

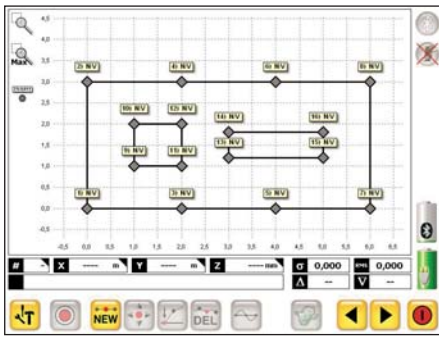
# Machine Bed Flatness and Level



The task here is to measure the “Flatness” and parallelism of the important element of the machine frame. This frame serves as the foundation for a gearbox test facility. The relative flatness is important to ensure that the machine is not stressed when mounted and to minimize the distortion resulting from thermal expansion and contraction. A little effort spent at this stage in the assembly can save a lot of time later during the alignment and test phase.

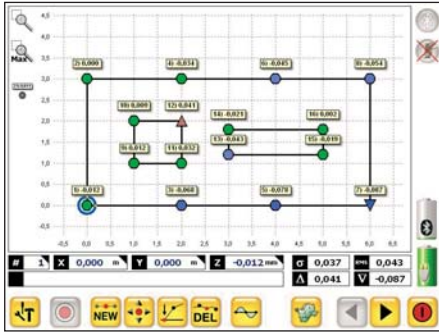



We have defined 8 points around the base which must be flat and another 8 points define the mounting platforms which must also be level and parallel to the base. We use a precision rotation laser T310 to define a reference plane. We use a couple of R310 laser receivers to measure the points with respect to the reference plane. An adapter has been used to compensate for the large offset. This is more convenient and more accurate than measuring both planes separately with respect to absolute level.



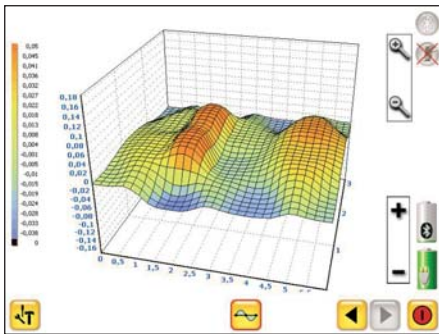
Use the program ProLevel to define a template of the points. You can do this on the fly in 5 minutes or load it from a previous measurement.

Thus the template only needs to be created once. It can also be edited on the fly if variations are necessary.



Now we simply select the point we want to measure by touching it on the screen. Move the R310 to that point and press the measure button .

The height of the reference laser will be recorded at each point. When we have measured all the points, we can optimize the reference by choosing 3 points or by using the best fit function.



We can now view the data or report it in many ways. Here we see a surface net laid over all the points. This can help to get an overview of what is going on.

This is a very convenient for making reports.

### Used Equipment:

- Rotation laser T310
- Laser receiver R310
- Evaluation unit DU310
- ProLevel Software for surface measurements



**T310** Part No. BG 830200/1



**R310**  
Part No. BG 830100



**DU310** Part No. IT 200310

AD 1006E 12/08 Design / DTP: michael.steffens.medien@design  
 Copyright 2008 Status Pro Maschinenmesstechnik GmbH. This documentation or parts thereof may not be copied or otherwise reproduced without explicit written from the management of Status Pro GmbH. The technical details are subject to change without notification. We would appreciate being informed of any errors in this documentation.