

Company Profile

Established in Dongguan in 2018, Yanke Intelligent Technology Co., Ltd. is a national high-tech enterprise that focuses on serving enterprise research and development, universities, and research institutes. It has long been committed to creating a safe, efficient, and intelligent one-stop experimental research and development service platform. After years of development and accumulation, it has become a comprehensive solution provider for basic research on materials and new energy, small and medium-sized trials, testing and evaluation; The product application covers directions such as lithium-ion batteries, sodium ion batteries, fuel cells, solid-state batteries, etc. Yanke Intelligence has established a global service network and delivered equipment to more than 20 countries around the world, providing turnkey engineering solutions for scientists in their laboratories.

Main product series:

Battery research and development experimental preparation equipment (including preparation plans for lithium-ion batteries, sodium ion batteries, solid-state batteries, etc.);

Battery safety testing equipment (testing equipment that complies with international and domestic standards such as GB31241, GB31485, IEC62133, UN38.3, etc.);

A turnkey project for the full process system equipment plan of lithium-ion battery production and preparation, including various battery preparation plans such as buckle, column, soft package, square aluminum shell, etc;

Fuel cell research and development experimental preparation equipment (including preparation schemes for solid oxide, proton exchange membrane fuel cells, etc.);

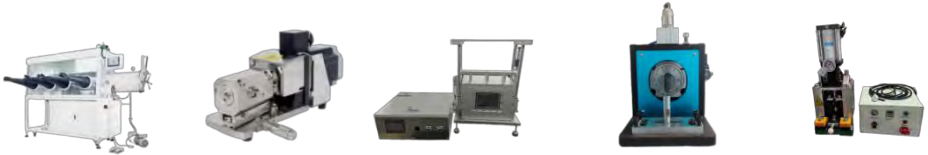
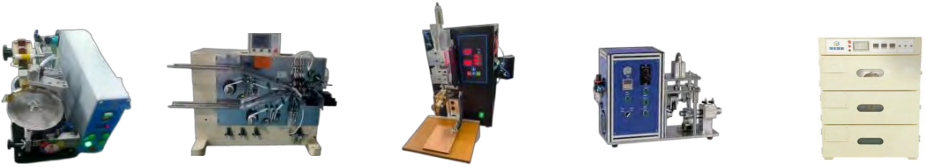
And pass ISO14001, ISO9001, ISO45001 quality system certification; Obtained the title of National High tech Enterprise; Obtained over 50 certificates, including invention and utility model patents.

Website: www.yanke181206.com

Cylindrical cell introduction

Cylindrical cell is a sealing form of battery, and the earliest cylindrical lithium-ion battery cell was invented by Japanese company SONY in 1992 as the 18650 lithium-ion battery cell. It is currently widely used in industries such as power battery cell.





Vacuum Mixer YK-JBJ-5L



Product Introduction

This product is an efficient equipment integrating vacuum mixing and dispersion, which is suitable for the positive and negative electrode slurry mixing process in the battery experiment process. Can be used in various solvents and powder mixing process.

Product Feature

- ◆ The agitator blade has a double blade spiral 90 degree structure, equipped with a high-speed dispersion plate and a scraping wall, ensuring no dead corners during mixing.
- ◆ The temperature control device is a multi-point temperature measurement at the bottom, accurately measuring the actual temperature of the material.
- ◆ The tank adopts double jacket structure, can pass cooling water, suitable for various process requirements.
- ◆ The slurry barrel is designed with electric lifting and equipped with spotlights for easy operation.

Tank volume	Maximum effective volume 5L, designed volume 7L
Vacuum degree	-0.098 MPA
Stirring speed	0~80rpm
Dispersion speed	0~6000rpm
Applicable viscosity	0~12000CPS
Power supply	AC 380V / 50 Hz, power approximately 4KW
Weight	Approximately 450kg
Size	Approximately L(1.3m) x W(0.9m) x H(1.7m)

Transfer Coating Machine YK-TBJ200-1m



Product Introduction

Applied to the positive and negative electrode coating process of lithium batteries, adopting a high-precision vertical plate structure and stable operation. The central controller with high-speed computing function can be used for continuous and intermittent coating, making it convenient for surface coating processes on various substrates

Product Feature

- ◆ Substrate tension control, stable belt running, equipped with correction device.
- ◆ The scraper adopts a high-precision displacement sensor combined with a servo motor for automatic adjustment.
- ◆ The design of circulating air in the oven saves losses, and the independent air doors of the blower and exhaust fan are adjusted
- ◆ PLC control, touch screen operation, convenient and easy to use.

Coating method	Continuous coating, intermittent coating
Operating substrate range	Aluminum foil 10um~25um copper foil 6um~15um
Effective coating width	The coating width is 200mm
Single-side coating thickness range	The thickness can be applied to 1um~30um
Coating precision	Single-side coating thickness accuracy of 1-2 um
Running speed	The coating speed is 0.5m~1m / min
Baking temperature range	Room temperature ~80℃, temperature deviation $\pm 3^{\circ}\text{C}$
Correction accuracy of winding and unwinding	$\leq \pm 0.5\text{mm}$
Power supply	AC 380V / 50Hz, power approximately 13KW
Weight	Approximately 900 kg
Size	Approximately L(2.5m) x W(1.4m) x H(1.6m)

Electrode Roller Pressing Machine YK-GYJ-210x330

Product Feature

- ◆ The constant pressure pump station adopts an automatic gas-liquid boosting workstation imported from the United States, an Italian solenoid valve, and a Swedish pressure sensor.
- ◆ The electrode roller is made of high alloy forged steel material, with dual medium frequency induction quenching and electrode slag remelting process treatment.
- ◆ The two rollers are horizontally arranged up and down, and the overall memorial archway type

Effective size of rolling surface	Φ210mmx330mm, The effective roller pressure width is 150~320mm
Linear pressure between two rollers	Maximum 35T
Roller hardness	HRC 65, hardness uniformity HS ± 2
Roller material	9Cr3mo
Roller surface roughness	Ra≤0.2
Roll straightness	≤±0.0015mm
Installation radial runoff	≤±0.0025mm
Equipment operation speed	0~4m/min
Power supply	AC 220V / 50Hz, power approximately 7KW
Weight	Approximately 1,000 kg
Size	Approximately L(1.5m) x W(1.5m) x H(1.3m)

Product Introduction

Suitable for thinning and increasing density of lithium battery electrodes, in order to achieve the designed/predetermined volumetric energy density and battery performance of lithium batteries produced by rolled electrodes.

Electrode Cutting Machine YK-CPJ-400

Product Feature

- ◆ Automatic tension adjustment for unwinding.
- ◆ Automatic feeding with color code sensing gap cutting function.
- ◆ Manual, automatic operation function, fault alarm function
- ◆ Using a programmable controller PLC for automatic control.

Cutting width	≤400mm
Rolling material diameter	< Φ350mm
Parallelism of upper and lower feeding rollers	≤±0.10mm
Feeding speed	≥15m/min
Feeding accuracy	±0.2mm/100mm
Burr depth	≤±0.15 μ m
Unwinding method	Active tension unwinding of inflatable shaft, magnetic powder tension
Power supply	AC 220V/50Hz, power approximately 2KW
Weight	Approximately 400kg
Size	Approximately L(1m) x W(1.1m) x H(1.5m)

Product Introduction

Applied to segmented gaps and fixed length cutting of lithium battery electrodes. The cutting length, quantity, and speed can be set arbitrarily, and it has an automatic unwinding function. The tension controller automatically feed and stops the material.

Manual Slitting Machine YK-SFQ-400



Product Introduction

Suitable for slitting of the positive and negative electrode of lithium batteries after coated.

Product Feature

- ◆ The structure of the upper and lower round cutter, and the cutting width can be adjusted by replacing the spacer sleeve.
- ◆ Open end cutter shaft fixation, good equipment integrity, and convenient operation.
- ◆ The thickness range of the slitting material is wide.
- ◆ High precision in cutting width, with no burrs, waves, or indentations on the finished product.

Operating substrate width	400mm
Equipment mechanical speed	1~20m/min
Slitting method	Using upper and lower circular knives for longitudinal rolling cutting
Blade material	alloy
Cutting width of waste edges	≤3mm
Adjustment of cutting width	15~200mm
Cutting width accuracy	±0.2mm
Power supply	AC 380V/50Hz, power approximately 1KW
Weight	Approximately 300kg
Size	Approximately L (0.7m) x W (0.7m) x H (0.9m)

Ultrasonic Welding Machine YK-HJ-1000



Product Introduction

Suitable for welding positive and negative electrode foils and tabs of lithium batteries. Equipped with an adjustable welding platform.

Product Feature

- ◆ Adopting advanced constant current and constant voltage circuit technology, the ultrasonic amplitude is continuously adjustable.
- ◆ The head mechanical structure adopts a German X guide rail structure, with extremely high precision
- ◆ Optional time welding mode and energy welding mode.
- ◆ Equipped with a voltage protection system, it does not affect the output power and operating frequency of the machine during automatic voltage regulation.

Positive/negative electrode material	Aluminum foil, copper foil
Positive / negative electrode thickness	0.006~0.020mm
Positive / negative electrode ear material	Aluminum tabs, nickel tabs, copper nickel-plated tabs
Positive / negative electrode tabs thickness	0.1-0.3mm
Maximum number of laminated layers	10-30 layer
Supporting power	4200W + (peak value)
Supersonic frequency	20KHz
Welding pulling	≥300N
Power supply	AC 220V / 50Hz, power approximately 4.2KW
Size	Head: approximately L(0.5m) x W(0.4m) x H(0.5m) Control box: approximately L(0.5m) x W(0.5m) x H(0.2m)

Automatic Turntable Adhesive Paper Cutting Machine YK-ZP-80



Product Feature

- ◆ Automatic belt feeding and cutting.
- ◆ The unique tape supply system places the tape on the turntable, allowing multiple people to use it simultaneously.
- ◆ The cutting length of adhesive tape can be adjusted freely.
- ◆ The cutting frequency of tape can be adjusted from 1 to 28 times and displayed.
- ◆ The gap between the adhesive paper on the turntable can be adjusted.

Product Introduction

Used to automatically cut adhesive paper according to its length.

Applicable adhesive tape width	4-60mm (thickness must be greater than 55 microns)
Cutting length	15-80mm adjustable (thickness must be greater than 55 microns)
Productivity	46PCS/min
Power supply	AC 220V/50Hz, power approximately 0.2KW
Weight	Approximately 9kg
Size	Approximately L (0.4m) x W (0.3m) x H (0.3m)

Semi-Automatic Winding Machine YK-BZR-100



Product Feature

- ◆ Adopting a single needle structure, the diameter of the needle can be changed.
- ◆ Manual introduction of tabs, automatic winding, automatic gluing final tape, and automatic discharging
- ◆ The linear speed of the diaphragm and electrode feeding is relatively constant, achieving the goal of constant tension during the winding process and ensuring that the battery cells are wound neatly and uniformly.
- ◆ Equipped with a electrode powder dust removal device.

Product Introduction

Used for the winding process of lithium-ion cylindrical cells.

Winding method	Cylindrical winding
Needle size	Ø3.5mm
Cell size	Ø14~32mm, length 25~70mm
Winding accuracy	The neatness is better than 0.5mm
Power supply	AC 220V/50Hz, power approximately 2KW
Weight	Approximately 550kg
Size	L (1.7m) x W (1.3m) x H (1.5m)

Bottom Welding Machine YK-DHJ-25



Product Feature

- ◆ Using precise numerical control, it can pre store 10 programs and can be easily modified and called.
- ◆ The use of dual pulses can ensure firm welding and beautiful welding points.
- ◆ Adapted to long-stroke welding, it can achieve welding of built-in negative electrodes in batteries and other forms of long-stroke welding.
- ◆ Automatic monitoring, tracking and compensation of power grid voltage.
- ◆ High power, simple operation, and reliable welding.

Product Introduction

Used for spot welding of battery metal materials with built-in negative tabs, and can also be applied to welding processes of nickel hydrogen, nickel cadmium, and various ion batteries.

Applicable scope	Cylindrical cell 18650, 21700
Distance from electrode to front of welding machine	78-110mm adjustable
Maximum stroke	85mm
Electrode size	Ø8x85
Power supply	AC 220V/50Hz, power approximately 1KW
Weight	Approximately 50kg
Size	Approximately L (0.4m) x W (0.5m) x H (0.5m)

Semi-Automatic Cylindrical Grooving Machine YK-GCJ-RZ



Product Feature

- ◆ Can be applied to cylindrical battery shell grooves made of steel and aluminum shell materials.
- ◆ Single station grooving, manual loading and unloading.
- ◆ Optional molds can achieve cylindrical battery rolling grooves with different diameters, making mold replacement and debugging convenient.
- ◆ Adjustable groove depth with axial compensation function for battery casing.

Product Introduction

Used for uniform automatic grooving of cylindrical cell steel shells.

Applicable scope	Cylindrical cell 18650, 21700
Rolling grooving time of a single battery cell	Approximately 3 seconds (adjustable)
Grooving depth	1.2~2.0mm (adjustable)
Grooving width	1.1-1.5mm (thickness of hob cutter)
Processing accuracy	±0.1mm
Hob life	> 1 million times
Power supply	AC 220V/50Hz, power approximately 0.2KW
Weight	Approximately 80kg
Size	Approximately L(0.83m)x W(0.3m) x H (0.5m)

Three-Layer Vacuum Oven YK-KX-300



Product Feature

- ◆ Three layers of independent temperature control design, each working chamber can realize different logistics baking.
- ◆ Electric heating air cycle for the heating of the working chamber, with good temperature uniformity and little volatility.
- ◆ The inner layer material is 201 stainless steel, the outer layer is cold rolled plate powder, high performance heat insulation sandwich design.
- ◆ The overall structure of the frame and chamber, good sealing, can ensure the long vacuum does not drop pressure.

Product Introduction

Used for baking lithium-ion battery electrodes, cells, and batteries to be filled with liquid. Each workroom works independently, and the heating, vacuuming, and inflation work in an automatic cycle mode. The time of each working section is set through the touch screen.

Heating principle	Three separate heating layers
Temperature	Room temperature to 120℃
Vacuum degree	When the pumping pressure is between -0.1 and -0.09Mpa, the digital display maintains a pressure of $\geq 95\%$ for 24 hours
Temperature homogeneity	50mm away from the wall at each point in the inner cavity: $\leq \pm 4^\circ\text{C}$ under vacuum, $\leq \pm 3^\circ\text{C}$ under normal pressure
Single-layer box size	About 350mm x wide 850mm x 800mm deep
Power supply	AC 380V / 50Hz, power approximately 7.5KW
Weight	Approximately 800kg
Size	Approximately L(1.2m) x W(1.1m) x H (2m)

Four Work Station Glove Box YK-STX-4



Product Feature

- ◆ Closed circulation: The inert gas inside the glove box is continuously dehydrated and deoxygenated through a closed circulation fan and purifier.
- ◆ Automatic control regeneration: Dehydration and deoxygenation materials can be regenerated, and the regeneration process is controlled by a program
- ◆ Automatic cleaning: The atmosphere inside the glove box is replaced through an automatically controlled cleaning valve.

Product Introduction

Provides equipment for anhydrous and anaerobic environments. The equipment mainly consists of a display system, transition chamber, vacuum system, control system, box, circulating purification and regeneration system, etc. It can also work integrately with gas purification system, solvent over consumption system, and water oxygen display system. The box is made of high-quality steel plate or mirror stainless steel by argon arc welding, with double-layer tempered glass. Beautiful and novel, with stable performance. The box is made of high quality steel plate or mirror stainless steel argon arc welding, double layer tempered glass. Beautiful and novel, with stable performance.

Large transition cabin	304 Stainless steel, 360mm in diameter, 600mm in length
Small transition cabin	304 Stainless steel, 150mm in diameter, 300mm in length
Control system	The working pressure of the control box and transition cabin can be freely set within $\pm 5\text{mbar}$, and the system automatically protects when it exceeds $\pm 16\text{mbar}$
Display system	Adopting Siemens PLC touch screen smart700
Vacuum system	Imported vacuum pump, can be started manually or by PLC, with a flow rate of $12\text{m}^3/\text{h}$. Vacuum pump limit vacuum degree $\leq 2 \times 10^{-3} \text{ mbar}$
Oxygen analyzer	Measuring range: $0 \sim 1,000 \text{ ppm}$
Water analyzer	Measuring range: $0 \sim 500 \text{ ppm}$
Power supply	AC 220V / 50Hz, power approximately 1.5KW
Weight	About 400kg
Size	Approximately L(3.1m) x W(1.2m) x H(1.95m)

Electric Liquid Injection Pump YK-ZYB-10g



Product Feature

- ◆ Rotate the ceramic core clockwise for measurement.
- ◆ Non dynamic sealing formed by ceramic itself.
- ◆ Using a linear micrometer adjustment scheme, the adjustment method calculates the stroke based on the density of electrolyte 1 to 1.27.
- ◆ The parameters such as injection speed, injection volume, and operating speed can be freely set.

Product Introduction

Used for injecting electrolyte into cylindrical batteries cell of different sizes.

Single stroke	0.2~10g
Liquid injection accuracy	The error of a single stroke is about 0.008g
Liquid injection range	1~999 (circle)
Pump core material	Zirconia ceramic materials
Power supply	AC 220V / 50Hz, power approximately 0.2KW
Weight	About 3kg
Size	Approximately L(0.3m) x W(0.25m) x H(0.2m)

Vacuum Standing Box YK-JZX-300



Product Feature

- ◆ The key sealing part is made of PTFE material without the need for sealing rings, which has the characteristics of good sealing and strong corrosion resistance.
- ◆ There is an observation window available to observe changes inside the cavity during operation.
- ◆ The vacuum is maintained stable, and the decrease in vacuum degree is not significant when maintained.
- ◆ Equipped with multiple vacuum circulation functions, it helps the electrolyte to fuse more fully.

Product Introduction

Suitable for vacuuming the injected battery, allowing the gas inside the battery to be extracted, achieving the function of fast and uniform penetration of electrolyte into the battery cell.

Internal cavity size	Length 300mm x width 200mm x 250mm height
Standing time	0~99.99s Adjustable
Inflation time	0~99.99s Adjustable
Vacuum degree	Up to the maximum of-90 KPa
Power supply	AC220V / 50Hz, power approximately 0.1KW
Weight	Approximately 60kg
Size	Static box: approximately L(0.6m) x W(0.4m) x H(0.6m) Control box: approximately L(0.5m) x W(0.4m) x H(0.3m)

Ultrasonic Cap Welding Machine YK-DHJ-40K



Product Feature

- ◆ Adopting advanced constant current and constant voltage circuit technology, the ultrasonic amplitude is continuously adjustable.
- ◆ Adopting an intelligent ICS chassis control system with secondary ultrasound function; System power on self-test, intelligent segmentation of vibration pairs, and automatic tracking.
- ◆ The mechanical structure of the machine head adopts a German X guide rail structure, with extremely high precision.
- ◆ Equipped with multiple protection functions

Product Introduction

Used for welding cylindrical cell caps.

Tabs welding method	Transverse
Welding surface life	≥ 100000 times
Welding head material	Imported powder alloy
Stand-off height	0~50mm
The transducer can withstand power	1000W
Ultrasonic frequency	40KHz
Power supply	AC 220V/50Hz, power approximately 1KW
Weight	Approximately 50kg
Generator size	Approximately L (0.55m) x W (0.3m) x H (0.55m)
Head size	Approximately L (0.5m) x W (0.2m) x H (0.4m)

Pre- Sealing Machine YK-FKJ-RZ



Product Feature

- ◆ The cylindrical battery is sealed using a pneumatic booster driven mold.
- ◆ Compact and lightweight, it can be easily used in a water oxygen controlled glove box through a transition chamber
- ◆ Different molds can be selected to be sealed cylindrical batteries of different specifications, achieving multiple uses for one machine.

Product Introduction

Used for pre sealing cylindrical cell with caps closed after liquid injection.

Applicable scope	Cylindrical cell with a diameter of \varnothing 10-26mm * height of 15-70mm
Sealing pressure	Pressure adjustable, maximum pressure 3T
Power supply	AC 220V/50Hz, power approximately 0.5KW
Weight	Approximately 80kg
Size	Head: Approximately L (0.4m) x W (0.4m) x H (0.8m) Electric control box: approximately L (0.4m) x W (0.4m) x H (0.2m)

Battery Cell Tester YK-CS-5V6A



Product Introduction

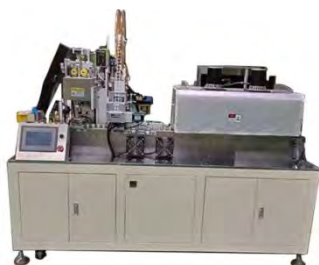
Used for performance testing of batteries that have undergone the formation process to obtain their capacity, internal resistance, and other key parameters. Classifying and grading batteries..

Product Feature

- ◆ Each module provides 8 independent programmable channels, with built-in power supply and complete control circuit.
- ◆ Each module can work independently. Each channel can be set up in a different working mode. The channel is completely independent.
- ◆ Accurate programming features, the system software can set the working steps and parameters, and the flexibility of each working mode

Number of channels	8 channels per unit, 80 channels overall unit
Voltage range control	25mV ~5V
Minimum discharge voltage	The two ends of the upper and lower fixtures can be discharged to 1.0V, and the 2m wire length can be discharged to 1.5V (customizable discharge to 0V)
Voltage accuracy	$\pm 0.05\%$ of FS
Current control range	Range 1:0.5 mA ~ 0.1 A; range 2:0.1A ~3A; range 3:3A ~6A
Constant voltage cutoff current	Range 1:0.2 mA; range 2:6 mA; range 3:12 mA
Current accuracy	$\pm 0.05\%$ of FS
Power supply	AC 220V / 50Hz, power approximately 3.5KW
Weight	About 250kg
Size	Approximately L(0.7m) x W(0.6m) x H(1.6m)

Film Enveloping Machine YK-TMJ-18



Product Introduction

Used for automatic PVC enveloping of 18650 cells, installation of positive electrode insulation pad and heat shrink molding.

Product Feature

- ◆ Manual load the cells onto the upper hopper and manually collect the cells
- ◆ The film feeding mechanism adopts a servo system, ensuring stable and reliable feeding.
- ◆ The length of the film enveloping is adjustable.

Applicable scope	Cylindrical cell 18650
Efficiency	Maximum 60ppm
Film cutting accuracy	$\pm 0.1\text{mm}$
Punching insulation sheets accuracy	$\pm 0.1\text{mm}$
Heat shrink temperature	0-300 °C adjustable accuracy $\pm 3\text{ }^{\circ}\text{C}$
Incoming material requirements	PVC film roll size: width 29.8mm \pm 0.2mm Insulation sheet roll size: width 19.9mm-0.1mm
Die size	18650 insulation sheet stamping die size: outer diameter 17.5mm, flat head inner diameter 10.5mm, pointed head inner diameter 7mm
Power supply	AC 220V/50Hz, power approximately 4KW
Weight	Approximately 500kg
Size	Approximately L (2m) x W (0.9m) x H (1.6m)

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