

# **INSTRUCTION MANUAL**

**LA-0306**

## **LIGHTWEIGHT ROLLER METER**

**MN-LA-0306.24.1**

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## SUPPORT & CONTACT INFORMATION

### Support Ticket:

The fastest way to get technical help is through our support ticketing system. Click this link to complete the form and our support team will get you answers ASAP:

<https://forneyonline.com/customer-service/>

### General Phone Support:

We still believe in service defined by a helpful voice at the other end of the phone. Our technical team is available for unlimited general product support inquiries on all the equipment we manufacture. Reach us via phone or email: Monday – Friday 8:00 AM to 5:00 PM Eastern

Phone: 724-346-7400 | Toll-Free: 800-367-6397

### Explore Our Knowledge Base:

Browse our knowledge base for informative articles to help you use, maintain, and troubleshoot Forney testing machines: <https://knowledge.forneyonline.com/>

# OPERATING INSTRUCTIONS

## PREPARING THE TEST:

1. Dampen the inside of the base with water.
2. Fill the bowl halfway to the top, with freshly mixed concrete. This is the first layer. (ASTM C-173/C 173M requires two layers of equal depth.)
3. Rod the first layer 25 times with the tamping rod. (Do not strike the bottom of the bowl with the tamping rod when rodding the first layer.)
4. Tap the sides of the bowl 10 to 15 times with a mallet, to close any voids left by the tamping rod, and to release any large bubbles of air that may have been trapped.
5. Add a second layer of equal depth of freshly mixed concrete to fill the base.
6. Rod the second layer 25 times with the tamping rod, making sure to penetrate the first layer by approximately 1 inch (25mm).
7. Tap the sides of the bowl 10 to 15 times with the mallet.

A slight excess of concrete, 1/8" in. (3mm) or less, above the rim is acceptable, add or remove a sample of concrete if necessary to obtain the required amount of concrete.

8. Strike off the excess concrete flush with the top of the bowl and wipe the edge of the bowl clean.
9. Wet the gasket and the inside of the top section of the meter.
10. Clamp the top section into position on the base.

## **PERFORMING THE TEST:**

1. Insert the baffle bottom funnel into the upper chamber.
2. Add at least 1 pint (0.5L) of water.
3. Add the pre-selected amount of isopropyl alcohol and record it.

**Note: The amount of alcohol can vary from less than ½ pint to more than 3 pints depending on the type of mix. Refer to ASTM C/173C 173M for more information.**

4. Add more water until it can be seen in the transparent tube in the neck, when the water line begins approaching zero, STOP.
5. Remove the funnel.
6. The rubber syringe can now be used to add water until the bottom of the meniscus is level with the zero line.
7. Attach and tighten the watertight cap.
8. Invert the meter and agitate the base horizontally for 5 seconds, and then return it to the upright position. Repeat the inversion and agitation process for 45 seconds minimum, and until the concrete has broken free, and the aggregate can be heard moving in the meter

**NOTE: To prevent the aggregate from lodging in the neck of the unit, do not keep it inverted for more than five seconds at a time.**

9. With the bottom of the base of the meter resting on the floor or on the work surface, grasp the neck and tilt the top of the meter to an approximate 45-degree angle. Roll the meter vigorously ¼ to ½ turn forward and back several times, quickly starting and stopping the roll. Rotate the base of the meter about 1/3 of a turn and roll it again. Continue the turning and rolling for approximately one minute.

**NOTE: If any leaks are found during the inversion and rolling procedure the test is invalid and must be started over.**



## **DETERMINING TEST RESULTS:**

Stand the unit upright and loosen the top, let the meter stand while the air rises to the top and the liquid level stabilizes.

1. When the liquid level does not change by more than 0.25% air within a 2-minute period, it can be considered stable.
2. If it takes more than 6 minutes for the liquid level to stabilize, the test is invalid and must be started over.
3. The foam above the liquid level can be up to, but not more than, 2% air content when measured by the divisions on the meter scale.
4. If the foam is higher than 2%, discard the test and start over, add more alcohol to dispel the foam.

When the air content stabilizes in less than 6 minutes, the foam level is less than two full divisions on the meter scale. Read the bottom of the meniscus to the nearest 0.25% and record the initial meter reading.

### **When the liquid level cannot be read on the meter scale.**

1. Add water using the calibrated cup, until you can read the liquid level on the meter scale. (Be sure to count the number of cups of water that were added and record this information, it will be added later to the final meter reading.)
2. Take a reading at the bottom of the meniscus to the nearest 0.25% air and record it as the initial reading.

## VALIDATE THE INITIAL METER READING:

Record the initial reading and retighten the top. Repeat the rolling procedure, and the procedure for determining the test results. (See previous page)

Take another reading to the bottom of the meniscus, and compare it to the first initial reading. If the comparison is within a 0.25% of the initial reading, record it as the final reading for this sample.

When the comparison shows more than a 0.25% difference from the first initial reading. Record this reading as the new initial reading. Repeat the rolling procedure, and the procedure for determining test results (See previous page). Take another reading to the bottom of the meniscus, and compare it to the newest initial reading. If the comparison is within a 0.25% of newest initial reading, record it as the final reading for this sample.

At this point, if there is more than a 0.25% difference in the comparison, this test is invalid, and a new test with a new sample of concrete must be started, using more alcohol.

Empty the concrete from the base and look to see that there are no undisturbed portions of concrete left inside.

If any undisturbed concrete portions are found inside the base, the test is invalid.

Table 1 Correction Factor for the effect of isopropyl alcohol on air meter reading

70% Isopropyl Alcohol Used			Correction
Pints	Ounces	Liters	(Subtract)
0.5	8	0.2	0.0
1.0	16	0.5	0.0
1.5	24	0.7	0.0
2.0	32	0.9	0.0
3.0	48	1.4	0.3
4.0	64	1.9	0.6
5.0	80	2.4	0.9

## **CALIBRATION**

The volume of the base can be determined by weighing the amount of water required to fill the bowl at room temperature and dividing it by the unit weight of water at the same room temperature.

Accuracy of the graduations on the top section of the unit can be determined by filling the assembled base and the top section with water to any visible level greater than 9. Add a quantity of 1% of the base volume to the water already in the meter. The level of the water column shall increase by an amount equivalent to 1% of air. (1 whole number graduation)

The volume of the measuring cup can be determined by the same method used in (1.) or by adding 1 or more cups to the assembled apparatus (Graduations determined as accurate in (2) and observing the increase in the height of the water column after filling the meter with water to a desired visible level.



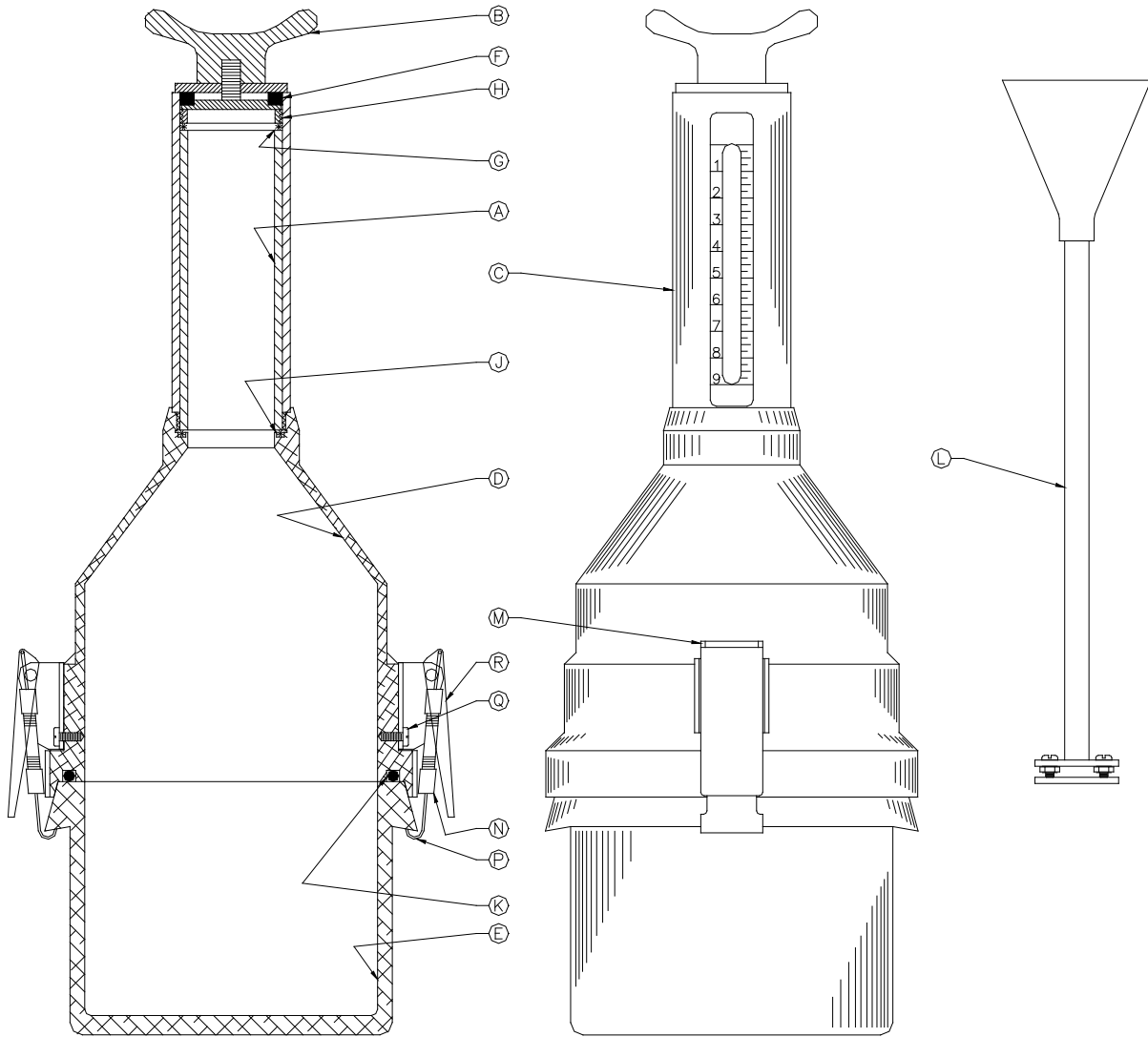
## LIGHTWEIGHT ROLLER METER LA-0306 PARTS LIST:

Item	Qty.	Part Number	Description
A	1	LA-0305-04	Plastic Sight Tube
B	1	LA-0306-25	New Cap
C	1	LA-0306-02	Graduated Tube
D	1	LA-0306-03	Upper Chamber Body
E	1	LA-0306-04	129.68 Cu. In. Base
F	1	TM-2312	Gasket (New Cap)
F	1	LA-0306-08	Gasket (Old Cap)
G	1	LA-0306-09	Tube O-Ring
H	1	LA-0306-14	Tube Clamp
J	1	LA-0306-09	Tube O-Ring
K	1	LA-0306-16	O-Ring
L	1	LA-0306-18-01	Baffle Funnel Assembly
M	2	LA-0316-45	Latch Assembly
N	2	LA-0316-43	Latch Stud
P	2	LA-0316-44	Clamp Tab
Q	6	LA-0306-17	Pan Head Screw
R	2	LA-0316-64	Latch, Body Only

## PARTS NOT SHOWN:

1	LA-0305-22	Spanner Wrench
1	LA-0305-28	Syringe
1	LA-0306-05	Tamping Rod
1	LA-0306-29	Strike Off Bar
1	LA-0306-07	Measuring Cup
1	LA-0306-19-P	Carrying Case
1	LA-0306-20	Instruction Manual
1	LA-0306-30	Plastic 16 Oz. Measure
1	MN-LA-0306	Instruction Manual

# PARTS SCHEMATIC



**NOTES:**