

Company Profile

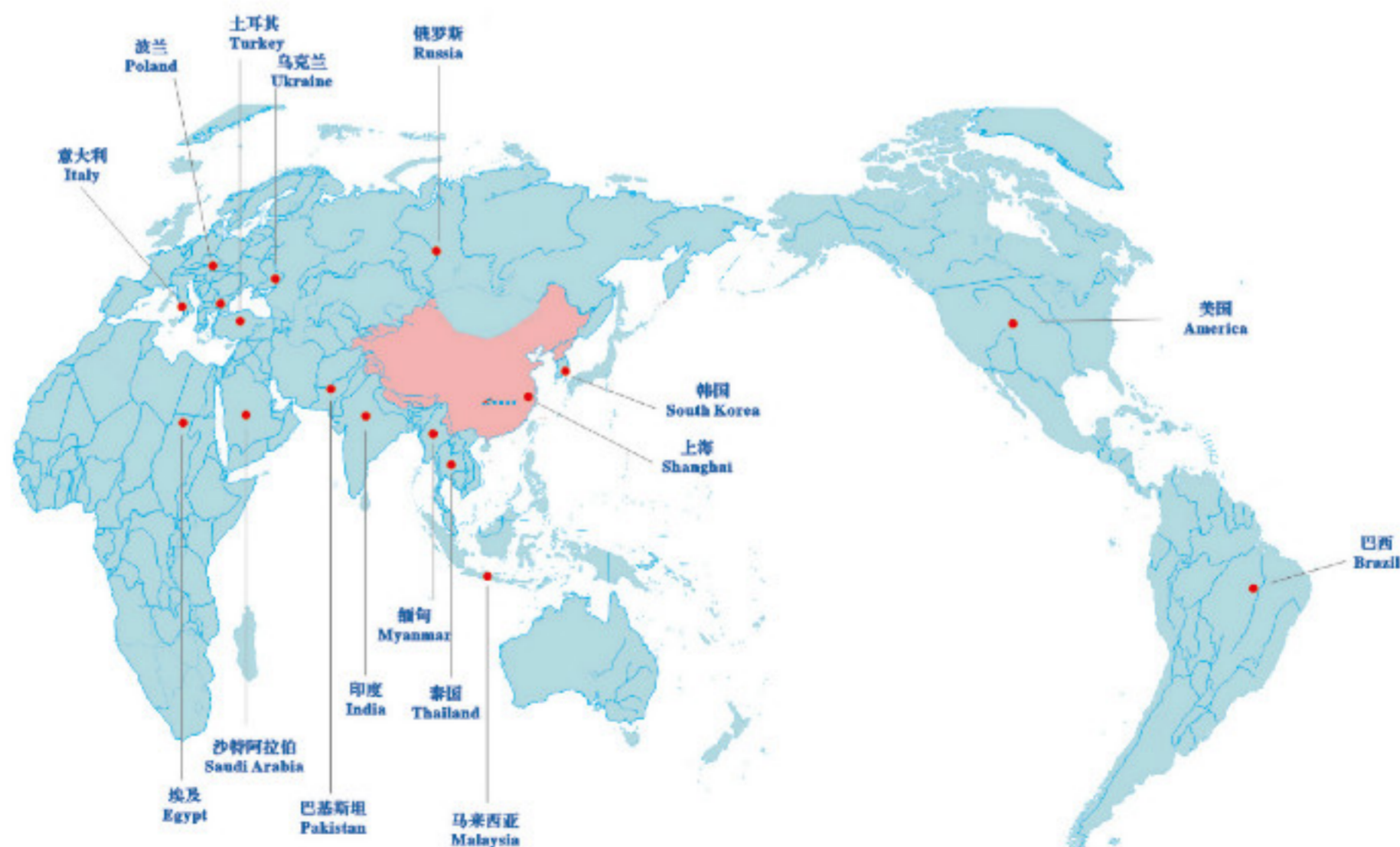


Shanghai Transtar International Inc. is an international commercial company which is subordinate to Zhaoqing Kerun Vacuum Equipment Co., Ltd.

Zhaoqing Kerun Vacuum Equipment Co., Ltd. is a diversified company specialized in the manufacturing of vacuum equipment, glass deep-processing equipment and related hi-tech coating equipment. The company has collected the outstanding personnel of multi-disciplinary talents and owns more than 30 years of experience in designing and manufacturing of vacuum equipments. The company has a variety of large-scale processing equipment and has made extensive technical cooperation with many famous international companies; moreover, it successfully acquired a number of national patents, thus, the manufacturing technology level of Kerun marks in the forefront in China and keeps the same level with that of international standard.

Particularly, Transtar has the advanced international level of high-grade silver-mirror glass coating line and the market share reaches more than 90% in Chinese market. Moreover, we have produced more than 200 lines of silver mirror production lines and aluminum mirror lines and have exported to more than 20 countries, including European countries, USA, Middle East and South Africa etc. and have cooperation with world famous glass manufacturers, such as Saint-Gobain Solar Glass in USA for the application in solar panel, and we received good reputation so far.

We welcome any inquiry from our customers and hope to establish long business relationship based on profits for two sides.



Content

1. High class silver mirror production line	02
2. Large environmental protection aluminum mirror production line	03
3. Magnetron sputtering coating line for tinted glass and reflective glass	04
4. Low-E glass coating equipment	05
5. ZZ series high vacuum aluminum glass coating machines	06
6. Vacuum coating equipment	07
7. ZZB series coating equipment for protection film for automotive lights	08
8. Production line for car rearview mirror	09
9. Automatically loading and unloading table	10
10. High vacuum poly-arc-ion coating equipment	11
11. Glass cleaning equipment	12
12. CS series painting machine	13
13. ZZH series high vacuum winding coating equipment	14
14. ITO winding type high vacuum magnetron coating machine	15
15. Robot	16
16. Material	17

High-class Silver Mirror Production line

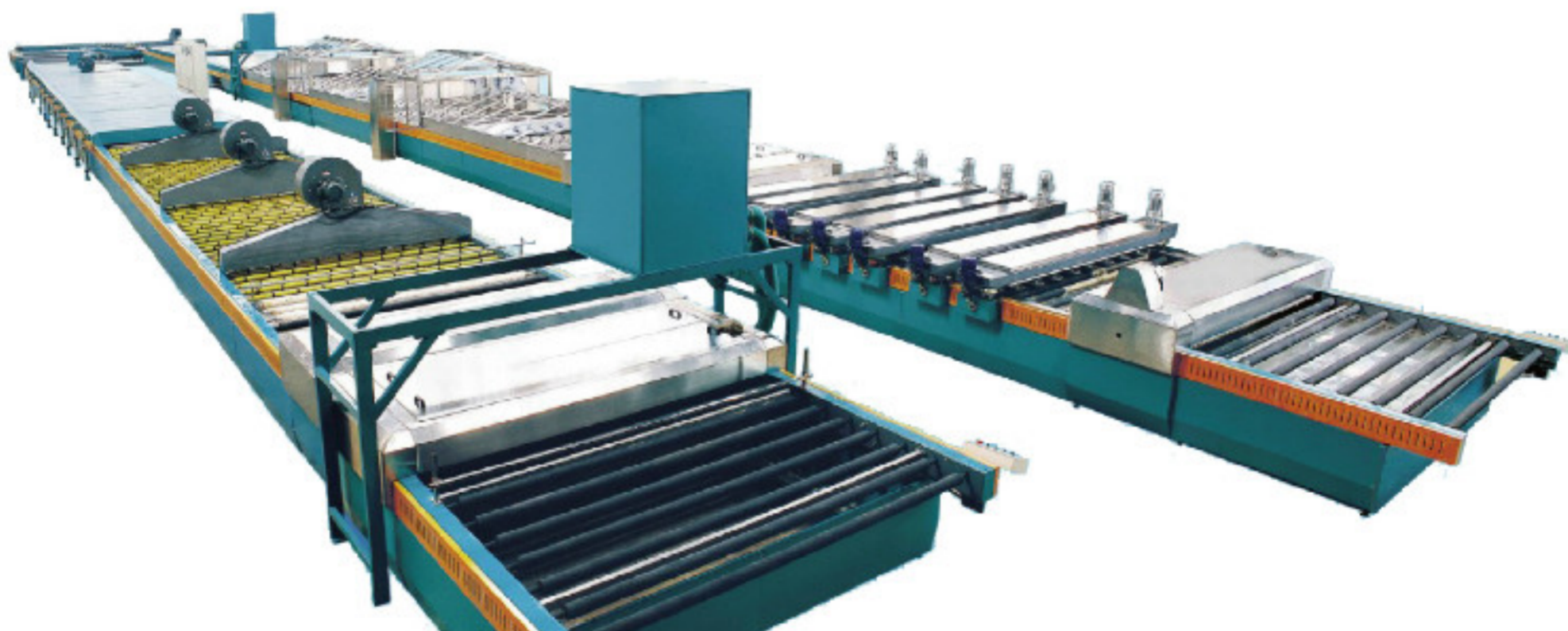
High-class silver mirror production line adopts the method of chemical spraying on glass surface with silver plated film, copper film/purification film, then spraying two layers of paint to realize silver mirror or copper free silver mirror. The procedure includes glass automatic loading, cleaning, silver coating, copper coating / purification film, painting , baking, 2nd painting, 2nd baking again, cooling, cleaning, powder spraying, inspection and final automatic packing , the whole process could be finished at one time.

We have produced more than 120 sets of silver mirror production lines and have exported to more than 20 countries, including European countries and USA, and has got CE certificate.

Main features:

- Biggest coating size of glass : 3210 x 6000 mm
- Production speed: 1 - 6 Meter / Min.
- Advantages: lower production cost, high production efficiency, automatic and easy operation.
- Advanced technology, reasonable allocation process, suitable for different working environment.

Process: Washing – Silvering – Copper Coating – 1st Painting – 1st Baking – 2nd Painting – 2nd Baking – Final Washing – Inspection



Large Environmental Protection Aluminum Mirror Production Line

In order to meet market demands, our company has successfully developed and produced environmental protection production line. The principle is to adopt magnetron sputtering technology and coat on the surface of large float glass with high quality aluminum film and has the features of no aluminum spot, no trachomatis , high output, save labor etc.

Main features:

- Maximum dimension of coating glass: 3600×2440 (mm) or 2 pieces of 2440×1830 (mm)
- Equipped with double-end structure, multi-chamber and multi-sputtering target configuration. All the processing including glass cleaning , coating , flow painting, drying and air-cooling can be finished at one time with high efficiency and low labor cost
- The production adopts fully automatic control to ensure industrial safety and stable quality

Key Technical Data

Type	JP 1830×2440	JP 3660×2440
Maximum size of coated glass(mm)	2440×1830	3660×2440
Production cycle	70s	70s
Ultimate vacuum (Pa)	2×10^{-3}	2×10^{-3}
Number of targets (pcs)	6-8	6-8
Sputtering power(kw)	100/pc	100/pc
Total power(KW)	680-800	800-1000
Control type	PLC	PLC



Magnetron Sputtering Coating Line for Tinted Glass and Reflective Glass

The coating line for tinted glass adopts magnetron sputtering principle to coat transparent flat glass with 24K golden mirror ,18K golden mirror, red golden mirror, purple mirror, purple red mirror, violet mirror, blue mirror ,grey mirror , bronze mirror, pink mirror, auspicious yellow etc.

Main features:

- Max. glass coating size: 2440X3300mm
- Multi-vacuum chambers and splashing chamber design are available
- The horizontal magnetic control line has single-end form and double end form, and the process of glass double cleaning, coating, detection, painting , drying, cooling can be finished at one time.
- The production line use PLC for whole process control and is equipped with color screen to show the date of the coating process.

Main technical parameter (special specification can be customized)

Type	JP-2000	JP-2500	JP-3300
Max. coating size (mm)	1500×2000	2440×1830	2440×3300
Rhythm(second)	3	3	3
Ultimate pressure(Pa)	2×10^{-3}	2×10^{-3}	2×10^{-3}
Number of Target	3	3	3
Sputtering power(kw)	80x3	80x3	100x3
Total installed power(kw)	300	380	420
Number of vacuum chamber	9	9	9
Number of sputtering chamber	3	3	3
Control method	PLC	PLC	PLC



Low-E Glass Coating Equipment

Low-E glass (Low-E) is prepared by plating a nano-scale metal silver and oxide composite layer with the method of vacuum magnetron sputtering on the high-quality float glass which can make the radiance of the glass reducing from 0.1 to 0.8 or even lower and reduce 90% of the radiation heat loss. Comparing to the ordinary coated glass, it has higher visible light transmission and lower outdoor reflection. The glass has the lowest U-value when make it as insulating glass. It makes building warm in winter and cool in summer by using such kind of Low-E glass.

Main Technical Data

Type	Maximum size of coated glass(mm)	Min.cycle time (min/pc)	Annual output m ² /Year	Target number(pc)	Remark
JP - 2000	1830×2440	120	1 million	11	Single silver
JP - 2500	2440×3660	120	1.6 million	15	Single silver
JP - 2000S	1830×2440	120	1 million	22	Double silver
JP - 2500S	2440×3660	120	2 million	22	Double silver



ZZ series High Vacuum Aluminum Glass Coating Machines

ZZ series high vacuum aluminum glass coating equipment are vapor coating in the vacuum with heating resistance, the metal wire is fused into vapor ,then it deposits on the glass basis and produce strong reflection film.The machine has single chamber type and double chamber type. We could design and manufacture according to customers' requirements of different model of vacuum coating equipment, vacuum components etc.



Main Technical Data

Type	Chamber dimension LxWxH	Coating size LxW(mm)xpc	Ultimate pressure(Pa)	Drawing time(min)	Total installed power(KW)	Evaporation power(KW)	Vacuum set
ZZ-1300	2000x1000x1480	914x1300x12	$\leq 3 \times 10^{-3}$	≤ 7	70	30	KT-800;ZJ-1200; 2x-15;H-150
ZZ-2000	2100x900x1680	2000x1500x4	$\leq 3 \times 10^{-3}$	≤ 7	80	45	KT-800;ZJ-600; 2x-15;H-150
ZZ-2000C	2100x1150x1680	2000x1500x6	$\leq 3 \times 10^{-3}$	≤ 7	90	45	KT-800;ZJ-1200; 2x-30;H-150
ZZ-2200	2240x900x1800	2140x1650x4	$\leq 3 \times 10^{-3}$	≤ 7	90	45	KT-800;ZJ-1200; 2x-15;H-150
ZZ-2200C	2240x1150x1800	2140x1650x6	$\leq 3 \times 10^{-3}$	≤ 7	90	45	KT-800;ZJ-1200; 2x-30;H-150
ZZ-2500	2500x900x1800	2440x1650x4	$\leq 3 \times 10^{-3}$	≤ 7	90	45	KT-800;ZJ-1200; 2x-15;H-150
ZZ-2500C	2500x1150x1800	2440x1650x6	$\leq 3 \times 10^{-3}$	≤ 7	90	45	KT-800;ZJ-1200; 2x-30;H-150
ZZ-3000	3100x550x2180	3000x2000x2	$\leq 3 \times 10^{-3}$	≤ 7	90	45	KT-800;ZJ-1200; 2x-30;H-150
ZZ-2800	2530x1400x1820	2250x1600x8	$\leq 3 \times 10^{-3}$	≤ 7	168	100	KT-800x2;ZJ-1200; 2x-30;H-150x2

Vacuum Coating Equipment

Ornament multi-function plastic coating equipments are evaporation based systems. The metal particles can be steam-plated on the surface of decorative products for better appearance.

The equipments have the advantages of proper structure, coating evenly, efficient and drawing fast, easy operation etc. They are the first choice of decorating business such as toys, plastic and porcelain products.



Main Technical Data

Type	Chamber Dia x H(mm)	Max. coating size Dia x H (mm) x axle	Ultimate pressure(Pa)	Drawing time (no load) min	Total installed power(KW)	Evaporation power(KW)	Vacuum set
ZII-1200	φ1200x2000	φ330x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	53	20	KT-800;ZJ-600; 2x-15;H-150
ZII-1400	φ1400x2000	φ400x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	65	20	KT-800;ZJ-1200; 2x-15;H-150
ZH-1600	φ1600x2000	φ470x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	75	30	KT-1000;ZJ-1200; 2x-30;H-150
ZH-1700	φ1700x2000	φ500x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	77	30	KT-1000;ZJ-1200; 2x-30;H-150
ZII-1800	φ1800x2000	φ530x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	96.5	30	KT-800x2;ZJ-1200; 2x-30;H-150
ZII-2000	φ2000x2000	φ590x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	96.5	30	KT-800x2;ZJ-1200; ;H-150x2
ZL-1000	φ1000x2000	φ310x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	53	30	KT-630;ZJ-600; 2x-15;H-150
ZL-1500	φ1500x2000	φ480x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	65	20	KT-800;ZJ-1200; 2x-30;H-150
ZL-1600	φ1600x2000	φ520x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	75	30	KT-1000;ZJ-1200; 2x-30;H-150
ZL-1800	φ1800x2000	φ580x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	96.5	30	KT-800x2;ZJ-1200; 2x-300;H-150x2
ZL-2000	φ2000x2000	φ600x1700x6	$\leq 3 \times 10^{-3}$	≤ 7	96.5	30	KT-800x2;ZJ-1200; 2x-300;H-150x2

ZZB Series Coating Equipment for Protection Film for Automotive Lights



According to automobile market demands, we develop the vacuum coating equipment especially for the protection film of automotive lights. It has been applied in many automotive lights factories and has good reputation. The PVD and CVD technology is combined on one device and realize one-time film coating and coating process, no need to coat base and top coat for plastic workpieces. The equipment is easy to operate, full automatic control which greatly increase the production efficiency. The film is uniform and corrosion resistance.

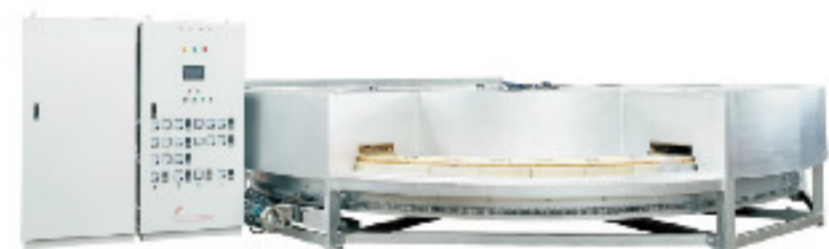


Production Line for Car Rearview Mirror

The production line consists of glass cleaning machine, heat blending furnace, cooling conveyor system, coating machine, glass paint coating machine and drying oven. It is the special equipment for producing car rearview mirror, motorcycle rearview mirror, cosmetic mirror and magnifying glass etc.

Main features:

- The heat blending molding equipped with vacuum negative pressure molding system can achieve molding of the small curvature radius workpiece
- The reflection mirror has no reflection lens distortion, no defects such as hemp dot
- It has high production efficiency, simple technological operation and convenient maintenance
- Heat blending furnace and vacuum coating machine adopts human-computer interface to control the whole production technological process.



Automatically Loading and Unloading Table



Main features:

- 1) All drive designed as mechanical structure, good appearance , easy maintenance and free to climate conditions;
- 2) The main frame is made of rectangle steel tube and assembly by hex socket head cap screws; synchronizing wheel with chrome plate shaft or synchronizing belt with aluminum profile;
- 3) The electric system use PLC and inverter control ,with vacuum system;
- 4) Power: 380/415/445VAC; frequency: 50/60Hz;
- 5) With excellent performance and safety function and CE mark certificate.

Type	M/C	Max. glass size	Power (kw)	Cycle time
LT - 3624	Loading table	3660x2440	8	45s
ULT - 3624	Unloading table	3660x2440	8	45s
LT - 2418	Loading table	2440x1830	5	35s
ULT - 2418	Unloading table	2440x1830	5	35s

High Vacuum Poly-arc-ion Coating Equipment

DZ series High Vacuum Poly-arc Ion Coating Equipment adopts plasma vacuum coating principle, integrating arc plating technology and ion coating technology to realize multi-function coating purposes. They are widely used in coating one or more layers of metal coating of watch components and metal materials such as TIN coating, golden coating, gun black coating and other high quality decorative coating.

Main features:

- Coating room is made out of water-cooling stainless steel and chamber front door
- The specification of coating room meets the general requirements of coating needs
- Poly-arc is advanced and reliable
- Optional with cylinder or flat magnetron sputter
- Applied lamp filament heater and ion strengthen accessory
- Automatic or manual control of PLC is available



Item/Model	DZ-600	DZ-700	DZ-800	DZ-1000	DZ-1200
Chamber size	Φ600x950	Φ700x900	Φ800x1000	Φ1000x1500	Φ1200x1500
	Φ110x700x8pcs	Φ145x700x8pcs	Φ110x700x8pcs	Φ240x1100x6pcs	Φ280x1100x6pcs
Rotary speed of work frame(turn/min)	1-3				
Oven temperature ℃	Up to 350 ℃,adjustable				
Heating power	4	6	12	20	24
Number of ion(pcs)	D100/4pcs	D100/4pcs	D100/6pcs	D100/8pcs	D100/12pcs
Magnetron sputter	750/5KW	750/5KW	100/10KW	115/40KW	115/40KW
Ultimate pressure(Pa)	1.5x10 ⁻³	1.5x10 ⁻³	1.5x10 ⁻³	1.5x10 ⁻³	1.5x10 ⁻³
Drawing time(no load, from atm to 5x10 ⁻³ Pa)min	≤10	≤10	≤15	≤15	≤18
Applied vacuum	KT-400 2X-70 2X-4	KT-500 2X-70 2X-8	KT-600 2X-70 2X-8	KT-800 ZJ-70 2X-70 2X-15	KT-800 ZJ-600 2X-70 2X-15
Nominal total power(KW)	28	33	51	118	130

Glass Cleaning Equipment

Glass cleaning equipment is the cleaning and drying process of glass before glass been vacuum coated, tempered, bended and other deep glass processing procedure. The process of cleaning consists of brush washing, rinsing, pure water rinsing, hot and cold drying and control panel etc. In order to meet customers' needs, the large and medium size equipment are equipped with manual (air driven) glass turner and light check system .It is a combination of advanced technology which works simply ,effectively but low cost .Special cleaning requirement can be designed and manufactured according to different specifications.

Main Technical Data:

Type	Maximum width of glass(mm)	Maximum length of glass(mm)	Thickness of glass(mm)	Line speed(M/min)	Heating power (kw)	Total power (KW)	Floor size W x L
BQ-2500A	≤2500	≥1500	8-9	0-2.5	12	28	4.5x12
BQ-2500	≤2500	≥1000	5-10	0-2.5	12	28	4.5x10
BQ-2200	≤2200	≥1000	5-10	0-2.5	12	28	4.5x10
BQ-2000	≤1830	≥1000	3-8	0-2.5	9	21	4x10
BQ-1700	≤1650	≥1000	3-6	0-2.5	9	21	3.6x10
BQ-1500	≤1500	≥1000	3-6	0-2.5	9	21	3.5x10
BQ-1000	≤1000	≥600	2-6	0-2.5	9	21	3x10
BQ-700	≤700	≥600	2-6	0-2.5	9	21	2.7x10
BQ-500	≤500	≥400	1-3	0-1	6	15	2.5x8
BQ-300	≤350	≥100	1-3	0-1	6	15	2x7



CS series Painting machine

Painting machine is designed according to the viscosity of paint and fluid mechanics principle to create waterfall-like film by mechanical means. The painted object pass under the water-like film with a proper speed and form a paint film which is an advanced replacement of traditional hand sweeps or painting process with modern technology and environmental protection equipment.

This equipment has the advantage of film speed, no pollution, no waste, film layer firm, smooth, bright, etc and is particularly suitable for substrate surface coating layer or multi-layer protection in the surface of lens, organic chips, wood floor, Aluminum-plastic board, artificial granite(marble) etc plate (or small bend). After the flat base been painted, dried, cooled, it can be processed into next procedure which is the perfect combination of the three elements — quality, yield and environmental protection



The company can also design and manufacture other specification of painting machine according to customers' required machine parts, special design etc.

Main technical parameter (special specification can be customized)

Type	CS-500	CS-700	CS-1000	CS-1700	CS-2000	CS-2500
Maximum size of glass(mm)	500×800	700×1500	1000×2000	1650×2000	1830×2500	2500×3300
Thickness of glass(mm)	1-10	1-10	2-10	2-10	2-10	2-10
Running speed(m/min)	1-3	1-5	2-5	2-5	2-5	2-5
Painting length(m)	4	5	6	6	7	9
Oven length(m)	4	4	4	4	4	4
Air cool length(m)	8	8	8	8	8	12
Total installed power (kw)	16	20	25	25	28	30

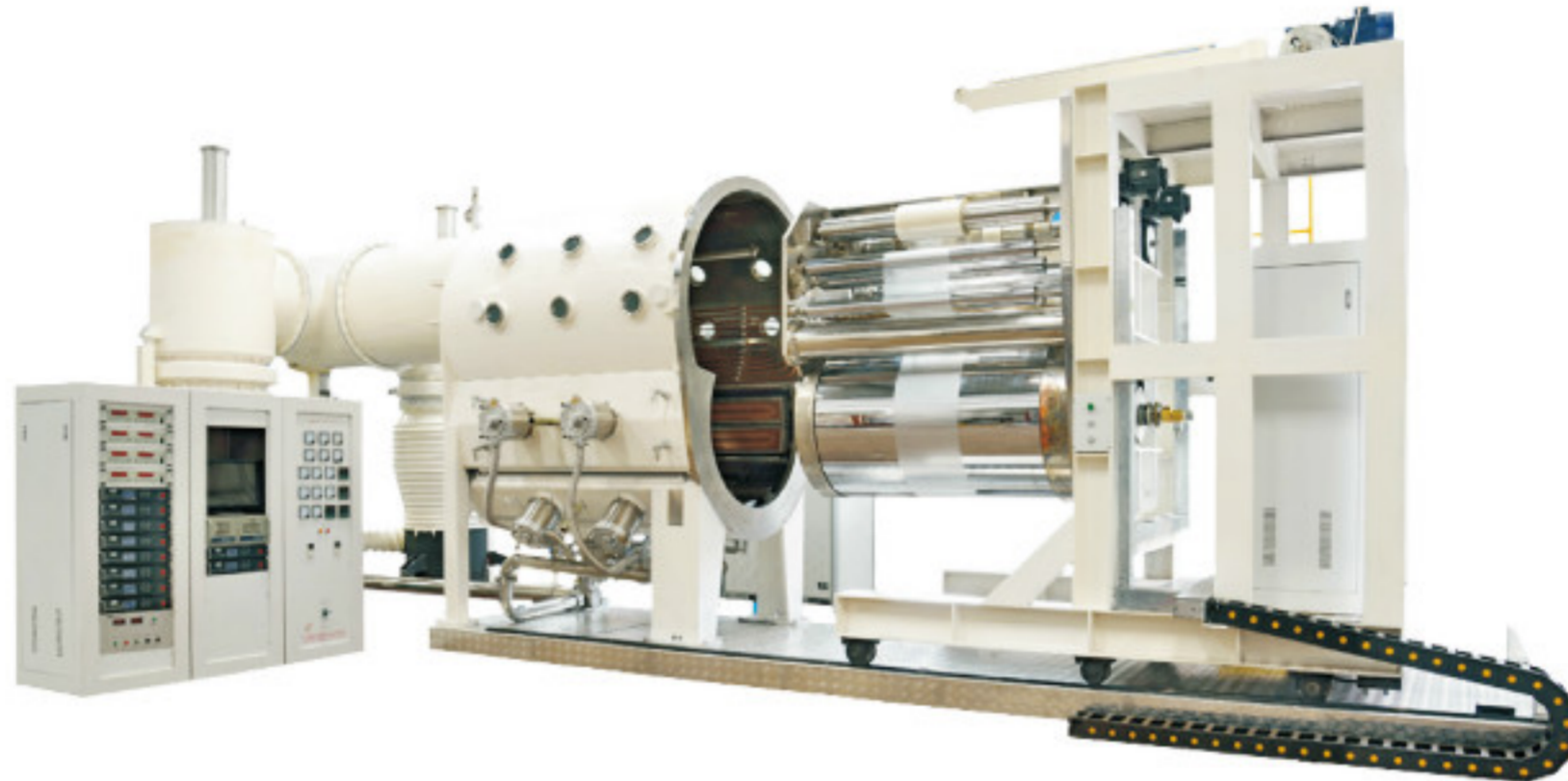
ZZH Series High Vacuum Winding Coating Equipment

ZZH series high vacuum winding coating equipment is the special equipment for evaporated aluminum film on the surface of film coiled material. It applies to production of metal food package material, electrochemical aluminum material, reflective material, insulating material, surface decorative material and electrical material etc.



Item/Model	ZZH-1200	ZZH-1400	ZZH-1600	ZZH-1800	ZZH-2000
Diameter of vacuum chamber (mm)	φ1200	φ1400	φ1600	φ1800	φ2000
Ultimate pressure (clean, no load)	Upper chamber 1.3×10^{-1} Lower chamber 5×10^{-1}				
Working pressure	Upper chamber 5×10^{-1} , Lower chamber 6×10^{-2}				
Air pumping time (from atmosphere to working pressure)	≤ 8 min				
Max coating width (mm)	600	800	1000	1100	2000
Max winding diameter (mm)	φ350	φ450	φ600	φ800	φ800
Coating material	PET (12-60mm), CPP (25-60mm), PVC (20-60mm), BOPP (20-60mm), OPP (25-60mm)				
Diameter of winding roll	φ75mm (3 inch) , φ152mm (6 inch)				
Max winding speed (m/min)	400m/min				
Tension control range (N)	25~500				
Evaporation source qty	7 sets	9 sets	11 sets	12 sets	22 sets
Evaporation power (kw)	10 kw/set				
Evaporation material	φ1.5mm aluminum wire (purity 99.95%)				
Installed power (KVA)	98	120	180	260	350
Max water consumption (ton)	10	12	13	15	20
Compressed air (Mpa)	0.40~0.60Mpa				

ITO Winding Type High Vacuum Magnetron Coating Machine



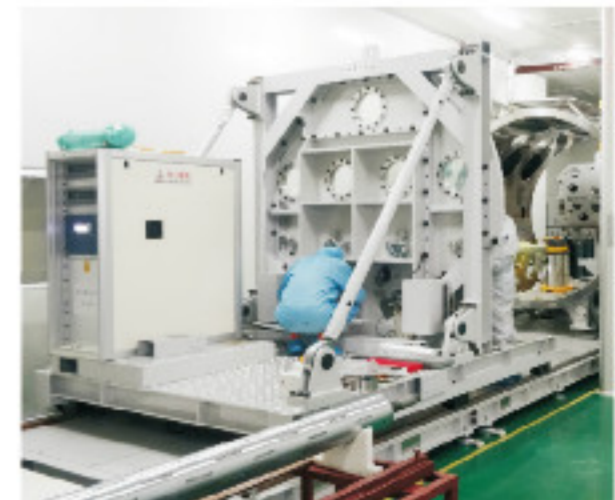
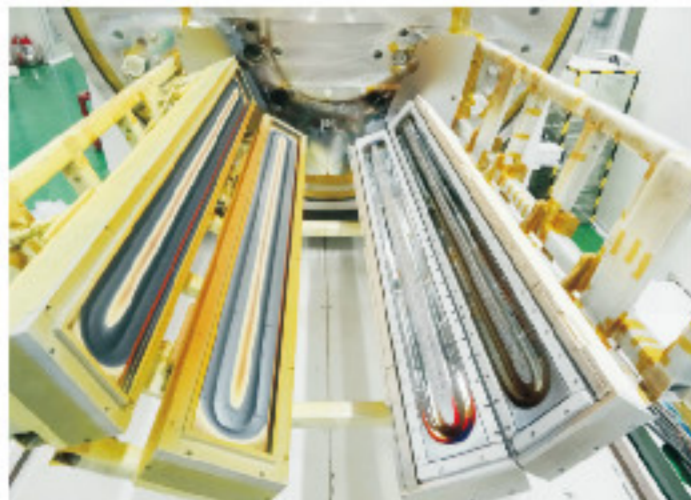
Our winding type vacuum coating machine could reach high vacuum to carry out the high-precision reciprocating winding and conveying of flexible films such as PET, PI. The system's working data will be displayed, operated and controlled through man-machine interactive mode to realize full-auto heating of vacuum system, air drawing, cool pump working and IR heating.

One set of large area cryogenic coils is installed in the machine's vacuum chamber. It uses imported low-temperature cooling system to draw the water vapor in the vacuum chamber.

We could equip MF and DC cathode system according to the process requirement.

The structure of the vacuum chamber is one horizontal semi-cylindrical tank. The whole chamber is made of SS304.

Vacuum air drawing system adopts molecular pump, domestic diffusion pump as the main pump to draw the air to ensure the required vacuum degree of coating.



Robot

Application:

Automotive glass, electronic glass, bathroom glass, home appliance glass, architectural glass and etc.

R-serial Robot



Model	HT-R-10/10L	HT-R-20	HT-R-50	HT-R-80
Number of axle	6			
Max load (kg)	10	20	50	80
Max working radius (mm)	1450/1925	1725	2100	2100
Repeated positioning accuracy (mm)	±0.15	±0.15	±0.20	±0.20
Max stroke	Arm rotation	±180	±180	±180
	Arm back and forth	+145~ -105	+145~ -105	+145~ -105
	Arm up and down	+150~ -163	+150~ -163	+135~ -155
	Wrist rotation	±270	±270	±360
	Wrist bending	±145	±145	±145
	Wrist torsion	±360	±360	±360
Install type	Ground type or hanging type			
Weight (kg)	150	230	550	550

Loading Robot



Model	HT-L-4-100	HT-LZ-4-100	HT-L-5-100	HT-LZ-5-100
Glass size(mm)	200-1000	200-1600	200-1000	200-1600
Glass thickness (mm)	2-6	2-12	2-6	2-12
Drive type	Servo motor	Servo motor	Servo motor	Servo motor
Number of axle	4	5	4	5
Load (kg)	10	50	10	50
Working cycle (seconds)	4-8	8-12	4-8	8-12
Power	220V 50Hz			
Air	0.6Mpa			

Revolve robot



Model	HT-R-3-100	HT-RZ-3-100	HT-R-4-100	HT-RZ-4-100
Glass size(mm)	200-1000	200-1600	200-1000	200-1600
Glass thickness (mm)	2-6	2-12	2-6	2-12
Drive type	Servo motor	Servo motor	Servo motor	Servo motor
Number of axle	3	4	3	4
Composite load (kg)	10	50	10	50
Working cycle (seconds)	4-8	8-12	4-8	8-12
Power	220V 50Hz			
Air	0.6Mpa			

Material

◆ For Vacuum Coating Machine

Tungsten Wire

Size: 0.75x3, 0.80x3 or customized



Aluminum Wire

Purity: 99.9%Al & 99.99%Al



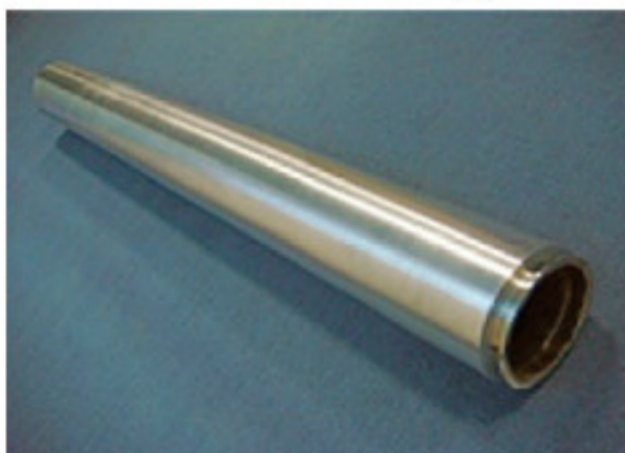
Aluminum Chip

Size: 150x2.5x0.2mm or customized



◆ For Aluminum Mirror Production Line

Aluminum Target



Mirror Paint



◆ For Reflective Glass Production Line

SS Target & Ti Target

