Laboratory Vane Shear Apparatus

LT-S0100 / LT-S0102 | Manual and motorized model options

Soft cohesive soils • Torque measurement with calibrated springs



12.7 × 12.7 mm

STANDARD SQUARE VANE

2 models

MANUAL / MOTORIZED

Testing directly on prepared specimens or in suitable sampling tubes

Photographs and Apparatus Components

Manual model: measuring head, vertical adjustment and calibrated springs

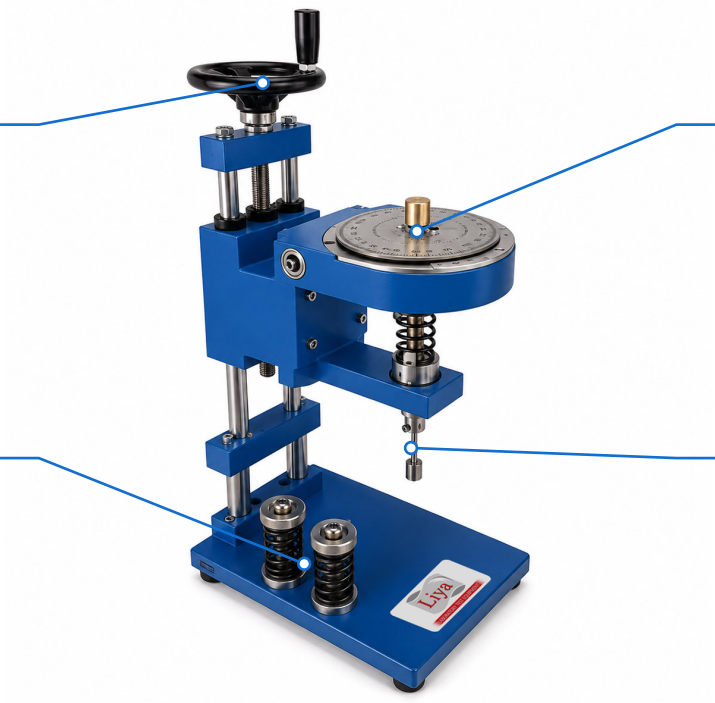
The Laboratory Vane Shear Apparatus determines the undrained shear strength of soft cohesive soils. A vane inserted into the specimen is rotated, and calibrated springs allow the torque at shear failure to be evaluated.

VERTICAL ADJUSTMENT

The handwheel and guide columns position the test head relative to the specimen.

MEASURING HEAD

The circular scale and spring arrangement support observation of rotation during testing.



CALIBRATED SPRINGS

Selecting a suitable spring supports measurement of soil resistance to rotation.

VANE SHAFT

Rotation transmitted to the vane creates a shear surface within the soil.



Manual model • Alternative view

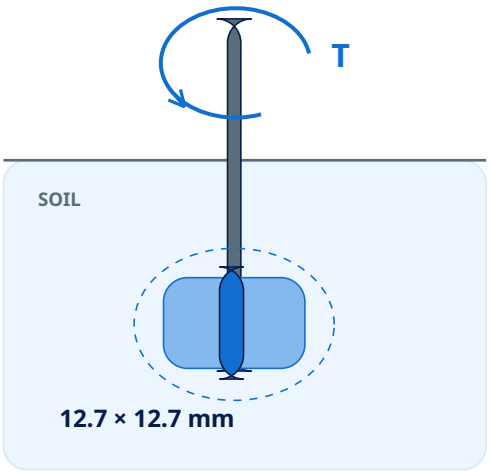


Measuring head, spring and vane shaft

From Rotational Torque to Shear Strength

Prepare specimen • Insert vane • Rotate at controlled rate • Evaluate

VANE + SOIL SPECIMEN + ROTATIONAL TORQUE



CONTROLLED ROTATION • TORQUE MONITORING

SHEAR SURFACE AROUND THE VANE

Soft, saturated and cohesive specimen

Evaluate undrained shear strength

REPRESENTATIVE VANE SHEAR DIAGRAM • NOT TO SCALE

Prepare the Specimen

Secure the specimen. Select the test location and a suitable spring range.

Insert the Vane

Position the vane while minimizing unnecessary disturbance of the soil.

Rotate and Record

Rotate at the selected method rate. Record failure torque and test details.

As the vane rotates, the soil resists movement. Torque at shear failure is evaluated with spring calibration and vane geometry to determine undrained shear strength. Specimen preparation and rotation rate influence the test result.

Specimen and Attachment Selection

Test directly on a prepared soil specimen or on soil retained in a sampling tube. Attachments for Ø38 mm and Ø100 mm sampling tubes accommodate different specimen arrangements.

The standard arrangement uses a 12.7 × 12.7 mm vane and calibrated springs. Secure the specimen, position the vane carefully and minimize unnecessary disturbance before testing.

Manual and Motorized Operation

LT-S0100 is the manual model. LT-S0102 provides motorized vane rotation. Speed options are 6-12°/min for the BS arrangement and 60-90°/min for the ASTM arrangement.

Select speed, spring and vane to suit the test method. Consider specimen conditions and the test arrangement when comparing results obtained at different rotation rates.

Model Options and Technical Specifications

Manual and motorized laboratory vane shear systems

Parameter / Model	Description / Specification
LT-S0100	Manual Laboratory Vane Shear Apparatus
LT-S0102	Motorized Laboratory Vane Shear Apparatus
Standard Vane	12.7 × 12.7 mm square vane
Measuring System	Torque evaluation with calibrated springs
Specimen Application	Direct specimen or soil within a sampling tube
Sampling Tube Attachments	Ø38 mm and Ø100 mm
Motorized Speed • BS	6-12°/min
Motorized Speed • ASTM	60-90°/min
Approximate Weight	LT-S0100: 11 kg • LT-S0102: 20 kg
Motorized Model Dimensions	62 × 25 × 65 cm

Select Vane, Spring and Rotation Rate Together

Record specimen conditions, vane size, spring calibration, rotation rate and torque at failure. Calculate and report shear strength according to the selected test method.

Vane Shear Test Workflow

01
Prepare
Secure the specimen and select a spring.

02
Insert
Position the vane carefully in the soil.

03
Rotate
Monitor torque at the method rate.

04
Evaluate
Calculate strength from failure torque.

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