V method. See page 47 for details on liquid flow - C_V method.

A calibration sheet with measured data is provided for each orifice. The calculated C_V is the average value computed from five separate tests (see sample below).

O'Keefe Controls Co.

MEASURED DATA POINTS
Air Flow

Pressure Units -	Air Flow Units -

Barometric Pressure _____
Ambient Temperature _____
Flowmeter _____
OKC Part No. _____
I/D No. _____
Purchase Order _____
Customer _____
Customer P/N _____
Invoice _____
Data By _____
Date _____

O'Keefe Controls Co.

C_V TEST CALIBRATION
Water Flow

Test	Weight of Collected Water	Fill Time (min)	Calculated C_v
1			
2			
3			
4			
5			
		Average C_v	

O'Keefe Part Number _____ Customer Name _____
I/D Number _____ Customer Purchase Order _____
O'Keefe Invoice No. _____ Customer Part Number _____
Barometric Pressure _____ Temperature _____
Date _____ Data By _____

© O'KEEFE CONTROLS CO. • 2003 ALL RIGHTS RESERVED