

PG1000 Rebuild Details



PG1000 rebuilds typically include the following:

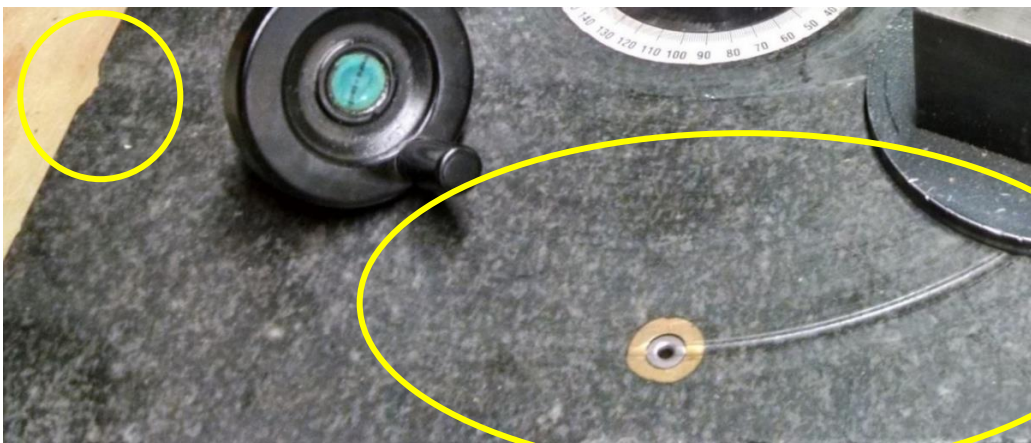
- New, certified for flatness, granite base
- Check and repair/replace any worn mechanical parts: bearings, gears, lead screws, backlash nuts, etc.
- New 4k 5MP camera
- New microscope and microscope assembly
 - Older 3U6X/tandem microscope assemblies converted to current style
 - Replace zoom module
 - New magnetic focus encoder and ring (PG1000-400 only)
 - Replace .75x front lens
- New encoder interface box (includes power supply)
- New 18" flexible variable intensity LED light
- New high-performance PC
- New 24" 4K Monitor
- Latest version of REACTION software will be preinstalled on PC
- Convert A Axis base block encoder to more durable magnetic ring encoder (PG1000-400 only)
- Rebuild, clean, calibrate and re-terminate X & Y Axis scales (or replace if necessary)
- Regrind the base-block, v-block and v-block insert
- PG1000 system will be fully tested, calibrated and ready to use upon receipt

Common Items Addressed with Rebuilds



Worn granite and chipping is often seen on older PG units. Due to its ability to withstand cutting fluids, granite is one of the most durable surfaces available for this type of inspection machine. However, over time the rotation of the base block combined with cutting fluids and dropping tools will inevitably takes its toll on the granite base.

The PG1000 takes measurements down to the micron level. A level granite base is critical to taking precise measurements. During the rebuild process it is often times necessary that the granite base gets replaced to ensure accuracy. Without a level granite base maximum accuracy is impossible to obtain.



The **camera/microscope assembly** is typically replaced during a full rebuild.

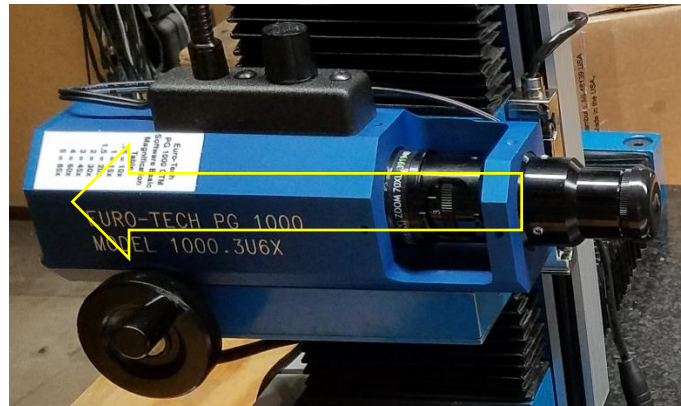
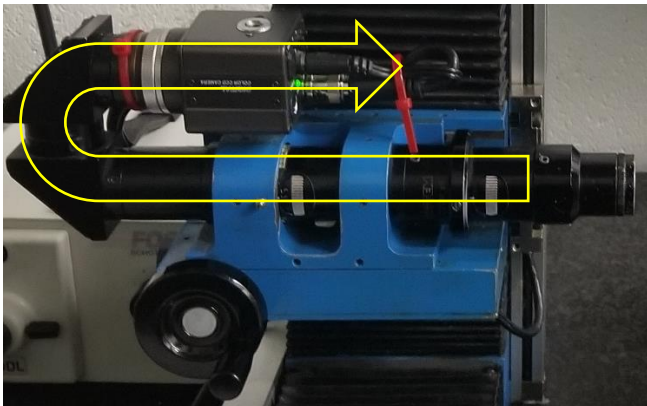


One of the biggest advantages of a rebuild is upgrading to a 4K camera. Older PG1000 systems utilized .5MP cameras to take still images. The images and videos produced by our current 5MP 4K cameras are crystal clear even at magnifications as high as 410x.

Replacing an older microscope will benefit the operator. Over time the focus assembly and magnification wheel inevitably get more difficult to turn. Besides the new microscope operating much more smoothly, we will also replace the focus and magnification encoders on all PG1000 models which have these features.



Older microscopes and cameras were much larger than the current models available today. In the past we had to get creative to keep the PG1000 system as compact as possible. As shown in the picture below (*left*) the old camera/microscope assembly on some models used to wrap in a U shape and was exposed to the potential of inadvertant bumping. As tehcnology evolved, and the physical size of the camera and microscope were reduced, we were able to redesign this camera/microscope assembly so that it gets housed in a protective shell as shown in the picture below (*right*). This design better protects the camera/microscope assembly leading to more accurate results.





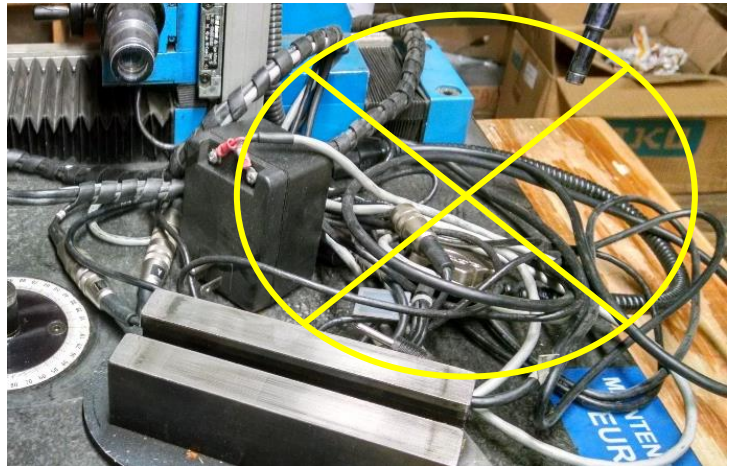
All rebuilds will receive a **new Encoder Interface Box** which will be factory mounted to the PG1000. **Cabling will be minimized** during the rebuild process.

The encoder interface box takes the data from the encoders on the PG1000 hardware and transfers it to the PC/REACTION software to be displayed on screen. This box is the brains of the system and having the latest encoder interface box ensures minimal communication problems. In the past the encoder interface box was powered from a USB port on the PC. As PC's physically got smaller, their internal power supplies got smaller. We found at times the encoder box would not receive adequate power from newer PC's leading to the software crashing. Our latest encoder interface box includes a dedicated power supply to ensure there is no possibility of power disruptions.

As the size of the encoder interface circuit board got smaller we were able to design a box that could mount directly to the PG1000. If you have an old standalone encoder interface box a rebuild will drastically reduce cable clutter.



Old standalone encoder interface box (left)

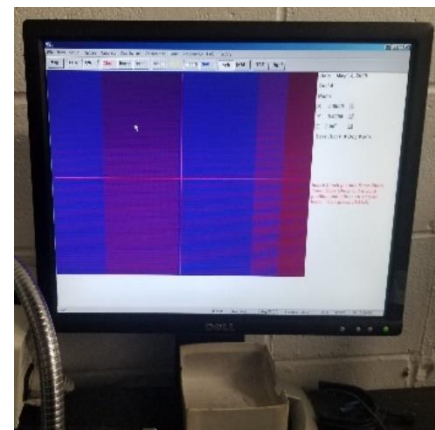


Rebuilds typically include a **new high-performance PC and 24" Ultra High Definition monitor**. In addition, the latest version of the REACTION software will be installed and ready to use upon receipt.

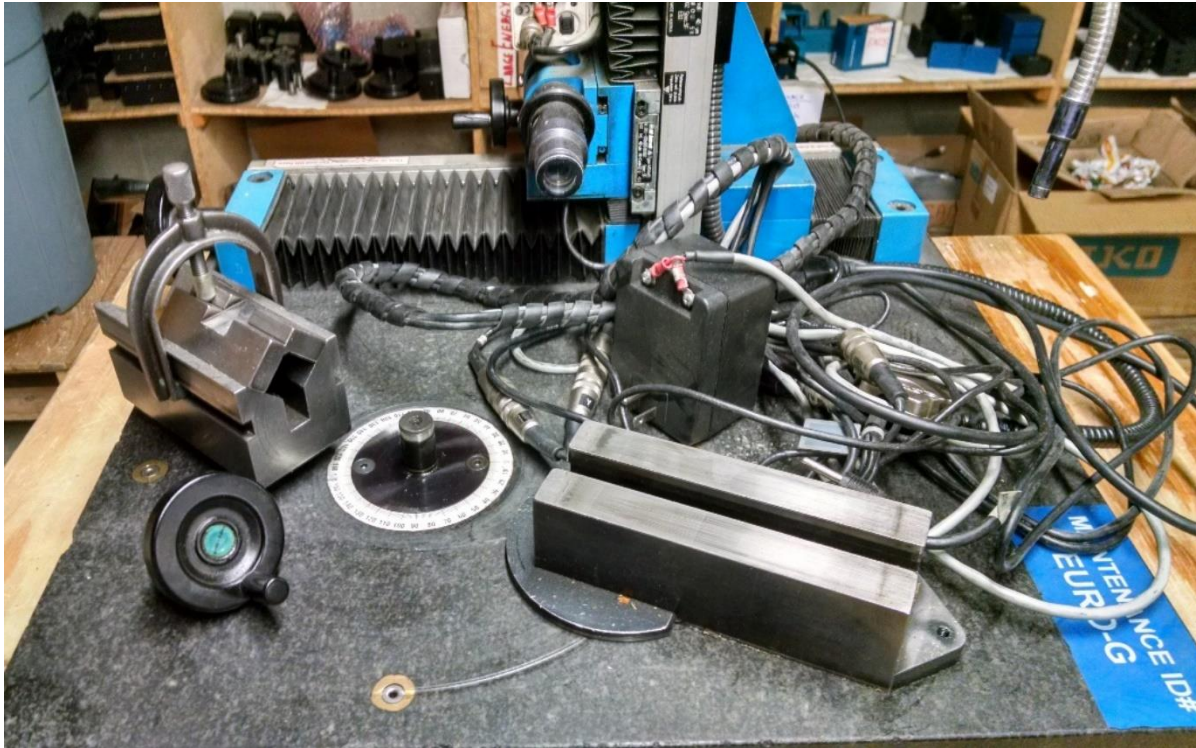


New PC, monitor and software (left)

Old software and monitor (right)



Example Rebuilds



Model#
3U6X

Purchased
May 2006



Model#
3U6X

Rebuilt
2019

s/n 313

Purchased September 2004



s/n 313

Rebuilt 2019

