

CALIBRATING A BENCHTOP 2000 DYNO WITH VERSION 6.xx SOFTWARE

(MULTI VELOCITY CALIBRATION VERSION BUILD V040810.01 ONWARDS)

During the life of your SPA Dynamometer it may be necessary to re-calibrate it! Reasons such as corrupt data/lost files are typical instances.

The first thing you must do before starting the calibration is to arrange the dyno into its ½ inch or 12.7mm stroke. You must then ensure that there is no Damper fitted in the dyno.

- 1) Open the software and click on the configure file system located on the top toolbar. Select the System option. A window will open called 'Dyno Settings' click the correct COM or USB port then select the correct Baud rate. If you have a V5 box in your dyno choose 38400 if you have a V6 box choose 115200. E.g. Port = COM1 Baud rate = 38400.
- 2) While still in the Dyno Settings window click the 'Dyno' tab. Select 'Benchtop Dyno'. Tick 'Low Speed mode' put the gearbox factor as '10.00'. When done click 'Apply' and then click 'ok'.
- 3) Click configure, Calibration, re-calibrate, motor speed. A warning window will open telling you the motor is going to run. Click ok and the calibration of motor speed will start. When the calibration is complete the window will close.
- 4) Click configure, Calibration, re-calibrate, velocity. A window will open. Click x5 gain, click next twice, and enter the stroke size the dyno is set to e.g. 12.7mm or ½ inch. Click next. The window is now asking what motor speed to use. In the 'Speed' box the maximum possible dyno speed will be shown e.g. 5.63Hz. Always reduce this slightly e.g. 5.40Hz. The number of calibration points is down to personal preference. 3 are more than adequate. Click next twice and the calibration will start. Then dyno will now run at 3 determined speeds. When the dyno has stopped running click finish.
- 5) Now turn the PC/Manual control switch to its central position (off) and change the dyno stroke to 25.4mm or 1 inch. When done turn the switch back to PC.
- 6) Click configure, calibration, re-calibrate, velocity. Click x1 gain and click next twice, enter the stroke size the dyno is set to. Click next. As before enter the speed and number of calibration points. Click next twice and the calibration will start. Then dyno will now run at 3 determined speeds. When the dyno has stopped running click finish.

- 7) Now turn the PC/Manual control switch to its central position (off) and change the dyno stroke to 50.4mm or 2 inch. When done turn the switch back to PC.
- 8) Click configure, calibration, re-calibrate, velocity. Click x0.25 gain and click next twice. Enter the stroke size the dyno is set too. Click next twice. As before the calibration will then start. Then dyno will now run at 3 determined speeds. When the dyno has stopped running click finish.
- 9) Click configure, Calibration, re-calibration, position. Click x1 gain (x4 should be greyed out). Click next twice. Enter the exact stroke e.g. 50mm or 2 inch and click next. Use 1Hz speed and click next twice. The calibration will now start. When both figures are steady click finish. Now Re-do this step again.
- 10) Click configure, calibration, re-calibration, load-cell. Enter the load-cell sensitivity value which can be found in the black folder supplied with the dyno e.g. 3.011mV/V. Then enter the load0cell FSD, this is usually 1500 Kg. When done click finish.
- 11) Click configure, calibration, re-calibration, zero load-cell. The load-cell will now zero.
- 12) Click configure, calibration, Save As. Save your calibration under any name of your choice.
- 13) You have now calibrated you dyno and are ready to begin testing.