

Surface Tensiometer

Surface / Interfacial tensiometer is an ideal device used to determine water (soil moisture) potential tension in the vadose zone. It's widely used to inspect the insulation oil materials in irrigation works, electric power department; or research and education work in petroleum, chemical engineering, science academy.

Surface tension: To measure the surface tension between a liquid and the air, the Tensiometer duNouy ring is placed below the surface of the liquid. This test is performed by pulling the ring upward through the surface of the liquid. The force needed for the ring to break the surface (overcome the surface tension) is determined.

Interfacial tension: There are applications where the surface tension at the boundary of two liquids needs to be measured. This is called interfacial surface tension.

The Tensiometer for this test needs to pull the ring up through the boundary between the lower, higher density liquid, and the liquid that is floating above. The force needed to break through the surface of the higher density liquid is recorded as interfacial surface tension. The force needed to break the boundary going from the floating liquid to the greater density liquid is measured by pushing the ring down through the boundary.

Du Nouy ring method: The du Nouy ring method is one technique by which the surface tension of a liquid can be measured. The method involves slowly lifting a ring, often made of platinum, from the surface of a liquid. The force required to raise the ring from the liquid's surface is measured and related to the liquid's surface tension.

Specifications:

Model	TENS-180	TENS-201	TENS-202	TENS-203
Measuring range	0~180 mN/m	0~200 mN/m	0~200 mN/m	0~200 mN/m
Min. dial scale/ resolution	1 mN/m	0.1 mN/m	0.01 mN/m	0.01 mN/m
Measuring method	Manual	Automatic	Automatic	PC Automatic
Display	Dial scale	Digital	LCD	Computer Screen
Platinum ring radius	9.55 mm			
Platinum torsion wire	0.3 mm			
Platinum ring perimeter length	60 mm			
Sample tray stroke	25 mm			
Glass cup volume	60 ml			
Sample tray speed	Manual	15 mm/min ±2 mm/min		
Power supply	NO	220V, 50Hz / 110V, 60Hz		
Display	Dial scale	Digit display	LCD display	PC screen
Micro-printer	No	Yes (optional)	YES	A4 printer

Mainly consisting of:

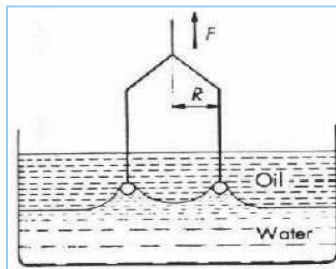
Platinum ring, platinum torsional wire,
stand, lever stand and worm wheel pair;
Manual operation, dial reading test result;



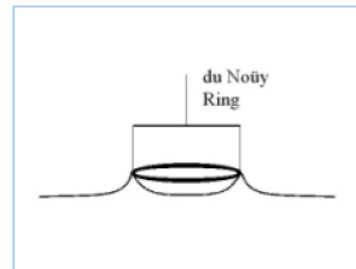
Platinum ring



500mg weight
for calibration (5 pcs)

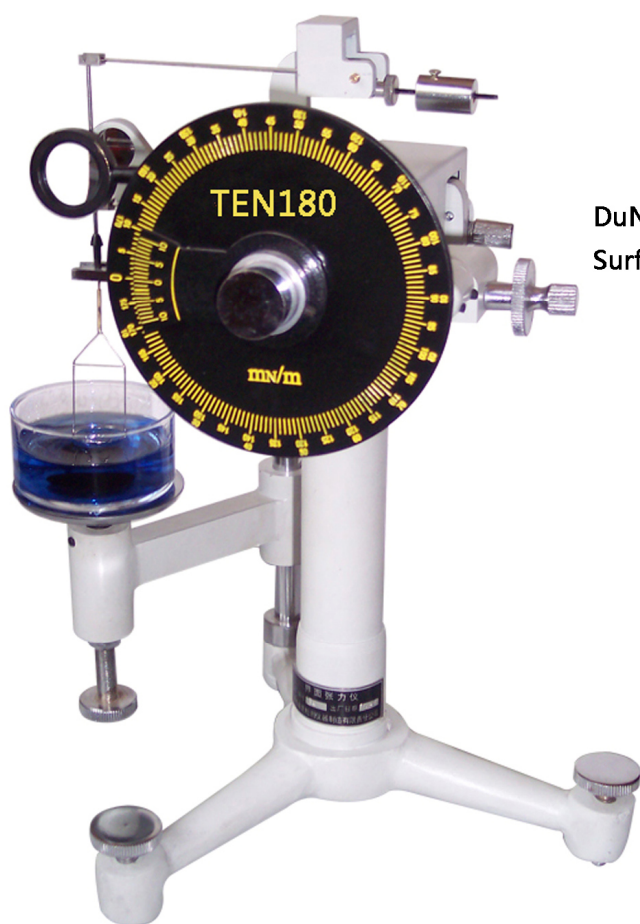


Du Nouy Ring method test

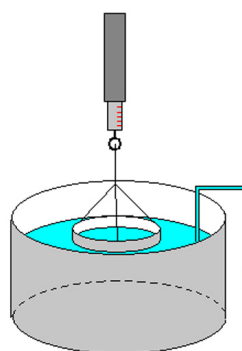


Model: TENS-180

SURFACE TENSIONMETER, ASTM D1590



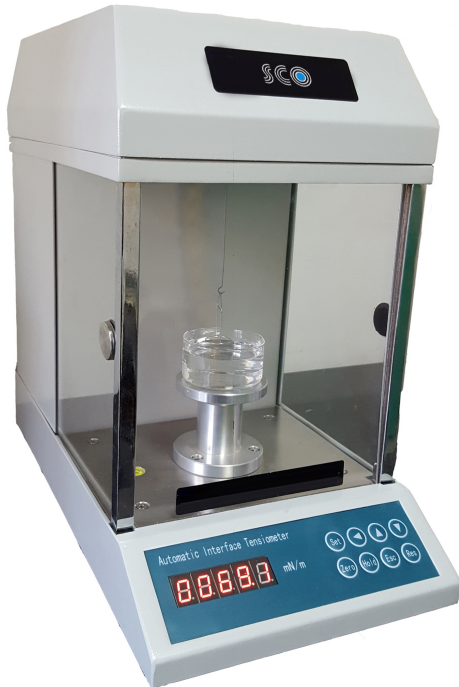
DuNouy Ring Test Method
Surface tesnsion test



Feature:

- manual operation,
- Dial scale display

Model: TENS-201
DU NOUY TENSIOMETER, RING METHOD
with Digital Display



Model: TENS-201

Tensiometer TENS-201 is used to measure the surface tension of liquids or surfaces. Main application in research and development laboratories to determine the surface tension of liquids like coatings, lacquers or adhesives. A further application field of tensiometers is monitoring of industrial production processes like part's cleaning or electroplating.

Conform with:

JB/T9388; ISO 1409; ISO 6295; ASTM D971-99a

- Automatic operation
- LED digit display
- Measuring tray auto up and down
- Automatic one key adjust Zero point function
- With peak value holding function
- Automatic stop when the liquid film breaks

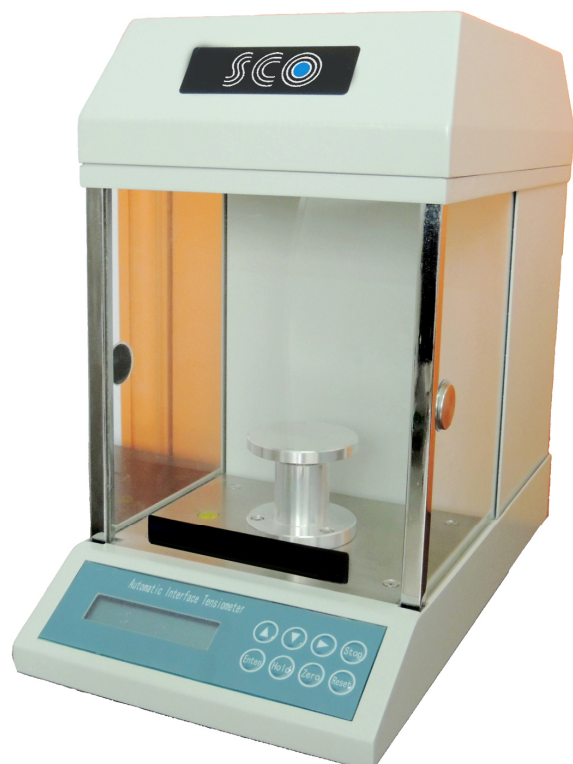
Features:

- Mainly consist in platinum ring, platinum torsion wire, differential sensor and data processing system etc.
- Easy to operate, high accuracy, auto calculate the liquid surface or interface tension value;
- Digital display the load; Measuring tray auto up and down;
- Automatic one key adjust Zero point function; with peak value holding function; Automatic stop when the liquid film Break.

Model: TENS-202
SURFACE INTERFACIAL TENSIOMETER
with LCD Display and printer

Features:

- LCD display
- Easy operation
- With peaking value holding indication function
- with tray up and down indication function
- with auto zeroing indication function



Model: TENS-203
DUNOUY RING INTERFACIAL TENSIOMETER
PC controlled with A4-printer



Features:

- PC control, based on Windows software to display test procedure and result
- Measuring tray auto up and down, and with up & down automatic indication function
- With peak value holding function
- Automatic stop when the liquid film break

Scope of Supply

Main frame	1 set
Platinum ring	1 pc
Torsion wire	1 pc
Pothook	1 pc
Glass cup	1 pc
500mg weight for calibration	5 pc
Power cord	1 pc
Set of documents	1 ea. (Manual, packing list, certificate)
PC Workstation	1 pc. Computer (for TENS-203)
Software	1 pc. English software (For TENS-203)
Optional accessories	extra Platinum ring

Order Information's

Article No.	Typde	Description
4.219.180	TENS-180	Manual Tensiometer, Dial display
4.219.201	TENS-201	Automatic Digital Tensiometer, 0~200 mN/m, 0.1 mN/m
4.219.202	TENS-202	Automatic Digital Tensiometer w. printer, 0~200 mN/m, 0.01 mN/m
4.219.203	TENS-203	PC controller Automatic Tensiometer w. printer, 0~200 mN/m, 0.01 mN/m
4.219.204	TENS-PR	Extra Platinum ring

Extra platinum ring (Optional)

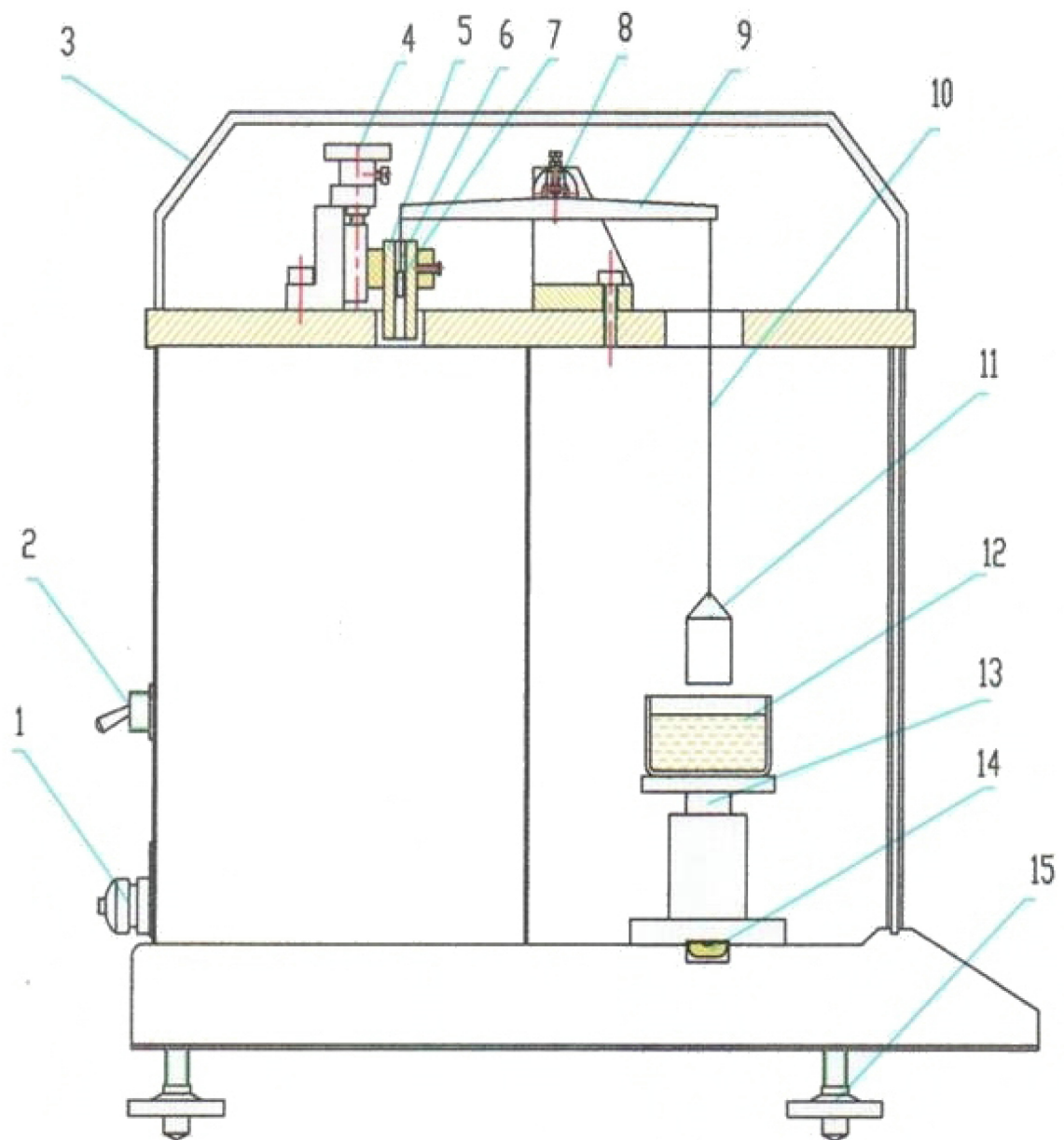


Fig. 1

- 1, Power socket 2, Power switch, 3, Upper cover 4, Fine adjustment screw
5, Sensor 6, Magnetic core hole 7, Magnetic core 8, Torsion wire 9, Lever
10, Pothook 11, Platinum ring 12, Glass cup 13, Moving platform
14, Water bubble level 15, Level adjusting screw