

## Model 793.33 Static Deflection

Process software

### Benefits

- » Lets you determine stiffness properties of materials and components
- » Software is easy to set-up and use
- » Runs in tensile, compression, or tensile-compression modes
- » You can view the test graphics in real time to evaluate the test
- » Automatic displacement error correction due to frame stiffness deflection
- » Use supplied Excel macro to perform additional off-line analysis—data plotting, change analysis parameters, and re-calculate results based on the saved time data

Model 793.33 Static Deflection Process software is used to characterize the elastomeric stiffness properties of materials and components. The static deflection process applies a constant rate ramp to your specimen and then measures the resulting load and deformation. Stiffness is the ratio of applied force to deformation. It can be measured at a point in time (instantaneous) or at a segment in time.

MTS Model 793.33 Static Deflection Process software can also measure:

- » The load applied to the specimen as a result of a programmed displacement
- » The amount displaced by the specimen as a result of a programmed load

Here's how it works. The figure below shows all possible segments in a static deflection process test.

Steps A, B, C, D, and F are optional. They do not occur unless you define them. You can define precycle and test level polarities as you wish.

- A Ramp to Preload
- B Precycle
- C Return to Preload
- D Dwell at Preload
- E Acquire data
- F Return to Preload
- G Process Data

## Tensile and Compressive Tests

You can create three fundamental types of tests with the static deflection process:

- » Tensile tests
- » Tensile-compressive tests
- » Compressive tests

When the results of each type of test are shown on a chart of force versus displacement data, a hysteresis loop results.

Figure 1 illustrates the relationship between hysteresis loop results and the quadrant or quadrants of the x-y axes in which they fall (where the x axis represents displacement and the y axis represents force).

The following figures below shows the relationship between the test types that you can create and the appearance of the resulting hysteresis loops.

With MTS Model 793.33 Static Deflection Process software, tests are easily specified. You can use the process to measure the real world behavior of materials and components over a wide range of test conditions.

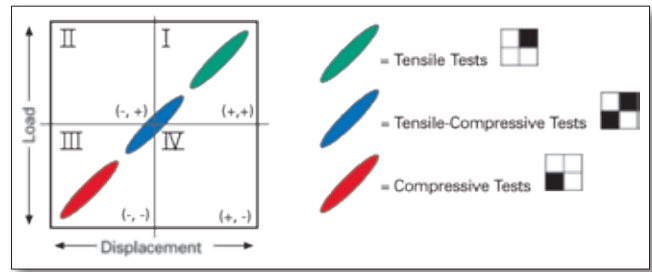
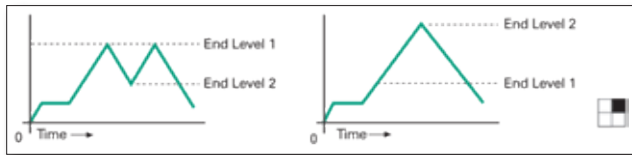
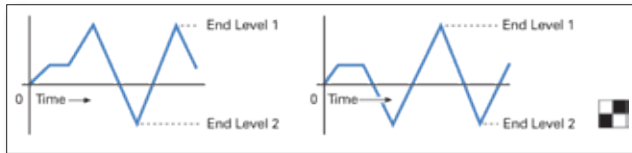


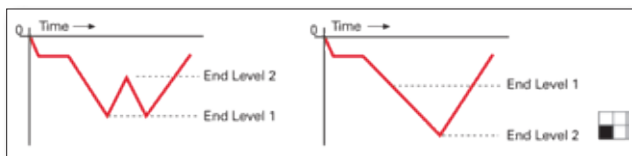
Figure 1



Tensile Tests



Tensile-Compressive Tests



Compressive Tests

Defines the test cycle and sets the format of the chart that appears in the run-time window.

Force	Nominal Length mm	± Percentage %
3000.0	-8.0000	10.000
650.00	-4.0000	10.000
650.00	-4.0000	10.000

Creates an x-y axis reference envelope that defines the allowable specimen force and displacement limits.

## For More Information

Contact your local MTS field sales engineer for more information. Or, write, fax or call MTS at the address below. Visit our web site at [www.mts.com](http://www.mts.com). Send e-mail inquiries to: [info@mts.com](mailto:info@mts.com).



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