



## 393 Series Float Style Rotameters

## Operating Instructions

**393 series rotameter models -**

- 393-0334 Flow range 0.3 to 3.4 l/min
- 393-0650 Flow range 0.6 to 5.0 l/min
- 393-1130 Flow range 1.0 to 13.0 l/min
- 393-2260 Flow range 2.0 to 26.0 l/min

**Introduction**

The SKC 393 Series Float Style Rotameter comprises a robust perspex body and enamelled steel base with three fixed feet for stability. The air inlet is through the centre of the base providing smooth airflow and a steady reading.

A screw-in hose-tail is supplied, which screws into the top outlet of the rotameter, and enables the easy attachment of tubing to the rotameter. The hometail incorporates an O ring to ensure an optimum seal to the rotameter.

**Reading the flow rate**

Before taking a reading ensure that the rotameter is positioned on a level surface.

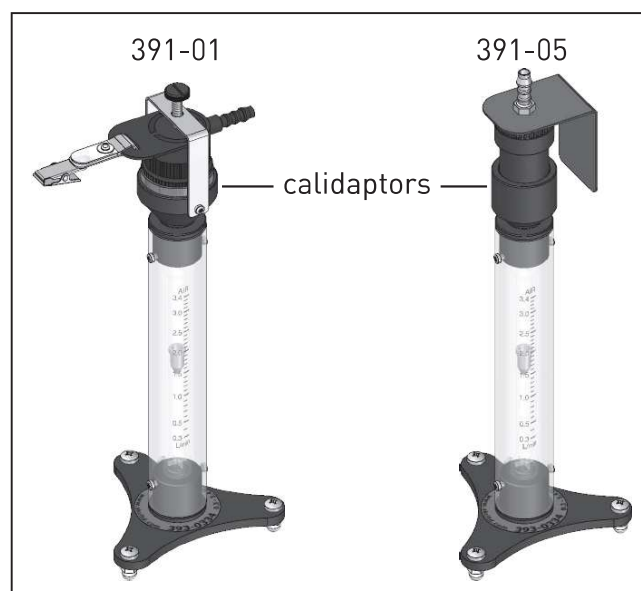
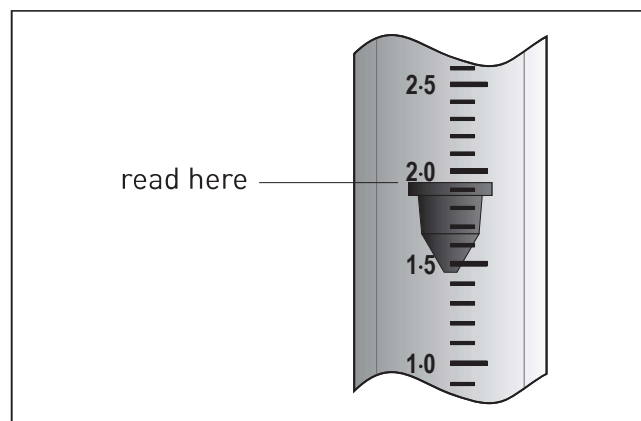
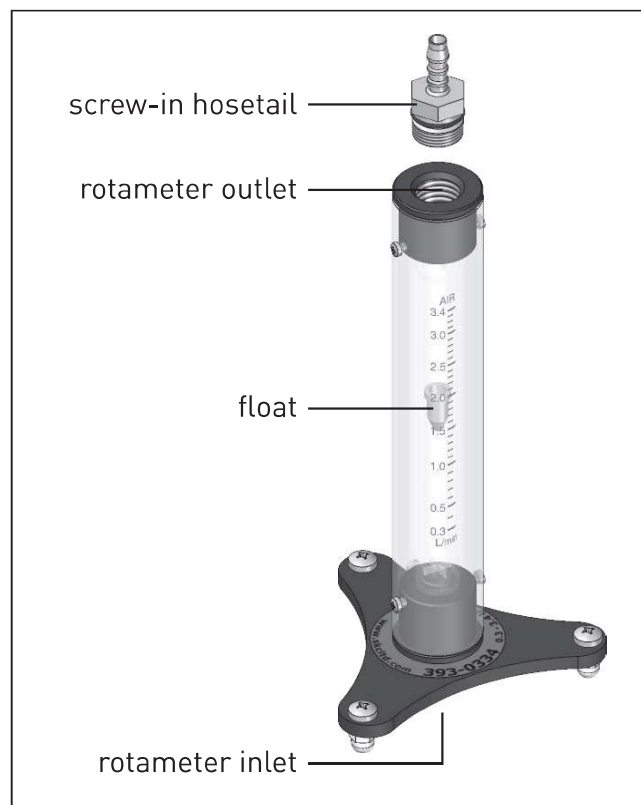
The reading is taken from the top level of the float. The operator should read the scale at eye level, not from above or below, to ensure the accuracy is maximised.

The accuracy of rotameters is impacted if the float is not steady. Ensure that the float is spinning freely and is not oscillating up and down before taking a reading.

**Optional accessories**

391-01 - "Calidaptor" for use with the I.O.M, single and seven hole sample heads. The front face of the sample head seals against a soft foam pad, and is clamped securely in place for hands free calibration.

391-05 - "Calidaptor" for use with the cowed asbestos head. Incorporates an 'O' ring to seal to the sample head inlet and secure the sample head in place to allow hands free calibration.



## Accuracy specification

The 393 series rotameters have the following accuracy specification to VDI/VDE 3513-2:2008 -

G (Permissible error) = ±2.5% of reading

q<sub>G</sub> (Linearity limit) = 50% of full scale

Accuracy at a given flow reading according to VDI/VDE 3513-2:2008 is given as -

F<sub>%</sub> = G ..... for q<sub>%</sub> ≥ q<sub>G</sub>

F<sub>%</sub> = G x ( q<sub>G</sub> / q<sub>%</sub> ) ..... for q<sub>%</sub> < q<sub>G</sub>

where -

F<sub>%</sub> = Accuracy at measured flow rate as a percentage of measured flow rate

G = Permissible error

q<sub>G</sub> = Linearity limit

q<sub>%</sub> = Measured flow rate as a percentage of full scale

Accuracy values for the major scale flow rates for the 393 series rotameters are given in the table below -

393-0334		393-0650		393-1130		393-2260	
Flow Rate (l/min)	Accuracy (% of reading)	Flow Rate (l/min)	Accuracy (% of reading)	Flow Rate (l/min)	Accuracy (% of reading)	Flow Rate (l/min)	Accuracy (% of reading)
3.4	2.50	5.0	2.50	13.0	2.50	26.0	2.50
3.0	2.50	4.0	2.50	12.0	2.50	24.0	2.50
2.5	2.50	3.0	2.50	11.0	2.50	22.0	2.50
2.0	2.50	2.0	3.13	10.0	2.50	20.0	2.50
1.5	2.83	1.0	6.25	9.0	2.50	18.0	2.50
1.0	4.25	0.6	10.42	8.0	2.50	16.0	2.50
0.5	8.50			7.0	2.50	14.0	2.50
0.3	14.17			6.0	2.71	12.0	2.71
				5.0	3.25	10.0	3.25
				4.0	4.06	8.0	4.06
				3.0	5.42	6.0	5.42
				2.0	8.12	4.0	8.12
				1.0	16.25	2.0	16.25

## Ambient temperature and barometric pressure correction

The 393 series rotameters are standardised to 20°C and 1atm (1013.25mbar). The ambient temperature and barometric pressure when using the rotameter will vary from these values, so the indicated rotameter reading should be corrected to the ambient conditions as follows -

$$Q_{\text{corrected}} = Q_{\text{indicated}} \times \sqrt{\frac{1013.25}{p_{\text{barometric}}} \times \frac{T_{\text{ambient}}}{293.15}}$$

where:

p<sub>barometric</sub> is the barometric pressure in mbar.

T<sub>ambient</sub> is the ambient temperature in Kelvin (°C + 273.15).

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