



CATALOG

Customized Coating Solutions for Every Need!

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Introduction



Company Overview

High-Energy Intelligent Control (Xiamen) Machinery Equipment Co., LTD. has been a leader in custom non-standard coating machinery since 2005. We specialize in research, development, production, and sales, offering innovative solutions tailored to our clients' needs.

Trusted Technology

Our laboratory coating machines are widely trusted by universities, research institutes, and enterprises for their advanced scraping and coating technology solutions. We utilize CNC machining from top countries to ensure the highest levels of precision and quality.

Commitment to Excellence

Our commitment to excellence is reflected in our products, which have received multiple CE, FCC, and RoHS certifications. Additionally, we have successfully passed ISO9001 and SGS certifications, demonstrating our dedication to quality standards.

Global Reach

Based in Xiamen, Fujian Province, our strong R&D capabilities have allowed us to serve diverse industries globally for over two decades. We take pride in our ability to adapt to the evolving needs of our clients, providing them with cutting-edge machinery and exceptional service.



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Model: MS-ZN320B

- Control System: Self-developed by GAONENG / PLC with touchscreen
- Coating Method: Doctor blade / rod coating integrated (separately for each coating)
- Doctor Blade Adjustment: Rear flip style (easy to clean)
- Coating Speed: Digital setting, 1-5 meters/minute
- Length Setting: Digital setting, 10-450 mm
- Temperature Control: Room temperature to 160°C (constant temperature)
- Leveling Device: Equipped with a leveling bar to flatten the material before coating
- Table Surface Material: Aluminum alloy + glass (removable)
- Coating Uniformity: $\pm 4\%$ (depending on material flatness)
- Working Area: 300*450 mm
- Coating Thickness: 0.005-5 mm (wet film)
- Machine Dimensions: Length 660 mm * Width 470 mm * Height 390 mm (approx.)
- Machine Weight: Net weight 42 kg (approx.)
- Rod Device: Comes with a rod holder (rod needs to be purchased separately, one rod per thickness)
- Rod Weights: Includes two adjustable weights
- Rod Size: Diameter 10 mm * Length 400 mm (standard)
- Doctor Blade Material: Alloy stainless steel
- Power Supply: Voltage 110-220V 50/60Hz
- Power Consumption: 48W (standby), 2000W (heating)
- Notes: For low viscosity and high precision, the rod coating machine is more effective. For high viscosity, the doctor blade coating is better!



Customizable Lab Coating
Machine: Small Hot-melt
Adhesive Coater

Model: GN-ZN320

- Control System: Self-developed by GAONENG / PLC with touchscreen
- Coating Method: Doctor blade / rod coating integrated (separately for each coating)
- Doctor Blade Adjustment: Rear flip style (easy to clean)
- Coating Speed: Digital setting, 1-5 meters/minute
- Length Setting: Digital setting, 10-450 mm
- Temperature Control: Room temperature to 160°C (constant temperature)
- Leveling Device: Equipped with a leveling bar to flatten the material before coating
- Table Surface Material: Aluminum alloy + glass (removable)
- Coating Uniformity: $\pm 4\%$ (depending on material flatness)
- Working Area: 300*450 mm
- Coating Thickness: 0.005-5 mm (wet film)
- Machine Dimensions: Length 660 mm * Width 470 mm * Height 390 mm (approx.)
- Rod Device: Comes with a rod holder (rod needs to be purchased separately, one rod per thickness)
- Rod Weights: Includes two adjustable weights
- Rod Size: Diameter 10 mm * Length 400 mm (standard)
- Doctor Blade Material: Alloy stainless steel
- Power Supply: Voltage 110-220V 50/60Hz
- Power Consumption: 48W (standby), 2000W (heating)
- Notes: Fully automated design with automatic material clamping for enhanced operational convenience



**Fully Automatic Lab Coater
Machine for Pharmaceutical
Industry**

Model: MS-ZN320A

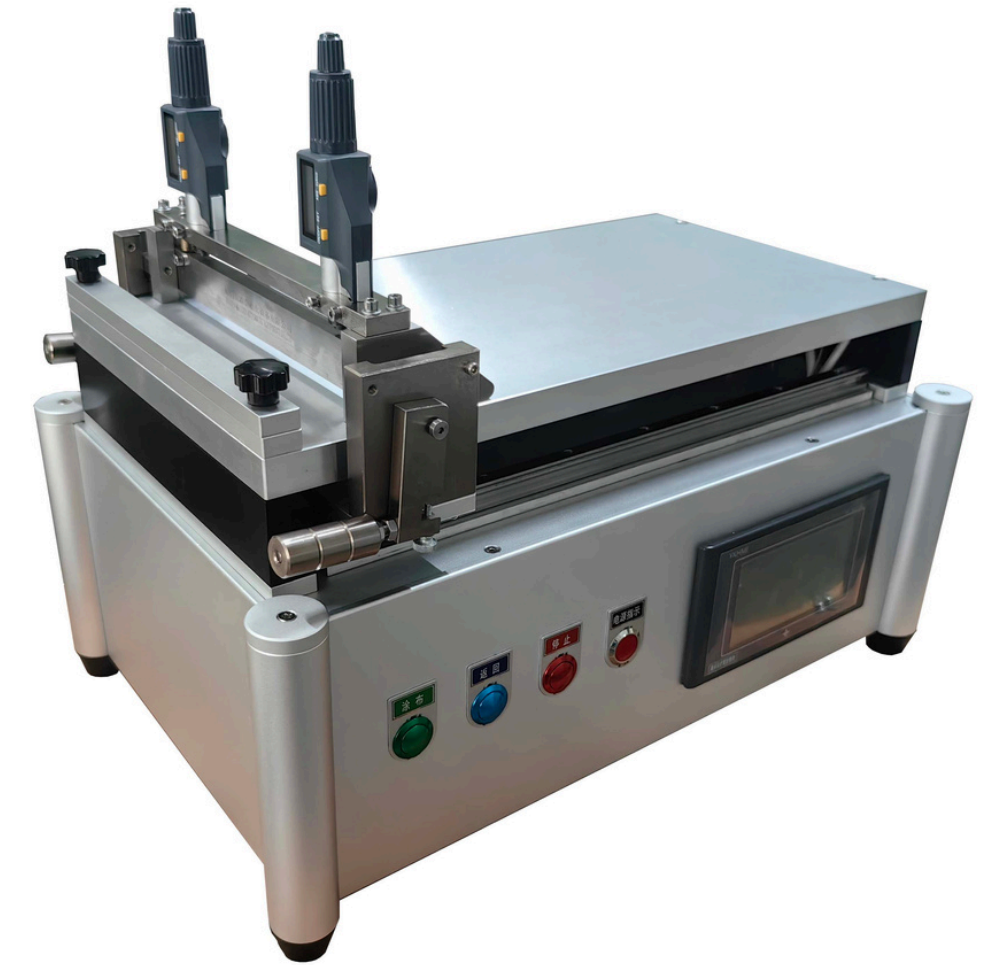
- Control System: Self-developed by GAONENG / PLC with touchscreen
- Coating Method: Doctor blade / rod coating integrated (separately for each coating)
- Doctor Blade Adjustment: Rear flip style (easy to clean)
- Coating Speed: Digital setting, 1-5 meters/minute
- Length Setting: Digital setting, 10-450 mm
- Temperature Control: Room temperature to 160°C (constant temperature)
- Leveling Device: Equipped with a leveling bar to flatten the material before coating
- Table Surface Material: Aluminum alloy + glass (removable)
- Coating Uniformity: $\pm 4\%$ (depending on material flatness)
- Working Area: 300*450 mm
- Coating Thickness: 0.005-5 mm (wet film)
- Machine Dimensions: Length 800 mm * Width 380 mm * Height 410 mm (approx.)
- Machine Weight: Net weight 44 kg (approx.)
- Rod Device: Comes with a rod holder (rod needs to be purchased separately, one rod per thickness)
- Rod Weights: Includes two adjustable weights
- Rod Size: Diameter 10 mm * Length 400 mm (standard)
- Doctor Blade Material: Alloy stainless steel
- Power Supply: Voltage 110-220V 50/60Hz
- Power Consumption: 48W (standby), 2000W (heating)
- Notes: For low viscosity and high precision, the rod coating machine is more effective. For high viscosity, the doctor blade coating is better!



Experimental Doctor Blade
Automatic Small Testing
Coating Machine

Model: MS-SY300

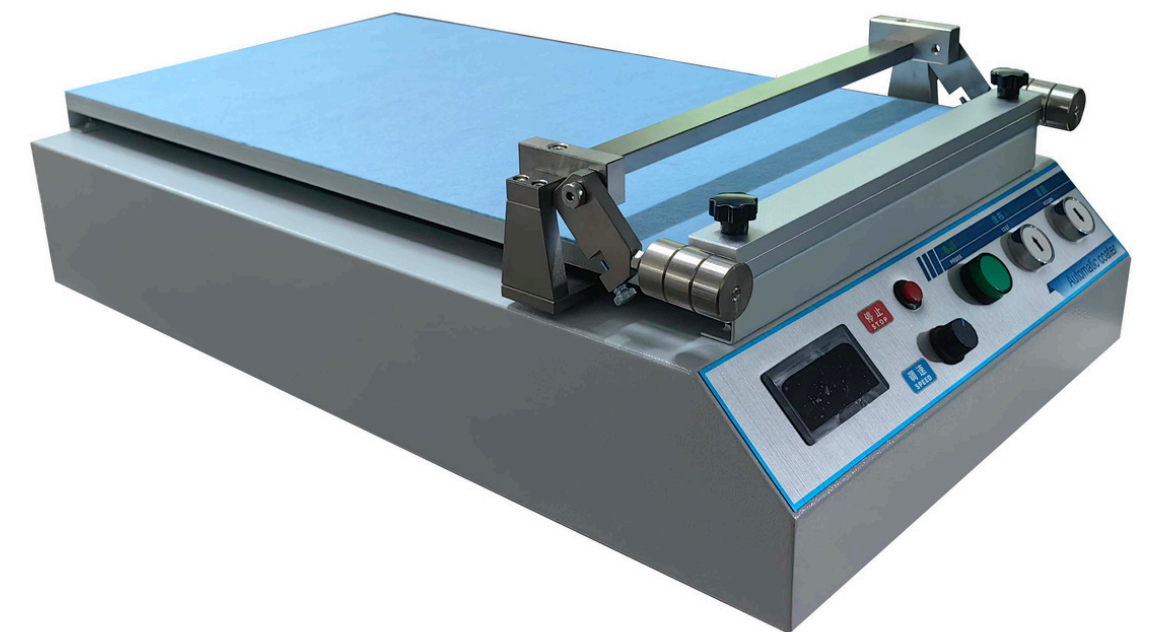
- Control System: Self-developed by GAONENG / PLC with touchscreen
- Coating Method: Doctor blade / rod coating integrated (separately for each coating)
- Doctor Blade Adjustment: Rear flip style (easy to clean)
- Coating Speed: Digital setting, 1-5 meters/minute
- Length Setting: Digital setting, 10-300 mm
- Temperature Control: Room temperature to 160°C (constant temperature)
- Leveling Device: Equipped with a leveling bar to flatten the material before coating
- Table Surface Material: Aluminum alloy + glass (removable)
- Coating Uniformity: $\pm 4\%$ (depending on material flatness)
- Working Area: 200*300 mm
- Coating Thickness: 0.005-5 mm (wet film)
- Machine Dimensions: Length 550 mm * Width 350 mm * Height 350 mm (approx.)
- Machine Weight: Net weight 28 kg (approx.)
- Rod Device: Comes with a rod holder (rod needs to be purchased separately, one rod per thickness)
- Rod Weights: Includes two adjustable weights
- Rod Size: Diameter 10 mm * Length 300 mm (standard)
- Doctor Blade Material: Alloy stainless steel
- Power Supply: Voltage 110-220V 50/60Hz
- Power Consumption: 48W (standby), 2000W (heating)
- Notes: For low viscosity and high precision, the rod coating machine is more effective. For high viscosity, the doctor blade coating is better!



**Small Lab Coating Machine:
Multifunctional Heated Blade
Coater**

Model: MS-XB320

- Control System: Self-developed by GAONENG
- Coating Method: Rod (optional, standard national specification)
- Speed: Adjustable 1-5 meters per minute
- Panel Control: Coating, return, stop, speed adjustment
- Weight Device: Adjustable weights on both sides
- Accuracy Error: Depends on rod quality
- Working Area: 300*420 mm
- Machine Dimensions: 710*420*285 mm (L*W*H)
- Machine Weight: Net weight 20 kg
- Rod Length: 400 mm
- Power Supply: Voltage 110-220V
- Power Consumption: 120W
- Notes: For low viscosity and high precision, the rod coating machine is more effective. For high viscosity, the doctor blade coating is better!



Lab Automatic Bar Coater:
Multiple Thickness Coating
Rod Options

Model: MS-GD200

- Coating Speed: Stepless adjustment 1-5 meters per minute
- Accuracy: ± 0.003 mm
- Table Surface: 370*260 mm
- Coating Area: 220*200 mm
- Coating Thickness: 0.005-5 mm (wet film)
- Machine Dimensions: 430*330*340 mm
- Machine Weight: 17-18 kg
- Doctor Blade Material: Alloy stainless steel
- Power Supply: Voltage 110-220V 50/60Hz
- Heating Temperature: Room temperature to 200°C
- Power Consumption: 48W (standby) 2000W (heating)
- Notes: For low viscosity and high precision, the rod coating machine is more effective. For high viscosity, the doctor blade coating is better!



Lab Automatic Scraper
Coating Machine with Heater
for Wire & Rods

Model: MS-RT300

- Control System: Self-developed by GAONENG
- Coating Speed: 0.5-5 meters/minute (speed adjustable based on actual glue coating requirements)
- Coating Width: 300mm
- Coating Method: Comma Doctor Blade
- Coating Thickness: 0.01-5mm
- Rewind Diameter: 200mm
- Glue Supply System: Automatic glue supply
- Heating Temperature: Room temperature to 180°C
- Winding/Unwinding Shafts: 3-inch Pneumatic Expanding Shafts (Wavy Type)
- Air Source Connection: 0.55 MPa -0.7 MPa
- Peak Power: 5000W



Medical Tape & Dressing Hot
Melt Coating Machine with
Laboratory Coater

Model: MS-RL300

- Control System: Self-developed by GAONENG
- Adhesive Supply Method: Pneumatic Adhesive Supply
- Melt Cylinder Capacity: 1 liter
- Coating Width: 300mm
- Coating Length: 400 mm
- Coating Method: Hot Melt Adhesive Doctor Blade
- Coating Thickness: 0.01-1 mm (Accuracy \pm 5 micrometers)
- Heating Temperature: Room temperature to 180°C
- Bottom Plate Heating: Heated Bottom Plate
- Traction Motor: Stepper Motor (With Reducer)
- Tension Control: Single Sheet with Tension Roller
- Machine Speed: 0.5-3 meters/minute
- Power Supply: 220V
- Peak Power: 6000W



Small Laboratory Coating
Machine for Hot Melt Adhesive
Sheets

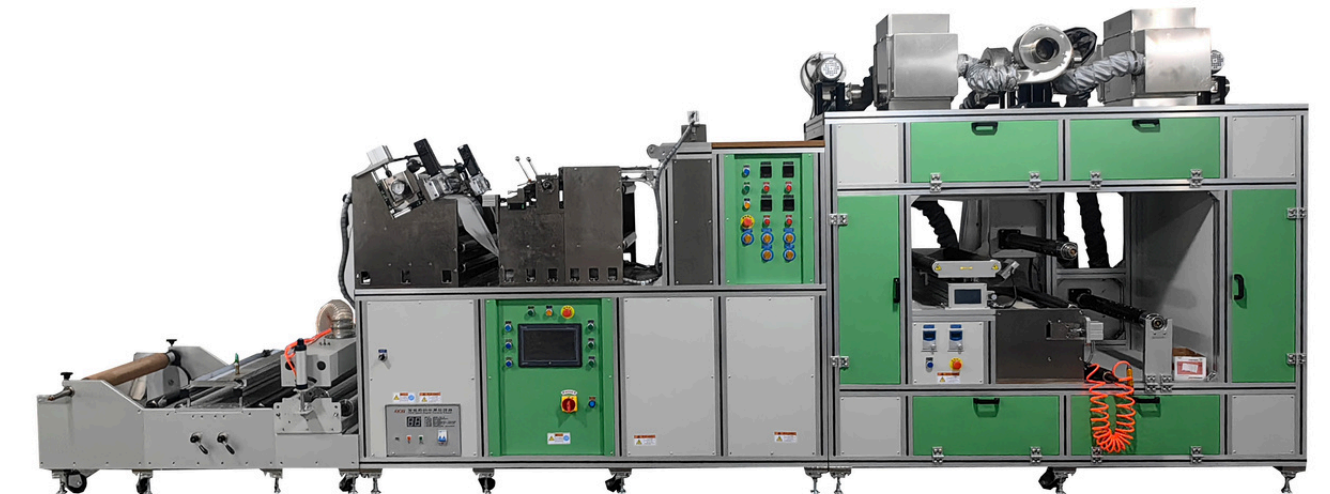
Model: MS-GD300

- Control System: Self-developed by GAONENG
- Coating Speed: 0.1-2 meters/minute (speed adjustable based on actual glue coating requirements)
- Coating Width: 300mm
- Coating Method: Comma Doctor Blade + rod (can be used independently)
- Coating Thickness: 0.005-5MM (wet film)
- Rewind Diameter: 500mm
- Glue Supply System: Manual glue supply
- Heating Temperature: Room temperature to 160°C
- Winding Function: Automatic winding
- Oven Lifting: Manual lifting
- Motor Type: 3-wire variable frequency motor
- Unwinding Device: Pneumatic expansion shaft, 3 inches
- Power Supply: 220V 50Hz
- Peak Power: 5000W



**Roll-to-Roll Coating Machine:
Small Comma & Wire Bar
Integrated with Oven**

- Control System: Self-developed by GAONENG
- Human-Machine Interface: 10-inch Touch Screen (Front and Rear Operation Buttons for Start, Stop, and Pause)
- Coating Method: Comma Doctor Blade/micro gravure/Beveled Knife
- Coating Width: 600mm
- Coating Thickness: 0.005-5 mm (Uniformity \pm 5%)
- Heating Temperature: Room temperature to 160°C
- Tension Control: Fully Automatic Tension (10-50NM)
- Alignment Device: Fully Automatic Rewinding Alignment
- Tunnel Fan: Adjustable Speed
- Tunnel Insulation: Asbestos Insulation Layer
- Winding Diameter: 500MM
- Machine Speed: 1-20 meters/minute (Variable Speed Based on Adhesive Drying)
- Tunnel Material: 304 Stainless Steel
- Motor Control: Variable Frequency Drive (Delta PLC Control)
- Exhaust System: Centrifugal Fan (External Interface 100 mm)
- Power Supply: 380V Power Supply with AC 24V Control
- Power Consumption: Estimated 33 kW (Subject to Actual Measurement)



**Multi-Functional Coating
Equipment for Tapes and
Adhesives**

Model: MS-GT1000

- Control System: Self-developed by GAONENG
- Coating Method: Comma Doctor Blade+ Beveled Knife
- Coating Width: 1000mm
- Coating Thickness: 0.01-5 mm (Uniformity±5%)
- Heating Temperature: Room temperature to 150°C
- Machine Speed: 1-10 meters/minute (Variable Speed Based on Adhesive Drying)
- Heating Zone: Divided into 2-meter Sections with Independent Temperature Control
- Heating Control: Thermocouple Sensors (Touch Screen Temperature Controller)
- Tension Control: Fully Automatic Tension (1~100N)
- Alignment Device: Fully Automatic Rewinding Alignment
- Tunnel Fan: Adjustable Speed
- Tunnel Insulation: Asbestos Insulation Layer
- Winding Diameter: 1 meter
- Tunnel Material: 304 Stainless Steel
- Exhaust System: Centrifugal Fan (External Interface 100 mm)
- Power Supply: 380V Power Supply with DC 24V Control
- Air Source Connection: 0.55 MPa -0.7 MPa



Precision Comma Blade
Coating Machine for Aerogel
& Fire Materials

- Control System: Self-developed by GAONENG
- Stroke Length: 70-80mm
- Coating Method: Specially designed scraper
- Coating Width: 50-85mm
- Coating Thickness: Flow control
- Glue Supply Method: Peristaltic pump
- Heating Method: Infrared heating
- Heating Tunnel Length: 4 meters (2 meters per section, independently temperature-controlled)
- Coating Speed: Adjustable (5 seconds per piece on flat surfaces)
- Sheet Conveying: Automatic conveying
- Sheet Stacking: Non-stop feeding up to 300mm height
- Equipment Power Supply: 380V, 12000W



Custom Non-Standard
Coating Machine for
Electrophoretic Glass Plates

Model: MS-GD1000

- Control System: Self-developed by GAONENG
- Coating Method: Comma Doctor Blade 1000 mm+Narrow Slot Coating Head 350 mm
- Coating Thickness: 0.005-5 mm (Uniformity \pm 5%)
- Heating Temperature: Room temperature to 160°C
- Machine Speed: 0.15-5 meters/minute (Variable Speed Based on Adhesive Drying)
- Heating Method: Electric Heating +UV Curing
- Heating Tubes: Stainless Steel Fin-Type Heating Tubes
- Tension Control: Fully Automatic Tension Adjustment
- Oven Lifting: Manual Lifting
- Glue Supply System: Manual Glue Supply
- Motor Type: 3-Phase Variable Frequency Motor
- Winding Diameter: 500mm
- Power Supply: 220V 50Hz
- Power Consumption: 30 kW



Customizable Slot Die Coating
Machine for Extrusion Coating

Model: MS-XF500

- Control System: Self-developed by GAONENG
- Coating Method: Slot +Double Scraper (Arc Knife)
- Coating Width: 460mm
- Coating Thickness: 0.01-1 mm (Uniformity \pm 5%)
- Heating Temperature: Room temperature to 200°C
- Machine Speed: 1-10 meters/minute (Variable Speed Based on Adhesive Drying)
- Glue Supply System: Precision diaphragm pump
- Glue Container: 40-liter stainless steel drum
- Heating Tunnel Type: Suspension tunnel (customizable)
- Tunnel Lifting: Dual-cylinder automatic lifting
- Winding Diameter: 500mm
- Tunnel Material: 304 Stainless Steel
- Power Supply: 480V,60Hz
- Air Shaft: 3 inches (76 mm)



Custom Double-Sided
Coating Machine with
Suspension Oven

Model: MS-QY600

- Control System: Self-developed by GAONENG
- Coating Method: inclined blade / rod
- Coating Width: 600mm
- Coating Thickness: 0.01-3 mm (Uniformity \pm 5%)
- Blade Lifting: Automatic lifting
- Machine Speed: 0.5-3 meters/minute (Variable Speed Based on Adhesive Drying)
- Coating Length: 100-1500mm (settable)
- Tension Control: Manually adjustable
- Manually adjustable: Traction (dual guide rail)
- Unwinding Diameter: Unwinding Diameter
- Migration Fixture: Pneumatic automatic clamping
- Tension Double Roller: Rubber roller with tension (sheet unwinding)
- Unwinding Inflation Shaft: 3-inch pneumatic inflation shaft
- Power Supply: 220V
- Power Consumption: 500W



**Doctor Blade Coating Machine:
Sheet Tractive Tension & Lab
Polymer Coater**

- Control System: Self-developed by GAONENG
- Coating Method: Continuous conveyance coating
- Human-Machine Interface: 5-inch touch screen
- Coating Width: Up to 300mm
- Coating Thickness: Adjustable(designed according to mold requirements)
- Scraper Type: Extrusion type scraper
- Machine Speed: 1-5 meters/minute (Variable Speed Based on Adhesive Drying)
- Tray Conveying: Automatic robotic arm (suction cup or push rod)
- Glue Supply Method: Automatic glue supply
- Platform Conveying: PVC conveyor belt
- Tray Stacking Height: 1-meter platform height
- Tray Lifting: Automatic photoelectric sensing conveyance
- Power Supply: 220V
- Power Consumption: 5000W



Custom Coating Machines for
Grinding Discs: Hydrogel Slide
Coater

Model: MS-ZN500

- Control System: Self-developed by GAONENG
- Control System: 5-inch PLC Touch Screen
- Coating Width: 400*500mm
- Coating Thickness: 0.01-5 mm (Uniformity \pm 5%)
- Blade Lifting: Automatic lifting
- Machine Speed: 1-10 meters/minute (Variable Speed Based on Adhesive Drying)
- Coating Length: Digitally preset 10-500mm
- Coating Method: Doctor Blade and Rod (Doctor Blade Standard, Rod Optional)
- Doctor Blade Material: Hard Alloy Material Doctor Blade (Easily Removable for Cleaning)
- Heating Temperature: Room Temperature to 160°C (Constant Temperature Setting)
- Power Supply: 220V 50Hz
- Power Consumption: 3000W



Custom Laboratory Coating
Machine for Varied Widths &
Substrates

- Control System: Self-developed by GAONENG
- Coating Method: Comma Doctor Blade
- Coating Width: 100-380mm
- Coating Thickness: 0.005-3 mm (Uniformity \pm 5%)
- Heating Temperature: Room temperature to 120°C (constant temperature available)
- Machine Speed: 1-20 meters/minute (Variable Speed Based on Adhesive Drying)
- Drying Tunnel Length: 10 meters (return type)
- Laminating Device: Automatic film lamination (tension controllable)
- Equipment Air Pressure: 6 kg/cm²
- Tension Control: Automatic tension control
- Alignment Device: Fully automatic alignment
- Equipment Power Supply: 380V
- Equipment Power: 10000W
- Overall Dimensions: 2700*1300*1800 mm



Graphene Coating Machine
Graphene Heat Conduction
Film Coater

- Control System: Self-developed by GAONENG
- Coating Method: Slot coating
- Coating Width: 650mm
- Coating Thickness: 0.1-5 mm (Uniformity \pm 5%)
- Oven Temperature: Ambient to 200°C (segmental temperature control)
- Machine Speed: 0.1-3 meters/minute (Variable Speed Based on Adhesive Drying)
- Glue Container: 304 stainless steel
- Glue Tank Capacity: 25 liters
- Tension Control: Fully automatic constant tension
- Insulation Method: Uses 120K high-grade insulation cotton (50mm)
- Equipment Power Supply: 380V
- Equipment Power: 45KW
- Heat Recovery: Equipped with a heat recovery circulation system



Efficient Slot Die Blade
Coating Machine for Film
Manufacturing

Model: MS-LY1600

- Control System: Self-developed by GAONENG
- Coating Method: Transfer (ceramic roller)
- Coating Width: 1600mm
- Unwinding Width: 1650mm
- Coating Thickness: Quantitative roller
- Glue Supply Method: Fully automatic glue supply
- Machine Speed: 5-60 meters/minute (Variable Speed Based on Adhesive Drying)
- Corona Treatment: Pre-coating corona device (5KW)
- Drying Tunnel Length: 30 meters (2 meters per section)
- Hot Air Circulation: Hot air discharge collection and recovery system
- Drying Temperature: Room temperature - 130°C (settable constant temperature)
- Washing Device: High-pressure double-row spray gun
- Post-Wash: Independent water supply for double-sided washing, air knife for double-sided drying
- Waste Heat Recovery: Automatic waste heat recovery (energy-saving $\pm 30\%$)
- Equipment Power Supply: 380V 50Hz
- Equipment Power: 200KW



**Fully Automatic High-Gloss
Powder Coating Machine with
Double Drying and Washing**

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