

PosiTector® **RTR**

Replica Tape Reader

Full Guide v. 1.0



DeFelsko®
The Measure of Quality

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Introduction

The **PosiTector *Replica Tape Reader (RTR)*** is a hand-held electronic instrument that measures burnished Testex™ Press-O-Film™ replica tape to produce peak-to-valley surface profile height measurements. It consists of a body (Standard or Advanced) and probe.

PosiTector RTR Kit Contents

- PosiTector body (*Standard or Advanced*)
- PosiTector probe (RTR-H)
- Stainless steel burnishing tool
- Cleaning cards (5)
- Surface cleaning putty
- Check shim
- Protective lens shield
- Wrist strap
- 3 AAA alkaline batteries
- Quick Guide instruction booklet
- Protective rubber holster with belt clip
- Nylon carrying case with shoulder strap
- USB Cable
- Certificate of Calibration traceable to NIST
- PosiSoft.net account
- Two (2) year warranty on Body and Probe

Quick Start

The **PosiTector *RTR*** 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.

NOTE: To ensure best accuracy, the user will be required to zero the probe every time the Gage is powered-up. It is therefore a good idea to clean the probe regularly with the included cleaning card. Cleaning is best performed when the Gage is powered down.

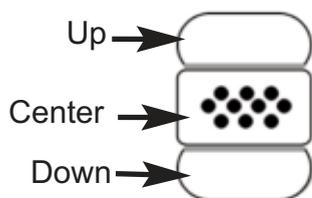
With the Gage powered down...

1. Clean the probe with the included cleaning card. (pg. 7)
2. Power-up Gage by pressing the center navigation  button.
3. Zero the probe. (pg. 10)
4. Measure the included check shim to verify accuracy. (pg. 8)
5. Measure the burnished replica tape. (pg. 7)

Menu Operation

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

Navigation Button



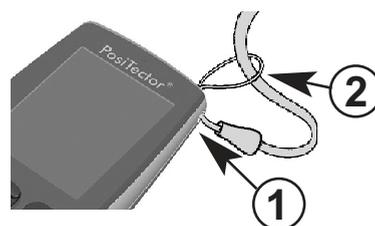
To navigate, use the **Up** and **Down** buttons to scroll and  to **SELECT**.

Select **Exit** to exit from any menu.

NOTE: The center  button is purposely recessed to help eliminate unintentional powering-up of the Gage.

Wrist Strap

We recommend attaching and wearing the supplied wrist strap.



Protective Lens Shield

The LCD is covered with a thin plastic film for protection against fingerprints and other marks during shipment. This film, while usually removed before using the Gage, can be left in place to protect against paint overspray or debris. Replacements can be purchased.

Certification

PosiTector RTR probes include a Certificate of Calibration.

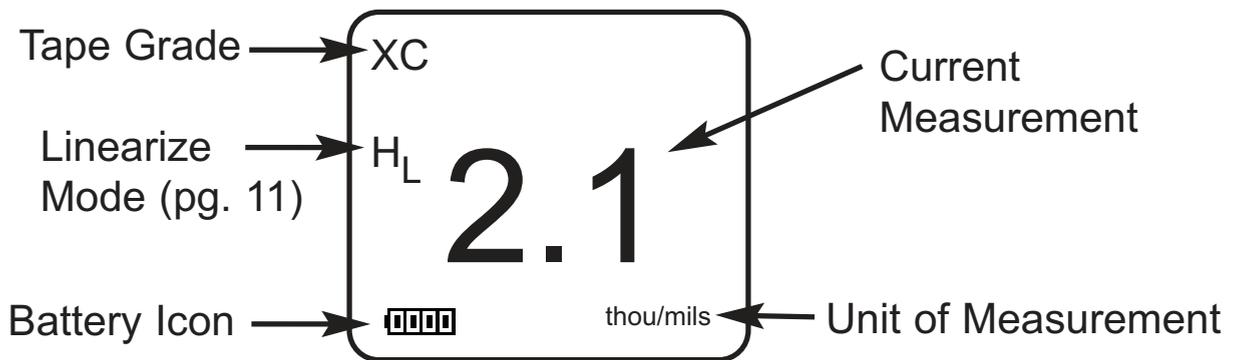
For organizations with re-certification requirements, instruments may be returned at regular intervals for calibration.

DeFelsko recommends that customers establish calibration intervals based upon their own experience and work environment. Based on our product knowledge, data and customer feedback, a one year calibration interval from either the date of calibration, date of purchase, or date of receipt is a typical starting point.

PosiTector Body



Typical Display



Probes

To disconnect a probe from a body, power-down the Gage and slide the plastic probe connector horizontally (in the direction of the arrow) away from the body. Reverse these steps to attach a new probe.



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

Additionally, the **PosiTector** accepts a number of probe types including magnetic and eddy current coating thickness, surface profile, environmental and ultrasonic wall thickness probes. Perform the latest software **Updates** (pg. 26) to ensure probe compatibility with your Gage. For the latest information on probe interchangeability see www.defelsko.com/probes



PosiTector® body accepts all PosiTector **200, SPG, DPM, 6000** and **UTG** probes



Press-O-Film Replica Tape

Press-O-Film provides a simple way to obtain an impression of a surface for analysis. It consists of a layer of crushable plastic micro foam affixed to a 50.8 μm (2 mil) incompressible polyester film. When compressed against a roughened surface, the foam collapses and acquires an accurate impression, or reverse replica, of the surface. It is available in a number of grades to accommodate measurements in different profile ranges.



Placing the compressed tape (replica) into the **PosiTector RTR** gives a measure of the average maximum peak-to-valley height of the surface roughness profile. The Gage automatically subtracts the thickness of the polyester substrate from all measurements.

How to Measure

1. Prepare the test surface
2. Burnish the replica tape
3. Prepare the Gage
4. Measure

Prepare the test surface

Locate a representative site for measurement. Clean the surface to be tested. DeFelsko recommends the use of the included putty to remove dust, debris, or residual blast media from the surface. Firmly press the putty onto the surface using your fingers, and remove.



Burnish the replica tape (create a replica)

Select the appropriate grade of replica tape based on the target profile. See tape instructions for assistance.

Pull a single adhesive-backed replica tape free of its release paper. A “bull’s eye” circle of paper should remain on the release paper (it is not used for measurement).

Apply replica tape to blasted surface. Press the adhesive-backed ends of the paper to hold it firmly in place during the burnishing process.

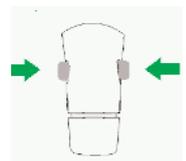
Firmly compress replica film using the rounded end of the included stainless steel burnishing tool. Apply sufficient pressure in a circular and x-y rubbing motion to produce a replica with a uniform pebble grain appearance. It normally takes 30 to 60 seconds to fully compress all parts of the film on most surfaces. In general, too much compression is safer than too little. After burnishing is complete, remove the replica tape from the surface.



Prepare the Gage

With the Gage powered-down, clean the measurement surfaces using the included cleaning card. Swipe the card through the opening a few times while firmly pressing both probe buttons to remove dust particles and residual tape adhesive.

Power-up the Gage by pressing the center navigation button. An image appears indicating that the probe requires zeroing.



Simultaneously press and hold both probe buttons firmly until the Gage beeps and the arrows point outward. Do not place anything in the measurement opening during this procedure.

Measure the included check shim to verify accuracy (pg. 8).

Ensure the correct grade of replica tape, C or XC, is displayed in the upper left corner of the LCD (pg. 10).

Measure

Insert the burnished replica tape into the measurement opening. Ensure the tape is properly positioned so that the burnished region is centered within the opening in the probe with the adhesive (sticky) side down.



To position the tape, move the tape to the back of the probe and align the two dots (printed on replica tape) with arrows on both sides of the measurement opening.



If you are using older tape that does not have the printed dots, simply align by centering the tape within the measurement opening.

Once positioned, firmly press both probe buttons simultaneously and hold until the Gage beeps and the measurement is displayed. During measurement, a constant anvil pressure is applied to the replica tape regardless of how hard the two buttons are pressed. The Gage automatically subtracts the 50.8 μm (2 mil) of incompressible polyester film. No further adjustments are required.

Cleaning Card

The probe contains two measuring surfaces that can become contaminated with dust particles and residual tape adhesive. It is therefore a good idea to clean the probe regularly with the included cleaning card. Cleaning is essential prior to performing a probe zero (pg. 10) or a verification of accuracy (pg. 8). It is best performed when the Gage is powered down.

With the Gage powered-down, swipe the card through the opening a few times while firmly pressing both probe buttons.

The card can also be used to clean the surfaces of analog spring micrometers. Replacement cards are available from your dealer.

Calibration & Verification of Accuracy

Calibration

Gage calibration is typically performed by the manufacturer or accredited lab. All probes include a Certificate of Calibration.

Verification of Accuracy

Gage accuracy is verified using the included check shim. Ensure that the probe has been cleaned with the included cleaning card and that the probe has been zeroed (pg. 10).

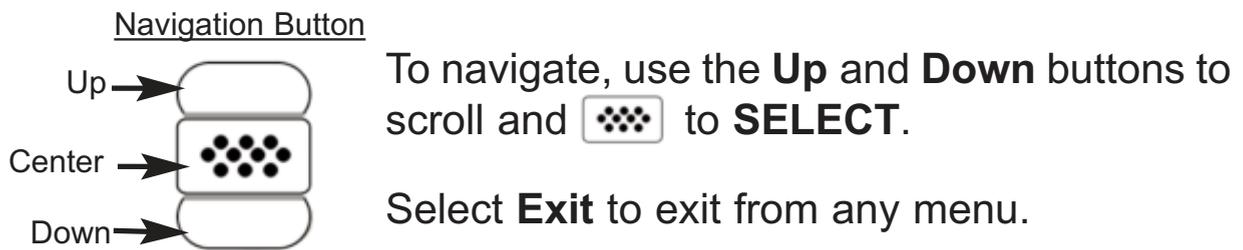
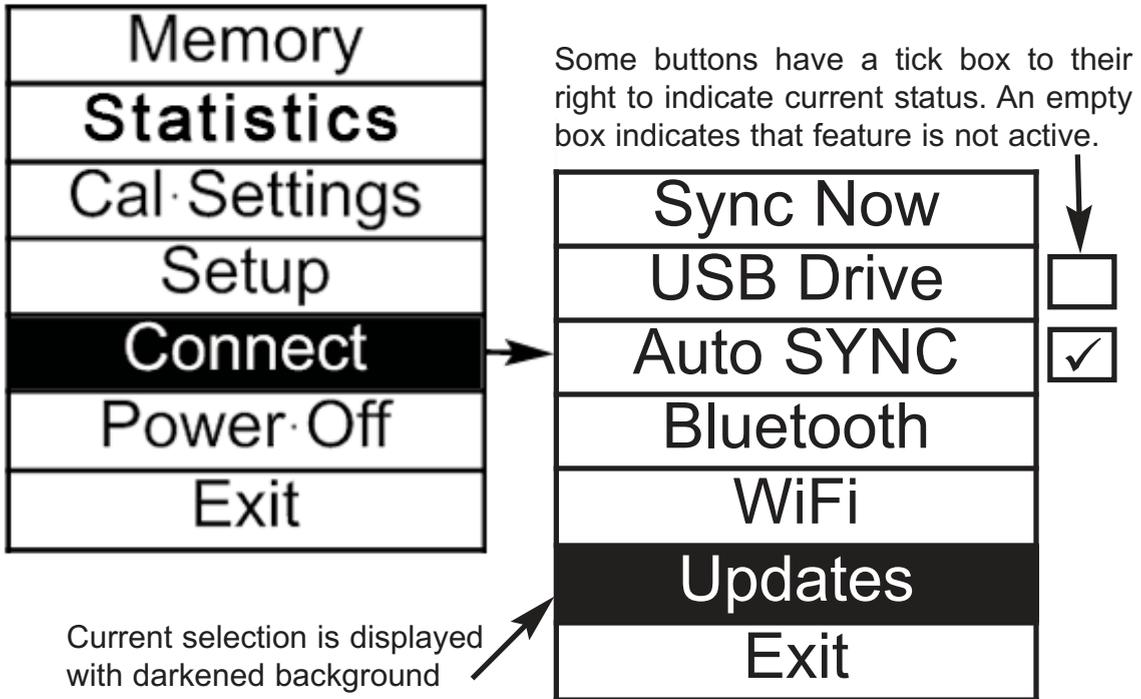
Place the check shim into the measurement opening. The average of several measurements should be within the combined tolerance of both the Gage and the shim. If not, the Gage may need to be returned to your dealer for service.

The check shim is specifically intended for the **PosiTector RTR**. The Gage is designed to measure burnished replica tape within a limited measuring range and automatically subtracts 50.8 μm (2 mil) from height measurements to account for the incompressible polyester film. Therefore plastic shims intended for other instruments such as coating thickness gages will not be measured properly.

Menu Operation

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

Below is a sample menu for a **PosiTector RTR** Advanced model:



NOTE: The center  button is purposely recessed to help eliminate unintentional powering-up of the Gage.

Statistics



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

\bar{x} Average

↑ Maximum Value

σ Standard Deviation

↓ Minimum Value

Cal Settings Menu

Zero

The probe should be zeroed regularly to ensure best accuracy. While the user will be required to zero the probe every time the Gage is powered-up. The **Zero** menu item allows the procedure to be performed at more regular intervals. It is particularly useful during long measurement sessions.

Clean the probe with the included cleaning card (pg. 7) before performing a probe zero.

1. Select **Zero** from the **Cal Settings** menu
2. Simultaneously press and hold both probe buttons firmly until the Gage beeps and the arrows point outward. Do not place anything in the measurement opening during this procedure.

SHORTCUT: Simultaneously press and hold both probe buttons firmly until the Gage beeps and displays "0". This can be performed from the main measurement screen without having to access the menu.

Tape Grade

Selects a replica tape grade. Required when **Linearize** mode (H_L) is ON.

- C - Course
- XC - Extra Course (default)

NOTE: Coarse Minus and X-Coarse Plus grades are not supported in **Linearize** mode since the only function of these two grades is to improve upon the accuracy of C tape at its low end and XC tape at its high end, something the **PosiTector RTR** will automatically do when measuring H_L . When **Linearize** mode is OFF, the **PosiTector RTR** will measure all four grades of replica tape just like a conventional spring micrometer.

Linearize



This is the default measurement mode. **Linearize** mode is ON when this box is ticked and the " H_L " appears on the display.

An undesirable characteristic of replica tape is that measurements made with analog spring micrometers are most accurate near the middle of each grade's range and least accurate at the outer ends of each grade's range. That is why two other grades, Coarse Minus and X-Coarse Plus, are used to check and, if necessary, adjust measurements at the lower and upper ends of the primary range of 20 - 115 μm (0.8 - 4.5 mils).

Inside the primary range, the upper end of Coarse grade's range and the lower end of X-Coarse grade's range share a 38 - 64 μm (1.5 - 2.5 mil) "overlap" region. Current Testex instructions describe a relatively complicated and time consuming procedure (the average of one reading using Coarse grade and one reading using X-Coarse grade) that is used to knit the Coarse and X-Coarse sub-ranges together to achieve reasonably accurate readings over the primary range. This method is a compromise between accuracy and ease of use.

■ When the Linearize box is NOT ticked, the **PosiTector RTR** displays a height value of H comparable to the value an analog spring micrometer would display after the 50.8 μm (2 mil) of incompressible polyester substrate has been subtracted. In other words, it is the average of the maximum peak-to-valley distances obtained by measuring the thickness of the replica tape without any correction.

■ When the Linearize box IS ticked, the **PosiTector RTR** displays a more accurate peak-to-valley height measurement H_L that has been adjusted for the non-linearity of replica tape. There is no need to average 2 or more replicas from different grades of tape AND there is no need to subtract the 50.8 μm (2 mil) of incompressible polyester substrate. Ensure the proper tape grade, C or XC, has been selected (pg. 10) and appears in the upper left corner of the display.

During measurement, if the linearized measurement falls outside of the selected tape grade's range, the Gage will suggest a more suitable tape grade to perform the measurement.

Setup Menu

Reset

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

- All batches, stored measurements, images, batch names and screen captures are erased.
- Menu settings are returned to the following:

Memory = OFF

Bluetooth = OFF

Tape Grade = XC

Statistics = OFF

WiFi = OFF

Linearize = ON

Memory Display = None

Perform a more thorough **Hard Reset** by powering down the Gage, waiting several seconds, then simultaneously holding both the center  and **(+)** 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

Battery Type = Alkaline

Flip Display = Normal

Backlight = Normal

White on Black = OFF

USB Drive = ON

Language = English

Auto Sync = OFF

NOTE: Date, Time and WiFi are not affected by either **Reset**.

Gage Info

Displays the model number & serial number, probe type & serial number, PosiSoft.net registration key, the amount of remaining memory for storage of readings, date and time and software packages.

For security purposes, the registration key is required to add the Gage to your PosiSoft.net account.

Flip Display

This option causes the display to read upside down allowing for alternate positioning techniques.

White on Black (Advanced models only)

Inverts the LCD display to white on a black background to provide better readability in some surroundings.

Backlight (Advanced models only)

Selects display brightness (Sun, Normal or Night). All settings will dim slightly after a period of no activity to conserve battery life. Press the **Down** button to brighten the display.

Set Clock

All measurements are date and time stamped (24 hour format) when stored into memory. It is therefore important to keep both the date and time current using this menu option. Use the **Up** and **Down** buttons to scroll, and the **(-)** and **(+)** buttons to adjust a value. The Gage's date and time can also be viewed in **Gage Info** (pg. 12).

Units

Converts the display from inch to metric or vice versa. Stored measurements in memory are not converted.

Switching units will turn off Statistics view and closes Memory.

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 charger. The battery state indicator icon is calibrated for the selected battery type. No damage will occur if the wrong battery type is selected.

NOTE: DeFelsko recommends the use of *eneloop* (NiMH) rechargeable batteries.

Language

Converts displayed and printed words to the selected language.

Memory Management

The **PosiTector RTR** has internal memory storage for recording measurement data. Stored measurements can be reviewed on-screen or accessed via computers, tablets and smart phones. Measurements are date and time-stamped.

Button functions with **Memory ON**:



Standard models store up to 250 readings in one batch.

The **Memory** Menu includes the following options...

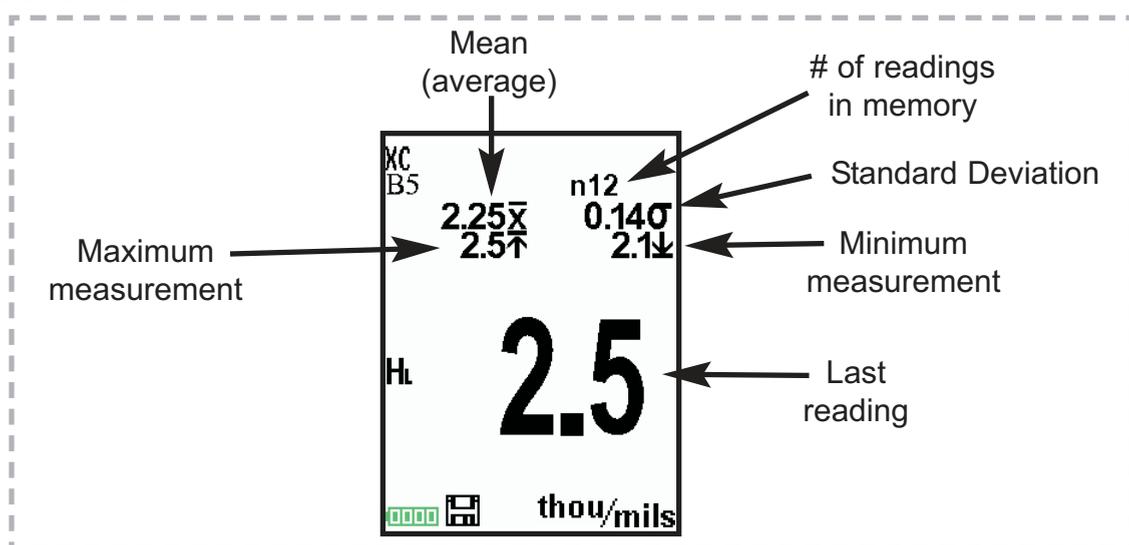
On: turns memory on and begins recording

Off: stops recording (stored readings remain in memory)

Clear: removes all readings from memory

View: lists group statistics and all stored readings on the display. It will begin by showing statistics based on all readings in memory. Use the **Up** and **Down** buttons to scroll through all readings. Press  to exit.

Standard Model display with **Memory ON** shows measurement statistics:

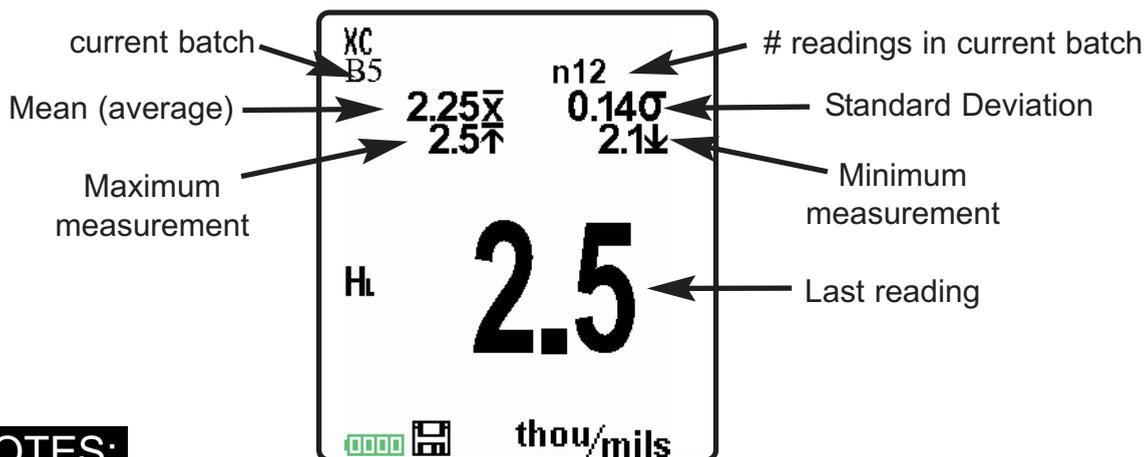


Advanced models store 100,000 readings in up to 1,000 batches. The **Memory** Menu includes the following options...

New Batch

Closes any currently opened batch and creates a new batch name using the lowest available number. For example, if only **Batch 1** and **Batch 3** exist, then **Batch 2** would be created and made the current batch. The  icon appears and basic statistics are displayed. Each measurement will be displayed and stored into this new batch. On screen statistics are immediately updated with each measurement. New batches are date stamped when they are created. Each reading is also data/time stamped.

Shortcut: When a batch is open, press (+) to create a new batch



NOTES:

- Remove the last reading from the current open batch by pressing (-).
- If memory is ON, continuous measurements can be taken and stored in memory.

Open

Selects a previously created batch name to open and make current. If it contains measurements, onscreen statistics will immediately reflect values calculated from this batch.

Close

Stops the recording process, closes the current batch, and removes batch information from the display.

Delete

Removes a batch completely from memory. The name is deleted and all measurements are erased.

View

Scroll using the **Up** or **Down** buttons through information, statistical summary, and a list of each reading in the currently opened batch.

Press  to exit.

Annotate

Create meaningful batch names and enter notes directly on the Gage using a familiar onscreen *QWERTY* keyboard.

Use the Gage's navigation and **(-)(+)** buttons to enter annotations.

Annotations can be synchronized with PosiSoft.net and are included in all PosiSoft reports (see **Accessing Stored Measurement Data**, pg. 19).

NOTE: Annotations can also be created using PosiSoft.net (pg. 20) or PosiSoft Mobile (pg. 21).

Print

Sends a statistical summary and individual measurements to the optional Bluetooth wireless printer (see pg. 25).

NOTE: To cancel printing, press and hold the **(-)** and **(+)** buttons simultaneously.



Display

(appears only if a batch is currently open)

The following user selectable display options are available:

 **Chart:** A real-time chart of batch readings

x-y Chart

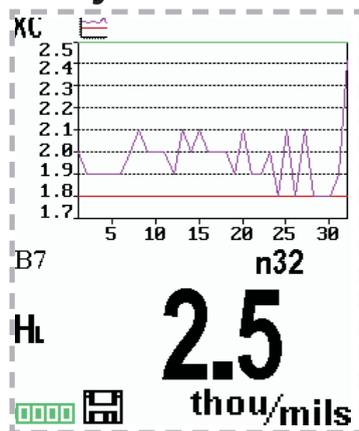
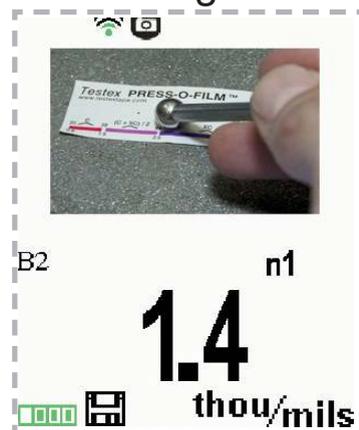
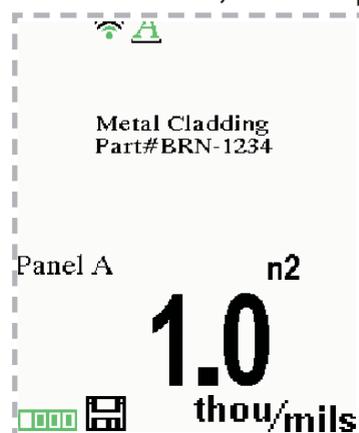


Image: Batch image



Notes: Instructions, descriptions or notes (see **Annotate**, pg.16)



None: Default screen shows statistics

Shortcut:

When a batch is open, press **Up** to scroll through the above display options.

NOTE:

PosiSoft.net (pg. 20) and PosiSoft Mobile (pg. 21) are used to insert an **Image** and **Notes** into a batch.

Summaries

(Advanced models only)

Displays a summary of all stored batches including the name, probe type, number of readings and type.

In the following example, Batch 3 (**B3**) indicates an “F” 6000 coating thickness probe was used to record a total of “6” readings in “PA2” mode.

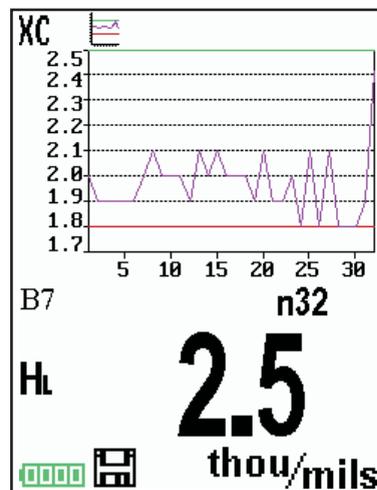
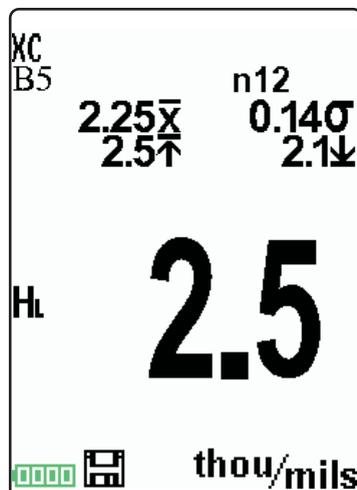
Batch Name	Probe Type	#	Type
B4	SPG	20	
B3	F	6	PA2
B2	F	10	
B1	UTG-C	5	

OK

Screen Capture

Press both (-)(+) 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. 19).

Sample Screen Captures



Accessing Stored Measurement Data

PosiSoft solutions for viewing, analyzing and reporting data:

PosiSoft USB Drive - connect the **PosiTector** to a PC/Mac using the supplied USB cable to access and print stored readings, graphs, photos, notes and screen captures. No software or internet connection required. **USB Drive** must be selected (See pg. 22).



PosiSoft.net - a free web-based application offering secure centralized storage of **PosiTector** readings. Access your data from any web connected device. Go to: www.PosiSoft.net

PosiSoft Software - Desktop Software for downloading, viewing and printing your measurement data.

PosiSoft Mobile (*Advanced models only*) - access readings, graphs, capture photos and update annotations through WiFi enabled devices, such as tablets, smart phones and computers.

PosiSoft Desktop Manager (PDM):

A small Windows based application which allows automatic two-way communication (synchronization) between the Gage and *PosiSoft.net* (internet connection required). When installed, PDM runs as a start-up application and resides in the Windows notification area (system tray) of a PC. PDM is available as a free download within your PosiSoft.net account or at www.defelsko.com/downloads

Register your Gage on PosiSoft.net to take full advantage of your Gage's capabilities. See www.PosiSoft.net

NOTE: PDM is not required for **WiFi** enabled gages (pg. 25).

PosiSoft.net:

To enhance the operation of your Gage, all **PosiTector** users have access to the features provided by *PosiSoft.net*. It is a web-based application offering secure centralized management of readings.

After (1) a user account has been created, (2) a Gage has been registered, and (3) the *PosiSoft Desktop Manager* is downloaded and installed onto a Windows PC (not required for WiFi connected gages), synchronization of measurement data can be performed either manually or automatically whenever the **PosiTector** is connected to a web enabled PC (USB cable or Bluetooth wireless technology) or WiFi network (Advanced gages only). Gage measurements stored in memory are uploaded; images and batch notes are synchronized.

Uploaded data can be manipulated using a standard internet web browser from any location in the world - job site or head office. Reports and graphs with annotations and corporate logo can be generated. Data can be exported to XML or CSV (comma delimited) text files.

Measurement data can be shared with authorized users via a secure login from any computer and most web enabled devices including smart phones.

NOTE: A *PosiSoft.net* account is not required to **Update** (pg. 26) your **PosiTector**. Simply download and install *PosiSoft Desktop Manager* at www.defelsko.com/downloads

PosiSoft 3.0:

Desktop Software that can be installed onto your Windows PC and allows the user to download, view, print and analyze their measurement data.

Reports and graphs with annotations and corporate logo can be generated. Data can be exported to XML or CSV (comma delimited) text files.

NOTE: *PosiSoft Software* is available for use with DeFelsko's complete line of electronic instruments and is available for download at www.defelsko.com/posisoft

PosiSoft Mobile:

Is a Gage-based software application featured in all **PosiTector** Advanced instruments (serial numbers 730,000+).

PosiSoft Mobile allows users to:



- browse stored measurement data including notes, images, statistics and charts
- update batch names/notes using your mobile device's keyboard
- insert images directly into Gage batches using your mobile device's camera or image library
- remotely view the live display of a working **PosiTector** & more

PosiSoft Mobile can be accessed from any WiFi enabled device using a standard web browser.

Ideal for use with devices such as Windows Phone/Mobile, Blackberry (RIM), Android, Apple iOS and more.

In addition to browser based access, PosiSoft Mobile Managers are available for Apple iOS and Android users.

See www.defelsko.com/wifi/wifi_mobile



Connect Menu

Synchronizing (Sync) is the process whereby **PosiTector** stored measurement data uploads to *PosiSoft.net* (from both Standard and Advanced models) while images and batch notes are downloaded to the Gage (*Advanced model only*). This transfer occurs when the Gage is connected via USB, Bluetooth or directly through your WiFi router/hotspot via WiFi. It can be triggered either manually (USB, Bluetooth or WiFi) or automatically (USB only).

Sync Now

When selected, the Gage immediately synchronizes stored measurement data via USB, Bluetooth or WiFi to *PosiSoft.net* (*PosiSoft Desktop Manager* (pg. 19) and an internet connection are required when using USB or Bluetooth.)

Multiple gages can be synchronized simultaneously when connected using multiple connections (for example two gages connected via USB and one gage connected via WiFi or Bluetooth).

Auto SYNC



Allows the Gage to automatically synchronize stored measurements with *PosiSoft.net* when initially connected to the internet via a PC running *PosiSoft Desktop Manager* (pg. 19) or a local WiFi network.

Additional measurements added to memory while connected are synchronized only when the USB cable is disconnected, then reconnected or when the **Sync Now** option is selected.

USB Drive

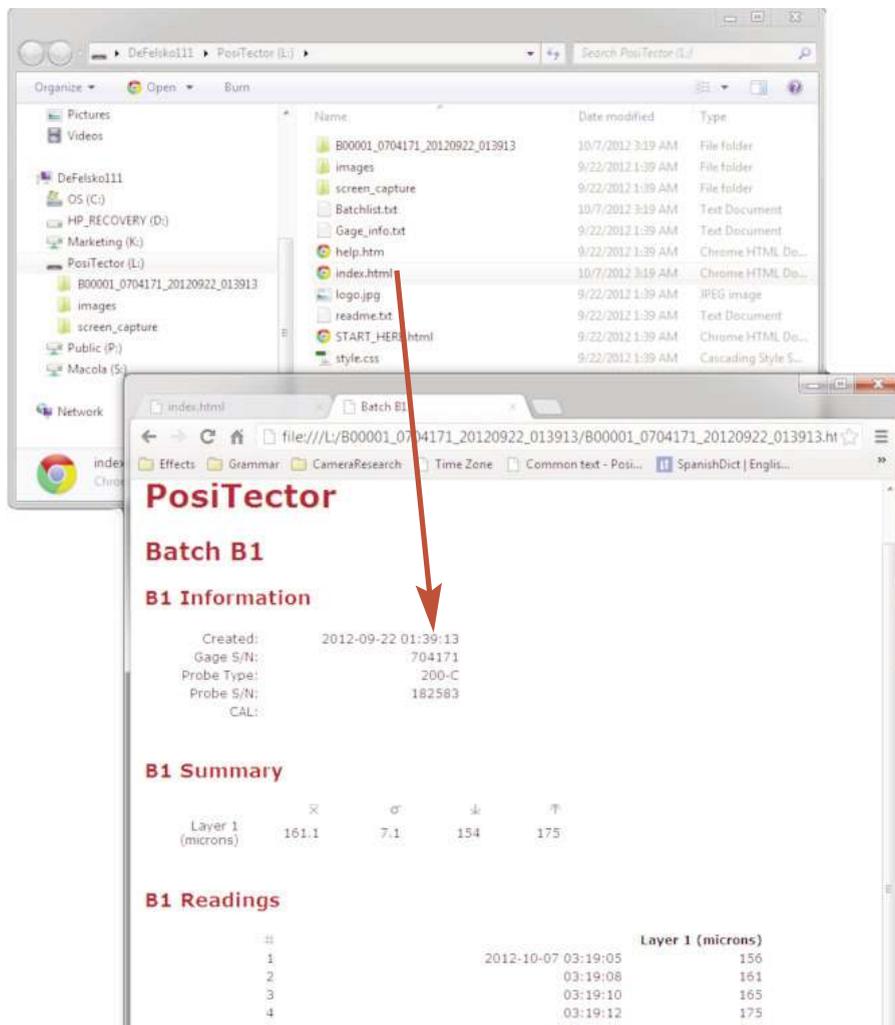


Universal Serial Bus (USB) is a specification for communication between devices and a host controller (usually a personal computer). USB has effectively replaced a variety of interfaces such as serial and parallel ports.

The **PosiTector** uses a USB mass storage device class which provides a simple interface to retrieve data in a manner similar to USB flash drives, cameras or digital audio players.

When checked, any computer can view readings stored in memory by navigating a virtual drive labeled “PosiTector” using the included USB cable.

A formatted HTML report is viewed by selecting the "index.html" or “START_HERE.html” file found in the root directory. Optionally, text ".txt" files located in each batch folder provide access to measurement values. Stored readings and graphs can be viewed or copied using universal PC/Mac web browsers or file explorers.

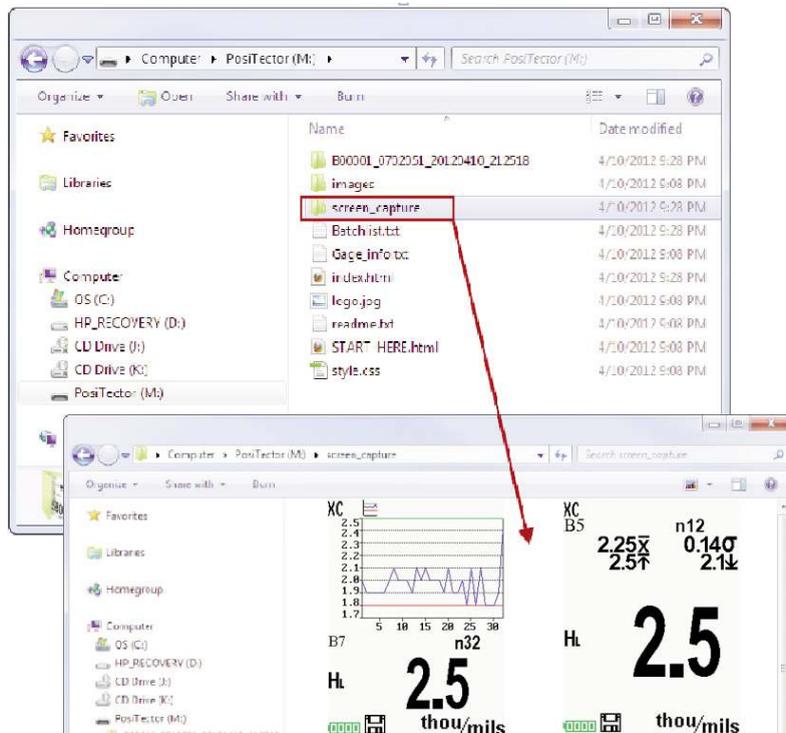


When your **PosiTector** is first connected to your Windows PC via a USB cable, an enumeration process is started that installs device drivers without re-booting your computer. You may see several pop-up windows in the taskbar at the bottom right of your screen. Wait for the entire process to be completed before proceeding.

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 Gage will trickle charge the batteries.

Retrieving stored screen captures

The last 10 screen captures (pg. 18) stored in memory can be accessed by navigating to the “screen_capture” directory within the “PosiTector” virtual drive.



Bluetooth

(Advanced models only)



PosiTector Advanced models have Bluetooth functionality to:

- **Communicate** with the *PosiSoft Desktop Manager (PDM)* in lieu of a USB cable.
- **Stream** individual readings to a computer or Bluetooth wireless printer as they are taken.
- **Print** to the optional battery powered Bluetooth wireless printer.

On: Turns Bluetooth functionality **On**. When selected, the  icon will appear on the display. To deactivate Bluetooth, select **Off**.

Pairing: The Gage and receiving device must be paired before stored or streamed readings can be transmitted. For pairing instructions, see www.defelsko.com/bluetooth

Info: Lists information about your current Bluetooth connection, including the currently paired device and MAC address.

Stream: When checked, the Gage will stream readings to the paired Bluetooth Device as they are taken. Readings can be streamed as they are taken to the optional Bluetooth wireless printer (pg. 25) or third-party computer software.

Bluetooth Wireless Printer

PosiTensor Advanced models can output to the optional battery powered Bluetooth wireless printer one of two ways:



- Stream individual readings as they are taken.
- Print stored batch readings and summaries.

Begin by entering the **Connect>Bluetooth** menu. Turn Bluetooth ON and “Pair” the **PosiTensor** to the printer. See: www.defelsko.com/bluetooth

Streaming: In the **Connect>Bluetooth** menu, select the “Stream” tick box. All readings will now be simultaneously displayed on the LCD and sent to the printer.

Printing: In the Memory menu, select “Print”.

WiFi

(Advanced models only)



Allows wireless communication with devices such as tablets, smart phones and computers connected to your local wireless network or portable mobile hot spot. See www.defelsko.com/WiFi

On/Off: Turns WiFi functionality **On**. When selected, the  icon will appear on the display. To deactivate WiFi, select **Off**.

Networks: The Gage will allow the user to add a new network and will automatically check for available local networks. Available networks detected by the Gage are listed on the screen along with any networks that the Gage has previously been connected to that are not currently within connection range.

Information: Gage displays information about the local WiFi network connection including...

- SSID: the network’s name
- State: displays if the Gage is connected to the network or not
- IP Address: the network’s IP Address. Users can enter this number into a web-browser of any WiFi enabled device that is connected to the same network in order to view the Gage’s synced batches through **PosiSoft Mobile** (See pg. 21).

Setup: Allows user to setup a WiFi connection

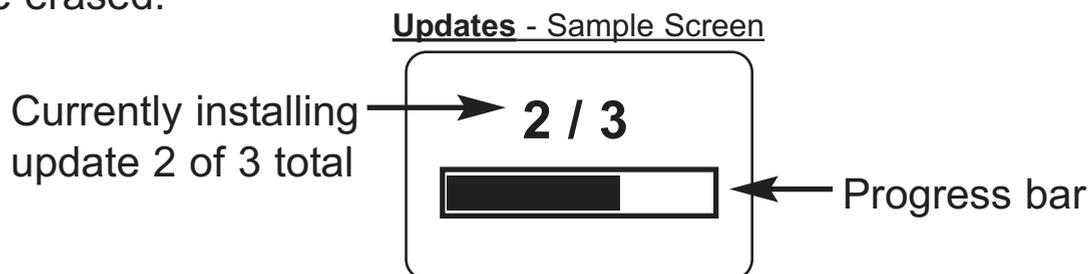
- IP Settings: enter the IP information as follows... IP Type (DHCP or Static), IP Address, Gateway, Netmask, DNS1, DNS2.
- Server Enable: enables a connection between the network and the Gage.
- Gage Name: enter a name for the Gage (up to 14 Characters).
- WiFi Reset: erases all WiFi settings.

Updates

Determines if a software update is available for your Gage. If an update is available, a prompt will appear allowing the user to choose to perform the update at this time or not.

To perform an update the Gage must be connected to an internet connected PC with *PosiSoft Desktop Manager* (pg. 19), or **WiFi** network (pg. 25).

NOTE: Ensure that stored measurements are backed up to a PC or *PosiSoft.net*. The Gage may perform a **Hard Reset** (pg. 12) after completion of the update and ALL readings in memory would be erased.



 **DO NOT** unplug the Gage during the update operation.

Power Supply / Battery Indicator

Power Source: 3 AAA alkaline, Lithium or optional Nickel-metal hydride (NiMH) rechargeable batteries. For best battery indicator results, ensure the appropriate **Battery Type** is selected in the **Setup>Battery Type** menu (pg. 13).

The battery indicator  displays a full bar with fresh alkaline or fully charged batteries installed. As the batteries weaken, the bar will be reduced. When the battery symbol is low  the Gage can still be used, but the batteries should be changed or recharged at the earliest opportunity. The Gage will turn off automatically when batteries are very low, preceded by a Low Battery Warning on the display.

 To retain all user settings and stored memory readings, only replace the batteries after the Gage has powered-down.

Battery performance decreases at low temperatures.

Additional Accessories

Rechargeable Battery Pack - 4 AAA eneloop batteries

The **PosiTector** can operate on rechargeable batteries and DeFelsko recommends the use of *eneloop* (NiMH) rechargeables. *eneloop* batteries combine the advantages of regular rechargeable batteries and disposable (Alkaline) batteries. They discharge very slowly and can be stored for long periods without having self discharge concerns. Eneloop batteries come pre-charged and ready to use immediately. See: www.eneloop.info

AC Power Cable Kit

An optional AC Power Cable Kit is available for continuous operation or battery charging through the **PosiTector's** built-in USB port (as shown on page 22). This kit supplies several alternate power solutions for your battery-operated **PosiTector**. They allow the gage to operate continuously without the need for batteries.

Use the USB cable alone to connect a **PosiTector** to your PC's built-in USB port that acts as a continuous power source. Or connect the cable to the included power adaptor which plugs into any AC wall electrical outlet, 110 or 220V.

A selection of electrical plugs is included which are capable of dealing with most country's outlets. The USB cable provided can also be used for **Accessing Stored Measurement Data** (See pg. 19).

USB Cable

A USB Cable is provided with every **PosiTector**.

Bluetooth Printer

This lightweight wireless printer receives data from all **PosiTector** gages via Bluetooth wireless technology. It is battery-operated and prints readings and statistical summaries.

Nylon Case

Convenient soft shell nylon case for carrying a **PosiTector**. Case has compartments for Certificates of Calibration, instruction manuals and other accessories.

Protective Lens Shield

One lens shield is included with every **PosiTector** instrument. Additional package of five (5) thin plastic lens shields are available and ideal for protecting the **PosiTector** display from paint and overspray.

Testex Tape

To create a reverse replica of the surface.

Tape Grades: Coarse and X-Coarse

Stainless Steel Burnishing Tool

To burnish testex tape.

Cleaning Cards

To clean residual adhesive and debris from the anvils.

Surface Cleaning Putty

To clean the test surface of debris.

Check Shim

To verify accuracy.

Technical Data

PosiTector RTR Models:

* **Standard:** H1

* **Advanced:** H3

Measuring Range:

20 – 115 μm
0.8 – 4.5 mils

Gage Size:

152 x 61 x 28 mm
6" x 2.4" x 1.1"

Accuracy (H):

+/- 5 μm
+/- 0.2 mils

Weight: (without batteries)

140 g
4.9 oz

Resolution:

1 μm
0.1 mil

Temperature Range:

0° to 40°C
+32° to +104°F

Anvil Pressure:

110 grams-force
1.1 Newtons

Conforms to:

ASTM D4417, ISO 8503-5,
NACE RP287, SSPC-PA 17,
SP6, SP10, SP11-87T
and others

Anvil Size:

Ø6.25 mm
Ø0.25 inch

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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. Clean the measurement anvils using the cleaning card (pg 7).
3. Perform a **Hard Reset** (pg. 12).
4. Measure the check shim to verify accuracy (pg. 8).

If you must return the Gage for service, describe the problem fully and include measurement results, if any. Be sure to also include the probe, your company name, company contact, telephone number and fax number or email address.

Website: www.defelsko.com/support

Limited Warranty, Sole Remedy and Limited Liability

DeFelsko's sole warranty, remedy, and liability are the express limited warranty, remedy, and limited liability that are set forth on its website: www.defelsko.com/terms



The Measure of Quality

www.defelsko.com

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