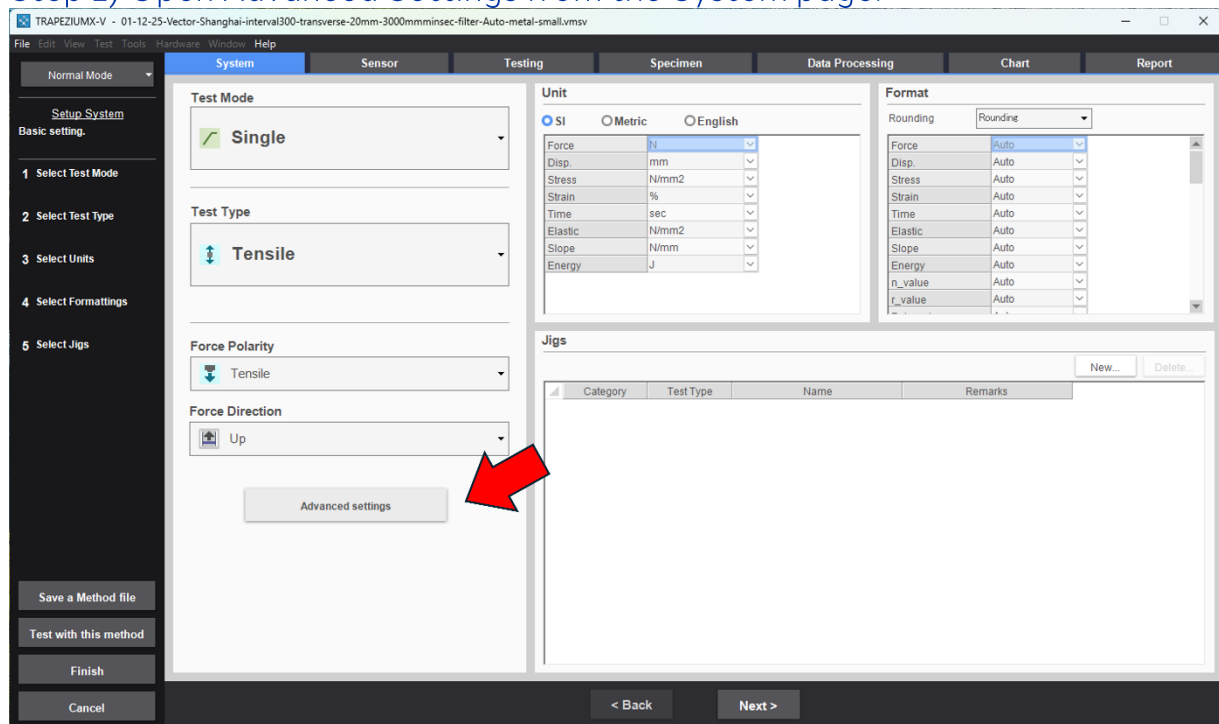


Strain Rate Control Guidance

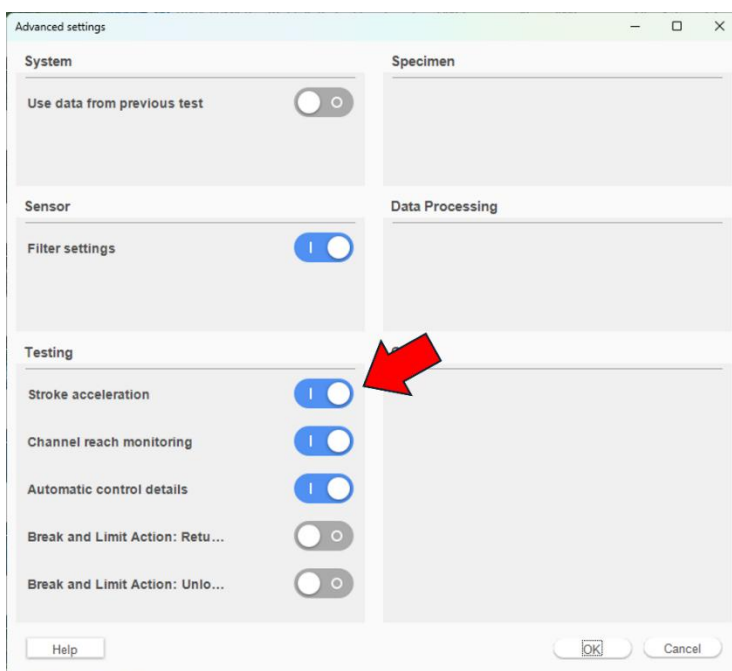


Below is our current guidance on strain-rate controlled testing with Vector on Shimadzu frames.

Step 1) Open Advanced Settings from the System page.



Enable Automatic control details.



Step 2) Configure Vector as outlined in TG1234 Integrating Vector with Shimadzu Trapezium X-V

TRAPEZIUMX-V - 01-12-25-Vector-Shanghai-interval300-transverse-20mm-3000mmminsec-filter-Auto-metal-small.vmsv

File Edit View Test Tools Hardware Window Help

System **Sensor** Testing Specimen Data Processing Chart Report

Normal Mode

Setup Sensor
Settings of the channels and sensors.

- 1 Set force and stroke limits
- 2 Set channels for extenso etc
- 3 Set FS, limit, GL etc
- 4 Set Sensor for main window
- 5 Set the size

Channel:

Ext Sensor

ID	Set	Channel	Name
Ext.1	☒	Analog1	Vector Axial
Ext.2	☐	None	Ext.2
Ext.3	☐	None	Ext.3
Ext.4	☐	None	Ext.4
Ext.5	☐	None	Ext.5
Ext.6	☐	None	Ext.6

Ext.1 Settings

Channel: Analog1 ☐ SIE
 Name: Vector Axial ☐ Strain gauge
 Full Scale: 20 mm
 Limit: 20 mm ☐ Pause
 GL: 50 mm ☐ GL Auto Calc.

Extenso_Strain

Name: Ext.1(Strain)
☐ Use True Strain
☐ Release with Max Force

Disp. Sensor

Name: Disp.
☐ Change at YP Detection ☒ Connecting smoothly

Strain

Name: Strain

Define

☒ Single
 Ext.1 ⇒ Stroke

Sensor on Main

1	Force
2	Stroke
3	Vector Axial
4	Strain Rate
5	Force rate
6	Stroke Rate
7	Extension Rate
8	VectorTransverse
9	None

Measurement Value
List Settings
Sensor display format

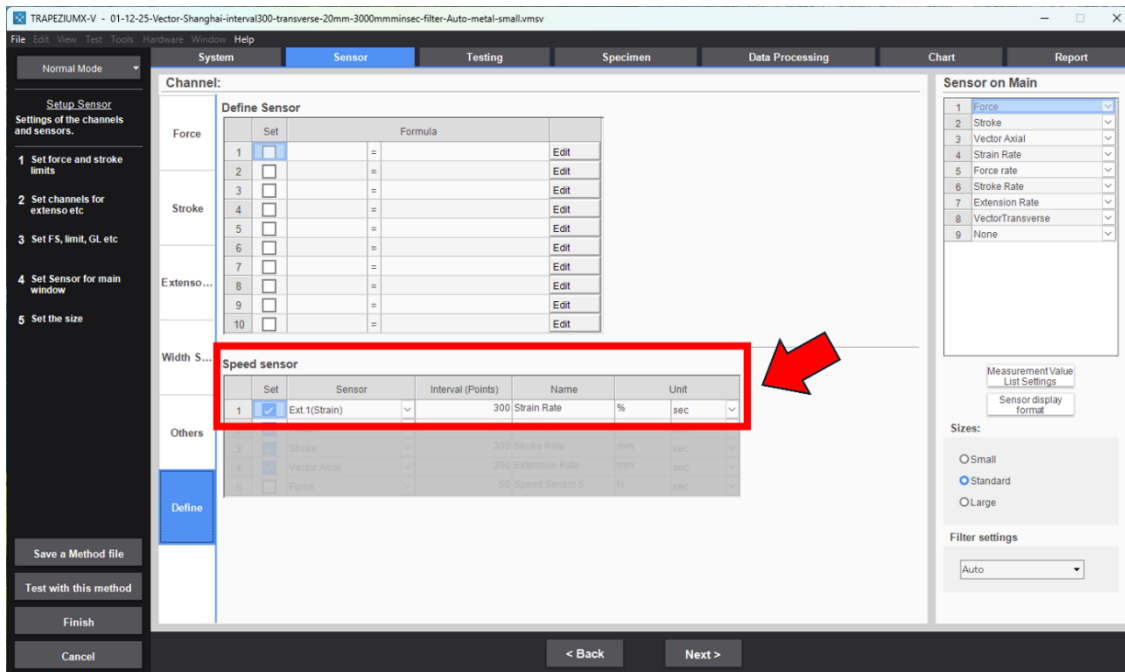
Sizes:
☐ Small
☒ Standard
☐ Large

Filter settings
 Auto

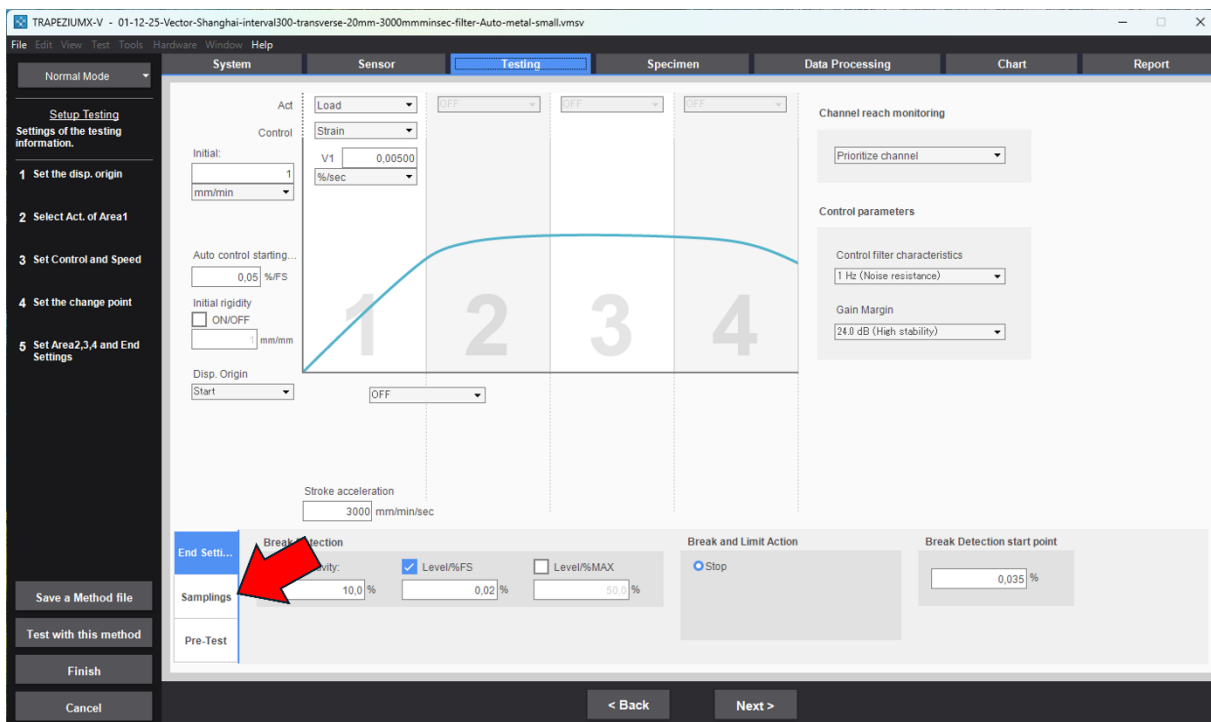
Save a Method file
 Test with this method
 Finish
 Cancel

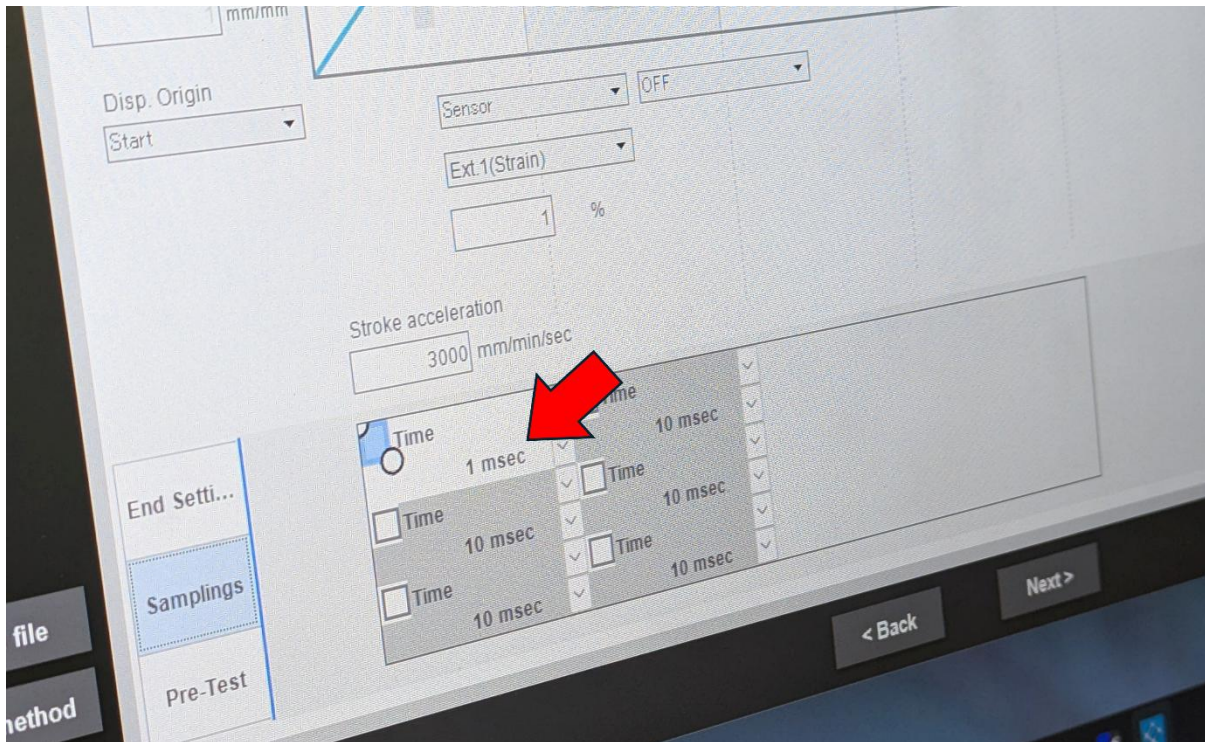
< Back Next >

Step 3) Define speed sensor to calculate the strain rate. An Interval (Points) of 600-1000 is recommended.

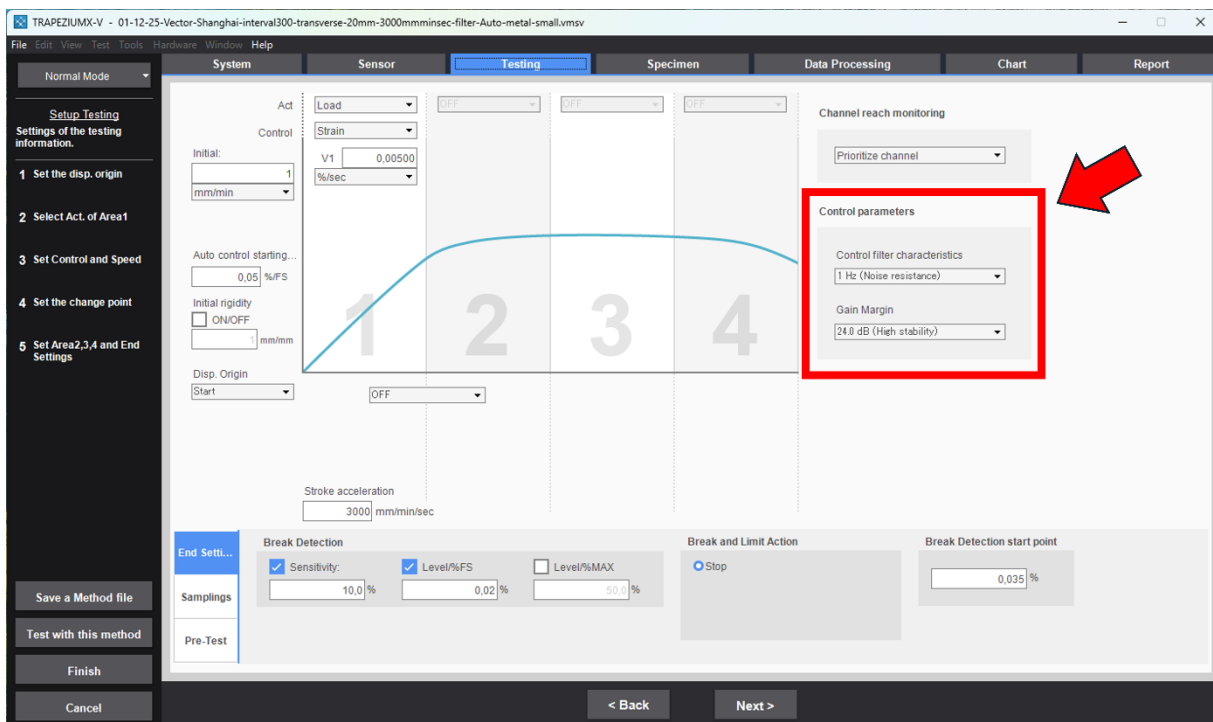


Step 4) Set sampling rate to 1 ms.





Step 5) Tune control parameters (Control filter Characteristics and Gain Margin) based on what test is performed.



Typical configuration values for the AGS-V are:

TrapeziumX-V parameter	Default	Proposed
Interval (Points)	50	600-1000
Control filter characteristics	15 Hz	1 Hz, 5 Hz, 15 Hz
Gain margin	21 dB	3000 (no change)
Filter settings	Auto	Auto (no change)
Sampling	10 ms	1 ms

Note: The available Control Parameters differ between models.

Note: Strain-rate control is best performed under low-noise conditions; following best practices is recommended.