

# Calibration of the Babolat Sensor/Star 5

## Foreword:

Please note that the author of this instruction guide is not Babolat trained and any person following these instructions does so at their own risk.

The software versions of the machines upon which these instructions were tested was both Version 01.01.t and 02.02.a. These instructions may not be appropriate for every version or revision.

## Overview of calibration functionality:

Please note that calibration can only be done in Kgs so you will require a calibrator with this functionality. You will also be required to pull tension up to 40 Kgs so make sure that your calibrator can handle this load!

The Babolat Sensor/Star 5 has two modes of calibration. The first is a simple check at a reference tension of 30 Kgs. The second is a stepped check starting at 5 Kgs followed by 10 Kgs, then 20 Kgs, and lastly 40 Kgs. This is termed "Linearisation" if you have a set of the calibration instructions issued by Babolat.

Please note that when in the first calibration mode, which only checks accuracy at 30Kgs, any adjustment to the pulled tension is made while the head is pulling so you can immediately see the effect of increasing or decreasing the tension which is reflected on the calibration device.

When you enter the Linearisation mode to check tension accuracy and adjust this at the various tensions between 5 Kgs and 40 Kgs you cannot adjust the tension while the head is pulling. You have to return the tension head back to resting position then adjust up or down using the Plus or Minus keys according to the need to increase or decrease tension then re-pull to see the result of the adjustment. You can do this as many times as you like at the given tension until you are satisfied before moving on to the next reference tension.

## How the instructions are notated:

The physical arrangements of the three control keys on the machine are:

- (+) Plus
- (S) Shift
- (-) Minus

All key depressions using the Plus and Minus keys are short depressions. Depressions using the Shift Key can be either a long depression or a short depression depending upon what function is to be accessed. The instructions below tell which depression to use by indicating SS (Short Shift) and LS (Long Shift)

## Instructions for basic calibration at 30 Kgs:

It is recommended that the Sensor/Star 5 is left switched on for about 1 hour before starting to calibrate.

To enter the basic mode you will need to enter a code using the Plus, Shift and Minus keys that you use to access the other functions like setting knot pull tension and pre-stretch. You need to enter the following key sequence:

**LS, +, SS, -, -, +, SS, -, +**

(Long Shift, Plus, Short Shift, Minus, Minus, Plus, Short Shift, Minus, Plus)

If you have entered this correctly you will see the word “CALIBRATION” on the display. You are now in the basic calibration mode.

You can now insert the calibrator and pull the tension in the normal way by touching the sensor button. *Note:* that I have found it does not always respond immediately in this mode and you may need to touch it once or twice to get it to react. Once the head is pulling the display changes to “ADJUST WITH - / +”

Once you have pulled tension you can then read your calibrator and see if it is reading 30 Kgs. If it is not you can move the tension being pulled up or down by using the Plus or Minus keys. *Note:* before making any adjustment give a few seconds for the tension head to settle and also do this following making any corrections up or down.

Once you are satisfied that it is accurate you can then release the tension head by touching the sensor button. *Note:* the display always shows “CALIBRATION” when the tension head is in the resting position and you are now ready to start Linearisation Procedure.

## Instructions for carrying out Linearisation:

The linearisation mode is accessed from the “CALIBRATION” display by simply doing a **SS** whereupon the screen will show the following:

LIN @ 5.0: + 0.0

*Note:* + 0.0 may be another value dependant upon how it is already set up e.g. the screen could show LIN @ 5.0: + 0.6 or even LIN @ 5.0: - 0.6. Basically +0.0 is the starting point and you can increase this or minus this depending on how you need to adjust your machine to get the required accuracy.

Once you have reached this point insert the calibrator and pull tension in the normal way. Record or remember the reading on the calibrator and return the tension head to the resting position. You can now add tension or decrease tension with the Plus or Minus keys (don't touch the shift key as this will move calibration onto the next reference tension) then re-pull the tension head and check the reading again. You can do this as many times as you like until you are satisfied with the calibration.

Once you are satisfied with the calibration of the 5 kg reference tension you can move onto the 10 kg by simply doing a **SS** and carrying out the same procedure for this tension. Every time you do a **SS** in this mode it will move on to the next reference tension.

Once you have calibrated all the reference tensions, up to 40 Kgs you will need to store these settings. This is simply done by pressing **SS** whereupon the display will move from the 40 Kgs display to show “RUNNING IN.”

### **Instructions for saving settings and relocking access:**

Once the calibration is complete you will need to relock the access to this menu. You need to enter the following key sequence:

**LS, -, +, SS, SS, +, -, -, SS**

(Long Shift, Minus, Plus, Short Shift, Short Shift, Plus, Minus, Minus, Short Shift)

The display will show “RESET E 2 P”. At this point, power off the Sensor/Star 5 in order to save these new settings. Wait ten minutes before turning on the machine. When you next switch on the Sensor/Star 5, the display will show the new machine welcome message, which is simply removed by doing a **LS**.

### **Acknowledgements:**

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