



Model 7991 Suction Regulator Test Device

Instrument Description

This instrument is designed to test the static pressure and flow capacity of a vacuum regulator to determine if it is suitable for clinical use. This is an abbreviated field test, and not a replacement for the full test procedures specified by the regulator manufacturer. This instrument will NOT test the timing or venting capability of an intermittent regulator.

Section 8.4.1 of ISO 10079-3 (*Medical suction equipment Part 3:Suction equipment powered from a vacuum or pressure source*) requires a suction regulator in the field to have a minimum flow rate of 20 liters per minute at a static pressure setting of 100 mmHg. When used properly, the 7991 Suction Regulator Test Device will indicate these parameters.

The Suction Regulator Test Device has a two-position switch for measuring STATIC pressure (suction) and the corresponding AIRFLOW. When switched to position "A" (STATIC PRESSURE) the gauge measures the non-flowing vacuum pressure directly. In the second position, "B" (AIRFLOW), the gauge indicates the airflow to provide a direct indication of the supply capability of the suction regulator when set to the previously indicated static vacuum.

Directions for Use:

1. Before subjecting a regulator to the test herein, ensure the outlet to which the regulator will be attached to is compliant to NFPA99 using the Boehringer Model 7990 Outlet Tester.
2. Attach the Tester to the regulator. If the regulator to be tested has an integral trap bottle or canister mounted to it, connect the tester to the inlet of the canister/trap bottle. Ensure the gauge on the regulator under test reads 0mmHg in the off position.
3. Turn the Suction Regulator Test Device to position "A" (STATIC PRESSURE).
4. With the regulator in the OFF position, ensure there is no gauge reading on the Suction Regulator Test Device. Any gauge reading indicates a failure of the internal shutoff mechanism of the regulator.
5. Set the regulator to be tested to continuous/regulate mode.
6. Adjust the regulator to 100mmHg, as indicated by the gauge on the regulator.
7. Compare the indicated value on the regulator to that of the value displayed on the suction regulator test device. Ensure there is no more than 10mmHg discrepancy between the Tester and the gauge of the regulator under test.
8. Verify that the regulator under test does not 'creep' to a higher vacuum setting. Any gauge creep would be indicative a need for regulator service.
9. Turn the switch on the Suction Regulator Test Device to position "B" (AIRFLOW) and read the indicated flow. Note that there will be an audible air leak through the orifice. **Caution: Do not occlude this orifice when taking readings.** The flow reading should optimally be in the green zone for acceptable flow. A reading in the yellow may indicate that additional flow could be obtained by cleaning or servicing the regulator. If the gauge reads below 20 lpm the regulator should be removed from service as it fails to meet the ISO specification for pharyngeal suction.

Interpreting Instrument Readings

In both test settings the results should be in the respective green areas of the 7991 gauge. If a regulator fails any portion of this test, return it to Biomedical engineering and service according to the manufacturer's recommendations.

Calibration

The Suction Regulator Tester is calibrated at the factory. To maintain the factory calibration, the orifice should be kept clean and free of debris. The instrument should be sent back to the factory for calibration every two years. Call 800-642-4945 for more information.

Disassembly and Cleaning

The exterior of the Tester can be cleaned with appropriate hospital disinfectants.

Instrument Specifications

Materials: Hard Anodized Aluminum, Polycarbonate, Silicone, Delrin

Inlet Fitting: 1/8-27 NPT

Measurement Accuracy: $\pm 5\%$ Flowing and Non-Flowing

Weight: 0.8 lbs

Size: 1½" Ø x 5¾" H (without hose or fittings)