

How to Determine if PG1000 Hardware Updates are Required Before Installing REACTION Software Version 9

Overview

PG Inspection Technologies has sold 1000+ PG1000 systems since 1996. Many PG1000 systems are operating on older versions of the Euro-Tech PG1000 software that are no longer supported.

Software and hardware upgrades fix bugs, enhance existing software features, and also add new features that benefit users and productivity.

This guide will help explain what hardware is necessary to successfully install the latest version of the PG1000 REACTION software and to operate the PG1000 system most efficiently.

Important Note:

This document is to be used as a guide only. There may be exceptions to this guide.

Please contact PG Inspection Technologies to discuss your specific system and requirements.

UPGRADE vs REBUILD

Replacing a few components in the field is considered an UPGRADE. However, an upgrade or installing the latest version of the REACTION software does not guarantee accuracy of the PG1000 system.

PG1000 systems will also periodically require a full REBUILD. Rebuilds are strongly suggested every 7-10 years. During the rebuild process the granite base is typically replaced and the mechanical items (bearings, lead screws, backlash nuts, etc.) are checked/repared and/or replaced. The X and Y Axis linear scales are cleaned and calibrated or replaced. Older camera, microscope and encoders are replaced with the most recent models. The system is then rebuilt, calibrated and will be as accurate and repeatable as a new system.

UPGRADES can often be performed in the field alongside mechanical checks/calibrations and can improve the performance of the PG1000 system and delay the necessity of a full rebuild.

REBUILDS must be performed at the factory in Waukesha, WI and require 2-4 weeks of downtime.

PG1000 RECALIBRATION NOTES

A calibration is required after REACTION version 9 software is installed! If you wish to upgrade to version 9 software it is an ideal time to have a PG Service Technician come onsite to perform any necessary hardware upgrades, check and adjust the mechanicals, update the software and calibrate the system.

PG Inspection Technologies recommends recalibrating the PG1000 systems once every two years for light use, annually for regular use and as often as monthly or quarterly for heavy or multishift use.

We recommend calibrating the unit after any upgrades are completed to ensure the accuracy of the system. PG Inspection Technologies includes a full calibration for any work completed by PG Inspection Technologies. Calibration reticles are available for purchase and for rental as well.

STEP 1: What Software Version Do You Have Now?

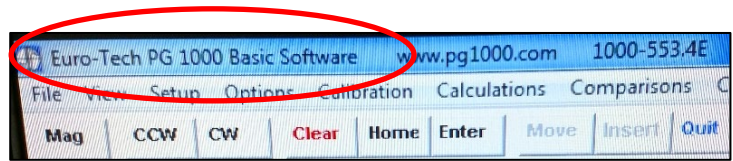
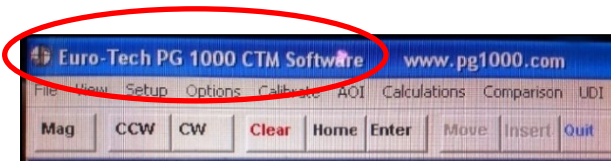
The software version you are operating on will be shown on the top left-hand corner of the screen when the software is open.

There have been four major software versions since 1996 with many updates released in-between each major software version. Two of the four versions are no longer supported. If you are using unsupported software and have an issue it is unlikely that we will be able to help should you have a problem. We strongly suggest that our customers regularly update their hardware and software to minimize the potential for downtime.

Note: *Unsupported/older software versions also do not always allow for system calibrations which are necessary to ensure accuracy.*

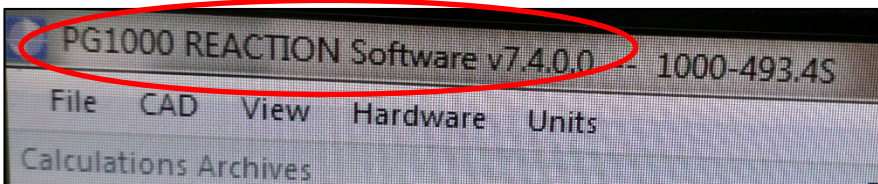
CTM Software (also known as Version 6.5 or PG1000 Basic Software)

- Supplied from 1996 to September 2012 (s/n 1 – 550 est.)
- Support ended in 2016. Must upgrade system/software to avoid potential problems & downtime.
- Significant hardware upgrades or full rebuild necessary. Contact PG Inspection Technologies.



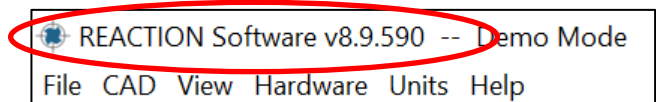
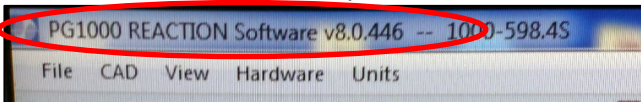
REACTION Software v7.0 – 7.9

- Supplied from September 2012 to April of 2016 (s/n 550 – 725 est.)
- Support ended in 2016. Must upgrade system/software to avoid potential problems & downtime.
- Encoder and PC upgrades likely. Camera may also need to be updated.



REACTION Software v8.0 – 8.9

- Supplied from April 2016 through December 2020 (s/n 750+ est.)
- System can most likely be upgraded to current software version.
- Encoder upgrade may be beneficial.



REACTION Software v9 – available as of January 2021

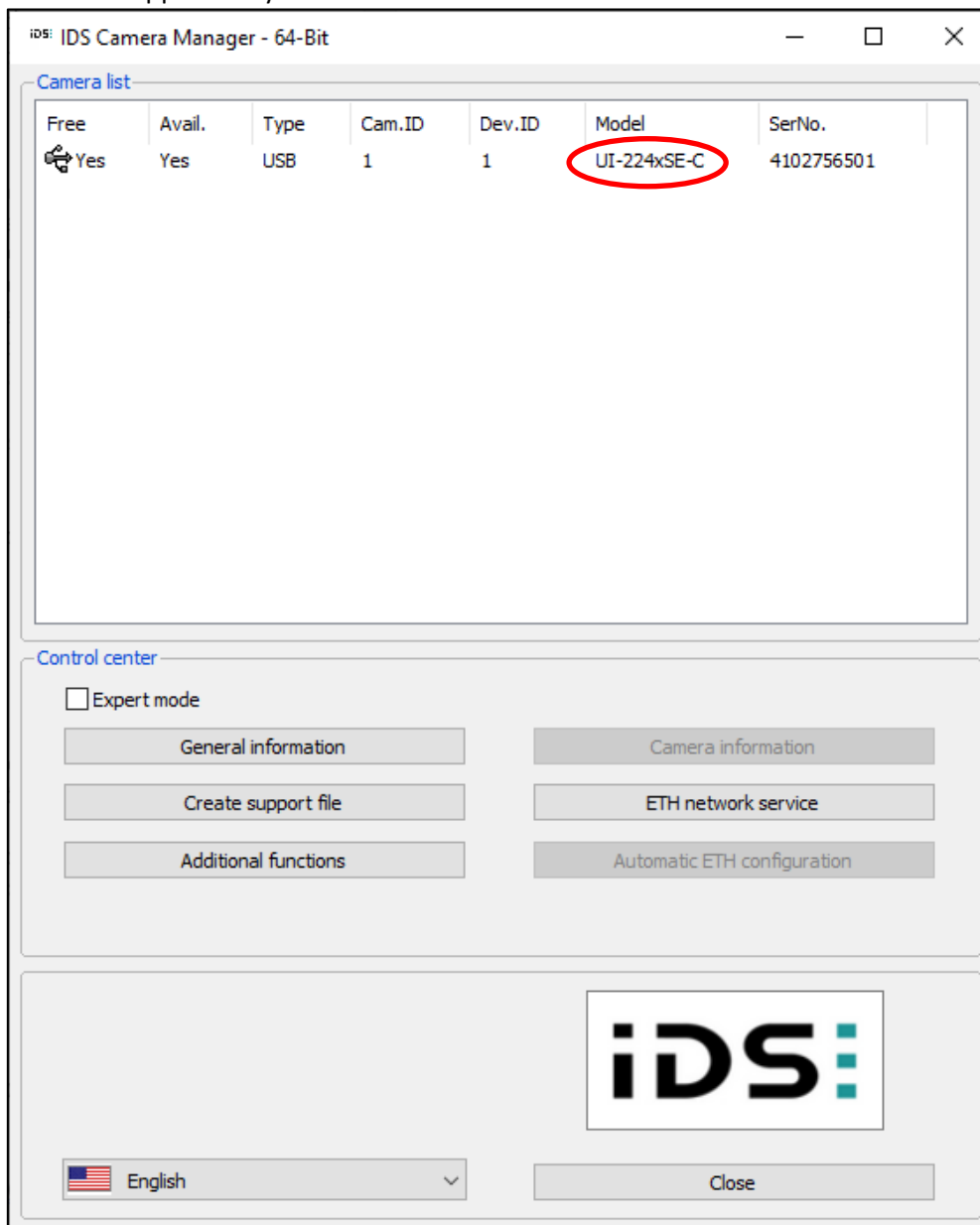
- This major new release includes updated calculation instructions, demo videos for each calculation, a user's manual, an easy-to-use customizable PDF report creation feature, cleaned up user interface and menu, many misc. functionality improvements, and bug fixes.
- Further improvements were made in September 2022 in software ver 9.2 when countouring feature was added and snap point to edges and all edge detection algorithms were updated to be more accurate and powerful.

STEP 2: Is Your Camera Supported by the Current Software?

Camera technology has dramatically improved over the last 2 decades and older camera models are not supported by the current REACTION software. If you have a camera that is not supported by today's software, you will have to upgrade your system to a 4K camera which means a PC and monitor upgrade will also be necessary.

The camera Model is found by opening the 'IDS Camera Manager' program installed on your PC.

- HD Cameras
 - Models supported by REACTION software: **UI-314x** (3140) / **UI-224x** (2240) / **UI-164x** (1640)
 - Models **no longer** supported by REACTION software: **UI-221x** (2210) / **UI-154x** (1540) / **UI-148x** (1480) / **UI-121x** (1210)
 - **Note:** PG Inspection Technologies has used 2240 cameras available to replace camera models no longer supported by the REACTION software
- 4K Cameras
 - Model supported by REACTION software: **UI-358x**



Above example shows a UI-224x (2240) HD camera which is supported by today's REACTION software

STEP 3: Is a New Computer/PC Necessary?

Today's PG1000 REACTION software requires a high-performance PC to run properly. Older versions of our software captured images and applied single calculations to the images whereas today's software is taking hundreds of calculations per second on live images. This requires a significant amount of computing power.

Computer details can be found under System Information or by right clicking on My Computer or This PC and selecting properties.

Note: 4K systems with model 3580 cameras were standard as of 2016. If you have a 4K system your PC is **OK** and you can upgrade to the latest version of the REACTION software.

Systems with a HD camera (systems purchased prior to 2016)

- Operating System
 - **32 bit – must replace PC**
 - **64 bit - OK**
- Processor
 - **i3 – must replace PC**
 - **i5 – upgrade suggested, performance issues (i.e. lagging) may occur. Crashing may occur when using edge detection features.**
 - **i7 – OK**
- RAM
 - **2GB – must replace PC**
 - **4GB – upgrade suggested, performance issues (i.e. lagging) may occur. Crashing may occur when using edge detection features.**
 - **8+GB – OK**
- Windows
 - **Windows 8/Vista/XP – must upgrade to Windows 10**
 - **Windows 7 - must upgrade to Windows 10**
 - **Windows 10 – OK**
 - **Windows 11 – NOT TESTED**
- Graphics Card
 - Required for 4K systems/model UI358x cameras

We can not upgrade software during a service call if the PC does not meet these minimum requirements.

STEP 4: Is an Encoder Interface Box Required?

The encoder interface box transfers data between the hardware (X & Y scales, magnification, focus, base block/tool holder rotation encoders) and the PC/software.

Each updated version of the encoder interface box enhanced the performance of the PG1000 system and eliminated problems/bugs from previous versions.

Having the current encoder interface box (p/n 1000-PGEB6-4L) is highly recommended for ALL PG systems.

The current encoder box has three primary advantages over older encoder interface box models.

- 1) PG1000 users can power, operate and recall optional lighting accessories through the REACTION software only with the PGEB6-4L box: backlight, ring light and illumination tube accessories: <https://www.pg1000.com/lighting/>
- 2) The older encoder boxes did not have programming built into them. They relied on 3rd party software. As operating systems evolve having our own programming built into the box instead of relying on a 3rd parties software eliminated unwanted effects associated with Microsoft updates
- 3) The PGEB6-4L box has a separate power 110vac supply. Previous encoder interface box models received power from the PC's USB/internal power supply. As PC's got smaller their internal power supplies also got smaller. At the same time operating systems and our software got larger and more power hungry. Power disruptions to the encoder interface box can cause the software to crash and by having a separate power supply we eliminated this possibility and made the system more stable.

- **US Digital Box** (white or black box not attached to PG unit)
 - Supplied from 1996 – 2011 (s/n 1 – 475 est.)
 - PG1000 systems with this encoder interface will require a full rebuild before the current REACTION software can be installed.

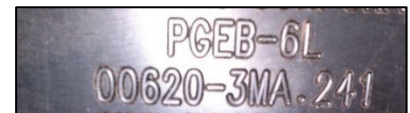


- **PGEB-5** (black box)
 - Supplied in 2011 (s/n 475 – 525 est.)
 - Encoder interface box must be replaced. It is likely that other hardware on this PG1000 system is also obsolete (camera, scales, scale cables, microscope, encoders, etc.) and not supported by the current REACTION software.

- **PGEB-6** (black box)
 - Supplied from 2012-2013 (s/n 525 – 625 est.)
 - Encoder interface box must be replaced.
 - **If you have Fagor X & Y Axis scales**
 - If the existing encoder box is not mounted to the PG1000 body and the existing scale cables are very long new 28" Fagor scale cables may 'clean up' wiring: Qty.2 00670-3P
 - **If you have RSF X & Y Axis scales**
 - New Fagor scales & cables are required for field upgrade, and unit will need to be recalibrated after the scales are installed: Qty.1 00632-6P & Qty.1 00632-4P/00632-5P



- **PGEB-6L, 6M or 6ML** (black box)
 - Supplied from 2014-2017 (s/n 625 – 800 est.)
 - If the existing encoder box is not mounted to the PG1000 body and the existing scale cables are very long new 28" Fagor scale cables may 'clean up' wiring: Qty.2 00670-3P
 - Upgrade to PGEB6-4L box recommended



- **PGEB6-4L and power supply** (black box mounted to column of PG unit)
 - Supplied from 2018 through today (s/n 800+ est.)
 - **Current version – OK**

Upgrade Information

Part No.	UPGRADE / REPLACEMENT PARTS
RB-PG1000-xxx s/nxxx	Contact PG Inspection Technologies at sales@pg1000.com with PG1000 serial number for detailed quotation
1000-PGEB6-4L	PGEB-64L Encoder Interface Box (includes 00657-7P power supply)
Qty.2 00670-3P	28" Fagor scale replacement cables with installation kit
00632-4P & 00632-6P	Fagor scales & cables for X & Y Axis. For PG1000-200 style systems. Includes reader heads, cable assemblies and installation kit
00632-5P & 00632-6P	Fagor scales & cables for X & Y Axis. For PG1000-400 style systems. Includes reader heads, cable assemblies and installation kit
00087-5P	High-performance PC with REACTION Software preloaded
00087-4P	New 22-24" HD Monitor

Contact PG Inspection Technologies for a quotation or for additional help.

Please have your PG1000 model and serial number, camera model and serial number, software version number and computer information available.

www.pg1000.com

pg@pg1000.com

(262) 946-5420