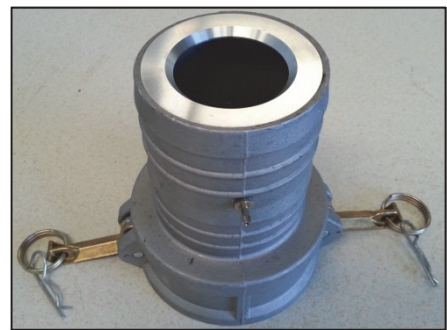


POSITIVE AND NEGATIVE DUCTWORK ACCREDITATION (PANDA) SYSTEM FLOW VERIFICATION COLLAR (P/N AFL72888001)

INSTRUCTION SHEET

The Flow Verification Collar provides an easy to use method of verifying the accuracy of the flow through the PANDA Flow Grid using the instrumentation supplied with the PANDA.

- The collar removes the need for returning the complete PANDA system to TSI for calibration.
- Each collar is provided with a calibration certificate for traceability.
- Only the TA465-P and PVM610 instruments still need regular calibration.



The Flow Verification Collar does not require recalibration unless it has been damaged, modified or requires a calibration interval.

- The factory recommended calibration interval is 10 years.
- If the authority having jurisdiction requires an interval less than 10 years, the Flow Verification Collar can be sent to TSI for recalibration.

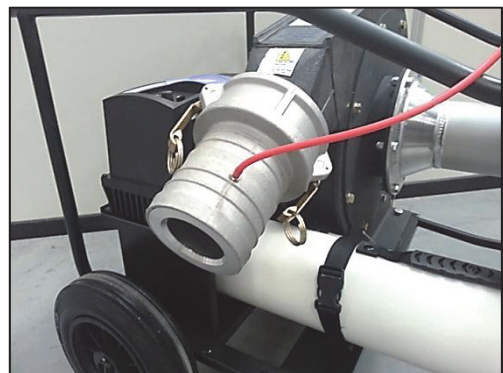
PANDA Flow Verification Collar Specification

Range:..... 10 l/s to 110 l/s

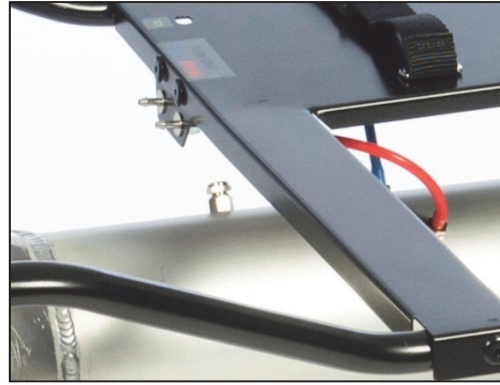
Accuracy: $\pm 2.5\%$ of reading +0.5 l/s

Instructions

1. Connect the Flow Verification Collar to the fan outlet flange.
 - a. Attach a silicon tube from the Verification Collar tap to the PVM610 positive (+) connection.
 - b. Zero the PVM610 pressure reading.



2. Connect the TA465-P to the taps on the PANDA Flow Grid.
 - a. Zero the TA465-P pressure reading.
 - b. Select **l/s** for flow units.
 - c. Set TA465-P for Standard conditions.



3. Run the leakage application on the TA465-P.
 - a. Select **Flow Grid** as the **Flow Device**.
 - b. Select **Run Test** to display Leakage test screen.

| LEAKAGE TEST | |
|--------------|---------------------------|
| Leak Factor | 0.3758 l/s/m ² |
| Leak Limit | 0.728 l/s/m ² |
| Leak Rate | 79.63 l/s |
| Status | OK |
| Flow Device | Flow Grid |
| Baro Press | 743.3 mm Hg |
| Temperature | 23.6°C |
| Time | 0:00 |
| Standard | Test 003 |
| | Sample |
| Test Done | 0 |
| START | |

When validating performance, it is recommended to check flows of 80 l/s and 30 l/s which provide assurance of operation throughout the entire range.

1. To start the test, slowly wind up the PANDA speed until a **Leak Rate** of 80 l/s is displayed on the TA465-P.
 - a. Allow both instrument readings to settle
 - b. Take average readings for the leak Rate and the pressure signal
2. Apply the pressure signal reading from the PVM610 to the Flow Verification Collar equation shown below:

$$Flow = 2.503 * Dp^{0.5032}$$

Example:

PVM610 reading = 991.6Pa.
 $2.503 * 991.6^{0.5032} = 80.58$ l/s
 Leak rate Reading from TA465-P = 79.63 l/s

3. Repeat the process with a leakage rate of approximately 30 l/s.

Example:

PVM610 reading = 148.1Pa.
 $2.503 * 148.1^{0.5032} = 30.95$ l/s
 Leak rate Reading from TA465-P = 30.60 l/s

Std. Calibration curve for Panda Outlet Orifice Device

