

# SCRATCH-RESISTANT GLASS SURFACE CLEANING EQUIPMENT AND CLEANING METHOD

## **Field of the Invention**

5 [0001] The present application relates to the field of scratch-resistant glass surface cleaning, in particular to a scratch-resistant glass surface cleaning equipment and its corresponding cleaning method.

## **Background to the Invention**

10 [0002] When traditional scratch-resistant glass surface cleaning equipment handles glass of inconsistent sizes, it is often unable to provide uniform adsorption stress due to the uneven distribution of adsorption components. This unevenness leads to local over-grinding or insufficient grinding during the polishing process, which in turn causes surface unevenness and potential damage to the glass, affecting the final cleaning effect and the  
15 scratch-resistant performance of the glass. Especially during polishing, if the adsorption and grinding forces cannot be properly matched to the actual conditions of different areas, excessive wear will occur in some regions. This not only reduces the scratch resistance of the glass but also causes irreversible damage to the glass, thereby affecting the overall quality and service life of the product.

20

## **Statement of Invention**

[0003] To address how to improve the cleaning efficiency and quality of traditional scratch-resistant glass surface cleaning equipment to meet the cleaning needs of glass of different sizes and reduce polishing damage caused by uneven distribution of adsorption  
25 components, this application provides a scratch-resistant glass surface cleaning equipment and its cleaning method.

## **[0004] Technical Solution of the Equipment**

[0005] A scratch-resistant glass surface cleaning equipment, including a front-stage cleaning mechanism, a polishing mechanism and a rear-stage cleaning mechanism  
30 arranged in sequence. The front-stage cleaning mechanism is used to pre-clean the scratch-resistant glass, the polishing mechanism is used to polish and grind the scratch-resistant glass, and the rear-stage cleaning mechanism is used to clean the polished scratch-resistant glass. The polishing mechanism includes a machine body, an adsorption distance adjustment component provided on the work surface of the body, a plurality of  
35 adsorption components sequentially connected to the adsorption distance adjustment

component along the circumferential direction of the adsorption distance adjustment component, a polishing disk located above the adsorption component, and a polishing translation drive component connected to the polishing disc and provided on the body. The adsorption distance adjustment component is used to adjust the distance between each adsorption component according to the size information of the scratch-resistant glass to be suitable for scratch-resistant glass of different sizes. When the scratch-resistant glass is adsorbed and matched with the adsorption component, the polishing translation drive component drives the polishing disc to polish the scratch-resistant glass.

[0006] By adopting the above technical solution, the problem of uneven cleaning of traditional equipment when handling glass of different sizes is solved by setting an adsorption distance adjustment component in the polishing mechanism. The adsorption distance adjustment component can adjust the distance between the adsorption components according to the specific size of the glass, so that the adsorption components can be evenly distributed and effectively adsorb onto the glass surface. In this way, the adsorption stress is evenly distributed on the glass, reducing the risk of glass damage caused by uneven stress during polishing. This achieves uniform and effective cleaning and polishing of glass of different sizes, and enables full-process cleaning and polishing of scratch-resistant glass surfaces. The front-end cleaning mechanism pre-cleans the glass surface to remove initial surface dirt. The polishing mechanism fixes the glass through the adsorption components and uses a polishing disc for fine grinding. The rear-end cleaning mechanism thoroughly cleans the polished glass to remove residual polishing paste and microparticles, thereby improving the cleanliness and smoothness of the glass surface and ensuring the quality of the final product.

#### [0007] Preferred Structure of Adsorption Distance Adjustment Component

[0008] Preferably, the adsorption distance adjustment component includes a fixed base fixed on the machine body worktable, a disc located above the fixed base and connected to the adsorption components, a push-pull rod slidably engaged with the disc, a rotation assembly located above the disk, and a guide rod used to connect the push-pull rod and the rotation assembly. When the rotation assembly rotates, the guide rod drives the push-pull rod to move along the radial direction of the disk, and then drives each of the adsorption components to move closer to or away from the disk at the same time.

[0009] By adopting the above technical solution, the distance between the adsorption components can be flexibly adjusted to adapt to glasses of different sizes. The rotation component drives the push-pull rod to move along the radial direction of the disk through the guide rod, thereby driving the adsorption component to move inward or outward, achieving stable fixation of glass of different sizes, thereby improving the applicable scope and operational flexibility of the equipment.

**[0010] Preferred Structure of Rotation Assembly**

[0011] Preferably, the rotation assembly includes a driving gear that is rotatably arranged on the disc, and a driven gear that meshes with the driving gear. The driven gear rotates with the disc and is coaxially arranged, so that the driven gear rotates with the rotation of the driving gear.

[0012] By adopting the above technical solution, the smooth movement of the push-pull rod and the adsorption component is ensured. This design ensures the synchronization and accuracy of adjustment of each adsorption component, thereby improving the fixation effect of the glass and the accuracy of the polishing operation.

**[0013] Preferred Structure of Driving Gear**

[0014] Preferably, the drive gear is provided with a guide hole, the guide hole is plug-fitted with the guide rod, the guide hole is arc-shaped, and the arc shape is consistent with the path shape of the guide rod when it moves with the rotation of the driven gear.

[0015] By adopting the above technical solution, the drive gear is provided with a guide hole, and the guide hole is plug-fitted with the guide rod, so that the guide rod can move along a predetermined arc path when the drive gear rotates. This design ensures that the movement trajectory of the guide rod is consistent with the actual operating path, thereby making the movement of the push-pull rod and adsorption components smoother and more precise, improving the reliability of glass fixation and the operating efficiency of the overall equipment.

**[0016] Preferred Structure of Guide Rod**

[0017] Preferably, the end of the guide rod away from the push-pull rod is provided with a limiter, the limiter is detachably connected to the guide rod, and the diameter of the limiter gradually becomes smaller in the direction away from the driven gear.

[0018] By adopting the above technical solution, it is possible to prevent the guide rod from detaching or positioning during movement. The gradually smaller design of the stopper further enhances the stability of the guide rod, thereby improving the safety and accuracy of the adsorption component during the adjustment process and ensuring the accuracy of the position of the glass during the polishing process.

**[0019] Preferred Structure of Disc**

[0020] Preferably, the disc is provided with a chute that slides with the push-pull rod, the groove surface of the chute is directly connected to the outer circumferential side of the disc along the radial direction of the disc, and the opening direction of the communication location with the outer circumferential side of the disc is arranged corresponding to the

adsorption component.

[0021] By adopting the above technical solution, it can be ensured that the push-pull rod moves more smoothly in the chute, and at the same time, the corresponding arrangement of the opening and the adsorption component enables the push-pull rod to accurately drive the adsorption component for adjustment. This design optimizes the movement path of the adsorption component, thereby improving the accuracy and efficiency of the adsorption operation.

[0022] **Preferred Structure of Adsorption Component**

[0023] Preferably, the adsorption component includes a connecting post connected to the push-pull rod, and a suction cup located above the connecting post.

[0024] By adopting the above technical solution, the precise adjustment of the position of the suction cup can be achieved through the connection between the connecting column and the push-pull rod. The suction cup ensures the stable fixation of the glass during the polishing process, thereby improving the polishing effect, reducing the risk of glass movement or detachment, and improving the overall operational safety and polishing quality of the equipment.

[0025] **Preferred Structure of Polishing Disc and Its Drive Component**

[0026] Preferably, the polishing disc is equipped with a polishing paste spray nozzle, which is used to spray glass polishing paste onto the scratch-resistant glass surface. The polishing translation drive component includes a vertical moving component connected to the polishing disc and used to drive the polishing disc to rise and fall, a horizontal moving component connected to the vertical moving component and used to drive the vertical moving component to move forward and backward, and a horizontal moving component connected to the horizontal moving component and used to drive the horizontal moving component to move left and right.

[0027] By adopting the above technical solution, polishing paste can be evenly applied before polishing, making the polishing process more efficient. The polishing translation drive component, through the linkage of the vertical, horizontal, and vertical moving components, precisely controls the movement path and position of the polishing disc, thereby achieving comprehensive polishing of the glass surface and improving the polishing uniformity and the smoothness of the glass surface.

[0028] **Preferred Structure of Front and Rear Cleaning Mechanisms**

[0029] Preferably, the front section cleaning mechanism includes a front section carrying platform, and a front section clean water brush assembly and a front section

drying assembly located on the front section carrying platform in sequence, and the rear section cleaning mechanism includes a rear section carrying platform, and a rear section clear water brush assembly and a rear section drying assembly located on the rear section carrying platform in turn.

5 [0030] By adopting the above technical solution, sufficient cleaning and drying operations can be performed before the glass enters the polishing stage and after polishing. The front-stage cleaning mechanism effectively removes dirt on the glass surface, and the rear-stage cleaning mechanism further cleans and dries the polished glass surface, thereby improving the overall cleanliness and polishing quality of the glass.

10 [0031] **Technical Solution of the Cleaning Method**

[0032] A method for cleaning the surface of scratch-resistant glass, using the above-mentioned scratch-resistant glass surface cleaning equipment, includes the following steps:

15 [0033] 1. Obtain the size information of the scratch-resistant glass, and control the adsorption distance adjustment component to adjust the corresponding distance between each adsorption component according to the size information;

[0034] 2. Pre-clean the surface of the scratch-resistant glass through the front-stage cleaning mechanism. The pre-cleaning includes at least a predetermined number of cleaning processes and a drying process under predetermined drying conditions. The  
20 cleaning process includes at least one clean water rinse and one brush scrubbing;

[0035] 3. Place the pre-cleaned scratch-resistant glass on the adsorption component, so that the adsorption component and the scratch-resistant glass are pneumatically adsorbed together;

25 [0036] 4. After spraying a predetermined proportion of glass polishing paste and clean water on the scratch-resistant glass that is pneumatically adsorbed with the adsorption component, polish the scratch-resistant glass sprayed with a predetermined proportion of glass polishing paste and clean water through the polishing mechanism;

30 [0037] 5. Perform subsequent cleaning on the surface of the scratch-resistant glass through the post-cleaning mechanism. The subsequent cleaning includes at least a predetermined number of cleaning processes and a drying process under predetermined drying conditions. The cleaning process includes at least one clean water rinse and one brush scrubbing.

[0038] By adopting the above technical solution, the cleaning method includes obtaining the size information of the scratch-resistant glass, controlling the adsorption distance

adjustment component to adjust the distance between each adsorption component according to the size information, which can ensure the stable fixation of the glass before polishing, and remove the preliminary dirt and moisture on the glass surface through the cleaning and drying process of the front-end cleaning mechanism to ensure the effect of the polishing process. The polishing paste and clean water spraying during the polishing process, combined with the precise operation of the polishing mechanism, make the glass surface smoother and scratch-free. Finally, through further cleaning and drying by the post-cleaning mechanism, residues are removed and the final clean state of the glass is ensured, thereby improving the efficiency of the entire cleaning process and the quality of the finished glass.

#### [0039] **Beneficial Technical Effects**

[0040] 1. By installing an adsorption distance adjustment component in the polishing mechanism, the problem of uneven cleaning of traditional equipment when handling glass of different sizes is solved. The adsorption distance adjustment component can adjust the distance between the adsorption components according to the specific size of the glass, so that the adsorption components can be evenly distributed and effectively adsorb the glass surface. In this way, the adsorption stress is evenly distributed on the glass, reducing the risk of glass damage caused by uneven stress during polishing, thereby achieving uniform and effective cleaning and polishing of glass of different sizes;

[0041] 2. This application can realize the full-process cleaning and polishing operation of scratch-resistant glass surfaces. The front-stage cleaning mechanism pre-cleans the glass surface to remove preliminary surface dirt. The polishing mechanism fixes the glass through adsorption components and uses the polishing disc for fine grinding. The rear-stage cleaning mechanism thoroughly cleans the polished glass and removes residual polishing paste and tiny particles, thereby improving the cleanliness and flatness of the glass surface and ensuring the quality of the final product.

#### **Brief Description of the Drawings**

[0042] Figure 1 is a schematic structural diagram of a scratch-resistant glass surface cleaning device according to an embodiment of the present application;

[0043] Figure 2 is a schematic three-dimensional structural diagram of the polishing mechanism in the embodiment of the present application;

[0044] Figure 3 is a schematic three-dimensional structural diagram of the polishing mechanism in the embodiment of the present application without the polishing translation driving component;

[0045] Figure 4 is an enlarged view of A in Figure 3 according to the embodiment of the

present application;

[0046] Figure 5 is a top view of the adsorption distance adjustment component and the adsorption component in the embodiment of the present application;

5 [0047] Figure 6 is a schematic cross-sectional view of A-A in Figure 5 according to the embodiment of the present application;

[0048] Figure 7 is a schematic three-dimensional structural diagram of the front-stage cleaning mechanism in the embodiment of the present application.

[0049] **Explanation of Reference Symbols**

10 [0050] 1. Front cleaning mechanism; 11. Front carrying platform; 12. Front water brush assembly; 13. Front drying assembly; 2. Polishing mechanism; 21. Body; 22. Adsorption distance adjustment component; 221. Disc; 222. Limiter; 223. Push-pull rod; 224. Rotation component; 2241. Driving gear; 2242. Driven gear; 2243. Guide hole; 225. Guide rod; 226. Chute; 23. Adsorption component; 231. Connecting column; 232. Suction cup; 24. Polishing disc; 25. Polishing translation drive component; 251. Up-down moving  
15 component; 252. Back-and-forth moving component; 253. Left-and-right moving component; 26. Polishing paste spray pipe; 3. Rear cleaning mechanism; 31. Rear transport platform; 32. Rear water brush assembly; 33. Rear drying assembly.

**Detailed Description**

20 [0051] The present application will be further described in detail below with reference to Figures 1-7.

[0052] As shown in Figures 1-2, a scratch-resistant glass surface cleaning device includes a front cleaning mechanism 1, a polishing mechanism 2, and a rear cleaning mechanism 3 arranged in sequence. The front cleaning mechanism 1 is used for pre-cleaning scratch-resistant glass, the polishing mechanism 2 is used to polish and grind the  
25 scratch-resistant glass, and the rear cleaning mechanism 3 is used to clean the polished scratch-resistant glass. The polishing mechanism 2 includes a body 21, an adsorption distance adjustment component 22 provided on the work surface of the body 21, a plurality of adsorption components 23 connected to the adsorption distance adjustment component 22 in sequence along the circumferential direction of the adsorption distance adjustment component 22, a polishing disk 24 located above the adsorption component  
30 23, and the polishing translation drive component 25 connected to the polishing disc 24 and provided on the body 21. The adsorption distance adjustment component 22 is used to adjust the distance between each adsorption component 23 according to the size  
35 information of the scratch-resistant glass to be suitable for scratch-resistant glass of

different sizes. When the scratch-resistant glass is adsorbed and matched with the adsorption component 23, the polishing translation drive component 25 drives the polishing disc 24 to polish the scratch-resistant glass.

[0053] In this embodiment, the scratch-resistant glass surface cleaning equipment includes a front-stage cleaning mechanism 1, a polishing mechanism 2 and a rear-stage cleaning mechanism 3. The three are arranged in sequence to complete the entire process from preliminary cleaning to polishing and then to final cleaning. First, the front-stage cleaning mechanism 1 is used to pre-clean the scratch-resistant glass. This mechanism removes initial dirt and moisture from the glass surface through multiple cleaning and drying steps, preparing it for the polishing process. The front-end cleaning mechanism 1 is designed to thoroughly clean the glass, ensuring no residue affects the subsequent polishing effect. Next is the polishing mechanism 2, the core of the entire equipment, responsible for fine polishing and grinding the scratch-resistant glass. The polishing mechanism 2 includes a body 21 and an adsorption distance adjustment component 22 mounted on the worktable of the body 21. This adjustment component can adjust the distance between multiple adsorption components 23 according to the specific size of the glass. The adsorption components 23 are arranged sequentially along the circumference of the adjustment component, allowing for precise adjustment to accommodate glass of different sizes. Once the glass is fixed by the adsorption components 23, the polishing disc 24 in the polishing mechanism 2 begins to work. The polishing disc 24 is located above the adsorption components 23 and is connected to and driven by the polishing translation drive component 25. The polishing translation drive component 25 enables precise movement of the polishing disc 24 on the glass surface, performing uniform polishing to eliminate surface imperfections and fine micro-scratches, resulting in a smooth glass surface with a high-quality gloss. Finally, there is the post-cleaning mechanism 3, which is used to clean polished, scratch-resistant glass. Polishing paste and tiny particles will remain on the polished glass surface, and these residues need to be completely removed by the post-stage cleaning mechanism 3. The cleaning mechanism adopts a method similar to the previous cleaning, and ensures that the glass surface is completely clean through multiple cleaning and drying processes, providing the best surface conditions for final shipment or further processing. Through this design, the entire equipment can effectively complete the entire process of scratch-resistant glass, from pre-cleaning, fine polishing to final cleaning, ensuring that the finished glass has high-quality scratch resistance and excellent surface finish.

[0054] Specifically, as shown in Figures 3-5, the adsorption distance adjustment component 22 includes a fixed seat fixed on the work surface of the body 21, a disc 221 located above the fixed seat and connected to the adsorption component 23, a push-pull

rod 223 slidingly matched with the disc 221, a rotation component 224 located above the disc 221, and a guide rod 225 used to connect the push-pull lever 223 and the rotation component 224. When the rotation assembly 224 rotates, the guide rod 225 drives the push-pull rod 223 to move along the radial direction of the disc 221, thereby driving each of the adsorption components 23 to move closer to or away from the disc 221 at the same time.

[0055] In this embodiment, the adsorption distance adjustment component 22 in the polishing mechanism 2 is composed of a fixed seat, a disc 221, a push-pull rod 223, a rotation assembly 224 and a guide rod 225. The fixed base is fixed on the work surface of the machine body 21. The disc 221 is located above the fixed base and is connected to the glass through the adsorption component 23. The guide rod 225 cooperates with the push-pull rod 223 and the rotation assembly 224 to drive the push-pull rod 223 to slide along the radial direction of the disc 221. When the rotation assembly 224 is activated, the driving guide rod 225 drives the push-pull rod 223 to move in the radial direction in the chute 226 of the disk 221, thereby adjusting the distance between the adsorption components 23 to adapt to different sizes of scratch-resistant glass. This adjustment process is precise and synchronous, ensuring that each adsorption component 23 can firmly adsorb the glass at the appropriate position and prevent the glass from shifting during the polishing process.

[0056] Specifically, as shown in Figures 4-5, the rotation assembly 224 includes a driving gear 2241 that is rotated on the disk 221, and a driven gear 2242 that meshes with the driving gear 2241. The driven gear 2242 and the disk 221 are rotationally matched and coaxially arranged, so that the driven gear 2242 rotates with the rotation of the driving gear 2241.

[0057] In this embodiment, the driving gear 2241 is driven by a motor or other transmission device, and the driven gear 2242 meshes with the driving gear 2241 and rotates synchronously with the rotation of the driving gear 2241. Since the driven gear 2242 is coaxially arranged with the disc 221, when the driving gear 2241 rotates, the driven gear 2242 drives the disc 221 up, and at the same time, the adsorption component 23 adjusts the distance inward or outward synchronously. This design enables all adsorption components 23 on the disc 221 to move evenly and accurately, thereby ensuring that glass of different sizes can be firmly adsorbed at the most appropriate position, providing a reliable fixed basis for subsequent polishing operations.

[0058] Specifically, as shown in Figure 5, the driving gear 2241 is provided with a guide hole 2243, the guide hole 2243 is plug-fitted with the guide rod 225, the guide hole 2243 is arc-shaped, and the arc shape is consistent with the path shape of the guide rod 225 when it moves with the rotation of the driven gear 2242.

[0059] In this embodiment, the shape of the guide hole 2243 is designed to be arc-shaped, and its arc is completely consistent with the movement path of the guide rod 225 when the driving gear 2241 rotates. This arc-shaped design enables the guide rod 225 to accurately move along a predetermined path when the driving gear 2241 rotates, ensuring that the radial movement of the push-pull rod 223 on the disk 221 is smooth and smooth, thereby driving the adsorption component 23 to be synchronously adjusted according to the designed movement trajectory. In this way, unnecessary friction or resistance during the adjustment process can be avoided, and the adjustment accuracy and operation reliability of the adsorption component 23 can be ensured.

[0060] Specifically, as shown in Figures 3-5, the end of the guide rod 225 away from the push-pull rod 223 is provided with a limiter 222. The limiter 222 is detachably connected to the guide rod 225, and the diameter of the limiter 222 gradually becomes smaller in the direction away from the driven gear 2242.

[0061] In this embodiment, the distal end of the guide rod 225 is provided with a limiter 222, and the limiter 222 is detachably connected to the guide rod 225 through threads or buckles. The diameter of the limiting member 222 is designed to gradually decrease from the end of the guide rod 225 outwards. This design can limit the movement of the guide rod 225, preventing it from deviating from the predetermined track due to inertia or external force. The tapered structure of the limiting member 222 effectively reduces resistance during movement and provides better guidance, thereby enhancing the stability of the entire adsorption system. This design ensures that the glass will not loosen or shift due to the movement of the adsorption component 23 during high-intensity polishing operations, further improving the safety and operational accuracy of the equipment.

[0062] Specifically, as shown in Figure 4, the disc 221 is provided with a chute 226 that slides with the push-pull rod 223. The groove surface of the chute 226 is directly connected to the outer peripheral side of the disc 221 along the radial direction of the disc 221, and the opening direction of the communication location with the outer peripheral side of the disc 221 is provided corresponding to the adsorption component 23.

[0063] In this embodiment, the distal end of the guide rod 225 is provided with a limiter 222, and the limiter 222 is detachably connected to the guide rod 225 through threads or buckles. The diameter of the limiting member 222 is designed to gradually decrease outward from the end of the guide rod 225. This design can play a limiting role during the movement of the guide rod 225 and prevent the guide rod 225 from deviating from the predetermined track due to inertia or external force. The tapered structure of the limiting member 222 can effectively reduce resistance during movement and provide a better guiding effect, thereby enhancing the stability of the entire adsorption system. This design ensures that during high-intensity polishing operations, the glass will not loosen or shift

due to the movement of the adsorption component 23, further improving the safety of the equipment and the accuracy of the operation.

[0064] Specifically, as shown in Figure 4, the adsorption component 23 includes a connecting column 231 connected to the push-pull rod 223, and a suction cup 232 located above the connecting column 231.

[0065] In this embodiment, one end of the connecting column 231 is connected to the push-pull rod 223 through threads or buckles, and the other end is fixed with a suction cup 232. The suction cup 232 provides a strong adsorption force through a vacuum pump or pneumatic device, and can firmly adsorb the glass. By adjusting the length of the connecting column 231 and the position of the push-pull rod 223, the height and position of the suction cup 232 can be flexibly controlled to adapt to glass of different thicknesses and sizes. The design of the suction cup 232 takes into account the material characteristics of the glass, and can provide stable adsorption force without damaging the glass surface, ensuring that the glass will not shift or fall off during the polishing process, improving the safety of the equipment and the reliability of operation.

[0066] Specifically, as shown in Figure 2, the polishing disc 24 is provided with a polishing paste nozzle 26, which is used to spray glass polishing paste on the scratch-resistant glass surface. The polishing translation driving component 25 includes an up and down movement component 251 connected to the polishing disc 24 and used to drive the polishing disc 24 up and down, a forward and backward moving component 252 connected to the up and down moving component 251 for driving the up and down moving component 251 to move forward and backward, and a left and right moving component 253 connected to the forward and backward moving component 252 for driving the left and right moving component 252.

[0067] In this embodiment, the polishing disc 24 is equipped with a polishing paste spray nozzle 26. The nozzle is connected to a polishing paste storage tank via a pipe. Before polishing begins, the nozzle evenly sprays the polishing paste onto the glass surface, and simultaneously sprays an appropriate amount of water as needed to adjust the dilution of the polishing paste. The polishing translation drive component 25 includes a vertical movement component 251, a front-back movement component 252, and a left-right movement component 253. The vertical movement component 251 is connected to the polishing disc 24 via a cylinder or lead screw drive device, and can control the lifting and lowering of the polishing disc 24 to adjust the polishing pressure and height. The front-back movement component 252 is connected to the vertical movement component 251 and is used to control the longitudinal movement of the polishing disc 24 along the glass surface. The left-right movement component 253 is connected to the end of the front-back movement component 252 and controls the lateral movement of the polishing

disc 24 on the glass surface. Through the coordinated movement of these three moving components, the polishing disc 24 can cover every corner of the glass along a preset trajectory, ensuring the uniformity and precision of the polishing operation, thereby improving the smoothness and transparency of the glass surface.

5 [0068] Specifically, as shown in Figures 1 and 7, the front section cleaning mechanism 1 includes a front section carrying platform 11, and a front section clean water brush assembly 12 and a front section drying assembly 13 located on the front section carrying platform 11, and the rear section cleaning mechanism 3 includes a rear section carrying platform 31, and a rear section clean water brush assembly 32 and a rear section drying assembly 33 located on the rear section carrying platform 31.

10 [0069] In this embodiment, the front section cleaning mechanism 1 includes a front section carrying platform 11, on which the front section clean water brush assembly 12 and the front section drying assembly 13 are installed in sequence. The front clean water brush assembly 12 is responsible for preliminary cleaning of the scratch-resistant glass surface. During the cleaning process, the brush assembly sprays clean water evenly on  
15 the glass surface and gently wipes it with the rotating brush to remove dust and stains attached to the glass surface. After the cleaning is completed, the glass will automatically enter the front-stage drying assembly 13. The drying assembly uses a high-efficiency fan or infrared heating system to quickly evaporate the water on the glass surface to ensure  
20 that the glass is completely dry before entering the next process, and the subsequent polishing effect will not be affected by water stains. The rear-stage cleaning mechanism 3 includes a rear-stage carrying platform 31, which is provided with a rear-stage clean water brush assembly 32 and a rear-stage drying assembly 33. The polished glass is first  
25 cleaned by the clean water brush assembly 32 in the rear section. The clean water brush assembly is rinsed with rotating brushes and clean water to remove the polishing paste, tiny particles and other stains remaining on the glass surface during the polishing process. After thorough cleaning, the glass enters the post-drying assembly 33. The drying component uses hot air or infrared rays to quickly dry the glass to ensure that there are no  
30 water stains or residues on the surface of the glass after cleaning, and to reach a highly clean state, providing guarantee for final packaging and shipment. The entire cleaning and drying process is fast and highly efficient, further improving the quality and cleanliness of the finished glass.

[0070] The specific steps of the scratch-resistant glass surface cleaning method in this embodiment are as follows:

35 [0071] 1. The glass is surface-cleaned by a plate washer, the track speed of the equipment is adjusted to 15 rpm, clean water is dripped on the glass surface, and the surface is cleaned through the brush area, then passes through the drying area, is baked

at 50°C for 10 seconds to pre-clean the surface of the scratch-resistant glass;

[0072] 2. Prepare glass polishing paste: make glass polishing abrasive paste with components such as surfactant, lubricant, polishing powder, pour it on the glass surface, and add an appropriate amount of water;

5 [0073] 3. Use special polishing equipment with a wool wheel, adjust the equipment speed, pneumatically suck the bottom of the glass, and then use the wool wheel dipped in polishing paste to uniformly polish and grind the glass surface for 30 seconds;

[0074] 4. Place the polished scratch-resistant glass on the plate washer for clean water cleaning and drying; then obtain scratch-resistant glass-ceramic with a clean surface.

10 The above are all preferred embodiments of this application, and are not intended to limit the scope of protection of this application. Therefore, all equivalent changes made according to the structure, shape, and principle of this application should be covered within the scope of protection of this application.