Calibration of the EMST75 Lite - finding the desired pressure

The EMST75 Lite is a handheld calibrated device that includes a one-way, spring-loaded valve with an adjustable external dial. The valve blocks the flow of air until enough pressure is produced. Once the targeted pressure is produced, the valve opens and air begins to flow through the device. **The dial allows adjusting the pressure amount in a range between 0 and 75 cm H2O.** The pressure-threshold load is based on the patient's maximum expiratory pressure (MEP) which can be obtained using a pressure manometer.

During training the pressure threshold device is adjusted incrementally to progressively increase the resistance (progressive overload). The expiratory force must be sufficient to open the spring-loaded valve and allow the air flow. The pressure released valve requires a consistent flow of air to remain open. If the expiratory force is inadequate, the valve will not open and no air will flow through the device. These mechanics may serve as a biofeedback during the use of the device. The "dose" of EMST is typically defined in terms of the number of repetitions per set, with 5 sets completed each day, for 5 days per week with the device resistance set at 75% of the patient's MEP and progressed each week

How to find the "number" on the device that corresponds to 75% of MEP

Turn the green knob so that the small screw on the knob sits on or just above the number 5. (See photo*) This is 5cmH20.This is where you begin.

One full turn will increase the pressure to 15cmH20. The screw will be sitting on (just above) the number 15. One more full turn will take you to 25cmH20 (the screw will sit halfway between 15 and 35). One more full turn will bring you to 35cmH20.

As the pressure increases on the EMST75, the spring gets tighter and the pressure increases more per turn, Beginning at 35cmH20, one full turn will increase the pressure by 20 cmH20 to 55 cmH20, and one more full turn will take you to the max at 75 cmH20. (The final 2 full turns each represent 20cmH20).

WHAT THIS TRANSLATES TO :

Between 5 cmH20 to to 35c mH20 ——>. 1/4 turn = 2.5 cmH20——> 1 full turn = 10 cmH20

From 35 to 75 cmH20——->1 /4 turn = 5 cmH20—-> 1 full turn = 20 cmH20

Pressure (from-to)	1 full turn =	1/4 turn =
(5-35) cmH20	10 cmH20	2.5 cmH20
(35-75) cmH20	20 cmH20	5 cmH20

***IMPORTANT TIP FOR CLINICIANS:** If you are looking for exact values, this table will help you. However, through discussions with clinicians utilizing the device and those doing research using the EMST75, coupled with the average of the numbers in the table above, we have found that using the value of **4cmH20 to represent each 1/4 turn** is the easiest method for documenting patients' progress, while achieving similar results.

This screw is just to the left of 5cmH20. To begin, move it a to the right to sit on/above the 5. That is the starting point.