

**Calibration Procedure
for Parks Flo-Labs
Model 2014**

Model 70

2014 CHECK-OUT PROCEDURE (in field) Rev. 1.0

These procedures are to aid in checking each function of the Flo-Lab.

Important: Before you get started you should make a note of all control settings so that when you have completed these procedures you can reset them.

1. Computer interface:

This unit is used to verify all of the functions so it must be checked first. If the computer interface does not pass this procedure, then the other sections cannot be checked.

This test will require a test fixture that is available through the factory.

Set-up: Power up the Flo-Lab and boot up the VIP software. When the monitor screen displays the first "choices menu" push the F3 key on the computer keyboard. This command will cause the dual scope mode to appear on the screen.

- a. Plug the cable below the SQUARE WAVE label on the test fixture into the jack labeled EXTERNAL located on the lower right corner of the front of the Flo-Lab. (Refer to the diagram of the Model 2014 front panel on the last page of this document.)
- b. Using the SIGNAL SOURCE switch located at the upper right corner of the Flo-Lab, select EXTERNAL signal source.
- c. Adjust the SIZE control to the position labeled 0.
- d. Adjust the POSITION control so that both traces are positioned at the bottom edge of their respective display waveform grid.
- e. Adjust the SIZE controls to the position marked 10.
- f. Depress the SQUARE WAVE button on the test fixture for 3-4 seconds. You should observe a square wave signal displayed on the computer monitor that is approximately 5 major divisions in amplitude going up from the baseline on both channels. (If the square wave is not the right amplitude, replace the 9 volt battery inside the test fixture.)

2. Doppler Module model 2400:

Set-up: Locate and adjust the following controls: SIGNAL SOURCE to DOPPLER, OUTPUT FILTER to 7, both sliding VOLUME controls set to LOW, DOPPLER RECORDING select to NORMAL.

- a. Adjust the SIZE controls to the position marked 10.
- b. Adjust the POSITION control so that both traces are positioned at the bottom edge of their respective computer display waveform grid.
- c. Push the FREQUENCY SELECT button labeled LOW.
- d. Depress and release the CAL. A button on the Doppler module. The CAL. A button should light. The trace on the Channel A grid should move up approximately two major divisions.
- e. Depress and release the button labeled HIGH. This selects the high Doppler frequency. Push the CAL.A. button. The Channel A trace should rise approximately four major divisions.
- f. Depress the CAL. A. button again. The light should go out.

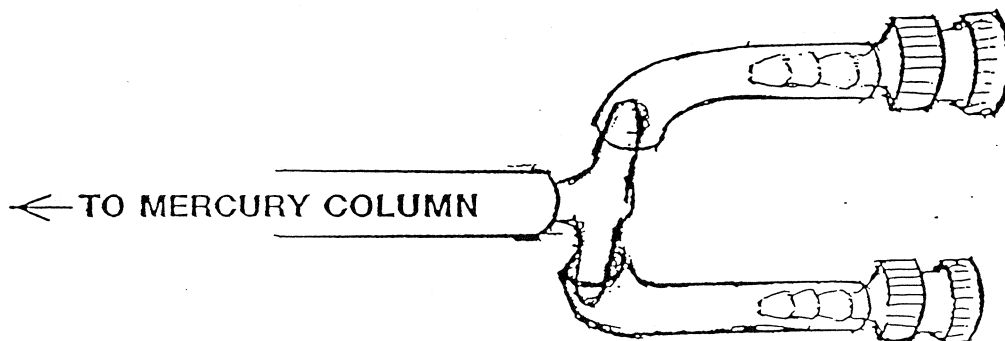
3. Plethysmograph Model 2208/2209:

Note: If you have a plethysmograph model 2209 you will not have an IPG section. Some of the checks will not apply to all plethysmographs.

Caution: DO NOT USE THE BUILT IN INFLATOR WHEN THE MERCURY COLUMN IS ATTACHED. Doing so will cause permanent damage to the mercury column and force mercury outside its column.

Set-up: Disconnect the red and yellow hoses from the front of the plethysmograph (if attached). Disconnect the IPG patient cables. Connect the special "Y" hose assembly to the hose connectors. You will need to connect your mercury column to the "Y" hose assembly (Refer to the illustration shown below). Use the SIGNAL SOURCE button to select PLETH. Use the AUTO SET-UP button to select MANUAL.

- a. Pump the mercury column up by hand to 40 mm Hg. Compare the computer display and the digital display to the mercury column. If the numbers are within 5%, they are O.K.. If not, please notify the factory and we will give instructions on recalibration.



Special "Y" hose assembly

- b. Pump the mercury column up by hand to 200 mm Hg. Compare the computer display and the Model 2208/2209 digital display to the mercury column. If they are within 5%, they are O.K.. If not, please notify the factory and we will give instructions on recalibration.
- c. Check the PPG section. Set AUTO SET-UP to MANUAL. Push the PPG button. Select GAIN X1. Set TIME CONSTANT to S (Short). Place a sensor on your thumb. Push and release the RESET. When the READY light is on there should be a waveform present on the screen. Do this for both A and B channels.
- d. To check the IPG section you will need to connect the IPG cable on the test fixture to the IPG BANDS connector.

- e. Push the IPG button. Switch TIME CONSTANT to VENOUS (D.C.), and the GAIN to X1. Make sure the SIZE control labeled A is at 10.
- f. Press and release the RESET button and wait for the READY light. Now press the CAL 0.8 % switch on the plethysmograph. The line on the strip should move up approximately 5 major divisions. The BASELINE IMPEDANCE display should read between 41 and 45 ohms.
- g. Disconnect the test fixture and mercury column. This test is complete.

COMPUTER INTERFACE

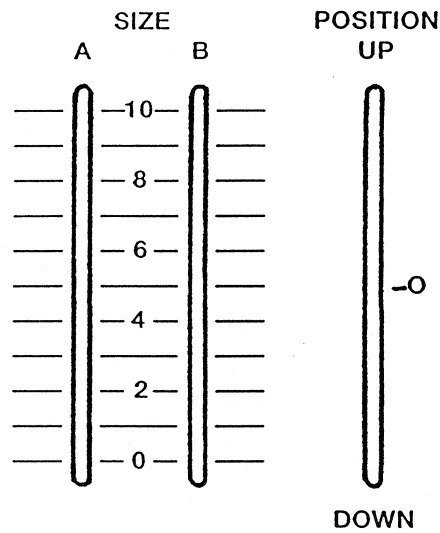
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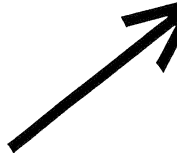
SIGNAL SOURCE



- DOPPLER
- PLETH.
- EXTERNAL



EXTERNAL



**Plug the cable of the
Flo-Lab test fixture in here**

EQUIPMENT NEEDED

- A. #2 PHILLIPS-HEAD SCREWDRIVER
- B. SMALL FLAT BLADE SCREWDRIVER
- C. RELIABLE MANOMETER (MERCURY COLUMN IS IDEAL) WITH AIR HOSE BRANCHING INTO "T" TERMINATED BY THREADED FEMALE AIR FITTINGS LIKE THE ONES ON THE 2014. (AS SHOWN IN FIGURE "A" AND FIGURE "C".)

PREPARATION OF FLO-LAB

1. ON FRONT OF FLO-LAB, REMOVE BEAUTY STRIPS (LABELLED "FLO-LAB" & "MODEL 2014"). REMOVE SCREWS HOLDING THE 2208 OR 2209 PLETHYSMOGRAPH MODULE IN PLACE.
2. ON THE BACK OF THE FLO-LAB, REMOVE THE FOUR SCREWS HOLDING THE BACK DOORS SHUT. (SEE FIGURE "B".)
3. GENTLY SLIDE THE 2208 OR 2209 PLETHYSMOGRAPH MODULE OUT USING CARE NOT TO DAMAGE THE CABLES. SLIDE THE MODULE OUT ONLY FAR ENOUGH TO ALLOW ACCESS ON THE TOP OF THE MODULE. SEE FIGURE "C" FOR ADJUSTMENT HOLE LOCATION.

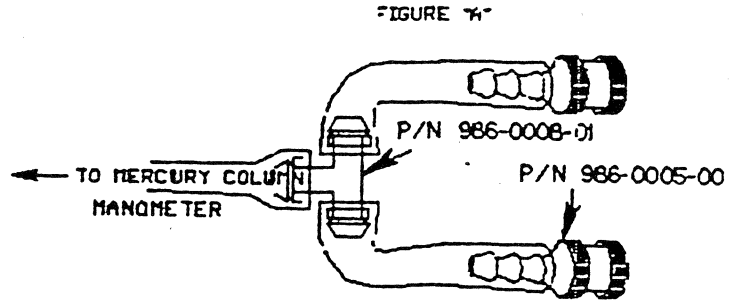
CALIBRATION

1. TURN ON THE FLO-LAB, ENTER THE "VIP" PROGRAM, AND TYPE THE "F3" KEY TO SEE "A" AND "B" PRESSURES DISPLAYED ABOVE THE CHARTS. REMOVE ANY HOSES FROM "A" AND "B" AIR PASSAGES (AS SEEN IN FIGURE "C"). HOLD YOUR THUMB OVER "A" AIR PASSAGE TO OCCLUDE IT. PRESS THE "INFLATE" PUSHBUTTON, AND WAIT UNTIL THE "BLEED/STOP" L.E.D. STOPS BLINKING. (THIS WILL CLOSE THE BLEED VALVE, IS NORMALLY OPEN, AND ALLOW YOU TO PRESSURIZE THE SYSTEM.)
2. CONNECT THE MANOMETER TO THE 2208 OR 2209 AIR PASSAGES (AS SHOWN IN FIGURE "C"). USE THE BULB ON THE MERCURY COLUMN MANOMETER TO HAND PUMP THE SYSTEM UP TO 200mm Hg. DON'T USE THE PUMP IN THE 2208 OR 2209 TO PUMP UP THE SYSTEM. ADJUST THE CHANNEL "A" AND CHANNEL "B" POTENTIOMETERS AS NECESSARY TO MAKE PRESSURE ON THE ILLUMINATED DISPLAY ON THE 2208 OR 2209 MATCH THE MANOMETER PRESSURE. (SEE FIGURE "C" FOR POTENTIOMETER LOCATIONS AND DISPLAY LOCATIONS.)
3. USE THE POTENTIOMETER AT THE RIGHT SIDE OF THE MODULE TO MATCH "A" PRESSURE ON THE COMPUTER MONITOR TO "A" PRESSURE ON THE ILLUMINATED DISPLAY ON THE FRONT PANEL OF THE 2208 OR 2209 MODULE.

2014 FLO-LAB

2208/09 PRESSURE C

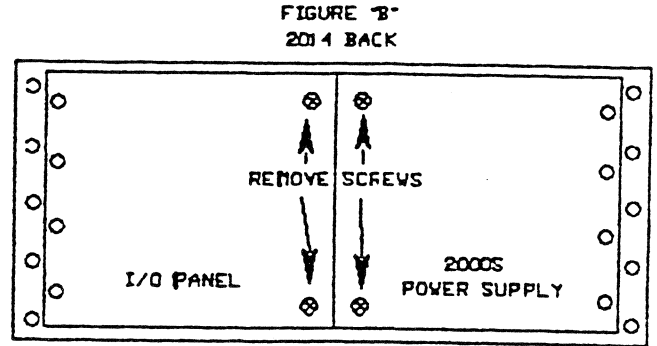
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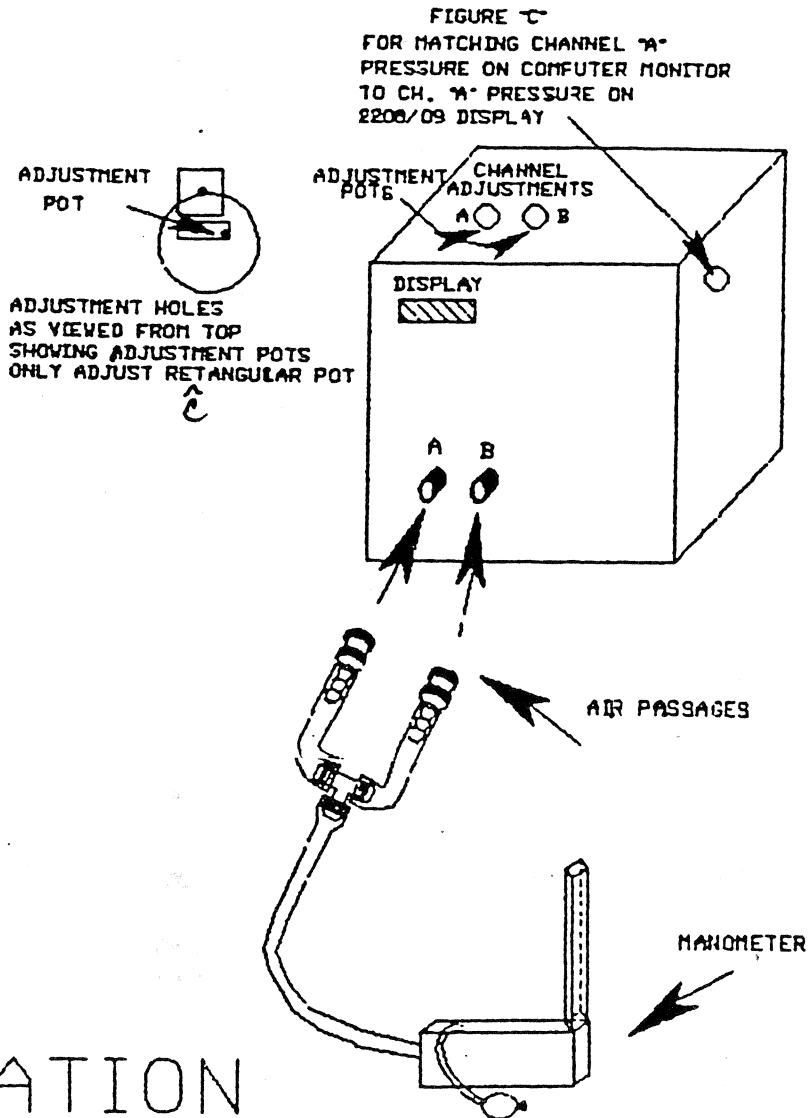
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SURE CALIBRATION