200-BP-CAL-KIT

Sphygmomanometer Calibration Kit

INSTRUCTION MANUAL

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Quality Assurance

Netech Corporation is ISO 9001-2000 Registered. This instrument was thoroughly tested and inspected according to Netech's ISO 9001-2000 quality standards (ISO/IEC 17025) and test procedures, and was found to meet those specifications when it was shipped from the factory.

Warranty

Netech warranties the Blood Pressure Calibration Kit against defects in materials and workmanship for one year from the date of original purchase.

During the warranty period, we will repair or, at our option, replace at no charge a product that proves to be defective, provided you return the product shipping prepaid to Netech Corporation. This warranty does not apply if the product has been damaged by accident or misuse, or as the result of service or modification by other than Netech Corporation, or if its serial number is defaced or removed.

Netech reserves the right to discontinue the Blood Pressure Calibration Kit at any time, and change its specifications, price, or design without notice and without incurring any obligation. Netech guarantees availability of service parts for 5 years after the manufacture of the unit is discontinued.

The warranty is void if you elect to have the unit serviced and / or calibrated by someone other than Netech.

The purchaser assumes all liability for any damages or bodily injury that may result from the use or misuse of the unit by the purchaser, his employees, agents or customers.

In no event shall Netech Corporation be liable for consequential damages.

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1.1 INTRODUCTION

GENERAL DESCRIPTION

The heart of the Blood Pressure Calibration Kit is a Digimano 1000 series Pressure Meter. The Digimano 1000 is a portable digital instrument designed to measure the pressure and vacuum of non-corrosive fluids and gases. The versatile instrument presents its measurement results in one of two engineering units on a large 3 _ digit LCD display.

The Blood Pressure Calibration Kit contains the 200-2000IN,

The Digimano 1000 has an accuracy of 0.25% full scale. Seven models with different engineering units and pressure ranges are available. To provide superior performance, the Digimano 1000 incorporates one of the latest semiconductor pressure sensors.It is powered by one 9-Volt alkaline battery.

Optionally, an AC adapter may be used. The Digimano 1000 is CE marked and is shipped with a Certificate of Calibration traceable to the NIST. The Digimano 1000 is a rugged instrument that performs its measurements quickly, accurately, and with ease.

1.2 SPECIFICATIONS

Display:
3-1/2 Digit 0.5 in LCD.

Polarity Display:
The negative sign (-) is displayed when there is a vacuum reading.

Accuracy:
0.25% full range, +/- 1 count (Pressure Only).

Operating Temperature:
0 degree C to 40 degree C

Media Compatibility:
Non-corrosive fluids and gases.

Maximum Pressure:
Double the rated Pressure.

Power:
One 9 volt alkaline battery or optional AC adapter.

Low Battery Indicator:
LED on if battery voltage is ≤ 6.8 volts.

Physical Dimensions:

Size: 3 x 2 x 1.4 in (7.6 X 5 X 3.6 cm)
Weight: 6.5 oz (.18 kg)

Digimano 1000 Standard Models:

Model #	**Measurement Units & Range**
200IN	199.9 mmHg / 199.9 inH2O
2000IN	1999 mmHg / 199.9 inH2O *
200PS	199.9 mmHg / 19.99 PSI
2000PS	1999 mmHg / 19.99 PSI *
200cmH2O	199.9 cmH2O / 19.99 PSI
200kPa	199.9 kPa / 1999 cmH2O
2000kPa	199.9 kPa / 199.9 inH2O

*** User can pick any of these models for the BP-Cal Kit.**

1.3 ACCESSORIES

Description	**Part Number**
User Manual	200-Manual
Syringe Pressure Applicator	204
Silicon Tubing	
Three-way Plastic TEE Connector	
Hard Carrying Case	

1.4 OPTIONAL ACCESSORIES

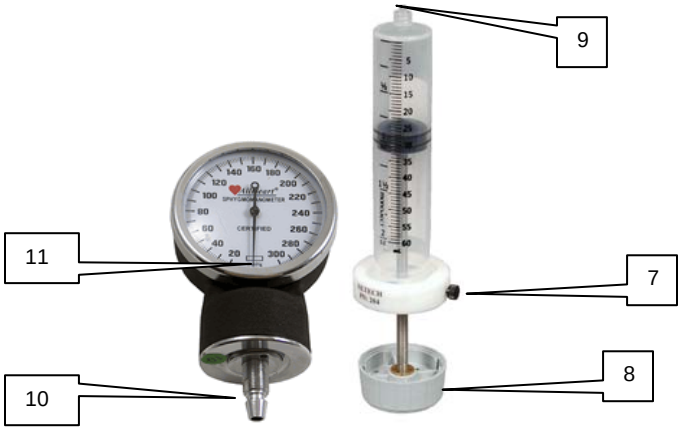
Description	**Part Number**
110 VAC Adapter	302
220 VAC Adapter	302-220

2.1 CONTROLS AND INDICATORS

1. **Display Screen**
2. **ON/OFF Switch**
3. **mmHG/PSI Switch**
4. **Luer Lock Fitting (Female)**
5. **DC Proportional Output**
6. **Zero Adjustment**
7. **Lead Screw Release**
8. **Precision Adjust**
9. **Luer Lock Fitting (Female)**
10. **Barb Fitting**
11. **Zero Square**

Digimano Pressure Meter

Figure 1



Sphygmomanometer Syringe Pressure Applicator

Figure 2

2.2 TYPICAL CALIBRATION SET UP

Place the cuff in a rigid enclosure such as a tin can. Using the inflation bulb pump unit to 200 mmHG and hold. Pressure should remain steady. If it does not stay steady go to Section 3 and use the same technique to determine where the system is leaking. The bulb, cuff and connecting hose can all leak and may require removal.

Remove any hoses from your sphygmomanometer (Unit Under Test (UUT)) and inspect them for cracks. If cracks are present replace hose.

Inspect the Unit Under Test (UUT) for indications of impact or physical damage.

If the UUT is an aneroid style, Sphygmomanometer, ensure that the needle is with the rectangular zero indicator (11), see Figure 2. If not the unit requires repair prior to proceeding.

Turn your digital pressure meter on and insure that the display (1) reads zero, if it does not adjust to zero by using the zero adjustment. See Figure 1.

Adjust the plunger on the Pressure Applicator Syringe to to its mid point by pushing or pulling the plunger (8) while pressing in the lead screw release button (7), see Figure 2.

Connect the silicon tubing to both the UUT and the Pressure Meter as shown in Figure 3.

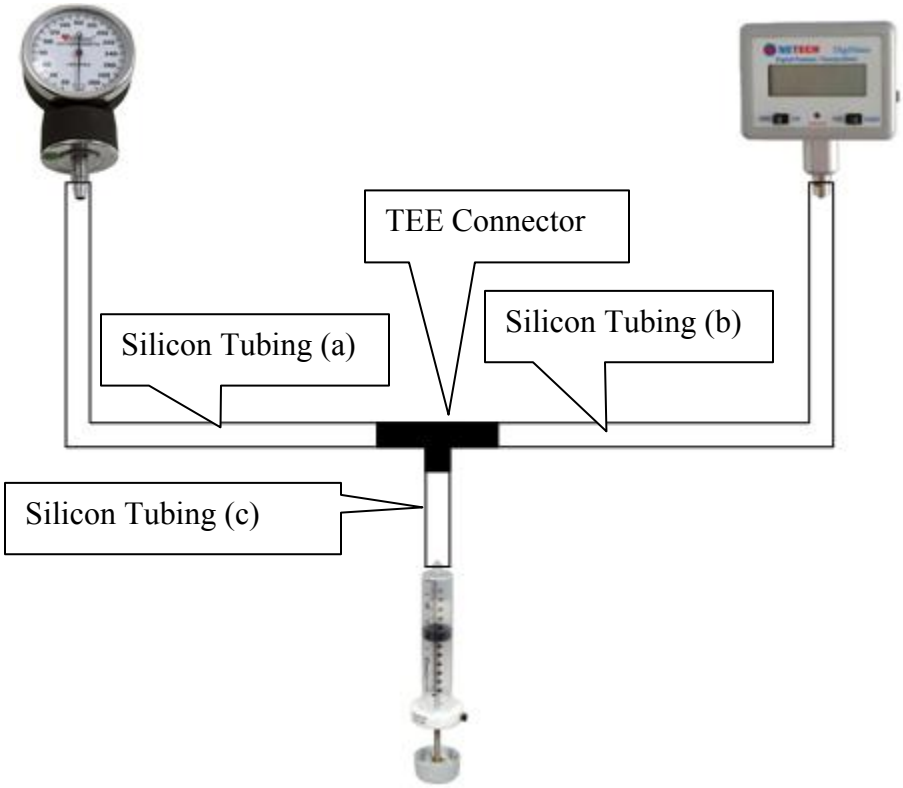
Ensure both the UUT and the Pressure Meter read zero, then carefully attach the Pressure Applicator Syringe, while ensuring that both the UUT and the Pressure Meter remain at zero.

During the remainder of the tests ensure the needle on an aneroid sphygmomanometer travels smoothly at all times.

Turn the fine adjustment knob (8) Figure 2, until the UUT reads 100 mmHg and hold. Ensure that the reading remains steady, if the pressure drops refer to section 3.0 Troubleshooting.

By turning the fine adjustment knob apply three values such as 50, 150 300 plus zero. Ensure that both the sphygmomanometer and digital pressure meter read within 3 mmHG of each other.

Sphygmomanometer **Digital Pressure Meter**



Pressure Applicator Syringe

Figure 3

3.0 TROUBLESHOOTING THE CALIBRATION SET UP

3.1 Maintaining Initial Zero readings

The sphygmomanometer and/or the digital pressure meter reads a pressure after connecting all the tubing and devices.

Make sure that you use the male luer lock fitting when connecting either the digital pressure meter or the pressure applicator syringe. Always connect the sphygmomanometer first and the syringe last using care to not induce pressure into the setup.

Do not readjust zero using the zero adjust on the digital meter, zero can only be adjusted when the unit is open to atmosphere.

3.2 Maintaining A Steady Pressure Reading

If the sphygmomanometer and the digital pressure meter will not stay steady your calibration set up is leaking.

- Using a clamp or some other tool that will seal off the silicon tubing, clamp tubing segment (c) at the syringe. If the pressure remains steady tighten up the syringe connection.
- If this fails clamp tube segment (c) at the TEE Connector if pressure stays steady tighten up this connection.
- Else clamp segment (b) at the TEE connector. If pressure stays steady tighten up this connection.
- Else clamp segment (b) at the Digital Pressure Meter connection. If pressure stays steady tighten up this connection.
- Else clamp segment (a) at the TEE connector. If pressure stays steady tighten up this connection.
- Else clamp segment (a) at the Sphygmomanometer connection. If pressure stays steady tighten up this connection.