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## Integrated Coating and Calender Machine



### Feature

- \* The machine combines coating machine with press machine. It is designed for the universities, R & D institutes and material companies manufacturing small batteries, button batteries and testing materials. The integrated machine without unwinder and rewriter of press machine is controlled with one system. With smaller size and simple control system the coating and pressing process can be completed easier by one charging.
- \* High-precision coating roll and back roll ( $\Phi 120$  mm) are supported with imported bearing unit mounted in the independent bearing chuck. The coating roll is driven by the imported servo motor and reducer.
- \* Clearance adjusting between scraper and coating roll
  - The comma scraper ( $\Phi 80$ mm) is supported on the adjustable stand \mounted on the guide way.
  - The clearance between scraper and coating roll is adjusted manually with linear guide way and liftable block (The adjusting accuracy can be tested with the micrometers and adjusted accordingly).
  - The high-precision heating press machine can test the materials under.
- \* Cold and hot pressing condition.
- \* For the testing and evaluating of battery materials in the laboratory the integrated machine can coat and calender battery electrode accurately as per designed process and improve the accuracy of test data.



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| <b>Parameters</b>                  |   |   |  |
|------------------------------------|---|---|--|
| <b>Base</b>                        | Aluminum foil   | Copper foil                                 |  |
| <b>Max. width</b>                  | 250mm   | 250 mm                                      |  |
| <b>Thickness</b>                   | 10-30 $\mu$ m   | 8-30 $\mu$ m                                |  |
| <b>Coating width</b>               | 50-150 $\mu$ m<br>Single-side after drying  | 50-150 $\mu$ m<br>Single-side after drying  |  |
| <b>Width</b>                       | Max.200mm   | Max. 200mm                                  |  |
| <b>Type of coating</b>             | Continuous  | Continuous                                  |  |
| <b>Length and width of coating</b> | Tolerance for single or double coating $\leq \pm 0.5$ mm                                |   |  |
| <b>Tolerance of two sides</b>      | $\leq \pm 0.5$ mm   |   |  |
| <b>Drying temperature</b>          | Max. 150 $\pm 3$ °C (Zone #1)   |   |  |
| <b>Rectangular coated zone</b>     | $\leq \pm 1$ mm<br>Max. coated zone (perpendicular to the edge of foil) $\leq \pm 1$ mm |   |  |
| <b>Roll size</b>                   | $\phi 300 \times L300$ mm   | <b>Uniformity of coating</b>                | $\pm 0.003$ mm                           |
| <b>Mechanical speed</b>            | 0.4~6m/min  | <b>Max. work speed</b>                      | 1m/min<br>Except for LiFePO <sub>4</sub> |
| <b>Radial run-out of rolls</b>     | $\leq \pm 0.003$ mm   | <b>Accuracy of electrode after pressing</b> | $\leq \pm 0.002$ mm                      |
| <b>Max. pressure between rolls</b> | 150Kg/mm  | <b>Max. pressure between rolls</b>          | 37.5T                                    |
| <b>Work pressure</b>               | 25MPa   | <b>Diameter of coil</b>                     | $\leq \phi 300$ mm                       |
| <b>Coil weight</b>                 | $\leq 100$ Kg   | <b>Tension adjusting</b>                    | 2.3~20kg                                 |
| <b>EPC accuracy</b>                | $\pm 0.4$ mm  | <b>Roll gap range</b>                       | 0~1.5mm                                  |
| <b>Heating media</b>               | Heating oil   | <b>Roll gap accuracy</b>                    | 0.001mm                                  |
| <b>Heating temperature</b>         | $\geq 80$ °C  | <b>Temperature tolerance</b>                | $\leq \pm 1$ °C                          |
| <b>Drying oven</b>                 | 2000*550*500 (mm)   | <b>Coating unit</b>                         | 3000*550*1500 (mm)                       |
| <b>Overall size</b>                | 4500*1900*1650 (mm)   | <b>Total power</b>                          | 20KW                                     |