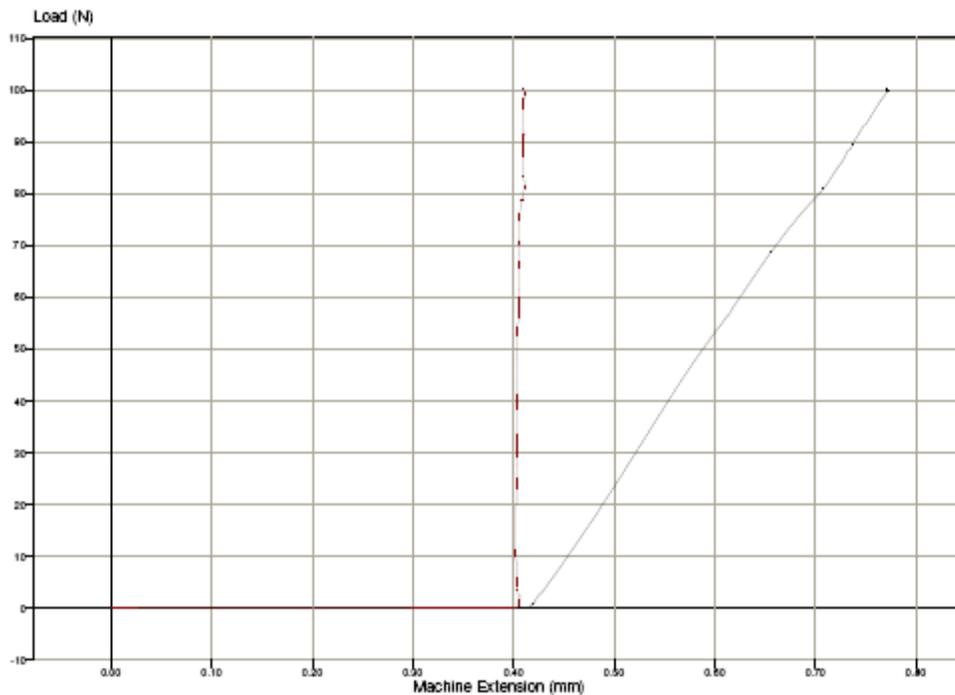


APPLICATION NOTE

No. 8 Stiffness Compensation for Lloyd Plus and EZ Universal Testers KRD Nov 2008

This procedure is used to compensate for the deflection of the load cell, frame, and fixturing during compression or tension tests. Up to 10 compensations can be saved, each with a unique user selected name. The saved compensation files can be selected at the tester when testing without software or can be selected at the Nexygen Testing Software console in the "machine setup schemes" tab. This feature is only available in Plus and EZ machines with embedded firmware 3.4 issue 4.

When using the machine to measure very small distances the extension readings can be incorrect due to the stiffness of the machine, loadcell bending and grip pin movement. To overcome this there is a setting for machine stiffness that can be set and the extension readings will be compensated for in the embedded software. The following graph shows one test with compensation and one without. It can clearly be seen compensation makes a considerable difference to the extension reading. This test was 100N loadcell in compression.



This procedure runs the load cell and frame at a controlled speed from a start point "Preload" to an end point "Set Limit" and stores the amount of travel that occurred so that it can be subtracted from tests when the file is selected. Files can be named so that they are easy to find and select.

Compensation can be Tension or Compression. The fixtures on the machine should be those that are being used in the test i.e. compression platens or grips. In the case of compression platens should be used and should be positioned close together prior to starting the procedure to save time. In tension a suitable very rigid steel sample should be placed in the grips.

The test consists of two cycles, automatically running to the selected limit, returning to zero, running to the limit a second time and returning to zero at the test conclusion.

APPLICATION NOTE

To carry out the stiffness compensation uses the following commands:

- Select Edit Test from any available test to get to the “Global” command
- Select “Global”

- Select >
- Select > once more
- Select Set Machine Stiffness

- Select “Rename” to change the name displayed
- Press “Enter” after renaming
- Select “Setup”

- Select “Test Mode Compensation or Tension”
- Select “Set Preload Value” and enter a value that is approx. 0.5% of the load cell value and press “Enter”
- Select “Preload Speed” and enter a value that is approx. 0.05 inches/min and press enter to return to the display at the right
- Press “Set Limit Value” to the value of the load cell and press “Enter”
- Select “Speed” and enter a value of 0.05 inches/min and press “Enter” to return to the display at the right
- Jog your fixtures close together and select “Perform”
- The display will ask “Are you sure”, select yes to process and no to end

