



Motorized Liquid Limit Device

ASTM D-4318; AASHTO T-89.

- **Motorized for greater uniformity of test procedure.**
- **Mechanical counter automatically records number of cup drops.**
- **Totally enclosed drive system protects parts from dust and provides added safety to operator.**
- **Includes ten precision molded Plastic ASTM Grooving Tools.**
- **Optional Grooving Tool available for testing to AASHTO standards.**

The Motorized Liquid Limit Device eliminates many human variables in classification testing. It allows the operator to more closely duplicate test results on the same soil.

The unit incorporates a totally enclosed gear motor system which drives the liquid limit device and mechanical counter assembly.

Supplied complete with Grooving Tools, the Motorized Liquid Limit Device is ideal for use in any soils laboratory.

Specifications

Gear Motor.	Attached to metal base; enclosed in housing with on-off switch.
Counter.	Mechanical; records number of cup drops.
Cup.	Spun brass; pin and slot mounting.
Base.	Molded hard rubber.
Cam.	Molded, self-lubricating plastic.
Housing.	Aluminum; holds cup and drop adjustment parts.
Grooving Tools.	ASTM type; plastic; pkg. of 10 (included).
Overall Dimensions.	8-1/2" w. x 15" d. x 7-1/2" h. (216 x 381 x 191 mm).
Weight.	Net 14-1/2 lbs. (6.6 kg).

Ordering Information

Note: Optional Grooving Tool (EI24-0461) required to meet AASHTO specifications; not included, order separately.

EI24-0441/02. 110vAC, 60 Hz, 1ø.

EI24-0441/01. 220vAC, 50 Hz, 1ø.

Accessories

EI24-0461. AASHTO Grooving Tool.

Replacement Parts

EI24-0451. ASTM Plastic Grooving Tools. Pkg. of 10.

EI24-0435/10. Brass Cup. With mounting holes.

EI24-0435/12. ASTM Slider and Pin Cup Holder Assembly.



Hand-Operated Liquid Limit Devices

ASTM D-4318; AASHTO T-89.

- **Precision molded base and cam components.**
- **Precision manufactured brass cup assembly.**
- **Removable pin cup assembly for easy cleaning and inspection.**
- **Includes ten precision molded Plastic ASTM Grooving Tools.**
- **Optional Grooving Tool available for testing to AASHTO standards.**
- **Optional model available with counter.**

The Hand-Operated Liquid Limit Device is a hand operated unit, designed to determine the liquid limit of soils. The hard rubber base is formed in a mold to maintain the uniformity of hardness, size and density of all devices. Precision molded cam control parts and nylon bearings provide accurate cup drop and smooth operation. These manufacturing techniques result in a better correlation of test results performed in laboratories around the world.

Specifications

Cup.	Spun brass; pin and slot mounting.
Base.	Molded hard rubber.
Cam.	Molded, self-lubricating plastic.
Housing.	Aluminum; holds cup, drop adjustment parts and hand crank.
Hand Crank.	Aluminum.
Counter.	Records number of cup drops. (Model EI24-0437 only).
Grooving Tool.	ASTM type; plastic; pkg. of 10 (included).
Weight.	Net 5-1/4 lbs. (3.6 kg).

Ordering Information

Note: Model EI24-0437 shown. Optional Grooving Tool (EI24-0461) required to meet AASHTO specifications; not included, order separately.

EI24-0435. Liquid Limit Device.

EI24-0437. Liquid Limit Device with counter.

Replacement Parts

EI24-0451. ASTM Plastic Grooving Tools. Pkg. of 10.

EI24-0435/10. Brass Cup. With mounting holes.

EI24-0435/12. ASTM Slider and Pin Cup Holder Assembly.

ASTM Liquid Limit Set

ASTM D-4318.

This standard set includes our Liquid Limit Device without counter along with a complete selection of accessories required for liquid limit testing to ASTM standards.

Ordering Information

- Set includes:**
- 1 Liquid Limit Device with ASTM Grooving Tools (24-0435).
 - 1 Graduated Cylinder 100 ml (88-6007).
 - 1 Mixing Dish (88-6712).
 - 2 Doz. Moisture Content Cans (88-7002).
 - 1 Flexible Spatula (88-7500).

EI2800.

ASTM Plastic Grooving Tools

ASTM D-4318.

- **Inexpensive enough to be disposable.**
- **Plastic construction — won't rust.**
- **Precision-molded to conform to ASTM standards.**
- **1 cm gage block located at end of handle.**
- **Color-coded for visual indication to change tools at proper frequency.**

The Plastic Grooving Tool is used to control the width of the soil groove in the liquid limit cup.

With traditional metal grooving tools, the cups get scratched; the costly metal tools get worn but are still used — giving inaccurate test results. By color-coding the grooving tools, the laboratory manager can easily identify and replace old tools at specific intervals, assuring tool accuracy and testing results.

Specifications

Construction.	Molded polycarbonate resin.
Gage Height.	1 cm.
Colors.	5 red and 5 white per package.
Weight.	Net 3 oz. (85 g).

Ordering Information

EI24-0451. Package of 10.

AASHTO Grooving Tool

AASHTO T-89.

- **Rust resistant brass construction.**
- **1 cm gage block located at end of handle.**
- **Meets AASHTO testing standards.**

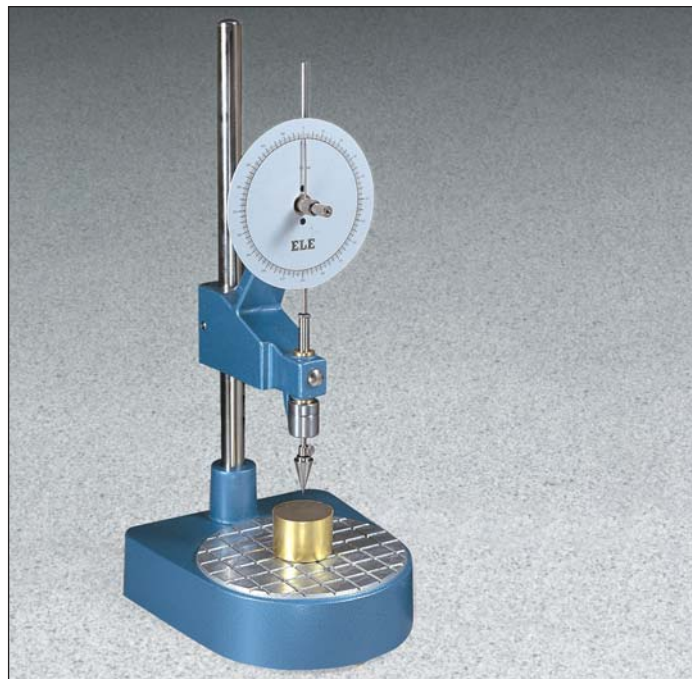
The AASHTO Grooving Tool is used to control the width of the soil groove in the liquid limit cup, in accordance with AASHTO specifications.

Specifications

Construction.	Brass.
Gage Height.	1 cm.
Weight.	Net 3 oz. (85 g).

Ordering Information

EI24-0461.



Cone Penetrometer

- **Reduces operator error.**
- **Can be used on a wide range of soils.**
- **Provides a direct measurement of penetration.**

The cone penetrometer test is based on the relationship between moisture content and the penetration of a cone into the soil sample under controlled conditions.

Specifications

Dial Indicator.	150 mm diameter graduated in 400 x 0.1 mm divisions. Indicator incorporates a friction/gear system.
Height.	Adjustable using rapid integral clamping mechanism.
Cone Release.	Manual.
Cone.	1 x 30°, 35 mm test cone included.
Base.	Cast aluminum with adjustable leveling feet.
Weight.	Net 13.25 lbs. (6 kg).

Ordering Information

Note: Model EI24-0540 series shown with optional Test Cup; not included, order separately.

EI24-0540. Cone Penetrometer.

Accessories

- EI24-0546.** Test Gauge. For checking the condition of the cone point.
- EI24-0548.** Penetration Test Cup. 55 mm diam. x 40 mm deep with rim parallel to the flat base.

Replacement Parts

- EI24-0544.** Penetration Test Cone. Stainless steel; 35 mm long with smooth surface at an angle of 30°.