



FULLY AUTOMATIC LABORATORY VANE SHEAR TEST APPARATUS

Standard: BS 1377:7, ASTM D4648

The **NL 5007 X / 002** is a new generation, independently developed fully automatic laboratory vane shear test apparatus. It is an essential geotechnical testing instrument designed to determine the undrained shear strength (C_u) of soft or sensitive clays under specific depths and consolidation stress states.

The system not only measures the undrained strength of undisturbed soil samples taken from varying depths but also allows for testing under different consolidation pressures (optional). Furthermore, it is fully capable of evaluating soil sensitivity by performing remolded shear strength tests.

Main Features :

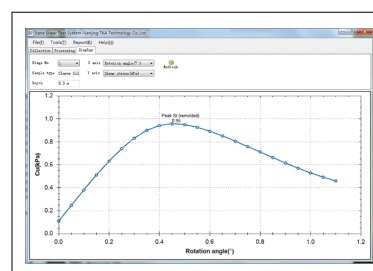
- **Premium Vane Construction:** Fabricated from high-grade 304 stainless steel using an integrated wire-cutting process (non-welded) with a thickness of no less than 2mm to ensure exceptional structural strength and rigidity.
- **Advanced Control & High Stability:** Powered by a high-torque stepper motor driving a precision torque transmission system, providing infinitely variable speed control for absolute stability.
- **Smart Protection & Data Transfer:** Equipped with built-in hardware overload protection and a high-speed USB 3.0 interface, ensuring fast, stable, and highly reliable communication with the computer.
- **Versatile Data Acquisition:** Supports automated data logging based on either predefined time intervals (seconds) or shear rotation intervals (degrees).
- **Powerful Enterprise Software:** Fully compatible with Windows 10/11. The software features dedicated modules for data acquisition, data processing, sensor calibration, and report generation. It includes a built-in consolidation module and automatically plots key relationships, such as shear strength versus vertical load or torque versus rotation angle.

Technical Specifications :

Model Number	NL 5007 X / 002
Specimen Mold Dimensions	Ø100 mm x 177 (H) mm (Customizable for specific model box boundary testing conditions)
Standard Vane Size	Ø12.7 x 12.7 (H) mm
Max. Penetration Depth of Shear Rod	≥ 220 mm (Extendable up to 1000 mm or more for vacuum preloading model boxes)
Shear Speed Range	0.001° / min to 200° / min (Stepless variable speed; alternative speed ranges optional)
Torque Sensor Options	0 – 5 N·m, 0 – 10 N·m, 0 – 20 N·m, 0 – 50 N·m, 0 – 80 N·m
Torque Sensor Accuracy	± 0.1% F.S.
Torque Resolution	≤ 0.1 N·m
PC Connectivity	High-speed USB 3.0
OS Support	Windows 10 / Windows 11

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5007 X / 001 – A 002	Vane Ø 12.7 mm x 12.7 mm (L)	1 no
NL 5007 X / 002 – P 001	Servo Drive Unit c/w Operation Software	1 Unit



Operation Software

Optional Accessories :

Model Number	Accessories Description
NL 5007 X / 001 – P 001	Vane Ø 12.7 mm x 19 mm (L)
NL 5007 X / 001 – P 002	Vane Ø 12.7 mm x 25.4 mm (L)
NL 5007 X / 001 – A 003	Vane Ø 25.4 mm x 25.4 mm (L)
TT 6ST – PC1	Compatible Desktop Unit
TT CP – 200	Computer Printer
TT 6ST – PBU	Portable Bench Unit



Compatible Desktop Unit