

PosiTector[®] *SPG*

Surface Profile Gage

Quick Guide v. 1.4



*Built-in
Probe*



*Separate cabled
probes for blasted
steel, textured
coatings and
concrete profile*

DeFelsko[®]
The Measure of Quality

Introduction

The **PosiTector Surface Profile Gage (SPG)** is a hand-held electronic instrument that measures the peak-to-valley height of the surface profile of abrasive blast cleaned surfaces or textured coatings. It consists of a PosiTector body (*Standard or Advanced*) and probe.

This Quick Guide summarizes the basic functions of the Gage. Download the full instruction manual at: www.defelsko.com/manuals

Quick Start

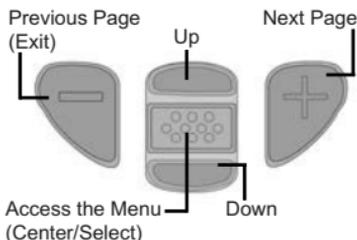
The **PosiTector SPG** powers-up when the center navigation button  is pressed. To preserve battery life, the Gage powers down after approximately 5 minutes of no activity. All settings are retained.

1. Remove the protective rubber cap from probe.
2. Power-up Gage by pressing the center navigation  button.
3. Place the glass plate onto a stable, flat surface. Take several measurements. If the average is greater than $\pm 5 \mu\text{m}$ (0.2 mil), **Zero** (pg. 3) the Gage.
4. Place the probe FLAT on the surface to be measured such that the tip of the probe reaches into the bottom of a profile valley. HOLD STEADY. The Gage will BEEP twice and display the measurement.
5. Lift the probe from the surface between measurements.

Menu Operation

Gage functions are menu controlled. To access the Menu, power-up the gage, then press the center navigation button.

To navigate, use the **Up** and **Down** buttons to scroll vertically and  to **SELECT**.



Press the **(+)** button to switch pages in a multipage menu

Press the **(-)** button to return to the previous menu or page.

Select Exit to exit from any menu.

Probes

When powered-up, the **PosiTector** automatically determines which probe is attached and does a self-check.

To disconnect a probe from a body, slide the plastic probe connector horizontally (in the direction of the arrow) away from the body. Reverse these steps to attach a different probe. It is not necessary to power-down the Gage when switching probes.



PosiTector SPG probes include a 60° (ASTM D 4417 B) or 30° (Australian Standard AS 3894.5) angle tip (50 μm /2 mil radius) with a measurement range of 0 to 500 μm (20 mils).

PosiTector SPG CS probes measure the profile of textured coatings up to 1500 μm (60 mils) with a 500 μm (20 mil) radius 60° angle tip.

PosiTector SPG TS probes measure concrete surface profile up to 6 mm (250 mils) with a 500 μm (20 mil) radius 60° angle tip.

Additionally, the **PosiTector** body accepts a wide variety of probe types including magnetic, eddy current and ultrasonic coating thickness, surface profile, shore hardness durometer, salt contamination and ultrasonic wall thickness probes. See www.defelsko.com/probes

Calibration

Instrument calibration is typically performed by the manufacturer. All probes include a Certificate of Calibration.

Verification of Accuracy

Instrument accuracy is verified using the included metal shim and glass zero plate. Ensure that the glass plate and shim are clean and dirt free before use.

Place the plate onto a stable, flat surface. Take several measurements. If the average is greater than $\pm 5 \mu\text{m}$ (0.2 mil), **Zero** (pg.3) the Gage.

Next, place the metal shim over the glass plate and measure ensuring the probe needle touches the glass plate in the area

between the shim's "legs". The average of several measurements should be within the combined tolerances of both the Gage and the shim.

If not, see **Returning for Service** (pg. 9). Metric example: gage tolerance is $\pm 5\%$ or $\pm 5 \mu\text{m}$ whichever is greater. The $76 \mu\text{m}$ shim tolerance is $\pm 5 \mu\text{m}$. So the average of several measurements should be between 66 and 86 microns. Inch example: gage tolerance is $\pm 5\%$ or ± 0.2 mils whichever is greater. The 3 mil shim tolerance is ± 0.2 mils. So the average of several measurements should be between 2.6 and 3.4 mils.

Zero Menu

Zero

The **PosiTector SPG** has only one adjustment point at zero. The zero point can be set using one of two methods. Both methods are found under the **Zero** menu option.

Glass Plate Zero

Setting the Gage to Zero on the glass plate is the preferred Zero adjustment method:

1. Select **Zero** from the menu.
2. Press the (+) button to select the number of readings to be used to obtain an average, typically 3.
3. Repeatedly measure the glass plate. After the last measurement, the Gage will calculate a Zero which represents the average of all the Zero readings taken.

Factory Zero

If a glass plate or suitable smooth, hard surface is not available, the factory zero setting can be restored:

1. Select **Zero** from the menu.
2. Press the down button to select **Reset** (pg. 4) and press the center navigation button . The factory calibration icon will appear on the LCD.

NOTE: The factory zero setting may not always be precise, particularly after a probe tip exchange. For best accuracy, the Gage should be zeroed on the included glass plate.

Setup Menu

Units

Converts the display from mils to microns and vice versa.

Reset

Reset (menu reset) restores factory settings and returns the Gage to a known condition. The following occurs:

- All batches, stored measurements, batch names and screen captures are erased.
- The Zero adjustment is returned to the factory setting. Since this may not always be a precise zero, the Gage should be checked on the glass plate.
- Menu settings are returned to the following:

Memory = OFF

Statistics = OFF

Hi Lo Alarm = OFF

Auto Dim = ON

Bluetooth & Stream = OFF

WiFi & Access Point = OFF

Display = None

Perform a more thorough **Hard Reset** as follows:

1. Power down the Gage and wait 5 seconds.
2. Simultaneously press and hold the **(+)** and  center buttons until the **Reset** symbol  appears.

This returns the Gage to a known, “out-of-the-box” condition.

It performs the same function as a menu **Reset** with the addition of:

- Bluetooth Pairing info is cleared.
- Menu settings are returned to the following:

Units = microns

Flip Display = Normal

Sound = ON

Language = English

Battery Type = Alkaline

Backlight = Normal

Bluetooth Smart = OFF

USB Drive = ON

NOTE: - Keep the gage away from metal during a **Reset**.

- Date, Time and WiFi settings are not affected by either **Reset**.

Battery Type

Selects the type of batteries used in the Gage from a choice of “Alkaline”, “Lithium” or “NiMH” (nickel-metal hydride rechargeable). If “NiMH” is selected, the Gage will trickle charge the batteries while connected via USB to a PC or optional AC power supply (USBAC). The battery state indicator symbol is calibrated for the selected battery type. No damage will occur if the battery type used in the Gage does not match the selected battery type.

Statistics Mode

Statistics \bar{x}

A statistical summary will appear on the display. Remove the last reading by pressing the (-) button. Press (+) to clear statistics.

\bar{x} – Average

σ – Standard Deviation

\uparrow – Maximum Value

\downarrow – Minimum Value

HiLo Alarm \updownarrow

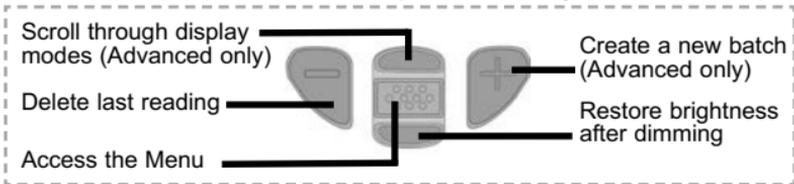
Allows Gage to visibly and audibly alert the user when readings exceed user-specified limits.

Memory Management

The **PosiTector SPG** has internal memory storage for recording measurement data. Stored measurements can be reviewed on-screen or accessed via computers, tablets and smart phones. All stored measurements are date and time-stamped. The  symbol appears when the Gage is set to store measurement data.

Standard models store up to 250 readings in one batch.

Advanced models store 100,000 readings in up to 1,000 batches. “New Batch” closes any currently opened batch and creates a new batch name using the lowest available number. New batch names are date-stamped when they are created.



Screen Capture

Press both the (-) and (+) buttons at any time to capture and save an image copy of the current display. The last 10 screen captures are stored in memory and can be accessed when connected to a computer (see PosiSoft USB Drive, pg.6).

SmartBatch™ 

This menu option sets up the **PosiTector SPG** to comply with various standards and test methods published by organizations including ASTM, SSPC, ISO, IMO, US Navy, SANS and AS.

For instructions on how to use the Smart Batch™ feature, see www.defelsko.com/smartbatch

Accessing Stored Measurement Data

DeFelsko offers the following free solutions for viewing, analyzing and reporting data:

PosiSoft USB Drive - Connect the Gage to a PC/Mac using the supplied USB cable. View and print readings and graphs using universal PC/Mac web browsers or file explorers. No software or internet connection required. **USB Drive** must be selected in the Gage's "**Connect > USB**" menu (pg.7).

PosiSoft Desktop - Powerful desktop software (PC/Mac) for downloading, viewing, printing and storing measurement data. Includes a customizable, templated PDF Report Generator. No internet connection required.

PosiSoft.net - Web-based application offering secure, centralized storage of measurement data. Access your data from any web-connected device.

PosiTector App - (*Advanced models only, serial numbers 784000+*) App for compatible iOS and Android smart devices. Permits users to create, save and share professional PDF reports. Add images and notes using the smart device's camera and keyboard.

For more information on our PosiSoft solutions, see:
www.defelsko.com/posisoft

Connect Menu

WiFi

(Advanced models only)

Allows connection to your local wireless network or mobile hot spot. Ideal for using your network's internet connection for synchronizing stored measurements with PosiSoft.net (pg.6). See www.defelsko.com/wifi



USB

When **USB Drive** is checked , the **PosiTector** gage uses a USB mass storage device class which provides users with a simple interface to retrieve stored data in a manner similar to USB flash drives, digital cameras and digital audio players. **USB Drive** is also required to import stored measurements into PosiSoft Desktop software (pg.6).

NOTE: When connected, power is supplied through the USB cable. The batteries are not used and the body will not automatically power down. If rechargeable (NiMH) batteries are installed, the instrument will trickle charge the batteries.

Bluetooth

(Advanced models only)



Allows individual readings to be sent to a computer, printer or compatible device as they are taken using Bluetooth wireless technology. See www.defelsko.com/bluetooth

Sync .net Now

The above **WiFi**, **USB** and **Bluetooth** menus contain a **Sync .net Now** option. When selected, the Gage immediately synchronizes stored measurement data via its respective communication method (internet connection required). Alternatively, select **Auto Sync .net** from within the **USB** connect menu to automatically synchronize upon connection to a PC. Additional measurements added to memory while connected are synchronized only when the USB cable is disconnected and reconnected, or when the **Sync .net Now** option is selected. **WiFi** connected gages automatically attempt synchronization upon power-up.

NOTE: **PosiSoft Desktop** is required when using **USB** connections to synchronize measurements with PosiSoft.net.

Bluetooth Smart

*(Advanced models only,
serial numbers 784000 and greater)*



When **Enabled** , allows communication with a smart device running the PosiTector App (pg.6) via auto-pairing **Bluetooth Smart** (BLE) wireless technology.

Sync Batches

Select batches to flag them for synchronization to the PosiTector App. New batches created while **Bluetooth Smart** is enabled are automatically selected.

With **Bluetooth Smart** enabled, select **Sync Batches** to transfer selected batches to the PosiTector App. This is useful when switching between smart devices, as only readings and batches that have yet to be synchronized with any smart device are synchronized automatically.

NOTE: If **Bluetooth Smart** is disabled, data from batches selected in the **Sync Batches** menu are held in a queue until communication with the PosiTector App is re-established.

Send Batches

Transfers selected batches to the PosiTector App (useful when switching between devices).

The **Send Batches** option is visible in the menu when the Gage is connected to a smart device running the PosiTector App.

Updates

Determine if a software update is available for your Gage. See www.defelsko.com/update

WARNING: The Gage will perform a **Hard Reset** (pg.4) after an update. All stored measurements will be erased from memory.

Returning for Service

Before returning the Gage for service...

1. Install new or newly recharged batteries in the proper alignment as shown within battery compartment.
2. Examine the probe tip for dirt or damage. The probe tip should move up and down freely. The metal plate surrounding the probe tip should be smooth and free from burrs and foreign material.
3. Perform a **Hard Reset**. (pg. 4)
4. Place the metal shim over the glass plate and attempt a measurement.
5. If issue is not resolved, **Update** (pg. 8) your **PosiTector** gage body and re-attempt measurements.

IMPORTANT:

If you must return the Gage for service, please fill out and include the Service Form located at www.defelsko.com/support with the Gage. Be sure to also include the probe, your company name, company contact, telephone number and fax number or email address.

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