



UNIVERSAL COATING HEAD

MODEL UC-200

OPERATING INSTRUCTIONS

CHEMINSTRUMENTS

510 COMMERCIAL DRIVE

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PRODUCT DESCRIPTION

Congratulations on the purchase of your new ChemInstruments Universal Coating Head. You now have a small, versatile coater that allows for the quick and easy application of emulsion and solvent coatings. The UC-200 creates consistently coated samples from roll stock.



Warning: This equipment can cause injury if not used properly. It is the operator's responsibility to observe all safety rules and warnings.

This Universal Coater has the following features:

- Two precision ground, stainless steel bull nose coating bars.
- Dial indicators for fast, accurate, and reproducible gap settings.
- Produce samples of unlimited length from 3-12 inches (7-30 centimeter) in width.
- Unwind stand is capable of holding roll stock up to 12 inches (30 centimeter) diameter by 12 inches wide.
- Coating range capable of producing 25-1500 gsm samples.
- Adjustable Teflon dams allow for coating control from ½" to 12" in width.
- Minimum viscosity is 1000 cps.
- Quickly disassembles with a minimum of parts for easy cleaning.

SPECIFICATIONS

Unwind Stand Capacity	12 inch (30 centimeter) diameter by 12 inch (30 centimeter) wide roll stock
Product Sample Width	3 inches (7 centimeters) to 12 inches (30 centimeters)
Reservoir Capacity	Up to 125 mL
Minimum Viscosity	1000 cps
Sample Thickness	25 to 1500 grams per square meter
Dam Adjustment	½ inch to 12 inches wide
Physical Dimensions	Width: 17.25 inches (44 centimeters) Depth: 16 inches (41 centimeters) Height: 12.5 inches (32 centimeters) Weight: 39 pounds (18 kilograms)

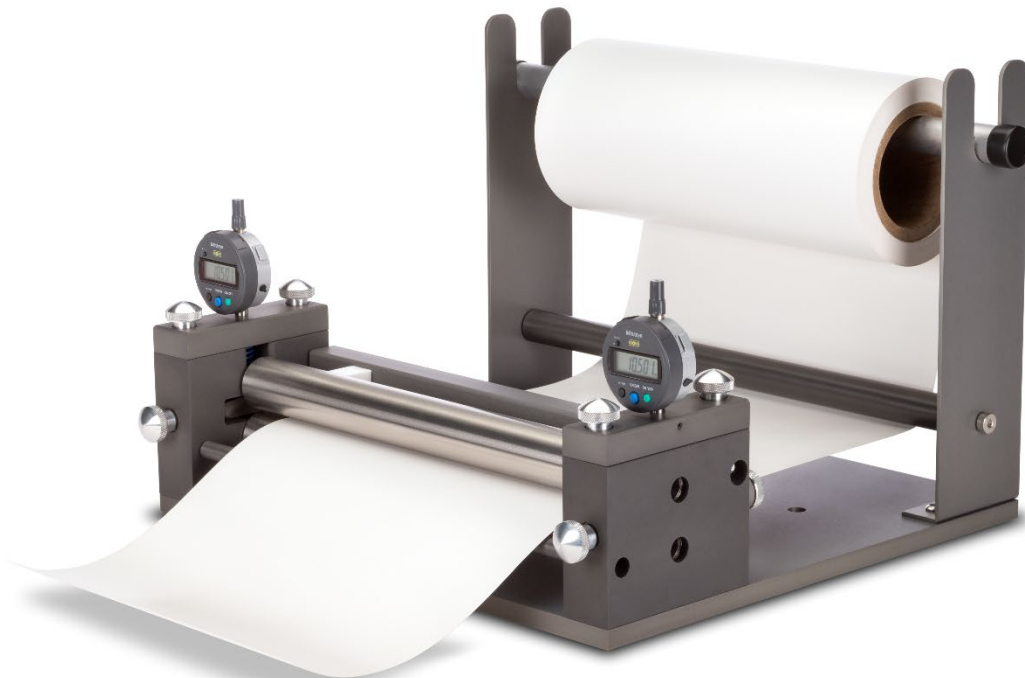
UNPACKING

ChemInstruments has made every effort to ensure that the Universal Coating Head arrives at your location without damage. Carefully unpack the instrument and check for any damage that may have occurred during shipment. If any damage did occur during transit, notify the **carrier** immediately.

Make sure all of these components are present before discarding the packaging material.

- An envelope with this manual.
- Coating head with 2 stainless steel coating bars and digital gauges in place.
- 2 Teflon dams.
- An aluminum rod for holding the roll of substrate.
- Instruction Manual for the digital gauges.

NOTE: The digital gauges have been factory set and are ready for use.



The coater should be set up in an area that has at least 36 inches of vertical space and access to the back of the unit. Leave plenty of room in front of the coating head so the sample 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.

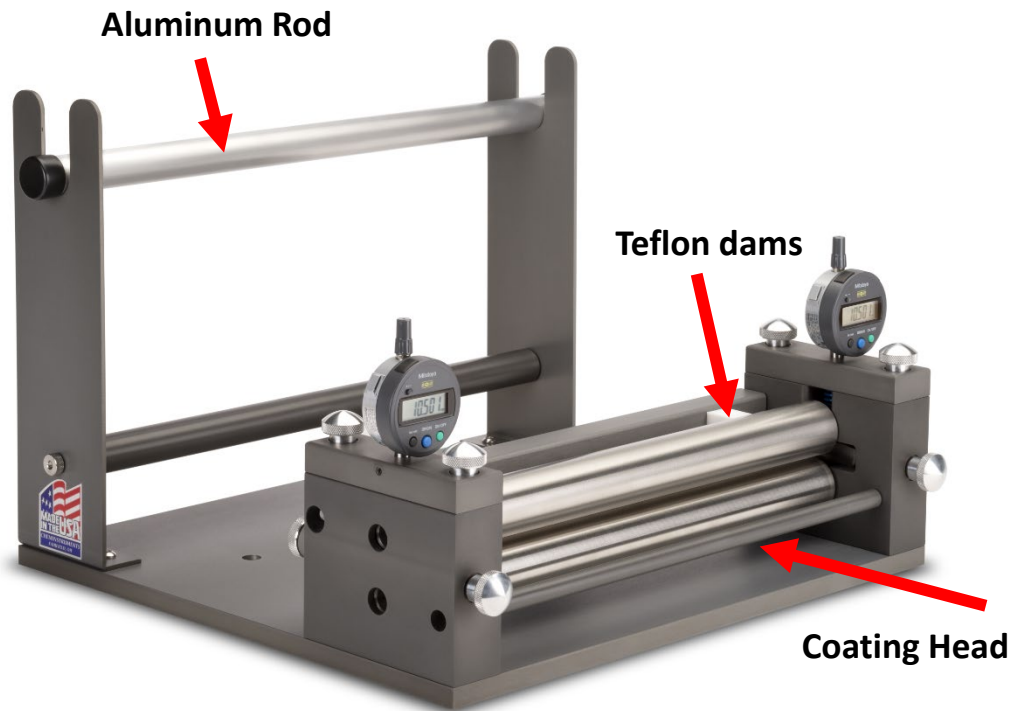


Warning: The bottom of both coating bars have a knife edge. This edge is extremely sharp. Use great care when handling or cleaning the coating bars.

ASSEMBLY

The Coater will come fully assembled. The following will need to be completed before using the coater.

1. The strapping around the coating head will need to be removed before use.
2. Insert Teflon dams.
3. The aluminum rod for holding the roll of substrate will need to be inserted in the un-wind upright brackets.



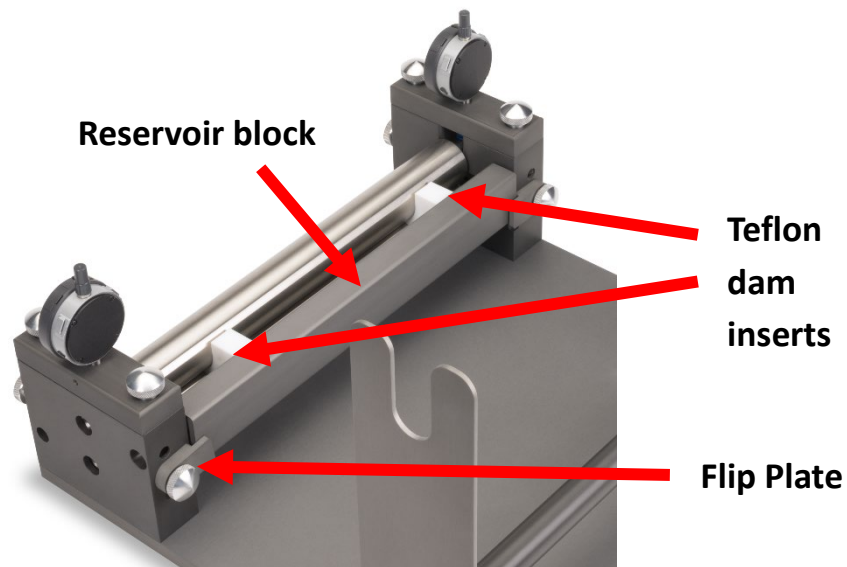
THEORY OF OPERATION

The UC-200, Universal Coating Head, can be used for the quick and easy application of emulsion and solvent coatings to create consistently coated samples from roll stock.

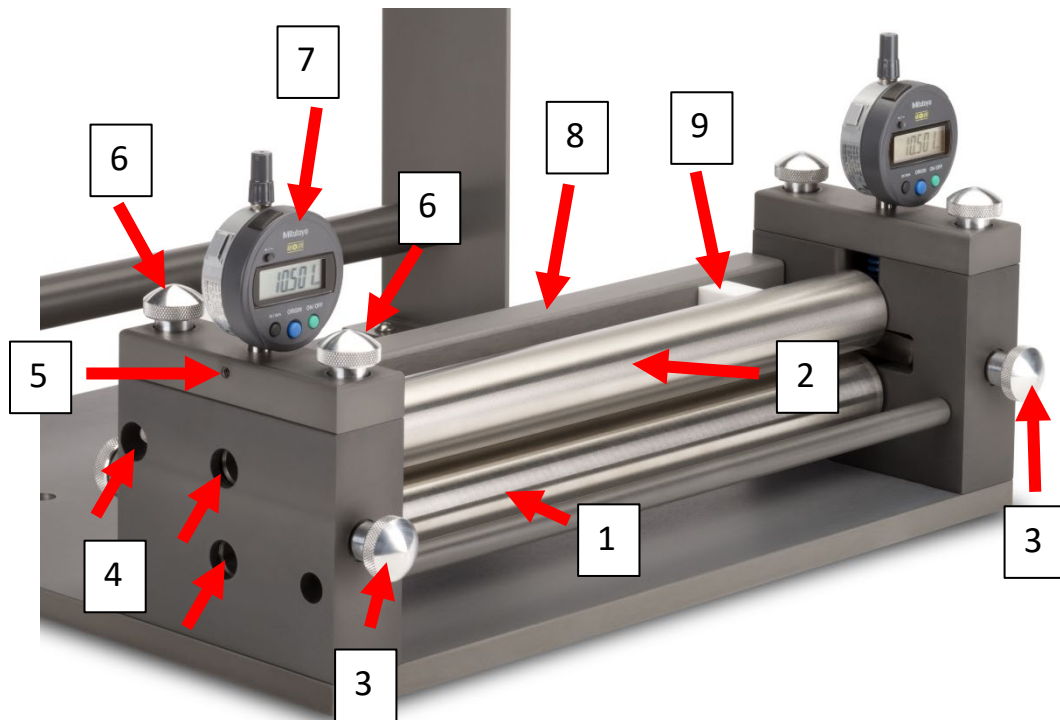
The heart of the coater is its two precision ground, 303 stainless steel rolls which provide for a precise knife-over-roll coating method.

RESERVOIR

The reservoir is located on the back of the coating head. The flip plates on each end plate hold the reservoir block in place. The Teflon dam inserts are placed in the reservoir as shown in the picture. The dam inserts can be positioned anywhere in the reservoir to create the specified width of the coating you would like to create.



COATING HEAD

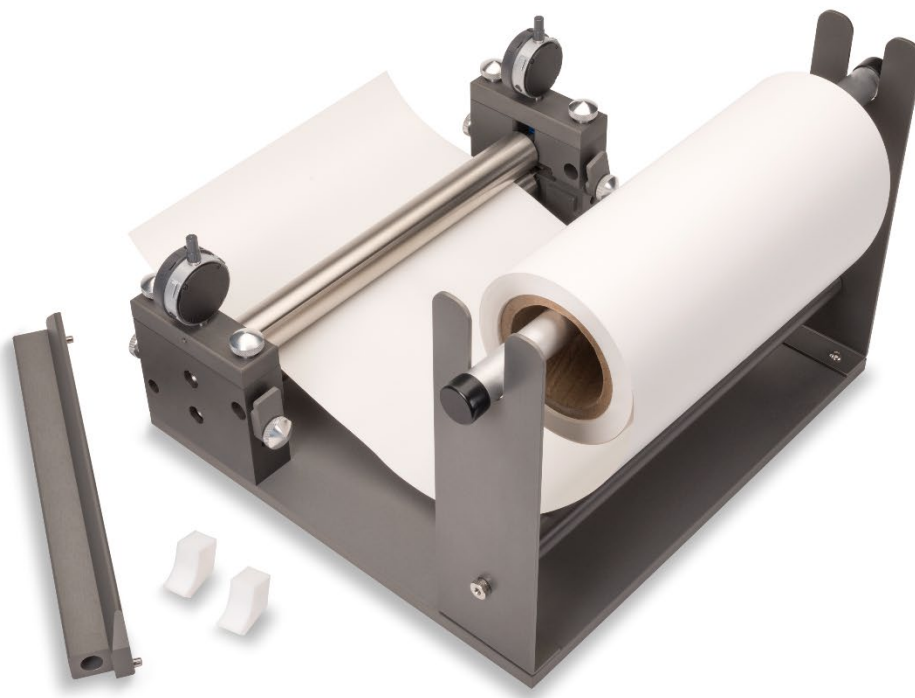


1. Bottom Coating Bar
2. Top Coating Bar
3. 2 thumbscrews for adjusting the gap between the coating bars.
4. Openings for optional heating rods for the reservoir, top coating bar, and bottom coating bar. These are available on both the left and right sides so that heating rods can be inserted from either direction.
5. Set screw for the digital thickness gauge. There is one on the right side for the other digital thickness gauge.
6. 2 thumbscrews for securing the top plate to the left end plate. The 2 thumbscrews on the right side secure the top plate to the right end plate.
7. Digital thickness gauge with units of inches or millimeters.
8. Reservoir block
9. Teflon dam insert.

COATING OPERATION

The following is the procedure for coating samples. See photos on next page.

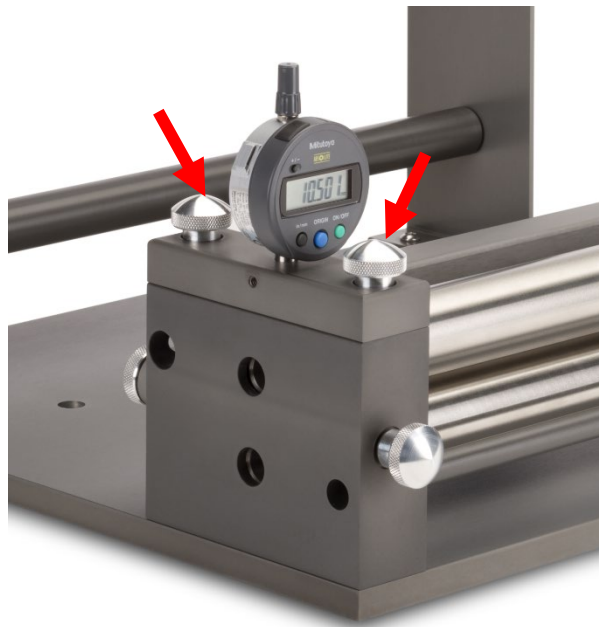
1. Remove the 2 Teflon dams.
2. Remove the reservoir block by turning the 2 flip plates and sliding the reservoir towards the un-wind upright assembly.
3. Slide the aluminum rod through the roll of substrate and set the rod in the notches of the un-wind upright assembly.
4. Pull the end of the substrate down between the coating bars.
5. Pull enough substrate out so that it extends 4-5 inches beyond the end of the mounting base.
6. Replace the reservoir block and turn the 2 flip plates so that they are holding the reservoir in place.
7. Place the Teflon dams in the reservoir. Slide them to the desired location.
8. Use the 2 front thumbscrews along with the digital thickness gauges to set the gap between the top and bottom coating heads.
9. Add coating substance to the reservoir between the 2 Teflon dams.
10. Pull the substrate through the coating bars at a downward angle of about 15°. Pulling the sample at a downward angle will eliminate the smearing of the adhesive on the freshly coated sample and provide an accurate coating thickness.
11. Pull the sample to desired length or until the adhesive runs out.
12. Cut the sample with a razor knife.



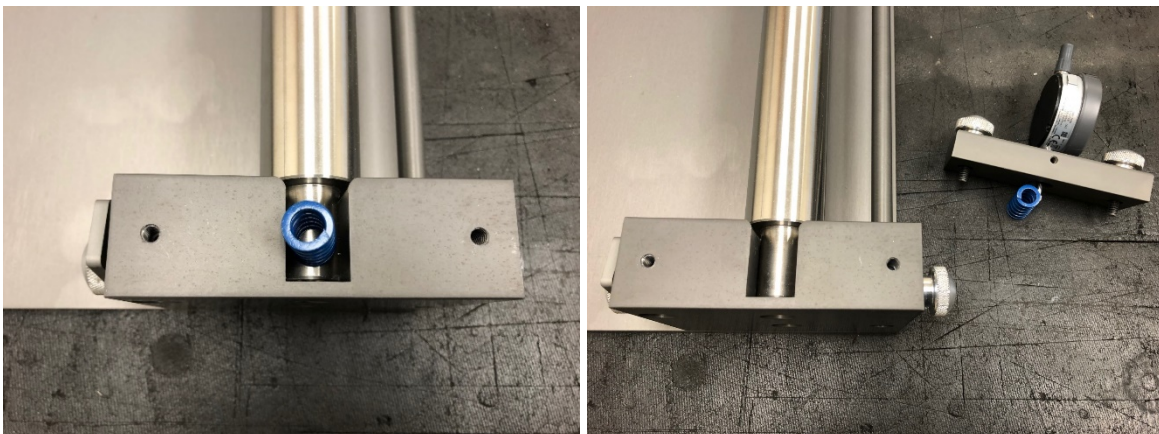
CLEANING PROCESS

The coating head can be disassembled for cleaning.

1. Remove the reservoir block and 2 Teflon dams.
2. Loosen the thumbscrews on the left top plate. You will have to loosen both thumbscrews at the same time to prevent them from binding up.
3. Loosen the thumbscrews on the right top plate. You will have to loosen both thumbscrews at the same time to prevent them from binding up.



4. Pull off both the left and right top plates. Remove the spring from each side.





Warning: The bottom of both coating bars have a knife edge. This edge is extremely sharp. Use great care when handling or cleaning the coating bars.

5. The top coating bar can now be removed for cleaning. **Use caution when handling the coating bar. It has a sharp knife edge on the bottom.**
6. The bottom bar can be cleaned in place. **Use caution when cleaning the coating bar. It has a sharp knife edge on the bottom.**
7. The top and bottom coating bars can be cleaned with a soft cloth and solvent. Be sure to only use a soft cloth that will not cause scratches to the coating bars.
8. Once the cleaning is complete, re-insert the top coating bar.
9. Install spring on each side.
10. Install right and left top plates.

NOTE: If it is necessary to scrub the coating bars, use only a soft cloth. The bars are precision ground and any scratches to the surface will affect the accuracy of the coatings.

OPTIONAL ACCESSORIES

UC-200 HEAT CONTROL BOX

The optional Heat Control Box in addition to your Universal Coating Head gives you a coater that allows you to coat hot melt adhesives on any substrate without having to use the large quantities necessary for production equipment.



MAINTENANCE

The ChemInstruments Universal Coating Head is a very simple machine. It requires very little maintenance. However, the machine requires a thorough cleaning after every use. The coating bars are precision ground and must be kept clean to provide quality coatings. The cleaning process was discussed in the previous section.

REPLACEMENT PARTS

Part Number	Description
R-UC COATING ROLL(NON)	Replacement Non-heated Coating Roll for the UC-200
R-UC COATING ROLL(HEATED)	Replacement Heated Coating Roll for the UC-200
R-UC-200 DAMS	Replacement Dams for the HLC/HLCL (1 set, 2 dams)
R-UC-200 DIAL INDICATOR(DIG)	Replacement Dial Indicator for the UC-200 (1pc)