

**CHEMINSTRUMENTS**  
**LABORATORY DRAWDOWN COATER**  
**LC-100**  
**OPERATING INSTRUCTION**

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## PRODUCT DESCRIPTION

Congratulations on the purchase of your new ChemInstruments Laboratory Drawdown Coater. You now have a coater that allows you to set your coating thickness accurately up to 0.0001"

This unit has the following features:

- Two precision ground stainless steel coating bars produce even cross web coating weight.
- Coater reservoir capacity of 125 GM.
- Two dial indicators permit quick, accurate, reproducible gap settings ranging from .0001" to .0500".
- 12" wide samples of unlimited length can be produced.
- Standard features include unwind stand, steel base plate, and nylon side dams for adhesive width control.

Upon receipt of a new ChemInstruments Laboratory Drawdown Coater, some steps should be followed in setting up the system. Following these steps will help to extend the life of the unit and help achieve better, more consistent results.

## UNPACKING

Check the unit for any damage that might have occurred during shipment. Very little damage has been experienced in the past, however, make sure the coating bars have not been scratched or nicked. Check all packaging material carefully for individually wrapped accessories. If any damage did occur during transit, notify the **carrier** immediately.



## ASSEMBLY

The Drawdown Coater has several different parts that require assembly before the coater can be used.

### KEY COMPONENTS

- Coating head with two stainless steel coating bars and crossbar assembly.
- Combination reservoir/backdam.
- 2 Mitutoyo dial indicators.
- An unwind mounting base. Includes 3 flathead and 2 button head screws.
- An unwind upright assembly.
- An aluminum rod for holding the roll of substrate.
- Two Nylon side dams. Already installed on reservoir/back dam.

The coater should be set up in an area that has at least 36 inches of vertical space, access to the back of the unit, and plenty of room in front of the coating head so that samples may be pulled at a downward angle.

### WARNING

**The coating bars are precision ground stainless steel. They are manufactured to a very high tolerance to ensure quality coatings. Handle the coating bars with extreme caution, using only a soft cloth to clean or move. Do not set the bars down on a hard surface, use a soft cloth as a protective layer.**

### SET-UP

1. Attach the unwind upright assembly to the mounting base with the short button head screws provided. The screws will screw into nuts, which are permanently mounted on the bottom of the mounting base. The cross plate on the unwind upright

assembly should be toward the rear of the machine and the aluminum guide bar should be toward the coating head.

2. Place the coating head on the mounting base, lining up the holes in the base plate of the coating head with the holes in the mounting base. Attach the coating head to the base with the short flathead screws provided. The screws will screw into nuts, which are permanently mounted on the bottom of the mounting base.
3. Insert the 2 dial indicators in their holes. Make sure the dials are firmly seated. Lightly tighten the setscrews using a  $\frac{3}{32}$  Allen key. This will lock the indicators in place, ensuring accurate readings.
4. Slide the Nylon side dams onto the reservoir/backdam. The angles of the Nylon dams should fit into the corresponding angles of the reservoir.

**NOTE: The machine is designed to hang over the edge of a bench or table.**

## **OPERATION**

The following is the correct procedure for coating samples:

1. Slide the aluminum rod through a roll of substrate and set the rod in the notches in the unwind stand.
2. Pull the substrate down between the cross plate and the aluminum guide bar.
3. Remove the reservoir/backdam. To do this, lift the "C" clamps to release the reservoir/backdam and slide it out and away from the coating head.
4. Tighten bottom coating bar clamping screws.
5. Loosen top coating bar and crossbar clamping screws
6. Lift the top coating bar enough to slide the substrate between the coating bars.
7. Pull enough substrate through so that it rests on the sample guide bar.

**NOTE: At this point, the top coating bar is resting on the substrate. The thickness is 0.0000".**

8. Make sure that the tensioner screws are screwed into the top coating bar.
9. Turn the gap adjusters clockwise until the dial points are lifted off the top coating bar surface. The dials should read about **-0.025"**.
10. Set the dials to **0.0000"** by turning the gap adjusters counter-clockwise.
11. Tighten the crossbar clamping screws.
12. Set the coating thickness using the gap adjusters.
13. After the desired thickness is reached, tighten the top coating bar clamping screws.
14. Slide the reservoir/backdam into place between the alignment pins on the backside of the uprights.
15. Hold the reservoir/backdam in place by latching the "C" clamps over the endpins of the reservoir/backdam.
16. Move the Nylon side dams into their proper positions to set the coating width, and tighten the thumbscrews.
17. Pour the adhesive into the reservoir.
18. Pull the sample through the coating bars at a downward angle. Make sure to keep the backside of the sample rubbing against the sample guide bar.

**NOTE: It is very important to pull the sample at a downward angle against the sample guide bar. Pulling the sample at a downward angle will prevent the smearing of a freshly coated sample. The guide bar keeps the angle consistent for every pull.**

**NOTE: It is very important to pull the sample at a constant speed. This will provide an even coating thickness**

19. Pull the sample to the desired length or until the adhesive runs out, then cut the sample with a razor knife. Make sure to leave enough substrate for the next pull.

## MAINTENANCE

The ChemInstruments Laboratory Drawdown Coater requires very little maintenance. The coating bars are precision ground and must be kept clean to provide quality, reproducible coatings.

Follow this procedure to clean the Drawdown Coater:

1. Pull enough sample through the coater to expend any adhesive remaining in the dam.
2. Remove the reservoir/backdam.
3. Remove the side dams from the reservoir/backdam.
4. Unscrew the tensioner screws until they are disengaged from the top coating bar.
5. Loosen the clamping screws for both the crossbar and coating bars.
6. Remove the crossbar.

**NOTE: Be careful not to damage the dial indicator points. Remove the dial indicators if necessary. Handle the dial indicators with caution.**

7. Remove the coating bars. Clean the bars with a **SOFT CLOTH** and water or solvent, depending on the type of adhesive used.

**NOTE: It is important to use only a soft cloth to wipe the bars. Scratches in the bars will affect the accuracy of the coatings.**

8. Re-assemble the coater.

If the coater will not be used for a while, either remove the dial indicators or relieve the pressure on them by turning the gap adjusters clockwise until the dial indicator points are lifted off the top coating bar. Also, create a small gap between the coating rolls and put something soft and protective in the gap.