High-Performance, Hand-Held DigiScale Measures Spring Force

Improve Reliability & Function With Proper Spring Force

Insufficient and/or Inconsistent Spring Pressure Adversely Affects Motor Performance and Brush Life

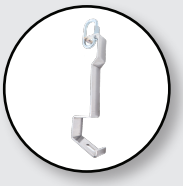
Rely on the Helwig DigiScale to measure the effectiveness of your springs. This premium scale offers all the qualities of a traditional hanging balance with the simplicity, convenience, and accuracy of digital operation.

Now Smaller & Easier to Use in Tight Locations

Features:

Roller attachment for constant force springs

Strap attachment for torsion springs



Hook attachment for turbine style springs

Large, easy-to-read LCD display with optional backlight

Precalibrated to factory specs

Memory to store 8 measurements

Auto power off to save on battery life

Extendable handle

Power: 9V alkaline battery (included)

Capacities: (Switchable Units - LB/OZ, LB, KG) 15lb/8kg

Basic Instructions (See Reverse for Detailed Instructions):

1. Press & hold ON button until 8888 flashes on screen. 000 will appear next.
2. When 000 is on the screen, press (do not hold) ON button again. 000 will flash on screen, indicating scale is zeroed.
3. Connect appropriate attachment to bottom loop of DigiScale, based on type of spring.
4. Insert roller attachment inside constant force spring or under the red handle of wear indicator, slide strap around torsion spring finger, or hook turbine-style attachment under lip of wear indicator.
5. Pull spring back to approximate new brush location (Figure A).
6. SLOWLY let the spring recoil in the direction of brush travel. Observe spring force and take reading at approximately 1 outer diameter (OD) of the spring coil (Figure B).
7. Be sure to check ALL springs.

Note: If spot checking & you find some spring pressures are too light, be sure to replace ALL springs!

Figure A

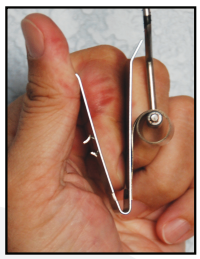


Figure B

To Calculate Spring Pressure:

$$\text{Spring Pressure (P.S.I.)} = \frac{\text{Measured Force (lbs.)}}{\text{Brush Thickness (in.)} \times \text{Brush Width (in.)}}$$

Recommended Range of Spring Pressure

Industrial D.C Applications 4.0 - 6.0 P.S.I. (280-420 g/cm2)

WRIM & Sync. Rings 3.5 - 4.5 P.S.I. (240-310 g/cm2)

High Speed Turbine Rings
Soft Graphite Grades 2.5 - 3.5 P.S.I. (170-240 g/cm2)

Metal Graphite Brushes 4.5 - 5.5 P.S.I. (310-390 g/cm2)

Fractional HP Brushes 4.0 - 7.0 P.S.I. (280-490 g/cm2)

Traction Brushes 5.0 - 8.0 P.S.I. (350-560 g/cm2)

*For brushes with top and/or bottom angles greater than 25° add an extra 0.5 - 1 P.S.I.

8900 West Tower Avenue • Milwaukee, WI 53224-2849
Toll Free Phone: 800.962.4851 • helwigcarbon.com
Email: carboncrew@helwigcarbon.com

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DigiScale In-Depth Instructions

For Basic Instructions, See Opposite Side

To Turn On & Off:

- To turn on: Press and hold "On/Off/Tare" button until numbers blink 8888.
- To turn off: Press and hold "On/Off/Tare" button until screen goes blank.

To Zero The Scale:

After the scale is turned on, press "On/Off/Tare" and 000s will blink on screen. The scale is now zeroed.

To Store Measurements Into Memory

1. Connect appropriate attachment to bottom loop of DigiScale, based on type of spring.
2. Insert roller attachment inside constant force spring or under the red handle of wear indicator, slide strap around torsion spring finger, or hook turbine-style attachment under lip of wear indicator.
3. Turn on scale (if not already turned on).
4. Zero scale by pressing the "On/Off/Tare" button - 000s will blink on screen indicating the scale is zeroed.
5. Pull spring back to approximate new brush location (Figure A).
6. SLOWLY let the spring recoil in the direction of brush travel. Observe spring force and take reading at approximately 1 outer diameter (OD) of the spring coil (Figure B).
7. Hold at 1 OD and press "Memory" button to enter into "Memory" mode (a book icon will appear on the lefthand side of the screen).*
8. Press "Memory" button to advance through the storage bins (1-8). Choose a storage bin.*
9. Press and hold "Memory" button.* Book icon on left over number will blink a couple of times and measurement will appear on screen. Immediately release "Memory" button when measurement appears on screen. Measurement is now saved.

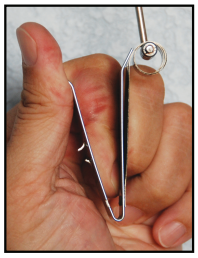

Figure A

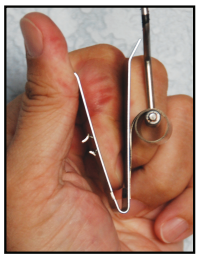

Figure B

**If at any point the book icon disappears before the measurement appears on screen at the end of step 9, you need to repeat steps 5-9.*

To Review Stored Measurements

1. Press "Memory" button to enter into "Memory" mode.
2. Once in "Memory" mode, press the "Memory" button to advance through the storage bins.

To Reset All Storage Bins To Zero

1. Press the "Memory" button to enter "Memory" mode.
2. Press "Memory" button again to get to memory storage bin 1 (book icon with numeral 1 below it). You must be in any memory storage bin between 1 and 8 to clear memory, not in the general memory screen.
3. Press and hold both the "ON/OFF/Tare" button and "Memory" button until 0000 blinks on the display, and then press the "Memory" button within two seconds.

To Turn On Backlight

Press and hold the "ON/OFF/LIGHT/TARE" button until the backlight indicator is displayed on screen. (Approximately two seconds.)

To Switch Measurement Units (LB/OZ, LB, KG)

1. Press & hold the "Memory" button. Scale will cycle through LB/OZ, LB, & KG as you hold button.
2. Release the button to select the desired unit of measurement.

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