Innovative Technologies of
Liquid Electrostatic Coating Solutions
In using the OTSON DISK electrostatic spray equipment, the high rotation of DISK tends to throw the paints away when the paint passes through the live DISK. In this case, the expelling effect appears between the paint carrying electrostatic and the live particles as to cause further atomization of paint and thus, forming much finer thin fog. Due to the occlusion of electrostatic, the lost paints are sucked back to the workplace in generating a kind of surrounding electrostatic effect and the over spraying phenomenon is thus minimized. In this way, the machine has achieved the purpose of electrostatic spray effect.

Dual Coating for Solvent and Waterborne Paint
The OTSON DISK electrostatic spray system can significantly improve the spraying quality and production while reducing the paint consumption, the waste discharge and the maintenance cost. Because of the highly atomized live paint grains, the film is uniformly and smoothly coated on the workplace which has reduced the orange tissue effect and improved the coating layer quality.

Features

• Dual Coating - Solvent and Waterborne Paint
• Improving Coating Quality - Uniform Film Thickness
• Good Edge Cover - High quality atomisation and coating finish
• Reducing Coatings Cost - High Transfer Efficiency
• Good Wraparound - Very little over spray and no bounce back
• Low VOC (volatile organic compounds) Emissions - Reducing Air Pollutions
• Reducing Water Pollutions
• High Production Rates.
• Long Life Operation
• Low Failure Rate
• Easy Maintenance

The OTSON DISK electrostatic spray system can significantly improve the spraying quality and production while reducing the paint consumption, the waste discharge and the maintenance cost. Because of the highly atomized live paint grains, the film is uniformly and smoothly coated on the workplace which has reduced the orange tissue effect and improved the coating layer quality.
Benefits of Electrostatic Spray Technology

- Improve Finishing Quality
- Reduce Refinishing Work
- Time Savings
- Reduce Paint Wastage
- Material Savings

Reduce Paints Costs

Return-on-Investment (ROI)

By replacing Conventional Air Spray gun with Auto Electrostatic Spray Bell System

<table>
<thead>
<tr>
<th></th>
<th>Typical</th>
<th>Calculate Your Own Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paint price per litre</td>
<td>USD 10</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Litre Used per Day</td>
<td>100 litres</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Business Days per Year</td>
<td>220 days</td>
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</tr>
<tr>
<td>Electrostatic Transfer Efficiency</td>
<td>95%</td>
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</tr>
<tr>
<td>Annual Savings</td>
<td>USD 209,000.00</td>
<td></td>
</tr>
</tbody>
</table>
Coating Savings

Fast Colour Change Solution (1 sec)

Spray Tube 1

Pump 1

Paint Tank 1

Pump 2

Paint Tank 2

Spray Tube 2

Twin-Turbine Rotary Atomizer

50.0% Savings

70.0%

80.0%

90.0%

100.0%

Coatings Savings - Comparison Chart of Different Spray Technologies
The OTSON Turbo Rotary Atomizer can rotate at speeds from 1,000 to 30,000 RPM which is capable of atomizing even the high viscosity coatings into extremely fine particles to produce a high-quality finish.

The Turbo Atomizer’s fine atomization can provides uniform coating thickness on all surfaces, and relatively reduce over spray and pain waste.

The quick-disconnect features of the turbo atomizer and the disks allow for easy maintenance and reduced downtime.

The whole coating machine is fully automated which provides high production rates and reduces labor cost.
The OTSON Twin-Turbine Rotary Atomizer can rotate at speeds from 1,000 to 80,000 RPM which is capable of atomizing even the high viscosity coatings into extremely fine particles to produce a high-quality finish.

The Twin Turbine Rotary Atomizer’s fine atomization can provide uniform coating thickness on all surfaces, and relatively reduce over spray and paint waste.

The quick-disconnect features of the twin turbine atomizer and the disks allow for easy maintenance and reduced downtime.

The whole coating machine is fully automated which provides high production rates and reduces labor cost.
DISK Booth Layout

**Single Type DISK** (MAX Conveyor Speed : 5 meters/min)

- DISK Twin-Turbine Rotary Atomizer
- Spray Booth
- Ω Track

**S-Type DISK** (MAX Conveyor Speed : 10 meters/min)

- DISK 1 Spray Booth
- DISK 2 Spray Booth
- Loading
- Pre Touch Up
- DISK Coating
- Post Touch Up
- Curing Oven
- Unloading

From Load / Unload Conveyor

To Oven
Single Type DISK Layout

1. **Primer Layer Coating**
   - Loading
   - Paint Curing Oven
   - Natural Cooling Zone
   - Flash-Off Zone
   - Dust Remove (Air)
   - Pre Touch up
   - DISK 1 Spray Booth
   - Post Touch up

2. **Second Layer Coating**
   - Paint Curing Oven
   - Natural Cooling Zone
   - Flash-Off Zone
   - Dust Remove (Air)
   - Pre Touch up
   - DISK 1 Spray Booth
   - Post Touch up

3. **Final Layer Coating**
   - Paint Curing Oven
   - Natural Cooling Zone
   - Flash-Off Zone
   - Dust Remove (Air)
   - Pre Touch up
   - DISK 1 Spray Booth
   - Post Touch up

- Conveyor
- Unloading
Application - Bicycle

Primer Coating

Final Coating
Application - Box & Baking Tray

**Primer Coating**

**Final Coating**
Application - Industry

- Small parts
- Bicycle
- Application
- Small parts
- Bicycle
- Computer Housing
- Stationery
- Wooden Furniture
- Hardware
- Lockers
- Freezers
- Iron Railing
- Display Cases
- Office Partitions
- Medical Equipment
- Rest room Partitions
- Roller Bars
- Metal Doors
- Decorative Lamps
- Electrical Home Appliances
- Car Accessories, Teflon Pot
- Sports Equipment
- Handcraft
- Files
- Desks
- Sports Equipment
- Handcraft Computer
- Housing
- Stationery
- Wooden Furniture
- Hardware
- Lockers
- Freezers
- Iron Railing
- Display Cases
- Refrigerators
- Heavy Machinery
- Office Equipment
Meeting the requirements of each industry....

OTS - 5700

Disk Electrostatic Automatic Coating System
Application - Spray Range

.....With the widest industrial spray range

OTS - 5700
Disk Electrostatic Automatic Coating System
OTSON® ELECTROSTATIC

10” Touch Panel   Industrial (HMI)

Electrostatic Current UMA

054

Electrostatic Voltage KV

-79.8
### OTS-5700 Microcomputer Control Panel
(15” Man-Machine Interface)

- **Input Voltage:** AC 200V ~ 415V  50hz / 60hz (3 phase ) ± 5%
- **Power Consumption:** 2.5 KVA
- **Dimension:** 420 (L) x 730 (w) x 1710 (H) mm
- **Weight:** 110 kg
- **Servo Motor Controlled Reciprocator.**
- **Touch Panel Interface by using 15” Color Screen.**
- **Memory Capacity up to 1000 sets of Operation.**
- **Fire Protecting Sensor**
- **Air Flow Control**
- **Paints Flow Control**
- **Air Temperature Control**
- **Color Change Control (6 color + 1 shinner clean )**
- **Remote Digital Video Monitor System (RDVRS)**
- **Door-in-Door design to achieve efficient anti-dust effect.**

Coatings: Solvent-base & Waterborne Coatings

### OTS-5500 Microcomputer Control Panel
(15” Man-Machine Interface)

- **Input Voltage:** AC 200V ~ 415V  50hz / 60hz (3 phase ) ± 5%
- **Power Consumption:** 2.5 KVA
- **Dimension:** 420 (L) x 730 (w) x 1710 (H) mm
- **Weight:** 110 kg
- **Servo Motor Controlled Reciprocator.**
- **Touch Panel Interface by using 15” Color Screen.**
- **Memory Capacity up to 1000 sets of Operation.**
- **Fire Protecting Sensor**
- **Air Flow Control**
- **Paints Flow Control**
- **Air Temperature Control**
- **Color Change Control (6 colors + 1 shinner clean )**
- **Remote Digital Video Monitor System (RDVRS)**
- **Door-in-Door design to achieve efficient anti-dust effect.**

Coatings: Solvent-base Coatings
# Specification

## OTS-5300 Microcomputer Control Panel
### (10” Man-Machine Interface)
- **Input Voltage:** AC 200V ~ 415V  50hz / 60hz (3 phase) ± 5%
- **Power Consumption:** 2.5 KVA
- **Dimension:** 420 (L) x 730 (w) x 1710 (H) mm
- **Weight:** 110 kg
- **Servo Motor Controlled Reciprocator.**
- **Touch Panel Interface by using 10” Color Screen.**
- **Memory Capacity up to 200 sets of Operation.**
- **Color Change Control (2 colors) Interlocking**
- **Door-in-Door Design to Achieve Efficient Anti-Dust Effect.**
- **Coatings:** Solvent-base & Waterborne Coatings

## OTS-5100 Microcomputer Control Panel
### (10” Man-Machine Interface)
- **Input Voltage:** AC 200V ~ 415V  50hz / 60hz (3 phase) ± 5%
- **Power Consumption:** 2.5 KVA
- **Dimension:** 420 (L) x 730 (w) x 1710 (H) mm
- **Weight:** 110 kg
- **Servo Motor controlled reciprocator.**
- **Touch Panel interface by using 10” colour screen.**
- **Memory capacity up to 200 sets of operation.**
- **Door-in-Door design to achieve efficient anti-dust effect.**
- **Coatings:** Solvent-base Coatings

## OTS-5000 Microcomputer Control Panel
- **Input Voltage:** AC 200V ~ 415V  50hz / 60hz (3 phase) ± 5%
- **Power Consumption:** 2.5 KVA
- **Dimension:** 420 (L) x 730 (w) x 1710 (H) mm
- **Weight:** 110 kg
- **Japan’s Fuji Frequency Converter.**
- **German’s EAO push button panel.**
- **Door-in-Door design to achieve efficient anti-dust effect.**
- **Ergonomic design. Digital control.**
- **Coatings:** Solvent-base Coatings
### Twin-Turbine Rotary Atomizer

- **Air Pressure**: 1.0 ~ 8.0 kg/cm².
- **Air Consumption**: 68 m³/Hr. (40 SCFM)
- **Speed**: max 80000 RPM (no-load) - Type B
- **Speed**: max 60000 RPM (no-load) - Type A
- **Viscosity**: Max 300cp = 300 mPs = 96 secs (NK2 Cup)
- Twin-Turbine design in providing high torque and atomization effect.

### Turbo Rotary Atomizer

- **Air Pressure**: 1.0 ~ 4.0 kg/cm².
- **Air Consumption**: 34 m³/Hr. (20 SCFM)
- **Speed**: max 30000 RPM (no-load)
- **Viscosity**: Max 60cp = 60 mPs = 20 secs (NK2 Cup)
- Turbo design in providing high torque and atomization effect.

### High Atomization Spray DISK

- **Spray DISK size**: Φ170mm, Φ230mm, Φ300mm.
- Twin-Turbine pneumatic nozzle achieves superb atomization effect even for high-viscosity paint.
- High-speed balance calibration, providing excellent stability of atomization disk.
### Specification

#### Color Changers Valve

The unit minimizes the time required to change color in your painting line and thus improves line availability, it also enables the user to augment the number of painting colors from 2 to 40. Further, interlocking this unit with your automatic operation will provide more excellent automation.

- **Colors:** 2~20 with one Shinner
- **Control:** Air Valve
- **Color change time:** 60 Secs
- **Coatings:** Solvent-base & Waterborne Coatings

#### Remote Digital Video Monitor System

- Fanless, -25°C to 70°C Operation Temperature
- 3 GbE LAN for Extend Internet Application
- 4CH ~ 8 CH 120 / 100 fps D1 Resolution Video Capture
- Rich I/O: 4 COM, 6 USB, 2 Mini-PCIe (1 with SIM Card Socket)
- Dual Display: DVI-D / HDMI and VGA
- 2 x 2.5” HDD / SSD
- Explosion-Proof Video Camera

#### Reciprocator

- **Length:** 1200mm~3000mm.
- **Single travel, multi-speed shifting.**
- **Control Method:**
  1. Frequency Converter for speed control.
  2. Man-machine interface control panel is controlled by servo motor for regulating the travel speed.
**Specification**

**OTS-5000 & OTS-5100 Liquid Electrostatic Power Supply**

- **Out Voltage**: 0~70 KV DC(-) - OTS-5000  0~100 KV DC(-) - OTS-5100
- **Out Current**: 50 microamperes
- **Intercepting Current**: 20~150 microampere
- **Input Voltage**: 220V AC (50Hz)
- **Weight**: 12 kg
- **Dimensions**: 300(L)x120(W)x350(H) mm
- **Coatings**: Solvent-base Coatings

**OTS-5300, OTS-5500, OTS-5700 Liquid Electrostatic Power Supply**

- **Out Voltage**: 0~110 KV DC(-)
- **Out Current**: 50 microamperes
- **Intercepting Current**: 20~150 microampere
- **Input Voltage**: 220V AC (50Hz)
- **Weight**: 12 kg
- **Dimensions**: 300(L)x120(W)x350(H) mm
- **Coatings**: Solvent-base & Waterborne Coatings

**Gear Pump**

- **Input Voltage**: AC 220 V ~ 380 V ±10% 3 Phase
- **Horsepower**: 1/4 HP
- **Dimension**: 130 (L) x 600 (w) x 30 (H) mm
- **Weight**: 13 kg
- **Output**: 3cc / rev  200 cc ~ 1500 cc / min (digital control)
- **Spray Hose**: Double-layer Teflon paint hose
- **Pump Material**: Hardened Steel CMoWCrVCo  HRC = over 63)
- **Titanium plated for durable use and wearing resistance.**

**Air Heater**

- **Dimension**: 410 (L) x 170 (w) x 150 (H) mm
- **Weight**: 5 kg
- **Input Voltage**: AC220V, 500W
- **Temperature**: 30C ~ 110C

**Water Filter & Oil Filter**

- **Dimension**: 170 (L) x 340 (w) x 90 (H) mm
- **Weight**: 3 kg
- **Water Filter**: 3650 l/s
- **Oil Filter**: 1900 l/s
- **MAX Operation Pressure**: 150psi
Easy Paint Kitchen for Waterbase and Solvent Paints

Dimension: 76x43 x 170 cm  Weight: 80 Kg
The microscope picture (500X) of atomization droplet which is done by our atomizer, the droplet diameter between 1.0-5.0um.
<table>
<thead>
<tr>
<th>Model /Function</th>
<th>OTS-5700</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Microcomputer Control Subsystem</strong></td>
<td></td>
</tr>
<tr>
<td>Microcomputer Control Panel (MAN MACHINE INTERFACE)</td>
<td>15”</td>
</tr>
<tr>
<td>Memory Capacity for Storge Coating Parameters</td>
<td>1000 sets</td>
</tr>
<tr>
<td>Fire and Smoke Protecting Sensor</td>
<td>Auto</td>
</tr>
<tr>
<td>Air Flow Control</td>
<td>Auto / Manual</td>
</tr>
<tr>
<td>Paints Flow Control</td>
<td>Auto / Manual</td>
</tr>
<tr>
<td>Air Temperature - Auto Digital Control</td>
<td>Auto</td>
</tr>
<tr>
<td>Color Change Control (2~10 colors + 1 shinner clean)</td>
<td>2~20 Colors</td>
</tr>
<tr>
<td>Environment VOC Detect Sensor</td>
<td>Auto</td>
</tr>
<tr>
<td>Reciprocator Stoke Control</td>
<td>Auto / Manual</td>
</tr>
<tr>
<td>Reciprocator Speed Control</td>
<td>Auto / Manual</td>
</tr>
<tr>
<td>Atomizer Speed (RPM) Control</td>
<td>Digital</td>
</tr>
<tr>
<td>Remote Digital Video Monitor System (RDVRS)</td>
<td>8 ch (D1) h.264</td>
</tr>
<tr>
<td>Electrostatic Power Supply Control</td>
<td>Digital Panel</td>
</tr>
<tr>
<td>Paints, Coatings, Fluid, Oil</td>
<td>Solvent-base &amp; Waterborne</td>
</tr>
<tr>
<td><strong>b.Spray Subsystem</strong></td>
<td></td>
</tr>
<tr>
<td>High Rotary Atomizer</td>
<td>Twin-Turbine Rotary Atomizer 80000 rpm (no loading spray disk)</td>
</tr>
<tr>
<td>High Atomization Spray Disk</td>
<td>170 mm ~ 300 mm</td>
</tr>
<tr>
<td>H.V Cable, Teflon Spraying Tube, PU Air Tube</td>
<td>11m ~ 40m</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Max 300cp = 300 mPs = 96 sec s (NK2 Cup)</td>
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<tr>
<td><strong>c.High Voltage Electrostatic Power Subsystem</strong></td>
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<tr>
<td>Electrostatic Power Supply</td>
<td>Max 110KV</td>
</tr>
<tr>
<td><strong>d.Reciprocator Subsystem</strong></td>
<td></td>
</tr>
<tr>
<td>Reciprocator (Stroke Length 1.6 Meters ~ 7.0 Meters)</td>
<td>1.6 M ~ 7.0 M</td>
</tr>
<tr>
<td><strong>e.Paint Supply Subsystem</strong></td>
<td></td>
</tr>
<tr>
<td>Color Change Valve</td>
<td>2~20 Colors</td>
</tr>
<tr>
<td>Gear Pump Motor</td>
<td>Explosion-Proof Motors</td>
</tr>
<tr>
<td>Gear Pump</td>
<td>3cc / rev 200 cc ~ 1500 cc / min</td>
</tr>
<tr>
<td>Air Heater</td>
<td>Auto</td>
</tr>
<tr>
<td>Air Filter (screening oil and water)</td>
<td>Auto</td>
</tr>
<tr>
<td>OTS-5500</td>
<td>OTS-5300</td>
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<tr>
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</tr>
<tr>
<td>15”</td>
<td>10”</td>
</tr>
<tr>
<td>1000 sets</td>
<td>199 sets</td>
</tr>
<tr>
<td>2~20 Colors</td>
<td>2 ~ 6 Colors</td>
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<tr>
<td>4 ch (D1) h.264</td>
<td>Analog Panel</td>
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<tr>
<td>Digital Panel</td>
<td>Solvent-base &amp; Waterborne</td>
</tr>
<tr>
<td>Solvent-base</td>
<td>Solvent-base</td>
</tr>
</tbody>
</table>

- **Twin-Turbine Rotary Atomizer**
  - 80000 rpm (no loading spray disk)
  - 170 mm ~300 mm
  - 11m ~ 40m
  - Max 300cp =300 mPs=96 secs (NK2 Cup)
- **Twin-Turbine Rotary Atomizer**
  - 60000 rpm (no loading spray disk)
  - 170 mm ~300 mm
  - 11m ~ 40m
  - Max 140cp =140 mPs=44 secs (NK2 Cup)
- **Twin-Turbine Rotary Atomizer**
  - 60000 rpm (no loading spray disk)
  - 170 mm ~300 mm
  - 11m ~ 40m
  - Max 140cp =140 mPs=44 secs (NK2 Cup)
- **Turbo Rotary Atomizer**
  - 30000 rpm (no loading spray disk)
  - 170 mm ~300 mm
  - 11m ~ 40m
  - Max 60cp =60 mPs=20 secs (NK2 Cup)

- **Max 110KV**
- **Max 100KV**
- **Max 100KV**
- **Max 70KV**

- **1.6 M ~7.0 M**
- **1.6 M ~3.0 M**
- **1.6 M ~3.0 M**
- **1.6 M ~3.0 M**

- **2~20 Colors**
- **2 ~ 6 Colors**
- **2~4 Colors**
- **2 Colors**

- **Explosion-Proof Motors**
- **Explosion-Proof Motors**
- **Explosion-Proof Motors**
- **Explosion-Proof Motors**

- **3cc / rev**
  - 200 cc ~ 1500 cc / min
- **3cc / rev**
  - 200 cc ~ 1500 cc / min
- **3cc / rev**
  - 200 cc ~ 1500 cc / min
- **3cc / rev**
  - 200 cc ~ 1500 cc / min

- **Auto**
- **Manual**
- **Manual**
- **Manual**
OTS-8000
Auto Electrostatic Spary Gun System

OTS-9000
Auto Electrostatic Spary Bell System

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