

Dynatron® 150plus

- d. Select 10% Duty Cycle: With the 10% LED lighted, enter "0" (zero) as the value for **Coupling**. The coupling feature is not available with old-style soundheads.
6. **Enter 3 MHz Values**. Press the FREQ key to select 3 MHz. Make sure the 3 MHz LED is lighted. Locate the 3 MHz column on the printout, and enter the numbers as follows:
 - a. Select CONT Duty Cycle: The CONT and 3 MHz LEDs are lighted. Enter the value for **F1 - 3 MHz** by pressing the time selection keys until the desired value is displayed in the time display.
 - b. Select 50% Duty Cycle: With the 50% LED lighted, enter the value for **Z - 3 MHz**.
 - c. Select 20% Duty Cycle: With the CONT LED lighted, enter the value for **Temp - 3 MHz**.
 - d. Select 10% Duty Cycle: With the 10% LED lighted, enter "0" (zero) as the value for **Coupling**. The coupling feature is not available with old-style soundheads.
7. **Store New Parameters**. After you have entered all parameters, press START to store them in the device's memory. Then press STOP to exit this mode.

The above procedure must be performed for each separate soundhead for the device. Turn the device off before attaching the next soundhead, then turn the device on again with the soundhead firmly plugged in.

Calibration Procedure

With the exception of calibration, all service on the Dynatron 150plus device should be performed by a Dynatronics service technician. If your Dynatron 150plus requires service, contact Dynatronics Customer Service at (800) 874-6251. **The calibration procedure MUST be performed by a qualified ultrasound technician using the proper equipment.** Calibration may be performed either by Dynatronics or by an ultrasound technician in your local area.

When to Calibrate: Dynatronics recommends that the Dynatron 150plus be calibrated annually to ensure the unit is working at its peak performance.

What to Calibrate: You must calibrate all soundheads used for this device at all three frequencies (1, 2, and 3 MHz), except the 1 cm² soundhead which is calibrated at 2 and 3 MHz only.

Equipment Required: You will require an ultrasound power meter capable of accurately measuring outputs up to 3 MHz. Check the manufacturer's specifications to confirm your power meter meets this qualification. Ohmic Instrument UPM-DT1 or UPM-DT-10 are recommended for use.

Water Quality: Water used in the testing procedure must be degassed water with an oxygen content of four parts per million (4ppm) or less.

Dynatron® 150plus

The following steps are provided to assist the technician with the calibration procedure. A calibration program is built into the software for the device. The procedure utilizes keys and displays on the key pad that are normally used for other purposes, but which have specialized applications in the Calibration Mode.

If you have any questions about the following instructions, contact Dynatronics' Customer Service Department before proceeding.

STEPS

1. Begin with the machine turned off. Plug the soundhead to be calibrated into the Dynatron 150plus ultrasound output jack and center the soundhead over the cone in the ultrasound power meter.
2. Enter the Dynatron 150plus's Calibration Mode by pressing and holding the **PAUSE** key while turning the machine on. The display windows first show the soundhead type that is plugged into the machine (see Soundhead Type Table on next page).

The soundhead type is displayed for about one second. Next, the display shows the stored frequency values for the soundhead that is being calibrated. The output power display is set to a value of zero. The LED for 1 MHz should be illuminated indicating the soundhead is now ready to be calibrated for this frequency. If it is not, press the toggle key to select 1 MHz now.

3. Press **STOP** and the **TIME UP ARROW** simultaneously to enter the Temperature Mode. The temperature of the soundhead is displayed in the time display window. The soundhead must be at a temperature between 72 and 75 degrees. If the soundhead is not within this range, warm the water and/or the head before continuing. Press **STOP** to get out of the temperature mode. At this point there is zero output from the device. Zero the scale on your ultrasound power meter now. When the scale is at zero on your power meter, press the **START** key to begin.
4. Press the **UP/DOWN** arrow keys located next to the Power display window on the Dynatron 150plus until the power meter shows 1.0 W/cm².
5. When the watts reading on the meter is at 1.0 W/cm² for the soundhead and the reading is stable, press the **Duty Cycle** toggle key (this is the key that selects 10%, 20%, 50% or Continuous).
6. The Dynatron 150plus performs the calculation internally for the "Z" (impedance value) and the coupling value. These values are automatically entered and stored

Soundhead Types Table

Smart Heads:

Time Display = HS

Power Display:

1cm2 = 1

2cm2 = 2

5cm2 = 5

10cm2 = 10

Older Sound Heads:

Time Display only:

1cm2 = H 1

2cm2 = H 2

5cm2 = H 5

10cm2 = H10

Soundhead Types

Dynatron® 150plus

in the Head Parameters for the device (this operation is automatic and invisible to the user). Record these values on the calibration sheet for future reference.

7. Press the frequency toggle key to **select 2 MHz**. The 2 MHz LED will light indicating the soundhead is now ready to be calibrated at the frequency. Repeat steps 3 through 6 above.
8. Press the frequency toggle key to **select 3 MHz**. The 3 MHz LED will light indicating the soundhead is now ready to be calibrated at the frequency. Repeat steps 3 through 6 above.
9. If you wish to cancel the calibration procedure without storing any new calculations, press the **PAUSE** key.
10. This completes the calibration of one soundhead. For devices that use more than one soundhead, you must calibrate each of those soundheads individually.

To calibrate the next soundhead, turn the machine off, and repeat steps 1 through 10 above.

CAUTION: Avoid unnecessary ultrasound exposure.