

# ULTRA SHOT®

## Cryogenic Deflashing Machine

Specialized in Cryogenic Deflashing  
for **OVER 20 years**



**ULTRA CLEAN**

# COMPANY BRIEF

**Showtop Techno-Machine Nanjing Co., Ltd.** is a national high-tech enterprise in China, specializing in the design, R&D, and manufacturing of cryogenic deflashing equipment. We provide high-quality, efficient, and cost-effective solutions for **rubber, plastics, elastomers, and zinc, magnesium, and aluminum alloy die-cast parts**.

In addition to equipment, STMC offers contract cryogenic deflashing services. Our headquarters is in Nanjing, with regional branches in Dongguan and Chongqing, and overseas offices in Japan and Thailand, serving customers worldwide with professional, one-stop deburring solutions.

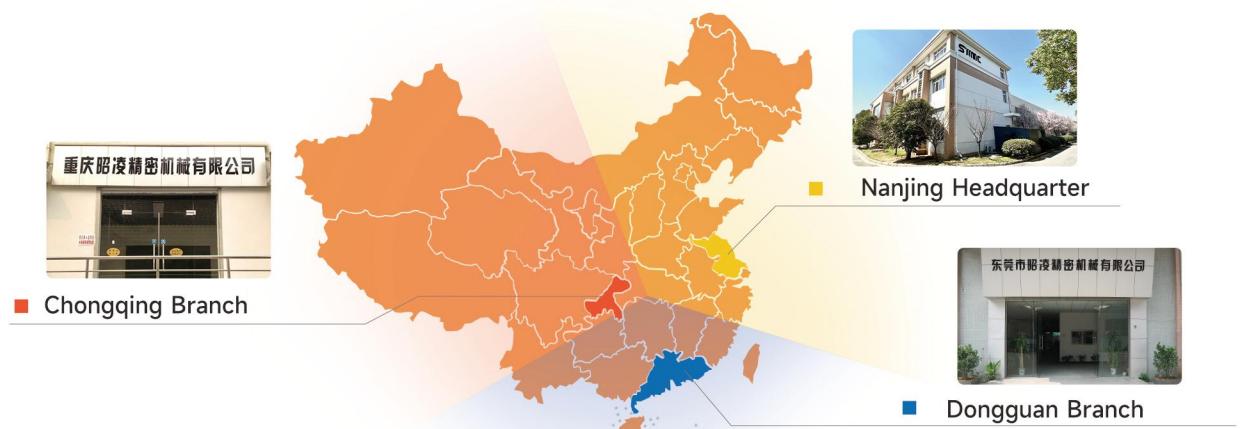
**4** Registered Trademarks

**5** Invention Patents

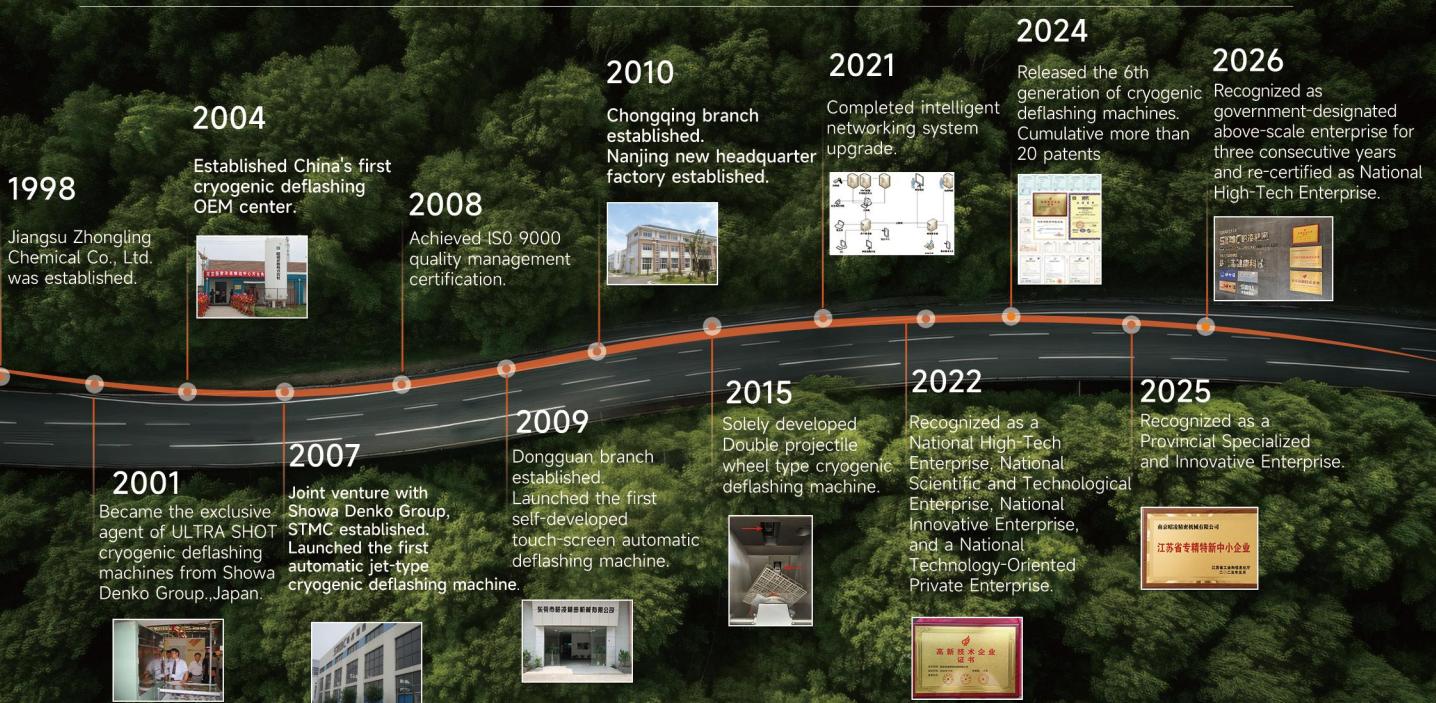
**17** Utility Model Patents

**1** Design Patent

**6** Software Copyrights



## Our Journey



## Company Honor

Showtop Techno-Machine Nanjing Co., Ltd. has been recognized as a National High-Tech Enterprise, High-Tech S/M Enterprise, Provincial Specialized Innovative Enterprise, and National Sci-Tech Enterprise. The company owns four registered trademarks and has obtained ISO 9000 Quality Management System Certification, CE Certification, and other qualifications.

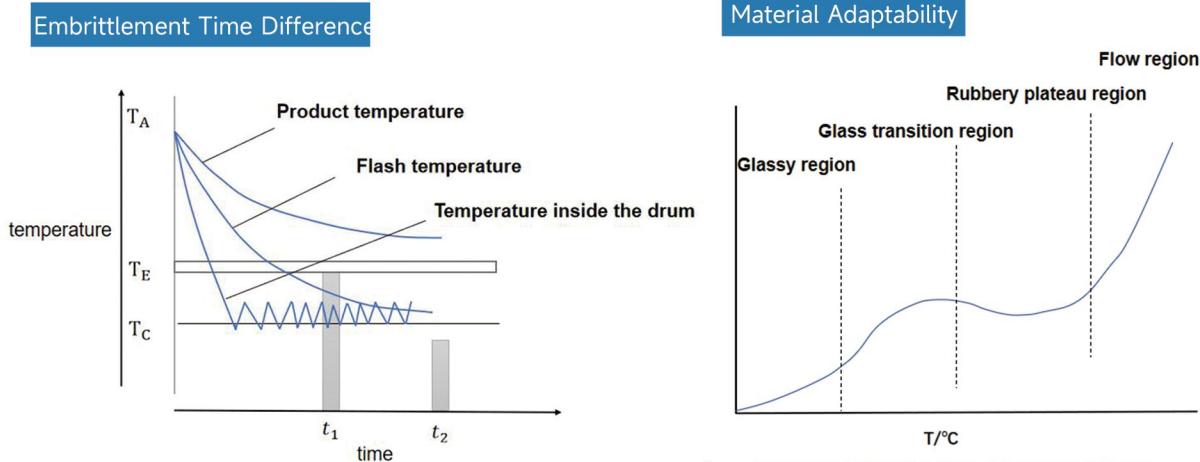


## Our Customers



# PRINCIPLE & STRUCTURE

## Working Principle of Cryogenic Deflesing



Rubber, injection molding, and zinc magnesium aluminum alloy products will turn into a hardening, embrittlement state as the temperature decreases, and gradually lose their elasticity. Especially below the embrittlement temperature, even slight force is applied to the material will cause it to shatter. At low temperatures, the flash around the product will embrittle before the product itself. During the time when the flash embrittles and the product still has elasticity, high-speed spraying of special plastic pellets will impact the product, achieving the effect of removing the flash without damaging the product.

TA: Feeding temperature

t1: ETP Period

TE: Product embrittlement temperature

TC: Deflashing machine set temperature

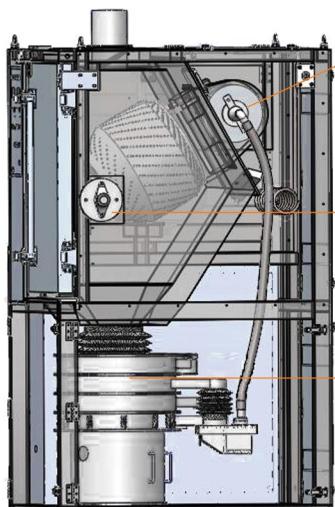
t2: Time required for product to start embrittlement

$\Delta t = t1 - t2$ : Time period for edge trimming processing

Polymer materials such as rubber and plastic belong to the category of macromolecular materials, which exist in different phase states at varying temperatures. From the perspective of phase states, these changes are merely variations in mechanical states. When products undergo cryogenic deflashing and return to room temperature, they will restore their original properties.

## Internal Structure

Ultra Shot® Cryogenic Deflashing machine is composed of three major systems: power, temperature control, and sorting.



### 1 Power System

The projection assembly consists of aluminum alloy shot blasting wheels and imported original high-frequency motors, it effectively achieves a **1:1 stable ratio** of power output and product processing capacity.

### 2 Temperature Control

Using temperature control components imported from Japan, along with advanced insulation and soundproofing materials, **accurately ensuring temperature control and liquid nitrogen consumption during product processing**, and reducing equipment operating noise.

### 3 Sorting System

The machine applies Sato type anti-plugging, adjustable 3D variable linear waveform vibrating screen. **Quick and easy disassembly and maintenance**, with excellent insulation performance; SUS304 stainless steel housing, long performance life with high stability.

## Power System



- ◆ Adopt alloy wheel, original high-frequency motor, and 60/45°degree tilt cylindrical Barrel.
- ◆ Features: Power output and product handling capacity to meet effectively the stability of the 1:1.
- ◆ The best incentive to create the perfe precis.
- ◆ Multiple safety controls guarantee secure and reliable operation.

## Sorting System



- ◆ Adopt the sato-type vibrating separator which can make 3D adjustable variable straightline wave and anti clogging.
- ◆ Characteristic: Excellent heat-insulation properties, to prevent ice outside.
- ◆ Disassemble or maintenance simply, quickly and improve productivity.
- ◆ High-quality SUS304 stainless steel housing ensures long life and high stability.

## Temperature Control System



The Ultra Shot cryogenic deflashing machine utilizes imported Japanese electronic temperature control components and high-quality thermal insulation and acoustic materials. Its innovative design features soundproofing foam embedded within the door panel structure. Compared to conventional designs where materials are simply attached externally, this approach enhances sound insulation by over 30% and extends the lifespan of the thermal layer to twice the industry average.

## Control System



- ◆ Features a user-friendly touchscreen with multi-language support and QWERTY keyboard for faster, more consistent production.
- ◆ Enables one-touch parameter storage and recall for simplified management.
- ◆ Supports manual and automatic operation, with daily maintenance checks, password protection, process checklists, and on-screen diagnostics.
- ◆ Customizable automation and HMI tailored to client needs, with optional barcode scanner.
- ◆ Cloud-platform monitoring enables real-time analytics and offers open APIs for MES integration.



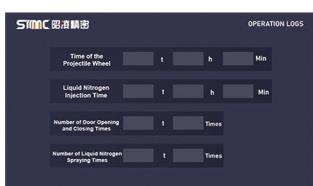
Home Screen



Automatic Mode



Manual Operating



Recipe Library



Recipe Save / Read



ICS



IPC



Barcode Scanner

# MACHINE CONFIGURATION



## ULTRA SHOT®60L Series

Ultra-high Precision

Minimum Processing Temperature: -130 °C

60L Capacity

10" Touchscreen Optional

Φ250 Aluminum Alloy Shot Blasting Wheel

- ◆ Suitable for manufacturers with multiple varieties, small batches, and variable processing parameters.
- ◆ Suitable for O-ring and injection molded products with high precision requirements, such as polyurethane U-shaped sealing rings and oil seals.



Ultra high precision, 60L capacity, 7-inch touch screen, equipped with  $\varphi 250$  aluminum alloy shot blasting wheels, the minimum processing temperature can reach -130°C.



G60C



NS-60C



G60T



NS-60T

## Effect Comparison



## Application

Small-sized rubber and injection-molded parts

Small-sized fluorosilicone and silicone medical components

Small-size zinc, magnesium, aluminum alloy parts

Small-sized O-rings and sealing rings

Small-sized precision electronic components

Small-sized elastomer products

## ■ Cryogenic Deflashing Machine



| Model  | Size             | Weight | Power   | Barrael Capacity | Useful Capacity | Projectile Wheel              | Wheel Speed |
|--------|------------------|--------|---------|------------------|-----------------|-------------------------------|-------------|
| G60T   |                  |        |         |                  |                 |                               |             |
| NS-60C | 1160×1100×1955mm | 800kg  | 5Kw×3Ph | 60L              | 25~30L          | φ250mm<br>AL / Titanium Alloy | 0~7200rpm   |
| NS-60T |                  |        |         |                  |                 |                               |             |

| Model                     | G60T                                  |                | Model                     | NS-60T                                |               |
|---------------------------|---------------------------------------|----------------|---------------------------|---------------------------------------|---------------|
| Power Device              | High-speed variable frequency motor   | FUKUTA         | Power Device              | High-speed variable frequency motor   | HITACHI       |
|                           | High-ratio gear reduction motor       | SIGMA          |                           | High-ratio gear reduction motor       | NISSEI        |
|                           | Centrifugal wheel bearing             | STMC           |                           | Centrifugal wheel bearing             | RESONAC       |
| Separation Device         | Sato-type 3D wave vibrating separator | WD-500         | Separation Device         | Sato-type 3D wave vibrating separator | KOEISANGYO    |
| Control Method            | Touchscreen                           | MCGS 10 inches | Control Method            | Touchscreen                           | Fuji Electric |
| Electrical Control Device | Electrically heated door seal         | STMC           |                           | Electrically heated door seal         | RESONAC       |
|                           | Liquid nitrogen solenoid valve        | JAKSA          |                           | Liquid nitrogen solenoid valve        | ASCO          |
|                           | Accumulated timer                     | THEBEN         | Electrical Control Device | Accumulated timer                     | THEBEN        |
|                           | PLC                                   | XINJE          | PLC                       | Mitsubishi                            |               |
|                           | Frequency converter                   | ZONCN          | Frequency converter       | Mitsubishi                            |               |

# MACHINE CONFIGURATION



## ULTRA SHOT®120L Series

High Precision       $\Phi$  320/ $\Phi$  350 Aluminum Alloy Shot Blasting Wheels

120L Large Capacity      10" Touchscreen Optional

Minimum Processing Temperature : -130°C

- ◆ Suitable for manufacturers with relatively fixed product specifications and mass production.
- ◆ Suitable for most products, common seals, injection molded parts, and die-casting parts can be processed.



High precision, 120L large capacity, 10 inch touch screen, equipped with  $\Phi$  350 aluminum alloy shot blasting wheels suitable for manufacturers with fixed variety and mass production of product materials.



G120C



G120T



NS-120T



NS-120T

## Effect Comparison



## Application

Medium and small-sized rubber and injection-molded parts

Medium and small-sized fluorosilicone and silicone medical components

Medium and small-sized O-rings and sealing rings

Medium and small-size zinc, magnesium, aluminum alloy parts

Medium and small-sized precision electronic components

Medium and small-sized elastomer products

## ■ Cryogenic Deflashing Machine



| Model   | Size             | Weight | Power    | Barrael Capacity | Useful Capacity | Projectile Wheel                  | Wheel Speed |
|---------|------------------|--------|----------|------------------|-----------------|-----------------------------------|-------------|
| G120T   |                  |        |          |                  |                 |                                   |             |
| NS-120C | 1400×1350×2300mm | 960kg  | 10Kw×3Ph | 120L             | 50~60L          | φ320/350mm<br>AL / Titanium Alloy | 0~7200rpm   |
| NS-120T |                  |        |          |                  |                 |                                   |             |

| Model                     | G120T                                 |                | Model                     | NS-120T                               |               |
|---------------------------|---------------------------------------|----------------|---------------------------|---------------------------------------|---------------|
| Power Device              | High-speed variable frequency motor   | FUKUTA         | Power Device              | High-speed variable frequency motor   | HITACHI       |
|                           | High-ratio gear reduction motor       | SIGMA          |                           | High-ratio gear reduction motor       | NISSEI        |
|                           | Centrifugal wheel bearing             | STMC           |                           | Centrifugal wheel bearing             | RESONAC       |
| Separation Device         | Sato-type 3D wave vibrating separator | WD-600         | Separation Device         | Sato-type 3D wave vibrating separator | KOEISANGYO    |
| Control Method            | Touchscreen                           | MCGS 10 inches | Control Method            | Touchscreen                           | Fuji Electric |
| Electrical Control Device | Electrically heated door seal         | STMC           |                           | Electrically heated door seal         | RESONAC       |
|                           | Liquid nitrogen solenoid valve        | JAKSA          |                           | Liquid nitrogen solenoid valve        | ASCO          |
|                           | Accumulated timer                     | THEBEN         | Electrical Control Device | Accumulated timer                     | THEBEN        |
|                           | PLC                                   | XINJE          | PLC                       | Mitsubishi                            |               |
|                           | Frequency converter                   | ZONCN          | Frequency converter       | Mitsubishi                            |               |

# MACHINE CONFIGURATION

ISO9000

CE



## ULTRA SHOT®180L Series

Smart Parameter Setup

160-180 Liter Ultra-large Capacity

Minimum Processing Temperature: -130°C

- ◆ Suitable for manufacturers with large product sizes and mass production.
- ◆ Suitable for large volume products, such as rubber toys, mouse shells, insoles, shock absorbers, etc.



160-180 liter ultra-large capacity, quick replacement basket plug and play, intelligent parameter setting, minimum processing temperature can reach -130°C.



G180C



G180T



NS-180T

## Effect Comparison



## Application

Medium and large-sized rubber and injection-molded parts

Medium to large-sized rubber/polyurethane dampers

Large-size fluorosilicone and silicone medical products

Mid-to-large size and mass-production sealing parts

Medium to large-size zinc, magnesium, aluminum alloy parts

Medium to large-sized elastomer products

## ■ Cryogenic Deflashing Machine



| Model   | Size             | Weight | Power    | Barrael Capacity | Useful Capacity | Projectile Wheel              | Wheel Speed |
|---------|------------------|--------|----------|------------------|-----------------|-------------------------------|-------------|
| G180T   |                  |        |          |                  |                 |                               |             |
| NS-180C | 1428x1370x2369mm | 1100kg | 13Kw×3Ph | 180L             | 70~80L          | φ350mm<br>AL / Titanium Alloy | 0~7200rpm   |
| NS-180T |                  |        |          |                  |                 |                               |             |

| Model                     | G180T                                 |                | Model                     | NS-180T                               |               |
|---------------------------|---------------------------------------|----------------|---------------------------|---------------------------------------|---------------|
| Power Device              | High-speed variable frequency motor   | FUKUTA         | Power Device              | High-speed variable frequency motor   | HITACHI       |
|                           | High-ratio gear reduction motor       | SIGMA          |                           | High-ratio gear reduction motor       | NISSEI        |
|                           | Centrifugal wheel bearing             | STMC           |                           | Centrifugal wheel bearing             | RESONAC       |
| Separation Device         | Sato-type 3D wave vibrating separator | WD-600         | Separation Device         | Sato-type 3D wave vibrating separator | KOEISANGYO    |
| Control Method            | Touchscreen                           | MCGS 10 inches | Control Method            | Touchscreen                           | Fuji Electric |
| Electrical Control Device | Electrically heated door seal         | STMC           |                           | Electrically heated door seal         | RESONAC       |
|                           | Liquid nitrogen solenoid valve        | JAKSA          |                           | Liquid nitrogen solenoid valve        | ASCO          |
|                           | Accumulated timer                     | THEBEN         | Electrical Control Device | Accumulated timer                     | THEBEN        |
|                           | PLC                                   | XINJE          | PLC                       | Mitsubishi                            |               |
|                           | Frequency converter                   | ZONCN          | Frequency converter       | Mitsubishi                            |               |

# MACHINE CONFIGURATION

ISO9000

CE



## Anti-Explosion MG Series

Anti-Explosion Dedicated Exhaust System

Enhanced SUS304 Structural Frame

Dedicated for Magnesium Alloy Die Castings

- ◆ Improves oxidation resistance on treated die-cast surfaces, extending product life.
- ◆ Simple operation and small footprint.
- ◆ Automatic nitrogen injection system to make sure the oxygen level in chamber always below explosion limit.
- ◆ The machine is anti-blast treated and equips safety pressure relief outlet at the top of the machine.
- ◆ The machine compartment door is equipped with a pressure rod to resist the explosion impact.

Specially engineered for alloy metal deflashing, the MG series features:

Anti-Explosion exhaust system, Imported PIR insulation

Reinforced stainless steel machine body structure



MG-C



MG-T

### Effect Comparison



| Model                     | MG-C/MG-T                             |               |
|---------------------------|---------------------------------------|---------------|
| Power Device              | High-speed variable frequency motor   | HITACHI       |
|                           | High-ratio gear reduction motor       | NISSEI        |
|                           | Centrifugal wheel bearing             | RESONAC       |
| Separation Device         | Sato-type 3D wave vibrating separator | KOEISANGYO    |
|                           | Touchscreen                           | Fuji Electric |
|                           | Electrically heated door seal         | RESONAC       |
| Control Method            | Liquid nitrogen solenoid valve        | ASCO          |
|                           | Accumulated timer                     | THEBEN        |
|                           | PLC                                   | Mitsubishi    |
| Electrical Control Device | Frequency converter                   | Mitsubishi    |



### Application



Zn-Mg-Al alloy die-cast parts

## ■ ULTRA-CLEAN Industrial Cleaning & Drying Machine



### Batch Integrity & Controlled Production

Prevents cross-contamination and ensures batch integrity through independently enclosed processing.

### Integrated Design, Effortless Operation

Cleaning, dehydration, and drying are fully integrated, eliminating the need to transfer products between processes.

### Ultra-Clean Washing Capability

Multi-angle high-pressure water and air technologies ensure deep cleaning by effectively removing dust, debris, and stubborn stains, simplifying production and boosting overall efficiency.

### Efficient, Fast & Energy-Saving Wash & Dry

Equipped with an accelerated water-removal dehydration system and dual-mode cold/hot drying. Each cycle uses only 10-15 liters of water, significantly reducing water and electricity costs.

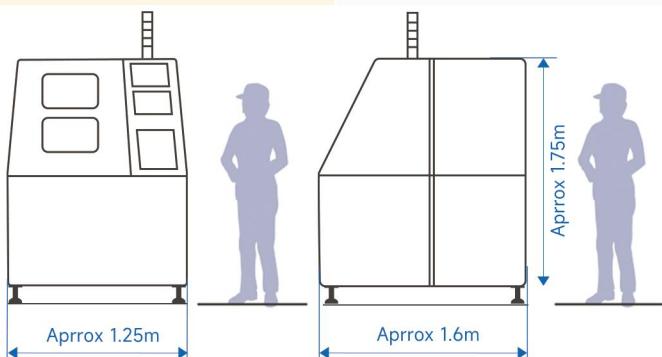
### Intelligent Control & Reliable Construction

Features an intelligent PLC control system for precise parameter setting and stable operation, combined with a heavy-duty stainless-steel structure for long-term industrial reliability.

### 24/7 Continuous Operation for Maximum Productivity

Designed for continuous industrial operation with stable performance and durable components, making it ideal for high-throughput production environments.

| Category                           | Specifications     |
|------------------------------------|--------------------|
| Overall Dimensions                 | 125 × 160 × 180 cm |
| Utility Electricity / Power Supply | 380V AC            |
| Pressure Range                     | 1-180 BAR          |
| Maximum Power                      | 13KW               |
| Average Power                      | 6.5KW              |
| Throughput / Flow Rate             | 12-15L/MIN         |
| Design Volume                      | 180L               |
| Net Weight                         | 500KG              |



## ■ ULTRA-CLEAN Industrial Cleaning & Drying Machine



### Convenient Operation

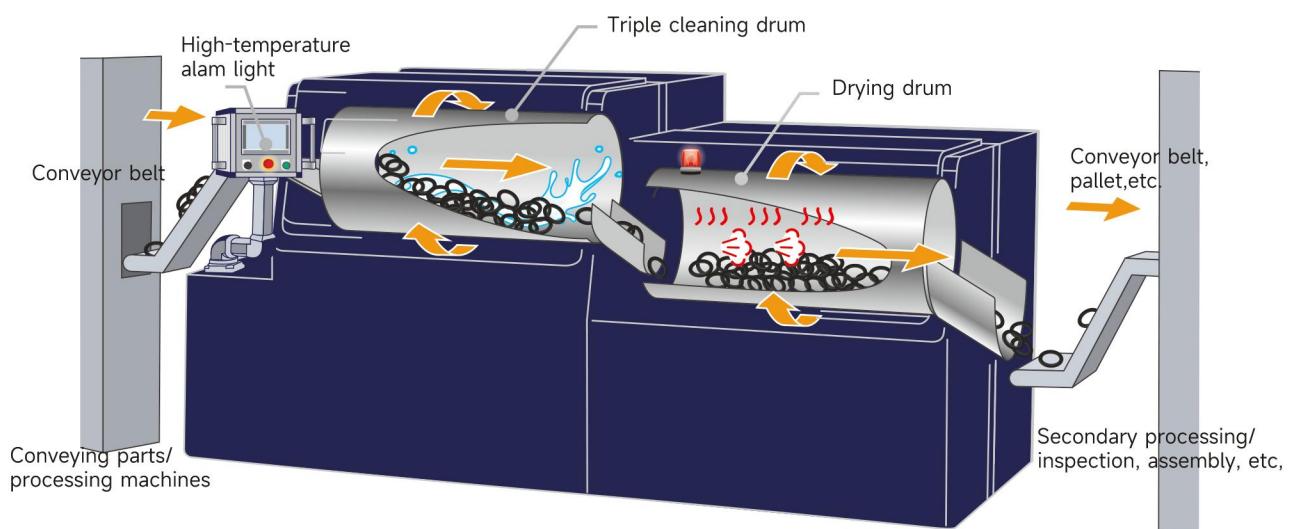
Multiple cleaning modes.  
Touchscreen control panel.

### Process Speed

100 kg / h ( Cleaning & Drying Capability)

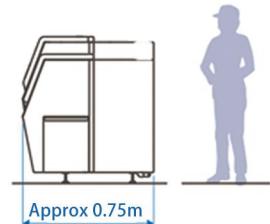
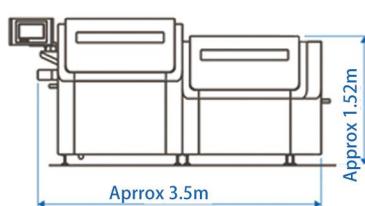
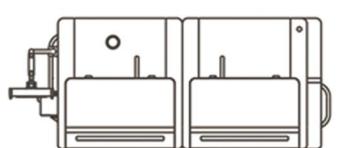
### Efficient Cleaning & Drying Power

Triple-stage cleaning with spray, immersion rolling, and flowing-water rinsing ensures thorough cleaning. Products are automatically conveyed by internal drum paddles into the drying zone, where high-efficiency drying quickly removes moisture, followed by automatic discharge for a fully continuous process.



\*Customize the inlet, outlet, and peripheral machines (such as conveyor belts, hoppers, and robots, etc.) according to different products

| Category        | Specifications |
|-----------------|----------------|
| Total Power     | 15Kw 380V      |
| Berrel Capacity | 260L           |
| Length          | 3.5m           |
| Width           | 0.75m          |
| Height          | 1.52m          |



# Parts Overview & SERVICE

| Category                  | Component                             | Brand         |
|---------------------------|---------------------------------------|---------------|
| Power Device              | High-speed variable frequency motor   | FUKUTA        |
|                           |                                       | HITACHI       |
|                           | High-ratio gear reduction motor       | SIGMA         |
|                           |                                       | NISSEI        |
|                           | Centrifugal wheel bearing             | STMC          |
|                           |                                       | RESONAC       |
| Separation Device         | Sato-type 3D wave vibrating separator | KOEISANGYO    |
|                           |                                       | WD-500        |
|                           |                                       | WD-600        |
|                           |                                       | STMC          |
| Control Method            | Touchscreen                           | MCGS          |
|                           |                                       | Fuji Electric |
| Electrical Control Device | Electrically heated door seal         | STMC          |
|                           |                                       | RESONAC       |
|                           |                                       | JAKSA         |
|                           | Liquid nitrogen solenoid valve        | ASCO          |
|                           |                                       | Custom-made   |
|                           | Accumulated timer                     | THEBEN        |
|                           | PLC                                   | XINJE         |
|                           |                                       | Mitsubishi    |
|                           |                                       | ZONCN         |
|                           |                                       | Mitsubishi    |
|                           |                                       | Toshiba       |
| Gearbox                   | Bevel Gear                            | KHK           |
|                           |                                       | STMC          |

## ■ Services & Solution



### Process Test

**Test purpose:** To verify whether the cryogenic deflashing process is applicable, if the mold needs to be adjusted, measure and calculate the effect, cost, capacity, pass rate, and conduct data analysis.

**Process:** Appointment - Test Plan - Parameter Verification - Capacity Test - Stability Test.

**Test report:** Optimal Quality Optimal Costl Full Analysis.



### Cryogenic Deflashing Contract Processing Services

**Scope of Services:** Rubber, injection molded parts, elastomers, zinc, magnesium, and aluminum alloy die-cast components, and other products.

**Process Flow:** Testing → Quotation → Contract Signing → Processing

**Management Standards:** Streamlined processes, standardized operations, and full traceability.

**Service Locations:** Nanjing, Dongguan, Chongqing (China)



### Renovation And Overhaul

**Contents:** Including repair of insulation layer, machine frame refurbishment, motor replacement, electrical control cabinet replace and repair, etc.

**Effect:** The old machine with failure or poor performance can be put into use again, thereby increasing the utilization value of machine and reducing the production and manufacturing costs.



### Upgrade and Transformation

**Conventional Upgrades:** Transition from button-based controls to touchscreen controls. Integration of barcode scanner functionality. Replacement of key components to enhance performance.

**Smart Transformation:** Integration with the customer's MES (Manufacturing Execution System) to enable Bluetooth barcode scanning. Automatic retrieval of process parameters and production order data. Automatic of production records to the MES system upon job completion.



### Machine Lease/Rental

**Suitable clients:** When there are a large number of production orders in the short term that urgently need to increase production capacity, but it is uncertain whether they will remain stable in the long term, or when the delivery time of newly purchased equipment cannot meet the urgent need for increased production capacity, leasing can be chosen instead of purchasing. According to the process requirements and rental schedule, add customer service to understand the quotation.



### Customized Development

**Development Process:** Needs Assessment → Technical Discussions (Both Parties) → Development Proposal Formulation → Project Implementation → Project Acceptance.

**Development Scope:** Design and supply of special configurations, exclusive jigs, and auxiliary components based on the specific requirements of the customer's production processes. Customized development of control systems with tailored functionalities. Seamless data interoperability with the customer's ERP or MES systems.

# APPLICATION

## ■ Application Areas Of Cryogenic Deflashing



Automotive Precision Manufacturing



Medical Equipment



Intelligent Wearable



Electric Vehicles



Toys

## ■ Applicable Materials Of Cryogenic Deflashing

### Rubber

The cryogenic deflashing machine can process products made of Si, NBR, EPDM, NR, FKM, PUR, SBR, BR, CR, FPM and other rubber materials. The common ones are seal rings / O-rings, auto parts, rubber parts, rubber insoles, silicone products, etc.



### Injection Molding

The cryogenic deflashing machine can process products made of PA, PBT and PPS. The common ones are connectors, nanoforming structural parts, medical use injection parts, automotive injection parts, mobile phone cases, mouse cases, injection molding miscellaneous parts, etc.; also products made of TPU and TPE elastic material, such as watch bands, wristbands, soft sleeves, plastic cases, etc.



### Zinc Magnesium Aluminum Die-casting

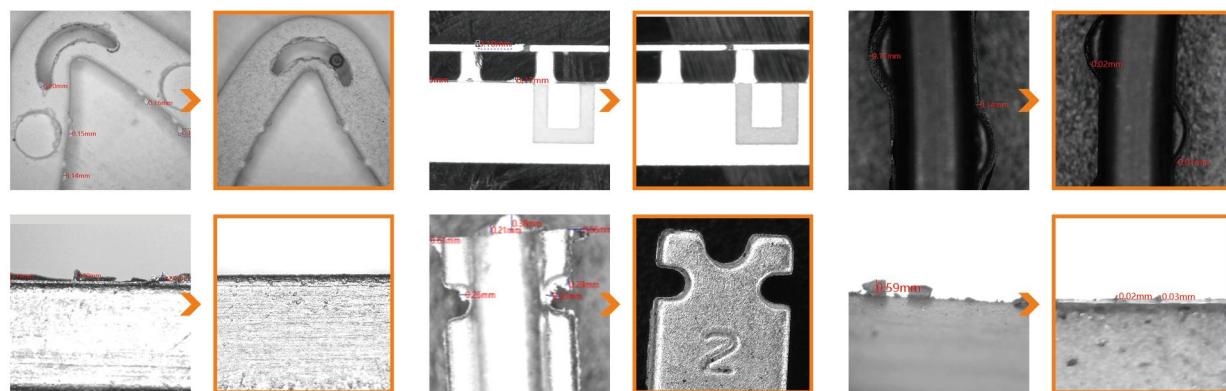
The cryogenic deflashing machine can process aluminum, zinc, magnesium alloy products. The common ones are auto parts, metal crafts, decoration items, toy parts and etc.



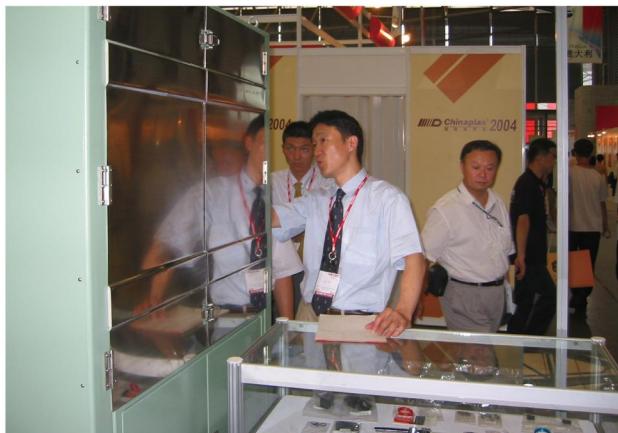
## ■ Applicable Products Of Cryogenic Deflashing



Under 60x magnification:



# PARTNERSHIP



Secured exclusive China distribution rights for Japan's Ultra Shot cryogenic deflashing machines. (2001)



Established China's first cryogenic deflashing OEM center.



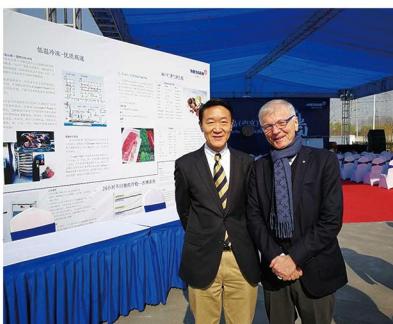
Sino-Japanese joint venture  
STMC established. (2007)



STMC Headquarter (2007)



Jiangsu Zhongling Chemical Co., Ltd. Mr. Wang Chunjiao, CEO of STMC, and the President of Messer.



STMC Headquarter (2011)



Customer Site



Customer Site



Customer Site



Customer Site

Customer Site



Customer Site



Customer Site



Customer Site



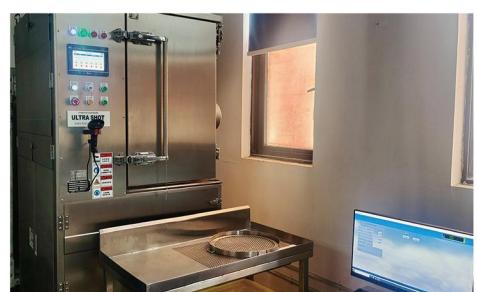
Customer Site



Customer Site



Customer Site



Customer Site



Customer Site



Customer Site



Customer Site



TEL: 400-0500-969

URL: [www.showtop-tech.com \(ENG\)](http://www.showtop-tech.com)

E-mail : [marketing@stmc.group](mailto:marketing@stmc.group)

[yurao\\_wang@stmc.group](mailto:yurao_wang@stmc.group)

Address:

No.5 Zhuyuan south road, Yongning industrial park, Pukou  
District, Nanjing City, China



Website



Wechat