

# Bottom Heating Film Coating Machine

Item Number: TB08



## Introduction

Bottom heating film coating machine for ceramic crystal battery and nano films with adjustable coating speed precise thickness control vacuum fixation and heated drying from room temperature to 150°C for reliable laboratory research and materials processing applications with repeatable results

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| Application                             | Description                                                                                                                       | Key Benefit                                                                                                            |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Ceramic Thin Film Research              | Coat ceramic slurry or functional ceramic materials onto supported substrates for high-temperature film-forming studies.          | Controlled coating speed and 0.01 mm thickness control support repeatable material comparisons.                        |
| Crystal Film Development                | Prepare crystal-related films where consistent slurry spreading and controlled drying conditions are required.                    | Bottom heating from room temperature to 150°C helps establish defined post-coating drying conditions.                  |
| Battery Electrode Preparation           | Apply battery material slurry to aluminum foil or copper foil for laboratory electrode and cell fabrication research.             | Vacuum fixation reduces substrate movement while programmable coating travel supports consistent electrode production. |
| Specialized Nano Film Research          | Develop special nano films using laboratory coating processes that require precise blade adjustment and controlled movement.      | Fine coating control and adjustable speed allow researchers to evaluate process variables systematically.              |
| Advanced Materials Research             | Investigate film-forming behavior and coating conditions for emerging materials under elevated-temperature research requirements. | The combined coating and heating functions simplify small-scale process development.                                   |
| Academic and Laboratory Process Studies | Produce repeatable coated samples for materials science experiments, formulation screening, and comparative testing.              | Touch-screen parameter setting, compact dimensions, and automatic coating movement improve workflow efficiency.        |

| Parameter                     | Specification                             |
|-------------------------------|-------------------------------------------|
| Model                         | TB08                                      |
| Standard coating device width | 100 mm                                    |
| Vacuum plate                  | Vacuum aluminum flat plate included       |
| Included vacuum pump          | 1 oil-free vacuum pump                    |
| Control system                | PLC and touch-screen control              |
| Coating stroke setting        | 0 to 300 mm, set through the touch screen |
| Power supply                  | 220 V / 50 Hz                             |
| Weight                        | 50 kg                                     |
| Overall dimensions            | L550 mm × W350 mm × H320 mm               |

| Parameter                          | Specification             |
|------------------------------------|---------------------------|
| Coating speed                      | 0 to 120 mm/s, adjustable |
| Blade thickness adjustment range   | 0 to 5 mm                 |
| Coating thickness control accuracy | 0.01 mm                   |

| Parameter                              | Specification                          |
|----------------------------------------|----------------------------------------|
| Vacuum plate heating and drying system | Room temperature to 150°C              |
| Temperature controller                 | Digital display temperature controller |
| Temperature control accuracy           | ±1°C                                   |
| Vacuum plate dimensions                | L415 mm × W200 mm × H32 mm             |

| Substrate     | Width        | Thickness   | Areal density              |
|---------------|--------------|-------------|----------------------------|
| Aluminum foil | 50 to 200 mm | 10 to 50 μm | 27 to 135 g/m <sup>2</sup> |
| Copper foil   | 50 to 200 mm | 6 to 20 μm  | 53 to 178 g/m <sup>2</sup> |

| Step | Operation                                                                                                                             |
|------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Place the electrode sheet on the vacuum plate, start the power, and activate the vacuum so the electrode sheet is fixed to the plate. |
| 2    | Place the coating device on the electrode sheet and add the coating slurry.                                                           |
| 3    | Start the coating cycle. The coating device automatically drives the coating device forward to complete the coating operation.        |
| 4    | Remove the coating device and push rod, set the heating temperature and time, and perform heated drying.                              |
| 5    | After drying is complete, remove the coated electrode sheet and reset the coating device.                                             |